

ITECTURAL REVIEW VOLUME CXXXII NUMBER 785 JULY 1962 FIVE SHILLINGS

AR



The use of decorative veneers, by reason of their variety and versatility, gives more creative scope to the architect than the use of any other form of finishing material. By virtue of the individuality of any one log of veneers, and its warmth and diversity of colour, natural wood veneers are always stimulating to the eye while being restful and unobtrusive. At John Wright & Sons (Veneers) Ltd. we produce a wide range of exotic veneers to meet the ever changing needs of the creative architect.

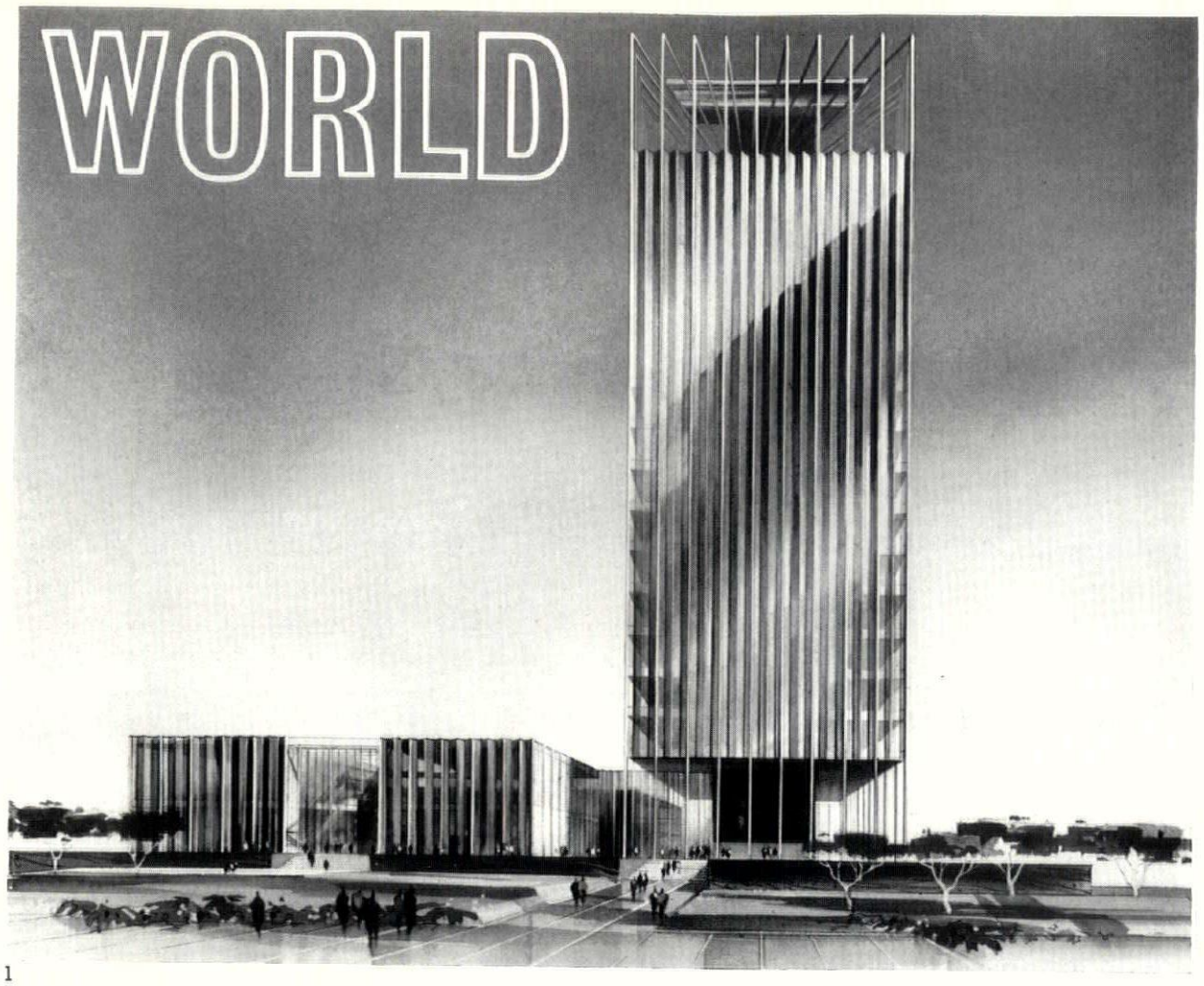
Manufacturers of veneers of all kinds since 1866

Barbour Index 14

JOHN WRIGHT & SONS (VENEERS) LTD

AVON WHARF, LONGFELLOW ROAD, MILE END ROAD, LONDON, E.3

Tel: ADVance 4444 (10 lines) Grams: "Mottled, Bochurch, London"



1

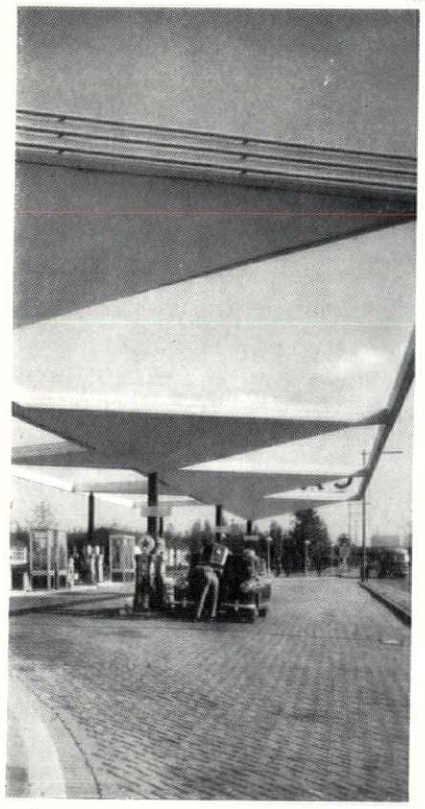
THE IRVINE MEMORIAL

The beginning of the end in Orange County?

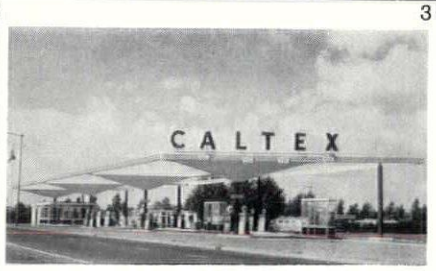
Proudly press-released as 'an example of the kind of facility to be included in the projected Newport Centre . . . a nerve-centre for the economic growth of the South Coastal Region . . . destined to become of great importance and benefit to Orange County' the pleat-glazed and porcelain faced tower-block illustrated above, 1, will be regarded with regret by many besides sentimental South Californians, as the monument to a regional planning disaster. The Newport Centre is only one of a cluster of new developments for organizations as diverse as Astropower and the University of California that are to be built on a tract of land that has resisted history until very recently by defying the pressure of exurban sprawl from Los Angeles and Long Beach and remaining imperturbably agricultural.

This accidental green belt was the coastal-hills zone of the famous Irvine Ranch, whose 93,000 acres made it probably the largest undivided agricultural holding the West had ever known, with an uninterrupted history that goes back to the original Spanish land grant, and in the hands of the Irvine family for about as long as California has been worth considering as a State of the Union, rather than gold-rush terrain. Its position has made it the most glittering prize ever dangled before US real-estate speculators, and even now they have not got their hands on it properly, since all the Irvines have done is to lease off (not sell) the coastal third of the ranch and, by remaining ground landlords, retain overall control over the development (they have their own planning and landscaping consultants). The entire coastal strip is to be developed as a unit, which is some consolation, and the master planners for the developers, as well as the architects of certain plum buildings like 1, will be William L. Pereira and Associates. The development will, no doubt, be intelligent and up to date, but the fact remains that the green wall has been breached. The Irvine Company is reported to be determined to keep the rest of the ranch agricultural, but, having given way to development in one place, will they be able to hold out against it elsewhere? The projected ranch museum at the base of the Irvine Tower may yet prove to be a memorial to one of the great missed opportunities along the New Frontier.

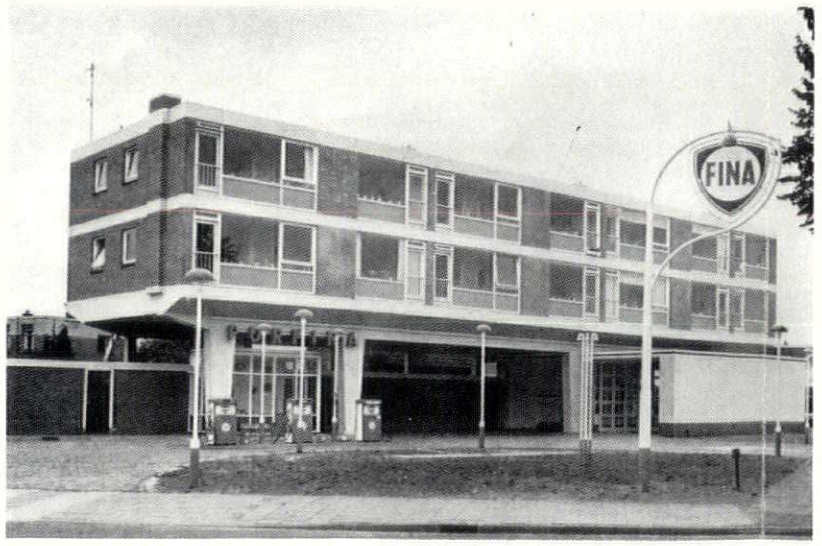
2



1



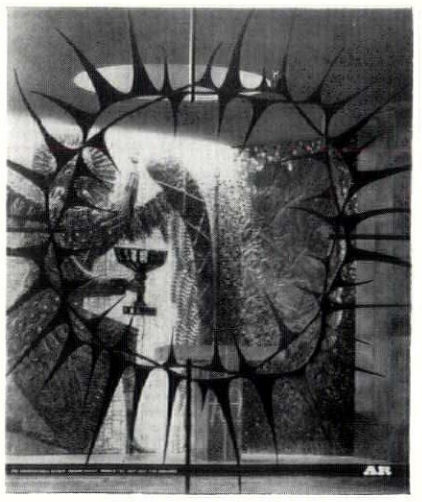
3 4



Dutch views on motorway architecture

BENZINE STATIONS

The exemplary literature on roadside architecture has been usefully increased by a recent number of *Bouw* (April 21, 1962) surveying Dutch filling stations (in *vele variaties*, as *Bouw* justly observes) and a few select examples from other Continental countries. The most striking, 2, 3, is by the architect L. Rondeltap for Caltex on the Stadhoudersweg, Rotterdam, whose gay canopy, though rather nominal in its provision of shelter, should have plenty of what Rondeltap calls *aantrekkingskracht* (the ability to stop passing cars). None of the other designs by Rondeltap are the equal of this one, nor are most of those designed by the oil companies' own architectural offices, but at Meppel the architectural team of Roosenburg, Verhave, Luyt and de Jongh have produced a filling station with flats over, 4, which might be worth study by motel architects, and another Fina installation, this time at Arnhem and designed by



This month's cover *shows the Gethsemane Chapel in the new Coventry Cathedral, which is appraised and illustrated in this issue. In the photograph a relief by Steven Sykes, in* ciment fondu *and glass mosaic, is seen through the iron grille in the form of a crown of thorns which separates the chapel from the south aisle. The grille was designed by Sir Basil Spence, the architect of the cathedral. Mr. Sykes's relief closes the vista up the south aisle from the glazed screen at the western end.*

ACKNOWLEDGMENTS

COVER: Galwey Arphot. WORLD, pages 1–4: 1, Studio One; 2–6, *Bouw*; 7, Banham Arphot; 8–11, *l'Oeil*; 12–15, *Byggaren*; 22, Lawrence S. Williams; 24–26, *Acropole*. QUEENS GARDENS AND COLLEGE OF TECHNOLOGY, KINGSTON UPON HULL, pages 11–14: 1–4, 7, Henk Snoek. THE BRICK PALACE OF 1862, pages 15–21: 18, Eric de Maré. MUNICIPAL THEATRE AT BUENOS AIRES, pages 22–23: 2, 3, Gomez. CATHEDRAL CHURCH OF ST. MICHAEL, COVENTRY, pages 24–42: Galwey Arphot. LANCASHIRE MILL TOWNS, pages 47–51: Nairn Arphot. FACTORY IN NORTHERN IRELAND, pages 52–53: W. D. Fry. FACTORY AT GILLINGHAM, KENT, pages 54–56: Toomey Arphot. MISCELLANY, pages 57–63: Exhibitions, 1, L. B. Hildyard; 2, Brompton Studio. Architecture, 2, Ronald G. French; 3, A'Court; 4, Wm. T. Munns; 5, Cement and Concrete Association; 6, *Arkkitehti Arkitekten*; 7, G. E. Kidder Smith. Shrubs, 1, 2, John Brookes; 3, 4, J. E. Downward. SKILL, pages 64–74: 4, Cowderay and Moss, *Nursing Mirror*.

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

VOLUME 132 NUMBER 785
JULY 1962

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents: Librerie Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

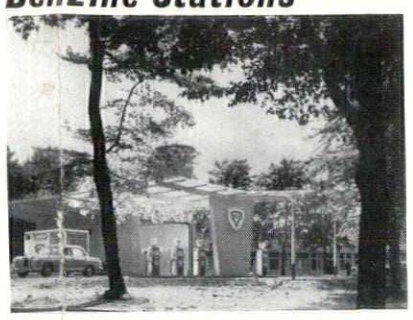
Directing Editors	*J. M. Richards* *Nikolaus Pevsner* *H. de C. Hastings* *Hugh Casson*
Executive Editor	*J. M. Richards*
Assistant Executive Editor	*Reyner Banham*
Assistant Editor (Production)	*William Slack*
Features Editor	*Kenneth Browne*
Technical Editor	*Lance Wright*
Assistant Editor (Counter-Attack)	*Ian Nairn*
Staff Photographers	*De Burgh Galwey* *W. J. Toomey*
Advertisement Manager	*F. G. Dunn*

CONTENTS

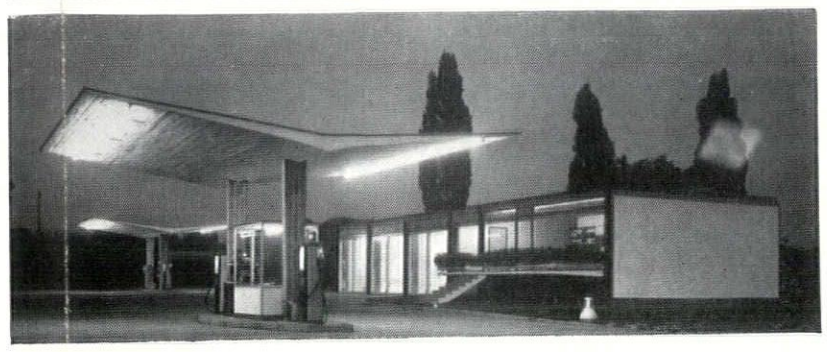
1 **World**
5 **Views and Reviews**
8 **Frontispiece**
9 **After the Common Market:** *Fello Atkinson*
11 **Queens Gardens and College of Technology, Kingston upon Hull:** *Architect, Frederick Gibberd*
15 **The Brick Palace of 1862:** *Betty Bradford*
22 **Municipal Theatre at Buenos Aires:** *Architects, Mario Roberto Alvarez and Macedonio Oscar Ruiz*
24 **Criticism**
Cathedral Church of St. Michael, Coventry: *R. Furneaux Jordan*
35 **Interior Design**
Cathedral Church of St. Michael, Coventry: *Architect, Sir Basil Spence*
43 **On Trial: 5 The Spec Builders:** *Reyner Banham*
47 **Townscape**
Lancashire Mill Towns: *Ian Nairn*
52 **Factory in Northern Ireland:** *Architect, James F. Munce (of Munce and Kennedy)*
54 **Factory at Gillingham, Kent:** *Architects, Farmer and Dark*

Miscellany
57 **Exhibitions**
59 **History**
60 **Architecture**
62 **Shrubs**
64 **Skill**
Ward Furniture
1, Beds: *Anthony Wylson*
74 **Contractors, etc.**

Benzine Stations



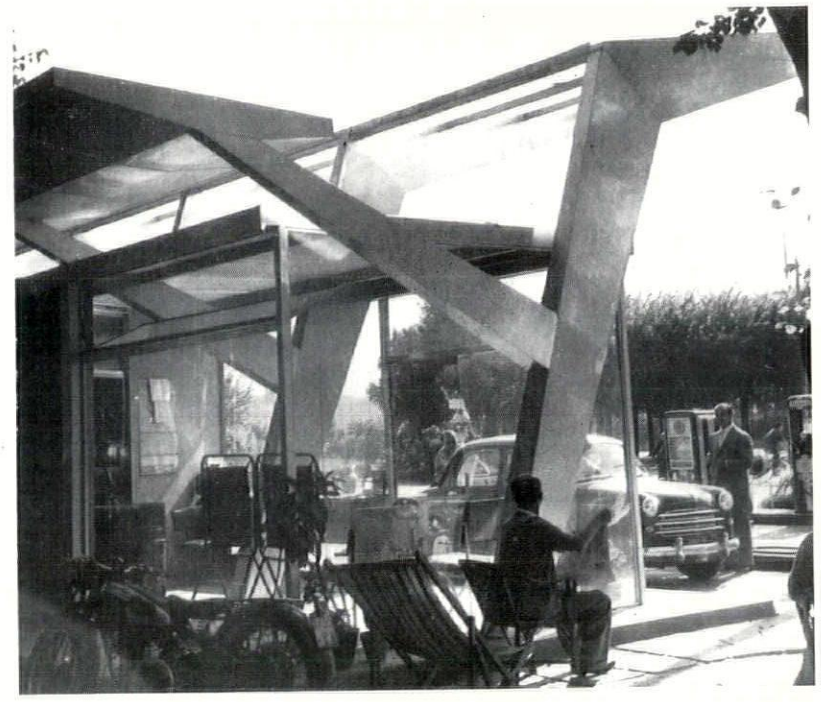
5



6

van Heelsbergen, sits happily, 5, in an arboreal site on the Schelmseweg.

The international examples are mostly well known, but one or two of them were well worth reprinting for their inherent architectural qualities. One such is Lothar Gotz's near-perfect station at Wiesbaden, 6, and another —much snapped by tourists, little discussed in the literature—is Aldo Franchini's sunshaded glass box, 7, on the main road going north out of Como, Italy, and dating back to the very early Fifties.

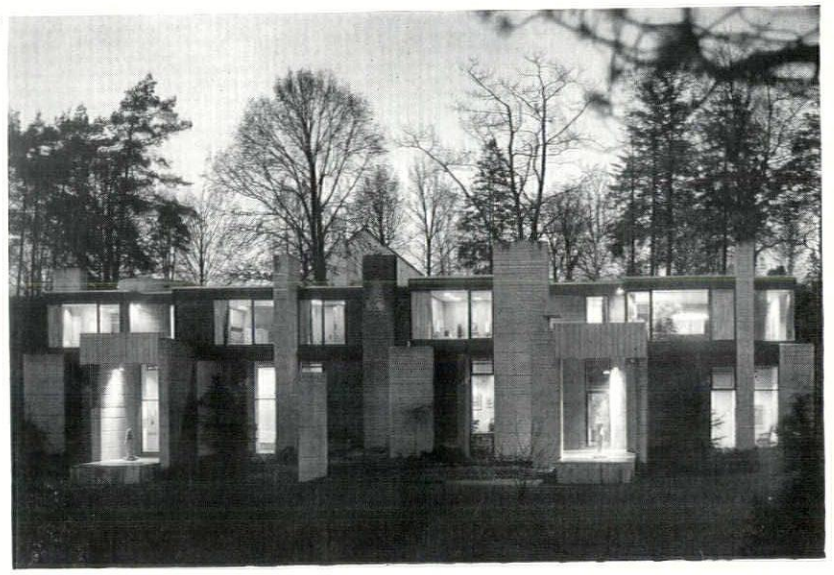


7

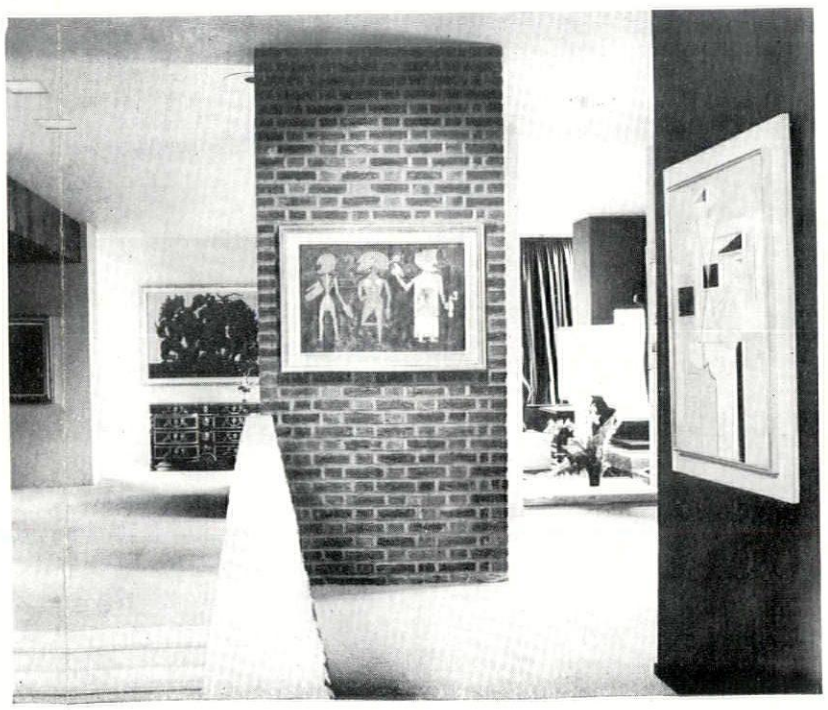
HOUSE OF ART

To design a residence for a *collectionevr* has long been one of the standard exercises in architecture schools where *Beaux-Arts* writ still runs, but very few architects are called upon, even in dreams, to design a house specifically around a particular collection. Yet this, according to Luce Hoctin in *l'Oeil* (April 1962), is what André Jacmain was called upon to do for the renowned Urvater collection of modern art. The house, 8, on an ideal site in the form of a shallow basin, outside Brussels, consists of a relatively straightforward living floor, over a labyrinthine ground floor where the pictures and sculptures are displayed (and of which *l'Oeil* discreetly gives no plan). The restricted and diversified spaces on the ground floor, 9, ensure that the visitor is confronted with the works of art under controlled conditions and on their own terms. For all this, the architecture is neither neutral nor self-effacing; the materials, as on the staircase, 10, can be as opulent as marble, as fashionably *brut* as exposed-aggregate concrete, or as artificial in effect as painted brickwork (flank walls) contrasted with the natural brick pier at the top of the stairs. The architectural concept extends into the exterior space both by way of the 'pavilions' containing sculpture seen in 8, and through offlying monoliths of concrete flanking granite platforms on which sculpture —here, 11, by Hajdu—is displayed *en plein air*. The house is of more than domestic consequence, since Jacmain has been able here to put into effect a concept of display that has been very much in the minds of younger architects and museologues for some time past, but is usually passed over in favour of the 'Establishment-Modern' solution typified by Lagneau's *Musée du Havre* (World, June, 1962). The controlled and constricted spaces, the enforcement of preferred viewpoints served by varied and unpredictable lighting, the long and short vistas—all these run counter to the concept of an ideal viewing space with evenly distributed lighting that has been with us ever since the dawn of museum architecture. What remains to be seen, of course, is how far the anti-ideal method can be generalized into the normal institutional situation where it is unlikely that the architect will be able to claim, as Jacmain can, to have enjoyed 'le double privilège d'entretenir des rapports d'amitié avec les tableaux et avec leurs possesseurs.'

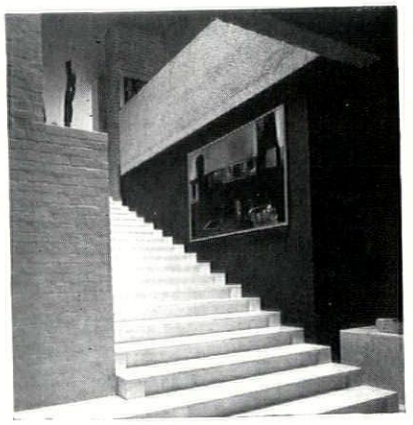
8



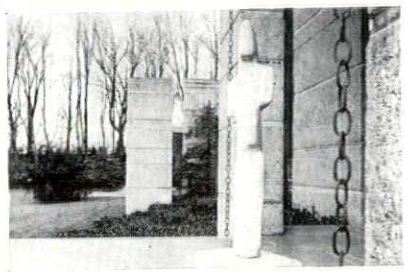
9



10



11



ANOTHER ANCIENT SHIP

The salvaging of the Swedish ship-of-the-line *Wasa*, which sank in 1628 off Stockholm, has created a museum problem not unlike that presented by the Pharaonic boats at the foot of

Wasa



12

the great pyramid at Gizeh (World, February, 1962). The hull, when lifted in 1961, proved to be in extraordinarily good condition and is now berthed, 12, in the Gustav V dock until she can be moved to her permanent site at Alkarret. But in the meantime the most appalling problems of conservation and research are involved, as the hull may in no circumstances be allowed to dry out. Accordingly a prefabricated, prestressed concrete frame structure clad in aluminium panels is being built on the pontoon with which she was docked, to shelter her from sun and desiccation, but even so it will be another six years or so before she will be fit for exhibition in her permanent home at Alkarret, the Wasa-museum, 13, architect: Hans Akerblad. The

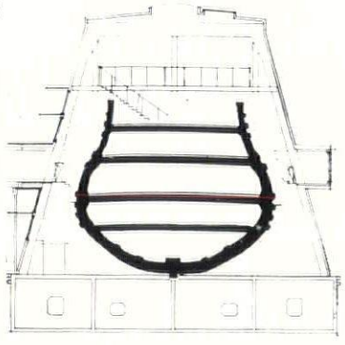


13

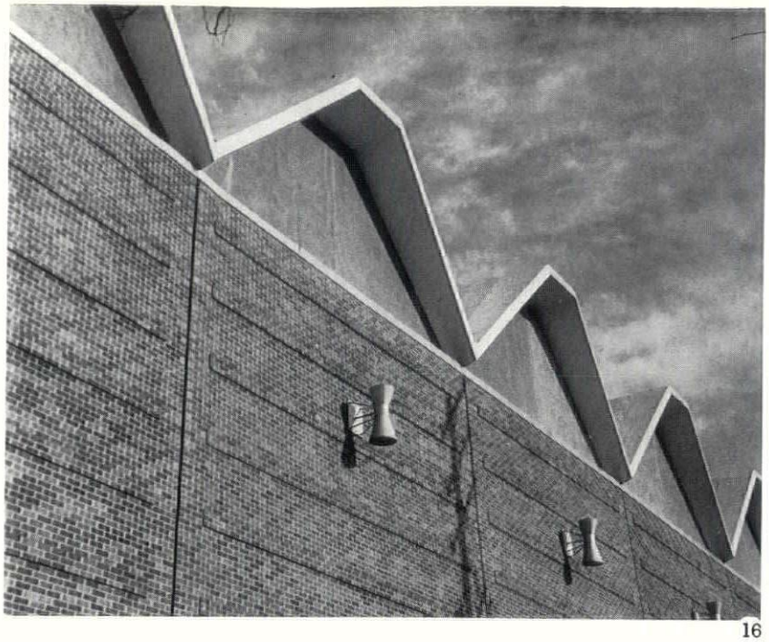


14

15



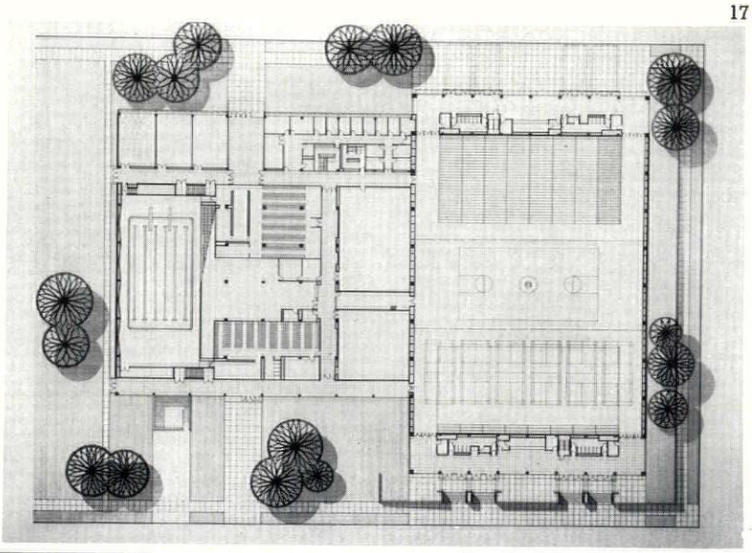
form of the building naturally follows the shape of the ship, with her tumblehome sides and raised prow and stern, 14, and the main viewing platform, 15, will lie in the projecting collar-like corridor half-way up the side of the structure. It is not easy for non-Swedes to understand why the *Wasa* should have lain so heavy on the national conscience as to need the kind of burial normally accorded to unknown soldiers, but the national status of the museum operation is made clear by the number and size of the firms and organizations who are recorded in *Byggaren* (7, 4, 1961) as having contributed freely to the work.

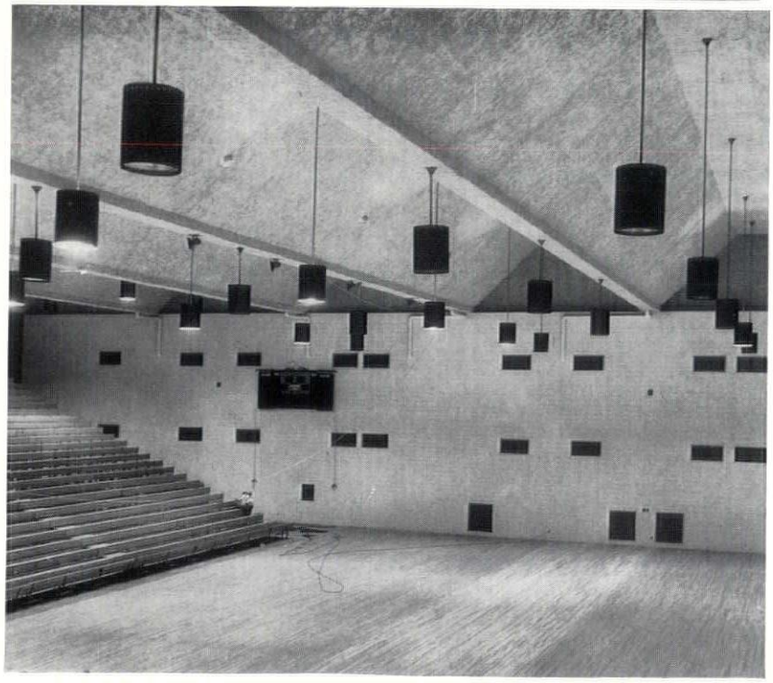


16

US CONCRETE ROOF

17



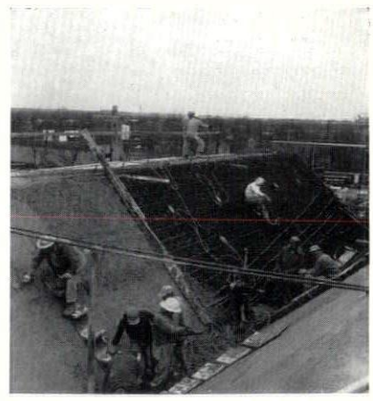


18

Throughout the ten years or so of the curtain wall epoch, European architects have consoled themselves with the thought that while they cannot afford to have much curtain walling (because of an insufficient manufacturing industry) the Americans cannot afford to use much concrete (because of high costs of on-site labour). Subsequent events have quietly made nonsense of the first proposition, and curtain walling is now found in Copenhagen and Milan, Dusseldorf, Barcelona, Paris, London and any other major architectural centre that can be named in Europe. While this development has been accepted, the US half of the statement has only been revised to the extent of accepting that freak conditions of affluence or public relations may make it possible for US architects to exploit reinforced and prestressed concrete for showy effects, as in Saarinen's airport buildings. The use of concrete in 'real life' in ordinary workaday US buildings certainly has not penetrated into the European architectural consciousness, and for this reason it is salutary to be able to publish an American building that, while it is undeniably collegiate, does not come from one of the gilded prestige universities, and still uses a type of post-tensioned concrete construction that could almost be regarded as 'typically European.'

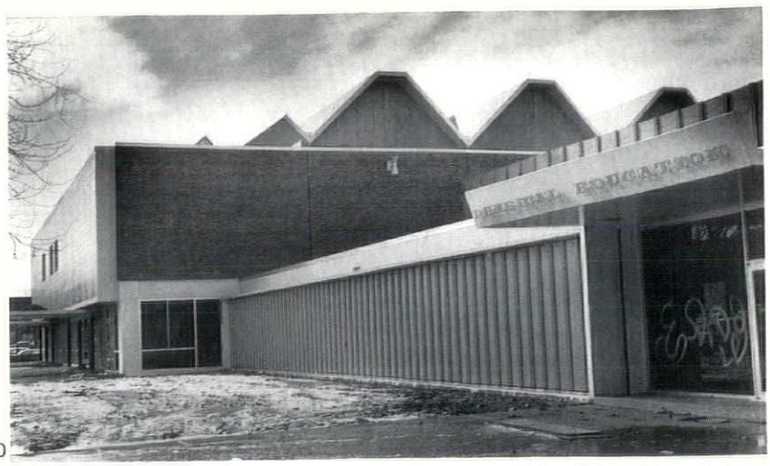
The Men's Physical Education Building at Indiana State College uses a folded plate roof, 16, that would look quite at home in Europe. Though this fact may be immediately written-off as due to the presence of an English associate on the staff of Miller and Miller, the architects responsible for the design, the other fact remains that a folded-plate roof, involving the kind of site-work visible in 19, was a

19



reasonable proposition to span the main gymnasium area, whose size is graphically demonstrated by the ranges of seating on the plan, 17, which are also visible in the interior view, 18.

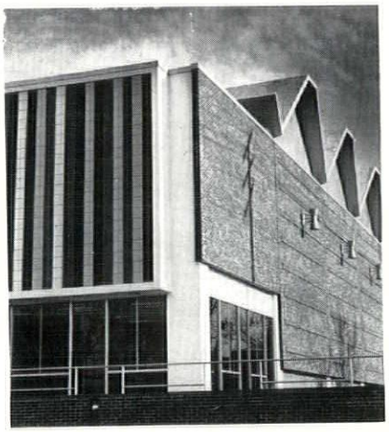
However, this interior, sparsely and dryly elegant, does at once reveal a sense of scale, based on the acceptance of sheer size as something normal, that appears to be as constituent to the success of a volume such as this, as it is to the frequent deficiencies of curtain-wall exteriors, where the common US acceptance of sheer size results in an inadequate sense of scale



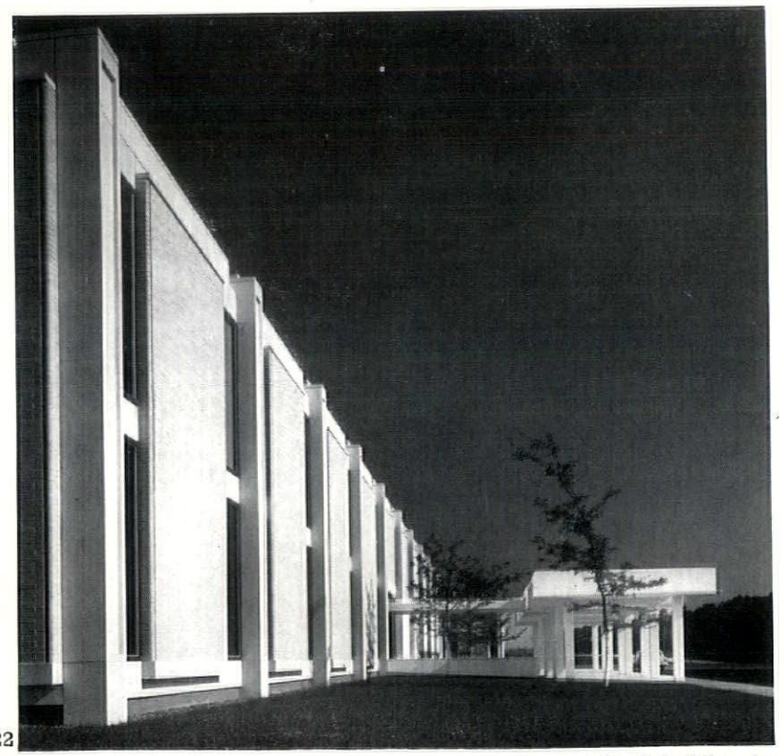
20

US Concrete

21



in matters of detail (cf. Union Carbide Building, World, May 1962). Interestingly enough it is precisely the treatment of the exterior that is most likely to jar European eyes on this building; not so much in the changing-room and swimming pool block, 20, as in the tiling of the public entrance facade, which seems in uncomfortable contrast to the comfortably large scale of the blind brick end-walls, 21. The whole conception of the building is, clearly, an entirely American one, whatever the nationality of those who worked on it; its resolution in terms that are in part familiar to European practice may, perhaps, deter those in Europe who are accustomed to use sweeping generalizations about the USA to excuse the shortcomings of their own continent.

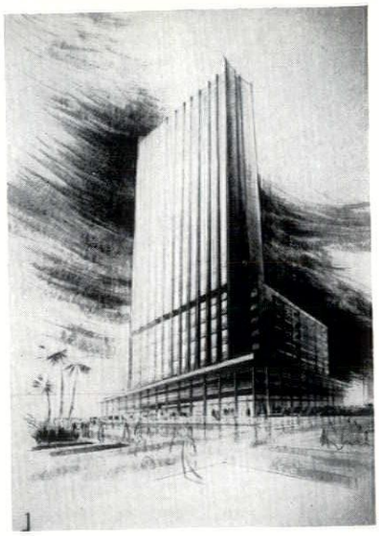


22

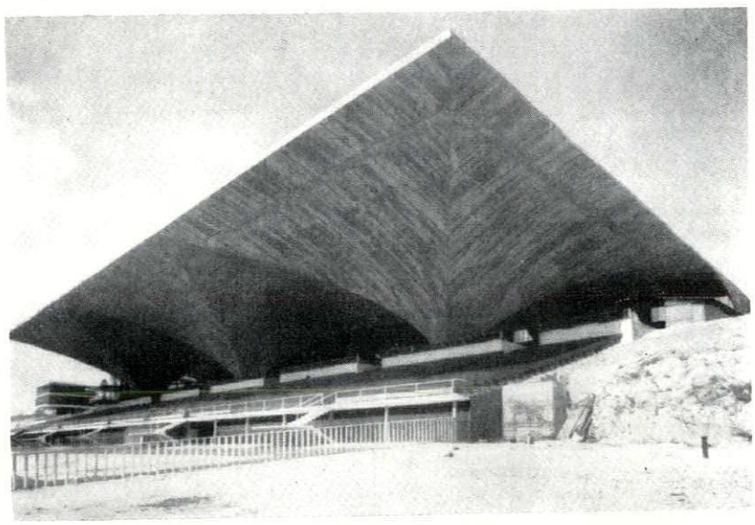
FOR THE RECORD

For the benefit of those who like to have the record straight we illustrate here a building and a project which have record-holding qualities over and above their architectural virtues. The most recent *completed* building by Vincent Kling to win a prize (all Kling's buildings seem to win prizes sooner or later) is the McNeil laboratory block, 22, at Fort Washington, which was awarded the silver medal of the Pennsylvania Society as the 'outstanding design (in the state) of 1961.' Close scrutiny of the detailing revealed by the photograph suggests that this may also hold the record for being first to revive the use of bull-nosed bricks in the US, but even a cursory view of the picture will reveal so clearly just why Kling is such a persistent prize-winner that one wonders why his work has not yet been the subject of more profound study.

The other record holder is the Indépendance building in Dakar, designed by Chesneau and Verola, 23, which—at the time of going to press—is the tallest building projected for Africa. Such records are not inclined to be very durable, but it could be that this project may have to be modified to maintain some height advantage over its rivals—as the first prize-winner in a competition for a building worthy to close the composition of the *place de l'Indépendance* it is too entangled with national prestige for anyone to allow it to be casually or negligently over-topped.

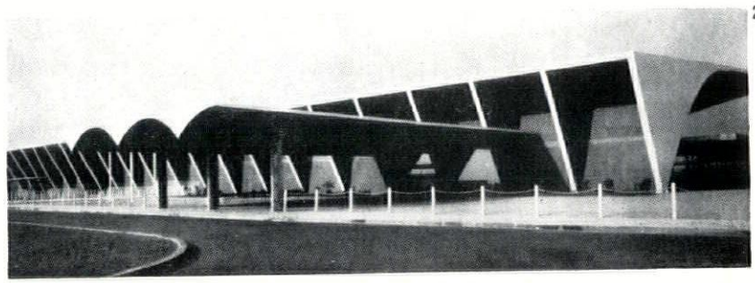


23



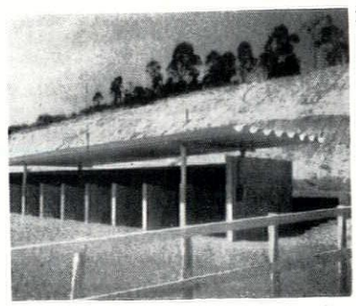
24

THE STADIUM TRADITION



25

Not even the flood of obituary reminiscence produced by the death of Edoardo Torroja seems to have provoked any major pundit to draw attention to the role played by stadia in the structural revolutions of our time, yet from Nervi's Florence stadium onwards, the contribution of the evolution of stadia to concrete technology must have been considerable. Most recent in this distinguished line is the Hipodromo Guanabara, 24, with its superb oversailing vaults, designed by Helio Modesto, with Arthur Eugenio Jerman as structural consultant, and illustrated in *Acropole* 279 (February 1962). Unmistakably Brazilian in most of its forms, for example, the entrance, 25, the Hipodromo conforms in most ways to current international norms in planning and organization for establishments of this kind. Less usual, and the more welcome for that, is the fact that minor structures such as the necessary sun-shelters for the horses, 26, also came within the architect's purview, and were carried out in a decent, pre-cast Neo Functional Tradition manner.



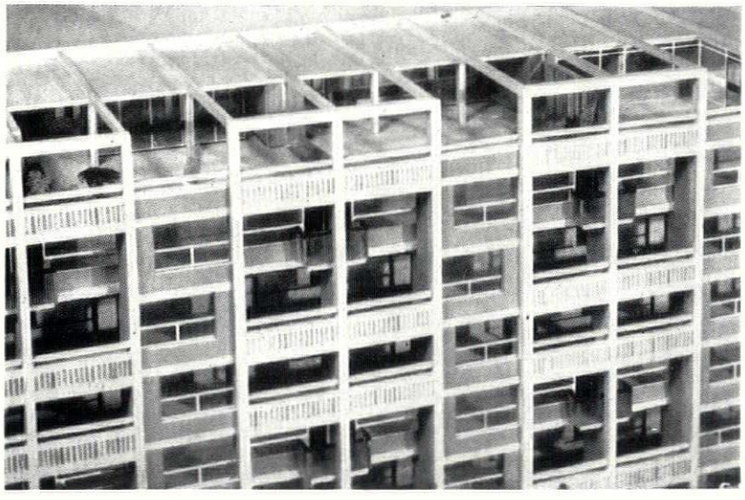
26

views and reviews

MARGINALIA

SHEFFIELD HOUSING

Apart from CLASP, the most significant new emergent in English architecture of the last few years is probably the Architect's Department of the City of Sheffield. In particular, the commanding quality of its work in housing has earned it a measure of international recognition that begins to rival that of the LCC. To mark ten years of progress in the field of housing, the Sheffield Corporation Housing Development Committee has just issued a substantial illustrated report on the major schemes completed to date, the main projects currently in hand, and some comparisons of dwelling-types that have been employed. The comprehensive survey thus afforded is useful in putting the much-discussed Parkhill development into the context of Sheffield housing architecture as a whole, though this one scheme still stands out well beyond anything else the Committee have achieved or are proposing, with the possible exception of Parkhill's immediate successor, Hyde Park, which will have a more sophisticated facade-treatment, and will also exploit the roofs, 1, in a way that Parkhill did not. Enquiries about the report, *Ten Years of Housing in Sheffield* (which comes slightly larger than A4 size but with its SfB classification on the spine) should be addressed to the City Architect's Department, Sheffield.



1, *model of the proposed Hyde Park housing at Sheffield.*

A NEW PATRON

When J. M. Richards wrote in the AR for October, 1955, about *The New Patrons*—companies concerned in other fields of business who spread their investment base by going into property—he mentioned insurance companies as prominent in this new class of building-promoters and observed 'They have a clear duty to inform themselves about the live architectural issues, seek out the architects best qualified to serve them and accord them the freedom a good architect deserves. They have the power in their hands to advance the cause of good architecture. . . . If they do not seize this opportunity . . . London will come to accept the commercially expedient and second rate as the normal standard for new buildings. . . .'

One of the major insurance companies—the Norwich Union—has just published a record of its building activities for the last fifteen years, and the results can be compared against Mr. Richards's modest proposal. The outcome of this comparison appears to be that as far as the Norwich Union is concerned, the commercially expedient is perfectly good enough, the second rate is the normal outcome, and the whole of Britain, not just London, has had to accept it. What makes it the more depressing to have to draw this conclusion is that the book is by no means full of second-rate buildings, and the few good ones make the uninspired plot-ratio-and-rental manipulations of the others look so much the worse. Architects as good as Yorke, Rosenberg and Mardall are represented, as are Raglan Squire and Partners; there are little-known buildings as good as a sequence of local distribution centres for Heinz by Grenfell Baines and Hargreaves —2, at Sheffield—and some promising schemes for provincial cities by relatively unknown firms, such as the MoW offices at Guildford, designed by Scott, Brownrigg and Turner, 3.

But the very width of the gap between these better schemes and the rock-bottom gutless non-architecture of designs like the Woolworth's in Cheltenham, 4 (no architect named), is proof enough that no conception of architecture rules over the Norwich Union's architectural operations. There is evidence for this, both in small things and in great—no one who read the proofs of the book appears to have been sufficiently well acquainted with architecture to know that Grenfell Baines and Hargreaves are two men, not three—and at the other extreme, the introduction by Sir Robert Bignold, the president of the group, contains not one whisper about the quality of the architectural design represented. The company's liabilities to policy-holders are discussed in some detail, but not its responsibilities to the towns and cities of Britain, some of which it has damaged irreparably, both in terms of planning on the ground and in terms of townscape as it greets the eye. Readers will recall that the Norwich Union was one of the fast moving operators who precipitated the crisis over the development of Wine Street, Bristol (the offending building is in the book, 5) while in the group's home town it is a commonplace to paraphrase the Norwich Union's well-known advertisement and say 'A fine city, Norwich—as long as you stand where you can't see the NU headquarters.' The whole affair is a sad example of those who have achieved a position of leadership, declining their responsibilities and refusing to lead.

BROADHEATH

There is a surprising statistic that everyone in Britain could be housed at low density in an area the size of Kent. Another, which has yet to be proved, might well be that everyone who wants a house could be found room for it in Britain's spoilt villages—that is, without encroaching on any area that is not urbanized already, and without breaking up any existing village group.

Every county has these villages or sprawls, and the principle of filling them in is tacitly accepted by most planning authorities. But there is a big difference between doing it carelessly so that the last state has less identity than the first, and trying to make up a proper village out of scattered development.

One such scheme has recently been produced by Arthur Ling for Claverdon, near Warwick, as a kind of master plan, which all new housing should accept (accept in the basic rhythms, not the finicking details). But another possibility is to build a new village at one go, and this is what is proposed for the straggling hamlet of Broadheath, near Worcester.

The architects are Rosier and Whitestone, of Cheltenham, and they have designed a self-contained unit with its own light industry and population big enough (3,000-5,000) to support a primary school and a reasonable variety of shops. Most of the houses use the Radburn plan; the B road which intersects the village centre will be first underpassed and then diverted.

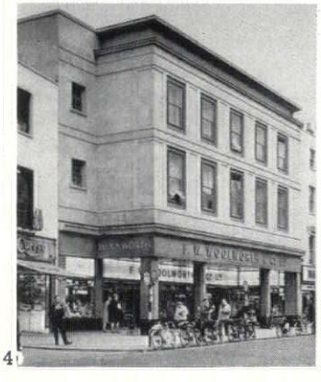
Four examples of building development by the Norwich Union Insurance Societies: 2, distribution depot for Heinz at Sheffield; 3, Ministry of Works offices at Guildford; 4, Woolworth's store at Cheltenham; 5, Norwich Union offices at Bristol.



2



3



4



5

Tall blocks of flats are intended at either end of the village green 'to give a termination of the view and to help the sense of enclosure.' This is multum-in-parvo with a vengeance, and the risk is that it will leave Broadheath uneasily poised between village and town—the sort of person who is going to live in the tall flats may want something more than Broadheath can provide.

That is a detail which would in any case sort itself out as the village grew up: the plan is a twenty-year job. The important thing is to get it started—for, unlike many such schemes, it is completely practicable, it has the support of the local villagers and is backed by a local landlord who owns enough ground to start the new Broadheath. What happens now depends on the county planning authorities, who have been asked for outline planning permission. If they give it, and quickly, the whole country will be in their debt. What a pity that the Ministry of Housing does not build pilot schemes like this, in the same way that the Ministry of Education builds schools.

Ian Nairn

OBITUARY

SIR SYDNEY COCKERELL: 1868-1962

'For the perception of excellence a faculty is required in addition to scholarship and taste: the capacity to perceive and enjoy the consummate of its kind that we call connoisseurship.' Thus wrote Mr. Stanley Morison, five years ago, of 'one of the more redoubtably effectual scholars, collectors and connoisseurs of our time: Sydney Carlyle Cockerell,' who died on May Day in his 95th year.

Cockerell was the last survivor of the heroic days when William Morris, Emery Walker, T. J. Cobden-Sanderson and St. John Hornby were laying the craftsmanlike foundations for the twentieth-century renaissance of typography. He shared on equal terms of connoisseurship (though not of means) the golden age of the study, appreciation and acquisition of early illuminated manuscripts with Ruskin, Morris, Fairfax Murray, Yates Thompson, Dyson Perrins, George Warner and M. R. James.

With Lethaby he set Edward Johnston on the road to that revolution in calligraphy and letter design which has given us not only a new standard of formal script but also London Transport Sanserif as well as Perpetua (and Times Roman). He grandfathered the more recent restoration of chancery italic as the only cursive hand fit for a gentleman. And I find that he was not only LITT.D. of Cambridge, and honorary member of the Art Workers' Guild and a member of the Roxburghe Club, but also (to my surprise) an honorary ARIBA.

Cockerell had been William Morris's secretary, assistant, and literary executor (as he was Wilfrid Scawen Blunt's). He had known Ruskin and Ouida, and had been intimate with Hardy and Shaw; sharing with the latter one of the most remarkable friendships of our time, that with Dame Laurentia McLachlan, Abbess of Stanbrook, as recorded in *In a Great Tradition*, 1956. Bedridden in his later years he maintained (in a script ever more microscopic but never any less legible) an extensive and variegated correspondence.* And the many visitors, of every age and style, to his hideous house at Kew were quite likely to find themselves in company with Ruth Draper or Miss Freya Stark or the Countess of Huntingdon, as a reminder that Sir Sydney's connoisseurship was not confined to the Gorleston Psalter or the scriptorium of William de Brailes. He retained to the end an uncommon brightness of eye, wryness of humour and sharpness of tongue.

To the public he was, of course, best known as the Director (1908–1937) of the Fitzwilliam Museum at Cambridge, of which immensely distinguished institution it would not be too much to call him the second founder: so ambitious were his policies, so sure his taste, so imaginative and forcible (some of the benefactors would have said peremptory) his techniques of acquisition to his beloved museum. The Fitzwilliam is his monument. But his friends have lost a character.

John Carter

ANTOINE PEVSNER: 1887-1962

The death of Antoine Pevsner cannot be allowed to go unrecorded by the AR; he was one of the enormously influential generation of Russian modernists who helped to revolutionize ideas on art, architecture and design in the 1920's. The brother of Naum Gabo, with whom he founded Constructivism, he lived in Paris for most of the inter-war period when Gabo lived in Britain. Although less directly involved with the progress of architectural ideas than was Gabo in the days of *Unit One* and *Circle*, he enjoyed a high reputation among architects and his sculptural constructions, based on elementary but very elegant mathematical procedures, anticipated many of the forms that appeared in the revival of vault-work that erupted in the 1950's—some of his most complex pieces are, like Candela's vaults, literal 'ruled surfaces.' His work found its place in an architectural context very convincingly in the new University buildings at Caracas, and—with even greater moral and aesthetic force—in a monument commissioned at the insistence of the late Eero Saarinen to stand in front of one of the long glass walls of the General Motors Technical Centre.

CORRESPONDENCE

NET SHEDS, HASTINGS

To the Editors.

SIRS,—May I add my voice to the thousands who have doubtless already written to express their confusion over the matter of the 'fishermen's store houses' in your issue of March, 1962?

The article contains an explanation of their unusual appearance to the effect that 'the height (is) of course necessary so that a good length of netting can be hung from roof to floor.' The accompanying section clearly shows this to be impossible due to the presence of three intermediate floors.

Perhaps some very earnest editor has ascribed more importance to these delightful structures than is warranted in placing them in the 'Functional Tradition.' Could it be that the honest fishermen were not entirely without extraneous motives in building them; avarice, perhaps, in attempting to obtain maximum cubic footage on a minimum lot, or simply the prestige resulting from having a higher storehouse than his neighbour?

Yours, etc.,
EDWARD CUETARA.

Rome.

The Editors reply:

Mr. Cuetara is right. The floors are used independently. The caption-writer was misled by a section taken the other way (not illustrated in the REVIEW) which shows the intermediate floors interrupted, but this is only for access.

The height of the buildings is however based on somewhat more functional considerations than Mr. Cuetara suggests. Mr. B. R. C. Tewson, who surveyed the sheds and made the drawings reproduced in the REVIEW, sends the following additional explanation.

'Before the existence,' he writes, 'of a breakwater built early this century, the tide used to come up to a level approximately in line with the winch huts farthest from the sea (see the published plan). It is believed that during the seventeenth century—old prints of the net sheds are proof of this—the fishermen found themselves in urgent need of somewhere to store all their gear and nets, and an area between the foot of the East Hill and high tide level was available to them. Owing to the limited space, and the fact that their boats already lay in this area, they decided to build vertically, with their boats moored on the shingle between the net sheds. Since the building of the breakwater the shore has gradually silted up, until the fishing-boats now occupy a steep ridge on the shingle, some 100 yards in front of the sheds. It is only since the 1930's that winch huts have appeared along the beach, replacing the old horse and capstan method of pulling up the boats.'

SCAGLIOLA

To the Editors.

SIRS,—I have only now come across Mr. Wragg's article on Scagliola in THE ARCHITECTURAL REVIEW, December, 1959. In connection with his findings, I would like to add a paragraph from an unpublished letter of Sir William Chambers. Some twelve years ago I was engaged on a thesis on Chambers's work, to which I have recently returned. I had to go through his letters in detail, and this is just one of the many interesting results in connection with practice in the eighteenth century.

The letter is to a Mr. William Hey, master builder of Edinburgh, and is dated October 13, 1773. It is to be found at the British Museum Add. 41133 p. 113v.

'Scagliola . . . is an imitation of Marble composed of talk [talc], ising Glass & mineral Colours of different Sorts. It is when well done nearly as hard as marble & as beautiful in ev'ry respect. The Price is from five or six to 12 shill. pr. foot superficial & the best makers of It in England are Messrs. Ritter & Bartoli, Newport Street, near Newport market London, who imitate almost any Sort of marble You please & also make very beautifull Ornaments of It. You find it is not cheap, & as marble would be a very improper lining for a room at Edinburgh so its imitation cannot be very proper.'

Yours, etc.,
HEATHER MARTIENSSEN.

BOOK REVIEWS

A MOVING VIEWPOINT

TOWNSCAPE. *By Gordon Cullen, Architectural Press. 56s.*

Architecture is the most political of the arts, in the sense that no citizen can evade its impact, and the art of town planning in particular can only evoke, in the susceptible layman, thoughts of political intensity. Who the devil do they think they are? is likely to be his first indignant inquiry: but in our luckless country, over the last few decades, many a resolute advocate of *laissez-faire* has soured or mellowed, as the concrete wastelands blotch our delectable landscape, into a reluctant acceptance of the planner's creed.

Such a creeping apostate am I, and it is political reflection, above all, that is inspired in me by Mr. Gordon Cullen's enthralling book *Townscape*, a sort of *Vade Mecum*, in an almost literal way, to the principles of good urban design. My first reaction to this volume was one of affronted irritation, the sort of response I feel to almost any echo, direct or incidental, of that awful 1951 Festival, whether it be italicized pub lettering or the falsity of Mediterranean colours in a North Sea island. Here, it seemed to me at first, were crystallized all the whimsical decrees of arty civics, reminiscent less of New Delhi, L'Enfant's Washington or Brasilia than of Dr. Thomas Sharp's Oxford, with all its worthy but somehow school-marmy dogmatism. Mr. Cullen is not the man for imperial immensities, the vision of the Incas and the Viceroys. He is concerned far more with narrow vistas, surprises, the crooked way of the English. He goes in for abstractions like Hereness and Thereness. He is subject to fits of striped awnings and heartiness, like a youngish vicar living it up among the youth clubs, and there is to his South Bank pleasure-dromes and Marlow river-havens an almost certain promise of speedy tarnish, grubbiness and dated decay. I do not believe that the supreme glories of urban juxtaposition are so rarely fortuitous as he maintains them to be. I cannot help resenting, like any good Jeffersonian, the inevitable but nagging suggestion that Daddy knows best.

But apostasy keeps breaking in: for gradually, as you digest more thoroughly the purpose of this book, and realize the astonishing prolificity of Mr. Cullen's ideas, it dawns upon you that you are hearing the voice of an aspirant and enlightened oligarchy. The survival of the town-planner is a recognition of democratic weaknesses—of the unhappy fact that, left altogether to themselves, people build ugly

*From which two volumes of selections were made by Miss Viola Meynell: *Friends of a Lifetime*, 1940, and *The Best of Friends*, 1956.

and selfish things. The beautiful cities of the earth, from Venice to Cambridge, from Charleston to Prague to Kyoto, mostly reflect the supremacy of a cultivated minority, enabled by the politics of their environment to impose their values upon the majority; and implicit in every line of Mr. Cullen's work is the conviction that such a discipline of taste should be restored to our own sub-Paradise.

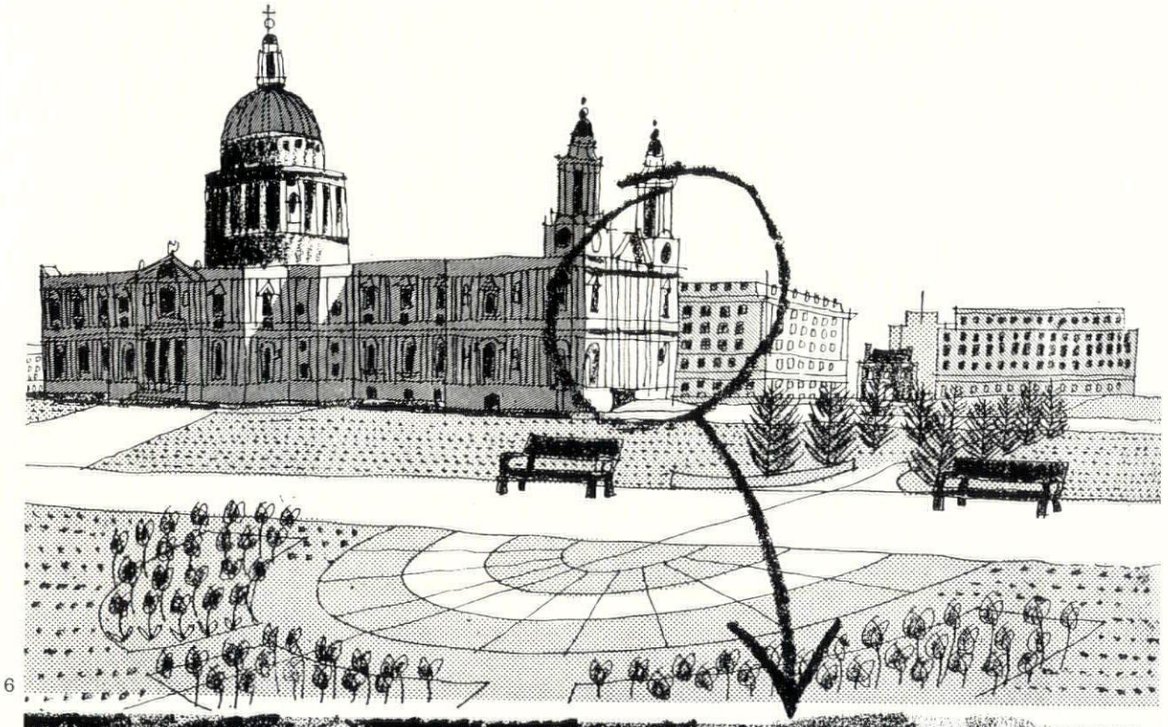
Such an idea ought to be anathema to the free man and the brave—who is Mr. Cullen, the proper Jeffersonian should demand, to lecture me on Thisness and Thatness? But as I look around me, and see the blight of avarice and ineptitude crawling like an infection over England, deluging her grand character in shoddy profit and opportunism, swamping her oaks in upstart conifers, stifling her instincts of fastidious adventure, cynically dwarfing her Westminster towers, heedlessly dominating her Magdalen bridges, demolishing her Euston arches with soft words and crocodile tears—as I see contemporary architecture reflecting, by and large, all that is meanest in our society, instead of all that is best and kindest, so I find myself submitting willy-nilly to the notion of disciplined taste.

And as oligarchs go, Mr. Cullen is almost a paragon. If I cannot stomach all his fancies, I can only honour the blazing respect for beauty that infuses every line of *Townscape*. Nobody has ever analysed more precisely the particularly urban fascination of the moving viewpoint—that shifting of perspective and allure that strikes the imagination so powerfully when you watch the Doge's Palace slide majestically behind the Campanile, or the lovely panorama of the High unfolding sinuously before your windscreen, or the silent fleet of sky-scrapers navigating the grey skies over Hoboken. For myself, I wish Mr. Cullen had identified all his examples, and generally pulled the book into something a little less airy-fairy: but as an expression of honest principles and a plea for decency at last, *Townscape* deserves only our gratitude. It is not so much a text-book as a philosophy: more a psalm than a chronicle.

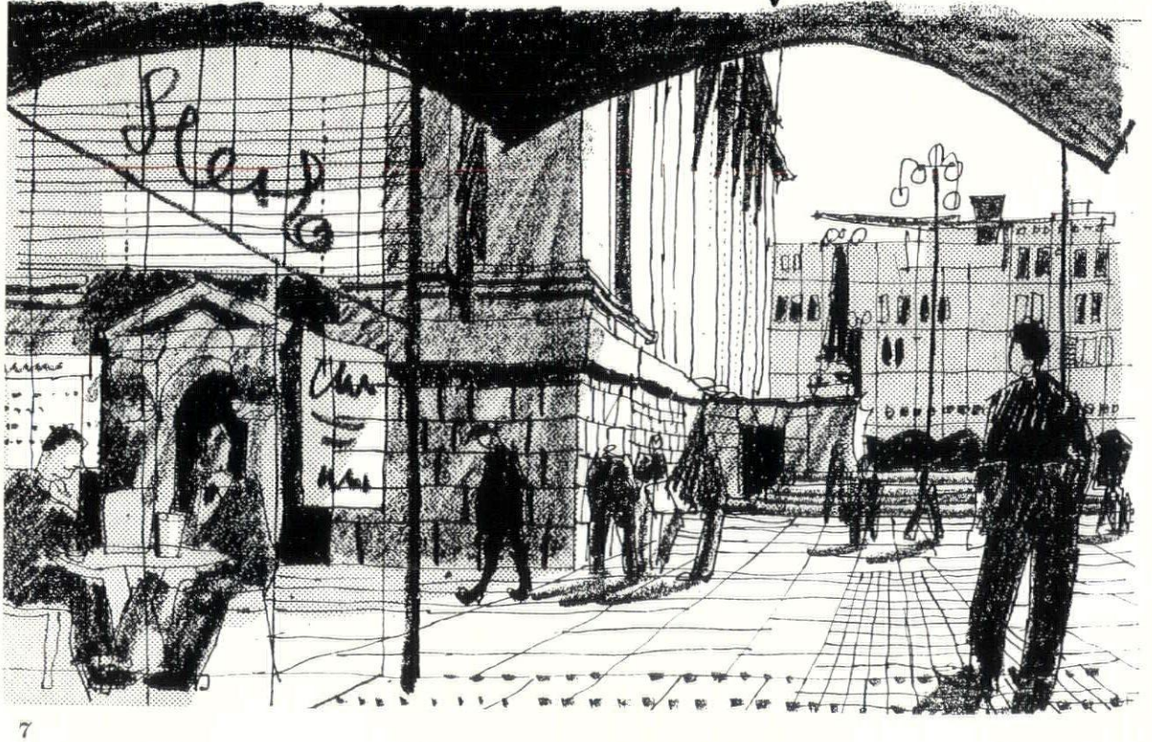
Or possibly a lament, for if you begin the book with politics, you end it with pathos. I do not myself believe that democracy and oligarchy of taste are necessarily incompatible. I think that in the United States there is emerging a new body of educated and intelligent opinion so influential in material matters that it is already having the sort of effect on civic design that the views of the English gentleman exerted two centuries ago over here. One day, no doubt, as the newly educated generations mature in England, too, we may expect the same elevation of the public taste, and even the brassiest of the speculators will feel forced to conform to higher standards. But you may well wonder, as you close the pages of this book, whether it is not too late, whether we are not too far gone, and our curtain-walls of apathy too expensive to destroy. There is a remark in *Townscape*, attributed to Dr. Leopold Fink, of Vienna, that rings both bitter and poignant to the English reader. Dr. Fink is discussing the atmospheric effect of city lighting, and he observes that an experienced man in charge of town lighting should know just the places where the best effects can be achieved. 'He will know them when he loves his town and his task.'

'*When he loves his town and his task*.' How many English municipal engineers love them well enough? How many English architects cynically contribute, each week of the year, to the debasement of our country? How many of Mr. Cullen's brave schemes—for Oxford, for Plymouth, for Westminster, for Ewell—will ever get further than his own shiny but forlorn pages? How many chairmen of local planning committees will ever bother to read this honourable and exciting book? What would Leningrad look like today, if Mr. Clore and Mr. Cotton had been at work there? How can we reconcile good taste in politics with bad taste in architecture? Only, I fear, by shutting the door hard, drawing the curtains tight, and imagining our noble country as she might be, if Mr. Cullen's kind of oligarchy were in command.

James Morris



6



7



8

Three illustrations from Townscape, *reviewed on this page: 6 and 7 are drawings by Gordon Cullen comparing the orthodox Beaux Arts approach of opening up or segregating St. Paul's with the integrating approach. 8, mystery on a matter-of-fact pavement.*

BOOKS RECEIVED

THEORETICAL PROBLEMS FOR STRUCTURAL DESIGNERS. *By K. P. S. Nayagam. Batsford.* 35*s.*

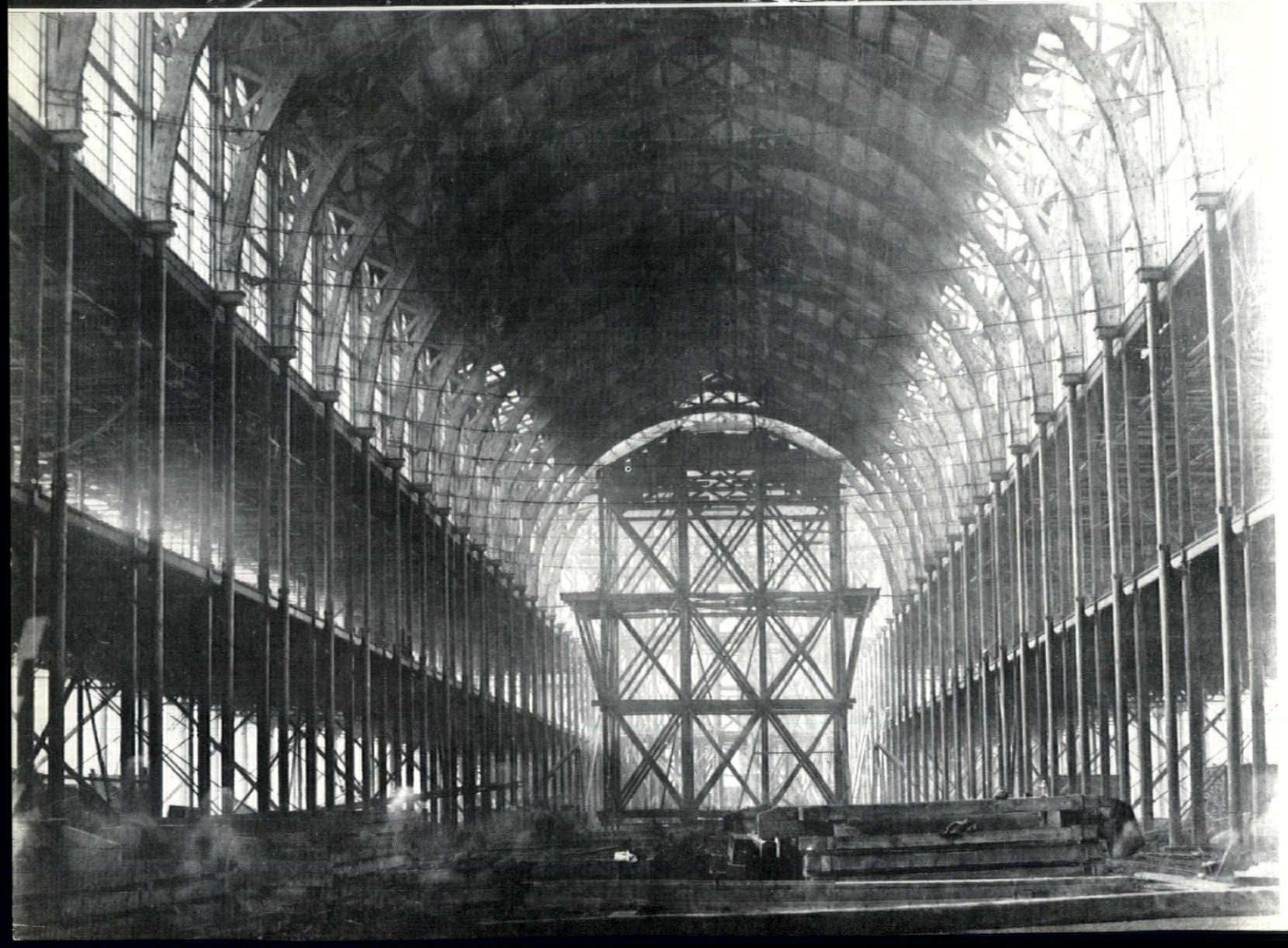
MATERIALS FOR ARCHITECTURE. *By Caleb Hornbostel. Chapman & Hall.* 160*s.*

SPECIFYING BUILDING CONSTRUCTION. *By D. W. Gale. Chapman & Hall.* 88*s.*

PLANNING REQUIREMENTS FOR THE HOSPITAL FOR THE MENTALLY SUBNORMAL. *By Guy Aldis. Pitman.* 80*s.*

GENERAL HOSPITALS. *Selected by Bouwcentrum, Rotterdam. Elseviev, distributed by D. Van Nostrand.* 100*s.*





The high state of the development of technology and industry in mid-Victorian England made the British engineer pre-eminent in the world at that time. An almost forgotten example of his work is the building in South Kensington for the International Exhibition of 1862, *the centenary of which is now being celebrated at the Victoria and Albert Museum and about which Betty Bradford writes in this issue. Its designer, Francis Fowke, was an engineer excelling in practical, economical construction. But the achievement of putting up the immense complex of structures at South Kensington, covering over* 24 *acres, in less than a year, was made possible also by the great resources, organization and experience of Kelk and Lucas, the firm of contractors who built it. Basically the same in construction, the galleries built to display machinery in motion (above), and the roof of the 'nave' (below), were prefabricated and set up on the site. In the photograph of the unfinished nave can be seen the travelling scaffold which was used in building and then in decorating the roof.*

Fello Atkinson

AFTER THE COMMON MARKET

While the idea of Britain's entry into the Common Market cuts across traditional alignments (on the one hand the Empire Loyalists are bedded with the Communists, on the other progressives with neo-Fascists) few of us really question any more whether we will go in, but how and when. It is also increasingly clear to many that such entry implies a future federation of Western Europe as fundamental and complete as exists between the United States of America (where minor differences on such matters as customs, income-tax and divorce-law and a major one on race segregation exist) for whose unity the Civil War was fought.

The chances of such a union remained remote while Germany and France rivalled each other and Britain—imperially oriented—stood aloof. In 1945, with Europe in ruins, it was virtually imposed by the Marshall Plan—possibly the most constructive international act of government in modern times. However, it was the Schumann Plan (ending the Franco-German struggle by the pooling of their steel and coal) culminating in the Treaty of Rome in 1957 with Italy, Belgium, Luxembourg and the Netherlands, which set the seal on things. The test of European Union lay in the operation of this ECSC (European Coal and Steel Community) experiment. Its reasonable success has made Britain reconsider her position in a quasi separate bloc and apply for membership in the European community.

As to the effect of this on the building industry, the reduction of tariffs resulting from Britain's entry should hardly change things. Transport costs, not import duty (already low) restrict the movement of basic materials such as bricks, cement, steel, etc. One might hope for improvements in the glass industry—handling probably precludes any price reduction—but the competition from Czechoslovakia went in 1938 and the industry 'enjoys' a monopoly with the main British, French and American firms joined in an international cartel. Curiously enough the paint industry, being so competitive, should greatly increase exports.

In the components field the industry is already largely internationalized. In West Africa, for example, where no Commonwealth preference is given or asked for and transport costs are equal, it is quite usual to use in the same contract Swiss lifts, Italian sanitary ware, British windows, Belgian or Japanese tiles, American air-conditioning equipment, Dutch doors, and so on, and to interchange them with others as prices or availability fluctuate.

Under the Common Market, since local authorities will have to drop the 'British only' rule, we can expect some price reduction and a gradual widening of available ranges of goods, which should result in some improvement in British component design. However, failure to meet British Standards will exclude for some time much first-rate Continental stuff, particularly electrical and sanitary ware. Revision of these standards (and enforcing statutes) will of course take place eventually, not only to allow the wider use of Continental goods here but of British goods on the Continent. In general, however, the myth of European and particularly German efficiency can be largely discounted. In the last year or so, with full employment and production, the same falling off of efficiency and delivery which has dogged us has been felt there and a notable rise in costs has taken place.

On the contracting side perhaps the effect could, at least in theory, be considerable. It will be possible for

foreign firms to operate here and vice-versa, but is there anything against that happening now? Again, in West Africa, where Continental (mainly Italian) and British firms compete on equal grounds, there is a fairly even distribution of contracts. There is perhaps a tendency for the larger, civil engineering, contracts to go to British firms and the smaller, building, contracts to go to Italian firms—possibly due to the greater capital structure of the former and the more streamlined management of the latter, where top men are engineers. But it may also be due to preference. On the whole Continental contractors are too frightened of our unpredictable weather to like working here, though some of the larger firms will no doubt seek links with their British counterparts.

It is perhaps on the labour side that the biggest change will really take place in the industry. Not only is this a side where in Britain the severest restrictive practices occur, but Britain lags behind in training and the British is probably inferior to comparable Continental labour. Like so many industrialized countries, Britain relies on foreign seasonal unskilled and semi-skilled building labour; in our case mainly Irish. South Italian labour at the same level is superior, and we could see some replacement by it of Irish labour, if conditions here were more attractive than in Germany, Switzerland or North Italy. There may also occur competition at craft levels, and this is doubtless reflected in trade union suspicions about the Common Market. But it seems unlikely that we shall see either a flow of craftsmen or architects here; perhaps the flow will even be the other way, as with footballers. There is a general shortage of craft and professional skills in the Common Market area which is reflected already in higher earnings. There are few good *cheap* technicians and few skilled *cheap* mobile craftsmen today in this area or its dependent underdeveloped countries—one of the causes surely for the Berlin Wall.

The trend is one of levelling up, not down, and in our insularity we sometimes forget that much of Europe has better social services and living standards than our own. Further, our income-tax is high, and is paid, unlike in Italy where, for complex historical reasons, it is not. Broadly there seems little immediate attraction here for foreign skill, at least professional. For some years now it has been quite easy to get labour permits for foreign architectural assistants, yet they do not come readily from the Continent.

Taking the long term view, the main objective of the Treaty of Rome is the free movement of goods and money. The Treaty also establishes the free movement of persons and services, and this freedom implies the right to practise a liberal profession in any of the member countries. However, since the aim of the Common Market is a general improvement in the living conditions of the European community, it must raise standards. Any comparison between architectural statutes in Common Market countries (and for that matter with our own) will show wide differences. In France, Italy, West Germany and Belgium architects enjoy statutory rights, as in England. Not so in Holland or Luxembourg where there is a free right to the title. In Belgium and Italy (with reservations) it is obligatory to employ an architect. Incidentally this is also true of many Commonwealth countries, such as Nigeria and Malaya. These are just a few of the more obvious differences which are being considered by the Liaison Committee of Architects of the Common Market which was set up with a Council and Delegate General along conventional lines in 1957 and sits permanently in Brussels. It has already published reports on organization and procedure and aims which are:

1. To study the co-ordination of national statutes.
2. To establish common codes of practice.
3. To organize training on an international scale.

Clearly the first two concern it immediately, since the aim is to raise standards, that is 'To equalize from above, to establish in each country that which doesn't exist but which is at present in another, without introducing excessive regulations.' This will be a long process, requiring much legislation. 'But' (I quote from the report) 'to do otherwise would be barbarous.' It may well be sensible for the Committee to study the framework of the American professional set-up which has grown from a like situation and where state licences are granted, and, according to their standards, accepted more or less by other states (and the National Council of Architectural Registration Boards), with Florida, New York and California as special cases.

Bound up with all this will be the need to establish standards of training and competence. At the most primitive level this must surely mean adopting the metric system and bilingualism—French is the Common Market lingua franca.

Entry into the Market will mean irrevocably reversing a process which for over 500 years has separated Britain from the Continent. Yet to stay outside seems against the pattern of history. Indeed, one of the more topsy-turvy and sadder aspects of the situation is that while Europe prepares for supernational union its ex-colonial territories are busy splitting into even smaller units. Nineteenth-century colonial policies were often arbitrary in joining territories together, but reversion to traditional areas can only leave them vulnerable to new forms of domination. The truth is that federalism is a highly sophisticated conception of government, calling for great reserves of tolerance and dispassion.

COLLEGE IN A CITY GARDEN

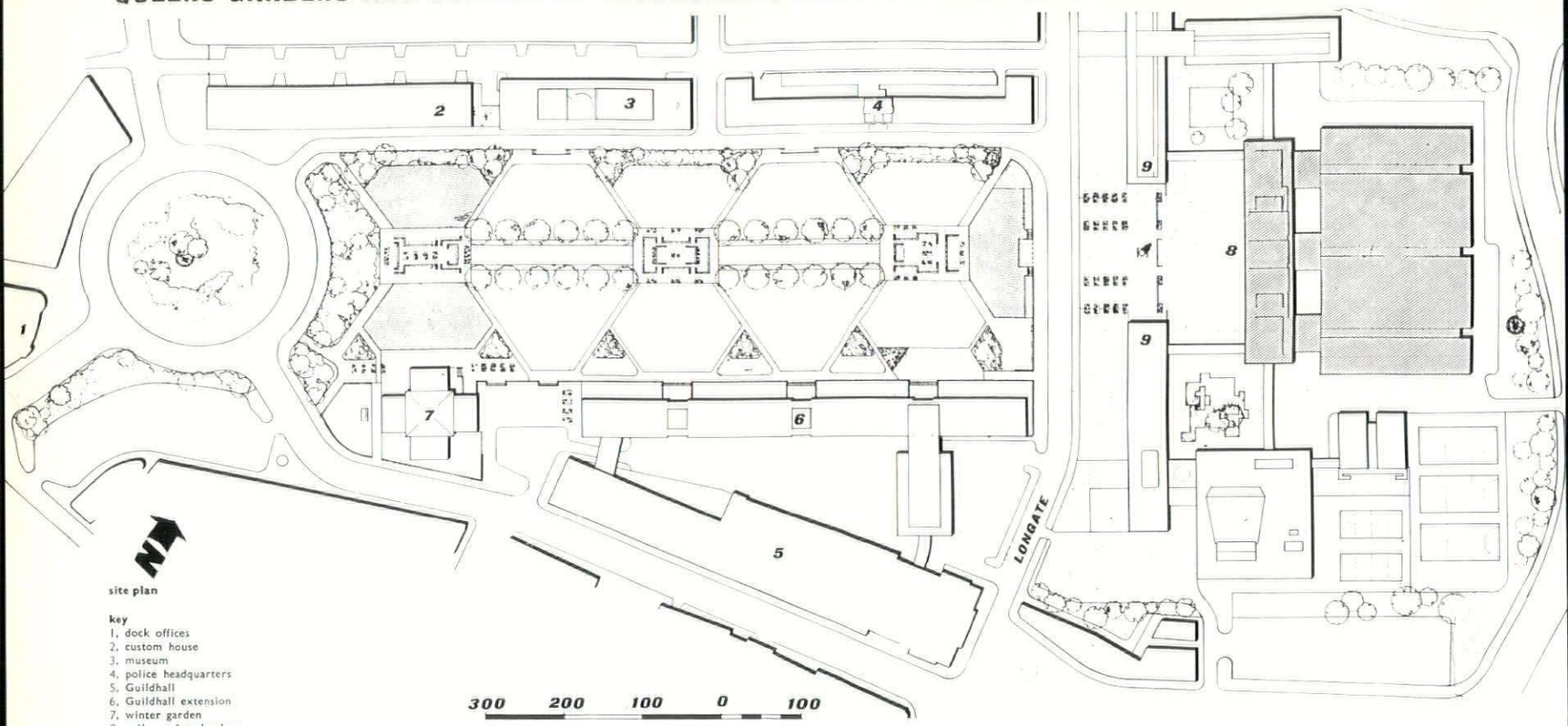
QUEENS GARDENS AND COLLEGE OF TECHNOLOGY, KINGSTON UPON HULL

ARCHITECT | **FREDERICK GIBBERD**

1, the college from the south-west.



QUEENS GARDENS AND COLLEGE OF TECHNOLOGY, KINGSTON UPON HULL



site plan

key
1. dock offices
2. custom house
3. museum
4. police headquarters
5. Guildhall
6. Guildhall extension
7. winter garden
8. college of technology
9. future extension to college of technology

Queens Gardens is a large, rectangular open space in the city centre of Kingston upon Hull, which was formed in 1937 by filling in an old dock. The Corporation, having decided that the Gardens should be the principal civic centre for the city, appointed Frederick Gibberd to prepare a new layout, to act as consulting architect for the surrounding buildings and to design the new College of Technology which stands at the end of the Gardens, behind the Wilberforce monument.

The design accepts the very strong vista down the centre of the Gardens, terminated by the Wilberforce monument and closes it by the nine-storey building of the College of Technology, with three-storey blocks on either side for Commerce and Art, which are not yet built. The Gardens will be closed on either side by long walls of three-storey buildings one of which, the Police Headquarters, by Priestman and Lazenby, has been built. A roundabout, which made an island of the Wilberforce monument, has been removed and a piazza or forecourt formed to link the monument to the College. All the roads bisecting the Gardens have been removed.

The Gardens, sunk below the general ground level, are now a large grassed area with avenue planting down the long axis. They incorporate small paved sitting

2, the base of the college seen behind the Wilberforce monument.



areas also sunk below the garden level and enclosed by hedges to give a sense of local enclosure and intimacy. Diagonal paths extend from the central paved areas to the long sides of the Gardens to provide short cuts across the Gardens and to connect up to the principal entrances of the buildings facing the square. The flat plane of the lawns is broken by planting clumps which include forest size trees, not yet grown.

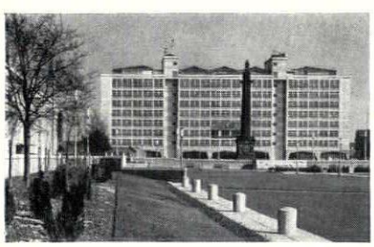
Three large pools are incorporated in the new design as a link with the former use of the Gardens. A pool at the northern end is overlooked by a terrace opposite the College. The terrace wall, facing the pool, is a sculptured stone panel 37ft. 6in. long, designed by Robert Adams; jets of water form an integral part of the design, two springing horizontally from the panel and a third vertically from the centre of the pool itself. The other two pools are placed as a mirror symmetry at the other end of the Gardens and overlooking one of these is a paved terrace, with which will be associated a Winter Garden and small public restaurant.

The College accommodation is in the form of a nine-storey building which, being the architectural focus of the scheme, has a broken silhouette in character with the Hull scene, behind which is a large, single-storey workshop block. The ground floor of the nine-storey block is designed as a large, comparatively open space linked to the forecourt and the Wilberforce monument. The central entrance hall is separated from the piazza by a glazed screen and is used for exhibitions and display. Opening off the hall is a lecture room, the library and the corridors for the workshop block behind. The upper floors contain for the most part laboratories and classrooms, but the centre wing of the second floor accommodates the administration for the whole college and the boardroom is marked externally by a balcony overlooking the forecourt, above which is a large decorative panel of concrete, cast on a clay mould and finished with synthetic resin, designed by William Mitchell.

On the eighth floor the building is set back to provide a sheltered roof deck with panoramic views over Hull and down Queens Gardens. On the centre portion of this roof deck is placed the college refectory and kitchen, which is roofed with a series of gables, reflecting the arched treatment of the ground floor entrance hall. On either side of the refectory are the students' common room at the south end and the examination room at the north.

The building has a reinforced concrete frame. External walls are formed by prefabricated timber window-panels extending from floor to ceiling and between the external columns. The windows are a special projecting-out type and the panels below cill height are filled with coloured enamelled steel sheets. The end walls are faced in reconstructed Portland stone slabs, corresponding to the floors, with exposed aggregate panels between.

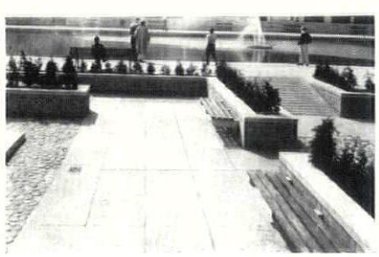
The workshops, which provide accommodation for the building, printing, mechanical and electrical engineering departments, are planned on a 24ft. square grid. The structure is entirely in reinforced concrete. Precast reinforced columns carry curved roof beams and prestressed valley gutters. This structural frame was post-tensioned in position. The roof consists of shell concrete units which were cast and prestressed on the site as work proceeded. They were lifted by crane and



3

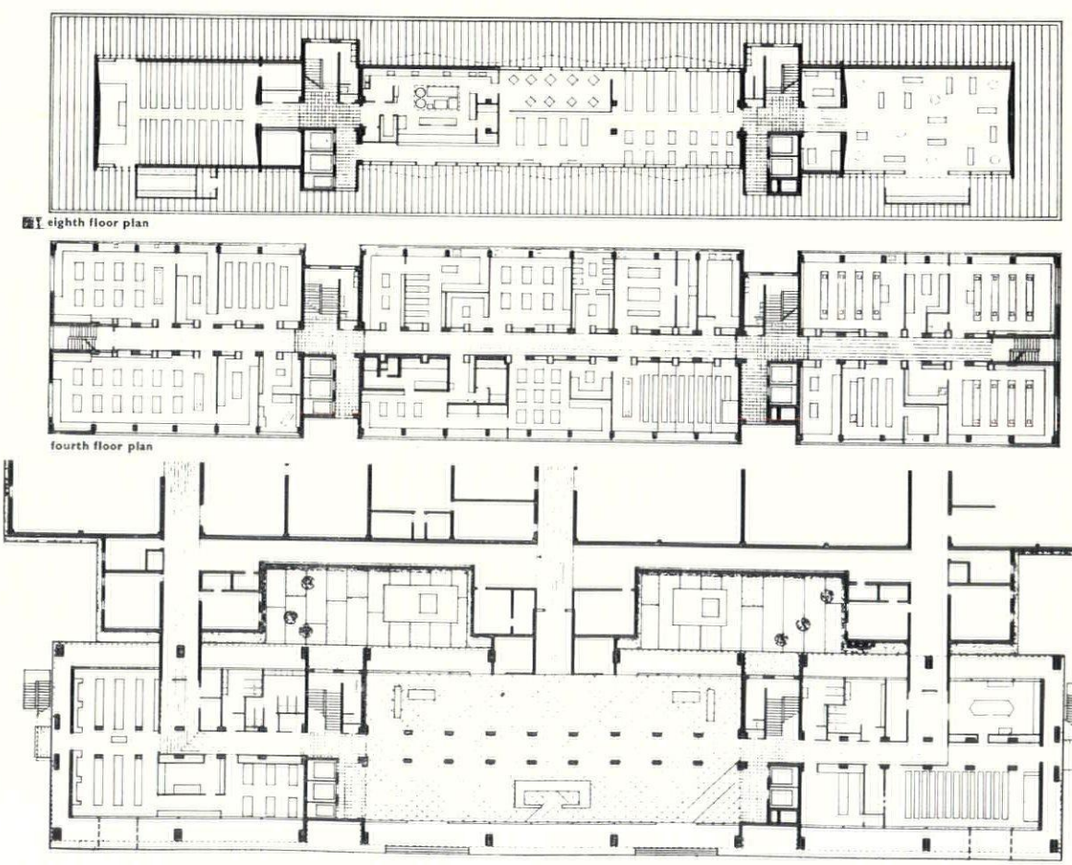


4



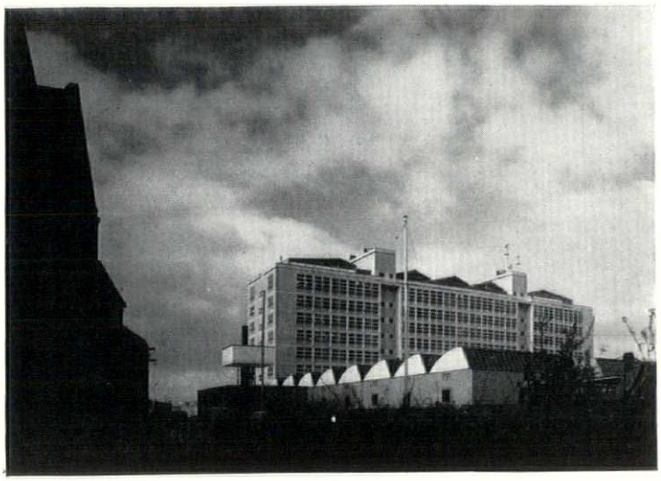
5

Three views of Queens Gardens; 3, from the west. 4, the paved area along the north-west side. 5, paved sitting area near one of the pools.



ground floor plan of College of Technology, nine-storey block, and part plan, workshop block

100 50 0 25



6

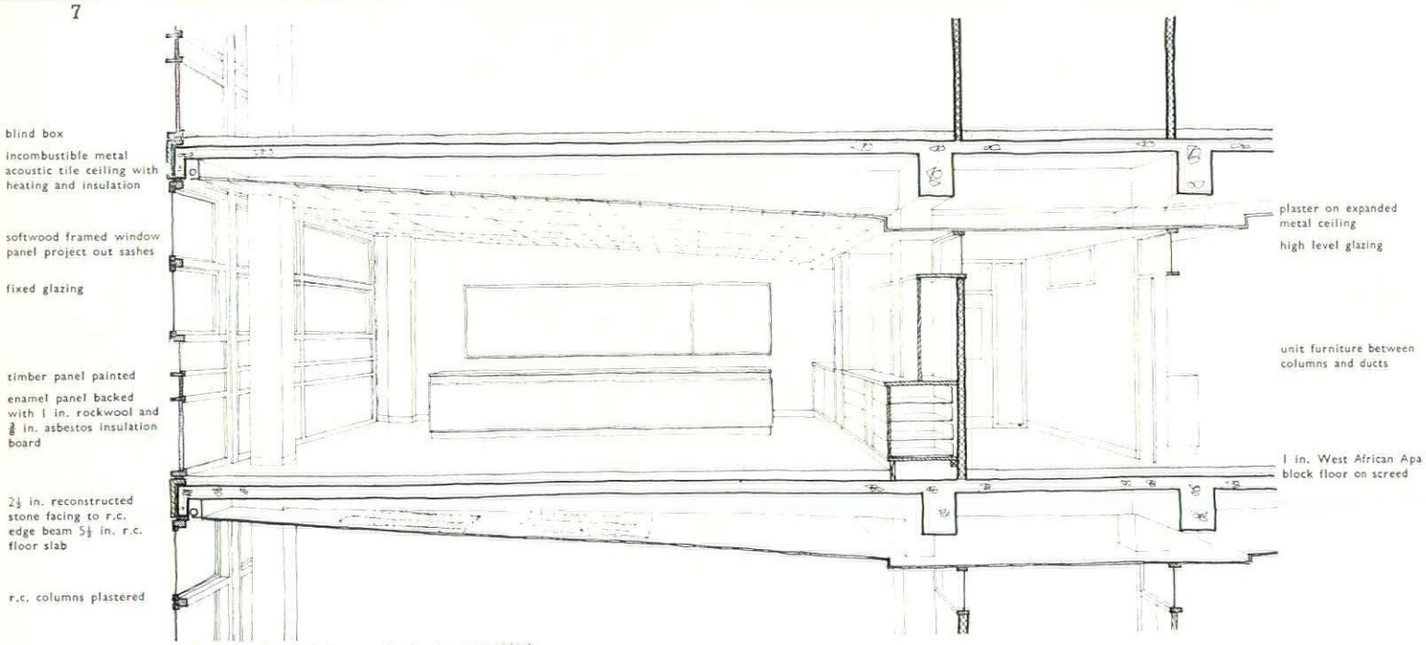
placed into position on the structural frame. The workshops are lit by a large north light and a small south light which balances the lighting intensity. The building is faced externally with handmade facing bricks in panels between the stanchions and with reconstructed Portland stone slabs.

H. F. Alston, the Town Planning Officer, of Kingston upon Hull, collaborated on the civic design problems and H. Rcscoe, General Superintendent for Parks, on the garden layout. The College was designed in association with S. W. Hobson, Chief Education Officer. Partner in charge of the scheme, A. E. Kelsey. Associate architect, J. B. Forrest. Consulting engineers, Scott and Wilson, Kirkpatrick and Partners. Services engineers, Roger Preston and Partners. Quantity surveyors, John Watson and Carter.

6, the College of Technology from the east, with the workshop block in the foreground.
7, synthetic resin mural by William Mitchell on the façade of the nine-storey block.



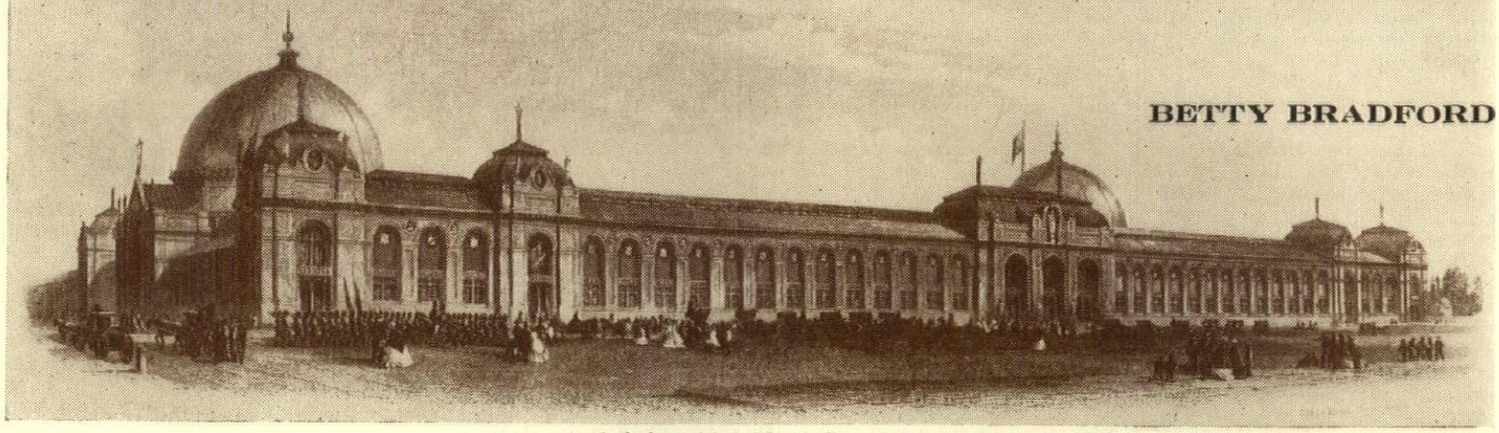
7



section through typical classroom in the nine-storey block

THE BRICK PALACE OF 1862

BETTY BRADFORD



1, *the front of the building in Cromwell Road—the brick Picture Galleries. Engraved from a drawing by Godfrey Sykes.*

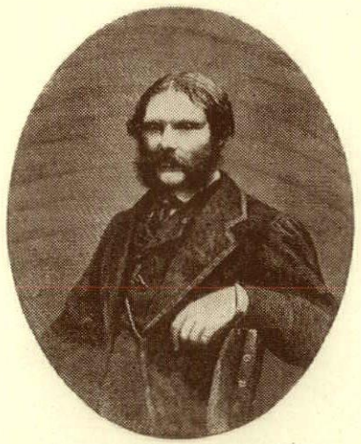
It was a gardener who planned our Crystal Palace in 1851, *and eleven years later we are indebted for the design of another exhibition to a soldier—so said* Punch *in* 1862, *but few nowadays know what exhibition it was that excited this comment, nor who the soldier was. Yet the forgotten and derided International exhibition of* 1862 *was intended to surpass and outdo the Great Exhibition of* 1851 *and almost did, and the buildings designed for it by Captain Francis Fowke abounded in that mechanical and structural ingenuity that we have come to expect of the Eighteen-Fifties and Sixties. In the centenary article below, Betty Bradford, of the Victoria and Albert Museum (where a commemorative exhibition is being staged), tells the involved and dramatic story of the Exhibition that just failed to be a great success.*

Francis Fowke, of the Royal Engineers, was the designer of the Exhibition of 1862, but the direction of the whole operation came from the redoubtable Henry Cole, Secretary to the Government Department of Science and Art. Cole was the man in charge of the South Kensington Museum (now the Victoria and Albert Museum), and responsible for the conception and the development of the South Kensington educational and cultural estate under the patronage of the Prince Consort. He was an extraordinarily ambitious planner and a dedicated civil servant. He had clear ideas on what was needed and knew how to achieve them: one example of his methods (which had important results architecturally) was the astute use he made of the Royal Engineers, in this way tapping other government resources at no extra cost to his own particular schemes.

His participation in the organization of the 1862 Exhibition was purposely kept quiet, presumably because of his controversial reputation—many people were jealous of Cole's methods and achievements. He had played a most active and successful part in the 1851 Exhibition. In 1862 he took no official part in the arrangements, but in fact was the directing power behind the exhibition organization. This organization was criticized at almost every stage of the Exhibition's preparation and progress, but the most remarkable criticism was aimed at the building. It started when the designs for it were published in order to invite tenders for the job, and stopped only when the building had been demolished.

Henry Cole's association with Francis Fowke originated in 1855, when Cole was the leader of the British Commission sent to report on the Paris Exhibition of that year. The young Fowke was delegated to examine the engineering aspects of the exhibition, and by default of a senior officer, who became ill, also became secretary to the Commission. He obviously impressed Cole, for at the end of the Paris work he was appointed to the staff at South Kensington as superintendent of the buildings there.

Early in 1858 Cole began thinking of an exhibition to be held in 1861, to open in May on the tenth anniversary of the Great Exhibition. Cole wanted to have the emphasis on the Fine Arts and to include Music (he was a keen amateur of choral work). In 1851 the Fine Arts had not been included, except in so far as they might illustrate some technical process. The proposal was put by him to a meeting of the Council of the Society of Arts, who had been the promoters, it will be remembered, under their President, Prince Albert, of the Great Exhibition. The idea found sympathy, and a resolution was passed to hold one in 1861. The scheme was launched, the method of financing it was determined, and the site decided upon. The obvious place to hold it was the vast stretch of land belonging to the Commissioners of the 1851 Exhibition which lay vacant. This had been wisely bought with the profits of that exhibition, and Cole pointed out that it had been resolved as early as 1850 that any surplus funds remaining from the Exhibition should be used 'for the establishment of future Exhibitions of a similar nature'[1]; reason



2, *Captain Francis Fowke, the designer of the exhibition building, from the* Illustrated News, *May* 3, 1862.

enough to make use of the ground. The land reached from Kensington Gardens in the north to what is now the Cromwell Road in the south, and from the present Queen's Gate (then known as Prince Albert's Road) to Exhibition Road in the east. An irregular piece to the south-east now occupied by the Victoria and Albert Museum and the Huxley Building had already been appropriated by Cole for the schools and the museum of the Department of Science and Art. The Commissioners of 1851 agreed to his proposal, and the matter rested. At this time Cole was unwell and went on a six months tour of Italy (which, characteristically, was very much a working holiday).

Wheels turned again in March of 1859—showing how completely the future exhibition depended on Cole. After some discussion, however, Cole's original idea was modified to shift the emphasis from the Fine Arts to the Industrial Arts. The Prince Consort wholeheartedly took up the project and Cole and he were in constant communication, the Prince having complete confidence in him. Cole was not only a man of ideas, but of action, and could be relied on to get things done. The Princess Royal later told Cole, after her father had died, that he used to say, 'When we want steam, we must get Cole'[2]!

In March, 1859, Cole was discussing principles for the design of the exhibition buildings with Fowke, who was already employed not only on the museum buildings but, since July of 1858, on planning a series of arcades around the perimeter of the northern two-thirds of the 1851 Commissioners' estate. This part had been leased to the Royal Horticultural Society to be laid out as gardens, but one

[1] From a memorandum quoted in *Fifty Years of Public Work*, the autobiography of Henry Cole, edited by his son Alan S. Cole, published in 1884.

[2] Reported in Henry Cole's diary 1863, November 30. Cole's diaries and other manuscript material comprising the Cole Bequest are lodged in the Library of the Victoria and Albert Museum.

suspects that the arcades had been planned with the projected exhibition building in mind, for this was to rise on the southern third of the ground, and was built into the southernmost arcades.

In March, too, Cole was arranging with John Kelk, the contractor for the Horticultural Society arcades, that he should tender for the exhibition building, on the understanding that it should be paid for on certain easy-going terms. All this, it may be noted, occurred long before the commissioners even had been appointed for the forthcoming exhibition.

Unfortunately, political events in Europe were to prove an interruption. In April war broke out between France and Austria over Italy. As the situation would spoil the chances of success of an international exhibition, it was postponed indefinitely. It could not be foreseen that the war was to last only until the late summer. However, Cole privately carried on with his plans, giving his attention to sources of funds. The idea was resumed in November of 1859, and it was announced that the exhibition would be held in 1862.

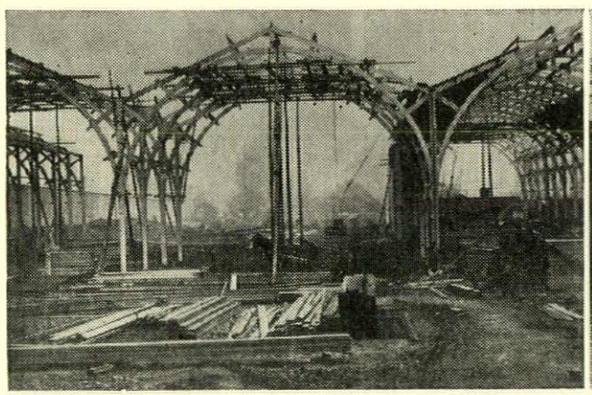
By May of 1860, the formal arrangements for the use of the 1851 Commissioners' ground were made between them and the Society of Arts. It was agreed that the exhibition could be held without payment of ground rent and that any permanent structures built could remain and be used for future exhibitions. Fowke's plans were progressing, and incorporated at this point a great hall (Cole's personal project) and brick galleries, intended to be permanent, to house the Fine Art section. At the end of November, it was decided that the trustees of the Guarantee Fund, which had already been raised, should become the Commissioners for the Exhibition of 1862. They were: Lord Granville (Lord President of the Privy Council, and thus closely in touch with the Queen and Prince), the Marquess of Chandos (Chairman of the LNW Railway), Thomas Baring, M.P., and Charles Wentworth Dilke (Commissioners for the Exhibition of 1851), and Thomas Fairbairn, who had been Chairman of the Committee of the Manchester Fine Art Treasures Exhibition of 1857.

It is significant to note that on January 14, 1861, Cole reported in his diary a visit by Paxton, who complimented him on Fowke's Horticultural Society arcades, which were up by this time, and a drill shed for the 1st Middlesex Volunteer Engineers erected on the museum estate, the prototype of the future Machinery Sheds of the exhibition. But Cole and Fowke evidently anticipated some difficulty in launching the exhibition building designs at this point, for, the next day, Cole wrote of telling Lord Granville: 'Either take on plans and give us power to carry them out, or get others, but don't divide responsibility . . . we would have our professional status acknowledged or would not act.' He also wrote 'Fowke objected to letting Paxton see his plans.' However, on the 16th: 'Paxton came and looked at Exhibition Plans. Thought the Hall good and made no objections except to cost. Would not have a building like ye Crystal Palace.'

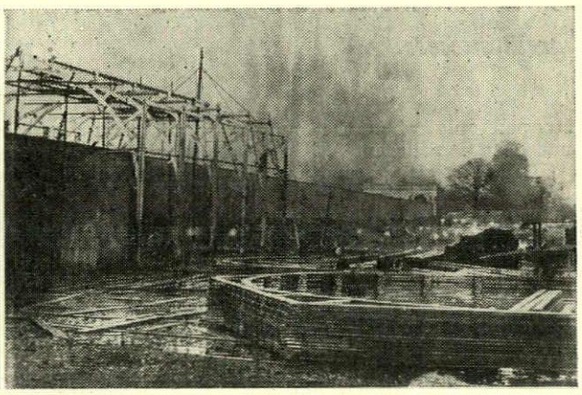
At the end of January the plans and forms for tender were sent out to the leading contracting firms. On February 5, the first shots were fired by Paxton in a letter to *The Times*. On the face of it, much may have been justified in his complaints about the conditions of tender, which led him to suppose 'that whoever tenders for [the exhibition building] must do so at great risk, unless he be so fortunate as to have access to the plans before they were given out to the public.' He was aiming at a very weak point here, but his following words were sheer hypocrisy. 'I confess I cannot understand the tardy haste that has seized the Commissioners. . . . The public, who have heard a good deal at times about the way in which Government contracts are let, will perhaps desire to know if things are much better managed by a Commission untrammelled by any control, and responsible only to some good-natured gentlemen, who, while they enjoy the title of "guarantors" [Paxton was a guarantor], have never been consulted in a single step in the proceedings that have taken place up to this moment. . . . as regards myself, . . . I never for a moment contemplated . . . that it could be seriously proposed to erect a building at much greater cost than the building of the Exhibition in 1851, and which would involve for the building, which may be temporary, a total expenditure, if got up on such a scale, little short of a quarter of a million of money. I feel it my duty to protest against incurring such an expenditure for a temporary object, if it is intended to be temporary, or for using the names of the guarantors for carrying out the erection of a great building in Kensington.' This seems surprisingly vindictive since he was in a position to have knowledge of all these developments of which he professes such innocence, and also on recalling the manoeuvring which accompanied the adoption of his 1851 Exhibition building design.

The letter excited some further correspondence to *The Times*. 'One of the Guarantors,' writing on February 5, protested in colourful terms: 'The letter of Sir Joseph Paxton . . . gives the first intimation of active proceedings by the Commissioners of the 1862 Exhibition. The "tardy" haste therein happily characterised must have some motive. Is not the clue to it to be found in the third clause of the conditions of contract—viz., that relating to the hall? The enormous structure is heard of for the first time publicly when it only wants three days to the time named for sending in tenders for its construction. How is this? Have the guarantors of the fund which is to give vitality to the entire scheme any idea of what is meant by a "hall about 550 feet long, 250 feet wide, and 220 feet high"? I am sure I had not until I referred to the official description of the building for the Exhibition of 1851, when I find that the proposed hall contains a cubical area more than ten times as large as that of the great transept of the Hyde Park Palace, and . . . I see that it would contain five of the centre transepts of that building, while its height would be as great as the latter with the Birmingham Town-hall placed on the top of it!

'What I desire to know is, whether those who have unwittingly agreed to be guarantors of a

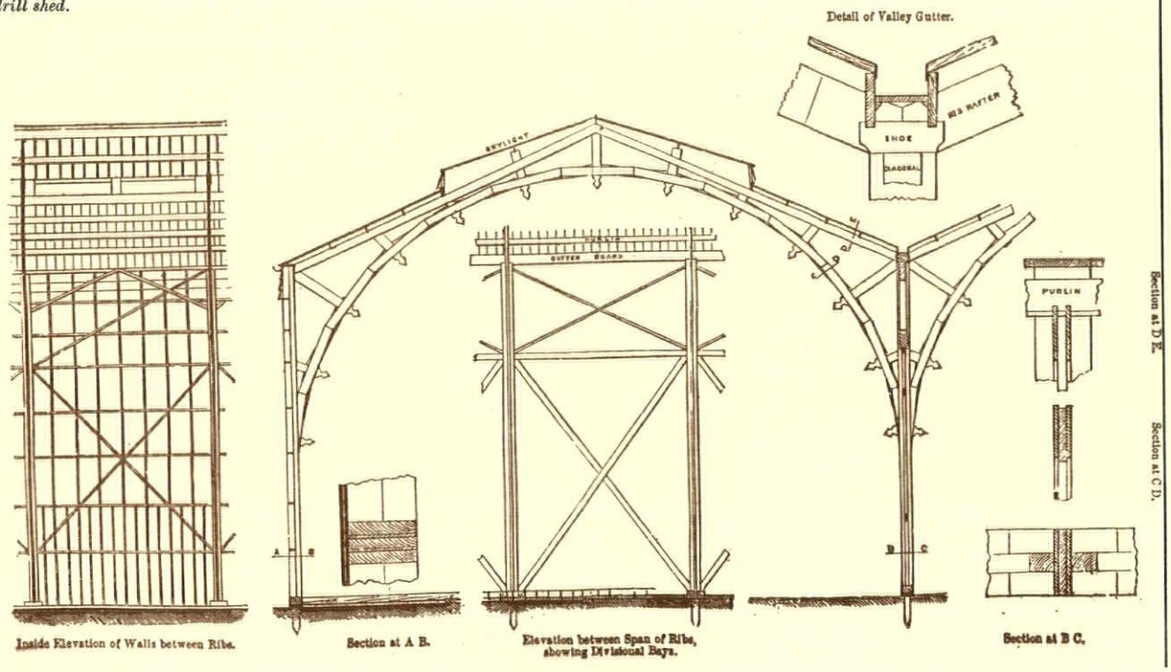


3



4

3, the Eastern Annexe was built with a central open court 100 *feet wide (or two bays) by* 350 *feet long. It was used to display large agricultural implements, stationary machinery, and large mineralogical specimens.* 4, *the Eastern Annexe in December* 1861, *being built against the back of the Horticultural Society arcades. The* 50 *foot span roof arches are stacked in the foreground.* 5, *construction details of the wooden Machinery Annexes. Based on the design of Fowke's drill shed.*



5



6, *the 'Great Hall' envisaged by Henry Cole as part of the Exhibition buildings, but not built. A watercolour by Francis Fowke in the Victoria and Albert Museum.*

fund for the promotion of an Exhibition in 1862, are willing to have their money spent on such a monument of folly, and what the Commissioners will do with the building if ever they get it?'

It is difficult to resist quoting another richly-phrased letter. This one, from 'An Intending Exhibitor,' in *The Times* of February 7, complains of the lack of a public competition for the design: 'The 1851 Exhibition building, suggested by Mr. Paxton, was only matured after the most diligent and closest consideration by all our leading engineers and architects, including among them Stephenson, Fox, Brunel, Barry, Wyatt and Owen Jones, and yet it is assumed that the increased necessities of the present case can be fully met by the privately matured plans of one or two South Kensington officials constituting the "Department of Science and Art." The public are not too well satisfied with what has been done at Kensington to quietly accept them as their architects and plenipotentiaries for the Exhibition of 1862, and will surely demand some explanation of their late proceedings.' He says, further on, 'The Commissioners can scarcely be held responsible for this want of good faith with the public' —a surprising statement, for the Commissioners by the very nature of their office held the responsibility—'It must rest with those who have been acting before they were officially constituted. The architectural profession and the public should at once urgently protest against those South Kensington proceedings, and if there is not now time for an open competition it would be better to postpone the exhibition for a year than to have the whole thing marred by the capricious development of an ugly mass of mongrel sheds and buildings similar to those at South Kensington.'

All this effectively cast doubt upon the undertaking. The public realized that it was in fact a 'put-up job,' and that a design had been made and decided on without either reference to the architectural profession or a public competition. However, the profession was strangely quiet—a few mild reproofs appear in the pages of *The Builder*; perhaps they were only too conscious of the magnitude of the task and of the profession's failure to meet the challenge in 1851. The 1862 Exhibition was to be on an even greater scale. These schemes required the mind of an engineer; the architects at that time were absorbed with quite different considerations.

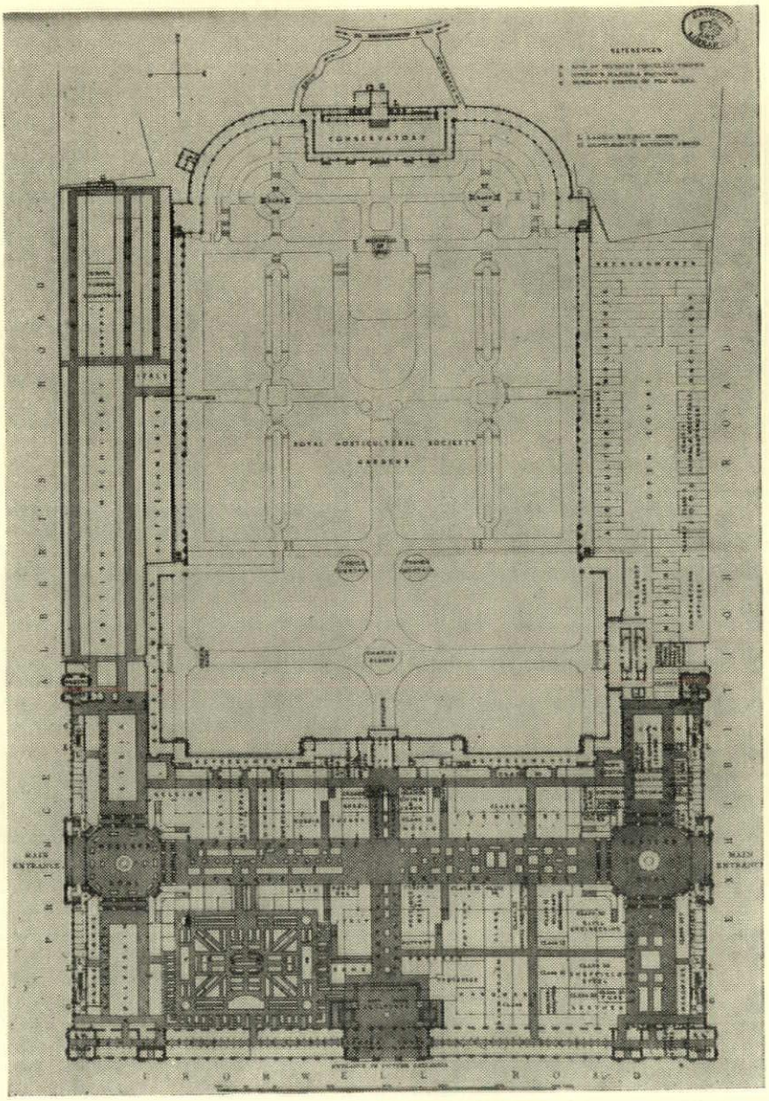
By February 9, the required date, several tenders were in. The highest was for £700,000 and the lowest, from Kelk and the brothers Lucas (who had joined with Kelk for this undertaking) was for £610,000. They were two of the biggest building firms of the day. As a limit of £400,000 had been fixed by the Commissioners, Fowke had set to work to modify his plans. Henry Cole's diary of February 12 shows: 'Met Mr. Kelk and Mr. Lucas. Wrote a tender for £390,000 . . . this would have kept P. Galleries, Hall and Nave intact, rest shedding. . . .' On February 21, 'Fowke came and proposed that the Hall should be given up to secure the rest, and I agreed. . . .' Thus Cole's personal dream for a concert hall was to remain as yet unfulfilled. However, he achieved it a few years later in the Albert Hall.

Fowke's design was officially adopted by the Commissioners on February 23 and the contract signed by Kelk and Lucas. They were to receive £200,000 during the progress of the building 'for use and waste,' and were to be paid before June 1, 1862. After the exhibition had made £400,000, they were to receive a further £100,000 which made up the full contract sum of £300,000. The permanent, brick part of the building was allocated £20,000 of this sum, and it was planned to spend £30,000 later on 'in completing it in an architectural manner"[3]. If, after the end of the exhibition, all was well, and Messrs. Kelk and Lucas had received their due £300,000, the permanent building should become the property of the Commissioners. Cole's idea all along was that the Society of Arts should have the use of these galleries for future enterprises.

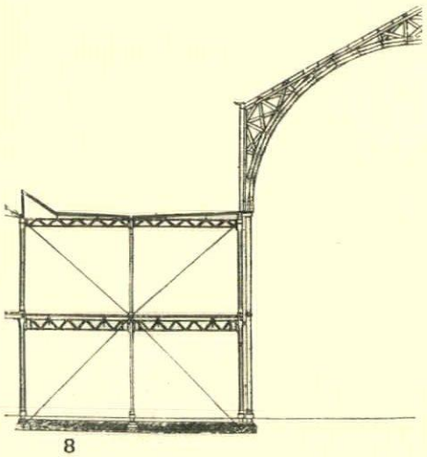
It is interesting to read Cole's actual words in explanation.[4] He states that the 'buildings have been erected to serve not merely for the 1862 Exhibition, but for all future exhibitions—International, Colonial and otherwise' and that the 'Society of Arts is ensured tenure of a certain portion for 99 years.' He hoped to forestall criticism by saying that 'Although

[3] *Some Account of the Buildings designed by Francis Fowke, Capt. RE, for the International Exhibition of* 1862. Chapman and Hall, 1861. (Written by Cole). There was a second edition in 1862, rewritten in part, reinforcing the argument for all the points which had drawn criticism. Another published source which has not been specifically mentioned in the text is the official *Concise History of the International Exhibition of* 1862 by John Hollingshead, published in 1862.

[4] *Some Account of the Buildings, etc.*



7, *ground plan of the Exhibition. The Albert Hall was later sited immediately north, and adjoining the position of the Conservatory. The present Imperial Institute Road was cut across the Gardens just below the line of the two French fountains. The Machinery Annexe runs from the top to the West Dome on the left and the Nave runs from the West Dome to the East Dome on the right* (see frontispiece on page 8). *The Picture Galleries are at the bottom along Cromwell Road.*



8

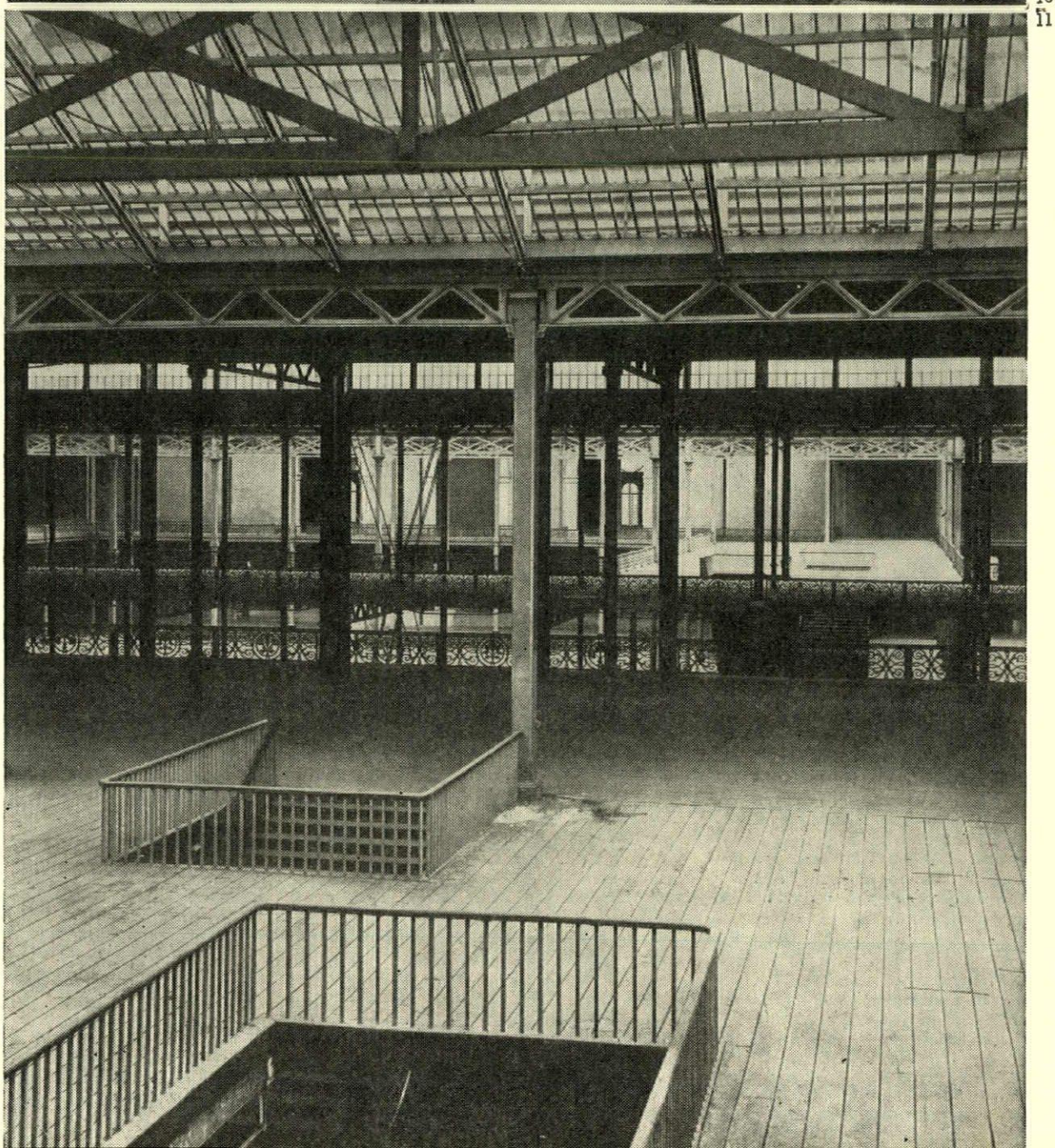
8, section showing the vertical cross-bracing of the galleries which counteracted the outward thrust of the Nave and Transept roofs, and strengthened them against the force of the wind. It was repeated every 100 feet (at every fourth bay). There was also horizontal diagonal bracing under the gallery roof flats. 9, half of one of the Nave roof ribs being hoisted, October 1861. This shows the travelling scaffold in use. The man on the topmost platform had to bolt together the two half-ribs.

9



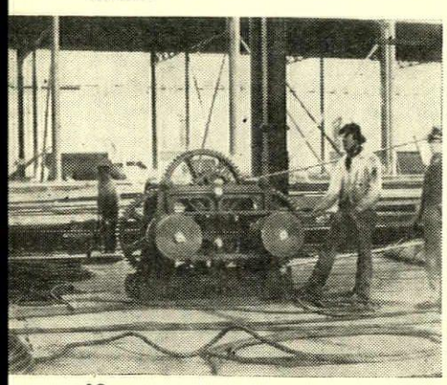


10



11

10, the Nave, looking west. The completed building showing Crace's ornamentation. Minton's majolica fountain, designed by John Thomas, is in the foreground beneath the East Dome. 11, from the North Gallery, top of the staircase. Looking from the North Gallery, across the Nave to the South Gallery and upper floor of the Cromwell Road entrance beyond. A false sense of scale is given by the high camera level, which seems to belittle the size of the interior. 12, the winch or grab used in hoisting the heavy components into position. It was belt-driven from a 10 hp mobile steam engine and was later shown in the Machinery Annexe.



12

the buildings will be in the highest degree suitable for the purposes of the Exhibition of 1862, there is no doubt that, as architectural fine art works, they must be considered incomplete at present. They are to be regarded simply as structures fulfilling the first object of utility, and as a work for future completion and decoration. The limited funds at the disposal of the Commissioners would not have justified them in entering upon any expenditure beyond what the interests of the Exhibition of 1862 itself absolutely demanded.' He compared the Houses of Parliament, which covered seven acres of ground, and which had been a-building for 25 years, to the Exhibition building which was to cover twenty-one acres, and which had to be erected within one year, and continues in somewhat optimistic terms: 'Each International Exhibition alone, . . . it is expected, will yield sufficient funds to complete certain portions with decoration, and thus afford monuments of the progress of national art and taste. Like the cathedrals of old their completion must be a work extending over many years.' And further on (showing the high level on which he was thinking), 'The Entrance to the Principal Picture Gallery in Cromwell Road will be through three noble recessed arcades. They are each 20 ft. wide, and 50 ft. high, and will look as imposing in their quantities as the principal façade of St. John Lateran at Rome and other Renaissance porticoes in Italy. . . . Nothing but want of funds, which can only be voluntarily supplied by the public —will prevent the surface decoration of the buildings from rivalling the structures of Florence in mosaics, of Sienna in Della Robbia, of Milan and Pavia in Terra Cotta, and of Wells in decorative sculpture. And unless the signs of the times are misread, there are artists and manufacturers in England who will soon rival the medieval workers.' There was a fund-raising stand in the Exhibition displaying cartoons for the proposed exterior decorations, and one imagines from the description given in the Official Catalogue, that a similar technique would have been used to the panels that face the Royal College of Organists.

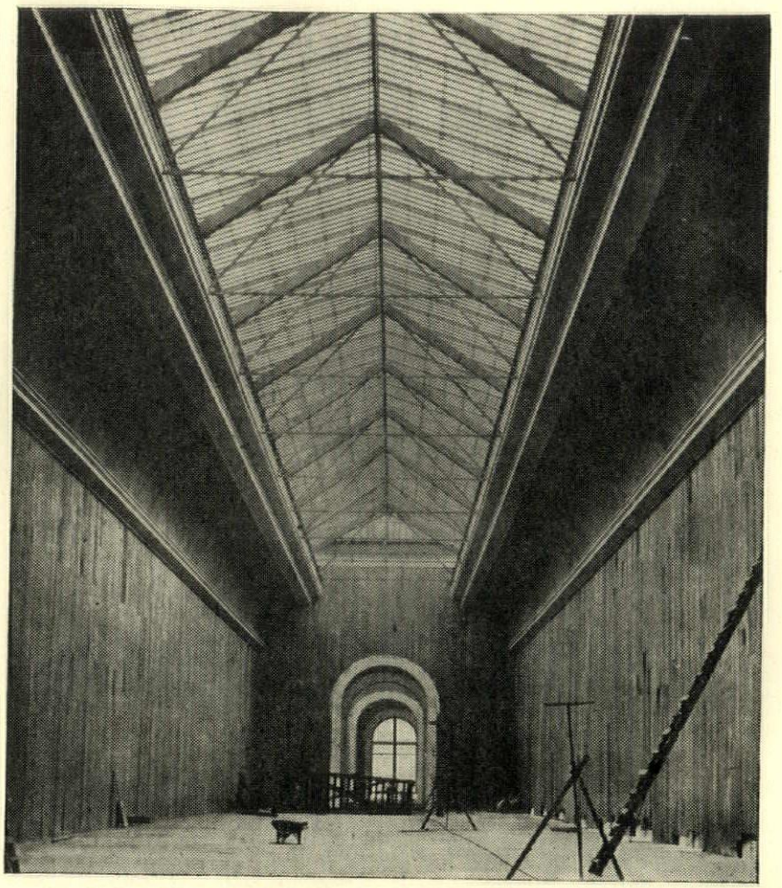
No time was lost after the official adoption of the design and the signing of the building contract. Fowke and Meason, the contractors' chief draughtsman (who had worked under Barry on the Houses of Parliament), busied themselves with the preparation of working drawings. Two weeks were spent on the measuring of the site and the laying out of the building. It had to be done with great accuracy, as the main parts were to be prefabricated. Three independent groups measured the ground and, on comparison of the results, it was found that between them the mean variation was only three-eighths of an inch—impressive in an area 1,200 feet by 600 feet.

The actual building operations started in April, 1861. The module used was one of 25 feet (the 1851 Crystal Palace was based on 24-foot units). The first step was to site the main colonnades of the interior; they used 25-foot lengths of timber to measure with. From this approximation, the position of the brick piers with York stone tops on which the columns were to rest could be determined. The precise centres of the columns were found by the use of a theodolite, and a small hole was drilled at the spot. Circles were then struck in the stone from this centre, and when each cast iron column was lowered, it was guided and centred on these circles.

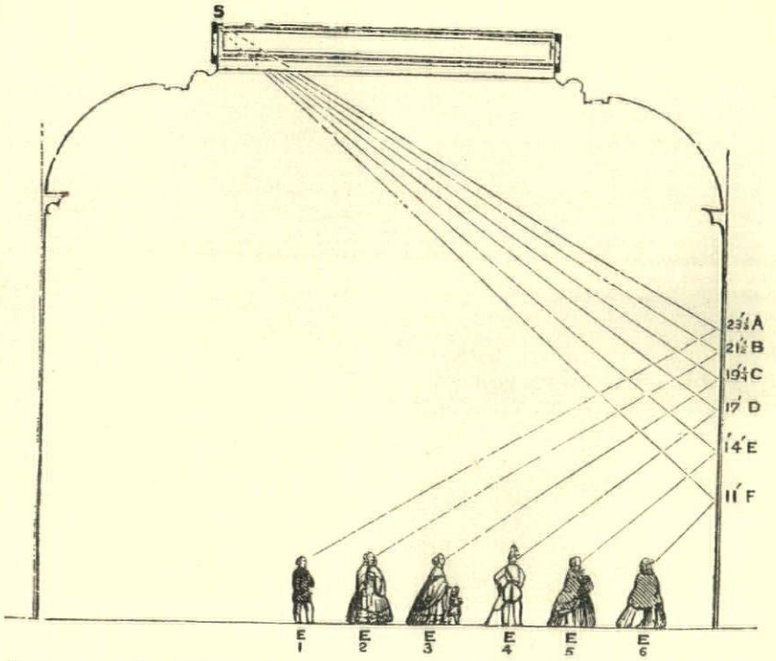
The first of the columns were being hauled up and put in position by the middle of June, and rapid progress was thereafter made. Engineering had progressed considerably since 1851 when men or horses provided the only motive power. The contractors in 1861 made use of a 'hoist' or winch, belt-driven by a movable 10-h.p. steam engine, invented by their Superintendent of Works, Ashton (who had also supervised the fixing of the ironwork in the two Crystal Palaces). A graphic description of the operation of this device was given in the Exhibition Supplement in the *Queen* of October, 1861: 'From this small machine, bundles of ropes are led to all parts of the building . . . spreading everywhere like a gigantic system of nerves. A white flag is seen to wave some two or three hundred yards distant, the engineers press the lever of the steam engine, and forthwith an iron column, some five and twenty feet high, or an iron girder . . . each weighing something like a ton and a half, is seen rapidly rising in the air. Then a green flag is waved; the speed is slackened; and finally at the sight of a red signal, the machine is stopped in an instant. . . . An iron column which would take 15 men a quarter of an hour to raise 50 feet, is lifted by the "hoist" in two minutes, with only two men to attend to the engine. In one day as many as 75 columns and girders were hoisted and fixed. . . .'

All through the summer, autumn, and winter the district was filled with sights and sounds of intense activity. We read that from 2,000 to 3,000 men, at a time worked on the site, not counting the numbers at work on the component pieces in various parts of the country. The iron castings were made at the Staveley Iron Works in Derbyshire; the wrought iron came from the Thames Iron Company. The timber-work was carried out partly at the Lucas works at Lowestoft, and partly at the Kelk works at the Grosvenor Canal, Pimlico. The bricks came from Sittingbourne in Kent. Working hours were prolonged by the illumination of hundreds of gas jets all over the site.

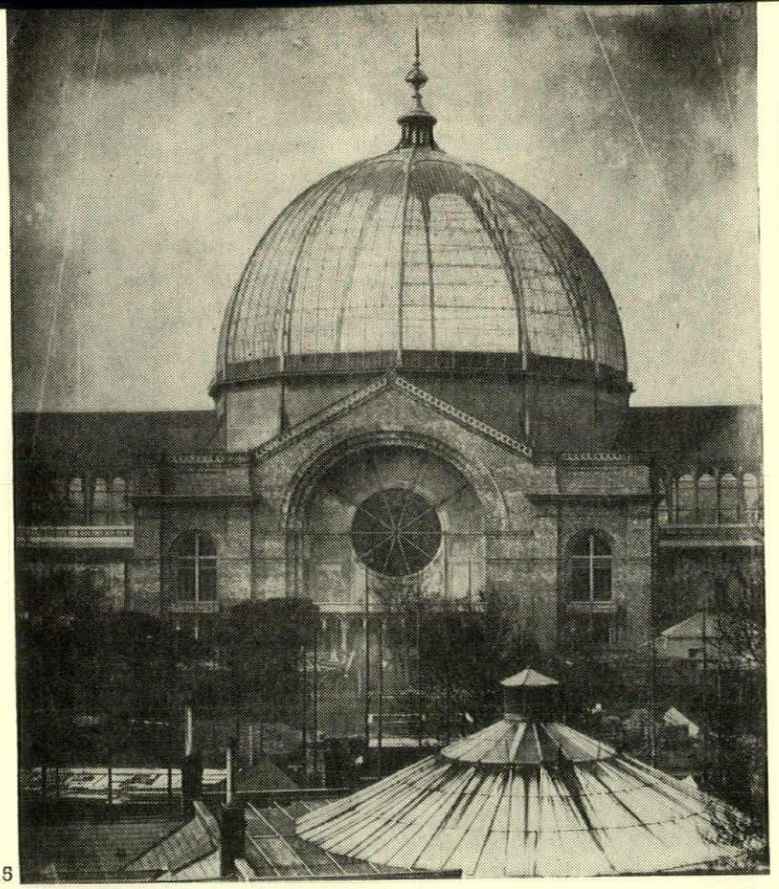
In June there was a slight hitch over the wooden roof-ribs which sprang from the cast-iron columns



13, *interior of the Picture Galleries looking east in January* 1862. *They were based on Fowke's experiments in lighting and ventilation, carried out in the construction of the galleries built to house the Sheepshanks Collection at the South Kensington Museum. This was part of the 'permanent' brick structure. The walls were lined with wood, papered, and then painted and stencilled to Crace's designs.*



14, *transverse section of Picture Gallery, showing the way of admitting the light to avoid glitter. This illustrates Fowke's theory of lighting by which he built the new picture galleries at the Museum. A spectator standing back at any reasonable distance from a picture, relative to its height, would not be disturbed by reflected light from its varnish.*



15



16



17

15, *the East Dome from the roofs of the Museum buildings, April* 1862. 16, *the South Front on May 5th,* 1862; *Cromwell Road at the junction with Exhibition Road.* 17, *the towers at the eastern end of the brick frontage on Cromwell Road, showing the blank panels which were designed to receive decoration; December* 1861.

in the Nave. They proved not to be strong enough and had to be re-designed. It was not until October that the first one was set in place. These ribs were prefabricated and carted to the site in four pieces. There they were joined to make two, and the final junction point was at the roof-ridge. A moving scaffold on tracks was constructed for this fixing job and served for all the later operations in the upper regions of the Nave. It weighed 140 tons but could be moved about by four men working crowbars under the wheels. When the time came to paint the roof, it was enlarged and apparently then weighed as much as 200 tons.

The machinery sheds for whose construction Fowke had previously won praise from Paxton, were entirely built of thin planks nailed together. Each roof rib was put together on the ground over a full-scale template and then hoisted and nailed into position. The arch spanned across fifty feet and consisted of a sandwich of two three-quarter-inch thick planks on either side of a one and a quarter-inch thick plank. These planks were nine inches wide and the weight of the roof was taken on their edge. The roof-holding uprights were also similarly laminated.

The feature of the design was to be two huge domes, comparable in size to the dome of St. Peter's in Rome, at the intersections of the Nave and Transepts. They were dodecagons ingeniously sprung from supports which described an irregular octagon—made by the last pair of columns at each intersection. To achieve the dodecagon, the last bay of the Transept or Nave, which adjoined the dome, was supported, instead of by a wooden roof rib, by a wrought iron groined rib which not only spanned straight over the roof, but also diagonally towards the dome. The points at which the two opposing ribs intersected, provided the four extra points of support, making the dome nearly, but not quite, a regular dodecagon. Crace, the interior decorator of the building, made the mistake of painting these wrought iron ribs with the same form of decoration given to the wooden roof-ribs with which they were in line, giving a most uncomfortable-looking result. It is interesting to notice that there was contemporary comment on this particular fault and criticism on Crace's failure to carry out his own theories on the 'Development of Construction'[5].

The first of the dome ribs was raised early in December, 1861, and Kelk said he felt confident that 'all would be finished by the 12th February'[6]. A major disaster befell the venture, when, as Cole recorded in his diary on December 14: 'The Prince died about 11 of Gastric Fever, having been ill about twelve days.' There was a moment of dismay, perplexity and sorrow, but on the 16th, at a committee meeting at the Society of Arts, the feeling was that the exhibition should go on, having gone so far, and Kelk, the senior contractor, called at Cole's office to say he 'would go on with the Exhibition at all risks and losses'[7]. But the protective shield of royal approval had gone (the Queen of course retired into the most abject mourning) and the year ahead was to be a hard one for the venture.

There had already been mild grumblings from the architectural profession. At a meeting of the RIBA there had been comments 'on the interference of the civil and military engineer in domain really belonging to the architect'[8]. However, the *Art Journal* (the leading art-periodical) undertook the task of damning the exhibition building on behalf of the slighted profession. It did this with extraordinary vehemence. On nearly every page in the months of 1862, preceding the opening of the Exhibition in May, one finds a regular pattern of condemnation, at times most unreasonable.

It was made quite clear, without mention of his name, that Cole was the real power behind the scenes; he was accused of 'jobbing,' and one reads in this a certain amount of vengefulness on the part of S. C. Hall, the editor of the *Art Journal.* There was a long-standing jealousy for the credit and position of power Cole had gradually taken, over the years, as the pioneer of the new movement for design and art-education reform in the 1840's and 1850's which culminated, albeit paradoxically, in the Great Exhibition. In a particularly long haranguing article in the February, 1862, *Art Journal,* Fowke's building was ridiculed and held in unfavourable comparison with another exactly contemporary London building—'that noble edifice' —Knowle's Grosvenor Hotel at the new railway terminus at Victoria. This kind of comparison would cast doubt on the fairness of their critical attitude and makes it difficult to see, now, a hundred years later, quite what sort of building would have been approved.

I quote from this number: 'We have studied (the) brick edifice carefully and thoughtfully, and we are constrained to pronounce it . . . the most worthless and the vilest parody of architecture that it has been our misfortune to look upon. There is not a railway-engine house in existence that would not scorn to be compared with it. In every detail . . . there [is] ever present a poverty of conception and a palpable ignorance of all architecture humiliating indeed. It is true that the whole building is very large, and that many of its component parts are very large also; but their magnitude serves only to bring out the prevailing mental littleness with the more startling effect.' The April edition has '. . . it is a monstrous outrage upon national forebear-

[5] In the *Art Journal,* May 1, 1862.
[6] Henry Cole's diary, December 12, 1861.
[7] Henry Cole's diary, December 16, 1861.
[8] Reported in *The Builder,* May 11, 1861.



18, *east elevation of the Royal Horticultural Society arcades as they are today, photographed by Eric de Maré. Designed by Fowke and decorated by Godfrey Sykes, they were completed by* 1859.

ance, and doomed to reflect most fatally upon the national taste. It would be difficult to imagine anything more daringly ugly than this lamentable specimen of what a selfish clique, when armed with authority and funds, can do in the way of shamefaced jobbery.'

Since the end of December, 1861, experimental activities on the interior decorations had been going on. Fowke seems not to have been very interested in this aspect, but apparently was averse to Digby Wyatt being called in. Octavius Hudson, an instructor at the School of Design, made some experiments which were deemed unsuccessful, and Lord Granville suggested approaching Owen Jones, which seems not to have been done. Fowke then took over the problem for a while. Finally J. G. Crace, the leading interior decorator of the day, was called upon, and his were the designs carried out. Even Mr. Crace, a most respected personage, suffered at the hands of the *Art Journal* for his connection with the unholy enterprise.

The monumental task of decorating and ornamenting the interior of the great building was achieved by using distemper colours. They gave an opaque effect in one coat, and dried quickly. The preservative qualities of oil paint were unnecessary on the greater part of the building which was the temporary structure. The enrichments were added by stencil. While the painting operations were going on and the building was being completed, the goods were arriving and the stands were being set up. The activity and confusion built up to a climax, and when the opening day arrived it was noticed at the last minute that the huge 'trophies' of exhibits built up on some of the stands seriously impeded the main concourse (these 'trophies' drew much ridicule from the press). There was not time to move the trophies before the opening day, as it involved a certain amount of diplomacy with foreign delegations, and this meant that the opening ceremony and procession had to be altered. Nevertheless it went off reasonably well, in spite of the absence of the British royal family who were in mourning for the Prince Consort. The Duke of Cambridge, the Crown Prince of Prussia and Prince Oscar of Sweden represented the Queen at the opening. Things were not what they might have been, it was all too clear, had the Prince not died. Already, at the end of the opening month, Cole writes in his diary 'Told B[aring] that there would be a deficit. He was prepared since Prince's death.'

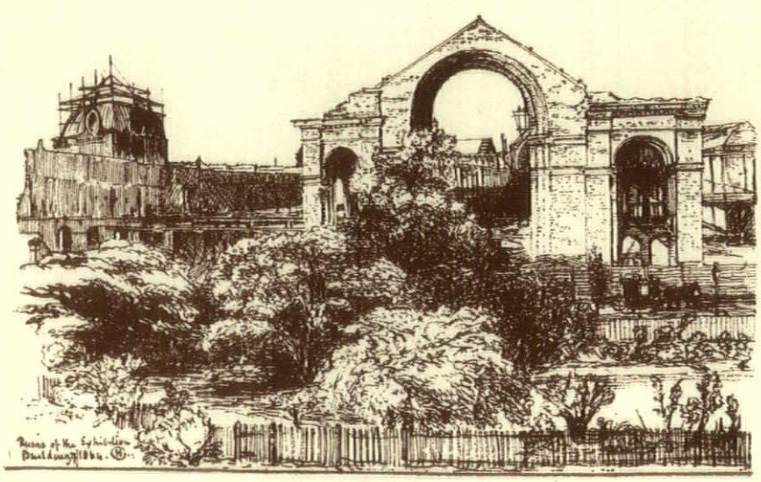
The extent of the loss was clearly sighted in September, 1862. The numbers of visitors were less than was anticipated. The distress in the cotton-manufacturing districts was given as a contributory factor. Plans were at once devised to minimize the loss. The Exhibition was extended for a month, the contractors agreed to forfeit their share of the additional receipts, and the Commissioners gave up their claim to the buildings.

At the closing of the Exhibition on November 1, loss was avoided by a very narrow margin:

£894,641 total receipts.
£893,858 total expenditure.
£730 balance to the credit of the Commissioners[9].

The contractors now owned the building, and needed to sell it to make up their losses. The temporary parts were dismantled and made use of or sold for scrap. The permanent brick galleries were the problem—Cole's problem as much as the contractors'—he had to try and save them for the purpose for which they had been intended. The Society of Arts evidently was incapable of raising the huge sum necessary to secure the building, and Cole tried to raise a public subscription without success. Parliament was then approached (Gladstone was Chancellor of the Exchequer) with a scheme to use the buildings to accommodate the Natural History and Ethnology collections of the British Museum, the Geological Museum, the Patent Museum, a National Portrait Gallery, and even the Royal Academy. Gladstone was favourable as it would have been cheaper to develop the existing buildings and ground at South Kensington than to expand in Bloomsbury. However, public opposition to Fowke's buildings was such that Parliament would not buy them. Finally, what remained of the 'permanent structure' was blown up in September of 1864.

[9] Full details are given in the *Report of the Commissioners for the Exhibition of* 1862. 1863.



19, *the ruins of the Exhibition buildings in the summer of* 1864, *seen from the South Kensington Museum buildings. A drawing by Henry Cole in the Victoria and Albert Museum.*

Some credit must be given to the unfortunate building. Unlike the 1851 Exhibition building, it aimed to provide specific conditions suited to the various types of exhibit. This produced a complex group of structures, in contrast to the compact, unified design of Paxton. It was erected in an astonishingly short time for so vast and solid a building, and appears to have fulfilled perfectly the requirements of the exhibition.

The phenomenal end to the story is not generally known. The Government did, soon after, buy the site of the exhibition, to develop the ground as Cole had outlined. An open competition was held for a design for the first building to go up, the one for the Natural History collections of the British Museum. The judges' choice went to the design marked 'Ad ogni uccello il suo nido e bello' which turned out to have been the one submitted by Fowke. Shortly afterwards in 1865, he died, and eventually his design was put aside in favour of the one by Alfred Waterhouse which we see standing today.

Henry Cole's high estimation of Fowke can be seen in this extract from a speech delivered by him to the Society of Arts in December, 1865[10]. 'I firmly believe that the arts of construction in this country have sustained a loss by Captain Fowke's death. At this period, when Art is so transitional, and Science is making so many discoveries, and men's minds are seething with inventions; when the use of new materials is being constantly manifested, and the new adaptation of old materials is constantly entered upon, England has lost a man who felt the spirit of his age, and was daring enough to venture beyond the beaten path of conventionalism. Captain Fowke, to my mind, was solving the problem of the decorative use of iron, and, by appreciating the spirit both of the Gothic and Renaissance architects, was on the threshold of introducing a novel style of architecture, when —alas!—Death, at the early age of 42 years, has cut short his promising career.' Sufficient time has now passed to assess the truth of these words.

[10] *Journal of the Society of Arts*, December 8, 1865, p. 60.

Most of the photographs have been taken from an album showing the progress of the building, presented by Sir Charles Dilke in 1869 to the Library of what is now the Victoria and Albert Museum. The engravings and diagrams are from the *Concise History of the International Exhibition of* 1862 by John Hollingshead, except for the portrait of Fowke, which has been taken from the *Illustrated News*.

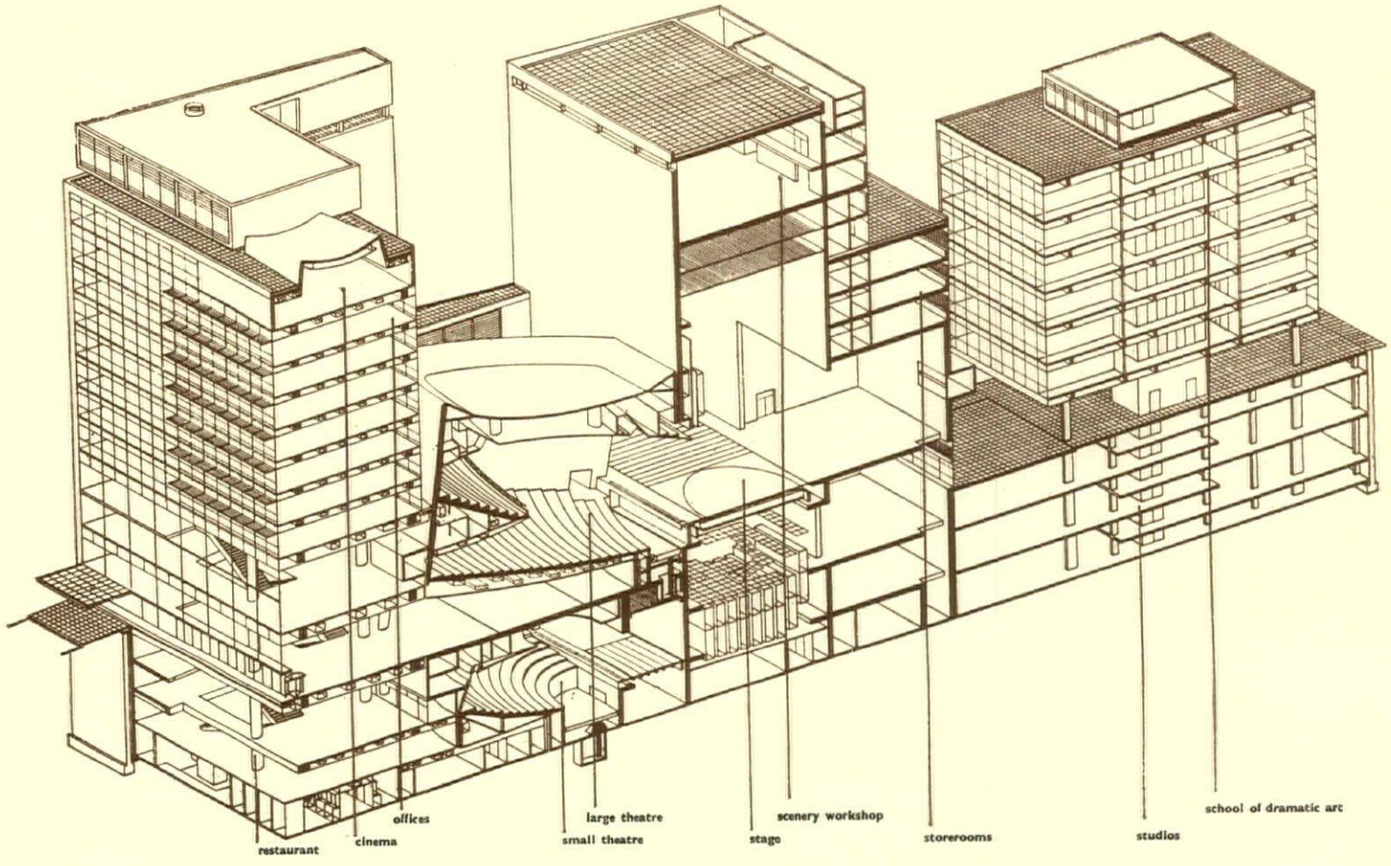
THEATRICAL COMPLEX

MUNICIPAL THEATRE AT BUENOS AIRES

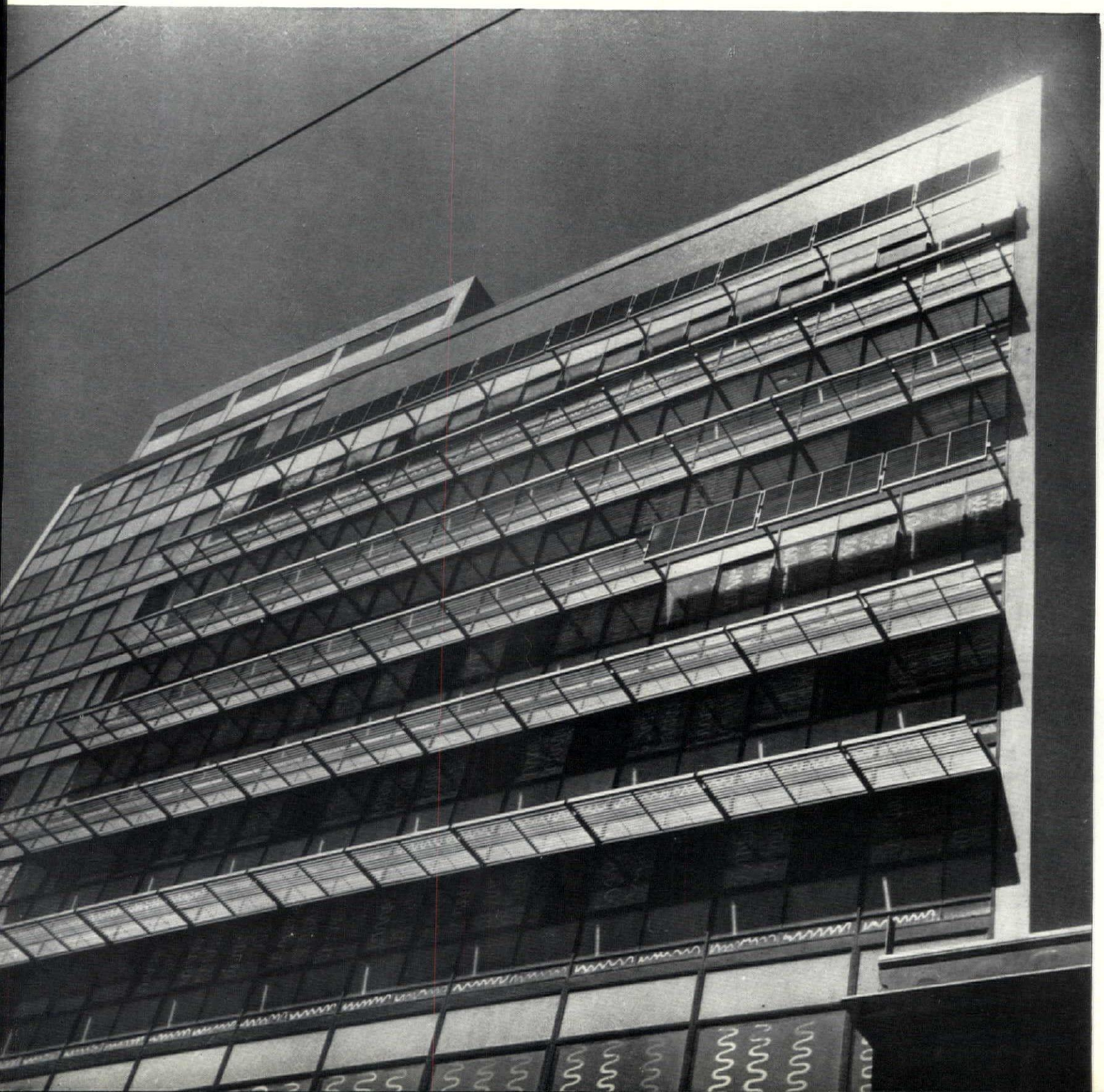
ARCHITECTS | ***MARIO ROBERTO ALVAREZ AND MACEDONIO OSCAR RUIZ***

Situated at the centre of the city's entertainment district, off the Avenida Corrientes, and called the Theatre General San Martin, this is a complex building comprising a large and an intimate theatre (each with fully equipped stage), a suite of conference rooms, an exhibition gallery, a school of dramatic art (not yet built), clubrooms, studios for various crafts connected with the theatre, workshops, an office-block, restaurant and car-park.

The theatres themselves do not appear in the external views of the building as they are placed one above the other (the larger on top with a mezzanine between) in the middle of the site and are screened from the street by the tall office-block which has the conference suite on the top floor and the restaurant on the ground floor. The future school of dramatic art will take the form of another tall block on the far side of the stage tower of the main theatre. The latter seats 1,128 people; the intimate theatre, which is semi-circular in plan, about 600.

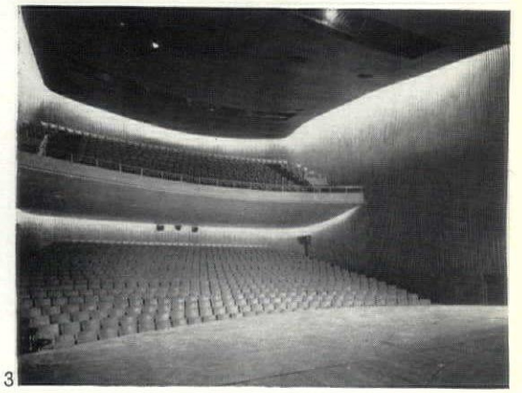


1

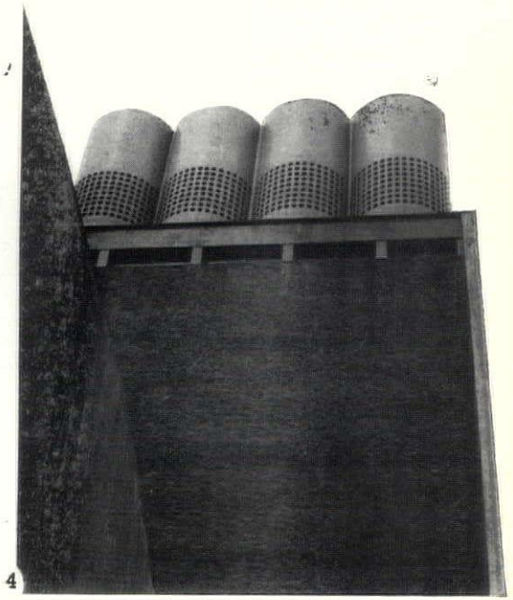




2

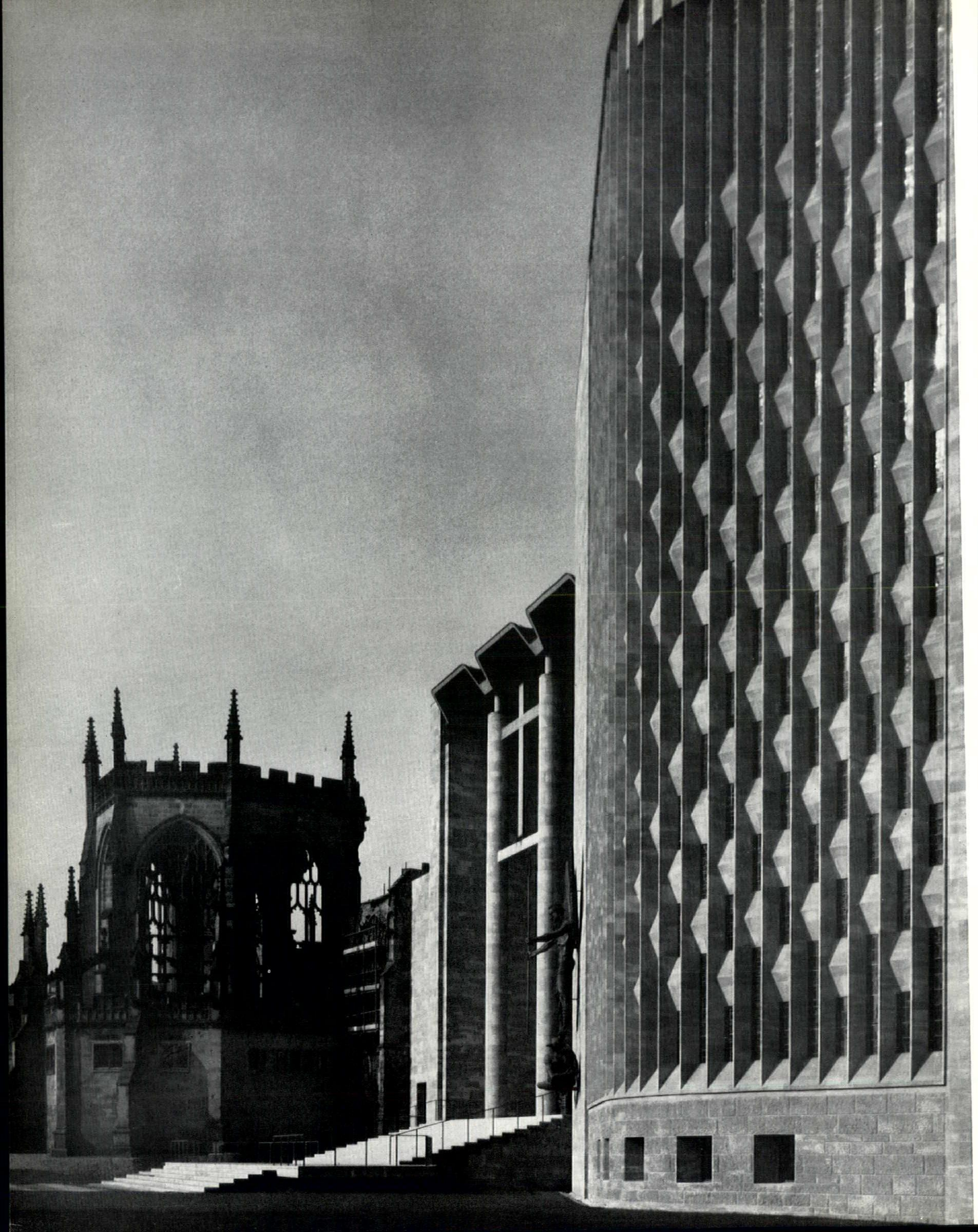


3



4

1, close-up of the office-block. 2, the small theatre and, 3, the large theatre. 4, ventilation shafts on the roof.



R. Furneax Jordan

Architect, Sir Basil Spence

Cathedral Church of St. Michael, Coventry

Every architect is a cathedral builder manqué. Cathedral building — a great phrase, full of challenge, full of overtones. The palace, the university, the big parish church, can none of them ever carry quite those same overtones. Strange, for the big church is, after all, bigger than the small cathedral, while the university or palace is more complex and just as sophisticated. It is, of course, quite simply that we know, and even the simplest person knows, that the greatest works of man, the greatest expression of the human spirit and of human ingenuity, are the old cathedrals of the old world. To build a cathedral is to challenge a thousand years of history. It is, also, inevitably to fail.

It would be rash—Spengler-wise—to point to any large cycle of the arts. History is more complicated and more confused than that. All the same we can see very clearly that at certain moments there were certain 'dominants.' The refinements of the Greek temple, the whole Parthenaic essence, was sculptural, not architectural; the temple was conceived as sculpture, symbolically carved, as it were, from a single block of marble. The Roman dominant was power, structure, engineering—all the rest was just adornment. Baroque was, in the last analysis, no more than scene setting for music, painting and pageantry—for Mumford's 'courtly heaven.' And as for the nineteenth century—all Victorian architecture falls into place, is immediately comprehended, only if one grasps that the dominant of that age, that wholly literate age, was literature. Only once, at any rate in Western Europe, was architecture itself ever the dominant, only once was there a 'total architecture' when structure, function and aesthetic were totally integrated, when, from the eleventh to the fifteenth centuries, they built that 'white robe of churches.' Cathedral building! It can be proved. Not only were all the arts developed in the service of architecture, but the smallest decorative motifs of the most minor craft, of, say, ironwork, illumination or embroidery, were the pinnacle, flying-buttress or cusped quatrefoil, all in miniature. The supreme and dominant art of the mason, the mystique of thrust, counter-thrust and mouldings, informed them all. This is as irrational, if you will, as a streamlined kettle in an age of mechanized transport. It has a similar significance.

But what, apart from this relationship of the arts to each other, do we mean by a 'dominant.' The dominant is the zeitgeist, wherein the arts, the resources, the dynamic of an age, are directed to a single end so that, ultimately, that end is the fullest material expression of a transcendental idea. The Greeks raised the ideal of anatomical proportion to the dizzy point at which it became, in effect, a religion, and thus made sculptors of them all. The Victorians filled their libraries with the virtues of liberalism until, ultimately, they made a religion of scepticism. We, in our time, have elevated this search for Truth through Enquiry—as opposed to Truth from Authority—into a religion, or at least into a transcendental ideal, although we call it Science. Since we lavish our resources upon it, it is recognizably *our* zeitgeist, and its ultimate end is exploration of the macrocosmic and microcosmic universe. It is not a mean thing. The Middle Ages organized and created a society—feudal and sacerdotal—hell-bent upon a highly transcendental architecture, quite literally the building of the House of God upon Earth—the Cathedral.

Now to behave within one's society as if you were, by means of some Time Machine, within another society, is to

On the facing page, 1, *the new Coventry cathedral (the subject of this month's critical article) in conjunction with the old. The photograph shows, from left to right, the apsidal end of the ruined old cathedral, now laid out inside as a garden; the steps leading up to the porch that spans the full width of the (liturgically) west end of the new cathedral and also provides the link between the two buildings; the curved baptistery wall, consisting of one great window filled with stained glass by John Piper and Patrick Reyntiens (see page 41). On the wall between the baptistery and the porch can be seen, in profile, the late Sir Jacob Epstein's bronze figure of St. Michael in conflict with the Devil.*

court disaster or failure. To behave in the fifteenth century like some Victorian liberal, was, as St. Joan discovered, to go to the stake. To behave in the nineteenth century like some Catholic master-mason, was, as Pugin discovered, there are 'hangovers'—Holy Roman Empires, College of Heralds and the like, or Toynbee's 'universal religions' left over from 'universal states'—but while the religious or ecclesiastical 'hangovers' are real enough to some people, none could pretend that they ever could have been the product of our zeitgeist; they survive in spite of, not because of, the age. It is not for us to found churches. Genuine sceptics disbelieve not because they are naughty, but because—standing on some cold pinnacle of science—they reject the assumptions upon which all churches are based . . . otherwise they would not be churches, they would be clubs. It is this development of Victorian scepticism into a scientific system that is the basis of *our* dominant. Therefore, we can build cathedrals only within the framework of a very peculiar pre-Reformation 'hangover'—commonly known as the Church of England. The resources, energy and dynamic of our society can no more be geared to such an operation than to castles or cavalry. The citizens of Chartres turned out in hundreds to push the cathedral stones up the hill; the City of Coventry has not contributed to the cathedral. To build a cathedral may be, as is so often said, 'an act of faith,' but it is faith in a Church, not in God. As such it is legitimate, even heroic, but in the context of our time, necessarily eccentric.

These words of introduction to an architectural assessment of Coventry may seem irrelevant. I don't think so; it is not enough to trot out the cliché that 'this is not a cathedral building age.' To build eccentrically, out of one's time, is not merely to build without a tradition—a 'tradition' anyway implies continuity, not revival—and without craftsmen, it is to create impossible social strains, to necessitate the solution of impossible problems.

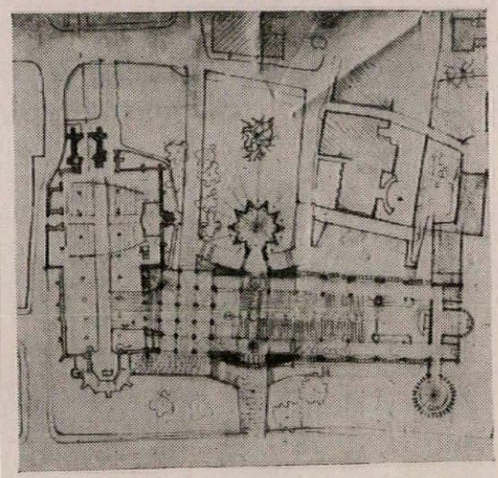
Leaving out of account the cathedral at Truro, which is no more than slightly belated Gothic Revival, the Anglican Establishment has in our time, and in this 'non-cathedral building age,' created three large cathedrals—Liverpool, Guildford and Coventry. The first two are built in defiance of this age, almost perhaps as a deliberate and conscious protest against society's cultural values—which indeed is almost a definition of 'romanticism.' Now this romantic protest is a perfectly valid procedure; it may or may not produce good architecture but the builders were within their rights. St. Paul's must have been seen in its day as a classic and valid protest, on behalf of a 'polite society' against Gothic barbarism.

Moreover, both Liverpool and Guildford —*if we leave out of account the arguments for a 'modern architecture' and forget our inbred professionalism*—are extremely successful. They satisfy everyone except the readers of this journal; and never has the intricate and lovely detail of neo-Gothic—the 'real thing' in the manner of Bodley, Temple Moore or Ninian Comper—been better done than at Liverpool. True, this wonderful detail is found mainly in the Lady Chapel, built when Bodley was still the young Scott's mentor. After that there was a slow, but never total, deterioration.

On the whole, however, this fine quality *was* only in the detail. It is the big things at Liverpool that fail—the tower, the great arch, the almost functionless plan—so that Liverpool, in the end, looks architecturally what inevitably it actually is—a monstrous white elephant. Historically, moreover, it is not, as Truro is, a last act of the Gothic Revival; with all that glass and gilded filigree it shares with Stockholm Town Hall the honour of being the swan-song of Morris's Arts and Crafts Revival. And the Arts and Crafts Revival was never a very big thing in history . . . not, at any rate, as cathedrals go.

Guildford is an even more curious phenomenon. Designed in the years immediately before the war, in a vaguely Gothic manner, it needed even at that date—with Tengbom's Hogalids Church already built —a courageous man to build Gothic of any kind and thus defy what was then the 'modern movement.' The English 'modern movement' being what it was in the 'thirties—luke-warm Swedish—things were perhaps for the best, although not, of course, in the best of all possible worlds. In another respect Guildford was markedly post-Liverpool and pre-Coventry; there were no great Guildford shipping magnates to pay for carving, and no bomb damage claim—£900,000 at Coventry. Consequently, and mercifully, Guildford is puritanical in its plainness. Guildford is the supreme example of what the Edwardian-style professional architect—unashamedly eclectic—can really do when on his mettle. If the exterior of Guildford never quite flickers into life, the interior is a superb piece of professional competence; the architect knows every move in the game. Philosophical arguments apart, this interior is a complete success, breath-taking and impressive. Of course both Spence and Gibberd—the latter in his Liverpool RC cathedral—are heroically attempting something more difficult, more important and—on my terms—impossible, whereas Edward Maufe, in the interior of Guildford, simply cannot be faulted . . . not, that is, on his terms.

Then there is another thing—tempo. An attitude to the abiding mysteries of the universe, to death and the last things—whether one calls it faith, religion, philosophy, acceptance, resignation—must be a lasting thing. It must at least seem to be rooted in time and to be enduring. The Mediaeval lack of any historical sense was not the least of the rocks upon which the Church was founded. That world of cathedral building was a quite timeless world—the Gothic dream. For a thousand years to seem but as a day was then God's prerogative, now it is Man's. It is all very disturbing. From Santa Sophia to Winchester was almost a millennium. And even after that, Winchester, St. Paul's, Liverpool stand like rocks at intervals of two hundred years—six generations between each. True neither William of Wykeham,

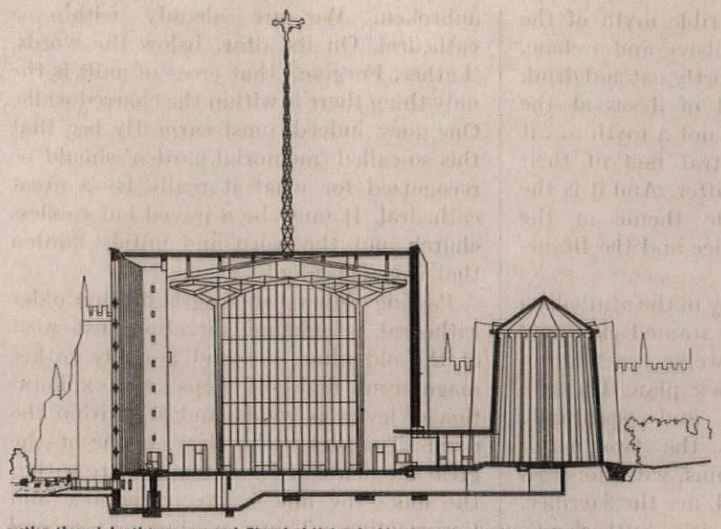


2, Sir Basil Spence's first sketch-plan of Coventry cathedral, showing how small were the changes made while the design was being fully worked out.

nor Wren, nor Scott could ever have dreamt of building each other's cathedrals, but it was real history—things like the Reformation and the Romantic Movement—not fashion—that marked those long intervals. And now, Truro, Liverpool, Guildford, Coventry, all descend upon us, one after the other, in little more than half a century . . . it is more than flesh and blood can stand.

Cathedral building, then, being Man's highest achievement, and also Man's only 'total architecture,' must be judged on the highest plane of history and of art. Thus judged, it must, in our day, fail.

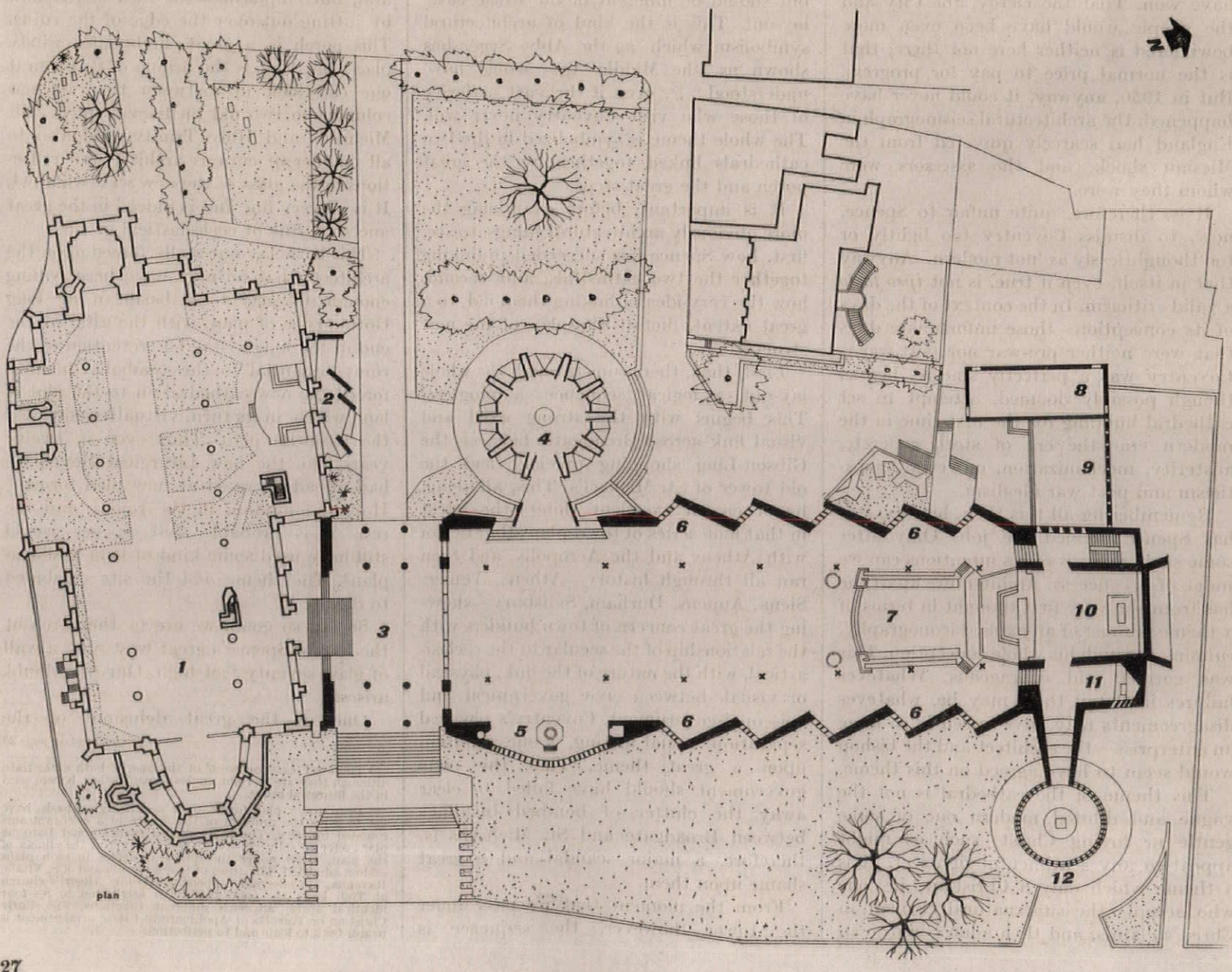
If, however, we alter our scale of values, if we lower our sights a little, a most curious thing happens. If we forget, for the moment, both the sublimity of Chartres and our beliefs in a 'modern' architecture, then—to our mild astonishment—both Liverpool and Guildford are seen, suddenly, to be singularly successful buildings. The clients, having been well served according to their own lights, are well satisfied;



section through baptistery, nave and Chapel of Unity, looking from the direction of the altar

key

1, ruins of old cathedral
2, bookshop
3, entrance porch
4, Chapel of Unity
5, baptistery
6, Tablets of the Word
7, chancel
8, verger's flat
9, refectory
10, Lady Chapel
11, Chapel of Christ in Gethsemane
12, Chapel of Christ the Servant



plan

thousands of men and women—including those Anglican communicants for whom, after all, these places are built—are delighted and even over-awed; while, in addition, both cathedrals are skilfully designed and well built.

Now at Coventry almost none of this is true. The clergy are divided, the City is indifferent, the public bewildered. The design itself—even on its own terms—is riddled with gaucheries, while the whole conception, though claiming to be modern, flirts with Gothic the moment our back is turned. And yet it is just at this point that we have to admit that another most curious thing has happened. We know perfectly well in our hearts that, in the long perspective of history—for all their superficial perfection—Liverpool and Guildford will never be important; each is a 'one off'—whereas Coventry is, just possibly, a new move in the high game. Is it, and if so, why?

First, we must remember that it is now over twelve years since the competition was launched. Buildings designed in Eng-

land between, say, 1946 and 1951, though their designers might now repudiate it, hardly belong to our world at all; inevitably they look back across the abyss of war, to 1939. Hertfordshire school planning, for instance, may have involved a great structural programme; its real starting points were Impington, Richmond and Hilversum. The Festival Hall, internally at any rate, owes more than it would ever like to admit to Sweden and even to Stratford. The first hint of a post-war 'break-through'—in planning and structure, but not décor—was the Festival of Britain. Thus there was never a chance, not really, not twelve years ago, of a Miesian House of God upon Earth. The Smithsons could have done it, as they showed, but there was never a chance that they would be allowed to. Once again we are up against this terrifying fact of tempo. If the Coventry competition had been postponed a mere ten years, the assessors would have been drawn from a different generation—a post-war gang instead of a pre-war gang—and the Smithsons would have won. That the clergy, the City and the people would have been even more bewildered is neither here nor there; that is the normal price to pay for progress. But in 1950, anyway, it could never have happened; the architectural seismograph in England had scarcely quivered from the Miesian shock, and the assessors were whom they were.

It is, therefore, quite unfair to Spence, now, to dismiss Coventry too lightly or too thoughtlessly as 'not modern.' Anyway that in itself, even if true, is not *ipso facto* a valid criticism. In the context of the days of its conception—those unfortunate days that were neither pre-war nor post-war—Coventry was a perfectly sincere, heroic, though possibly doomed, attempt to set cathedral building for the first time in the modern era—the era of steel, concrete, austerity, mechanization, universal agnosticism and post-war idealism.

Remembering all this then, how exactly has Spence tackled the job? Only after some such analysis of his intentions can we judge of his success. Architecture apart, he has from the very first thought in terms of a theme, almost of an explicit iconography, running through his whole conception. This was correct and courageous. Whatever failures in detail there may be, whatever disagreements may have arisen in so large an enterprise—the architect and the bishop would seem to have agreed on this theme.

This theme of the cathedral is not the vague and diluted modern one of some gentle or loving Christ—such as might appeal to any sentimental sightseer. It is a theme which only a Christian—i.e. one who accepts the supernatural element in Christ's claims, and then adores him—can possibly accept. The terrible myth of the Atonement may be repulsive and archaic, but to those who will shortly eat and drink of the body and blood of Jesus at the Coventry altar rail, it is not a myth . . . it is presumably the central fact of their existence here and hereafter. And it is the Atonement that is the theme of the Cathedral . . . the Sacrifice and the Resurrection.

This is explicit not only in the symbolism and iconography of the stained glass and the tapestry, it began twelve years ago in —of all places—the block plan. The two cathedrals, physically and spiritually linked, are themselves the two major symbols. The bombed ruins, with the cross of nails on charred wood, are the Sacrifice. The new cathedral, with Sutherland's Christ in Majesty dominating all, is the Resurrection. That, at least, is logical and Catholic. It informs the whole cathedral. That was a magnificent start, that there should be such a specific theme at all, that it should not be just something added to the structure in the form of carving or glass but should be inherent in the whole basic lay-out. This is the kind of architectural symbolism which, as the Abbé Suger has shown us, the Middle Ages would have understood . . . even if the vast majority of those who visit Coventry never will. The whole theme is symbolized in the two cathedrals linked together by the great porch and the great steps.

It is important, before examining the more obviously architectural things, to see, first, how Spence has succeeded in linking together the two cathedrals; and, second, how the very idea of linking them did, to a great extent, dictate the plan of the new structure.

First, then, there runs through the whole lay-out a logical sequence—a progress. This begins with the strong axial and visual link across Broadgate, between the Gibson-Ling shopping precinct and the old tower of St. Michael's. This, all along, has been an excellent thing—the latest in that long series of town-plans that began with Athens and the Acropolis, and then ran all through history—Athens, Venice, Siena, Amiens, Durham, Salisbury—showing the great concern of town builders with the relationship of the secular to the ecclesiastical, with the nature of the link, physical or visual, between civic government and episcopal government. Coventry's physical separation, visual linking, is one variation upon a great theme. That the civic government should have failed to clear away the clutter of bombed buildings between Broadgate and St. Michael's is, therefore, a major scandal and a great shame upon them.

From the moment that we pass under the tower, however, the sequence is unbroken. We are already within a cathedral. On its altar, below the words, 'Father, Forgive,' that cross of nails is the only thing there is within the charred walls. One does, indeed, most earnestly beg that this so-called 'memorial garden' should be recognized for what it really is—a great cathedral. It must be a paved but roofless church, not the worn and untidy garden that it is at present.

Passing down the length of this older cathedral we change direction just west of the old altar, descend a really rather magnificent flight of steps—the exploitation of levels is good—and are within the porch. This, let us be clear, is one of the great moments of Coventry. We are within the link—the link between Sacrifice and Resurrection. There is here a second change of level, with a second flight of steps down to Priory Street. The porch itself is in fact a half-landing. The inspiration here is palpably from Siena. The plain cylindrical columns soar away, seventy feet high, so that the roof of this porch continues the roof line of the new cathedral, but emphasizes the idea of the link by jutting out over the edge of the ruins. This porch is a great, high, open windy place, but that is the drama of it. From it one can look up between the tall new columns to two old mediaeval spires—St. Michael's and Holy Trinity, and also to all manner of curious architectural reflections in the glass of the new west window[1]. It is all very fine and is indeed in the great ancestral line of ecclesiastical groups.

This basic lay-out really forced upon the architect what he may have been willing enough to accept—a basilican or long Gothic type of plan, with the altar at the end of the long vista. The retention of the ruins—essential to the symbolic theme—forced the new cathedral on to the plot of land which, in its turn, virtually compelled the basilican plan. Thus even if, twelve years ago, the new Liturgical Movement had already arrived at new plan forms—Holy Communion in the round, and the rest—it is probable that Spence would still have used some kind of long basilican plan[2]. The theme *and* the site combined to dictate it.

So far, so good; we are in the porch at the foot of Spence's great west wall, a wall of glass seventy feet high. Our first doubt arises.

One of the great delusions of the

[*continued on page* 33

[1] The word 'east' or 'west' in the case of both cathedrals, although they are at right angles to each other, is here used in the liturgical sense.

[2] Drastic new plan forms, on a new liturgical basis, have yet to solve the problem of the stance of a celebrant surrounded by laity. The centralized Byzantine and Baroque plans offer no solution; the altar was never at the climax of the plan, never under the dome—a defect in such plans seldom admitted. The apses of Santa Sophia and of S. Vitale, Ravenna, are miserable appendages, while Alberti's church at Todi lacks the total perfection attributed to it—four identical apses, all with different functions. The Early Christian or Torcello or Apollinare in Classe arrangement is nearer both to logic and to perfection.



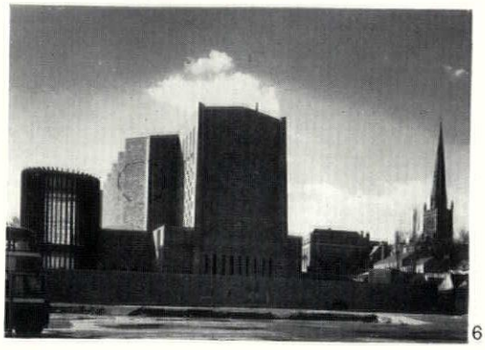
3



5



4

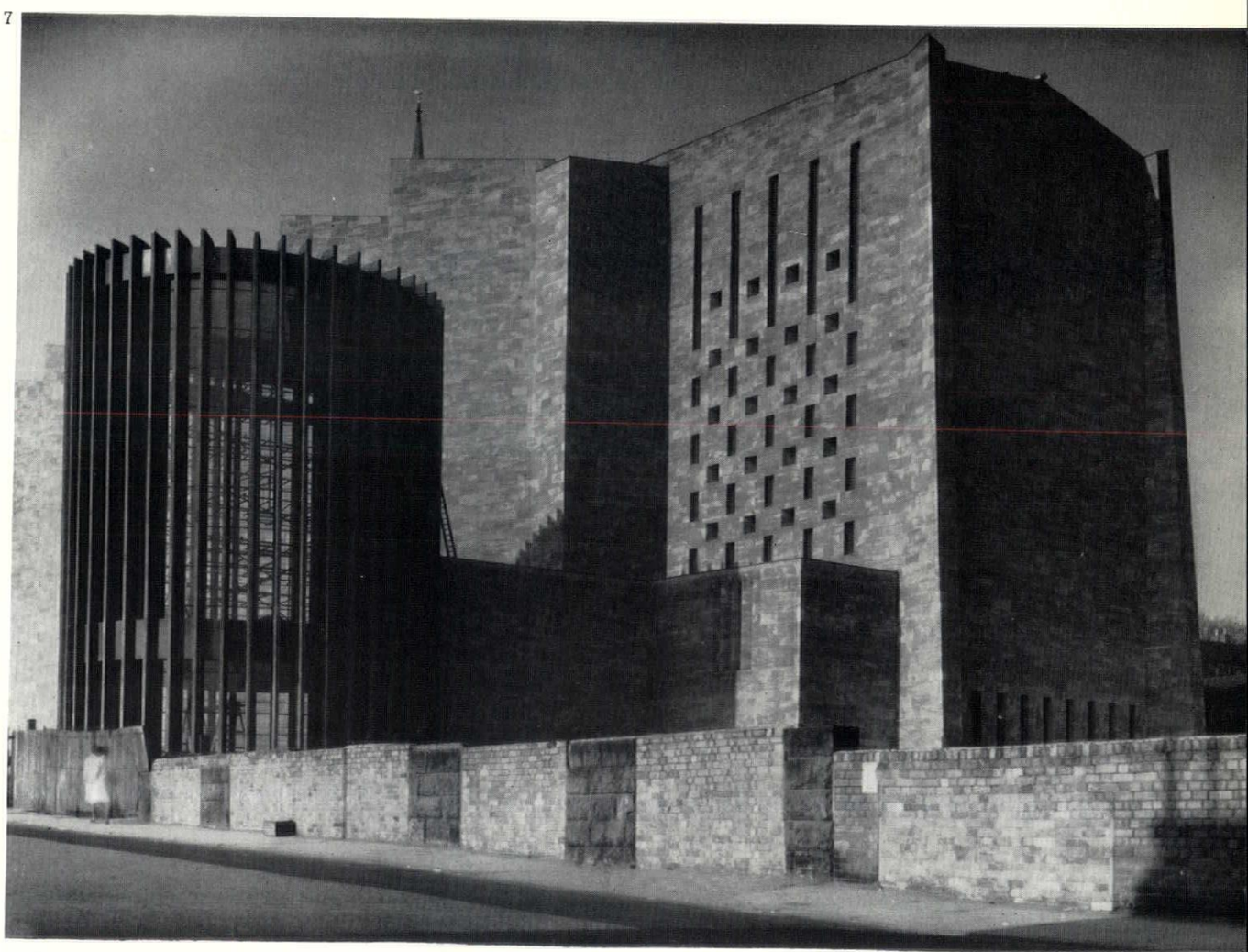


6

3, the southern flank of the cathedral showing, beyond the porch and baptistery window, the saw-tooth windows of the nave and, in the distance, the Chapel of Christ the Servant. 4, the (liturgically) western end of the new cathedral and, on the left, part of the Chapel of Unity seen from the surviving tower of the old building. 5, the Chapel of Unity from the north. On the left are a row of Georgian houses which enclose the approach from Broadgate through Holy Trinity churchyard. 6, from the south-east, the only direction from which the cathedral is visible as a mass. The spire of Holy Trinity is on the right. 7 (below), a closer view from the south-east: on the right the chancel and Lady Chapel; on the left the Chapel of Christ the Servant on the lower floor of which is the chapter-house.

Cathedral Church of St. Michael, Coventry

7

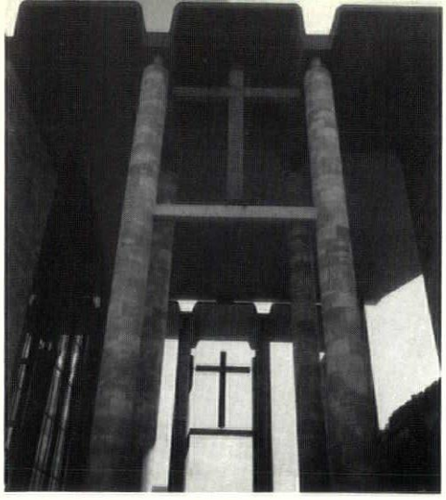




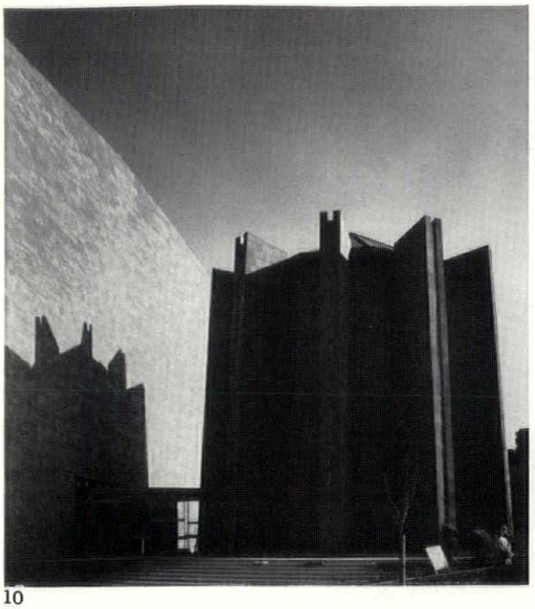
8

8 (above), the western porch and the baptistery window with, between them, the Epstein figure of St. Michael in conflict with the Devil. The walls and the columns of the porch are of pink Hollington stone. On the facing page: 9, looking upwards into the porch, which leads through into the churchyard of Holy Trinity and thence to the centre of the city, as well as connecting the new cathedral with the old. 10, the exterior of the Chapel of Unity, linked to the nave of the cathedral by a glazed passage; 11, the saw-tooth windows of the nave; 12, the Chapel of Unity with the nave windows beyond. It is star-shaped in plan, with strips of coloured glass by Margaret Traherne up the centre of each of the ten concrete buttresses. These and the walls between are faced with greenish-grey Westmorland slate. The roof is of copper.

Cathedral Church of St. Michael, Coventry



9

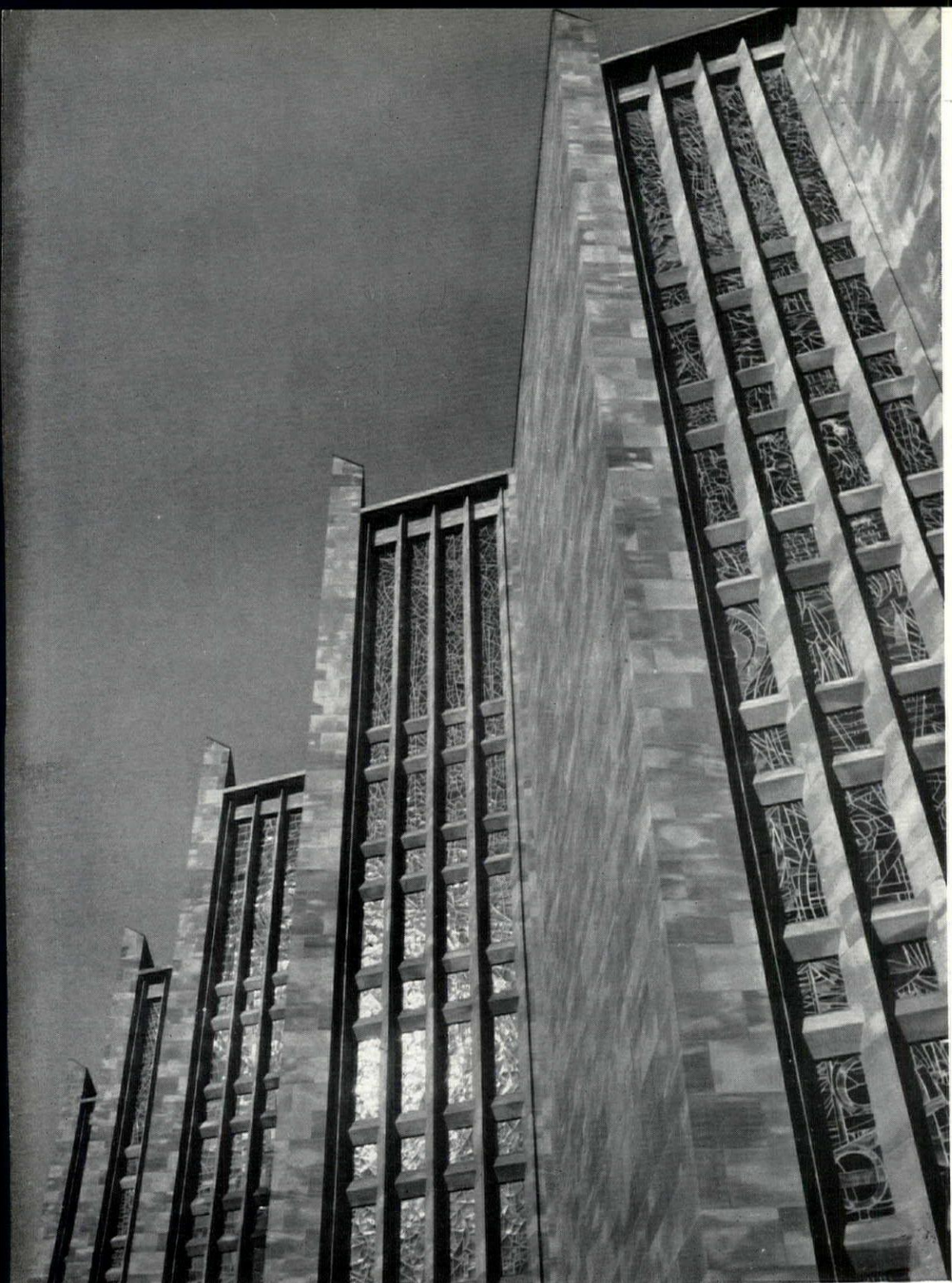


10

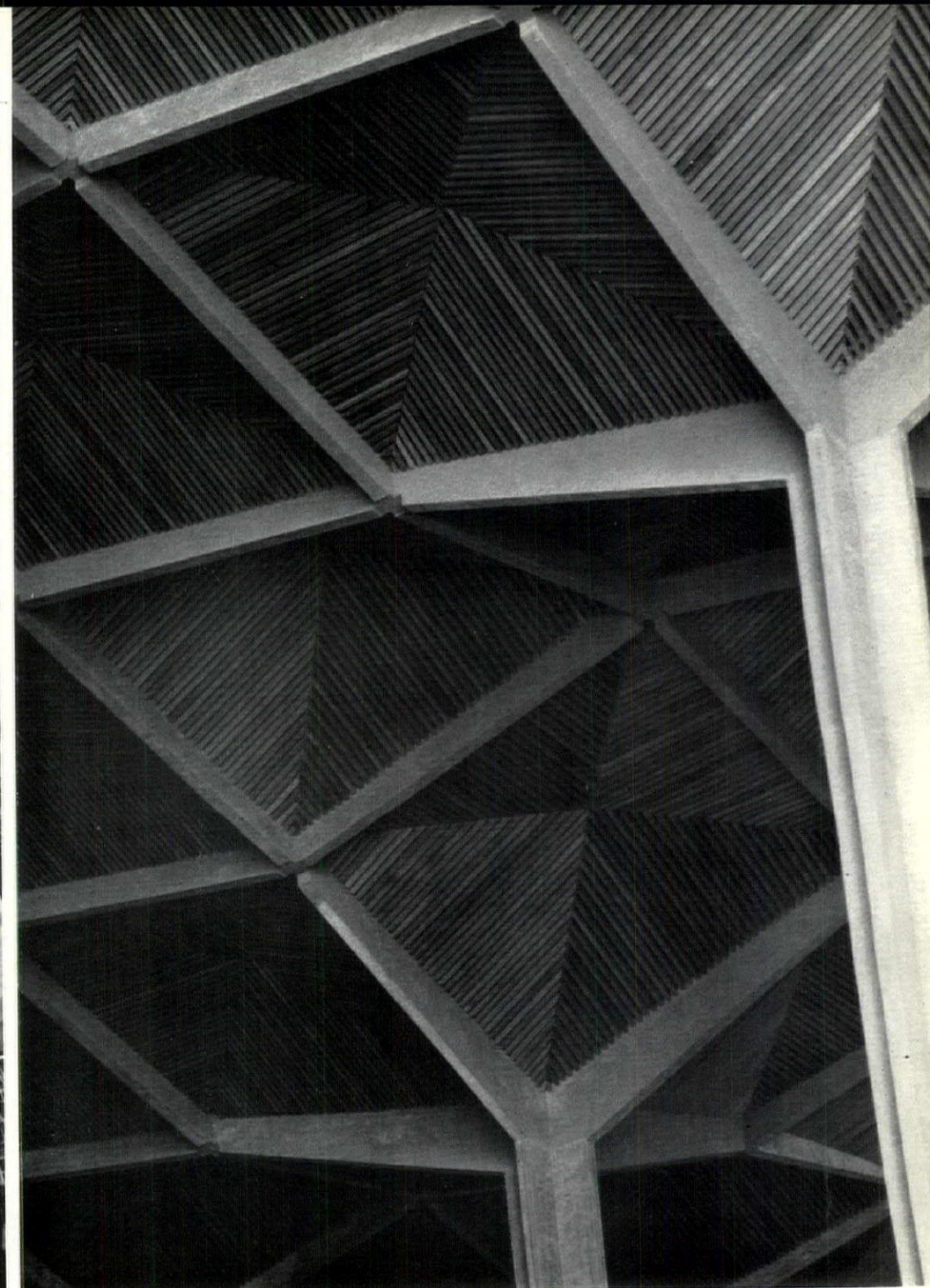


11

12



13



14

13, *close-up of the nave windows, looking towards the east end.* 14, *the nave canopy, supported on precast reinforced concrete columns, cruciform in plan, standing on bronze pins. It is independent of the roof-structure above it. Between the concrete ribs that spring from the columns are low pyramids of Sitka spruce rafters, treated with ship's varnish. The structural engineers were Ove Arup and Partners. Other photographs of the interior, and of the works of art with which it is embellished, are on pages* 35–42.

Cathedral Church of St. Michael, Coventry

continued from page 28

'modern movement' has been that glass is transparent. It is not. It is transparent in one direction only; in the other direction, according to the light, it is either black or reflective. One sees exactly why Spence made a 'west front' wholly of glass and —*pacé* John Hutton's well-drawn but not very effective engravings upon it—virtually of clear glass. Once again it was the theme. From the porch, or even from before the altar in the ruins, the *intention* was to see down the whole length of the new cathedral to the high altar and to the tapestry. In fact one sees nothing but reflections. Perhaps when the candles are lit, there will be just a little of the lost drama, but only a little.

This linking together visually of Sacrifice and Resurrection was an inspired idea, but was not, for that reason, any the easier to interpret architecturally. If the long basilican plan and that great windy porch are among the good things at Coventry, the western wall of glass is not. In the first breath-taking glimpse of the interior—and was there ever a long 'Gothic' vista that was not momentarily breath-taking—one still has one's back to that wall of glass, but to advance down the nave and then turn again westwards, is to realize—for this observer at least—the extent of the disaster. The whole idea of seeing the tapestry from *outside* fails because it is, in fact, not visible. The whole idea of seeing the ruins from *inside* fails because, in fact, they are only too visible—or at least the sky above them is. It is no good: from within a cathedral which, otherwise, is the traditional 'jewelled casket,' it is altogether too much of a distraction to see that great chunk of white sky above the black ruins, with one or two Coventry chimneys thrown in for good measure. To say that one must, when within the House of God, remember the World outside, may be a theological answer; it is not an architectural one. All the time that glare drags the eye to itself and so away from everything else[1]. The architect has spent twelve years looking into his model from the outside; what a pity that he was never able to get inside and look out.

One turns one's back upon the western wall and looks east to the altar and the tapestry. To be frank, one had had grave doubts about these saw-tooth walls—that such magnificent stained-glass windows, running seventy feet from floor to ceiling, should be wasted in the sense that one could not see them except from the chancel. This fear, at any rate, has proved false. Looking east, the virtual invisibility of all sources of light is fine indeed. This, after all, is something that has been attempted again and again in history—it was the reason for the clerestory—but has seldom been achieved. The soft grey of the acoustic plaster, the gentle radiance striking across the marble floor from hidden sources, the thin and therefore unobtrusive columns, all combine to be extremely impressive[1].

The only 'ornament,' the only breach in the simplicity of these tall slabs of wall is the 'Tablets of the Word.' At the foot of each slab of wall—where, in a RC church, one would find the stations of the cross—are the sayings of Jesus. These are carved directly into the wall by Ralph Beyer. They are large, but the lettering is thin and in perfect scale. It is perhaps a little self consciously craftsmanlike, rather in the Eric Gill 'Catholic' tradition, but it is extremely beautiful[2].

Actually to get the full effect of this interior one has to move well forward from the west doors. The *immediate* effect, just inside those doors, is rather less propitious. The inscription, inlaid in large, thin brass letters in the black marble floor—TO THE GLORY OF GOD + THIS CATHEDRAL BURNT NOVEMBER 14 A.D. 1940 IS NOW REBUILT + 1962—is excellent at that point. A glance at the plan, however, shows that the sawtooth wall of the nave, and the thin columns extend only down two-thirds—the eastern two-thirds—of the nave's length. The repetitive rhythm of the bays being thus reduced, the whole sense of length is also reduced, and the western third of the nave is transformed into a large, open and rather functionless space. Wren handled such a space rather well at the western end of the nave of St. Paul's, but here it does not entirely succeed. It is disturbing. It holds the font but is not a baptistery; it is a preliminary to the nave itself but is not a narthex; it is rather nebulous. Here, too, we come back to something that seems to haunt this cathedral—the infelicitous use of clear glass. To the left is the entrance to the Chapel of Unity. This is, or should be, a small door—nothing more—leading out of the nave into the connecting slype; why set that door in a large 'surround' of clear glass. It is distracting, creates a glare and serves no purpose, symbolic or practical.

On the right, however, opposite to the Chapel of Unity, we have—as in the porch—another great moment. The font, the almost untouched boulder from Bethlehem, really is effective and, in some mysterious way, is possessed of enormous pathos. Its simplicity and that pathos are heightened by its position at the foot of all the glitter and sophistication of John Piper's window. Lewis Mumford (*New Yorker*, March 15, 1962) writes of 'the great aureole of light, a blaze of golds and reds . . . Piper's window is an unqualified triumph—wholly abstract in treatment, but in its context meaningful; even on a dark day it glows, and its colours, like those of the other windows, are reflected in muted but still opulent tones in the dark floor.' This writer saw the window, as Mumford did, on a dark day, and can confirm his praise.

Turning aside for a moment to enter the Chapel of Unity: this decagonal structure, with its very tall slender lines, its deeply recessed windows and its marble floor, is a thing of grace and beauty. The floor, designed by Einar Forseth was a Swedish gift. It was apparently almost forced upon the architect, but in the end this strange and very Swedish design is an unqualified success. So also, in this Chapel, is the stained glass, designed by Miss Margaret Traherne, and given personally by Dr. Adenauer. The tall tapering cylinder—which is the Chapel's basic form—is designed to resemble a Crusader's tent, as was pointed out at the time of the competition. Since, however, this is a Chapel of *Unity* where not only all Christian sects, but even Mohammedans, are invited to worship the one God, it would be hard to find a more inappropriate symbol. That is a trivial matter in such a lovely little building.

Returning to the nave, one moves eastward, becoming more and more aware of the stained glass windows by Geoffrey Clarke, Lawrence Lee and Keith New. Everyone will have their favourite window, as they did when some of them were exhibited years ago at the Victoria and Albert. Beyond that it is not really possible either to describe or to comment upon something which is basic to the whole conception of the cathedral. These windows justify the phrase 'Renaissance of stained glass,' which is more than can be said of any other glass—remembering Morris, Burne-Jones and all that—since the Reformation. The iconography, or symbolic theme, of such highly abstract designs is quite incomprehensible. In the face of such beauty that is unimportant.

From the chancel steps, then, one looks back at the great ranges of jewelled windows, all *en echelon* as it were, to be pained only by that glare of sky in the western wall. The whole sweep of marble floor is seen from here—very grand when the writer saw it, because it was innocent of all seating as, of course, were the paved floors of mediaeval cathedrals . . . before God one stood or one knelt.

[1] This is the most severe criticism that this observer has to make. Although it is an old fear justified it is made from the conscience and very reluctantly.

[1] The writer had always felt certain that in the grille windows, the thin columns and segmental vault—in fact in his whole reinterpretation of the 'lantern church' in reinforced concrete—that Spence was directly influenced by Perret at Raincy. Spence says that this was not so. In the concealment of the grille windows he may have improved upon Perret, but the similarities are still striking.

[2] In parenthesis—what an enormous strength it has been to the Anglican Establishment that for nearly four centuries it has been able, almost, to persuade its adherents that Jesus spoke Elizabethan prose.

Those who dislike Spence's work accuse him of 'gimmicks.' If there is some truth in this it is also fair to say that a certain bigness of conception usually overcomes the gimmicks. For a short time Spence worked for Lutyens and will know, therefore, how a big man, in a generation very prone to its own gimmicks, purged himself of these as he moved on to ever larger themes. Spence may do the same. This is to preface a further hard criticism. The chancel—and it is a big chancel—is in its general lay-out highly traditional; this is fair enough since functionally it is that part of the cathedral most closely geared to the Rubric. Spence, therefore, wanted to give the choir stalls, bishop's throne, etc., all in traditional positions, a corresponding traditional richness. Gothic canopy-work was, for every reason, out of the question, but—and was there not a remark above about 'flirting with Gothic' —he has devised a most curious substitute for canopy-work, a most curious timber and brass Christmas tree over each stall. Over the bishop's throne there is an outsize Christmas tree with a mitre instead of a fairy on top. It is all very ingenious, well done if it must be done, but a gimmick if ever there was one.

It is all the more pity because, just east of the stalls, there comes another great moment. The sedilia, each set on a black marble block, are most monumental chairs —each sculpted and moulded as it were out of laminated timber, and each fit for a High Priest of the Temple. The twenty-foot altar, again, is just a huge block of concrete—with only the slightest of timber tops to ward off charges of 'paganism.' May posterity remain true to the intention of architect and clergy, and keep this altar clear of everything but the communion vessels themselves. Even the crucifix is set so that it rises from behind the altar, while the big candlesticks are on the floor on either side. It is all really rather Pagan, or at least primaeval, but in the very highest sense.

So we stand before Graham Sutherland's seventy-foot tapestry—mainly white on green. If the sole intention had been that the Christ in Majesty should, by sheer size, dominate the whole cathedral, then this great work would be an unqualified success. It does this, and does it beyond all doubt. But that, of course, is not all. The crucifix which is woven into the design below the feet of the main figure, carries on the Sacrifice-Resurrection theme, while the insignia of the Evangelists, two on either side, are lovely things. What of the great Christ itself? One does realize that the bold white silhouette had to be kept bold at all costs, so as to 'read' down the whole length of the nave, but even so the effect of Christ's frilly pinafore is disconcerting, and the main part of the figure is just a huge white and amorphous shape, void and without form. The tapestry was woven in France; better perhaps had it been designed there.

From here, too, one may look back down the whole length of the roof. This is the most curious and interesting feature of all. The slender and down-tapering columns rise from the marble floor that reflects them, to support the complex diamond-patterned wooden ceiling. This ceiling is an immense improvement upon the vault of the competition drawings. It is also very curious indeed—it is a ceiling, not a vault, but—if Gothic had never been—then this ceiling could never have been either. All the same, in its design Spence has revealed its true nature most clearly. It is a rigid, light and purely decorative canopy, exerting no thrust, and supported not upon the walls, from which in fact it is detached, but upon the columns. It is effective, it is skilful, it is unique and quite illogical—illogical, that is, as a derivative from the stone fireproof vault of the Middle Ages. But perhaps that does not matter in the least.

At the end of the north aisle is the tiny Chapel of Christ in Gethsemane, a fascinating Byzantinesque pastiche. It is no worse for that, and on such a miniature scale pastiche may be justified. The architect designed the wrought iron Crown of Thorns which is the screen, and Steven Sykes designed and made the extraordinary mosaic of the Angel in the Garden —a golden glow down the whole length of the aisle.

Nearby and, like the Chapel of Unity, a separate structure linked only by a slype to the main cathedral, is the Chapel of Christ the Servant. This is circular and has tall windows from floor to ceiling. Once again the ghost that haunts the cathedral, the ghost of clear glass, raises its head. But here with astonishing success, both architecturally and symbolically. This is a rebuilding of the ancient chapel associated with Coventry's guilds; it is now a Trade Union chapel. To enter it, therefore, and to see, literally all round one, the panorama of industrial Coventry in all its bleak squalor is absolutely magnificent. It is here, indeed, that one *should* be reminded of the World outside, but then here the glare of naked sky in no way conflicts with the 'jewelled casket' of the big church.

As this article is being written there is no flèche, as there will be, over that rather nebulous space at the western end of the nave. That, although not rivalling the old spire, will give unity to the whole disparate group—two cathedrals, porch and two chapels. Except for the old spire it was never the architect's intention that Coventry cathedral, like some latter-day Amiens or Durham, should dominate the City. That was never possible. Only to the east, where the ground falls steeply, does the main mass of the cathedral rise up in what is popularly supposed to be a true cathedralic manner.

Elsewhere the exterior of the cathedral is discovered bit by bit, more in the French manner than the English, up paths and alleys—not upon broad lawns. Taken thus, in picturesque glimpses, it is far more Gothic than either the drawings suggest or, one suspects, the architect intended. For instance, the Chapel of Unity, which somehow dominates the south side, is a very mediaeval little affair. And then those vertical slabs of stone wall between the windows—although they abut nothing—are curiously buttress-like. The 'Sienese' porch, too, as approached up the great steps from Priory Street, is an oddly mediaeval experience. It is here that one discovers Epstein's St. Michael trampling upon Satan. This is the great work of a very great man, but a work of his declining years. The uncoursed pink sandstone ashlar is very good, and the masonry everywhere superb. There are still craftsmen; when the last stone of the huge Piper window came to be laid, it dropped into place with a little puff of dust.

A cathedral is never finished; posterity will both enhance and damage this one like all the others. Spence's work, for all its errors, has the true ring of earnestness and sincerity, with occasional flights of imagination in a big way. Are the Anglican clergy fit to care for and to use the instrument he has offered them? This writer, as he has made clear, would not agree with every word of Lewis Mumford's eulogy, but Mumford may speak for himself:

'In both conception and execution the new cathedral has effected a union between feeling and form, between the traditional and the rational, between pious memories and modern prospects. Its originality consists in its indifference to originality, and in its respect not for the letter of modernism but for the spirit that giveth life. If thousands of people go every year to the French town of Ronchamp to see Le Corbusier's little church, tens of thousands will have equally good reason to go to Coventry—possibly with greater satisfaction, if only because the long nave of the church will easily accommodate endless numbers of them. The fusion of continuity and creativity that Sir Basil Spence has accomplished here strikes a note that vibrates longer and with deeper resonance than many other works of modern architecture. In the structure itself, in its siting, in its chaste omissions and in its generous permissions, it has a completeness and an organic richness that are more vital than formal perfection.'

ID
a monthly review of interior design



1, the pipes of the organ at Coventry Cathedral are divided between the two sides of the chancel opening—here, the northern set.

Cathedral Church of St. Michael, Coventry

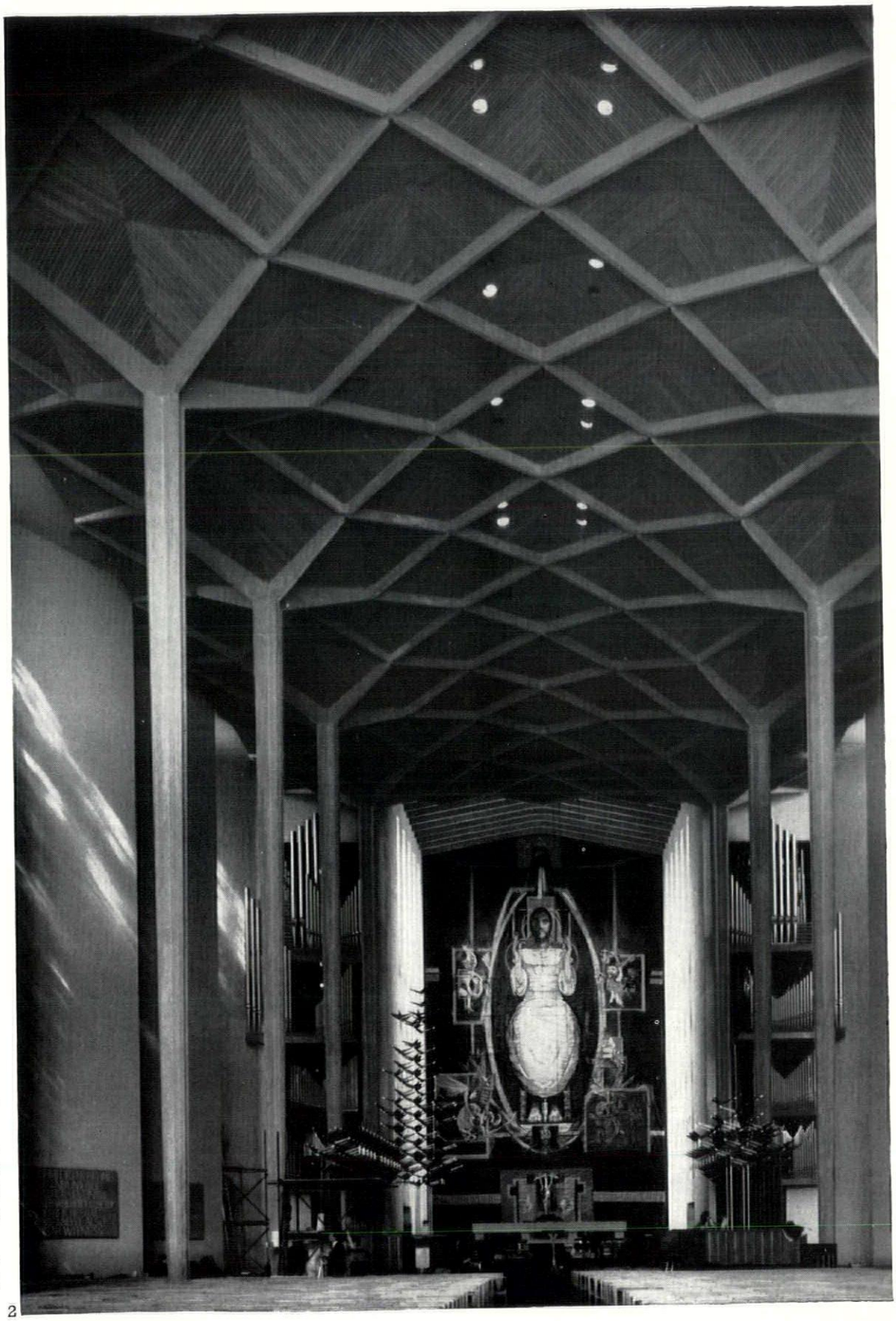
architect: Sir Basil Spence

collaborating artists:

John Piper, with Patrick Reyntiens (stained glass)
Graham Sutherland (tapestry)
Lawrence Lee, Geoffrey Clarke and Keith New (stained glass)
Ralph Beyer (lettering)
Einar Forseth (mosaic flooring)
Margaret Traherne (stained glass)
Steven Sykes (mosaics)
John Hutton (engraved glass)
Sir Jacob Epstein (sculpture)
Geoffrey Clarke (altar cross)
Hans Coper (candlesticks)
Elizabeth Frink (lectern and bishop's mitre)
R. D. Russell (nave seating)

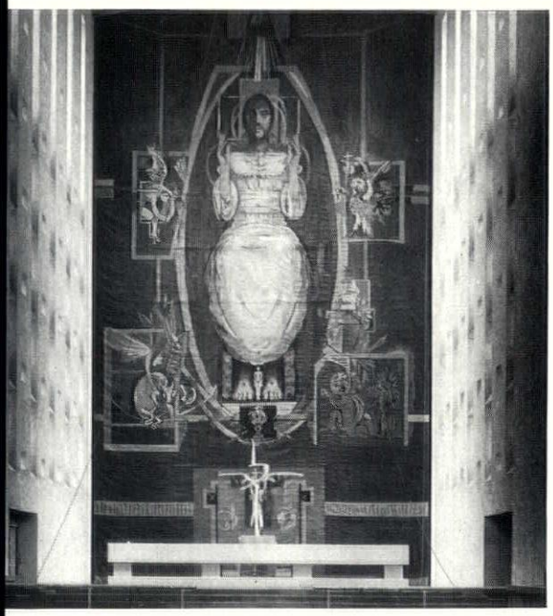
The first Anglican Cathedral to be completed for half a century—indeed, the first to be completed within a decade of ground being broken—St. Michael's, Coventry, also has the most fully integrated interior appointments, both furnishings and works of art having been located and designed either in consultation with the architect, or by the architect himself. The interior pursues—though not with iconographic strictness—the theme of suffering and resurrection, culminating in the Christ in Glory of the tapestry on the altar wall which, because of the orientation of the new cathedral at right angles to the old, is in fact the north wall. However, the following captions refer to locations by their liturgical positions, as if the cathedral were normally orientated east-west.

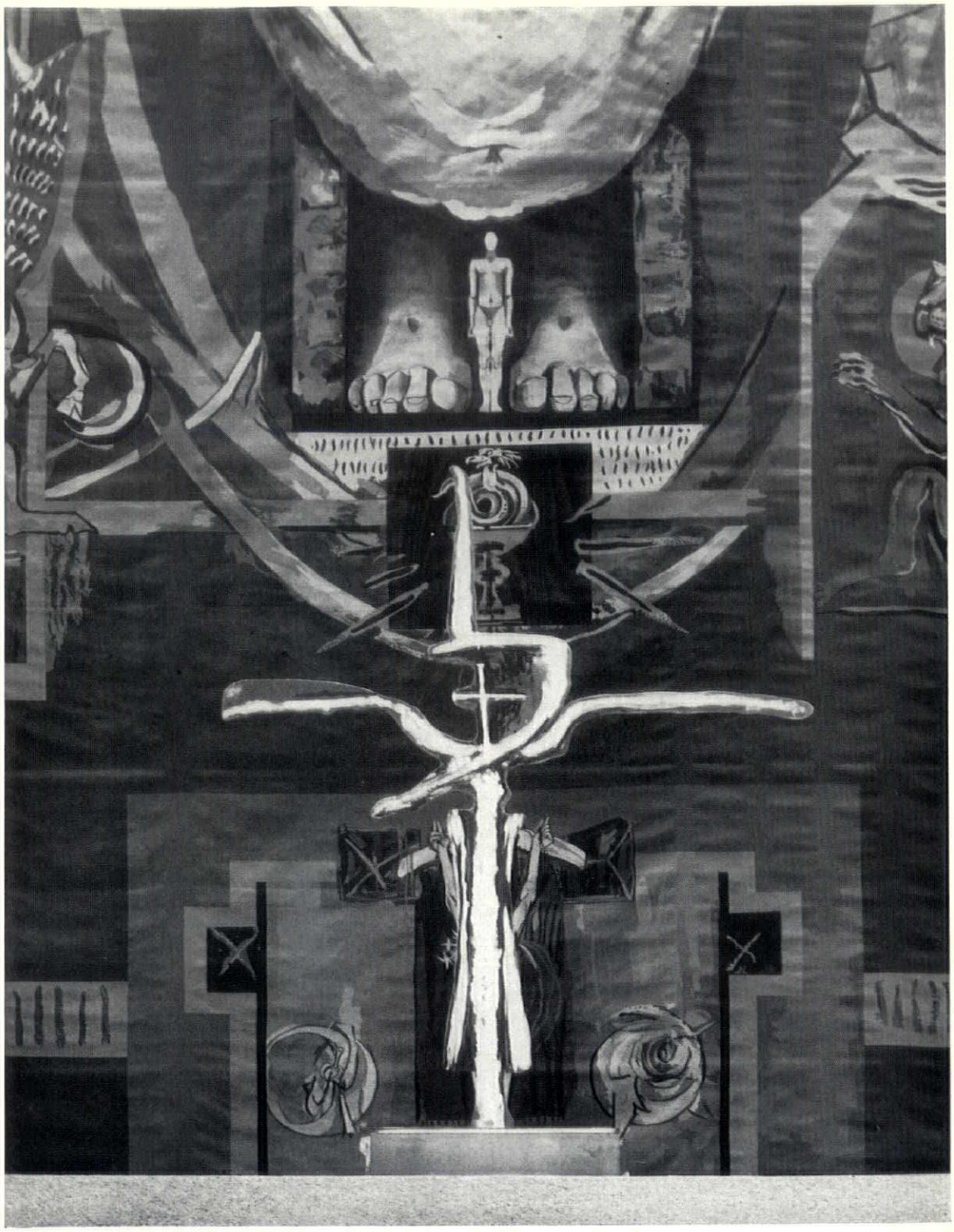
ID



2. the nave, looking toward the tapestry by Graham Sutherland, which is lit by concealed windows on either side of the chancel. In this afternoon photograph, light from the liturgical north streaks the off-white acoustical plaster of the flanking walls.
3, 4, the communicant's approach to the altar-rail, with the tapestry occupying more and more of his field of vision.
5, communicant's view of the tapestry at the communion rail, with Geoffrey Clarke's silver cross superimposed, visually, on the crucifixion at the foot of Sutherland's design.
6, 7, details of two of the apocalyptic beasts from the tapestry; the calf, 6, and the lion, 7.





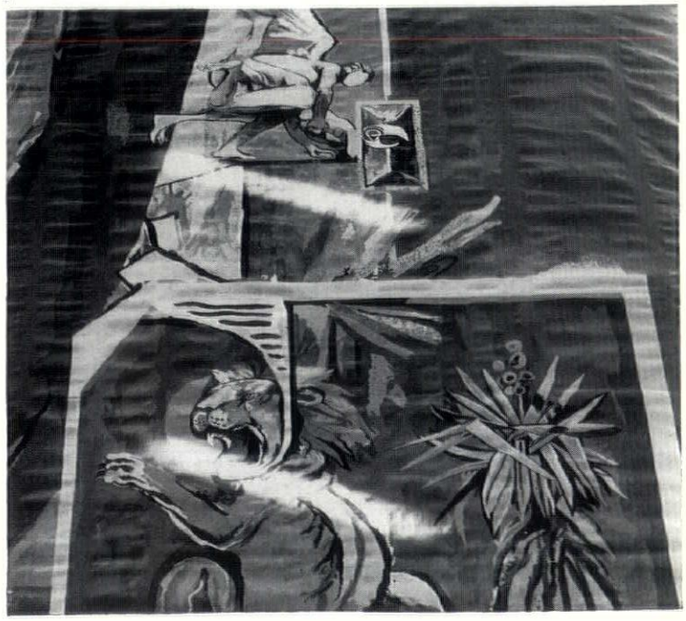


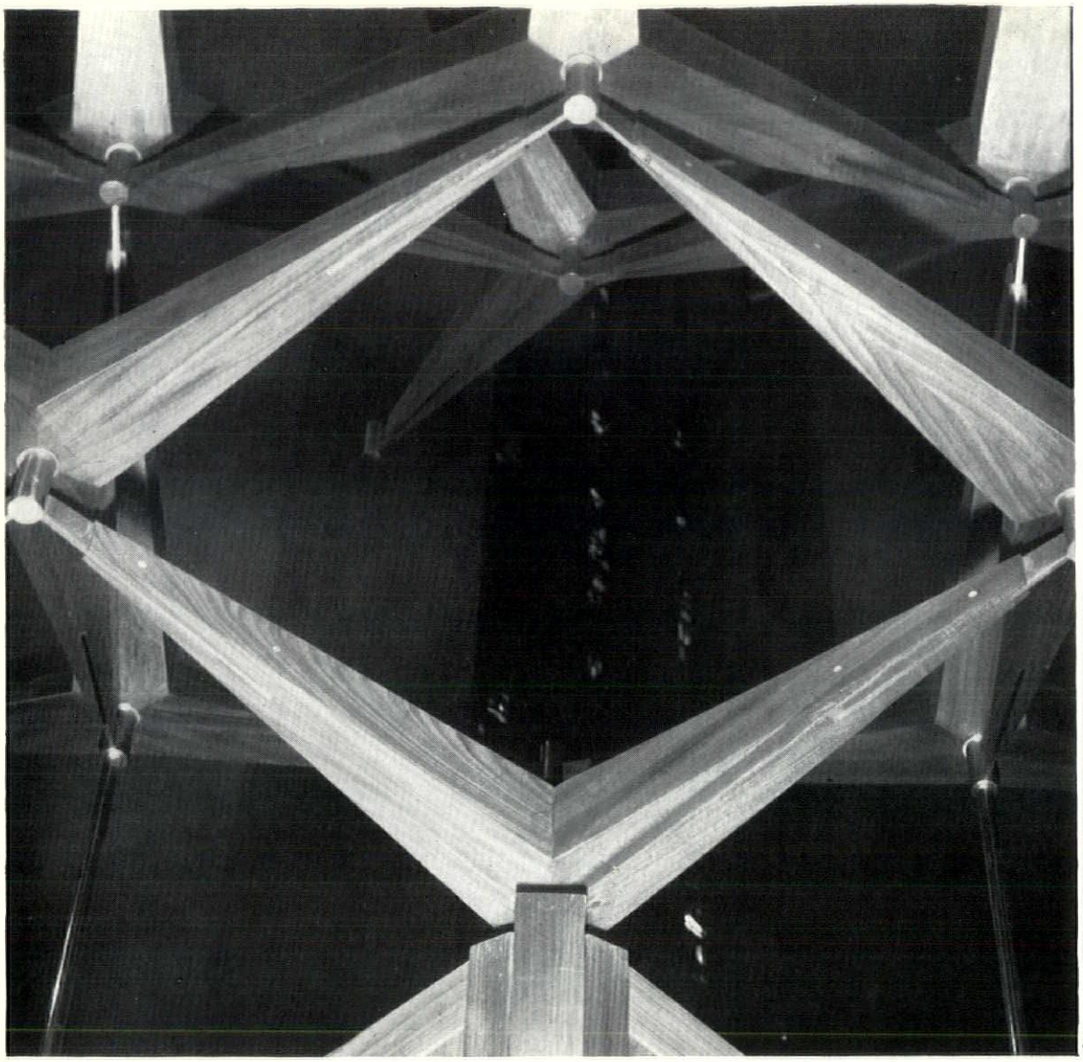
5

6

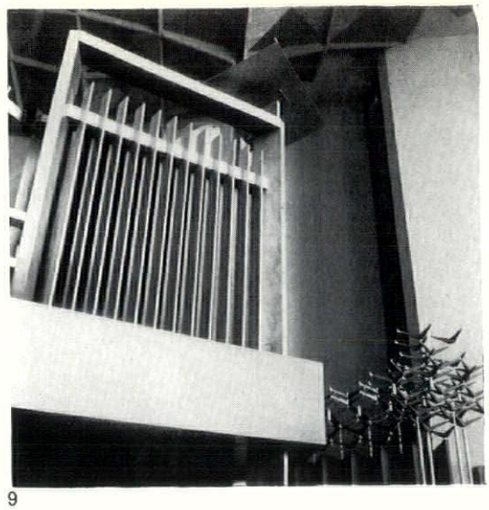


7



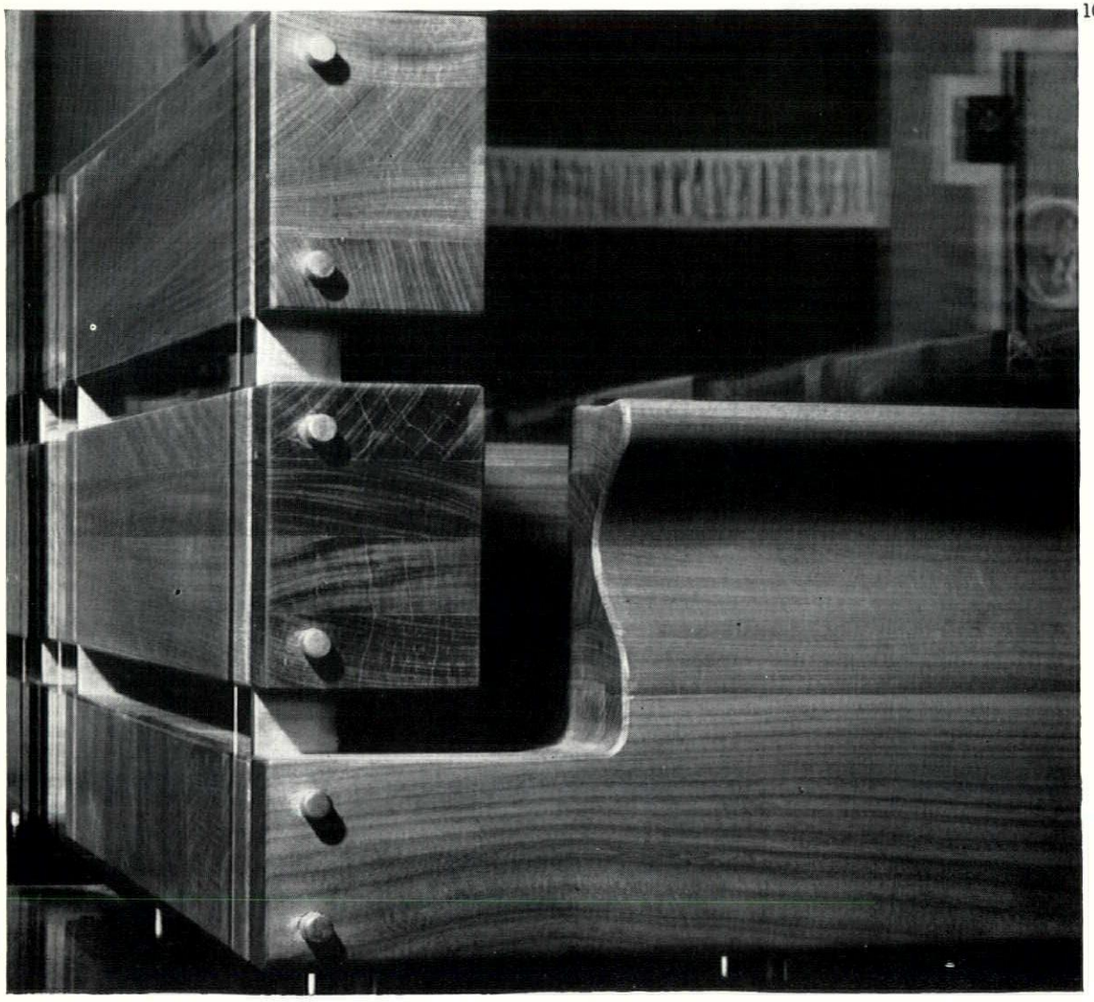


8



9

8, detail of the cresting, symbolizing the Crown of Thorns, above the clergy stalls in the choir—this complex space-structure, carrying lights at its outer extremities, is also seen in 9 (above) and 19 (over page). 9, the pulpit, with the cresting on the south side visible beyond.



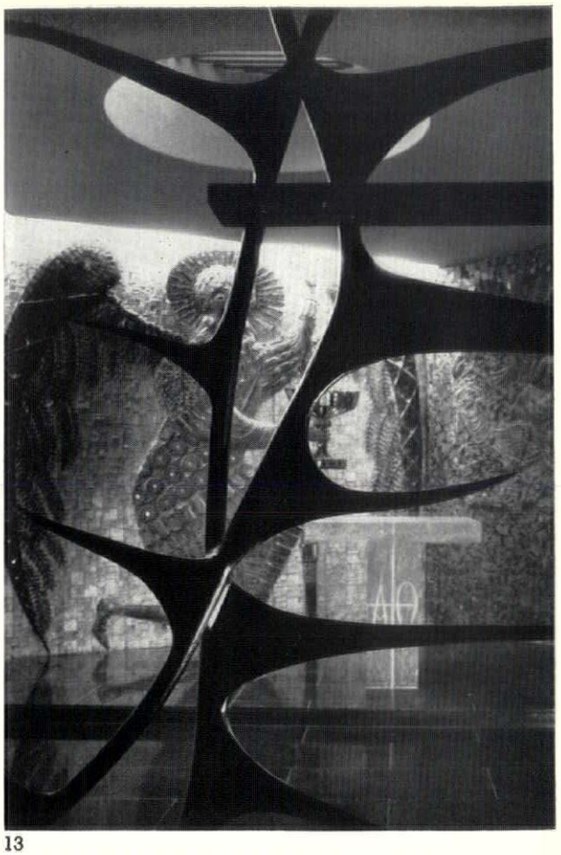
10



11

10, detail of one of the carved, laminated wood clergy seats between the choir and the communion rail. These fixed, generously-scaled, wooden chairs, designed by the architect's office, are also seen in 11, complete with their kneelers and desks.



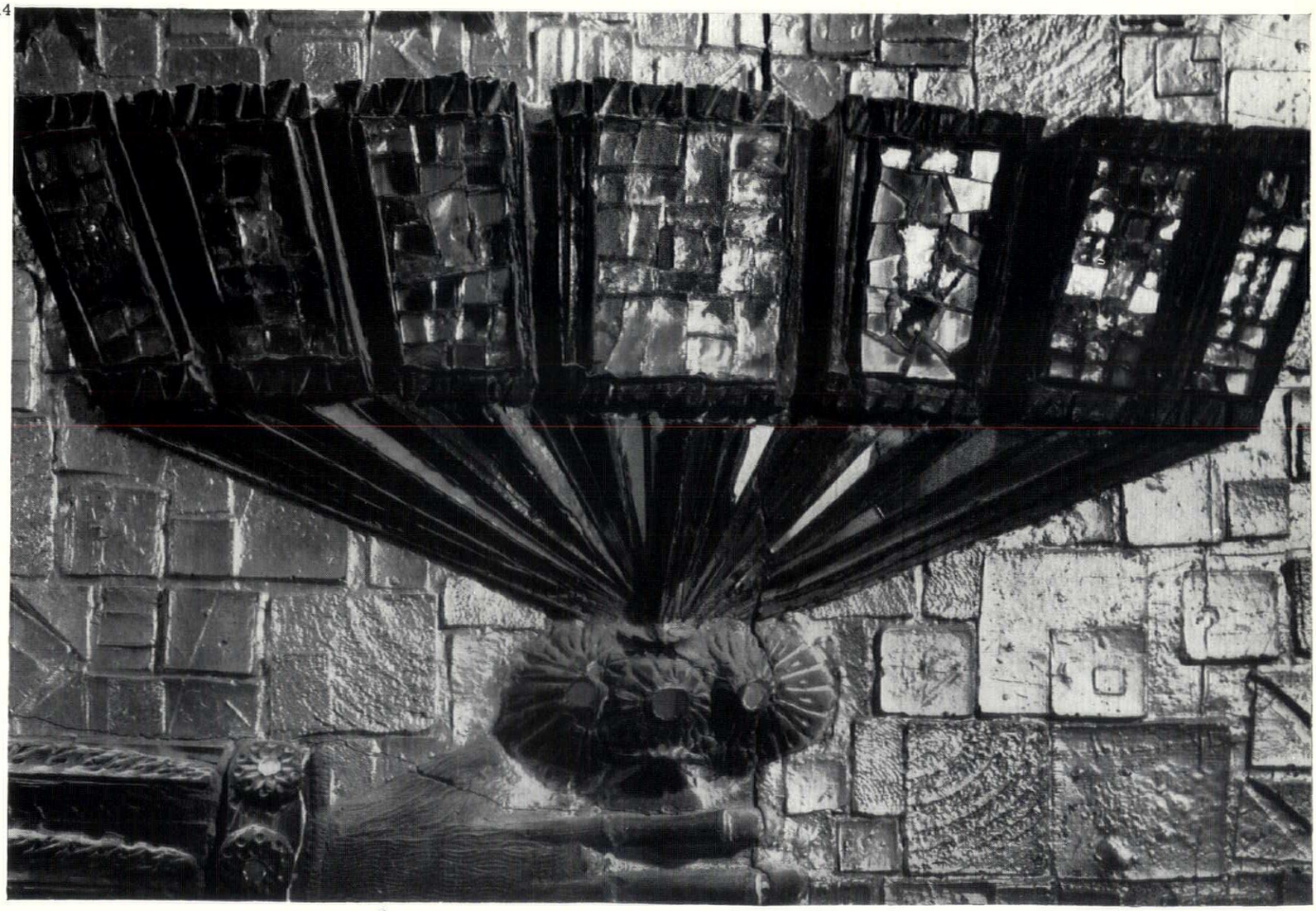


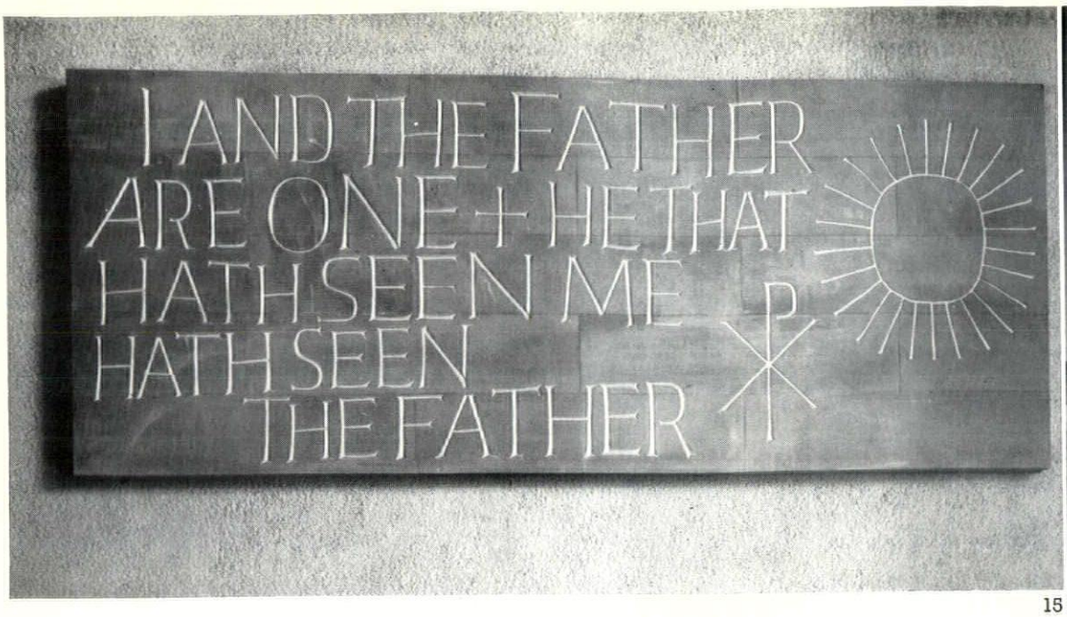
12, the approach to the Gethsemane chapel along the south aisle, at the point where the steps, of black Kellymount marble, rise in a narrow underpass beneath the organ; clergy seats and part of the tapestry can be seen on the left.
13, interlace and fixing of the iron Crown of Thorns, designed by the architect, to form a screen at the entrance to the chapel—see, also, the cover of this issue.
14, close detail of the cup proffered by the angel in the mosaic on the east wall of the Gethsemane chapel. With a controlled light always falling from the right (liturgical south) the glass tesserae of this part of Steven Sykes's design will always pick up a greater glitter than the rest of the mosaic.

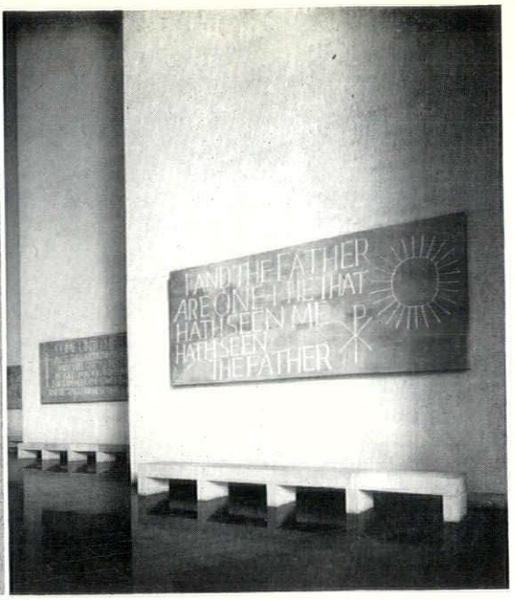
12 13

Coventry Cathedral: Gethsemane Chapel

14



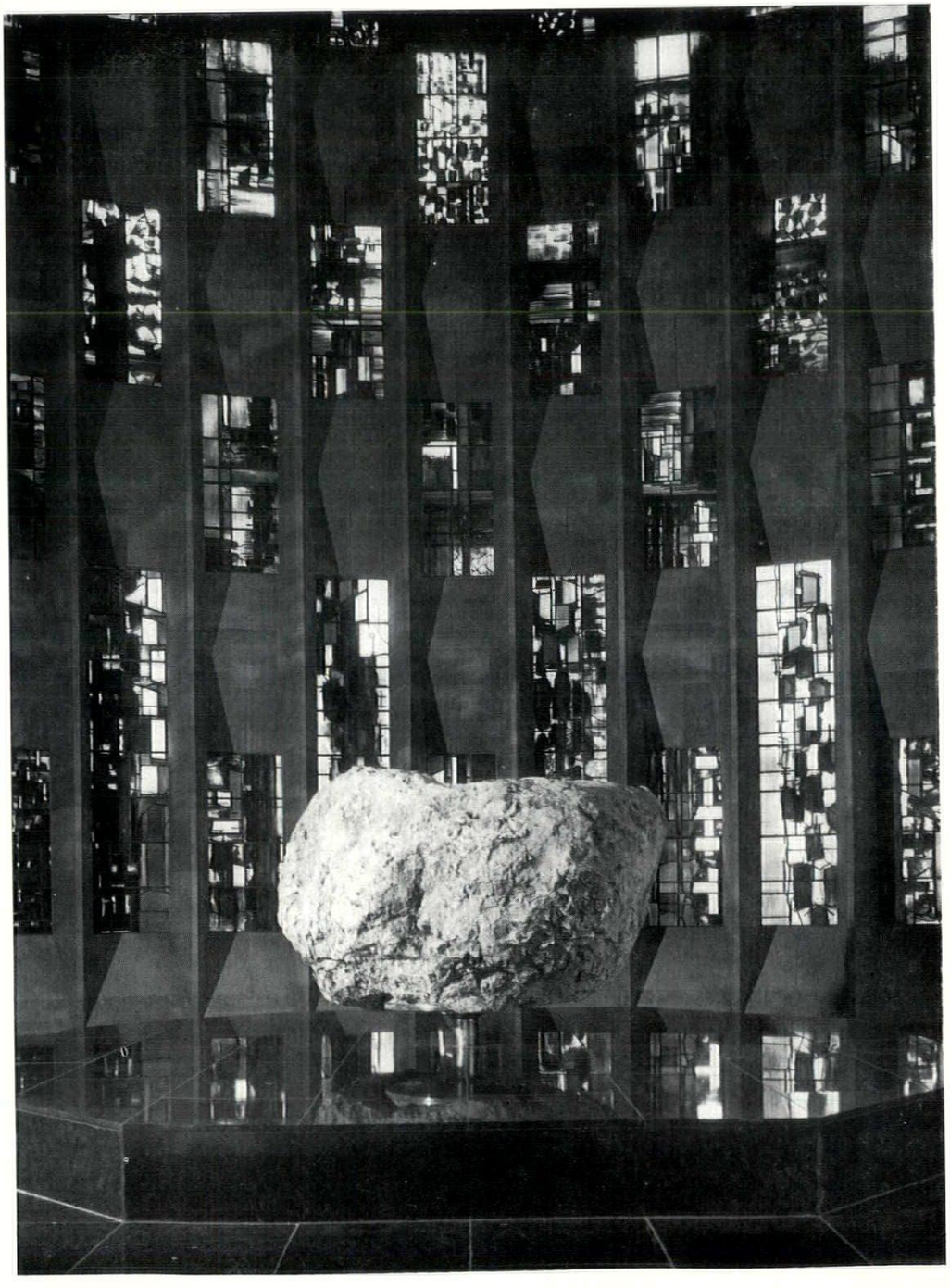




15 16

Coventry Cathedral, nave and baptistery

18

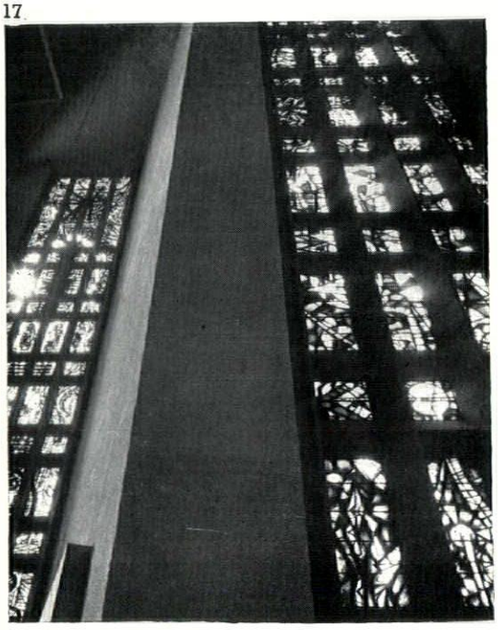


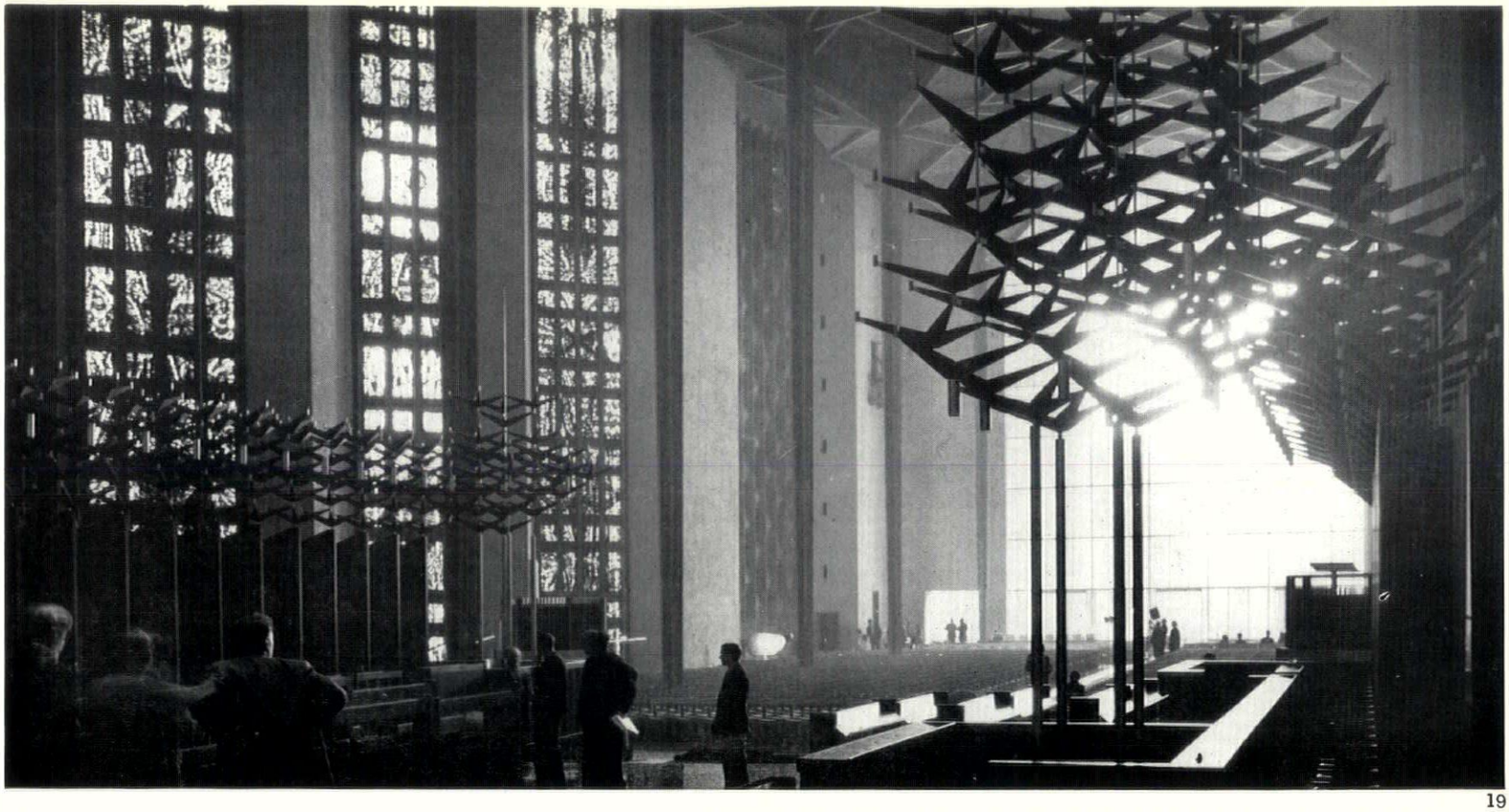
ID

15, lettered tablet by Ralph Beyer at one of the hallowing-places on the south wall of the cathedral.
16, the tablet in its place, with seat below.

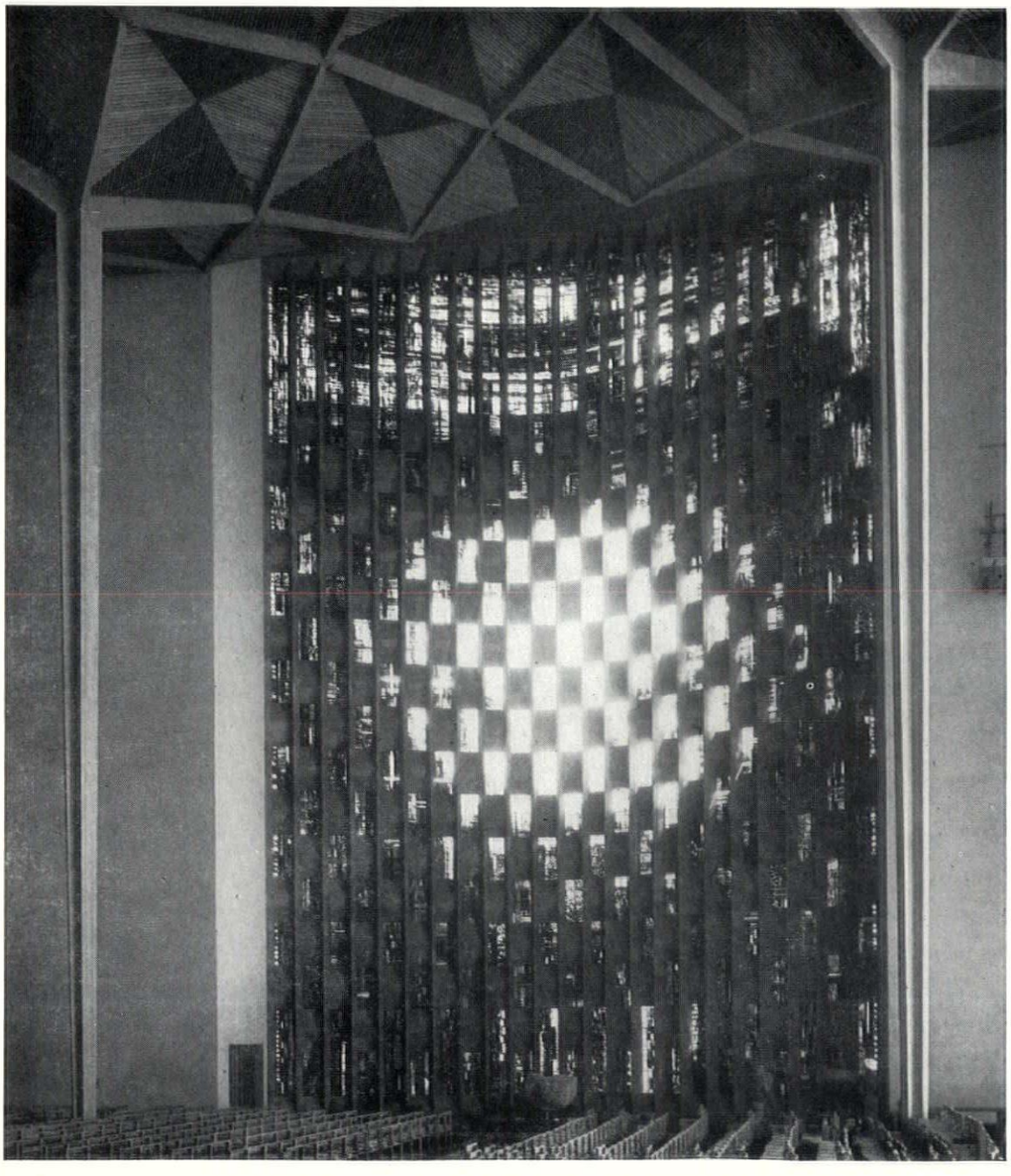
17, two of the sequence of full-height stained glass windows—these are on the north side—made at the Royal College of Art by Lawrence Lee, Geoffrey Clarke and Keith New. The corner of one of Ralph Beyer's tablets, bottom left, gives the relationship of tablet to window at each hallowing-place.
18, the font, a boulder from Bethlehem, lightly hollowed on its upper surface, seen in front of the lower, darker, part of John Piper's baptistery window.

17





19



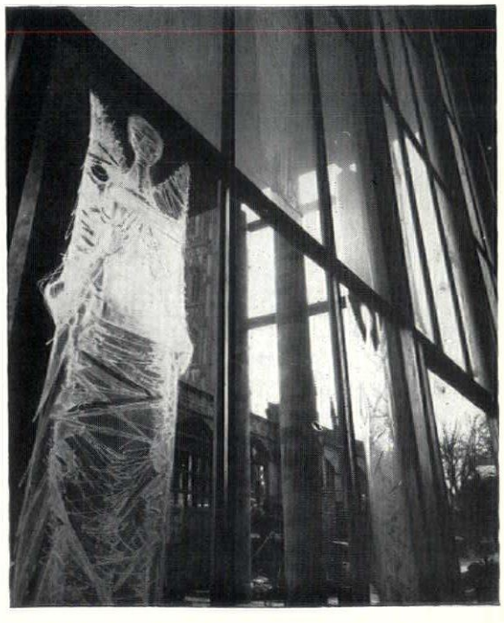
20

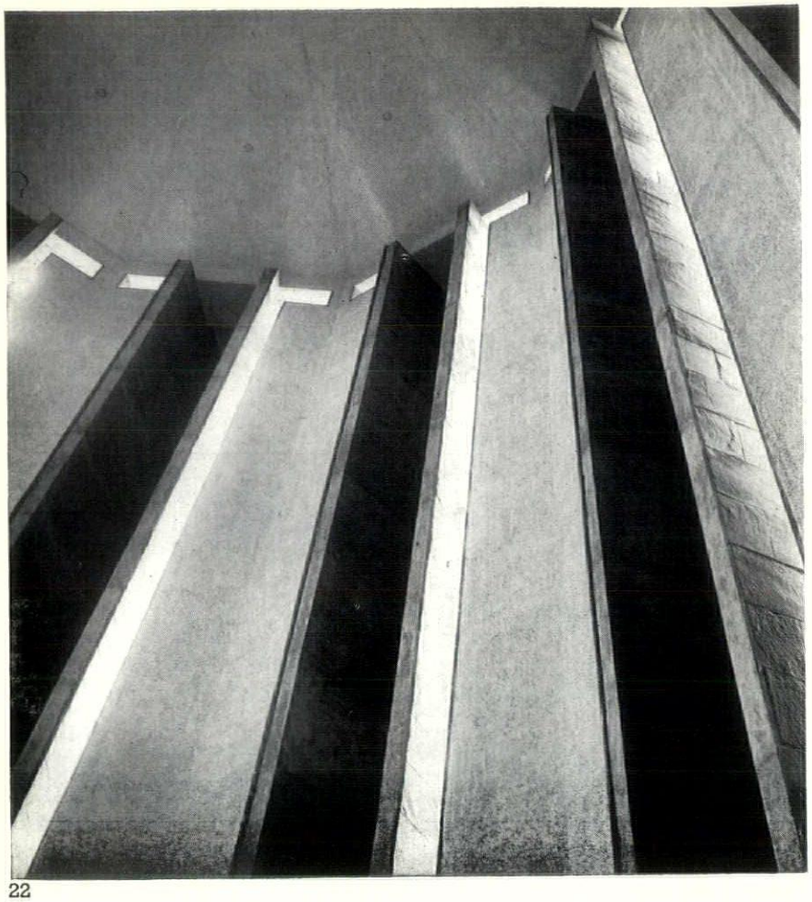
19, general view of the nave, through the choir. At the left are three of the main sequence of windows on the southern side, then the font in the baptistery (though in this view the mullions conceal the glass) and then the light from the great west screen bursting through the cresting of the choir.

20, the baptistery, showing the sun-burst effect of the lighter glass in the central part of John Piper's window.

21, one of the angels, engraved by John Hutton, on the clear glass of the west screen, with the porch and ruins beyond.

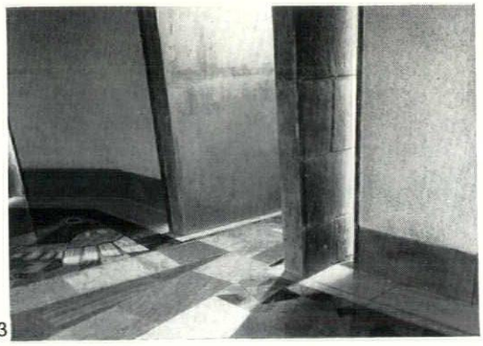
21





22

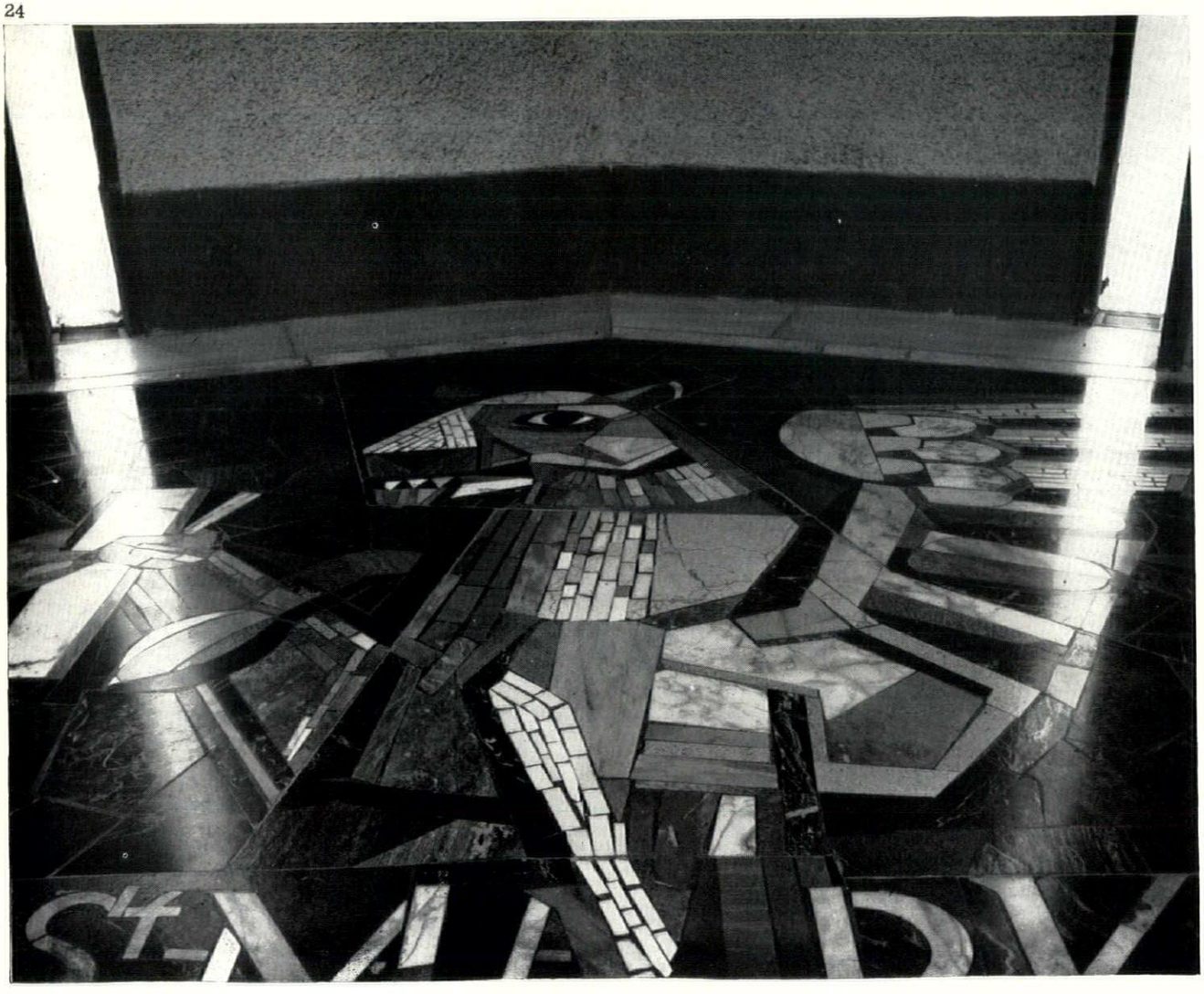
22, looking up into the roof of the Chapel of Unity ; light enters through strips of stained glass by Margaret Traherne on either side of the structural mullions.
23, the base of a mullion.
24, part of the mosaic floor, by Einar Forseth, in the Chapel of Unity.



23

Coventry Cathedral: Chapel of Unity

24





ON TRIAL

5: THE SPEC-BUILDERS

towards a pop architecture

REYNER BANHAM considers the influence of the present state of the housing market

The presence of an article on Pop-Art in a series devoted to architectural realizations of the potentials of technology, may appear to need some justification, but this is not so. Justification is needed only in the eyes of those who have tried to build up technology as a moral discipline, following a mistaken reading of the intentions of Mies van der Rohe, or an accurate reading of the mistaken conclusions of *Vers une Architecture*. Technology is morally, socially and politically neutral, though its exploitation may require adjustments of social and political structures, and its consequences may call moral attitudes in question. And the Pop-Arts, being almost all of them inconceivable without a high level of mechanization and mass-production, are integral with technology, which does not discriminate between recordings of John Glenn heard through the ionosphere, and recordings of Cliff Richard heard through an echo-chamber. Technology is a commonwealth of techniques exploited to serve a disparity of human needs.

technology is amoral

However, if this study needs no justification, the instance at which it has been written needs some explanation, since it depends on two circumstances that have no apparent connection, save a temporal coincidence. One circumstance is the continuing improvement in architectural quality of certain classes of speculative housing, which raises the question of the present state of popular taste. The other circumstance, which gives a precise time-mark for this study, is that certain types of fine art, notably painting, in which elements of Pop-Art are employed, have recently attained a level of official success that marks a breakthrough for a kind of sensibility that takes fine and Pop equally in its stride. Since it is believed in some circles that any revolution or upheaval in the pure arts must, of some historical necessity, be followed by an equivalent upset in architecture, it is anticipated that the *cordon-sanitaire* between Pop-Art and architecture is about to be breached like a metropolitan green belt, and a Pop-architecture emerge about 1966.

the twain have met

This 'necessity' will not stand up to historical examination, however. The supposed causal connection between painting and architecture may have been true of the nineteen-twenties, and it may be possible to reflect it back on the Renaissance, but it is far from a universal pattern. And in any case, it has been rendered vacuous by events of the past thirty years. On the painting side this development occupies only fifteen years at the maximum. Pioneer studies of Borax styling, such as those that appeared in the AR in 1948, were resumed at the Institute of Contemporary Arts in the early

'fifties, but in an altered tone of voice—approval, not deprecation. This set in motion a series of repercussions among the painters under ICA influence (e.g. John McHale's cover for *Machine Made America*, AR, May, 1957), created a school of Pop-Art fanciers in the Royal College of Art, and led to awards and other recognitions for artists like Peter Blake and David Hockney—the latter's style can be seen in the illustrations of the Teenage Bar of the Canberra, AR, October, 1961, and he received a John Moores award in 1962, as did Peter Blake.

That this was an extension, revolutionary and perhaps beneficial, of the iconography of the Fine Arts, is clear—but it is not clear how it might benefit architecture. The fundamental reason why it will have little to say to the arts of building and town-making is that architects and planners have got there already. For instance, the collage-effect of violent juxtaposition of advertising matter with older art forms, which appears in, say, Peter Blake's work as clusters of fan-club badges on realistic paintings of the human form, was being widely discussed in architectural circles around the time of the Festival of Britain and the Hoddesdon meeting of CIAM, or, in THE ARCHITECTURAL REVIEW, as early as December, 1952, when the editors took Professor Guyatt smartly to task for his 'aesthetically purist' views on advertising in the townscape.

The fact is that architecture, in a capitalist society, deals in real property and is therefore a branch of commerce. Furthermore, since it creates visible forms, it is apt to become a branch of advertising as well, and in this latter sense there has been a Pop architecture for some time now—Albert Kahn's Ford Pavilion at the New York World's Fair of 1939 is probably the true ancestor of the genre, and its progeny are in various ways widely diffused throughout the US in the form of exclamatory hamburger bars, and other roadside retail outlets.

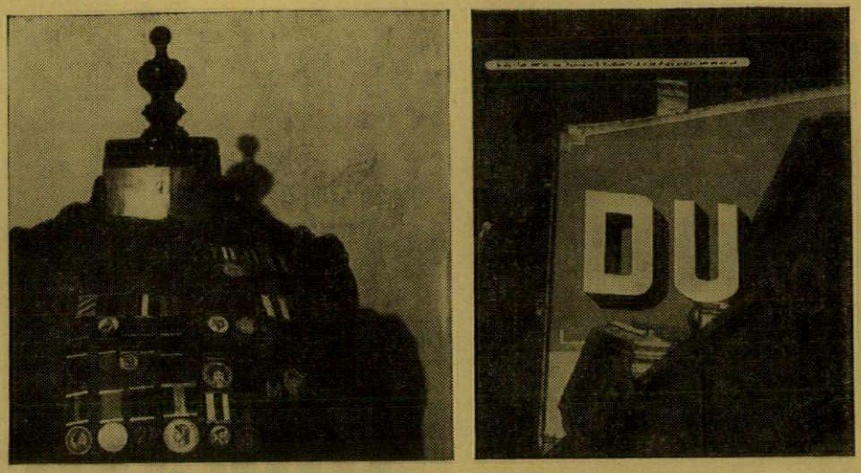
At this point some discriminations of style, method, intention and content are necessary, because it is still—alas—necessary to explain the difference between Pop-Art and Folk Art. Many critics would clearly like to believe that a Pop architecture would turn out something like the towers of Simon Rodilla or the fantasy palace of *Facteur* Cheval at Hauterive. But in spite of the good *facteur's* mastery of Beaux-Arts facade composition, or Rodilla's intuitive genius in engineering, these are Folk Art. They lack the imagery of dreams that money can buy that characterizes Pop-Art; desirable possessions and accessible gratifications, handily packaged, seductively displayed, mass-produced and ubiquitously available. Neither the palace at Hauterive nor the towers at Watts are marketable goods.

Clearly, the Royal College painters are handling Pop-Art in their pictures much as if it were a particularly noisy form of Folk Art, and there is about them, quite frequently, a Marie-Antoinette air of Fine-Art people dressed up hoi-polloi (even though some of them privately *consume* Pop-Art in the ordinary teen-age way). But architecture can become involved in Pop-Art at its own level and according to the same set of Madison Avenue rules. One way has already been discussed: it can serve as a selling point for some desirable standardized product that is too complex or too expensive to be dispensed from slot machines, and in this sense we have had a sort of Pop architecture in Britain since the beginnings of the Granada and Odeon chains of cinemas. Or, the other way in which architecture can be a part of the Pop world is in becoming, in itself, a desirable standardized product, and in this sense we have had a Pop architecture in Britain ever since the more progressive and aggressive speculative builders decided that it was time for housing to quit the eotechnic phase and to take over current advertising and marketing techniques, instead of methods that still smacked of the transfer of fiefs from one vassal to another. Since buildings, despite Buckminster Fuller, are still too heavy to be sent to supermarkets, the consumers instead must be mobile and locally numerous, and these more modern merchandising techniques can only be employed in heavily motorized conurbations. We have had a Pop architecture in Britain, to be precise, ever since SPAN set up shop at Ham Common.

architecture as package and commodity

It will certainly be objected that buildings of the sort that have been discussed above are not architecture. The *cordon sanitaire* between architecture and Pop-Art, to which reference was made earlier, represents a very deep-seated desire, as old as the reformist sentiments of the pioneers of modern architecture, that the profession should not be contaminated by commercialism, that architecture should remain a humane 'consultant' service to humanity, not styling in the interest of sales promotion. Yet SPAN housing is unquestionably accepted as architecture, for all that it is a nearly-standardized, almost mass-produced, accessible and attractively packaged product. The question of where to draw a line between architecture and commerce becomes al-

Architecture and the Aesthetics of Pop-Art



The confrontations of traditional forms and publicity that add spice to Pop-Art painting such as Peter Blake's (left—medals on a human torso) were observed in architecture (right) in the early 'fifties.



most unanswerable as soon as one tries to draw it, and even if it were to be drawn so far towards one extreme as to only *just* exclude, say, hamburger bars, it would still need an architect with a large capacity for self deception, or a very small practice, before he could say that, professionally, he had never stepped over that line. The preparation of rendered perspectives to present a scheme to clients is only one case in point.

In a capitalist society, every architect whose living depends on his work—even in public service—must operate at times within the terms, if not the financial structure, of commercial enterprise. Honesty should require the profession to admit that many of its virtues are commercial ones—such as CLASP's value-for-money operations in the component market—and that some of its most productive motivations are commercial too. But in some conspicuous examples of such motivations we appear to be drawing within the sphere of influence of the ICA's investigations of the Pop-Arts. James Stirling, at a public meeting at the ICA, justified both the style and the constructional methods of his Langham House Close housing (AR, October, 1958) in terms of 'the market.' The importance of this statement lies less in its truth as applied to this particular design by Stirling and Gowan (which may be arguable) than in another truth that was not to be known in 1958—that elements of the Langham House Close type of architecture have become a viable spec-building style for which there is a real market among the sophisticated and mobile consumers of the London conurbation.

commerce is normal

The question then arises, were Stirling and Gowan consciously influenced by these ICA discussions? Is this an early manifestation of a consequential connection between early Pop-Art-influenced painting, such as Richard Hamilton's, and early Pop-Art-influenced architecture. Not only does the style of Langham House Close make this unlikely—Stirling and Gowan could have produced this particular and personal blend of the Maison Jaoul and de Stijl without Stirling ever visiting the ICA or seeing a Hamilton painting—but the dates make it pretty well impossible. 1958 as a completion date implies 1956 as a design date and throws the whole conception too far back in time. In the case of SPAN's pioneer development at Ham Common, which launched an even more viable and marketable housing style, the design dates go back to 1953–4, which would make any talk of ICA influence nonsensical, even if what one knows of the character of Eric Lyons, the architect, did not make it ridiculous.

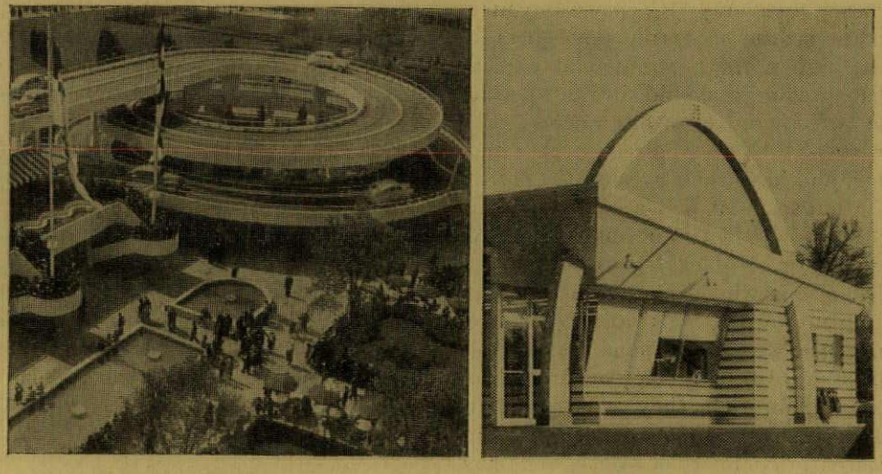
The importance of SPAN as a landmark in British Housing needs no underlining here—it marks the point where the commercial operators at last began to dispute the leadership in housing design with architects in public authorities. But the dates given above have an added significance if one relates these pioneer schemes to their acceptance as stylistic exemplars by other speculative developers. Reference to the illustrations following Ian Nairn's article *Spec Built* (AR, March, 1961) will show that by the end of 1960 both the SPAN style and the Stirling-and-Gowan style had achieved a photographable degree of penetration into the market, and a number of different developers were involved. Both styles had, in fact, only become public property in 1960—but the point is that one (Stirling's) is much tougher than the other, and had achieved its penetration in half the time. In other words, public taste was becoming sharper, quicker as the 'fifties ended—something that is all the more remarkable in view of the fact that public taste was not noticeably sharp at all when the 'fifties began.

style is negative

A word of caution is necessary at this point. It is clearly true that where a moderately sophisticated and mobile market for housing exists, as in the London or Lancashire/Cheshire conurbations, public taste has become much keener, but stylistic taste is apt to operate in a negative sense. The *positive* selling point of a house at present is equipment and gadgetry (if we may leave location and price on one side for the moment), followed by space-standards and obvious factors of convenience. The aesthetics of the interior space appear to be of no consequence as a selling point, except where size and location of windows are concerned—a prospective buyer will often find himself pulled both ways by the contrary attractions of a fashionable picture window and a traditional British regard for privacy. But the style of the exterior seems more likely, at present, to discourage rather than promote sales. Buyers are more likely to be positively put off by a style that is too advanced than positively attracted to one that is familiar.

The fact that some developers in selected markets can use such styles indicates two things: one, already noted, that public

Twenty years of Pop architecture in the USA



Modern architectural forms as sales-promotion have a history in the USA that extends back to Albert Kahn's Ford pavilion of 1939 (left) and forward through generations of hot-dog stands (right).

taste in those areas is sufficiently advanced for the style to be no bar to sales; the other, that these developers are operating right at the limits of public acceptance. Though this New Frontier attitude to the market is more common in Pop-Art than social jeremiahs would have us believe (Braun radios and appliances are advertised in German teen-age mass-media like the magazine *Twen*) this is a fairly sensational situation in housing, and should prepare us for some unusual features in the firms behind it.

Frontiersmen of taste

A degree of conscious, or—at any rate—*expressed*, pioneer-spirit is present. Even those who follow, rather than create the styles, are aware that they are still forcing the market, albeit the market is catching up fast. Consonant with this is the fact that most, probably all, are playing the market off the tops of their heads (in old-fashioned Madison Avenue cant) rather than on the basis of the considered examination of market research. The approach remains amateur—a developer works in an area that he knows, such as the southern suburbia of London, and works within margins of siting and cost that leave him little room for error. The accuracy with which the market has been assessed appears to depend on one simple factor—in the spear-head developments (mixed high rise and two-storey estates, now becoming comparable with the LCC's Roehampton) the managing director, or partner in charge, is setting out to sell houses to the Zodiac-to-Jaguar income-groups—his own social class, who probably share his own *Observer*-reading sentiments about improving public taste and the need for better housing design.

off the top of the head

This is a unique and probably transient situation. It implies that the developer is a big enough firm to attract, or produce, executive talent of quality—but not so big that the executive talent cannot keep close personal control over a sizable segment of the enterprise. When the firms get bigger, this situation is pretty sure to change. When it changes, it may well prove to be the end of a honeymoon period in architect/developer relations. At present, the few significantly progressive developers do not ride their architects hard. In some cases, the architects make all the action, often locating and, in some cases, negotiating the purchase of the sites, and generally working very close to the limits of the code of professional conduct. In other cases, operators with their own architect's offices allow startling lee-way to their designers in all matters except costs, and, significantly, one of the biggest and most progressive developers, Wates, is proposing to establish a development section, comparable to the Development Groups in public offices.

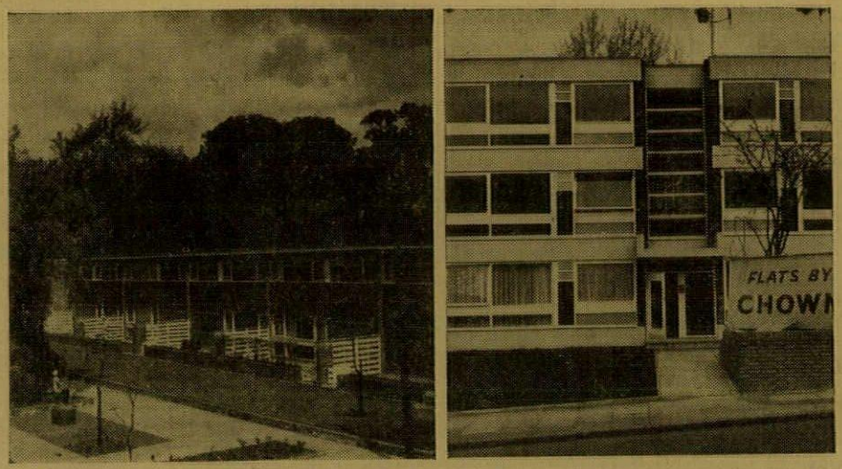
the end of the honeymoon

But a big house-building company is not a big company compared even to, say, EMI, let alone BMC. Geography may keep the size of successful developers in check, but normal commercial expansionist pressures should begin to send some of them sprawling across the country—SPAN are already in Cambridge, and have their eyes on the profitable atom-scientist belt around Harwell. If they grow, then it seems likely that they may quite quickly pass beyond the critical size in which the present amateur and intuitive methods are considered safe. Since their expansion depends on their ability to play on forward taste, it is unlikely that they will revert to Tudorbethan and spray-on half-timbering in search of commercial safety, and they may then have to go out and get expert market advice.

At present, the service of keen Pop taste does not appear to interfere with accepted architectural practice at all—it is very nice work indeed for an architect with an eye for cost-control and residential densities. But once the market researchers come in, this situation will change. It has already become apparent that detailed user-research (purely functional) may play havoc with architects' preferences in planning and space-manipulation; market research is bound to bear largely on matters of style as well, and this will, inevitably, be even more painful. But that critical size has not yet been reached, and the situation remains, as they say, manipulative. It is up to architects to make what they can of conditions in which it is temporarily possible for them to mould the creation of a keen Pop taste in architecture without coming under the discipline of those commercial rituals that normally operate in the field of Pop merchandising, and to operate the amoral techniques of technology according to the morality of architecture. Of course, the alternative, to miss the opportunity, is always open to them.

sentence deferred

The penetration of architectural style in commercial building



Wates admittedly following the lead of SPAN (left), a stylistic penetration of the market in six years (1954-60), and Chown employing elements of Stirling and Gowan after four (1956-60).



LANCASHIRE MILL TOWNS

TOWNSCAPE

Ian Nairn

The recipe: a valley-full of chimneys, a town hall as black as your hat, bare hills always at the back of the view. The Lancashire mill towns, more likely now to produce engineering parts than cotton dresses in their mills. They are still the victims of every kind of misunderstanding from the lowbrow 'oh, what a dirty place' to the highbrow 'hm, yes, interesting specimens of nineteenth-century architecture.' Yet, if we were not anchored to preconceptions, they would be one of the sights of Britain—not as interesting specimens of anything, but in themselves, places and people together, in an amalgam which is unique. Proud but self-mocking, friendly but mordant, fond of a blow-out but wise about its consequences. And, always, a sharp sense of place, something which the topography has assisted splendidly, for the six (Blackburn, Bury, Burnley, Bolton, Preston, Rochdale) are far enough apart to be separate, near enough to be aware of each other.

The nineteenth century matched this spirit perfectly, which is the primary point of this article. The impetus lasted right up to the second World War, with the Bolton City Hall extension—and pilasters and porticoes here are very different from those put up in the City of London by the servile for the blind.

And now, after a break of twenty years, the mill towns are starting to build again. All of them have big renewal schemes at varying stages of negotiation, mostly done with London money by London architects. They are modern, now, of course, but that is the least of it. The point is, what sort of modern? Put at its frankest, what you can get away with in the home counties with the aid of some trees and bright colours is going to look pathetically mean up here. It has been tried, at Bolton, and the people are fed up with it at the simplest level of all, i.e. that it looks cheap and nasty, that it has got no guts.

This is a bigger challenge than it may seem. It is modern architecture forced to put its cards on the table at a level where high-sounding catch-phrases will not help it. Perhaps half of all the buildings illustrated in the REVIEW, from the Festival Hall onwards, have had all their good qualities betrayed by the simple fact that they look shoddy after a couple of years. The reasons range from honest error to callous indifference. In Lancashire, the towns themselves can eliminate the indifference, if they use their bargaining power, because they are on a seller's market. The mill town centres are gold mines, and the developers know it. And, one hopes, the mountain of statistical research that has gone on since the war should have eliminated most of the errors. But why is there still streaked concrete, peeling cedar boarding, and brickwork with so much efflorescence that it sometimes looks more white than red? This, rather than the abstruseness of the design philosophy, is what the man in the street looks at first, and quite right too.

That is the simplest sense in which the architects of Britain may fail these noble, genuine places. The other way is if they misunderstand the very special character of Lancashire and the way in which Blackburn and Bolton, Rochdale and Burnley are all quite different—not only in site but in temperament. One of the things that they all have in common is a vivid market life. Where precincts may stay glum, the market hall and the stalls around it sell everything and are full of life. They work best of all when they are bang in the centre. The Town Hall still means something here, in a personal way, and sometimes market hall and town hall have remained close together and react on each other as vividly as at Ypres or Arras. The best example in the six towns is at Blackburn; yet the very first stage in the redevelopment of Blackburn's centre is to demolish the market and put it two hundred yards away.

And, naturally enough, the progressive supporters of such a scheme are led by its undoubted virtues into a kind of brave new world hubris: 'In this space age, with its glamorous departmental stores and supermarkets, people will no longer be content to shop in shabby, inadequate buildings, or stand in an uncomfortable, cobbled market square buying goods from a rickety wooden stall with the rain dripping down the back of their necks from a canvas cover. There is no glamour or comfort in shopping under such conditions. Our critics must face the facts and realities.' It is much more likely that people will always want a choice, and that the balance between market hall and market stalls, selling different things at different prices and paying different rents, is something that will always be valid.

The market stalls at Blackburn may seem to be a small point, but they crystallize the whole problem. All of the mill towns have parts of their centres which really are outworn. Rebuilding in some kind of partnership between town and developer is a good way of doing it. But, in the process, the towns must not be served up with a hack assembly of slabs and curtain walling plus a piazza put in for amenity's sake. There is a marvellous chance to match the nineteenth century's achievement in buildings which the town will be proud of in fifty years, instead of being fed up with in five. But to do so, the far-from-poor property companies and their architects will have to get their finger osut.

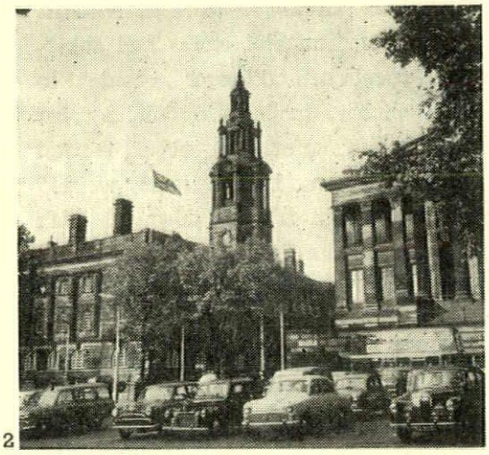
PRESTON

There are some villages with the feel of towns; Preston is a town with the feel of a city. The nineteenth century gave it a set of public buildings which are like all the separately excellent parts of Liverpool brought together and related. The best way to come is up the busy, curving Friargate, when a black shape above trees, 1, tells you that this is it.



1

Here is the true Civic Centre, of the right size and in the right place: formal, compact, and exactly at the hub of the town, not a set of windy mausolea a bus-ride away from the shops. The focus is a small square, with a lot of trees, used as open market or car park in the free-and-easy way of Continental squares, 2. Behind is the great classical pile of the



2

Harris Museum, designed by the local man Hibbert, begun in 1882, and a worthy descendant of St. George's Hall (created in an atmosphere of terrifying optimism. One of the mottoes on it reads 'In nature there is nothing great but man. In man there is nothing great but mind'). Behind on the left is the Edwardian Sessions House, and the steeple, off-centre, enhances the gravity of the rest by contrast. On the right was Gilbert Scott's Town Hall, burnt a few years ago and now being demolished. The quality of what goes up here is very important—nothing slick and nothing shoddy; good solid stuff, with plenty of modelling. Behind the Sessions House are the main markets, 3 and 4, majestic iron roofs covering the stalls, a marvellous combination of open and closed



3

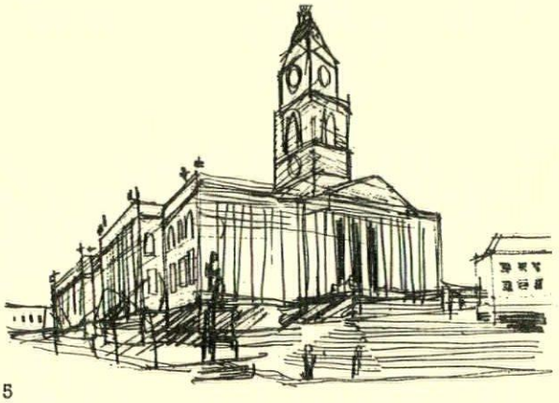
at the same time. Physically you are inside, and out of the weather; yet spatially you are outside, linked to the facades in the square around. The idea is fairly common in France, though rarely done with such elegance, but these must be almost unique in England. There is a long term risk that these may be replaced in rearrangements and town hall extensions. This would be disastrous.



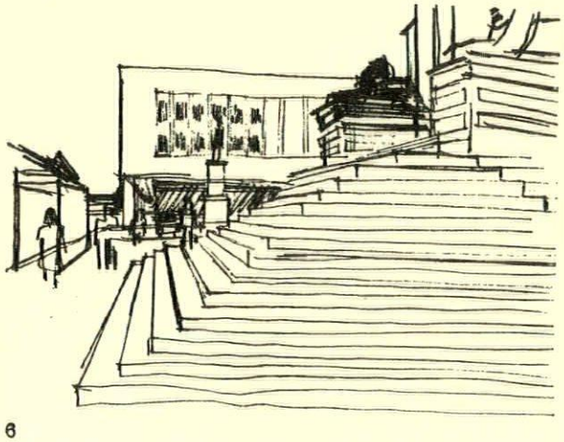
4

BOLTON

Another hub, and another set of fine classical buildings to express it. The town hall itself, 5, is by William Hill, 1873, more or less copied from Leeds town hall. Hill used more or less the same design for the Portsmouth Guildhall, also; a good thing will stand repetition. The main building, proud and black and square, with a huge set of steps up the main entrance, 6, is given a mighty bit of counterpoint in the crescent-shaped extension at the back, 7, completed in 1939. This is probably the very end of a virile, viable classical style. In this case it must have been the Lancashire spirit which brought out the quality, because the firm (Bradshaw Gass and Hope) did very depressing things in less downright parts of the country. These are not just stage-sets, and modern architecture could learn a lot from them, both in the general way of how a style can honourably and richly express civic aspirations, and in the particular sense of the sharp bite of cube against curve. There is certainly plenty to learn, if the recently completed piece of urban deflation to the south

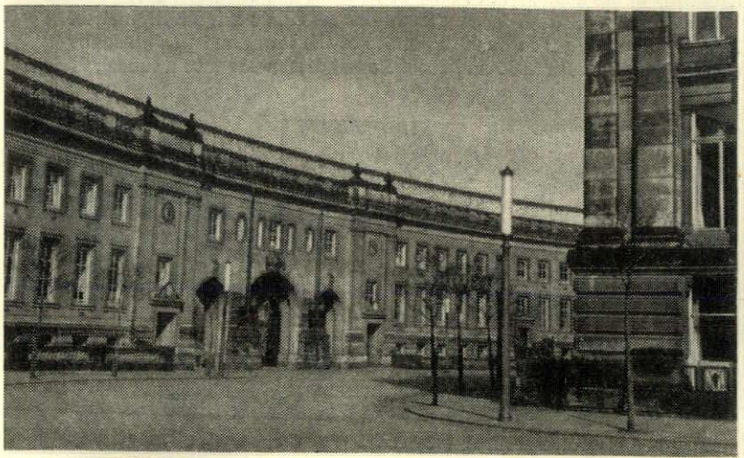


5



6

(page 51) is any indication. There is now a gap between this and the crescent; how will it be filled? The corporation have had enough of cut-rate modern, but where are they to find anything better? This, so far, is where modern architecture in Britain has failed completely.



7

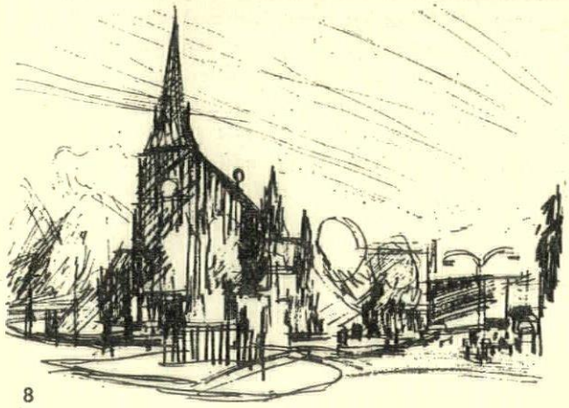
BLACKBURN

Here, things are virtually decided (see page 51). The market hall with its tough, elegant tower is doomed, the markets themselves will be moved to a site two hundred yards away. Shops will still come right up to the Town Hall, but they are less likely to be the same individualistic free and easy sort—at Bolton, only one of the new shops is local, all the rest are multiples. In towns like these where local feeling is still so strong this is an important thing. And a close look at the model raises big doubts about the townscape and the details. The town hall will have an indeterminate space in front, not quite formal, not quite informal. The roofscape will be a sea of parked cars or asphalt. The pedestrian spaces seem to be simply what was left over after the accommodation was fixed, not an organic sequence which should have been the starting point for the whole design. The elevations look as though they may be a cut-rate Notting Hill.

None of this need happen; Blackburn's centre certainly needs a thorough overhaul, the spaces and details could yet work out well. But if they are to do so, the developers and architects will have to do much more hard thinking than is evident here.

BURY

No hope, here, of integrating town and town hall. It faces outwards on the edge of the centre. The markets, also, tie in with neither. They are to be rebuilt in a scheme which has a good deal more organic logic than Blackburn's, to give a long thin pedestrian way between the centre and the ring road. But meanwhile, the real heart of Bury is in what was in fact the old market place. Triangular, friendly, 8, dominated by the spire of the splendid parish church by J. S. Crowther, 1872. The inside, stone and brick, is a real nineteenth-century cathedral. Beyond, in a few yards, is a belvedere looking on to mill chimneys and moorland. Also in the market place: lavatories, Peel on plinth, and far too much through traffic. Yet most of the traffic could be taken out to the north along a road which dips out of sight under the belvedere, and Peel on his plinth could be surrounded by market stalls instead of cars. This is and looks to be the absolute centre of gravity of the town. It needs to be busy, not secluded. In townscape terms, it needs to be cluttered—but the clutter must be human, not municipal. The motor traffic at the moment produces the right amount of charge or energy, but destroys the space in doing so.

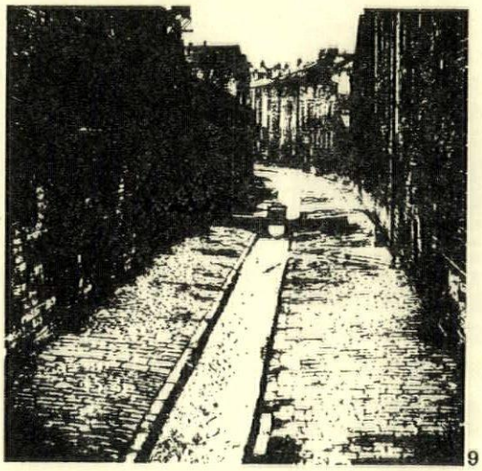


8

BURNLEY

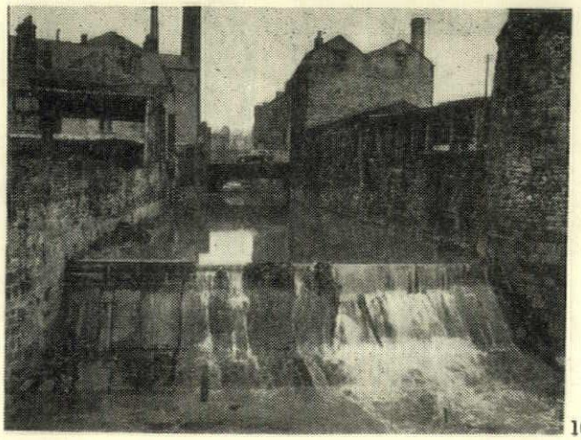
Burnley is completely different from all the other mill towns; closer and gloomier, and much more withdrawn. And the genius loci is withdrawn too, a pair of secret rivers twenty feet below street level, 9, rushing along between crumbling stone buildings in massive stone culverts. The normal town attributes are dispersed without relationship in four or five places—Town Hall here, Magistrates Court there, Market Hall half a mile away. This seems inexplicable until you look at the plan and realize that most of Burnley is a gridiron town. Even after two centuries it is a crippling disadvantage.

However, the rivers are not controlled by a gridiron pattern. Hence a cleft with water in it always turns up when it is least expected, and as there are two rivers, sometimes open and sometimes covered, subterranean



9

Burnley has a mysterious wayward life of its own, by contrast with the staid predictable streets above. Often squalid, but always magnificent; nowhere more than in the meeting point of the two rivers, 10, that has to be tracked down step by step from a map—forgotten, desolate and splendid. From here the Calder wanders through shoppers' Burnley; the Brun goes from desolation to desolation and then suddenly bursts out into a completely wild gorge, filled with huge trees, far below the old parish church, now squatting on the edge of town like a tired black animal. Here the river is completely inaccessible, and that is certainly



10

much better than being made into a pretty glade with flower beds and polite notices. But how much better again to recognize the value of this barbaric undercurrent and make a wild and difficult walk out of it.

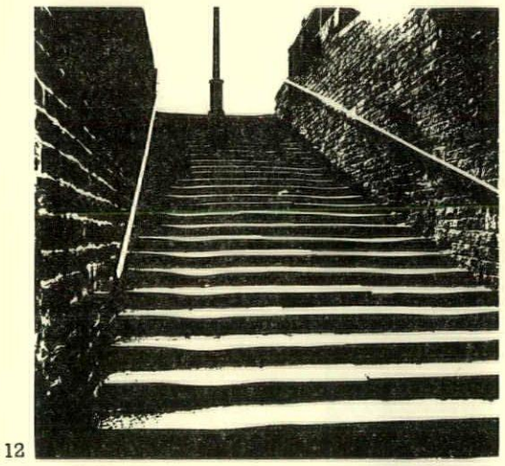
ROCHDALE



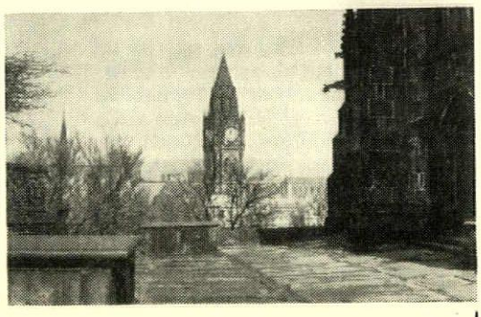
11

The wettest and the friendliest of the mill towns. Here, the opportunities are really magnificent, if they are recognized in time. The site is a valley with steep sides; to the north is the town centre, to the south is W. H. Crossland's Town Hall, 11, a Flemish fantasy made credible by nineteenth-century gusto and sincerity. The same self-respect keeps it spick and span today. At the back is a wooded cliff, originally covered with cottages: on top is the church, reached by a cascade of steps, 12. From the top, the Town Hall spire peeps over, 13: go to the edge, and there is the whole harsh joy of the nineteenth century in its roofs and backside, 14.

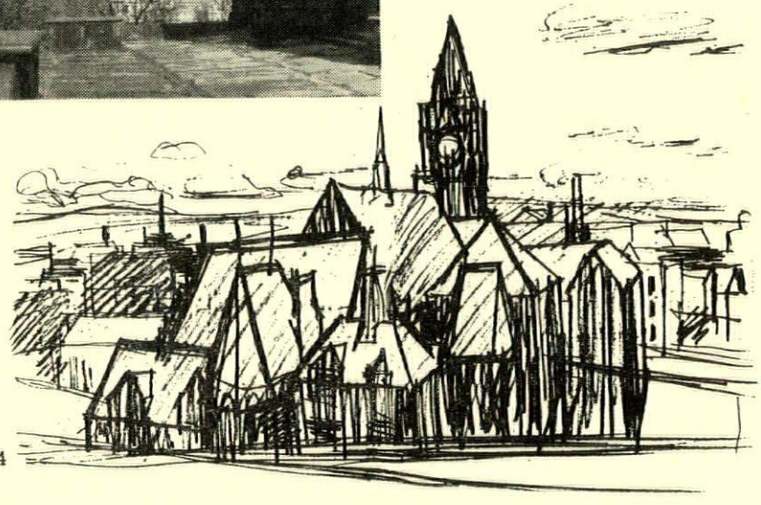
That might be enough for any town. But Rochdale has a hidden river. It originally ran right through the centre of the town, and was gradually covered over between 1900 and 1930. Now it disappears into a tunnel, 15, just west of the Town Hall, thereby making possible a wide road through the centre which splits the town. An inner ring road is to be built within the next two years and this could take away the through traffic.



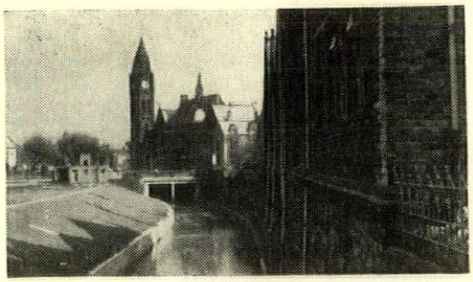
12



13



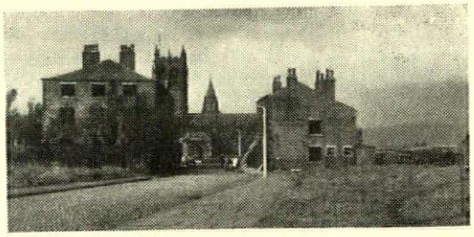
14



15

At the same time, developers' proposals are being considered for the area immediately to the north. It would be possible to reopen the river* in front of the Town Hall, and keep it covered only for one short stretch, farther east, which could become a pedestrian meeting-and-market place instead of the present roundabout. And the area around the church could be transformed from the present desert of clearance, 16, to a new kind of hill-village, intimate and enclosed. Lavish proposals, but worth all of the effort and trouble, because Rochdale is potentially one of the finest town sites in the whole country. This is the exact moment to decide—the chances are still all there to be taken, and the town still has the kind of pride in itself which can make realities out of the apparently impossible. What it and the other mill towns need is recognition by the rest of the country that they are not just repositories for music-hall jokes. If some of the jealously preserved pretty bits in the South had a fraction of the depth and true character of these Lancashire towns, they would consider themselves lucky.

* The town officials say that it smells, and so it does. But that, like smog, can be taken care of.



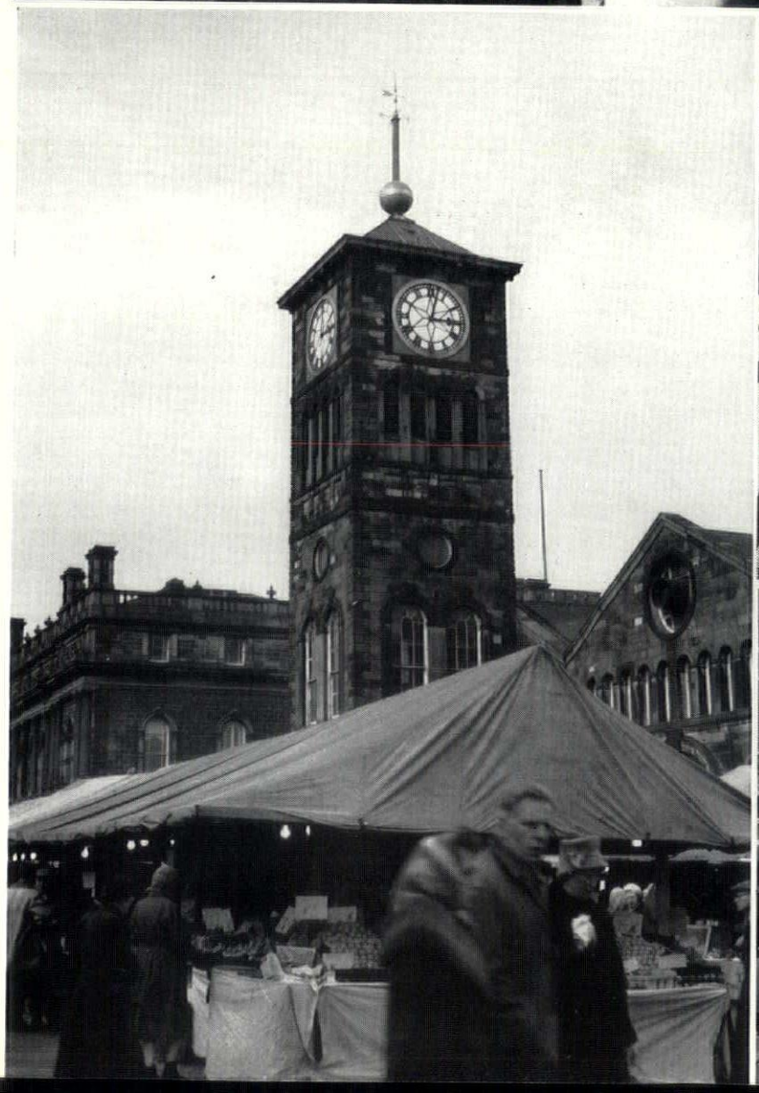
16

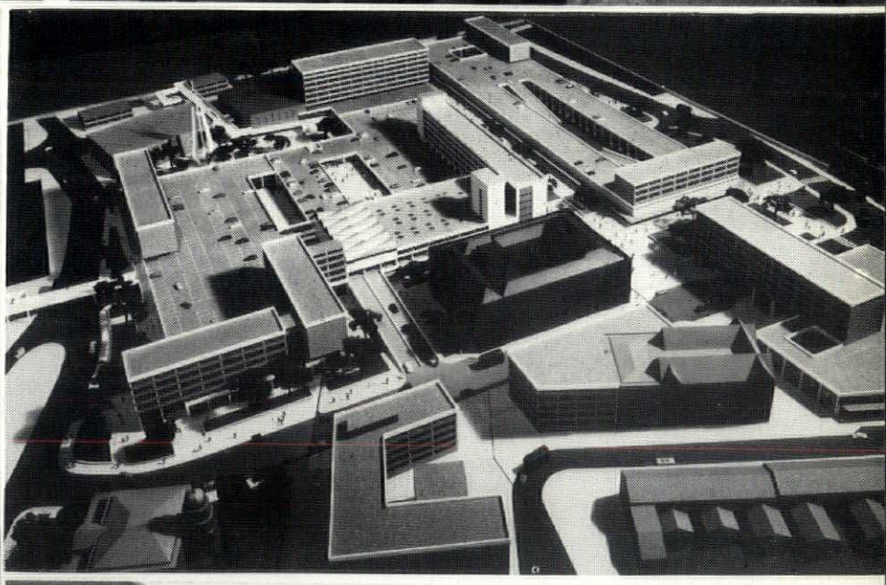
Drawings by Roger Limbrick

WHERE NOW?

The mill towns are at the crossroads. Their virtues can be summed up in these two photographs of Blackburn, top and below left: town hall and market hall living and working together, both built with self-respect and a knowledge that the centre of a town is something more than a profitable bit of speculation. Yet the very first stage of Blackburn's redevelopment, shown in the model, below right, will be to take the market hall away to the other end of the centre and replace it by a conglomeration of shuffled slabs. And there is no indication that the individual details, so tough and sturdy in the old buildings, will be any better than the insipid mediocrity of what has already gone up at Bolton, bottom right.







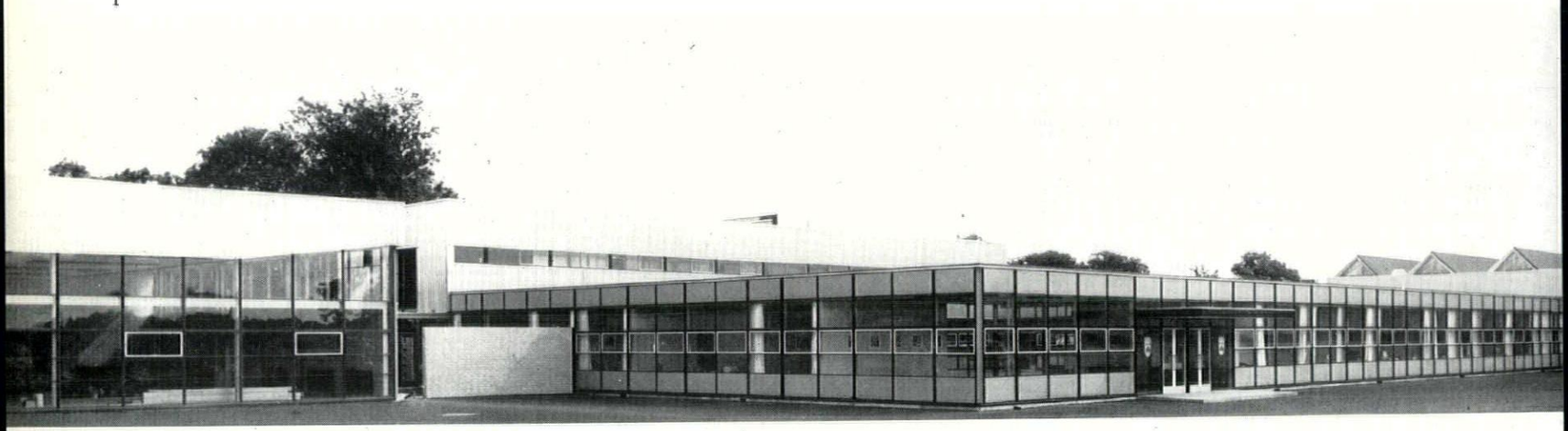

MARTINS

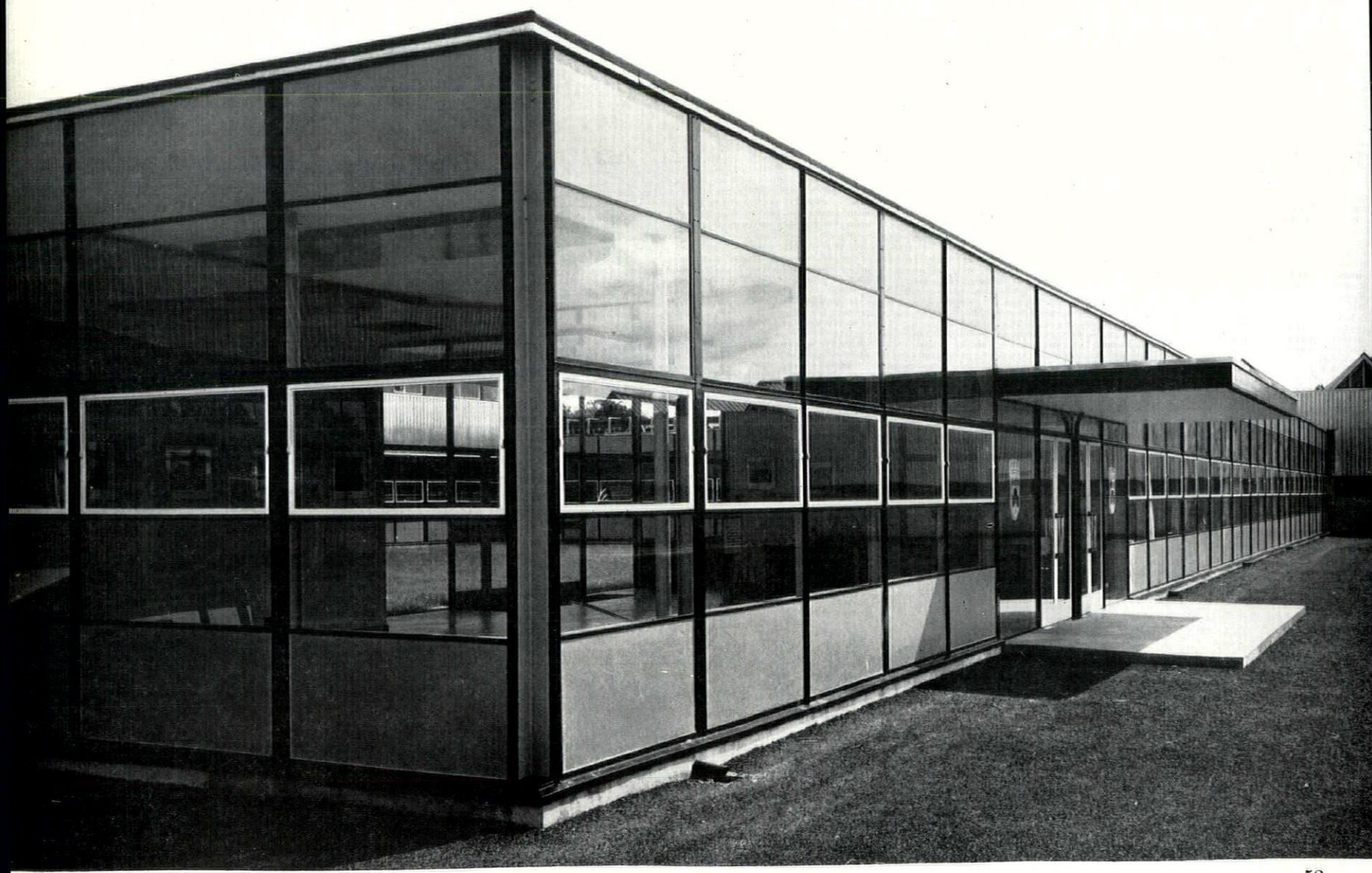
Factory in Northern Ireland

ARCHITECT: JAMES MUNCE (of Munce and Kennedy)

1, *distant view of office block with the production area on right.* 2, *close-up of office block.*

1



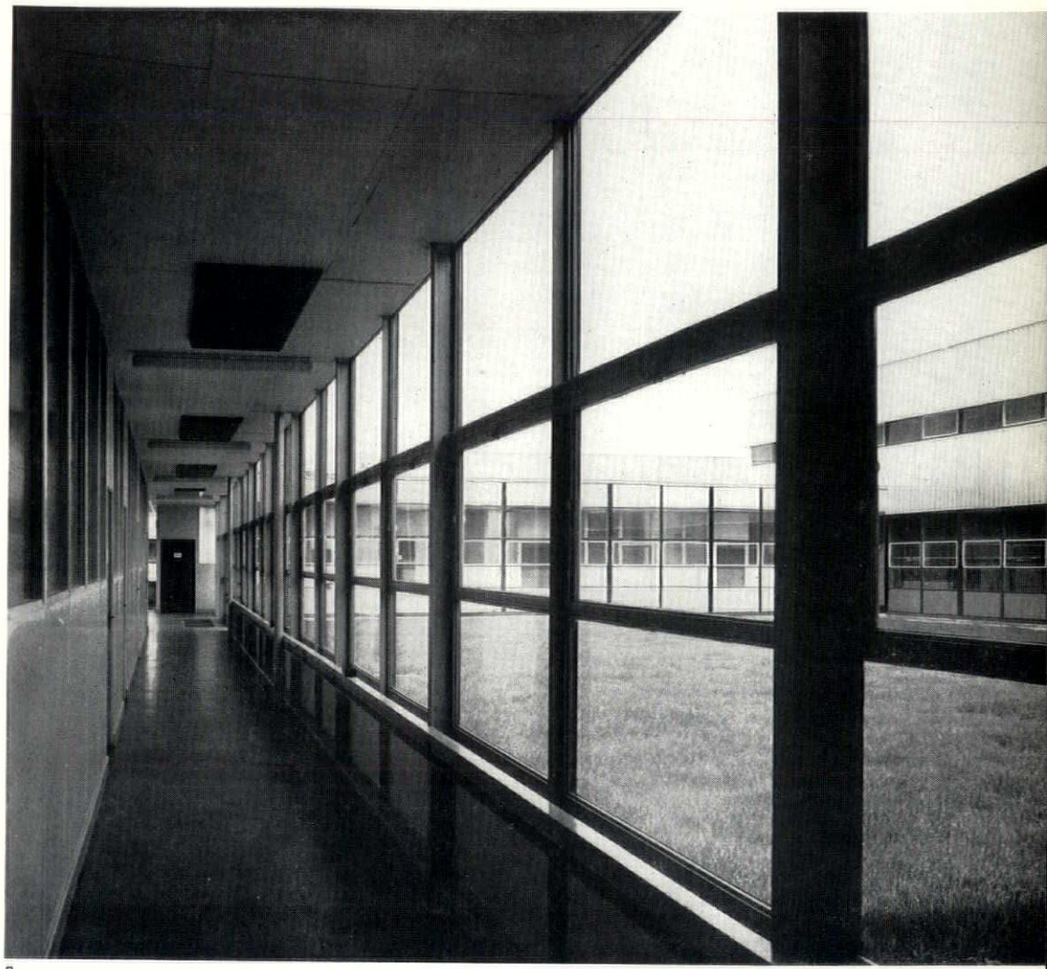


2

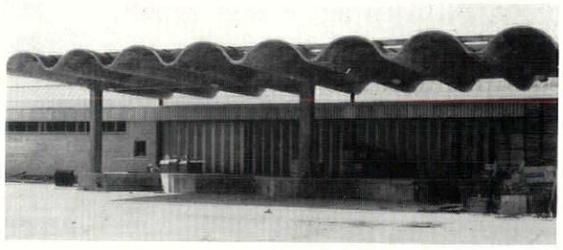
On the Dunmurry Industrial Estate, which was laid out by the same architect. The commission, from the Northern Ireland Ministry of Commerce, was to design a standard factory for erection in advance of letting to the user, consisting of production unit, offices, stores and space for a tea-room. Requirements were that the production area should be expandable in three directions (hence the placing of the office block), that the structural module should provide the maximum stanchion-free area, that the factory should be easily adaptable to the particular needs of users and that the production area should have a high daylight factor.

The structural system chosen is a series of triangular steel space-frames providing even top-lighting. The frames were fabricated in 66 ft. lengths and could be quickly erected by two cranes working in conjunction. Frames were in fact erected at the rate of two a day. The production area is clad with prefabricated aluminium units with fibreglass insulation backed by a steel panel. A glazed strip is carried round the building 4 ft. 6 in. above the floor level, below which is a plinth-wall in concrete brick. The roof is patent glazing on the north face with woodwool slabs on the remainder. The storage area is similar but with 10 ft. high brick walling. The office block has metal windows on the ground floor, fixed directly to the structural steelwork, and aluminium cladding above.

When nearly complete the factory was taken by Grundig Works Ltd. for the assembly of tape-recording and similar equipment. They required additional office accommodation close to the production and loading areas, separate rooms in the production area for specialized machines and a large canteen, and the plan was found easily adaptable to these needs.



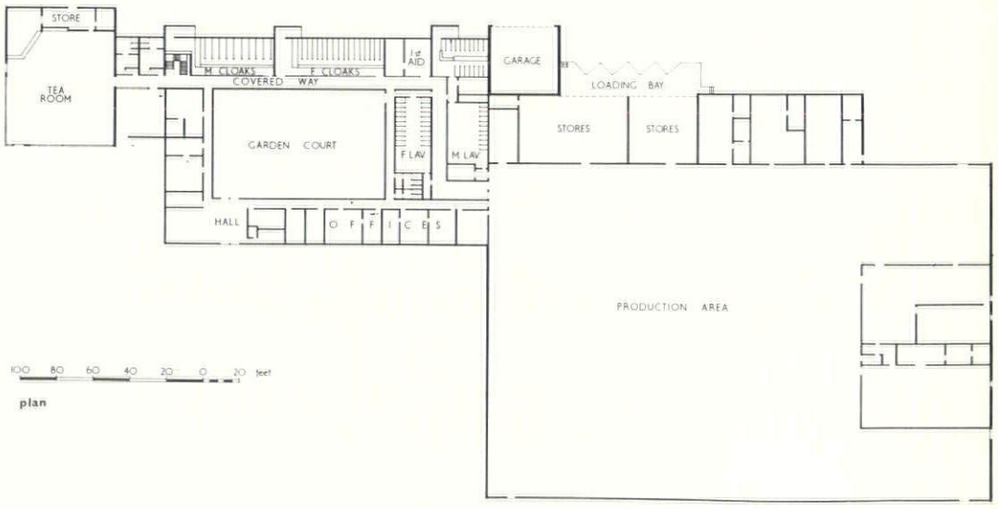
5



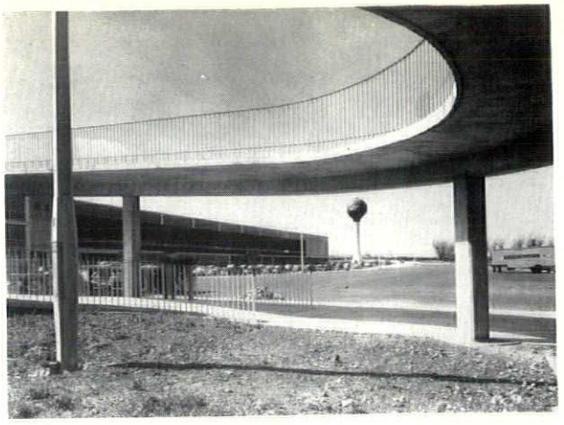
3



4



3, canopy over the loading bay. 4, gate-house at the entrance.
5, garden court seen from the office block.



1

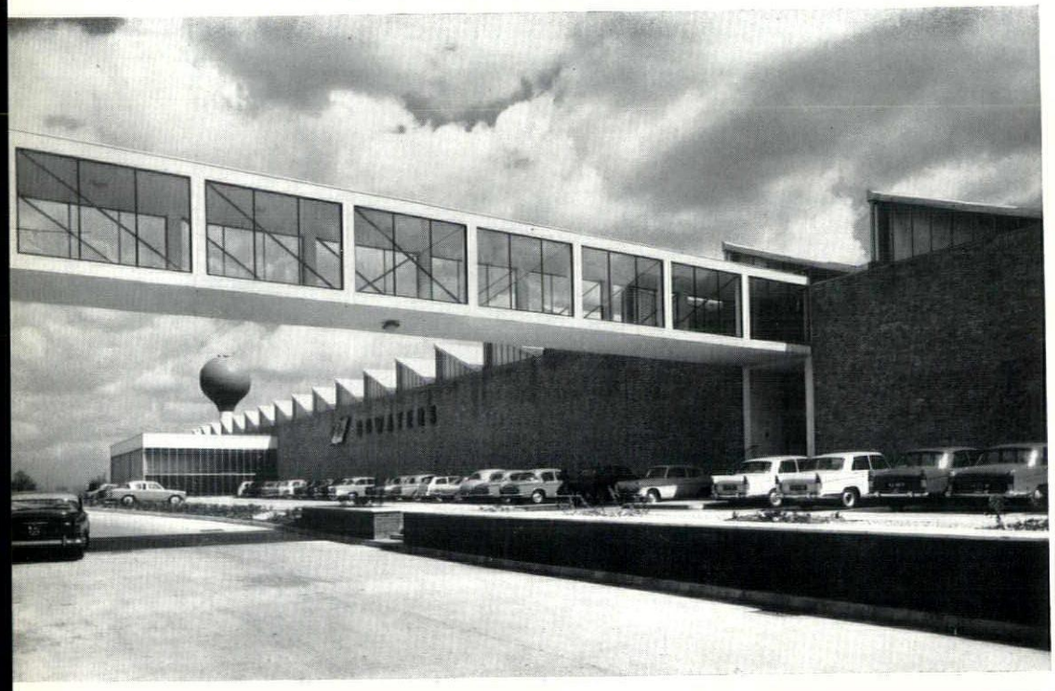
1, *distant view from the east.*

Facing page: 5, entrance to the office block. 6, the north-west corner of the production area, with the water tower on the left.

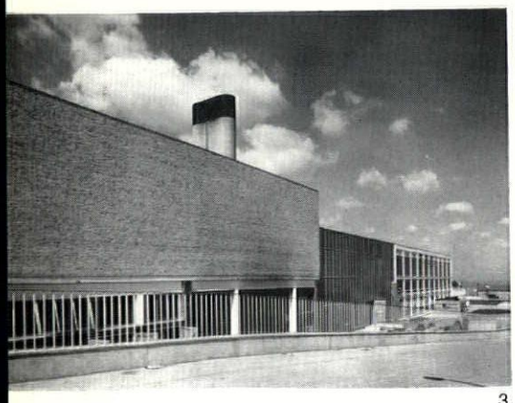
Factory at Gillingham, Kent

ARCHITECTS: FARMER AND DARK

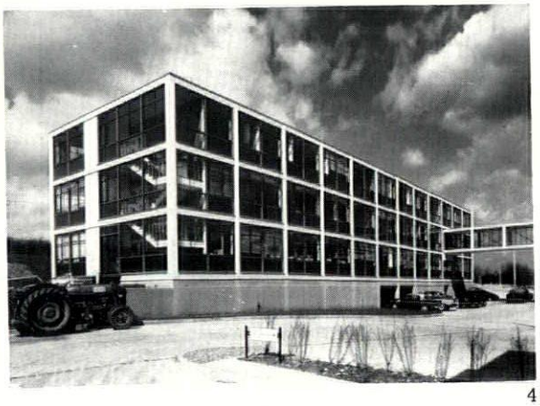
2, looking north along the production area, under the bridge to the office block. 3, the east side of the production area. 4, the office block from the south-east.



2



3



4

For Bowater Packaging Ltd. to centralize the manufacture of the various flexible packaging products of the Bowater organization, such as wrapping and waxed papers, cartons and bags; also for the extrusion of polythene, the development of polythene coatings and the printing and lamination of aluminium foils. The site is at the junction of A2 with the Gillingham link to the new Medway Towns motorway.

Requirements included a large production area, all on one level, flanked by stores and with loading and unloading bays, a process house (for printing, photographic and lithographic departments) together with drawing-offices, an amenities (canteen, ablutions and recreation) block, an office block and general stores and workshops. The production area had to be capable of longitudinal expansion in both directions.

The factory is steel-framed, the production area and finished goods store being of northlight construction and the adjoining reel store of the portal frame type. In the former part parallel-chord trusses span between stanchions 39 ft. apart, the upper chord being outside the roof, and support vertical lattice girders at right-angles immediately behind the northlight glazing. The girders, which span between 74 ft. and 78 ft., are welded and were assembled in two halves by welding the bottom booms and then securing the diagonal members with high-tension bolts. The portal frames in the reel store span 82 ft. The roof is covered with corrugated asbestos sheeting. Main flank walls are brick, faced with yellow stocks. The reel store is faced with aluminium trough sheeting.

The amenities block, on a lower corner of the site near the main road, has its locker-rooms, etc., at the main factory level, reached by an external ramp, and canteens and recreation rooms below. It has a reinforced concrete frame faced with precast slabs and infill panels of glass, porcelain enamelled steel or brick. The process block is a two-storey reinforced concrete structure with similar



5



6

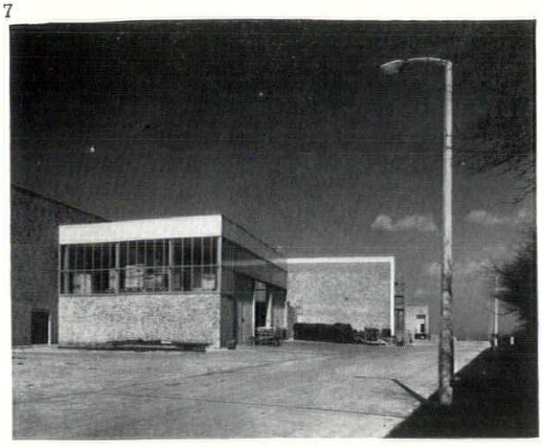
Factory at Gillingham, Kent

wall panels. The office block, which was largely prefabricated off site, has three floors of offices with entrance and garages below. The first floor is linked by a covered way to the factory. A conference room is on the second floor. It has a reinforced concrete frame with hardwood subframes containing the window and spandrel panels.

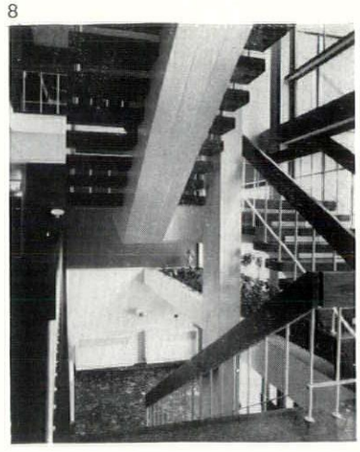
A spherical 50,000-gallon water-tank (see also page 60) with a single supporting cylindrical shaft is constructed of steel plate with butt-welded joints. The sphere was welded together on the ground and lifted into place by two cranes. The column contains an access ladder and pumps, etc., in the base.

Quantity surveyors, E. C. Harris and Partners.

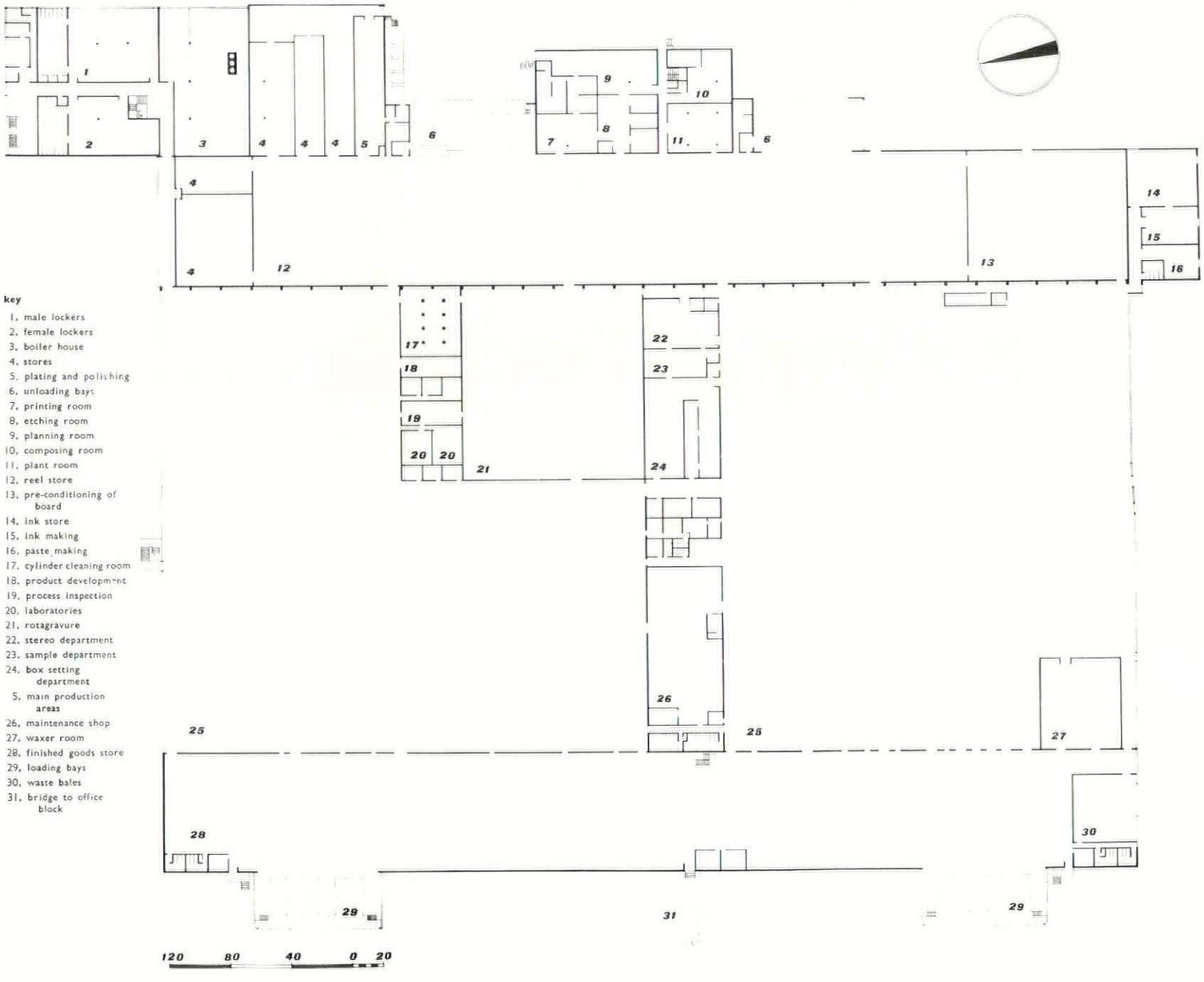
7



8



7, the production area from the south. 8, staircase in the office block.



plan, production area



ground floor plan, office block

EXHIBITIONS

PAINTING AND SCULPTURE

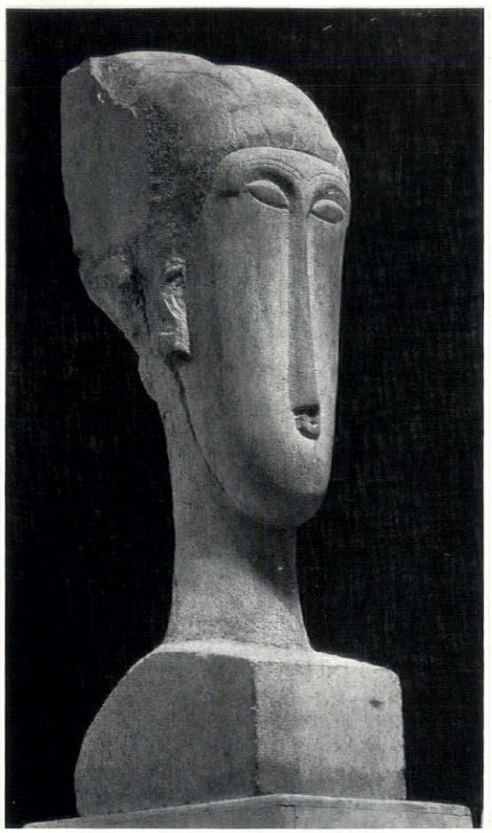
Every London dealer in twentieth-century masters seems to have a stock of Modigliani drawings. They come out for an airing in anaemic little exhibitions of 'selections' and some of them are so faint that the kindly dealer usually helps one to sense their importance by giving them broader mounts and fancier frames than they need. Every so often, three or four galleries bring out their stock at the same time and make it almost impossible to remember where one saw the half-finished drawing of Zborowski or the lightly pencilled nude that seemed to be backing into the paper. Half of them are familiar, but one is never quite certain whether they were in the same gallery when one saw them before. There's something sacred about even the slightest of his drawings, for he was an artist of the greatest purity and refinement, and if I had a great deal of money I would buy all the very faint ones, just to give them a long, long rest from the endless package deals.

On a recent occasion when three other galleries were showing Modigliani drawings, the Hanover Gallery put up a set that was quite different from the average run, and far from being totally dependant on a bare subsistence allowance of the line that indicates his authorship. Apart from a 1915 portrait drawing, they were all drawings for sculpture, and although they do not appear to be dated, are considered to have been done in 1909. They are the drawings of a man who wanted to be a great stone-carver and who might have rivalled even Brancusi if only there had been a little active support for the few marvellous things he managed to carve before being diverted into painting. This isn't a sly attempt to suggest that the paintings show the hand of a disappointed sculptor. There is no doubt at all that his best paintings of the reclining nude are among the most dazzlingly beautiful pictures painted in the twentieth century. They could only have been painted in this century, but they disclose a steadiness and independence of purpose rare in our time, and are equally free from the group avant-gardism of the cubists and futurists and the group reaction of some of the same people into neo-classicism. Furthermore, the fact that he was totally concerned with the figure in his paintings doesn't imply that his thoughts were on sculpture when he was painting them. He preserves the integrity of the picture-plane at the same time that his disposal of the figure diagonally across the canvas, with the legs cut off above the knees by the canvas edge, gives the beholder the sense of actually leaning over her, and it's difficult to imagine how a similar effect could be achieved in sculpture. In any case, there is a deliberate informality in the paintings that is just as deliberately avoided in the sculpture.

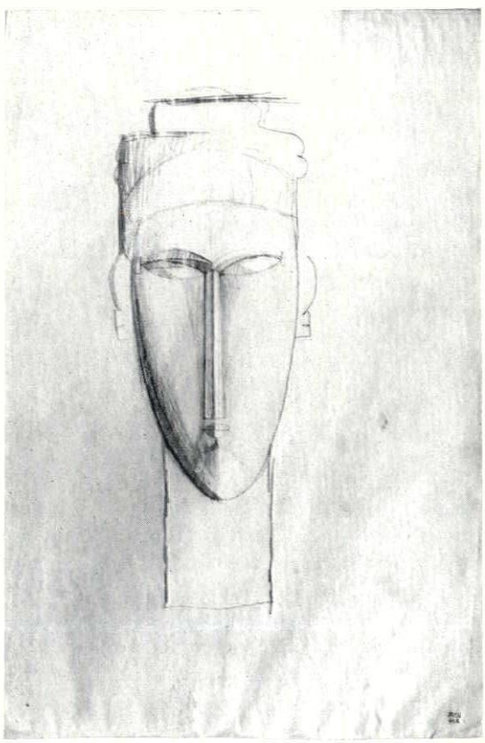
Two or three years ago, the Hanover Gallery exhibited one of Modigliani's carvings of a woman's head, 1. This head and the versions of it in the Tate and the Museum of Modern Art are presumably three of the seven heads in the 'decorative ensemble' which, according to Ronald Alley's fascinating catalogue of foreign works at the Tate, was contributed by Modigliani to the Salon d'Automne of 1912. I gather from the same source that Eric Maclaglen thought that the head in the Tate was intended as a corbel above a door, but Ronald Alley seems to think that this view is refuted by Lipchitz's recollection of seeing Modigliani carefully adjusting the height of each head to conform to his idea of a 'decorative ensemble.' I don't think this is a challenge to Maclaglen's view. Modigliani must have realized that there was no likelihood of an architect using them, and hit on the 'ensemble' as a way of exhibiting a series of closely related carvings intended for architectural use. Some of the drawings of heads in the Hanover Gallery exhibition made it as clear as the famous drawings of caryatids that he had an architectural setting in mind, 2.

Paul Guillaume once said that it was Modigliani's intention to build a temple in honour of humanity, in which his carvings would play an integral part. There were to be hundreds of caryatids, which he called 'colonnes de Tendresse.' I don't suppose he ever had a very clear vision of the temple, but nothing could be more seeable than the sculpture he began to provide for it, and if I may continue my own daydream, and suppose myself still to be rich after buying in all the faint drawings (they would of course multiply like rabbits as soon as it was known I was in the market for them) I would hold an annual competition for the best design by a student for a building incorporating Modigliani's sculpture. The students wouldn't have to worry about plumbing or anything of that sort because the building wouldn't be for use. Modigliani wouldn't have wanted anything to 'go on' in his temple, except a quickening of the pulse and maybe a deepening of the sense of the validity of the will to form.

The stories of his wild behaviour and his love-making and of his early death from the effects of drugs and alcohol give him biographical equality with Toulouse-Lautrec, but, unlike Lautrec, he didn't



1

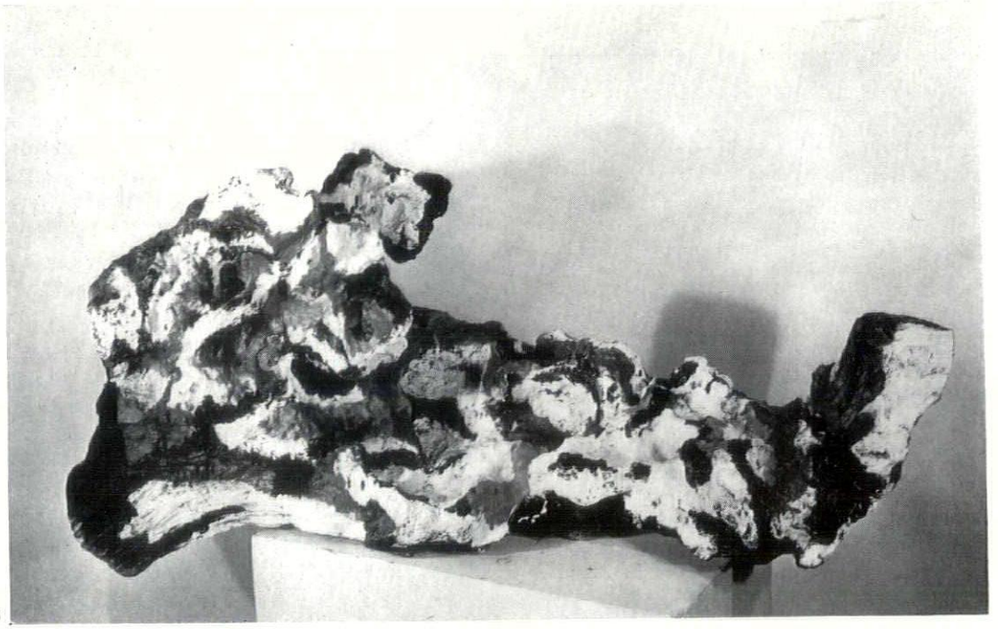


2

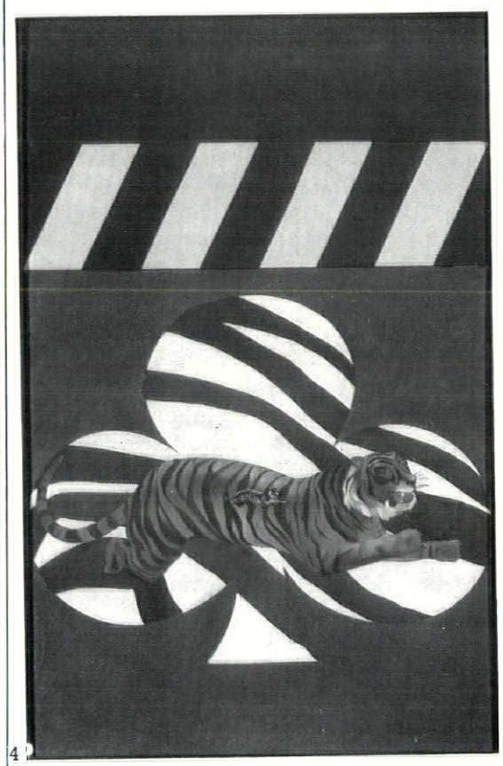
make an identity for himself out of his milieu, and the most telling of all the anecdotes about him is the one that recounts his short sharp meeting with Renoir. The old man had heard about Modigliani's nudes and began to talk to him in a banteringly lascivious manner about the advantages of painting from the naked model. It made Modigliani so angry that he turned on his heel and left the room. If Renoir had seen some of the reclining nudes he would, I think, have been genuinely puzzled by Modigliani's reaction to his line of talk, for they are more openly erotic than his own, and as one critic has quite justly remarked, they lie 'as if wanting to offer each limb in turn to the beholder.' Lasciviousness is an expression of a sense of the shamefulness of the sexual impulse. I think that Modigliani was without that sense of shame, but that he was probably not unaware of breaking a taboo. His nudes have a shocking amoral purity. They are immensely calm and stable objects dedicated to vertiginous sensation. The same is true of the carved heads. They are the fruit of a response to woman that doesn't pretend to be disinterested but achieves coolness and remoteness by an exertion of the will. They give us the rare opportunity of responding aesthetically as if erotically. Since his time it has usually been the other way round, and if one were to judge his stature by his influence he would be a very negligible figure indeed. The will is no longer a factor in the game of playing the creator. Form is whatever has got done in the drive for intensity. The polychrome sculptures of Karel Appel, recently exhibited with his latest canvases at Gimpel fils, are a case in point.

Appel's sculptures belong to the class of the meddled-with ready-made. They are large pieces of burnt tree-trunk, found perhaps in one of the Provençal olive plantations devastated by fire last summer, which have been dabbled all over in primary colours. In the way that gnarled and pitted tree-forms have always done, they vaguely suggest creatures of one sort or another, 3. The savaging of objects is a well-tried way of intensifying impact, but Appel brings to the task the unrestrained energy that turns every subject he tackles into an uproar of paint. The objects at Gimpel's were much afflicted before he touched them, but he succeeded in making the painting of them a further affliction. Instead of 'protecting' the surfaces, it set up a kind of inflammation in the excoriated flesh. As a painter, Appel is on about the same level as Vlaminck, but the throwing of the subject to the paint is more openly celebrated, and there's something about his latest canvases that brings to mind meal-time in the lion house.

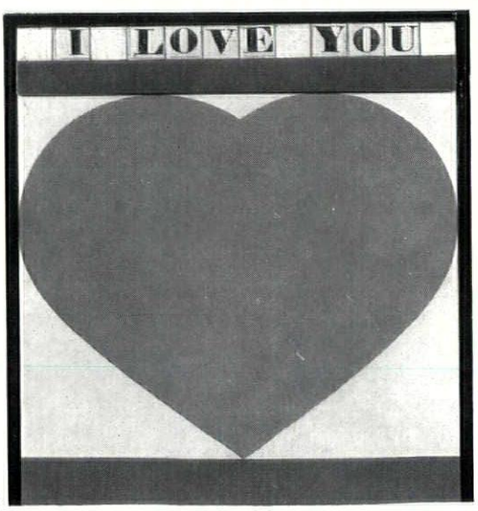
The young English painters whose work



3



4

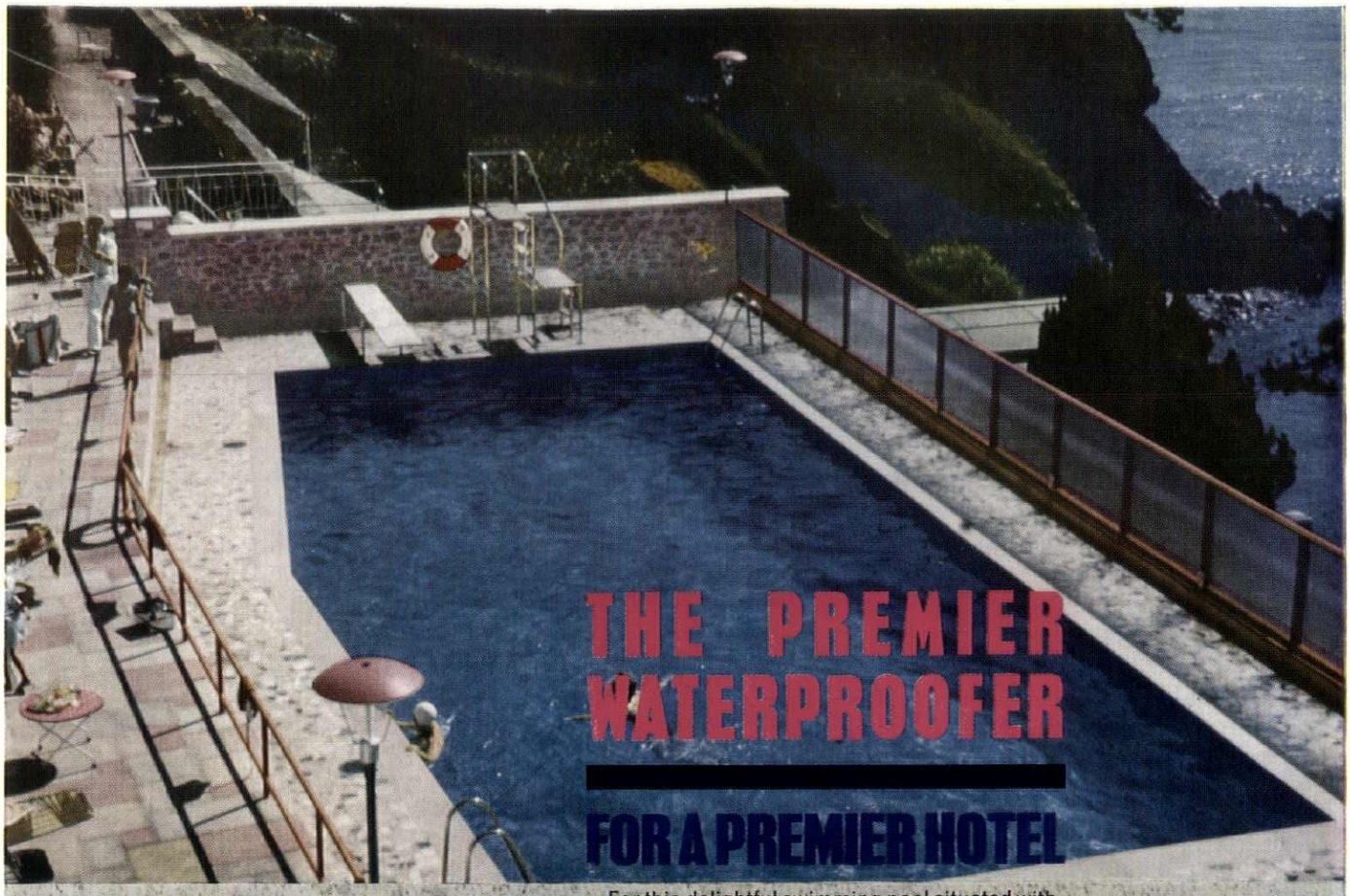


3

reflects a pop environment haven't of course the full professional attack and assurance of a painter like Appel, but I think that some of them—two, to be precise—have a more subtle and complex attitude to painting.

Four of these 'pop' men were chosen to represent 'Today' in a recent 'Today and Yesterday' show at Arthur Tooth & Sons. Fortunately, the yesterday of Paul Nash, Augustus John and J. S. Sargent among others was in another room, but the work of the young men was so bright and energetic and amusing that it made the others look quite frighteningly ineffectual. The best job of intensifying impact was done by Peter Phillips. A work like 'Motorpsycho/Club Tiger,' 4, with its quick-starting tigers, its ace of clubs, its stripes of bright flat colour and its play with scale, manages to cram an astonishing number of references to the street culture of our time into its design whilst remaining as simple and eye-catching as a poster. Phillips is witty and enthusiastically cool and he took the show by storm, but he is somehow lacking in the presentiments of a painter: he has clever ideas and works them out with the efficiency of an ace ad man.

Peter Blake, even when using bright flat paint in the same eye-catching manner as Phillips seems to project more complex experiences. His large red ace of hearts is probably less packed with conscious references than Phillips's ace of clubs, but the 'I love you' above it, spelt out in letters carefully cut from newsprint, reduces the heart's hard glow and gives the picture a curious magic, 5. The picture he calls 'Postcard,' 6, painted in a quite different manner but in the same spirit, was, I think, the best thing in the exhibition, and incidentally brought today and yesterday together. It's almost an



THE PREMIER WATERPROOFER

FOR A PREMIER HOTEL

For this delightful swimming pool situated within the grounds of the Imperial Hotel, Torquay, R.I.W. "C.W.P." was specified and used as being the sole means of integrally waterproofing the entire concrete structure.

R.I.W. Cement Waterproofing Powder is extremely economical and simple in use, imparts better working qualities with less mixing water, is completely non-injurious to steelwork or steel reinforcement and provides a dense, water-repellent mass of high-quality and maximum durability.

Architects: C. Howard Crane and Partners
Contractors: P. W. Wilkins & Son Limited

R.I.W.

CEMENT WATERPROOFING POWDER

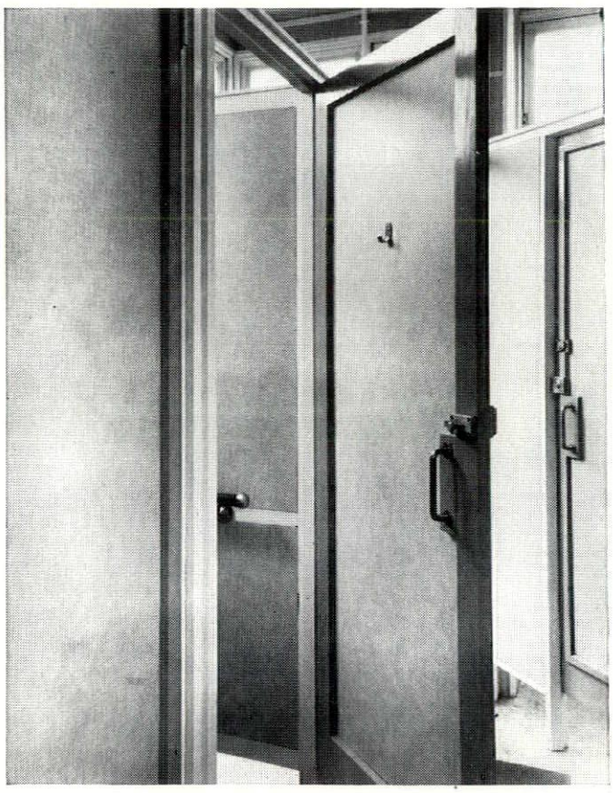
For full details of R.I.W. Cement Waterproofing Powder and the complete R.I.W. range of protective, constructional and decorative products, write to :—

R.I.W. PROTECTIVE PRODUCTS CO., LTD.
325, WHITEHORSE ROAD, CROYDON, SURREY.
Telephone: Thornton Heath 6121/2/3

Liverpool Hospital Board specified

weydec

for Clatterbridge Hospital

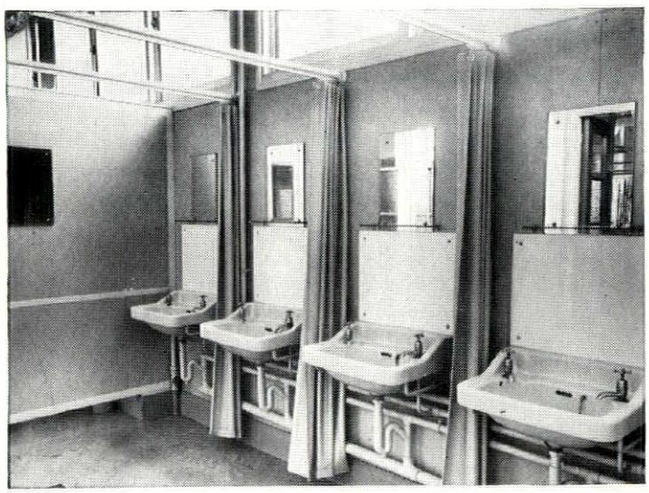


Weydec faced both sides Blue Linen for doors in Block 'B' wards.

WEYDEC was used extensively for wall lining, partitioning, doors, and infill panels around baths when two open balconies at the hospital were converted into toilets, bathrooms and washroom cubicles. Blue Linen pattern was selected — decorative face with plastic balancer for linings and panels ; decorative face both sides for partitions and doors.

Specifying Architect : E. R. Furbur (DIP. ARCH) ARIBA in association with the Architect to the Liverpool Regional Hospital Board.

Contractors : Hohin (Bebington) Ltd., Bebington Cheshire.



Weydec faced one side, plastic balancer on reverse for infill panels in wash basin cubicles.

Write for full information and data sheet on

Weydec, the Weyroc board with the integral decorative plastic surface

A PRODUCT OF AIRSCREW-WEYROC LIMITED Weybridge · Surrey

AP 155



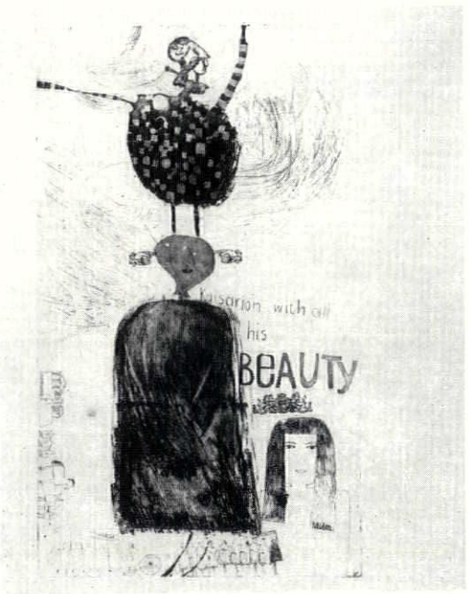
6

enlarged copy of a tinted Edwardian postcard, and the original reference number is painted in the lower right-hand corner. But there's a trans"orming finesse in the line and colour, and like all Blake's work, it discloses a gentle and loving mockery of human sentiment.

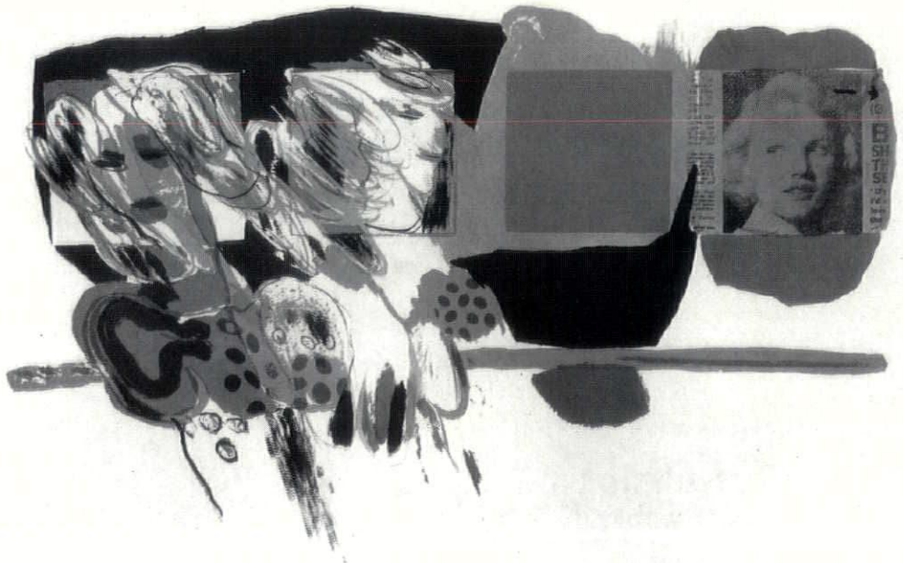
Two other young men of the pop school contributed outstanding prints to the large show of contemporary British graphics at the RWS Gallery, organized by Robert Erskine and sponsored by Trust Houses Ltd. One of them, Allen Jones, was in the 'Today and Yesterday' show, but I found the lithograph called 'Secret Val.ntines,' 7, more interesting if less ambitious than his paintings. There is a brash charm about the obvious way in which the newspaper photograph and the two girls painted in the facile manner of a sophisticated commercial artist are given a kind of underlift from their abstract context and in their turn give the spots and dabs an air of purposefulness. It's a kind of exercise in mutual aid.

The other print, by David Hockney, was in the student section, but Hockney has infinite promise. His etching, called 'Kaisarion with all his beauty,' 8, is in the 'semi-Egyptian style' of the very large painting he contributed to the last 'Young Contemporaries' show: it's a manner which carries a serio-comic response to Hollywood spectaculars, but the feeling for spaciousness and the light-hearted sense of glory which seem to come to him as easily as a shrug of the shoulders make his work spectacular in its own right.

Robert Melville



8



HISTORY

MACKMURDIANUM

Mackmurdo has in the last ten years become so much a household word in Victorian research that a letter I found among my papers and which he wrote on January 1*st*, 1941, *the year before he died, may now be of more than private interest. Here it is, with a few annotations.*

Wickham Bishops, Witham. 1.1.41.

My dear Pevsner: Sad indeed is what you tell me about yourself, & Michaloski[1]. There could not be two men more loyal to the country acting as their Host. But, alas, Governments only deal with individuals by massing them in categories.

Now as to Shaw. I only once had talk with him. But I know many of his clients & all his pupils. Pugin, Scott & Street, started the Gothic Revival, but did little work other than churches & parsonages. Shaw carried this revival into domestic architecture. But Shaw was not an out & out mediaevalist as were the 3 others. He soon swung over to the Queen Anne period, & in some instances courted with the Renaissance. His picturesque timber houses were singularly attractive to the increasing number of people who had made money in commerce and wanted large country houses: as typical, Powell, partner of Hezeltine, stockbroker, whose house Shaw built at Guildford[2]. But for houses in London, he found the Queen Anne house the better type. Also, most minds travelled in definite stages from the picturesque timber type to the Queen Anne & Georgian.

His pupil *Lethaby* remained an out & out mediaevalist to his death—a man of intensive emotion rather than of *ex*tensive culture, like *Macartney*. Gerald *Horsley* was a less strong character yet a charming personality. His work was Gothic tempered by studies of the Renaissance in Italy. They all had a great affection for their master—whose advice to them was—it

[1] Ernst Michalski (1901–1936) was a close friend of mine and one of the most talented art historians of his generation. He wrote the first serious evaluation of Art Nouveau, as early as 1925 (*Repertorium für Kunstwissenschaft*), the first serious evaluation of Mannerist architecture (*Zeitschrift für Kunstgeschichte*, 1933) and monographs on the two German Baroque sculptors Christian (1926) and Permoser (1927).

[2] I have not succeeded in identifying this house.

seems, don't tie yourself to a style or period. Be governed by your *own taste* & what you feel most fit for the surroundings. All his clients had great confidence in him as an able Architect. It was a time when architects enjoyed considerable freedom. The effect of travel was putting many notions in the melting pot. But Shaw was not the type to form a school. The affection for him which these 3 pupils had, kept them together & inspired them to start a movement for binding art workers together—a movement of much larger range than that I started in the Century Guild, which gave them the idea[3].

As for Webb. He was a very different man. He had a strong personality. A lone man—determined to follow wherever his taste led him. His work has more character: is more an expression of the individual designer than was Shaw's. A house by Webb is like no other house that has been, or will be. I have always felt that his attitude to his art was nearer my attitude than anyone else's. He influenced Morris more than Morris influenced him. But it was a quiet, penetrating influence. The house he built for my friend Col. Gillum at New Barnet was a beautiful house[4]. The first time I saw it, I fell in love with its quiet simplicity & originality. I believe it has now been messed about terribly. But Percy Wyndham's house, I suppose, remains today, as built[5]. Webb was little known outside the Preraphaelite circle. I don't think he had any pupils, but am not sure.

Shaw's houses did impress me, but did not give me any new lead. I was more impressed by Webb's work. Webb seemed to me a more *live craftsman* than Shaw. He attacked problems as a craftsman does: by straightaway dealing with them & getting over them in a workmanlike way. Gillum was the first man to buy Madox Brown's pictures, painted in England. The first to have his chairs, tables & other furniture designed by Webb—models used afterwards by Morris. Architecture was at a very low ebb during the XIXth century. The few who made it a living art were P. Webb, James Brooks, John Seddon, C. Voysey, Shaw, R. Blomfield, E. Prior, Halsey Ricardo. Yet even their work was not always such that you could say, on immediately seeing it, 'this was designed by so & so: except in the case of any work by *Webb*, or by *Brooks*[6]. I am afraid this is all very vague. But I am still so immersed in my work—the reconstruction of the Social Order, that I can think of little else—

I wish I could help you more.

Yours always,

A. H. Mackmurdo.

I have always felt it a great compliment when Architects told me, they could always tell the authorship of my work: every bit of it bore my signature.

N.P.

[3] The Century Guild was started in 1882, the Art Workers' Guild in 1884, the Arts and Crafts Exhibition Society in 1888.

[4] On this house see N. Pevsner: *Burlington Magazine*, xcv, 1953, 78, etc.

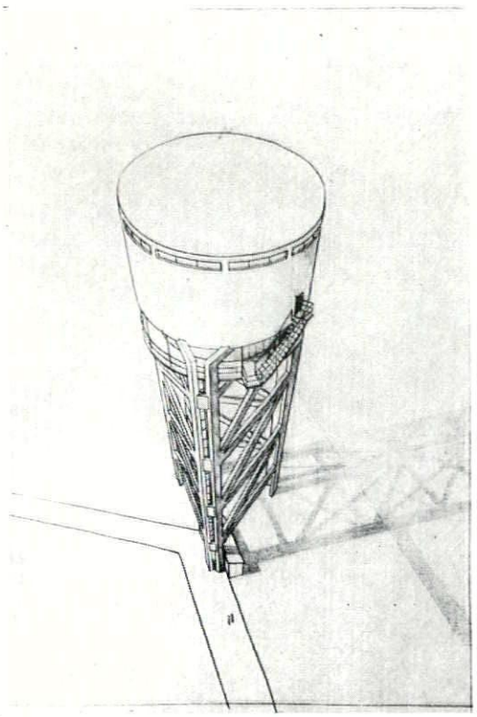
[5] The house is of course Clouds, East Knoyle, Wiltshire, and it is alas no longer in its original state. It was sadly mutilated outside and inside in 1938.

[6] Brooks is a surprise in so far as he was almost exclusively a Gothic church architect. What would Mackmurdo have thought of the Church of the Ascension, Lavender Hill; All Hallows at Gospel Oak?

ARCHITECTURE

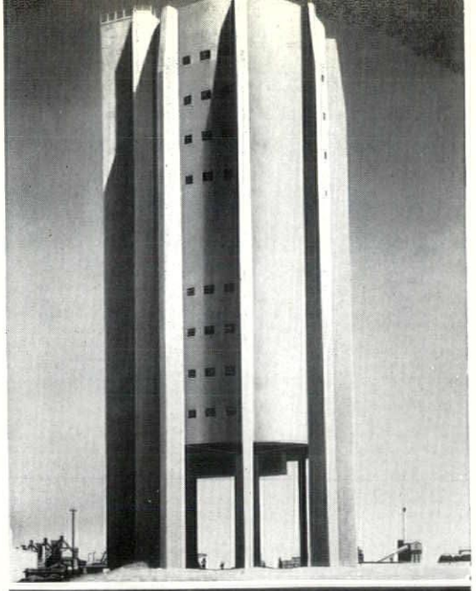
WATER-TOWERS

The early masters of modern architecture were quick to notice that a water-tower is a simple problem, structurally and functionally—it was only later that they discovered that it could also be a vehicle for imaginative invention. An unpublished drawing by Mart Stam, 1, gives the basic components—a tank, and a framework to carry it—as they were understood by the Functionalists of the early 'twenties, and as they are still understood by less imaginative engineers today.



1

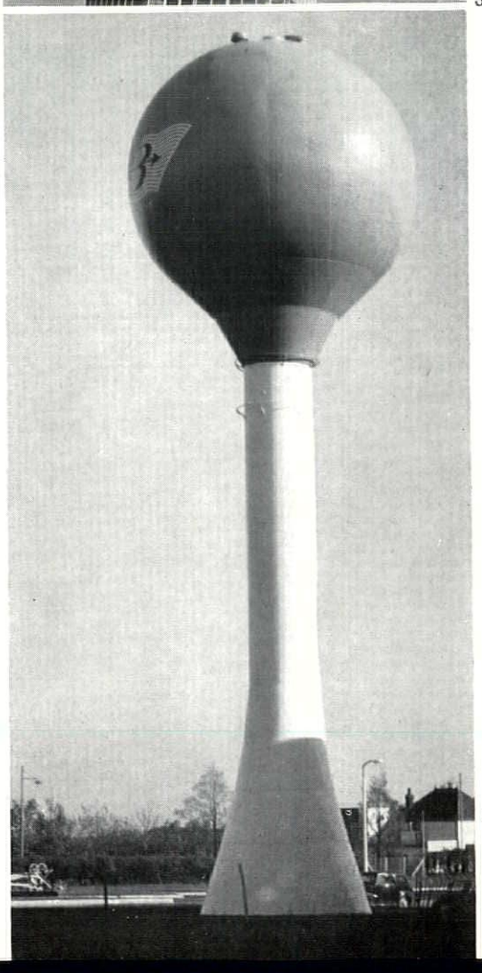
Yet even this fundamental concept of a tank on legs can produce solutions as diverse as 2, at Bourkela in India, designed by J. C. Gammon's, the English consulting engineers, or 3, which serves the Bowater factory at Northfleet, Kent, architects, Farmer and Dark; engineer, S. Jampel. But once the tank and its support can be



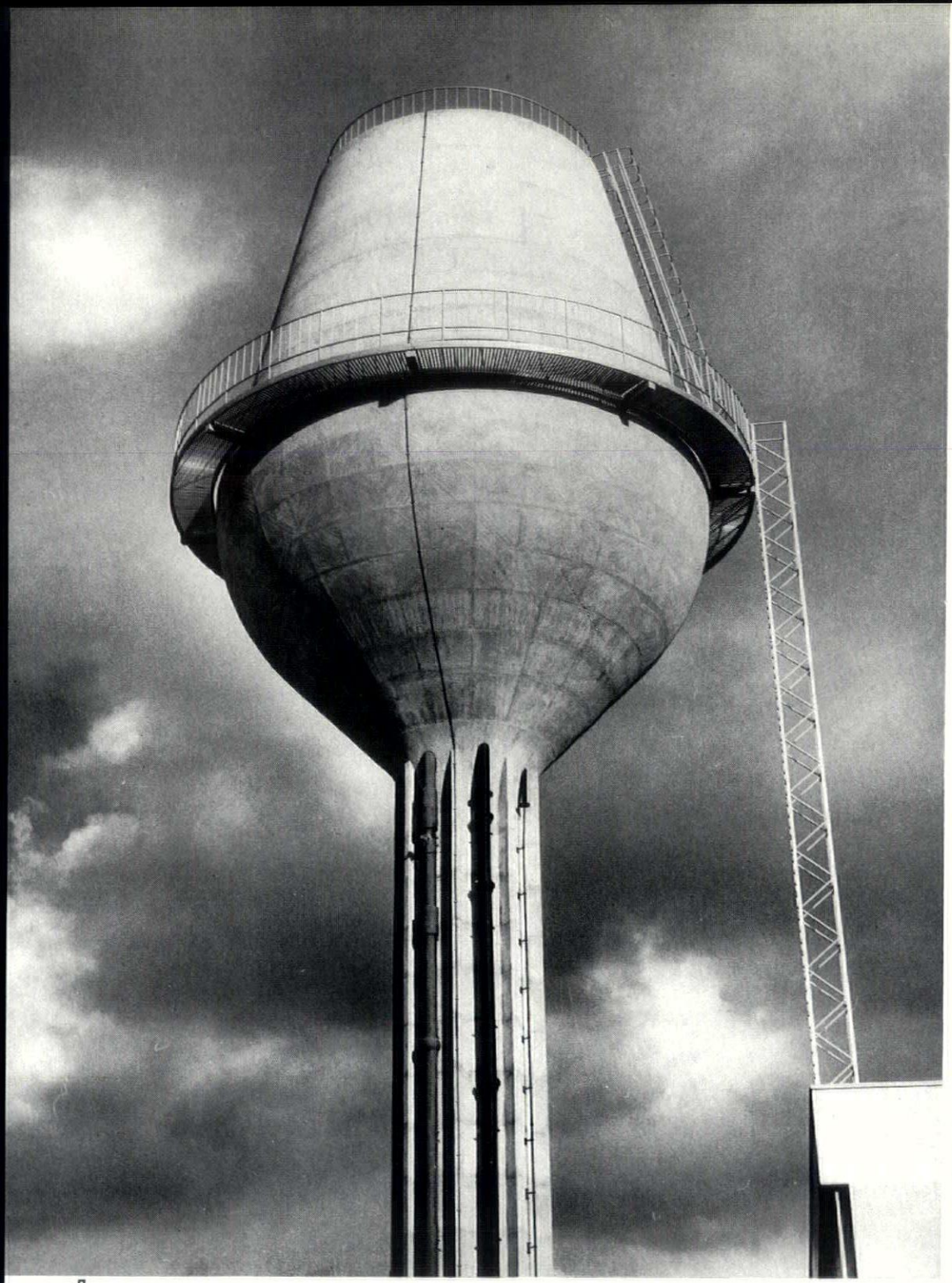
2



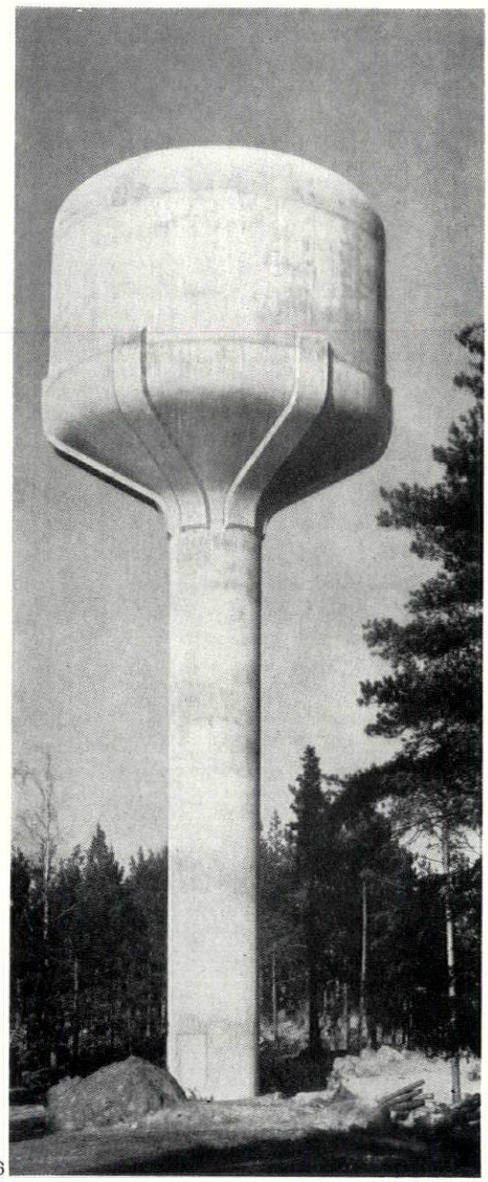
3



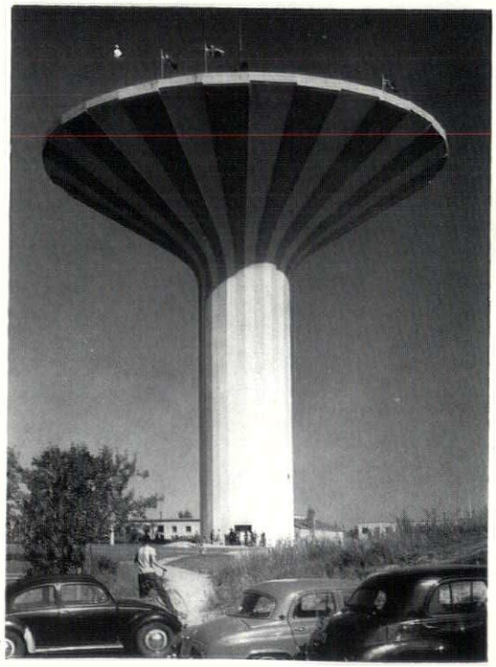
4



5



6



7

seen less as separate parts than as a continuous structure, diversity of form at once begins to take on a different meaning. The stage at which the elements begin to merge into a single form is exemplified by another water-tower for the Bowater company, 4, this time at their Gillingham plant (see also pages 54-56) and designed by the same architects and engineer.

Once this break-through has been made, concrete opens the way to a world of functional fantasy limited only by the intellectual capacity and the sheer nerve of the designers. For the new Ulster Hospital, Frederick Gibberd and F. J. Samuely and Partners devised the wine-glass form of 5, which conceals a chimney rising through its centre. An alternative with a visibly closed top is the club-headed form, with its external strappings and *brut* concrete surfaces, of the tower at Loviisa, Finland, 6, by Kaija and Heikki Sirèn.

But the integration of the structure can be made expressive in more striking ways than this. The tower at Orebro, 7 (and illustrated in AR August, 1960), with external flutes that ran down the underside of the tank and straight down the supporting stem in continuous sweeps, suggests a more radical solution that was later developed by the same designers. In the water-tower at Uppsala, 8, Sûne Lindstrom and the architect and engineers of VBB Partnership, have brought the side of the tank itself almost to the ground in long gores, leaving only a stumpy stem at the base. As Professor Lindstrom himself has pointed out, such formal/



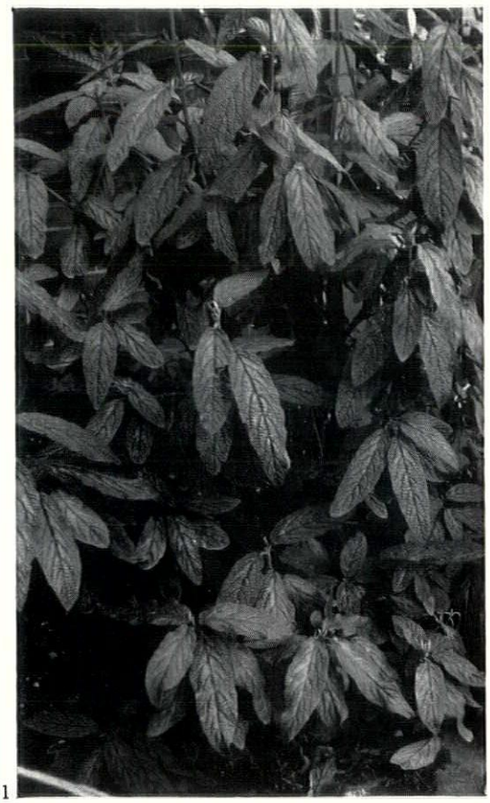
structural conceptions as these water-towers are outstanding examples of collaboration between engineers and architects. He might also have mentioned that they are fast becoming a world-wide public gallery of gigantic abstract sculpture in the open air.

P.R.B.

SHRUBS

THE VIBURNUM FAMILY

Many shrubs of good form, suitable either for massing or for isolated positions, are to be found in the family of Viburnum. One of our most useful broad leafed evergreens—of which there are far too few for our many needs—is *Viburnum rhytidophyllum*, 1. This handsome shrub, eventually reaching fifteen to twenty feet high, has a slightly gaunt habit of growth which displays to advantage the large, curiously wrinkled evergreen leaves, dark green on their upper face and grey felted beneath. The young shoots are reddish brown and the large flat bunches of red and black fruits add a welcome touch of



1

colour in the autumn. Not only is this an excellent free-standing shrub, but it can be usefully trained against north and east walls, always very difficult to clothe satisfactorily.

At the other end of the scale is *Viburnum davidii*, 2, no more than three feet high

and of wide spreading, mounded growth which makes it particularly suitable near the corners of paths, at the foot of steps or beside low walls. The dark, evergreen leaves are beautifully ribbed, and if plants of both sexes are grown together they may produce clusters of berries in a shade of sharp porcelain blue, quite unexpected in autumn.

Viburnum tomentosum mariesii, 3, is almost a piece of architecture in its own right. Branches, leaves, and the wide heads of white flowers are all so symmetrically arranged and so exactly horizontal, that it is a perfect foil for curved objects and vertical structures of all kinds. Growing eventually to ten feet high and through, it is more often seen at six or seven, and although it is deciduous, the branch formations make a striking winter feature, while the leaves colour pleasantly before falling. *Viburnum fragrans*, 4, is exactly the opposite, being entirely vertical, and while not such a striking shrub, in other ways its very upright habit and small bunches of ice pink or white flowers, pleasantly scented, make it in winter a useful plant for many situations.

Viburnum tinus, the Laurustinus of Victorian shrubberies, 5, is a very useful and attractive evergreen which should be planted far more often than it is today. Hardy all over the south and west, and in sheltered situations much farther north, it slowly forms rounded evergreen bushes from six to ten feet high and through. The billowing masses of dark leaves, paler on the underside, reddish twigs and pink tinged white winter flowers make it a very desirable addition to an architectural setting. As a wall shrub it would be both interesting and unusual, with the added advantage that its flower heads, being protected, would open earlier and last longer.

A low shrub, useful for its rounded habit of growth, rounded greyish leaves and large heads of sweetly scented white spring flowers, is *Viburnum carlesii*. Growing to four feet high and through, it is ideal for grouping where something of neat and restrained habit is needed. But a word of warning: plants on their own roots should be obtained if possible, as it is often grafted on to the stock of coarser growing Viburnums in order to produce large plants more quickly, and suckers coming up from the roots, if unchecked, will quickly swamp the grafted plant.

All the Viburnums are happy in reasonably moist, good loam and are very accommodating in that, while growing most happily on an alkaline soil, they will also accept neutral and slightly acid conditions.

A. du Gard Pasley


2 5


3


4

SKILL

WARD FURNITURE: 1, BEDS

The Ministry of Health Ten Year Hospital Programme has aroused interest in all aspects of hospital planning. The whole development in this field of building has been sporadic and isolated in the last twenty years not least in the attention given to basic furniture. In this, the first article of a series, Anthony Wylson reviews hospital beds, the needs, the availability and the scope for research and development.

Background

The typical hospital bed for general use as seen today is the result of standardizing a model based on a traditional technique of bed construction. For over a century, the industry has revolved around the tubular steel and chill casting technique of the Midlands. Manufacturers have established the 'three component' approach of 'bed-ends' and 'mattress frame' securely locked together by a dovetail corner fitting. This basic form has been modified and adapted to changing requirements. In recent years the analytical focus upon hospital planning has touched on hospital furniture. New techniques of establishing design criteria and new methods of construction have initiated new trends.

Chill cast metal bedsteads, originated by Dr. W. Church in 1841, became an important industry in Birmingham in the later half of the nineteenth century. The first steps towards a specific hospital type bed was made in 1881 when Lawson Tait, an eminent Birmingham surgeon, had a bedstead developed by S. B. Whitfield for his private clinic. The design was based upon the current domestic bedstead. Its success led to the adoption of Tait's name for the hospital bedstead side of the Whitfield Company. Prior to World War I the fashion in domestic beds began to favour timber but the metal bedstead remained for institutional use because of its strength and hygienic qualities. In 1900 the 'Fowler' position bedstead had been produced, followed soon afterwards by obstetric units. In 1918 the Pearson fracture bedstead was manufactured for military casualties, and a back-rest bedstead was adopted in this country in 1928.

Progress in America was more rapid. In 1818 an 'extra high' bed had been established for military hospitals. By 1880 iron bedsteads had been adopted and an additional unit (consisting of a pivot and ratchet arrangement) raised the top of the mattress to support the patient's back. Pillows were used under the knees to stop the patient sliding down when the back rest was in use. In the 1890's the Gatch spring (Fowler position) was introduced, but it was not widely used until 1920. This spring (or mattress frame) consisted of three adjustable sections on a fixed foundation operated manually at first by ratchets and later by means of crank handles. The use of the mattress as a back-rest appears to have established a form noticeably different to the telescopic back-rest tradition in this country. In the 1940's, when early ambulation became more accepted, attention was given to a unit which could be adjusted to different levels. Early solutions necessitated attendants actually lifting or lowering the mattress frame into position. A manually operated two-crank adjustable height bed was introduced in 1950 and in 1956 the all-electric bedstead was developed.

In America the use of iron for bed construction, which had become popular in the nineteenth century, was found to be too heavy and unpleasant in appearance. Thus, by the turn of the century, wooden beds became fashionable. Today the widening range of materials used in construction include wood, steel, iron, aluminium and magnesium alloy.

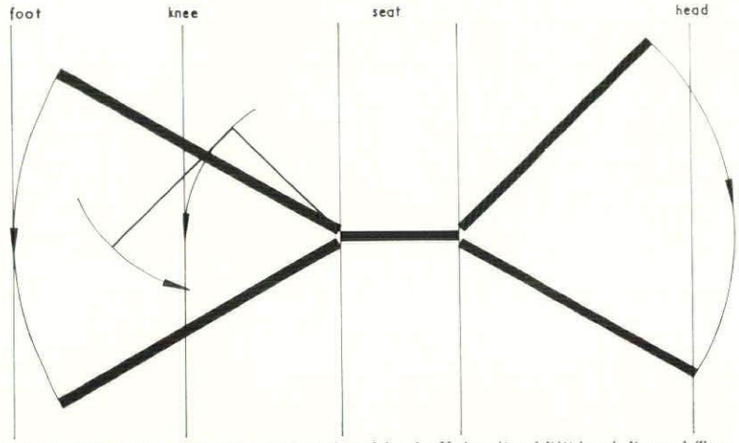
In conjunction with the development of the hospital bedstead techniques in mattressing have also changed. The hair mattress was popular until 1935 when the inner spring mattress (actually introduced in 1910) was adopted. Foam mattresses were put into the market in the 1940's. Today cotton felt mattresses and rubberized hair mattresses are also used.

Present trends

In this country the form of the traditional hospital bedstead has been crystallized into a British Standard, BS 1682 : 1950, with other British Standards covering adult cots, ward cots for children and bedsteads for mental patients. BS 1682 recommends a 36-in. width (30 in. for children's wards), a height of 24 in. to the top corner castings (to 30 in. if required), and a length of 78 in. (to 84 in. if required). The publication covers the construction of back rest, pole fittings, castors, wheeling devices, the mattress frame and spring, with the object of 'insuring interchangeability of the main component parts and uniformity in appearance without precluding the use of subsidiary components, such as special back rests, or the incorporation of modifications.' A wide range of accessories and adaptations that represent the progress in medical practice have been related to this Standard. Since 1950 no basic research has been carried out in this country, though individual manufacturers have developed units based upon particular hospital requirements.

The schedule aims to show the wide range of adaptations and modifications that have been developed by some manufacturers on this basis. The underlying principle of these units is the interchangeability of three main components (two bed ends and the mattress frame) with allowance for accessories. By adopting certain standards, both accessories and other hospital furniture (overbed tables, trolleys, bedside lockers, etc.) can be related to the units of other manufacturers. It is unfortunate, however, that the British Standard should be so concerned with a specific form of bedstead construction rather than the principles involved. With new techniques developing, it ceases to be of use either as a basis for assessing hospital bedsteads or as criteria for design. Recent developments by manufacturers show

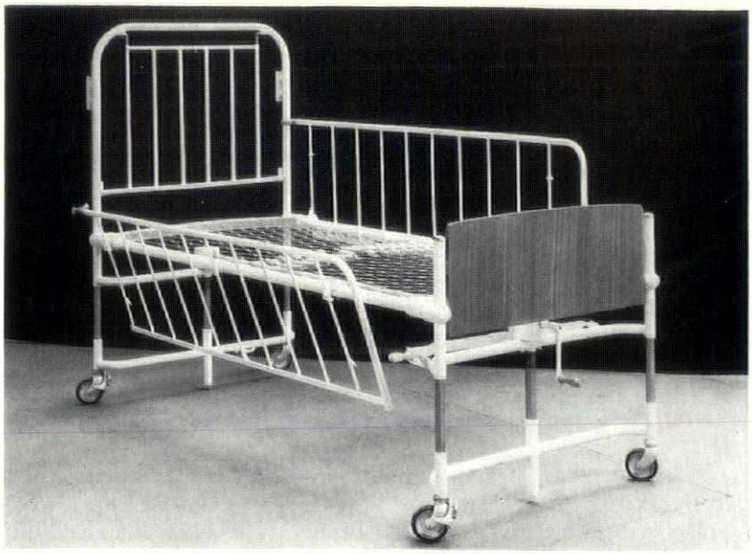
[continued on page 65



1, *eight mattress frame positions were investigated by the University of Pittsburgh Research Team. The diagram shows the basic mechanics adopted.*



2, *Addenbrooke's bed by Tullis Industries Limited.*



3



4

3, *Variable height bed by J. Nesbit Evans and Company Limited.* 4, *The Egerton adjustable bed* (Nursing Mirror *photograph.*)

continued from page 64]
a noticeable change in construction.

Lawson-Tait's telescopic obstetric bedstead designed for use where space is limited, Steel's obstetric table (with a stainless steel telescopic platform hydraulically operated to tilt in either direction with foot-operated quick-release action for head down position) and the Lawson-Tait Woolwich accident bed, also with tilting mechanism, adopt welded tubular frame construction. The Nesbit-Evans 'Oswestry' orthopaedic bedstead adopts all-welded construction more akin to trolley and examination-couch design. Evered and Company have developed the Marsden motorized unit similar in scope to the American Borg-Warner bed. This is a clear indication that both clinical requirements and available methods of construction render the traditional technique of modification and adaptation inadequate.

Recently Stanley Cox Limited have developed a general purpose hospital bed based on research by Barnet Medical Developments Limited. It is interesting to note that this company approaches the problems of bed design with experience in therapy equipment—equipment that requires exacting anthropometric studies, such as the company's Theraplinth and Scott traction frame. The Barnet bedstead (FB 101) has a short wheelbase, high/low adjustment (18 in. to 27 in.), measures 81 in. by 36 in., weighs 180 lb. and can be packed into a volume of 6 ft. 9 in. by 3 ft. by 1 ft. 8 in. The bed ends are in either polished wood or stove-enamelled metal panels. The most noticeable feature is the simplicity of the basic mechanism that aims to minimize dust collecting surfaces. The unit is also designed to provide for a transfusion stand, balk and beam assembly and side rails.

The Egerton adjustable bed has been on the market for three years. The design, by a medical practitioner and two engineers, aims to overcome bed-weariness as far as possible by mechanical means. It faces the problem of paralysed or long-term illness patients who need or wish to sit up. It aims to enable a patient to change his position at will without making excessive demands upon nursing staff, and it attempts to overcome the problem of bed-sores caused by prolonged pressure on one part of the body. The bed is constructed of tubular steel frames, hinged together, covered with Delacron panels and a 4-in. foam mattress overlay. The mattress frame can give both horizontal and a variety of sitting positions. Movement is effected by a small electric motor mounted on the chassis, operated by the patient by means of two push-buttons switch-box. This control mechanism has been adapted in special cases to a particular need. (In one case of a totally paralysed patient the mechanism was operated by the limited movement of his head.) The bed can also be arranged to give a postural drainage position, head-down tilt, and leg-raise position (for chronic arthritis with fixed flexion of hips). Detachable cot sides, adjustable foot support and a support for the lumbar curve can be fitted.

The electrically operated unit is 3 ft. wide with foam mattress and costs £105. A similar hand-operated model with hand-locking adjustment costs £75. The units are manufactured by Egerton Engineering Company, Watters Yards, High Street, Bromley, Kent.

Tullis Industries Limited manufacture a wide range of hospital equipment including the Addenbrooke's adjustable hospital bedstead. This incorporates an adjustable mattress frame (Fowler position) and is constructed of welded 'T' section. It

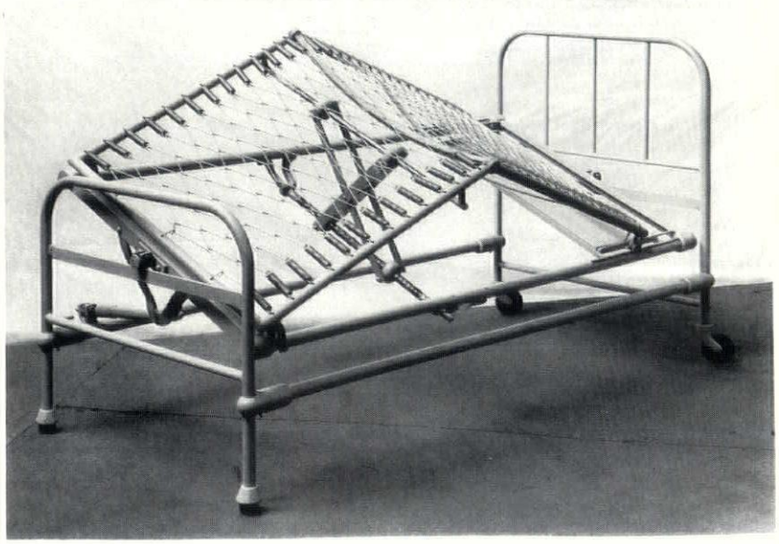


5



6

5, 6, *the Barnet bed by Stanley Cox Limited.* 7, *postural drainage bed by J. Nesbit Evans and Company Limited.*

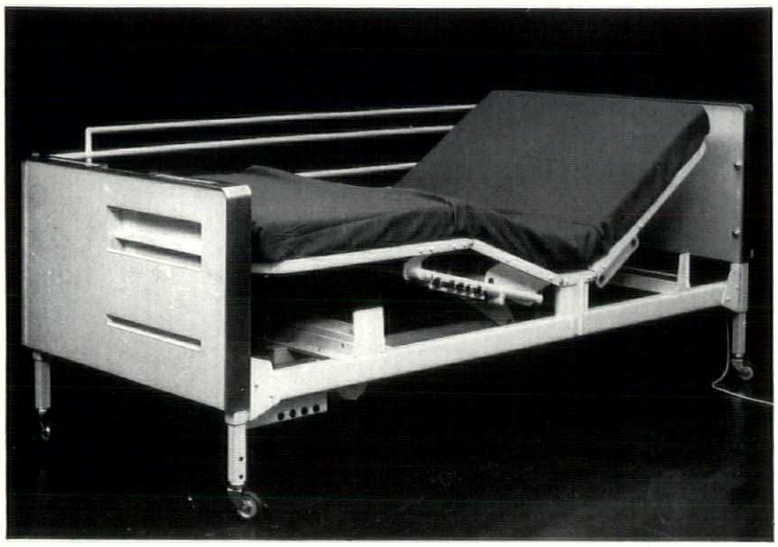


7

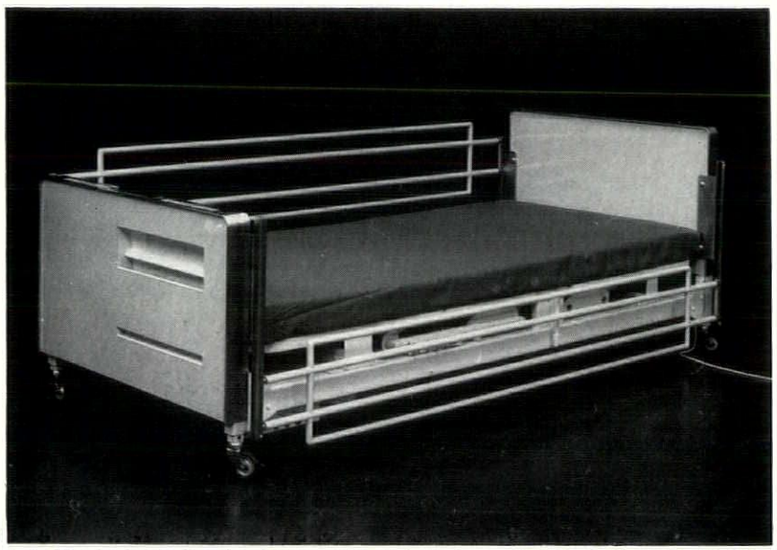
costs approximately £50.

Automation and all-electric beds are the eye-catching slogans in American journals. Progress has been more adventurous because of the conditions under which American hospitals operate. In fact in 1945 a hospital bed was developed that included not only built-in retractable orthopaedic posts and sideboards, automatic push-button control of the mattress, reading lights, automatic overbed table and retractable steps, but also a retractable basin with running water and connected drainage, and in addition (included in the $1,000 price) a full-sized flush toilet which could be manipulated into a comfortable position and retracted in 35 seconds. It was stated that the unit afforded saving in nurses' time and the size gave greater comfort and a sense of security.

Such ambitious projects must inevitably be eclipsed by economics, but the intentions and technical accomplishment are worthy of note. However, a study of hospital beds of particular importance was inaugurated in 1955 at the University of Pittsburgh. The study, which has resulted in the recently manufactured Borg-Warner bed, is an illuminating document that shows the extent of research and factors involved when a hospital unit is considered in detail.

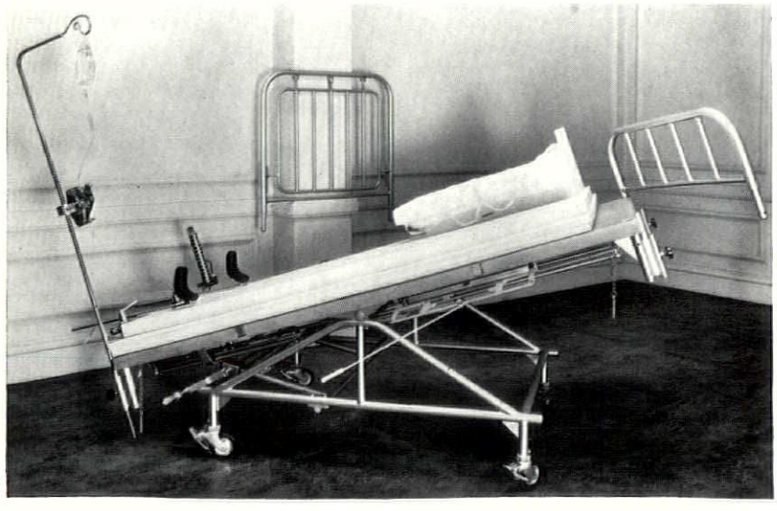


8



9

8, 9, *Marsden bed by Evered and Company Limited.* 10, *Lawson Tait Woolwich Accident Bed No.* 9508.



10

The Pittsburgh Report establishes the importance of the hospital bed by referring to the introductory report by Dr. Smalley: 'When one sets out to discover areas of greatest need with regard to methods engineering, he is impressed with the importance of the hospital bed and its environment as an essential instrument for health care. When a patient is admitted, he is assigned a bed with which he will be intimately associated throughout his hospitalization. To the patient, the hospital bed is a means for rest, comfort and convenience; to the doctors, nurses and other members of the health team, it is a vehicle of therapy and recuperation; to the non-professional personnel and to the service departments, it is a piece of hospital equipment which requires a certain amount of maintenance and service; to the hospital administration, it is a capital investment subjected to depreciation and obsolescence costs. To all these, the hospital bed has different significances but no objective analysis of the methods and procedures attending patient care can avoid the conclusion that the hospital bed plays an important role in providing the patient with those services needed for recovery.'

The Report concludes that: 'No one set of specifications for a hospital bed will economically meet the requirements in all clinical areas. A critical care unit and the recovery room do not require the adjustable height bed, but need the Gatch spring for treatment purposes. A nursing unit devoted exclusively to ambulatory patients has no need for an adjustable height bed, and questionable need for the Gatch spring. In intermediate care units, however, which may represent 50 per cent to 60 per cent of hospital beds, an adjustable height bed with a Gatch spring is highly desirable.'

Five recommendations are then put forward for the general purpose hospital bed for 'intermediate care': adjustable height range, 15 in. to 31 in. for mattress frame (allowing for a 4-in. foam rubber mattress), to satisfy patient and staff requirements; mattress frame dimensions of 36 in. wide by 84 in. long; Gatch spring in order that the mattress can be manipulated into a variety of positions; position of patient to be mainly controlled by hospital staff but to allow the flexibility of patient, operation of back and knee rest when permitted to do so; accessories to be considered include three-quarter length side rails, intravenous standard mounting, provision for supporting the soles of the patient's feet under certain conditions.

In conjunction with this general purpose bed, beds for critical care and ambulatory units are recommended. The former is a fixed high level (31 in.) with Gatch spring and the latter a fixed low level (16 in.) with flat mattress frame. The Borg-Warner all-electric bed is based upon the requirements for intermediate care and is powered by a 1/20 h.p. motor and combines both control on the height of the mattress frame (also achieving a tilting effect) and a variety of positions for the patient.

Problem of selection

In this country, the problem of selecting satisfactory hospital furniture has also arisen. Generally it has been an *ad hoc* choice by the supplies officer in consultation with members of the hospital staff. However, in some new hospital projects, the selection of furniture has been the subject of particular care.

In the case of the West Cumberland Hospital, four manufacturers were asked to place examples of their products on competitive display. Some of these units had been tried out in practice providing material for a written assessment in each case. Consultant staff, matrons and other senior officers were asked to give their opinions. It was found that the nursing staff primarily favoured the high/low feature followed by manoeuvrability and ease of cleaning. Full-length easily fitted cot sides, transfusion stand, provision for drainage bottle and other accessories were considered essential. The final choice fell between the Hoskins and Sewell short wheelbase bedstead with wood ends and the Nesbit-Evans unit with large castors.

In the case of Swindon Hospital, at the time the project was initiated, the bed-unit was regarded as a key item of equipment. It was considered that a fully satisfactory design did not seem to be available. Thus, representatives of the main hospital bedstead manufacturers were invited to attend meetings of the committee to discuss the possibility of designing a new type of bed to include the following features:

1. An all-purpose bed suitable for the majority of different types of hospital cases, the first being to provide maximum comfort for the patient.
2. Maximum mobility.
3. It should be easily maintained when stationary.
4. It would be adjustable for overall height and for raising the foot of the bed.
5. The head of the bed and bracket should be detachable.
6. Adequate sockets for drip stands, balk and beams, etc.
7. All mechanical parts which might be oily should be enclosed so that the bed can be easily cleaned.
8. Light in weight, but hardwearing and pleasing surface finish.
9. Short wheelbase.

Five firms were interviewed, and all promised to submit a prototype design, but it was later realized that the requirements specified were too complicated to be incorporated into a bed that would be reasonable in price and design. After various trials the order was placed with Hoskins and Sewell whose prototype had come nearest to the required design.

Thus, although the Birmingham chill cast hospital bedstead tradition is strong, this is by no means the only system through which new solutions can be developed. New clinical requirements—examination couches, wheel chairs, trolleys, polio beds, therapy units, etc.—have introduced new aspects of design and use of materials. Anthropometric studies have become paramount where the unit is directly supporting the patient. Light construction, welding, simple mattress design have been adopted where mobility is important. At the same time a more liberal attitude towards 'institutional' furniture has given scope to sturdy contemporary design.

These new conditions and the development that must result from the hospitals' programme suggest that the Hospital Equipment Advisory Committee should propose a new British Standard on hospital beds. Since it was established in 1947, the committee has covered an

[continued on page 74

By Appointment to Her Majesty the Queen Manufacturers of Kitchen Equipment.

STILL'S

ARE USED TO CATERING

FOR ARCHITECTS



Over the past eighty years W. M. Still & Sons have proved themselves to be experts in the manufacture and installation of high quality catering equipment. Installing complete kitchen and catering units is a matter of course to Still's team of technicians who, through years of working with architects, have grown to anticipate their needs. This close co-operation and understanding is however only part of Still's contribution to a catering installation. The design department of W. M. Still is prepared to take the burden of designing kitchen and catering installations off the shoulders of the architect. They will prepare detailed layouts and quotations for the architect and—in fact—see the job through to completion. For further information about this service,

write to W. M. STILL & SONS LTD

29/31 Greville Street, London, E.C.1. Tel: HOLborn 3744

Branches at BRISTOL MANCHESTER · GLASGOW

AP348

Table 1: Ward Beds

Manufacturer	*British Standard Wheeling Bed and Modifications*	*Adjustable Height and Other Ward Beds*		*Special Units—Obstetrics, Orthopaedic, etc.*	*Infant's Cots, Beds and Bassinettes*
Hoskins & Sewell Ltd., Bordesley, Birmingham, 12	Model Y841. Standard model on 1¾ in. hardwood peg castors. 24 in. high Model Y2702S. Standard model with back-rest and 4 in. ball-race castors. Double wheeling action at foot. 24 in. high Model Y2720SB, as above, but with single wheeling action at foot Model Y862S. With 4 in. rubber tyred ball-race castors at head and single wheeling action at foot Model Y2942A. With telescopic backrest, lift-out head, 4 in. rubber tyred ball-race castors and double wheel action at foot 'Bedford' Adult Cot Y3230. With side rails 1 ft. 8 in. deep on 4 in. rubber tyred ball-race castors. Side rails stow away automatically beneath mattress frame Model Y2906 Adult Cot. With 14 in. side rails on 1¾ in. hardwood peg castors. Mattress frame 24 in. high	Swindon General Purpose Bedstead Y3521. Welded steel tubing. Fitted with plastic (or polished wood) faced head and foot boards. Integral sockets for overhead beam and side rails. Lift out head and incorporates built-in telescopic backrest. Mattress frame 24 in. high and can be inclined to give a head-down tilt Short wheel base and large castors (9 in.) for manoeuvrability Cumberland General Ward Bedstead Y3504. Allows adjustable mattress frame height from 17 in. to 25 in. or tilted 8 in. to either head or foot. Fitted with wood head and foot boards, integral sockets for side rails and overhead beams, adjustable backrest, large 7 in. castors and short wheel base. Side rails 19 in. deep 'Isleworth' Cot Bedstead Y3430. Combining adjustable mattress frame height (16 in. to 28 in.) with Bedford patented stowaway side rails 20 in. deep. Particularly suitable for geriatric nursing. Also fitted with adjustable backrest. Built on 4 in. castors	'Westminster' Bedstead Y3482. Adjustable mattress frame height from 16 in. to 28 in. with separate operation to foot and head end to allow tilting. Fitted with adjustable backrest, mounted on 7 in. castors 'Warwick' Bedstead Y3611. Adjustable mattress frame height from 16 in. to 26 in. by means of single winding handle at foot end. Either foot or head can be inclined separately. Adjustable backrest, 4 in. castors 'St. Bartholomews' Bedstead Y3566. Cot bedstead with padded side rails that slide away beneath mattress frame and adjustable mattress frame height. Adjustable backrest and 5½ in. castors		No. Y2872. With 18 in. deep side rails and 21 in. high mattress frame. Size 4 ft. 6 in. by 2 ft. 6 in. 'Bedford' Child's Cot No. Y3237S. With 24 in. deep side rails. On 4 in. rubber tyred ball-race castors. Size 4 ft. 6 in. by 2 ft. 6 in. Mattress frame 24 in. high

Manufacturer	*British Standard Wheeling Bed and Modifications*	*Adjustable Height and Other Ward Beds*	*Adjustable Mattress Frame*	*Special Units—Obstetrics, Orthopaedic, etc.*	*Infant's Cots, Beds and Bassinettes*
Surgicon Ltd., Tower Works, Birds Royd, Brighouse, Yorks.			Patient's Surgical Bed 'Continental Design.' On four rubber tyred ball bearing castors, tubular steel feet lowered to immobilized bed. Tractionable mattress with backrest. Removable foot and head ends. Tilting to 14° from foot end and 5 in. from head end. Price £46 7s. 6d. Cardiac Bedstead 'Continental Pattern.' Incorporating four section mattress which can be adjusted to six positions. 1, horizontal, 2 Fowler position, 3, reversed back position, 4, Trendelenburg position, 5, sitting position, 6, high sitting position. Mattress 22 in. from floor	Obstetric Bed Table No. SE125. With heavy tripod base and foot-pedal operated hydraulic pump to elevate and lower the body section from 31 in. to 42 in. Mechanism under bed completely enclosed. Price £312 0s. 0d.	
Hoskins & Son Ltd., Neptune Works, Upper Trinity Street, Birmingham, 9	Bedstead No. 3378. Wood block feet or castors, 24 in. high Bedstead No. 3378M. Bedstead No. 3380. With sheet metal panels at head and foot, 24 in. high Bedstead No. 4029. With short steel base of 4 ft. 11 in. for manoeuvrability. Supplied with or without backrest, 24 in. high Bedstead No. 4000. Foot end fitted with double wheeling device with screw operation, 24 in. high Bedstead No. 3023C. Standard construction, 24 in. high	Bedstead No. 4031. Mattress frame can be varied from 18 in. to 27 in. or 24 in. to 33 in. Adult Cot Bedstead No. 4057. 24 in. high rails, 20 in. deep Adult Cot Bedstead No. 4053, 24 in. high, rails 20 in. deep. Telescopic backrest incorporated Bedstead No. 4027. Designed for Electric Convulsive Therapy, 20 in. high, mounted on 'Homa' ball-race brake castors			

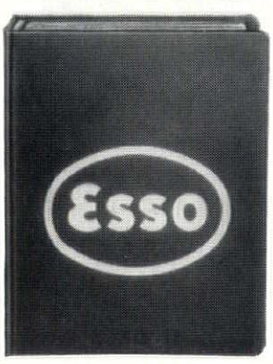


A complete guide to oil-fired heating

–IN ONE PRACTICAL VOLUME

There's never been *anything* like the Esso Guide to House Heating. At last, in a single volume, a comprehensive and exhaustive study of every aspect of the problem of domestic heating.

The Esso Guide to House Heating is written by Richard Eve, B.Arch. (McGill), ARIBA, with the technical assistance of the Esso Petroleum Co. Ltd., and is illustrated by Bernard Myers, ARCA. It contains over 500 pages divided into twelve self-contained sections. Together with an introduction and index, the sections are supplied in a stout 'loose leaf' binder, from which each can easily be removed. Thus several people can use the work at the same time.



SECTION HEADINGS INCLUDE: Oil and domestic heating · Heat and comfort · Domestic hot water supply · Space Heating by hot water · Heat loss calculations · Pipe and pump calculations · Embedded-coil panel heating · Space heating by warm air · Burners, boiler units and ancilliaries · Conversion to oil · Estimating the cost · Testing and servicing.

Price 4 gns from: Esso Petroleum Company Limited, 36 Queen Anne's Gate, London, S.W.1.

Table 1:

Manufacturer	*British Standard Wheeling Bed and Modifications*	*Adjustable Height and Other Ward Beds*	*Adjustable Mattress Frame*	*Special Units—Obstetrics, Orthopaedic, etc.*	*Infant's Cots, Beds and Bassinettes*	
J. Nesbit-Evans & Co. Ltd., Wednesbury, Staffs.	Model No. 3001. With four 4 in. diam. ball-race castors. Two wheels lower at foot end to make bed mobile. Head detachable above mattress level, 24 in. high Model No. 3002. Similar to Model 3001, but with an adjustable non-slip telescopic backrest. The head end is detachable at mattress level (to give access to patient's head), 24 in. high Model No. 3003. Similar to Model 3002, but with three 4 in. diam. ball-race castors and single wheeling mechanism. Telescopic backrest, 24 in. high Model No. 3003P. With wooden or Formica panel at foot end in place of steel tubing Model No. 3004. With three 4 in. diam. ball-race castors and single wheeling mechanism at foot end, 24 in. high Model No. 3007. Similar to 3003 and with 4 in. diam. braking castors at the head and foot end (as opposed to a combination of castors and stub feet). Telescopic backrest, 24 in. high Model No. 3008. Similar to No. 3004 without wheeling mechanism at foot, 24 in. high Model No. 3011. Similar to 3003 but without wheeling mechanism at foot end. Two 4 in. diam. ball-race castors at head end. Telescopic backrest, 24 in. high	Recovery Room Bedstead No. 3012. Similar to B.S. unit but with winding mechanism to raise foot end extensively. 7 in. castors on each leg with brakes. Back rest built in to head end, 24 in. high Short Wheel Base Ward Bed No. 3009. Advantages in manoeuvrability claimed. 4 in. braking castors on each leg. Head fitted with telescopic backrest, 24 in. high Chamber of Mines Ward Bed No. 5500. For tropical hospital use with rigid steel mattress base (instead of wire mattress base). Manufactured with hardwood feet but 2½ in. or 4 in. ball bearing castors can be fitted Variable Height Bedstead No. 3402. Designed primarily for nursing geriatric and post operative cases. Height can be varied from 18 in. to 26 in. operated by single winding handle at foot of bed, or to incline head or foot separately. Braking castors fitted on two legs Also Model No. 3402P. (Used at West Cumberland General Hospital.) With wood panel at foot end and removable lowering bedsides. Head and foot pillars are modified to take overhead fracture beams Mental Hospital Bedstead No. 01. 24 in., 20 in. or 8 in. (for epileptic cases) high with sheet steel panels at foot and head Mental Hospital Bedstead No. 05. Similar to 01 but on 4 in. diam. ball-race castors with single wheeling mechanism at foot end. Mental Hospital Bedstead No. 5303 Adult Cot Bedstead No. 7150. 14 in. high drop sides Adult Cot Bedstead No. 3208. Wheeling pattern with 14 in. high side walls Wheeling Adult Cot. No. 3210. Incorporating self-locking adjustable telescopic backrest at head end. 'Stowaway' sides can be stowed beneath bed when not required Deep Sided Adult Cot Bedstead No. 3220. Sides normally 20 in. above mattress frame but 24 in. sides can be supplied Variable Height Adult Cot No. 3222	Cardiac Bedstead Model No. 2131. Mattress frame can be adjusted with a number of different positions by winding mechanisms. On 4 in. ball-race rubber castors, two fitted with castor brakes, 27 in. high Fowler Position Bed No. 3108. Operating mechanism completely enclosed for cleanliness and operated from foot of bed. Head and knee rests operated independently. 4 in. ball-race castors, 24 in. high Fowler Position Bedstead No. 3109. As 3108 but with two wheel mechanism at foot end, 24 in. high Fowler Position Bedstead No. 3005. With independent adjustment of head and knee rests from either side of bed. Two wheel wheeling mechanism at foot of bed, 24 in. high Postural Drainage Bedstead No. 3000. Mattress frame can be elevated to considerable angle for lung drainage in the prone position. Adjustment from winding handles either side of the bed. 24 in. high Postural Drainage Bed No. 4001. Mattress frame can be both elevated to a considerable angle for lung drainage in the prone position and be inclined laterally in either direction	Obstetric Bed No. 4002. Modified B.S. wheeling bed with device to lower patient's head to enable postural treatment, if necessary Patent Obstetric Bedstead No. 4008. Designed to faciliate examination and attention to the patient without risk of injury Labour Ward Bedstead No. 4004 Oswestry Orthopaedic Bedstead No. 3300. Departure from British Standard in appearance, employing all-welded construction for lightness, large wheels and short wheel base for mobility. Wire mattress is mounted in an inverted anigle-sded frame which allows the addition of fracture boards. Head and foot bars are strengthened to take fracture apparatus, 27 in. high Fracture Bedstead No. 1009K. British Standard in form but extra strength to take fracture apparatus, 27 in. high Spinal Bedstead No. 6707. Special rotating bed to give easy access to the back and spine	Cot No. 1004. Small lightweight cot with 2½ in. diam. ball-bearing castors, 14 in. sides, size 3 ft. 0 in. by 1 ft. 9 in. Mattress frame 30 in. high Children's Ward Bedstead No. 3200. With castors and metal sides which can be lowered, 5 ft. 6 in. by 2 ft. 6 in., 24 in. high Anti-Accident Cot No. 8160. To British Standard with sides 18 in. above mattress frame. Standard sizes 5 ft. 0 in. by 2 ft. 6 in., 4 ft. 6 in. by 2 ft. 6 in., 4 ft. 0 in. by 2 ft. 0 in. Wheeling Child's Cot No. 3201. Child's cot with 24 in. sides, having intermediate halfway up position and wheeling mechanism Wheeling Child's Cot No. 3202 Child's Safety Cot No. 3206 Child's Cot. No. 3204	Bassinette No. 1007. Castors at one end. Non-swing bassinette inclinable to order. With or without curtain rod. Light steel Folding Bassinette No. 1005. With removable cotton duck sling. Removable mosquito net frame Folding Bassinette No. 1006. With ball-race castors at one end Clip-on Bassinette Attachment No. 59. Can be fitted to any standard ward bedstead

Swanlyne
SANITARY FITTINGS

GOSLETT
OF CHARING CROSS ROAD

Designed by WALLIS GOSLETT
REGISTERED DESIGN

TWO TONE

WHITE BOWL
BLACK OR COLOUR
OUTSIDE



Available on all
Swanlyne
DESIGNS

LEAFLET AR/T762
Barbour Index File 336

GOSLETT
OF CHARING CROSS ROAD

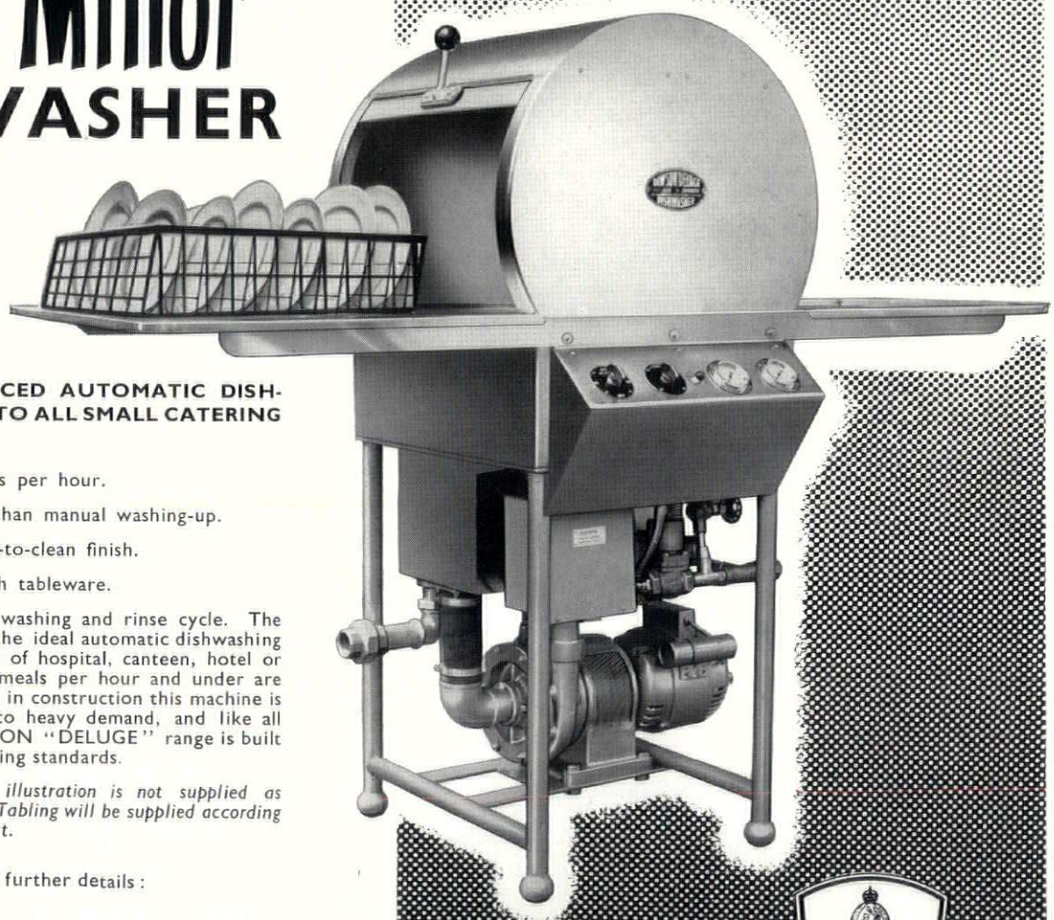
Showrooms:
127-131 CHARING CROSS ROAD
LONDON, W.C.2
Nearest Station: TOTTENHAM COURT ROAD
Telephone: GERrard 7890 (12 lines)

Table 1:

Manufacturer	*British Standard Wheeling Bed and Modifications*	*Adjustable Height and Other Ward Beds*	*Adjustable Mattress Frame*	*Special Units—Obstetrics, Orthopaedic, etc.*	*Infant's Cots, Beds and Bassinettes*	
'Lawson-Tait.' Messrs. S. B. Whitfield (Sales) Ltd., Lawson Tait House, High Street, Bordesley, Birmingham	Back Rest Wheeling Bedstead No. S311A. Backrest locks in three positions. Double wheeling device with 4 in. diam. ball-race castors, 24 in. high Back Rest Wheeling Bedstead No. S321A. As S311A but with single wheeling device with 4 in. diam. ball-race castors, 24 in. high Single Castor Wheeling Bedstead No. S221A. As S321A without backrest, 24 in. high Ward Bedstead No. S141B. Simple ward bedstead with 1¾ in. wood wheels at all corners, 24 in. high	Adult Patient's Cot. No. S7009. Set on 1¾ in. wood or china wheels and ball bearing castors and with 14 in. sides, 24 in. high Short Wheelbase Bedstead No. 9098. Designed for manoeuvrability—fitted with 3 position backrest and ball-race castors. Can be made with fold-down foot-bow to give increased length, 24 in. high	Melbourne Thomas Frame No. S214A. Designed to give comfort to patient. Operated by means of a crank handle at head end Lung Drainage Frame No. S233B. For continuous postural drainage operated from either end by means of screw mechanism Fowler Position Frame No. S232B. Head and knee rest sections operated independently by totally enclosed screws Tilting Bed No. 9503. Designed with a short wheel base with 9 in. diam. Volvex anti-static castors (two with brake action). Tilting controlled by two independent handles to give head down or foot down to an angle of 20° and a level seat height of from 18 in. to 27 in. Cardiac Bedstead No. S9000. Controlled by two separate screws at side of bed; head and knee rest adjusted independently. 4 in. castors, 26 in. high	Steels Obstetric Table 9507. Stainless steel telescopic platform, hydraulically operated to tilt in either direction with foot operated quick release action for head down position, 4 in. diam. antistatic volvex castors. Table operated by two separate control foot pedals at head Tilting Obstetric Bedstead No. S9014. Controlled by means of handle at foot, both head and foot bows lift out, on 4 in. castors, 30 in. high Telescopic Obstetric Bedstead No. S9011. Designed for use where space is limited, the foot section being made to slide under the head section	Child's Cot No. S9158. British Standard Form. Sides 18 in. high. Size 4 ft. 6 in. by 2ft. 6 in. Height of mattress frame from floor 22 in. Child's Cot No. S9162. Head end with adjustable backrest and whole head end can be lifted out if required for treatment. Double castor wheeling attachment. Half-way positions to drop sides. Mattress frame 27 in. from floor. Sides 22½ in. deep. Size 5 ft. 0 in. by 2 ft. 3 in. Child's Cot No. S7005. With 4 in. ball-race castors. Sides swing down under cot clear of nurse's feet. Mattress frame 24 in. high. Sides 24 in. deep or 12 in. at intermediate position. Size 4 ft. 6 in. by 2 ft. 6 in.	Electrically heated receiving cot—can be tilted. No. S7010 Cot for Premature Infant. Cot No. S9023. Can be tilted Infant's Cot. No. S9031. Folding cot consisting of metal frame supporting canvas bag Bassinette Cot No. S7001. Made with rigid hooks to take the basket which cannot rock Bassinette Attachment No. S7003. Designed to be fitted to foot of any bedstead with suitable height of foot bow Bassinette Cot No. S7002
Siddall & Hilton Ltd., Industrial Road, Sowerby Bridge, Yorks.	Full range of ward beds	Tilting Bedstead Hi-Lo Bedstead Motorised Rocking Bedstead Short Wheel Base Bedstead			Range of Children's Cots and Bassinettes	
Evered & Co., Surrey Works, Smethwick 40, Staffs.	Full range of ward beds		Marsden Motorised Bedstead Fowler Position Bedstead		Range of Children's Cots and Bassinettes	
A. Philips Ltd., Excelsior Works, Eyre Street, Spring Hill, Birmingham 18	Full range of ward beds		Fowler Position Bedstead Cardiac Bedstead Postural Drainage Bedstead Thoracic Bedsteads	Orthopaedic Bedstead Obstetric Bedsteads	Range of Children's Cots and Bassinettes	
Calthena, Leestone Road, Sharston Industrial Estate, Manchester 22	Full range of ward beds					
Stanley Cox Ltd.		Barnet Bed Short Wheel Base High/low adjustment 18 in. to 27 in Mattress frame 81 in. by 36 in.				
Tullis Industries, Gerrards Cross, Bucks.		Addenbrooke's adjustable bed				
Egerton Engineering Co., Watters Yard, High Street, Bromley, Kent				Adjustable bed of tubular steel covered with Delacron panels. Position of mattress frame operated by electric motor		

A must for the smaller Caterer

THE *Dawson* 'New Minor' DISHWASHER



THIS NEW LOW-PRICED AUTOMATIC DISH-WASHER IS A BOON TO ALL SMALL CATERING UNITS

- ★ Washes up to 60 racks per hour.
- ★ Quicker and cheaper than manual washing-up.
- ★ All stainless steel easy-to-clean finish.
- ★ No moving parts touch tableware.
- ★ Completely automatic washing and rinse cycle. The **'NEW MINOR'** is the ideal automatic dishwashing machine for every kind of hospital, canteen, hotel or restaurant where 100 meals per hour and under are being handled. Robust in construction this machine is designed to stand up to heavy demand, and like all machines in the DAWSON "DELUGE" range is built to the highest engineering standards.

The tabling shown in the illustration is not supplied as standard with the machine. Tabling will be supplied according to requirements, at extra cost.

Please write for leaflet and further details :

DAWSON 'DELUGE' DISHWASHERS

The Certificate of the ROYAL INSTITUTE OF PUBLIC HEALTH & HYGIENE *has been awarded to* DAWSON 'DELUGE DISHWASHERS

DAWSON BROS. LTD.

406 RODING LANE SOUTH, WOODFORD GREEN, ESSEX.
Telephone : CRESCENT 7777 (4 lines)
Head Office & Works : GOMERSAL (Near Leeds)
Telephone : CLECKHEATON 3422 (7 lines)

continued from page 66]

extensive range of hospital equipment (from patient trolleys to surgical gloves, from identification colours of gas cylinders to the recommendations arising from the danger of static electricity in the vicinity of inflammable gases). Furthermore, the form of the British Standards on anatomical, physiological and anthropometric recommendations for office furniture (BS 3044, 3404 and 3074) and the British Standard on school furniture (BS 3030) show that it is possible to establish principles without the limitations of stating a particular model. In BS 3030 'provision is being made for basic design and construction of school furniture without defining a particular design or method of construction. The furniture is, therefore, being specified in terms of requirements of the user, the dimensions necessary for comfort and good posture and the requirements for strength, durability, quality of materials and workmanship . . . dimensional requirements based on anthropometric investigations and introduction of performance tests.'

This line could well be adopted to establish design and selection criteria for ward furniture. It is also important from the point of view of the manufacturers to consider the possibilities if a future international market were faced with co-ordinated production from one country. Once component categories have been established (e.g. in terms of patients' needs), the presentation of principles would give manufacturers freedom to interpret needs without prejudicing standards or co-ordinating factors. It is also important that the criteria should be continually re-assessed in the light of experience.

The bedstead cannot be considered in isolation. It is essentially one of several components that cater for the patients' needs. The bedstead is a means of supporting the patient in various positions depending upon clinical requirements. Thus the comfort of the patient depends extensively upon the suitability of the mattress and mattress frame. The Report of the King Edward's Hospital Fund for London and the British Standards (BS 1818 and 1819) both present the existing forms—interior sprung, foam rubber and hair mattress. The King Edward's Fund survey points out the advantages and disadvantages of each and concludes:

'It is not possible to say that any one type of mattress is most suitable for general use' and 'From the nursing point of view . . . no one mattress is universally acceptable.' This appears as further evidence of a need for the rationalization of patients' requirements from the immediate comfort afforded by the correct support of the body (anthropometric study) and body temperature control (correct bedding) to the wider considerations of the total ward complex.

Framework for future development

What is happening to co-ordinate the development of hospital furniture at the outset of an extensive hospitals programme? Are there to be short term and long term research programmes, a question raised in the recent *Design* magazine article by Archie McNab?

In respect to the latter, the Nuffield Foundation (Research Fellow Bruce Archer) has sponsored a research team which has been given the facilities of the Engineering Department of the Royal College of Art with the object of making 'Studies in the function and design of non-surgical hospital equipment.' The investigation is charged with the task of developing an organized body of knowledge which will assist manufacturers to design and hospital planners to select, fixed and movable equipment, considering such factors as reduction of cross-infection, ease and comfort of the patient, ease and efficiency of the attendant, servicing and maintenance, circulation and transport, aesthetics, production and design for capital investment. This work is seen in terms of a five-year programme.

It would seem that the short term considerations could arise out of collaboration (which is now being discussed) between four organizations, the Ministry of Health, the Building Centre, the Design Centre, and the King Edward's Hospital Fund.

The Supplies Division of the Ministry is planning to produce Equipment Notes to complement the Ministry's Building Notes. The Supplies Division will also carry out cost analyses for the 'totally equipped' hospital, which should give more freedom in the selection of equipment. These steps reflect the Ministry's policy to move forward on a wide front, reviewing and assessing standards en route, a system used in the Herts Schools building programme.

The Building Centre, following the exhibition held in March/April, 1961, is developing a department entirely devoted to hospital materials and equipment. This will include a hospital equipment register with a selective display of materials and equipment of particular merit. The Design Centre will participate in the selection process. The King Edward's Hospital Fund, with direct access to hospitals, hospital staff and teaching facilities, can fulfil the important role of testing and commenting upon materials and equipment.

This foursome could intercept the present tendency to piecemeal and isolated development. It could also provide basic information on which existing units can be assessed and around which new designs can be developed.

The Hospitals Programme has the benefit of all that was gained from the Schools Programme. Where hospital furniture is concerned, it is most important that all aspects are represented at the time of selection or design, and that these are rational, unprejudiced and progressive, resolving both the technical problem and the therapeutic value of the hospital environment.

CONTRACTORS etc

Queens Gardens and College of Technology, Kingston upon Hull. *Architect:* Frederick Gibberd. *General contractors:* Wm. Moss & Sons Ltd. (first stage); Spooners (Hull) Ltd. (second stage). *Sub-contractors: Piling:* Holmpress Piles Ltd. *Asbestos spray:* Turners Asbestos Cement Co. *Cycle parking blocks:* Stelcon (Industrial Floors) Ltd. *Steelwork:* Bigwood Bros. (Birmingham) Ltd., J. T. Scotney Ltd. *Collapsible gates:* The Bolton Gate Co. *Reconstructed stone:* Croft Granite Brick & Concrete Co. *Granite tiles:* O. Toffolo & Son Ltd. *Faience tiles:* Leeds Fireclay Co. *Heating installation (first stage):* G. N. Haden. *Glass dome lights and lettered glass:* T. & W. Ide. *Patent glazing:* Aygee Ltd. *Asphalt and roofing felt:* Permanite Ltd. *Sliding door track:* E. Hill Aldam & Co. *Structural steelwork:* King & Co. *Slate (first stage):* Bow Slate & Enamel Co. *Metal windows:* Mellowes & Co. *Metal balustrades:* S. W. Farmer & Son Ltd. *Removable false ceiling:* Tentest Co. *Heating installation (second stage):* Hopes Heating & Engineering Co. *Open steel flooring:* Beetles & Sons Ltd. *Heated ceiling:* William Beardmore & Co. *Ironmongery:* Armstrong Patents Co., H. & C. Davis & Co. *Entrance and corridor door handles:* James Gibbons Ltd. *Enamelled infill panels:* Stewart & Gray Ltd. *Timber window panels:* Spooners (Hull) Ltd. *Lifts:* Hammond & Champness Ltd. *Roller shutter:* G. Brady & Co. *Reconstructed stone and cladding slabs:* Trent Concrete Ltd. *Slate (second stage):* John Williams & Co. (London) Ltd. *Tower turret cladding:* Robertson Thain Ltd. *Roof terrace paving:* Frazzi Ltd. *Thermoplastic flooring:* Semtex Ltd. *Hardwood strip and block flooring:* Hollis Bros. Ltd. *Cork tile flooring:* Joseph F. Ebner (1953) Ltd. *Paint:* Blundell Spence & Co. *Laboratory and special furniture:* Kingston (Architectural Craftsmen) Ltd. *Telephone hoods:* Burgess Products Co. *Fire-fighting equipment:* Kingsford Products Ltd. *Lecture theatre seating:* Race Furniture Ltd. *Library furniture:* P. Willoughby Ltd. *Kitchen equipment:* Sumerling & Co.

St. Michael's Cathedral, Coventry. *Architect:* Sir Basil Spence. *General contractor:* John Laing Construction Ltd. *Sub-contractors: Linen curtains:* Adam & Lane & Neeve Ltd. *Ironmongery:* C. & S. Allgood. *Electric clocks:* Baume & Co. *Lift installation:* Bennie Lifts Ltd. *Collapsible gates:* Bolton Gate Co. *Bronze extrusions:* James Booth & Co. *Copper roofing:* Fredk. Braby & Co. *York stone paving and steps:* Joseph Brooke & Son Ltd. *Painters:* George Brown Ltd. *Tile layers:* Bryon & Co. *Slate cills:* Burlington Slate Co. *Acoustic plaster:* Cafferata & Co. *Lightweight roof screeds:* Celcon Ltd. *Piling:* The Cementation Co. *Acoustic treatment:* Cork Insulation & Asbestos Co. *Floor tiling:* Coventry Tile Co. *Bronze windows and Great West Screen:* Crittall Manufacturing Co. *Lightning conductors:* R. C. Cutting & Son Ltd. *Fire hose reels:* Dunford Fire Protection Services Ltd. *Electrical installation:* Electrical Installations Ltd. *Heating control panel and equipment:* Electroflow Meters Ltd. *Glazing to Great West Screen:* Faulkner Greene & Co. *Underlay on main roof copper:* Fibreglass Ltd. *Paint for exposed concrete:* Joseph Freeman, Sons & Co. *Brackets for nave lights:* Geo. H. Gascoigne Co. *Nave light fittings:* General Electric Co. *Glazing:* Glass (Coventry) Ltd. *Porch crosses and altar tops:* O. Grunan, Esq., The Awson Motor Carriage Co. *Gilding to dome of Chapel of Christ the Servant:* John Hardman Studios. *Granite setts:* W. H. Harrabin & Son Ltd. *Communion rail and Choir practice room furniture:* Harris & Moulder Ltd. *Bronze slots and anchors:* G. Harrison & Sons Ltd. *Blue quarry tiles:* Haunchwood Brick & Tile Co. *Choir stalls and undercroft furniture:* John Higgin (Furniture) Ltd. *Brass letters in nave floor, bronze handrails, grilles and bases for font and nave columns:* Highton & Son Ltd. *Timber pyramids in vault canopy:* Holloway Brothers Ltd. *Wood block flooring:* W. W. Howard Bros. & Co. *Television lighting hoists:* Geo. W. King Ltd. *Fixing stained glass to Hallowing places and Baptistry window:* G. King & Son (Lead Glaziers) Ltd. *York stone circular steps:* Johnsons Wellfield Quarries Ltd. *Preliminary cutting for Great West Screen engraved panels:* London Sand Blast Decorative Glass Works Ltd. *Application of glazing mastic:* Mann Reddington Ltd. *Undercroft light fittings:* Merchant Adventurers of London Ltd. *Bronze casting of St. Michael:* Morris Singer Co. *Concrete manholes:* Mono Concrete Co. *Vacuum cleaner and fittings:* New Welbeck Ltd. *Microphones and speech reinforcement equipment:* Panphonic Reproducers Ltd. *Rubber flooring to catwalk:* James A. Park. *Temporary waterproofing:* Permanite. *Dome lights and armour plate doors:* Pilkington Brothers Ltd. *Acoustic plastering:* C. E. Pinn & Co. *Tapestry weaving:* Pinton Freres. *Mosaics to flower room sink:* Proctor & Lavender Mosaics Ltd. *Waterproof rendering:* Quickset Water Sealers Ltd. *Heating and ventilation installation:* Rosser and Russell Ltd. *Undercroft light fittings:* Rotaflex (Great Britain) Ltd. *Nave chairs:* Gordon Russell Ltd. *Tapestry frame work:* Scaffolding (Gt. Britain) Ltd. *Bronze cramps:* Smith, Wallis & Co. *Suppliers of red Hollington stone for the external walls:* Stauton & Bettany Ltd. *Fleche, pulpit and lectern:* J. Starkie Gardner Ltd. *Paint for interior concrete:* Stic B Paint (Sales) Ltd. *Spotlights in Choir practice room:* Anne Storm Ltd. *Tapestry lighting:* Strand Electric & Engineering Co. *Light fittings for Chapel of the Cross:* Frederick Thomas. *Door handles, springs and locks:* Tonks (Birmingham) Ltd. *Plumbers:* J. C. Toogood Ltd. *Marble floor in Chapel of Unity:* J. Whitehead & Sons Ltd. *Precast concrete fins and nave columns:* Woolaway Concrete Products Ltd. *Fleche erection equipment:* Westland Aircraft Ltd. *Sanitary fittings:* Adamsez Ltd. *Light fittings:* Atlas Lighting Ltd. *Glazing:* Aygee Ltd. *Glazing mastic:* The BB Chemical Co. *Chancel furniture and clergy stalls:* Geo. M. Hammer & Co. *Slate cladding and paving:* Lakeland Green Slate & Stone Co. *Marble paving in Nave:* Nine Elms Stonemasonry Works Ltd. *Timber preservation:* Pesteure Ltd. *Precast concrete treads to spiral stairway:* Stuart's Granolithic Co.

Factory at Gillingham, Kent. *Architects:* Farmer and Dark. *General contractors:* John Laing Construction Ltd. *Sub-contractors: Piling:* The Cementation Co. *Reinforced concrete, precast:* Conallcrete Ltd. *Steelwork:* Sanders & Forster Ltd. *Internal partitions:* Ayrshire Metal Products Ltd. *Stairs, fire escape:* Clark, Hunt & Co. *Ironmongery:* H. & C. Davis & Co. *Windows, pattern glazing:* Faulkner, Greene & Co. *Windows, metal:* John Thompson Beacon Windows Ltd. *Doors, collapsible steel shutters, fire resisting and rolling steel doors:* Potter Rax Ltd. *Balustrading, industrial:* Lionweld Ltd. *Balustrading, decorative, and gates, catladders:* Allen & Greaves Ltd. *Lantern lights:* British Patent Glazing Ltd. *Domelights, plastic:* Duplus Domes Ltd. *External cladding, asbestos cement roofing and linings, suspended ceilings:* John Denyer Ltd. *Parquet, vinyl tiles:* Bennett's Wood Flooring (Tungit) Co. *Vitreous tiles:* Wilson & Wylie Ltd. *Acid resisting tiles:* Prodorite Ltd. *Plastic ceiling finish:* R. A. Brand & Co. *Duct pipes:* Bowater Flexpipe Ltd. *Plumbing:* Arthur Scull & Son Ltd. *Sanitary fittings:* Standard Range & Foundry Co. *Central heating, mechanical ventilation, sprinkler installation:* Matthew Hall & Co. *Boilers:* G.W.B. Furnaces Ltd. *Roof ventilators:* Colt Ventilations Ltd. *Lifts:* Otis Elevator Co., George Johnson Ltd. *Kitchen equipment:* Benham & Sons Ltd. *Lockers:* Speedwell Gear Case Co. *Venetian blinds:* Airelite Venetian Blind Co. *Facing bricks:* Eastwood Sales Ltd., Sevenoaks Brick Works Ltd.

WEST'S *SHELL* PILING

the pre-cast pile with the cast-in-situ core

PRINCIPLE

West's Shell Piling System combines the principles of pre-cast and cast-in-situ piling, retaining the rigidity of the positively driven pile, but avoiding fatigue in the pile core.

APPLICATION

The pile is suitable for supporting all types of structure. Recent contracts have included steelworks, refinery plant, gasworks, power stations, bridges, transmission towers, factories, multi-storey office blocks and flats and houses.

THE PILE

The pre-cast reinforced concrete shells forming the outer casing of the pile are threaded on to a steel mandrel and the whole assembly is then driven bodily into the ground, using a drop hammer. The pole may be lengthened where necessary by the addition of shells until the required set or depth is reached. After the removal of the mandrel, the shell is filled with concrete, reinforced as required by the load conditions. The pile core is, therefore, unstressed, since it is cast in-situ after the casing has been driven to form a set.

PILING PLANT

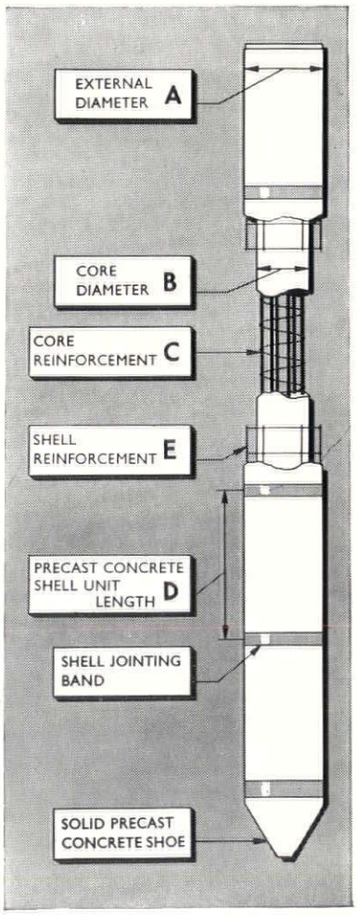
The wide range of specialized plant enables piling to be carried out under the varying site conditions which prevail in foundation construction. Extensive site preparation is not necessary and an immediate start can normally be made with a capacity per machine of 150 ft. to 400 ft. of completed pile each day.
Large diesel piling outfits for extensive open sites and smaller tracked diesel outfits suitable for more restricted sites, are available for the economical execution of any size of piling project. Stocks of matured shells maintained at the main works and depots enable piling to commence immediately and to proceed with speed.

TECHNICAL SERVICE

Advice on the design and construction of foundations incorporating West's Shell Piles is available from our Technical Department. Early consultation is recommended.



Large mobile piling machine



PILE DATA

To be read in conjunction with sectional drawing.

Ext. Dia. "A"	*Core Dia. "B"*	*Core Reinforcement "C"*	*Shell Length "D"*	*Shell Reinforcement "E"*	*Loading (Tons)*
24″	19″	In accordance with design requirements	3′ 0″	Mesh reinforcement	100-200
20″/21″	15″		3′ 0″		75-120
17½″	12″		3′ 0″		50-80
14½/15″	10⅞″		3′ 0″	6 vertical bars 7-12 rings	Up to 60

The core reinforcement "C" is varied to suit the load on the pile.

WEST'S PILING & CONSTRUCTION CO. LTD., BATH ROAD, HARMONDSWORTH, MIDDLESEX
Tel: SKYPORT 5222 Telex: 21819 WESTPILE LONDON
Branches in LONDON, BRISTOL, BIRMINGHAM, MANCHESTER, NEWARK, STRATFORD-BY-BOW, GLASGOW, BELFAST
Australasia: West's Shell Piling (Asia) Pty. Ltd., Melbourne, Sydney, Adelaide and Wellington N. Z.
France: Carbonisation Entreprise et Ceramique, Paris

Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames.
Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter



for freedom in design–

REINFORCED CONCRETE

BRC

Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

London, Birmingham, Bristol, Chelmsford, Leeds, Leicester, Liverpool, Manchester, Newcastle, Cardiff, Glasgow, Dublin, Belfast, Bulawayo, Calcutta, Johannesburg, Lagos, Singapore, Vancouver.

Export Sales: 54 Grosvenor Street, London W.1

THE ARCHITECTURAL REVIEW VOLUME CXXXII NUMBER 786 AUGUST 1962 FIVE SHILLINGS



C & A MODES LIMITED
go for the practical luxury of
WILLIAMSON CRESTALUX TILES

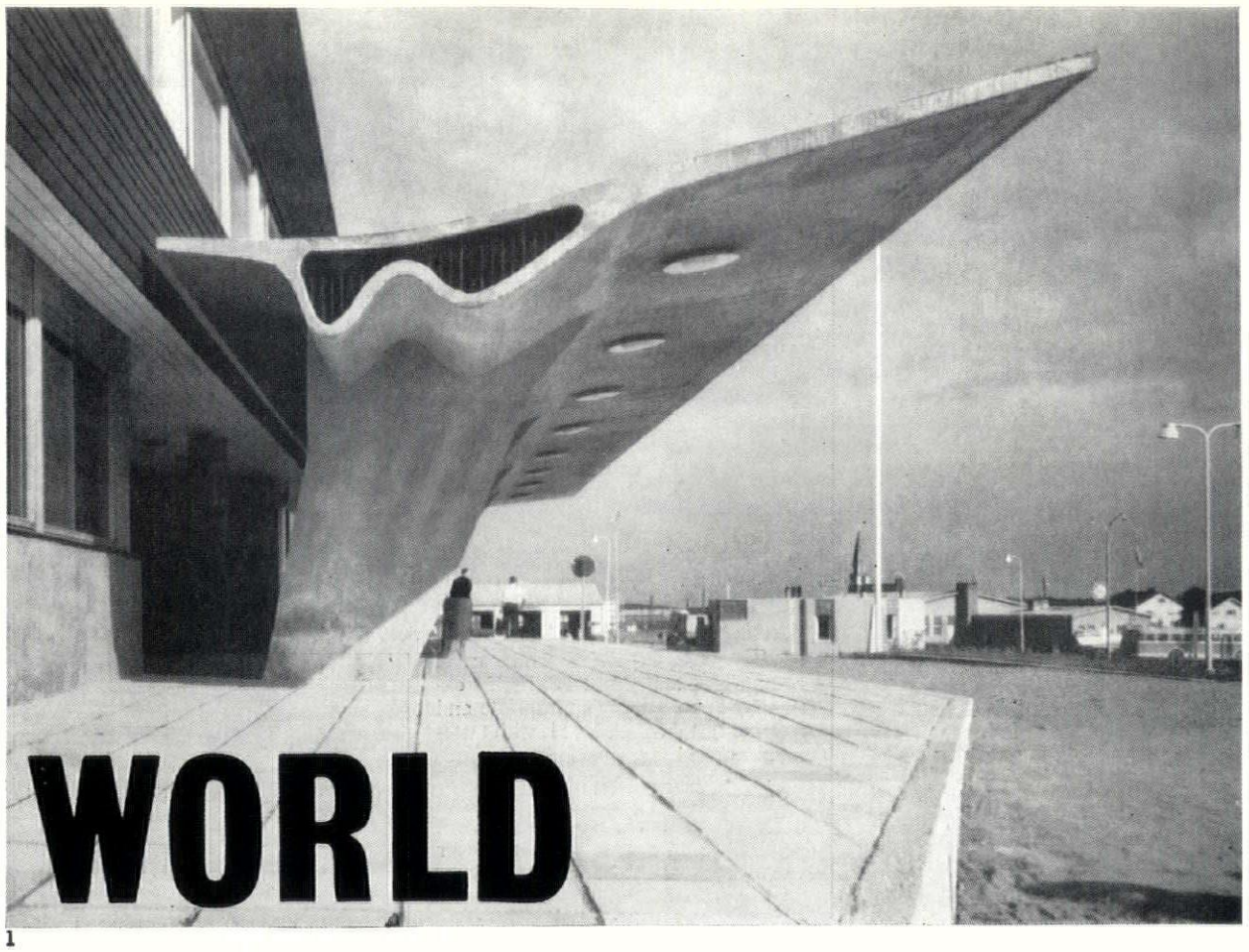


C & A Modes is one of several organisations to specify Williamson Crestalux Vinyl Tiles for a very important reason. Practical luxury. Practical—that's the high resistance that Crestalux tiles have to wear and indentation—their resistance to high point loading, such as stiletto heels, is paramount. Practical—the non-slip surface produces no dust, resists dirt, water and abrasion. Luxury—that lasts. Luxury with customer appeal. Luxury—in the clear, deep colours—in the distinguished marble effects—in the silence and resilience of Crestalux underfoot.
Practical luxury—makes Crestalux Vinyl tiles the outstanding high duty floor finish.

For further information please write to:

JAS. WILLIAMSON & SON LTD · LANCASTER
London address: 39/41, Cannon Street, London, E.C.4. Tel: City 7926.

WORLD



1

FINLAND STATIONS

The striking entrance canopy of Rovaniemi bus-station, 1, was only one of a number of original features that emerged from *Arkkitehti/Arkitekten's* recent number (4, 1962) devoted to buildings for transport. Pekka Laurila, in an historical article on Finland's first railway—Helsinki-Hameenlinna, completed exactly a century ago—illustrated one of the line's original stations, at Turenki. Its delectable Swiss-cottage detailing, 2, and Early Victorian silhouette, 3, would seem to require a Vincent Scully to do them stick-style justice.

The two modern buildings discussed at length in this issue of *A/A* make an effective contrast to the extremes of Finnish architecture at present, Eero Kajava's station and post-office at Kuovola is an elaborate, multi-functional complex that runs a justifiable gamut from an abrasive version of Aalto's office facades, left in 4, to a kind of Miesian glass-walling, but never strays far from international norms for transportation buildings. The Rovaniemi bus-station, designed by Pulkka, Rajala, and Leppanen, fully justifies the expectations aroused by the canopy, 1, with a more irregular silhouette, and double humping roof, 5, with projecting bug-eye skylight that suggests some affinity with the Aalto of the church at Imatra. And yet that canopy belongs only marginally to the Aalto school, especially when seen head-on, 6, a view that seems to reveal nothing but genuinely original architectural invention.

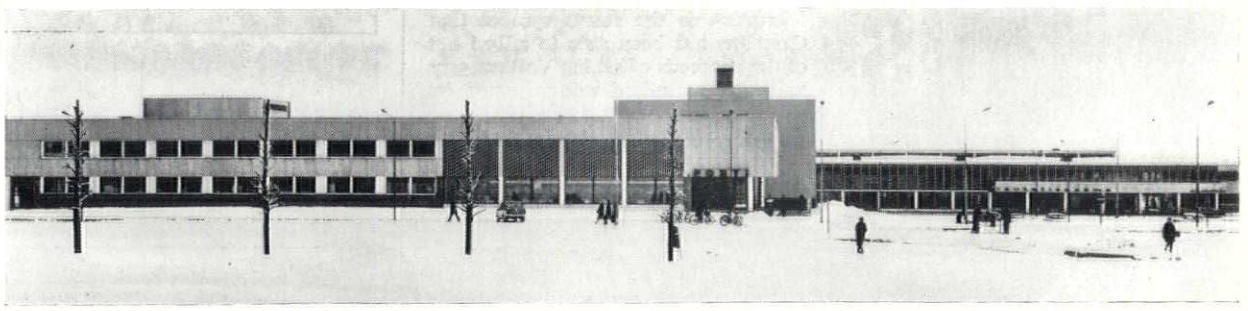
2



3



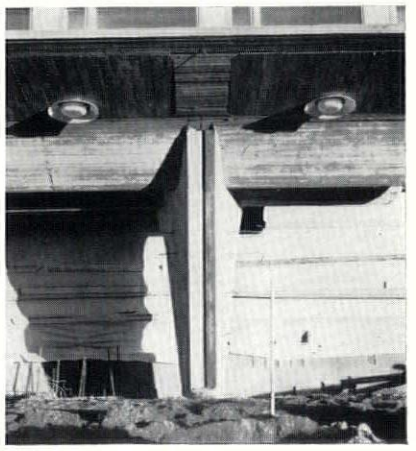
4



5



6



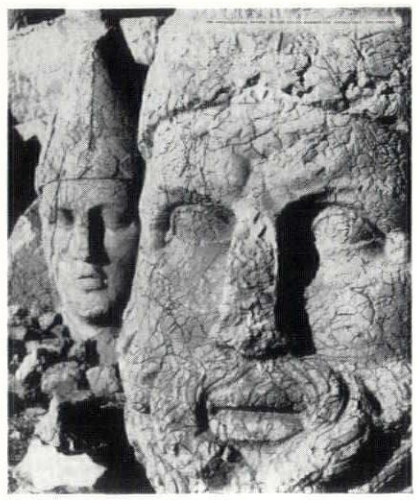
SUPER FICI 5

Milan surveys the 'isms' of post-war architecture in Rome

Readers who ordered the Milanese magazine *Superfici* on the strength of the note in World for February last were doubtless bewildered to receive, instead of the last word in smart brutal layout, a piece of patent 'thirties revival which would have been distinctly square even by the typographical standards of 1935. However, it now appears that *Superfici* 4 was a passing aberration only, and the fifth issue fully recovers the *élan* of earlier numbers. The main subject, in any case, is well calculated to bring out the best in a Milanese magazine: Neo-realism, neo-eclecticism and revivalism in the post-war vicissitudes of Roman architecture. All good fighting stuff, much of it very shrewd, but nothing quite so shrewd as the two illustrations chosen to exemplify the neo-eclectic trend—Severio Muratori's shameless

ACKNOWLEDGMENTS

COVER: Ara Guler. WORLD, pages 75–78: 1–6, *Arkkitehti/Arkitekten*; 7–8, *Superfici*; 9–17, *Deutsche Bauzeitung*; 18–24, *Progressive Architecture*; 25, 28, 29, *Bauwelt*; 26, 27, *Deutsche Bauzeitung*; 30, 31, *L'architettura*. FRONTISPIECE, page 82, page 83: Banham Arphot. PRESERVATION IN NEW YORK, page 84: *New York Times*, Sam Falk; page 85: Garth Huxtable. RETAIL MARKET, SHEFFIELD, pages 86–91: Galwey Arphot. OFFICES AND LABORATORIES, pages 92–94: Toomey Arphot. VITTONE, pages 95–104: 4, 6, Soprintendenza al Monumenti del Piemonte; 5, 17–19, Moncalvo; 7, Bernado Caviglia; 8, Anderson; 10, Aimari; 13, 14, Parva Lux; 22, 23, 25, Lorenzo Bricarelli. EXPLORING EYE, pages 113–115: Ara Guler. INTERIOR DESIGN, pages 121–124: 1–4, John Donat; 5–11, Toomey Arphot; 12, Sam Lambert. DESIGN REVIEW, page 124: John Donat. OFFICES AND SHOWROOMS, SLOANE STREET, LONDON, pages 129–130: 1, 2, 4, Sydney W. Newbery. INDUSTRIAL OFFICES, CWMBRAN, SOUTH WALES, pages 130–131, John Maltby. MISCELLANY, pages 132–137: Exhibitions (painting and sculpture), 1, Marlborough Fine Art; 2–5, Gimpel Fils; 7, Harriet Crowder; (Seattle) 3–15, Banham Arphot; Functional Tradition, 2, A. Purrington; 3, Douglas C. Morris; 4, 5, 7–11, Galwey Arphot. SKILL, pages 138–146: 1, 2, 4, 5, Morland Braithwaite; 6, Feature Press; 10, Kenneth Prater; 12, A. Auger. THE INDUSTRY, pages 146–148: 3, Fox Photos.



This month's cover *is a photograph by Ara Guler of a couple of the giant heads that stand on the site of the tomb of King Antiochus* 1, *King of Commagene, on the summit of an Anatolian mountain. The site is described and illustrated by more of Mr. Guler's photographs in this month's Exploring Eye, pages* 113-115

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

VOLUME 132 NUMBER 786
AUGUST 1962

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents: Libreria Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

Directing Editors	*J. M. Richards* *Nikolaus Pevsner* *H. de C. Hastings* *Hugh Casson*
Executive Editor	*J. M. Richards*
Assistant Executive Editor	*Reyner Banham*
Assistant Editor (Production)	*William Slack*
Features Editor	*Kenneth Browne*
Technical Editor	*Lance Wright*
Assistant Editor (Counter Attack)	*Ian Nairn*
Staff Photographers	*De Burgh Galwey* *W. J. Toomey*
Advertisement Manager	*F. G. Dunn*

CONTENTS

75 **World**
79 **Views and Reviews**
82 **Frontispiece**
83 **Preservation in New York:** *Ada Louise Huxtable*
86 **Retail Market, Sheffield:** *Architect, J. L. Womersley (Sheffield City Architect)*
92 **Offices and Laboratories, Fulham:** *Architects, E. R. Collister and Associates*
95 **Vittone:** *Henry A. Millon*
105 **City Hall, Hong Kong:** *Architects, A. Fitch and R. J. Phillips (of the Public Works Department, Hong Kong Government)*
113 **Exploring Eye:** *Commagene*
116 **Townscape**
Manchester Re-united: *Kenneth Browne*
121 **Interior Design**
Art Gallery in London W.1
Architects' Office in the City
124 **Design Review**
125 **On Trial, 6:**
Mies van der Rohe: *Reyner Banham*
129 **Offices and Showrooms, Sloane Street, London:** *Architects, J. Douglass Mathews and Partners*
130 **Industrial Offices, Cwmbran, South Wales:** *Architects, Clifford Tee and Gale*
Miscellany
132 **Exhibitions**
136 **Functional Tradition**
138 **Skill:**
Ward Furniture, 2, Bedside Lockers, Overbed Tables and Methods of Screening: *Anthony Wylson*
144 **The Industry**
146 **Contractors, etc.**

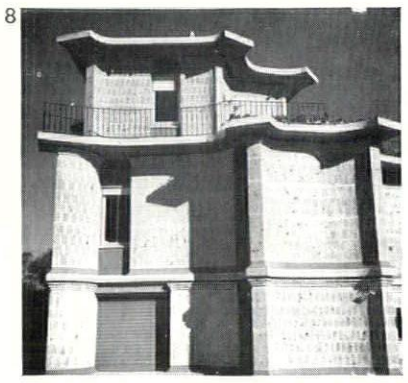
Superfici

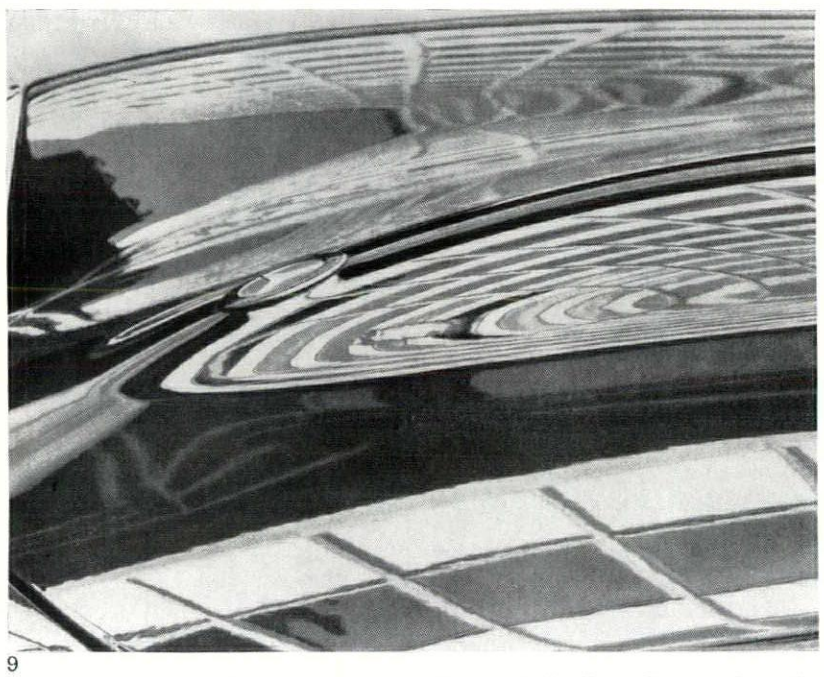
revival of the forms of the *insulae* at Ostia, 7, for the Demochristian headquarters at EUR, and the Villa Baldi, 8, whose forms make it only too clear that there are some architects, in this case Paolo Portoghesi, who cannot prevent the preferred subjects of their historical research, in this case Guarino Guarini, from corrupting their present practice.

7



8





9

HAUS

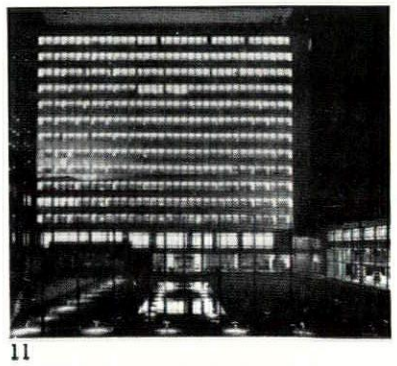
If ever a building deserved its epoch, and an epoch its building, there is a monumental appropriateness in the fact that the end of the first great flush of German *Wirtschaftswunder* affluence has been marked by the completion and publication of the new Daimler-Benz offices and museum outside Stuttgart. D-B's leading product, the Mercedes, is the status symbol that Germany has been able to afford out of the proceeds of selling Volkswagens to relatively underdeveloped countries like the United States, and *Deutsche Bauzeitung's* cover, 9, to what is virtually a special issue (5, 1962) appropriately shows part of the facade reflected in the suitably bebadged bonnet of the product.

Perfectly in character, the design of the new buildings is the work of two immensely competent grey-flannel architects—Rolf Gutbier and Hans Kammerer—and reveals itself externally in an entirely appropriate and rational curtain-wall, 10, 11, with tastefully applied art-work, 12. Indeed, the office-block is so completely typical of its time and place that it almost defeats discussion or evaluation—when you have said that it is the post-war German office-block *par excellence*, you have said everything—and nothing—and there is little more to be said except to draw attention to some neat details, such as the lighting louvres in the foyer, 13.

The museum is another matter, 14. In it, the routine of the Machine Aesthetic meets the routine aesthetics of ma-



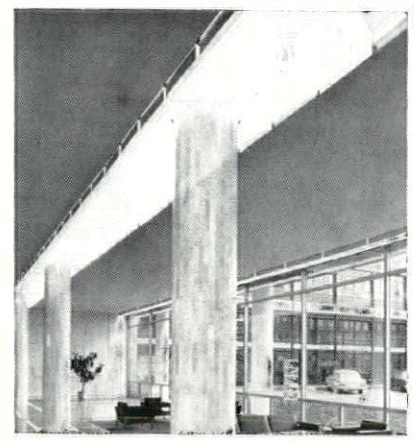
10



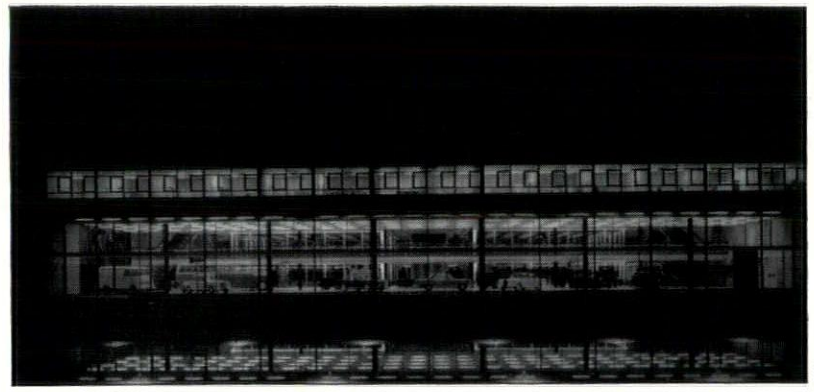
11



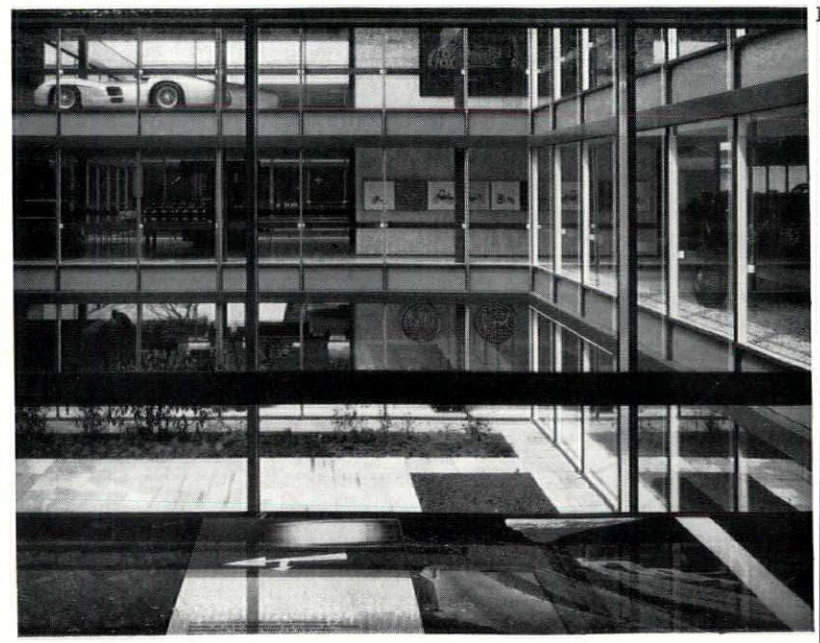
12



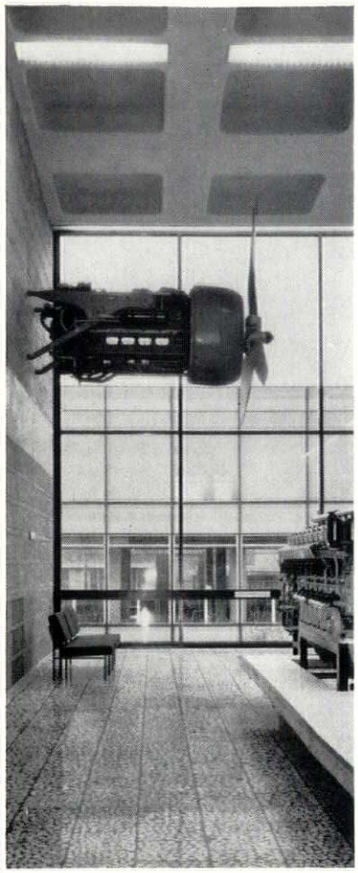
13



14



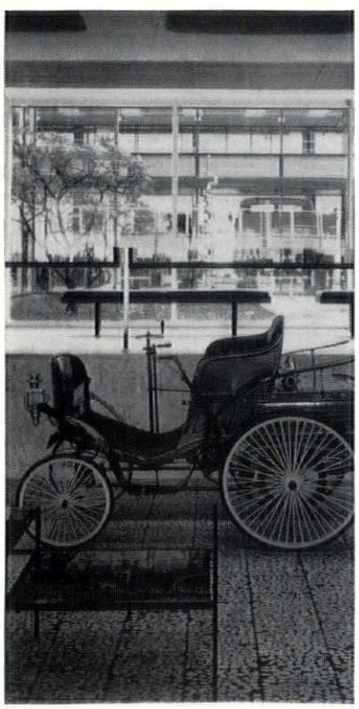
Mercedes



16

chinery, 15, with results that are never less than instructive. Whether the machines are ancient, 17, or modern, 16, their forms give the lie direct to the fiction that the Machine Aesthetic, as we have it now in its post-Miesian form, has anything at all to do with machinery as it is commonly conceived. Nevertheless, the refined and underplayed aesthetic of the architecture is everywhere a perfect foil to the highly communicative forms of the exhibits, as if the fundamental concept of a museum glass-case had been extrapolated to the scale of a whole building.

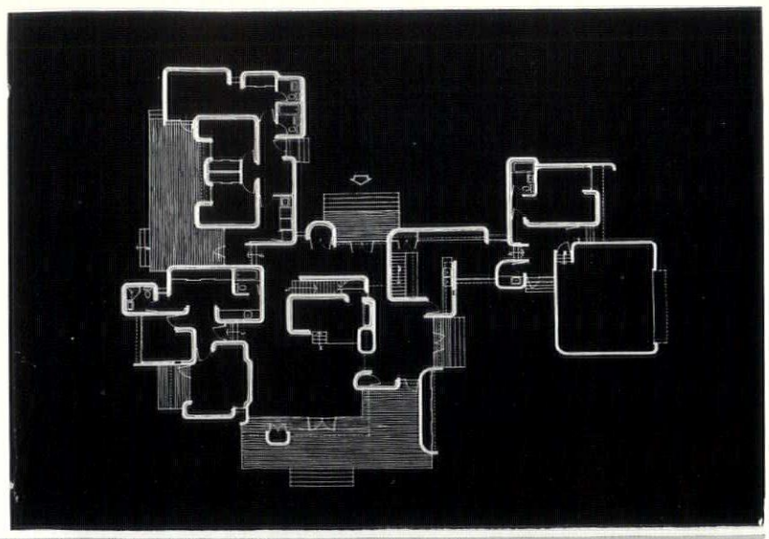
17



WALL-DEFINED SPACE

concrete house by Jo Johansen

Many thousand student projects since Ronchamp must have hung upon the proposition that also underlay the original design, 18, dreamed up by Jo Johansen for the Taylor House at Westport, Conn.—an architectural space defined by a pattern of loops of wall, curling tightly around some areas, turning their backs on others. Unlike all the students, however, Johansen has built his, 19, and to almost the original plan (20 shows how the guest house has been separated from the main *corps de logis*) with, in addition, a highly original shutter-patterned surface, 21, to the concrete

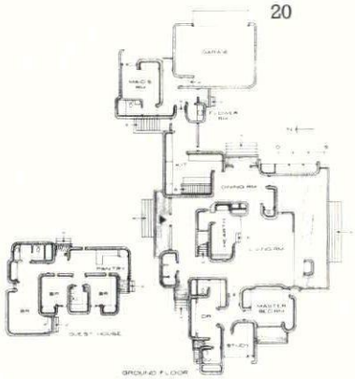


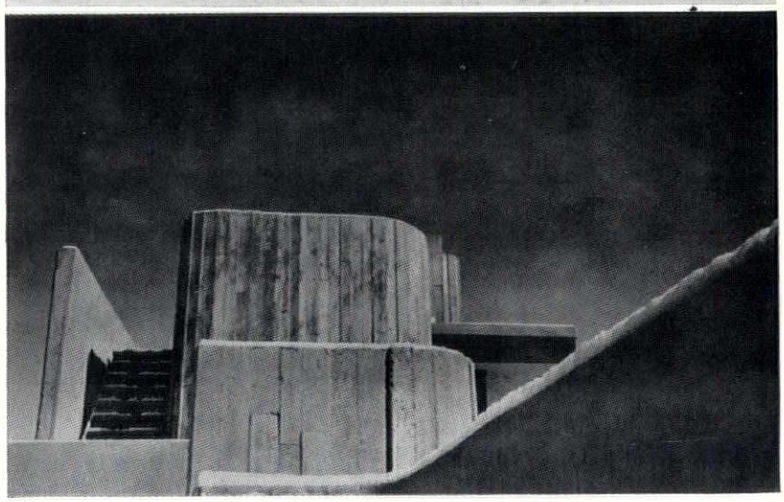
18



19

20

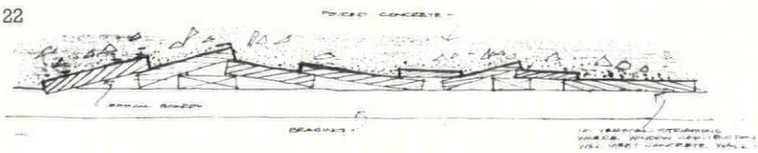




21

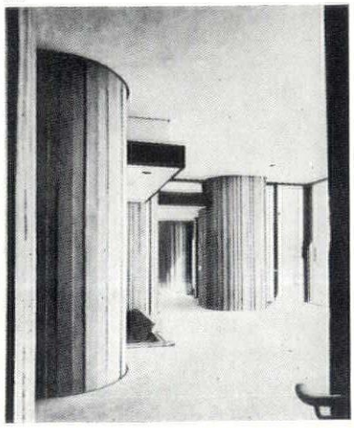
work, achieved by manipulating the plank-work to the point where it ceases to be shuttering at all, 22. The effect of the finished building is startling, even by Connecticut standards, but it is not without its

22



supporters—*Progressive Architecture* (May, 1962) boldly goes right out on its private limb and asserts 'Johansen's powerful statement of the "enclosing

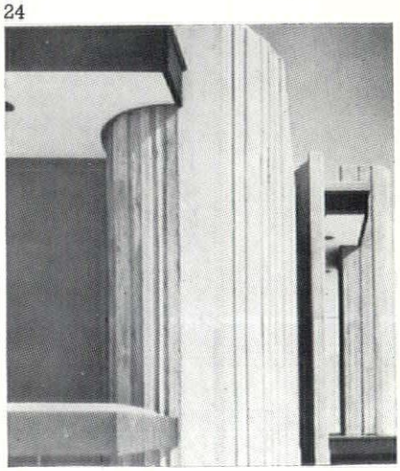
23



wall system" of the "labyrinthian environment" will play a most significant role in the evolution of today's architectural philosophy. This is yet another strong argument in favour of *specific* and *defined space* as opposed to *universal space*, and consequently an argument in favour of a more personal architecture.'

Quite apart from the *non sequitur* of the second sentence, one can state in opposition to this plea for a more personal architecture, that eye-witness descriptions of the house are not always enthusiastic, even while admitting that it is a work of character. The planning is felt to be very *un*-spacious in effect, with large concrete bulges backing into every major room, 23; the mating of horizontal, metal-trimmed, surfaces to the concrete, 24, is not felt to be a very masterly detail, and the surface of the concrete itself is felt to be an excessively laborious effect for a very small aesthetic return. However, it should be pointed out before the story gains too wide a currency, that it was *not* the Taylor House, but the shutter-patterning of the concrete on a recent work of Sert (an established butt of *chaudfonniant* wit) that prompted Corb to enquire 'Have you no plywood in the US?'

24





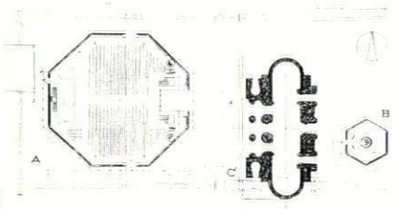
25

DOUBTS ON EIERMANN

church restoration in Berlin

Few post-war buildings in Germany have been so long awaited as Egon Eiermann's re-making of the Berlin Kaiser-Wilhelm-Gedächtniskirche, at the end of the Ku-damm. It was long known that Eiermann intended to leave the ruined stump of the original Neo-Gothic structure, and add to it in a manner that it was hoped would demonstrate how well 'uncompromising modern' could complement an existing ruin. The result, 25, has had a wary reception, and not only in Germany—*l'Architettura* (May, 1962) resorted to strong language: 'shabby, clutter, sterility.'

Certainly, Eiermann failed to avail himself of the more obvious and 'picturesque' means of making an orange blossom wedding of new and old, though there seems to be something entirely appropriate, *Berliner* and bloody-minded about his two octagonal 'gasometers,' 26, 27, with their ineloquent grille-work facades—that are ineloquent only when viewed from outside; internally, 28, they reveal the richness of the stained glass, 29, wherever windows are required. Yet, even when this is admitted, the church built and dedicated, what *Bauwelt* (22 January, 1962) called *Skepsis und Argwohn* (Doubt and Suspicion) will still remain—this is a difficult building to take, and disappointing to have been designed by one of Germany's greatest architects, and in a situation (the reclamation of ruins) in which Germans are currently expected to excel.



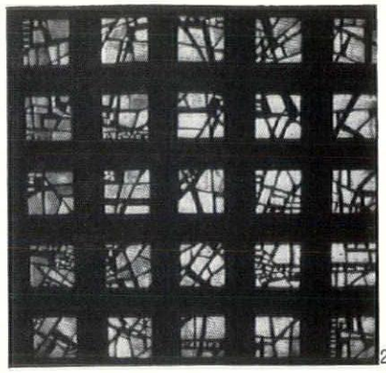
26



27



23



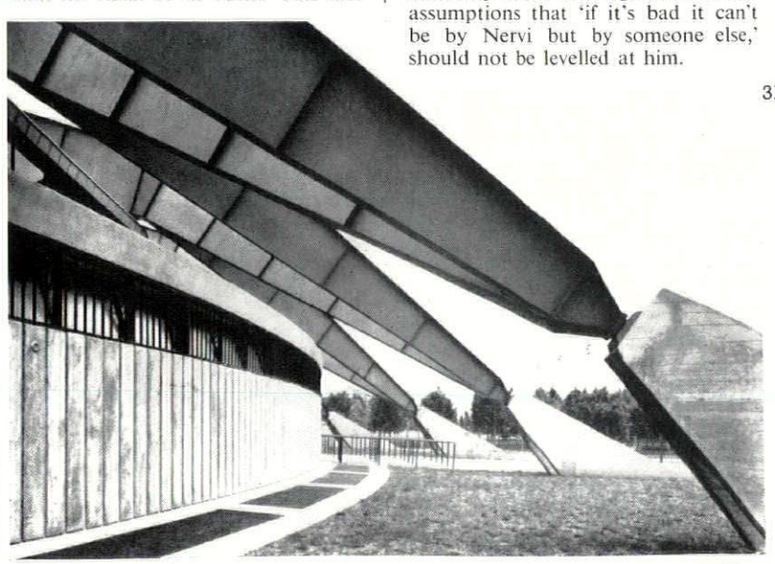
29



30

VITELLOZZI FOR SPORT

Those who complained that the collaboration of Annibale Vitellozzi had 'spoiled' Nervi's work for the 1960 Olympics in Rome have been slow in revising their opinions in the light of his later works, but *l'Architettura* (May, 1962) has at least made revisions easier by publishing a survey of Vitellozzi's recent *impianti sportivi*, beginning with his Olympic swimming pool, which was discussed in World, September, 1960, and ending with the Palazzo dello Sport, 30, which he built for *Italia 61* in Turin. This last clearly raises some extremely pertinent questions about his relationship with Nervi, because it is effectively a steel version of the Olympic Palazetto in Rome—strikingly similar in some ways when viewed from within, entirely convincing in its use of straddling steel portals, 31, to brace and carry the roof, and vastly better detailed at ground level with its vertical concrete planks, than was the Palazetto with its ill-conceived brick fill. Vitellozzi is clearly an architect of quality and authority in his own right, and casual assumptions that 'if it's bad it can't be by Nervi but by someone else,' should not be levelled at him.



31

views and reviews

MARGINALIA

YORK UNIVERSITY

The development plan for the new University of York, drawn up by Robert Matthew, Johnson-Marshall and Partners, with Andrew Derbyshire as project architect, may well become for universities what the LCC's Hook scheme has become for New Towns—with the crucial exception that York University will be built. Though some objections to the choice of an exurban site at Heslington may linger, the use to be made of that site is a model for other universities to follow. While the scheme provides for flexibility in development, as it must in the present fluid state of learning and of stimulating uncertainty about the future of universities, it is firm about the right things. The basic infrastructure of services, roads, landscaping is intended to be such as to make it easier to make a good university on the site.

Although the precise form and siting of the buildings within this plan are far from fixed, it is intended that the bulk of the students shall ultimately reside in the university, not in halls of residence but in genuine colleges, whose members shall include teaching staff and post-graduate students, as well as undergraduates. Further, as the report puts it, 'Every college will also contain its own share of generalized teaching accommodation . . . rooms for tutorials, seminars and lectures, and a working and recreational library.' In other words, 'collegiate planning' at York will not be an historical architectural form inflicted on mere dormitories—as threatens to become the case with some of the more dispersed red-brick universities—but a way of life that might, ultimately, express itself in entirely original architectural conceptions without any historical precedents except the seminal concept of a community of scholars.

F. R. S. YORKE

Readers will share the Editors' deep regret at the news of the death of F. R. S. Yorke, a pioneer of modern architecture in Britain and one of its most distinguished practitioners. A memoir will be published in the October issue.

THE HUXTABLE WALKS

Those who know Ada Louise Huxtable chiefly as the author of occasional articles on industrial design, or a book on Pierluigi Nervi, may be somewhat surprised to find her appearing as the guardian of Old New York, as she does on pages 83–85 of this issue of the AR. In fact, she is one of a number of men and women of goodwill who have recently applied themselves to the task of saving some undoubted masterpieces of architecture and, in the process, drawing the attention of Gothamites to the fact that Manhattan is a *city*, not just a bonanza of real-estate subdivisions ripe for re-development. One of her most valuable contributions to this new view of New York is a seventy-six page pocket book published jointly by the Museum of Modern Art and the Municipal Art Society, costing 95 c. and accurately described by its title as *Four Walking Tours of Modern Architecture in New York*.

Each tour covers some twenty-five or thirty crucial blocks of the city, containing ten or a dozen buildings of note. There is nothing snobbish about Mrs. Huxtable's architectural hit parade—Ed Stone's grill-work gets in as well as Bunshaft's austerity, the Chrysler Building's mad Borax spire as well as the Guggenheim's swoopy curves. The Guggenheim, indeed, lies outside the area covered by the walks proper, and is one of a group of buildings (such as Chase Manhattan and the Loeb student centre) that have been included to increase the guide's comprehensiveness. The result is an essential midget Baedecker for any modern-architecture fan at large in New York. It has come a long way since the original mimeographed sheets of 1959 and its success is a fair tribute to the value of Mrs. Huxtable's labours.

SEATTLE-SCAPE

Though nicely timed to provide World's Fair visitors with a memorable guide to the Seattle scene, Victor Steinbrueck's *Seattle Cityscape* (University of Washington Press, $3.95), is not a hurried catchpenny compilation, but a matured view of the city and its environs recorded, over a period of years, in the author's characteristic sketches. These are not the kind of sketches that simply reinforce the transient visitor's superficial impressions; rather, they fill in a solid foundation of recorded observation that makes the visitor aware that he too saw these things, even if he did not consciously record them on his visual memory at the time. A month after the event, the visual truth of Steinbrueck's view of the tall poles leading to an uncommonly beautiful mountain, strikes home—this is the quintessence, 1, of Rainier Avenue, and memory confirms it. His accumulated details of bracketed villa architecture, 2, have the same effect—



2

Seattle is a villa-girt city, and as the exuberance of the style declined so the domestic architecture got better, leading to what Steinbrueck justly calls a 'more natural kind of bungalow or cottage style . . . beamed or bracketed construction, often false but not noticeably so . . . unpretentious homes,



3

3, consistent with the climate.' The tract-developer's suburban vernacular has rarely been so justly appraised as in this passage, and few cities have been so fairly handled by a shrewd observer.

CORRESPONDENCE

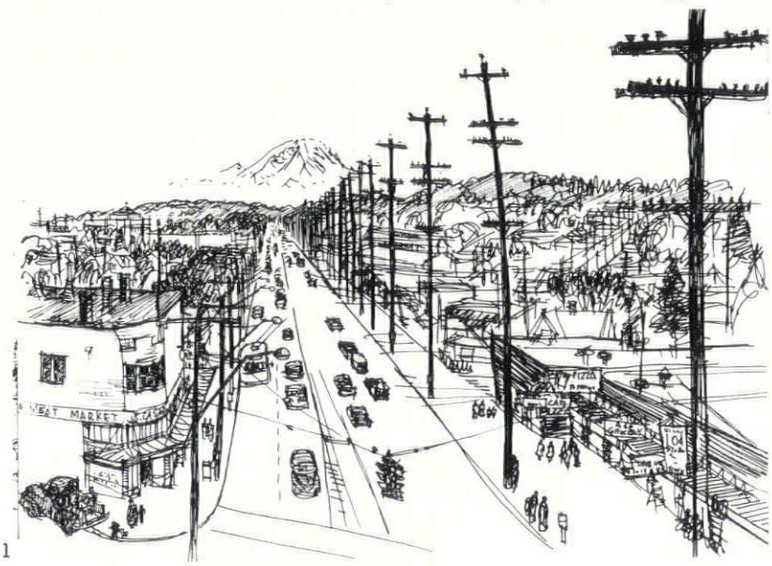
THE BUTTERY-HATCH AESTHETIC

To the Editors.

SIRS,—With such blasts of verbiage as 'cruder,' 'wilful obscurantism,' 'pretty insensitive,' 'visual confusion,' 'botched,' 'schizoid tendency,' 'architectural falsehood,' and 'offering his humans this mechanistic insult,' critic Reyner Banham has spit out a catalogue of defaming epithets and ugly attributions, including conscious evil-doing, against the person of Louis I. Kahn, a man of most serious concern. Yet, aside from his sustained attack of unnecessary and meaningless pricks, Mr. Banham's four-page article (AR, March, 1962) in actuality tells us little more than that Mr. Banham does not personally care for Kahn's solution of the human and mechanical circulation systems for the Richards Medical Research Laboratories, that he does not find anything particularly new in this solution which he has not already seen in Le Corbusier's Pavillon Suisse, and that he especially dislikes the aesthetic consequences of it; and, as a side issue, he tells us that he either does not understand or on semantic principles refuses to accept Kahn's mode of verbal communication. (I, in turn, must either claim ignorance, despite my Oxford Dictionary, or counter-attack Mr. Banham for sneering 'obscurantism' in his title 'the buttery-hatch aesthetic.')

Curiously, this architectural knight-errant points a pitiless finger at ambiguity; yet the reader is not certain if he may not be wielding the sword more out of annoyance with the enthusiasm of the supporters of Kahn than with Kahn's act itself. Nor is it certain that Mr. Banham can himself make this distinction; the reader witnesses him jab in one direction at extravagant claims which, he unjustifiably implies, Kahn has made for his own work and slash out in another direction at Banham-conjured misconceptions which, he declares with authority, are entertained by 'everybody' and which, he suggests, induce the 'supporters' into ignorant adulation. Then partially, at least, Kahn is 'on trial' (under the cherubic aegis of AR's scales of justice and the pen of the self-elected one-man judge and jury Banham) for the reason that somewhere there are people who apparently do not know that the service core building contains a core of services and are thereby led, as though by intent, to believe 'that Kahn has moved his services to the perimeter of the floor area.' In the same moment, Mr. Banham, who seeks out paradoxes and ambiguities, apparently has overlooked the paradoxical situation by which the service core can be considered to be on the perimeter of each of the three laboratory towers.

In the lapse of journalistic responsibility by failure to provide the proper scholarly footnote that would protect the uninitiated from innocently accepting it as one of Kahn's 'highly personal' appellations, the fresh air intakes have in cute mockery been designated on the axonometric delineation, either by Mr. Banham or by the AR, by the appointment 'intake nostrils.' How-



1

ever, with this apparently deliberate anthropomorphization of the mechanical system, did the realization not come to Mr. Banham, a man dedicated to the mastery of discernment, that, as a human animal, most of his biological respiratory, secretory, and execretory ductwork, while well concealed for most of its run, in most cases ends in prominent features that comprise much of the body's 'characteristic (if not always) fashionable silhouette?' The nose and the mouth (the latter multi-purposed orifice from which can be spewed forth such soiling belches as one finds in writing throughout Mr. Banham's article) are of the more conspicuous prominences of the physiognomy. The more private parts are also terminal prominences of the body's ductwork, some of which are appendages that take on compulsive attractions, as in the case of the milk producing glands of woman—man's imagery being dominated throughout his history from the cave to Hollywood by such obsessive fetishes of the mundane existence. My point then: how has critic Banham the pretension to set forth his personal taste as the standard of criteria by which one can measure 'underdone' and 'overdone'?—these words, as responsible critics know, stealthily infuse into the unsuspecting reader value connotations which 'unstressed' and 'stressed,' for instance, might not so do. Need I point out that a *rare* steak to one man's taste might be *underdone* or just right, while to others it could even be *overdone*!

Yours, etc.,

WILLIAM S. HUFF,
Assistant Professor.

Department of Architecture,
Carnegie Institute of Technology,
Pittsburgh.

To the Editors.

SIRS,—In Reyner Banham's article (March AR) about Kahn's Medical Laboratories at Philadelphia, he begins by saying that it shows no useful advance on the position reached by le Corbusier thirty years ago: later on he mentions that 'any extension of the building could not be linear,' but would require the addition of a new part. These two statements taken together seem to express what he has missed in the building, what is more important than the expression of served/servant spaces. That is the concept of space and of the relationship of one space to another, in other words the *architecture*. It is of the essence of the building that the decision to increase the size of it could be achieved without hurting the spaces that already exist, and without trying to hide the decision in an ill-concealed join between old and new materials. The Pavillon Suisse had no inherent possibility of adding to it, without in some way really hurting it: it did not have the architecture of connectivity that the Medical Laboratories have.

In fact, Kahn has given us a community of spaces which stands there full of the character of a democratic state, in which each person is not afraid to stand as himself. Some of the spaces are servant spaces; they are not Pas Perdus, not left over; they had their character from the beginning. More important, they are *general* serving spaces within which many serving functions could be performed. When Kahn explains why his earlier design, in which the tower stepped outward as it went up to accommodate the increasing number of exhaust ducts, was changed to a uniform shape when he found that there were also many services coming up from the ground and diminishing as they came up, one suddenly understands the great validity of his idea of a servant space, rather than a specialized duct.

Anyone who has seen the Medical Laboratories over a period of time would hesitate to make the criticism of the junction of the towers and the laboratories: the structure of the laboratories is clearly visible as it stands away from the towers, and to have pulled the towers away from the laboratories would have made it extremely difficult for them to serve the laboratories fully, for their full height and width. Further, the criticism that the towers dominate pays homage to the compositional-type criticism which Reyner Banham denounces: for one who knows the building in all its moods, who sees the bottles in the laboratory windows and the light coming from the spaces at night and the plume of gas floating from the top of the towers in summer, and who realizes the space inside which would have been destroyed by any sort of core service system, there is no doubt which element dominates.

Yours, etc.,

ANTHONY WADE.

Reyner Banham replies:

Mr. Wade implies that the Philadelphia laboratories are *not* a service-core building, Professor Huff knows better, but tries (in emulation of his master, perhaps?) to double-talk this situation into something else—back to the Oxford Dictionary, Professor, for some home-work on perimeter cores! These two letters, taken together, give a fair picture of the muddle into which Kahn's supporters can fall in his defence, and the extremes of emotional commitment that propel them into such confusions.

For my own part, I have only three points to make in rebuttal. Firstly, that I intended (and said, almost in so many words) only a partial study of Kahn and his work, and only in so far as it bore upon a particular and vexing problem of current architecture. Mr. Wade's complaint that I have 'missed' something therefore fails. Secondly, Mr. Wade's point about extensions also fails because Kahn has made no provision for extension, but only for the addition of another building alongside what has been built already, and then another building, and so on—a clumsy and inflexible method compared to linear extension, bay by bay. Thirdly, the use of the words 'nostrils' is not mine; it has been in use in connection with the Philadelphia labs for some time, and I have heard it attributed to Kahn himself. Regretfully therefore, I must submit that the splendid rhetorical flourishes of Professor Huff's last paragraph must fail as well.

Finally, I observe that Mr. Wade believes that he has seen a 'plume of gas floating from the top of the towers in summer.' It is not a frivolous point to suggest that unless that plume is either water vapour or smoke (neither of which is a gas) the governors of Philadelphia must be very careless of the health of their citizens, for I can think of no common visible gas that is not poisonous. To elevate normal chimney-effluents to the level of 'gases' is no way to increase public confidence in Kahn's apologists: both letters, in their very different ways, show that misconceptions are not necessarily 'Banham-conjured.'

STRUCTURAL BRICKWORK

To the Editors.

SIRS,—I was most interested in Mr. Foster's article in the May REVIEW on 'The use of Structural Brickwork for Frameless High Buildings,' particularly as I am to be the structural consultant for an unusual loadbearing brick structure. The structure will consist of cross walls at 10 ft. centres, 4½ in. thick, *six* storeys high, and the floors will be 4½ in. reinforced concrete slabs. The wall will be carrying about six times the load of a 9 in. wall in the normal two-storey house and yet be only half as thick.

To allay doubt in the minds of the clients, and as a check on the calculations, experiments have started on the loadbearing capacity of slender walls. A 'pilot' test has just been completed. A 4½ in. thick, 3 ft. wide, 10 ft. 2 in. high panel of 4,400 lb. per sq. in. brick (an ordinary common), which according to the code has no safe load, withstood a load of 58 tons, representing a stress of 800 lb. per sq. in. Practically no restraint was given to the walls by the apparatus, the wall sat on a steel beam and was topped by another through which the load was applied. In the test there was non-uniform application of load between the top of the wall and the loading beam, and in addition the load was applied slightly eccentrically. From the test figures it is apparent that when these faults are corrected the failing load may well reach 70 tons or 970 lb. per sq. in.! The test figures compare favourably with the results of Davey & Thomas given in Table 3 of Mr. Foster's article.

Calculations for the *allowable* stress granted by the code are given below:

Effective height of the wall (= actual height)	= 10 ft. 2 in.
Effective thickness (= actual thickness for solid wall)	= 4½ in.
Slenderness ratio $= \frac{10 \text{ ft. } 2 \text{ in.}}{4\frac{1}{2} \text{ in.}} = \frac{122}{4.5}$	= 27.1
Reduction factor, Table 2 (max. slenderness ratio given in Code is 24, and the figure quoted has been obtained by extrapolation)	= 0.15
Brick crushing strength	= 4,400 lb. per sq. in.
Mortar mix	= 1 : 1-6
Max. permissible U.D. stress for slenderness ratio unity from Table 1	= 245 lb. per sq. in.
Therefore working stress = 245 × 0.15	= 36.7 lb. per sq. in.
Load factor at 58 tons failing load $= \frac{800}{36.7}$	= 22

The maximum stress in the proposed structure will be 170 lb. per sq. in., and the slenderness ratio will be about 17, yet to accommodate this the code requires second class engineering bricks in 1 : 3 mortar.

It is fairly obvious from the work of the Swiss engineers and others that the code is highly conservative, and needs modifying. When the code is revised it will make structural brickwork even more competitive with concrete and steel than it is now. Further research work is in progress in the Building Science Department of Liverpool University, under the supervision of Professor A. W. Hendry and myself, to investigate the restraining effect of reinforced concrete slabs on the walls.

Yours, etc.,

W. G. CURTIN.

Liverpool.

To the Editors.

SIRS,—The article by Donald Foster on loadbearing brickwork must commend itself to anyone who is primarily concerned with reducing the cost of structure and serves to spotlight a major weakness in current British practice. It could be criticized in detail, for example the comments in the first part on the elastic behaviour and the mode of failure of loadbearing brickwork will strike many engineers as being open to some doubt, but in general terms there can be no doubt that there is an urgent need for the revision of C.P. 111 based on much more extensive testing than appears to have been carried out to date.

I feel, however, that the article is perhaps a little optimistic in the way it deals with quality control, and that its value would be enhanced if this problem was faced perhaps even a little pessimistically. The problem may be defined in terms of factor of safety and in this respect may well be compared with the same problem in concrete construction. In either case the great majority of structural work will be carried out in smaller buildings by contractors of a wide variety of efficiency and by the same token the degree of site control reasonably obtainable will vary widely from job to job.

The current code for reinforced concrete allows for an average factor of safety on the concrete part of the structure of about 5, and where the site control is of a high order the actual factor of safety against ultimate failure may in certain conditions be as high as 10. Nevertheless it would be unreasonable to describe the concrete code as conservative and indeed in some respects, notably in the provisions for shear resistance, there are grounds for thinking that it may be just the opposite.

Any revision of C.P. 111 would have to take into account the probability that a very large volume of structural brickwork would be erected with the minimum degree of supervision, using labour of a very variable

quality, and using two materials both of which may be subject to considerable variations in quality. Even so it would be difficult to argue that the worst brickwork is likely to be any worse in degree than the worst of concrete construction in which respect the various items affecting safety factor would appear to be similar, and this alone would justify a considerable increase in allowable stresses on brickwork.

The question of improving standards of site control is another matter, however some of us are doing our best in this respect.

Yours, etc.,

JOHN POWLESLAND.

Brightlingsea, Essex.

Mr. D. Foster, author of the article referred to, replies as follows:

Mr. Powlesland queries my remarks on the elastic behaviour of brickwork. These were intended to report Swiss statements based on the result of much testing of brickwork built of perforated bricks. Although there has only been a relatively small amount of similar work here, sufficient has been done to show that there are often marked differences in the mode of failure between such brickwork and that built of solid bricks, but there is need for further investigation.

Mr. Powlesland also discusses quality control. I must say that I did not intend to convey any feeling of optimism and I agree that there are wide variations in the structural qualities of bricks and brickwork. Despite these I believe that there is room not only for a *general* increase in the permissible stresses of C.P. 111.101, but that there is also a case for a *considerable* increase where all the variables are under tighter control.

It is known that a draft revision of the Code can shortly be expected for comment and it is believed that some increases in permissible stress are likely. That such increases are long overdue is clear from Mr. Curtin's example of the loadbearing capacity of a 4½ in. wall. The results of the research at Liverpool will be eagerly awaited by many of your readers.

BOOK REVIEWS

PANE AND PALLADIO

ANDREA PALLADIO. *By Roberto Pane. Giulio Einaudi, Turin,* 1961

No foreign architect has ever been as influential in any country as Palladio in England. Yet we have no serious monograph on him in English, unless one counts as a monograph Professor Wittkower's brilliant chapter in *Architectural Principles in the Age of Humanism*. Nor is there a really adequate modern Palladio book in any other language either. Professor Pane's book in its new form—quarto, with about 175 pages of text and over 300 illustrations—comes nearest. Professor Pane has a sharp eye for details; his comparisons between the buildings, the illustrations in Palladio's own *Quattro Libri* and those in Bertotti-Scamozzi's *La Fabbriche ed i Designi* of 1786 are fruitful, and his emphasis on planning fully justified. But Professor Pane is curiously uninterested in the problems arising out of such a close study of Palladio's individual buildings. He makes short shrift of Professor Wittkower's analysis of the proportions of Palladio's buildings and their significance to an understanding of the architect's mind, and he is even more impatient of the attempts made by some authors at analyzing Palladio's style in terms of Mannerism and non-Mannerism (p. 353 e.g.), with the telling result that he calls the frontispiece of the *Quattro Libri*, in spite of its strapwork and its caryatids, Baroque. Instead of asking seriously why Palladio cared so much for numerical relations, or why he opened the apses of his two major churches in colonnades behind which the choirs dimly appear, he is satisfied with reiterated references to *chiaroscuro*, to 'creare bellezze,' and to an 'esatto metro.' That surely is not enough.

Nor is Palladio's *oeuvre* really as blissfully harmonious as Professor Pane wants it to appear. Those neo-classicists who admitted—even if with puzzlement—his *impurezze* were much nearer the truth, and Palladio's biographer has the extremely hard job of explaining them in such a way that a picture of the man and his style emerges incorporating all he has done, incorporating for instance the group of strange villas of *c.* 1560 which are astylar (as it used to be called), and make excessive use of completely unmoulded heavy tripartite lunette windows and of rustication. The back of the Malcontenta for instance belongs to this group, but its most baffling, almost Vanbrughian, specimen is the Poiana.

This is only one example of the lines of thought which one would have expected to be followed in so substantial a volume. Another is how far the fact that Palladio of all the great Cinquecento architects was the most narrowly professionally trained is reflected in his work. He learnt the trade of the *lapicida* and appeared for the first time in the documents (carefully collected in Professor Pane's book on over twenty pages) with the denomination architect when he was already thirty-two. Then there is the other socially and professionally significant fact that the *Quattro Libri* are the first architectural treatise frankly advertising its author. Palladio illustrates his own works liberally and with such comments as: 'I have made such a staircase at the Convent of the Carità and it has been wonderfully successful.' This incidentally refers to the flying staircase, the first of the type ever ventured upon; but that again seems not to have interested Professor Pane. The fact that a convent is given a form said to represent that of the Roman house, and that one entered it through a hall with giant Corinthian columns left and right would have been worth some comment too, at least from the point of view of Cinquecento Christianity. Again, in the case of the villas, one would have liked to hear more, or more consistently, of the offices and outbuildings and their position and purposes. How often did Palladio place kitchens in basements? Were the villas indeed manor houses as well as villas? Does the fact that the outbuildings, the *barchette*, seem so often never to have been built, show that husbandry had already become less of a concern?

Finally, two suggestions as to what answers, in the field of stylistic interpretation, one would have liked to receive. Palladio's consistent use of stucco has often been commented on, most interestingly by Goethe. Is one aspect of it the desire for even surfaces, as the equally or even more consistent use of unfluted columns indicates? And how about Palladio's giant orders of columns as well as pilasters? They belong most tellingly to his late style, but occur already about 1550 in the *cortili* of his palaces. For giant pilasters, of course there was the precedent of Raphael's Villa Madama, and the much more powerful one of Michelangelo's Capitoline palaces. But can the latter be called a precedent? Professor Ackerman proposes convincingly that they were designed as early as *c.* 1545 (even if they were not begun until the sixties and not published until 1569), in which case Palladio could have come to know about them when he was in Rome in 1547 and 1554. The Palazzo Valmarana seems to show that he must have known the Capitol at least at that time, i.e. about 1565. But how does one picture Palladio's encounter with unexecuted plans of Michelangelo? So much for giant pilasters. Now as regards giant columns, the most likely thing surely is that surviving fragments of Roman temples with houses built into them gave the initial suggestion or even the existence of orders of columns of different heights in the Baths recorded in Palladio's drawings. But why did he use them? Is it the same desire for being comprehensive and for embracing a whole that made him create the type of villa with wings opening like arms and made him perforate his apses to explore beyond them? These are some of the problems which now ought to engage the scholars' attention. Professor Pane's book with its precise observations and its full illustration and annotation will be an invaluable tool.

Nikolaus Pevsner

ENGLISH AMERICAN

THE EIGHTEENTH CENTURY HOUSES OF WILLIAMSBURG: *An architectural history. By Marcus Whiffen. Published by Colonial Williamsburg, Virginia.* $10

This is a remarkably satisfying account of the transformation of English vernacular building into Colonial architecture: all the better, if an English reviewer can say it without offence, for being done by an Englishman. The English origins of the Williamsburg house, both in details of construction and in features of the plan, are even more evident now as a result of recent work here, than they were when Mr. Whiffen left these shores. The one novel element at Williamsburg was the planning legislation of 1699 and 1705 which laid down, obviously with an awareness of London legislation after the Fire, requirements for the size and height of new houses.

Some of the houses were built of brick, and for houses of any size bricks were made on the site, as in England. Bricks were imported from England as ballast, but they cannot now be identified any more than Dutch bricks brought here in the same manner can be picked out in London or Yarmouth. But throughout the colonial period in Virginia, the typical house had brick foundations and chimneys with a timber frame—mainly of yellow pine or poplar, more lasting than Virginian oak. Most of the hardware and all the window glass were imported from England. Mr. Whiffen, writing in part at least for the visitor to Colonial Williamsburg, gives a well documented account of the building trade in the colony—the master builders and their craftsmen; the materials and the tools, the pattern books available in the circumstances—which makes this even more valuable than a good guide-book.

The plans, elevations and photographs in the second part, along with the author's discussion of their design and construction, are most illuminating. The prototype of the houses in this Colonial capital was the English cottage of two rooms and one-and-a-half storeys. Under the stimulus of plentiful materials, high standards of craftsmanship and the wealth of many of the inhabitants (these surviving houses are presumably among the best of their time) this very modest form of dwelling acquired scale and elegance, to make it architecture of a very distinctive character. There is, to an English eye, a remarkable contrast between the quality of design and fitting—framed staircases rising easily, sash windows even in dormers, etc.—and the simplicity of the plan. Another feature which lifts these houses out of the comparable English class, though Mr. Whiffen does not remark on it explicitly enough, is that most of them are built over a half-basement—a feature confined in England to the houses of the gentry and to London terraces. A first glance at the plans suggests that none of these houses (with one exception, the Powell Waller house) contain a kitchen. The explanation appears (pages 46–7) that cooking was done by negroes in a detached kitchen. The medieval detached kitchen, a moribund concept in seventeenth-century England, was given a new lease of life in an eighteenth-century society based on slavery. It is a pity that nowhere does Mr. Whiffen print a plan showing the full lay-out of house, kitchen, smokehouse and dairy. Nor does he name the rooms on any plan, though references to inventories suggest that it might have been possible.

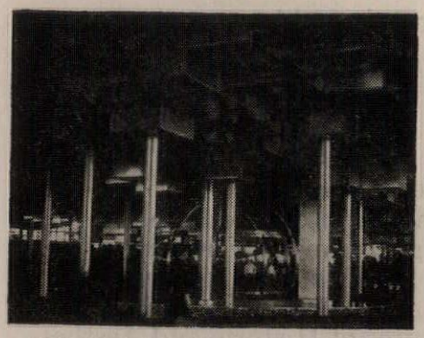
The domestic architecture of Williamsburg was thoroughly English, and more particularly *southern* English—rafters without a ridge-purlin and the use of *chamber* for a ground floor room are southern, and there is only one example of the common midland type of plan with fireplaces in the centre of the house and a small lobby entrance to one side. The one new design which arrived in the 1730s was that of the London terrace house, here built free-standing or isolated.

It is a sad reflection that the history of the house in western Europe should be so much more vividly pursued by an American publication and by, for instance, German studies than by the rare and unsatisfying volumes of the English Royal Commission on Historic Buildings.

Maurice Barley







Like every great international exhibition, the Seattle World's Fair poses the problem of an architectural language that can be at once popular and international. The fairground style is both, and Seattle abounded in first-class examples (opposite top). High pressure advertising is both, and the theme-exhibit, 'The World of Century 21,' conceived and designed by advertising men (this page) got its message across in spite of poor detailing. But could the Gothic fantasies of Minoru Yamasaki's Federal Science Pavilion, or John Graham's Space-Needle (opposite, below), have achieved the same immediacy of communication without letting go of architectural integrity? Reyner Banham considers this problem of showmanship in a note on pages 134–135.

Ada Louise Huxtable

PRESERVATION IN NEW YORK

It would be very easy, and not untrue, to say that the preservation score in New York is zero, or close to it. It would not be true, however, to say that there is no interest in or action towards conservation of the city's older and more important structures. But the sad fact remains that such action is lagging far behind demolition, for New York is currently in the midst of a fantastically accelerated building boom and the belated calls for preservation sound pathetically like whistling in the wind. The old building mortality rate—except for a few familiar, 'safe' monuments, like Thomas McBean's historic St. Paul's Chapel of 1764 or Town and Davis's Doric Sub-Treasury Building of 1842, now the Federal Hall Memorial Museum—is running dangerously close to 100 per cent.

The reasons for this go beyond the obvious one of economics, although the New York real estate market, thanks to peculiarities of the tax structure and an apparently insatiable demand for identical box-like offices and apartments that add nothing to the pleasure or dignity of man, has never been more profitable. New Yorkers, and most Americans for that matter, do not believe that anything less than a monumental classic pile signifies historic architecture. The kind of anonymous, popular 'street architecture' that does so much more to define the true spirit and style of an era is little understood, although New

York is—or has been—particularly rich in examples. In fact, it is just this irreplaceable street architecture that suffers most from our large-scale plans for urban renewal, and that accounts for our most lamentable, and least lamented, losses.

Our casualties in recent years include substantial amounts of the city's oldest architectural survival: the intimately-scaled, four- and five-storey, brick and granite Greek Revival commercial rows built from the 1820's to the 1840's in lower Manhattan, from the Battery to Brooklyn Bridge. Virtually all that is left now will be sacrificed to scheduled urban renewal projects. The latest announced threat is to New York's unusual cast-iron district, a section just below Greenwich Village on the West Side containing continuous streets of iron-fronted commercial 'palaces' of the 1860's and '70's, a remarkable technological and historical pocket that was given its first important public notice by W. Knight Sturges in THE ARCHITECTURAL REVIEW of October, 1953. It would be quite safe to say that New Yorkers, except for architectural historians (and we are a small, strange breed) are completely unaware of its existence. Or, as in the case of Manhattan Borough President Edward R. Dudley, who proposed the area for renewal, awareness does not extend to appreciation; the spot is ideal for redevelopment, claims Mr. Dudley, because it contains nothing but 'rundown, bad buildings.'

Other losses of note have been Rhinelander Gardens on West 11th Street, by one of New York's most famous nineteenth-century architects, James Renwick; the elegant historic houses on Washington Square North, known simply as 'The Row,' replaced by apartments of consummate mediocrity—the once beautiful



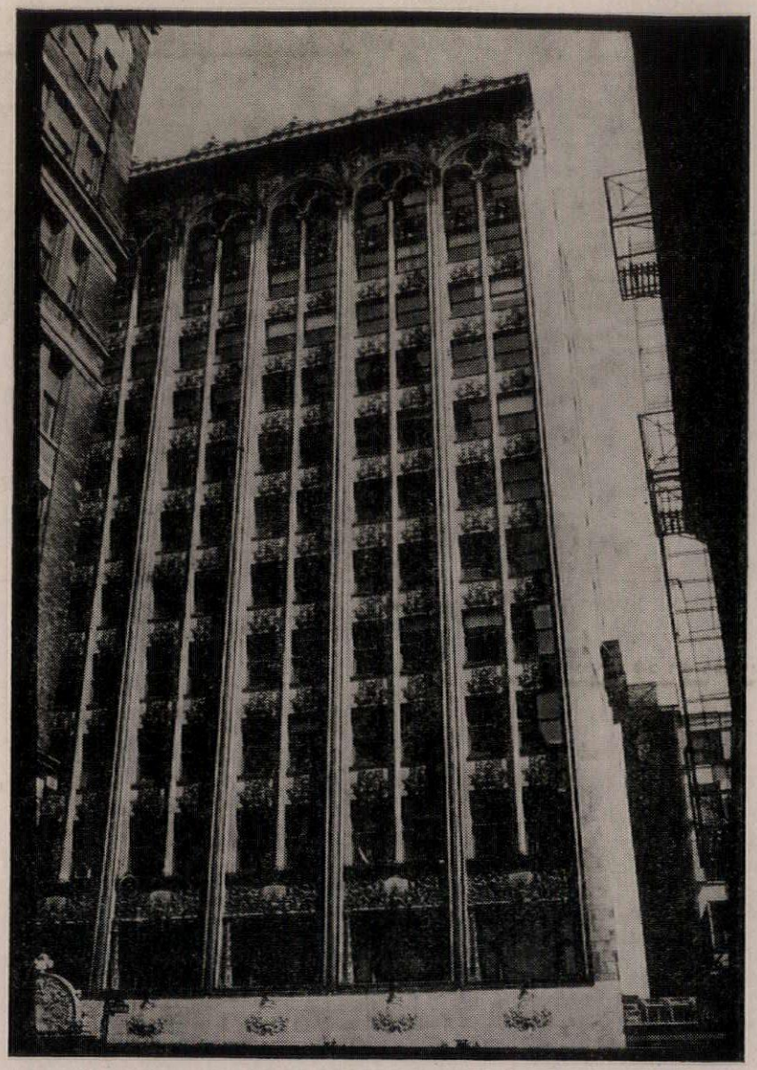
1, *cast-iron front buildings in Worth Street, New York (designed by Griffith Thomas in* 1869). *These have been preserved above the remodelled first floors.*

square has been subjected to equal depredations by New York University and private speculators; and George B. Post's Produce Exchange at 2 Broadway, New York's most famous landmark of the 1880's, demolished with great difficulty for a far less distinguished successor.

However, awareness of the problem is growing and has finally reached official levels. Although certain citizens' groups, and some of the press, have tended to make a glorious black and white melodrama of the situation—the villainous government versus the victimized people—this is a distorted picture. Last summer, Mayor Wagner appointed a Committee for the Preservation of Structures of Historic and Aesthetic Interest to study the matter and make recommendations. This fall, the committee submitted its report, the crux of which was the proposal of a permanent, official Landmarks Preservation Commission, which would set up lists, initiate legal machinery, and make suggestions to city agencies like the Planning Commission and the Housing and Redevelopment Board for sites and buildings to be preserved within renewal areas. (Almost thirty American cities already have such bodies and laws; New York's awakening is shamefully late.) This step was taken in March, when the New York Board of Estimate established the commission, with a budget of $50,000, to start the preservation wheel rolling.

Urban renewal officers have been conspicuous offenders in the past, and are still far from free of blame, but the present City Planning Commissioner, James Felt, is increasingly aware of the case for conservation. He has put himself quietly behind the call for a Preservation Commission by approving the proposition even before the Mayor released it. In addition, he is responsible for the recent appointment of the first architect-member of the City Planning Commission in many years, who is also one of the authors of the preservation proposal issued by the Committee for Historic and Aesthetic Structures. It is with the Preservation Commission, of course, that the real future fate of New York's historic architecture lies, and if it follows conventional time-consuming bureaucratic procedures, there will be few old buildings left to save.

Except for this official action, preservation in New York relies on the isolated activity of private groups, as threats to cherished structures arise. If there has been any single leader, it is the Municipal Art Society of New York, an organization devoted to maintaining the city's aesthetic and architectural standards. (Harmon Goldstone, the new, preservation-minded member of the City Planning Commission, was also President of the Society.) In 1957 the Society published a 'New York Landmarks' list of three hundred buildings considered worthy of preservation with the assistance of the Society of Architectural Historians. Not surprisingly during the six-year study approximately one-third of the buildings slated for inclusion had been torn down. Subsequently, the New York Community Trust, a philanthropic foundation, has been placing Landmarks Plaques on the more important remaining structures, which gives them a certain cachet in otherwise unobservant eyes. It is also not surprising that some owners, interested in keeping their buildings anonymous and negotiable, have refused the plaques. This is true, for example, of Louis Sullivan's only New



Sullivan's Bayard Building, 65 Bleecker Street.

York work, the still handsome, though partially disfigured, Bayard or Condict Building at 65 Bleecker Street, of 1897–98. Walking tours of older neighbourhoods, sponsored by the Municipal Art Society and the Museum of the City of New York, under the direction of the ardent classicist, Henry Hope Reed, Jr., have attempted to educate New Yorkers to at least a part of their architectural past.* If blame is to be distributed, however, the sin is as much with our architects and urban renewal sponsors who, conspicuously lacking knowledge, concern and creative imagination, prefer the bulldozer to the more difficult job of integrating new and old.

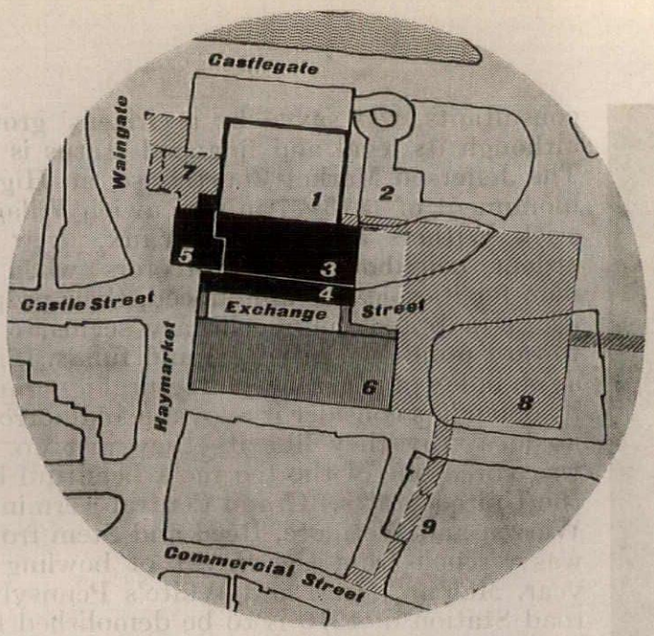
Individual battles have raged noisily. Carnegie Hall, the acoustically perfect concert auditorium built in 1891 by W. B. Tuthill with Adler and Sullivan as consultants, was saved by a citizens' group in 1960, although its legal and financial status is still shaky. The Jefferson Market Courthouse, an High Victorian monument of 1873–77 in Greenwich Village by Frederick Withers and Calvert Vaux, drew a band of ardent neighbourhood protectors when the city's plan for its sale was announced; their proposal for its use as a branch public library seems to be moving toward municipal approval and funds. (Significantly, as an index of general architectural ignorance, most of its defenders consider it a lovable old horror, and have no idea why they like it—they just do. In 1885 it was voted one of the ten most beautiful buildings in the United States.) Grand Central Terminal, built by Warren and Wetmore, Reed and Stem from 1903–13, was rescued from the threat of bowling alleys last year. McKim, Mead and White's Pennsylvania Railroad Station of 1910 is to be demolished for a flashy complex of sports arenas and commercial structures, but one feels that its champions are crushed by the sheer size and vulgarity of the gargantuan new scheme. Henry J. Hardenbergh's substantial 'French style' Dakota apartments of 1882–84 were bought by their tenants for a co-operative residence.

The most disorderly and best-publicized battle of all was the near-riot conducted by the Committee to Save the West Village, led by the articulate and able architectural journalist, Jane Jacobs, author of the new, acutely perceptive, but highly controversial book, *The Life and Death of Great American Cities*.† Mrs. Jacobs and her Committee fought the City Planning Commission to a standstill on the neighbourhood's selection as a renewal area. Redevelopment plans and official 'slum' designation have both been withdrawn, after sensational proceedings that included the carrying of protesting residents kicking and screaming from City Hall hearings, and a series of sinister accusations and counter-accusations that still hang smoking in the air.

The New York press has been sympathetic, reporting the battles conspicuously, and in the case of the two major papers, the *Times* and the *Herald-Tribune*, often lending editorial support. But until the public and any city-appointed Commission realize that criteria for preservation must be enlarged beyond that standard sentimental bromide, 'George Washington slept here,' we will have confusion, obstruction, and little real progress. We are a nineteenth-century city, and our landmarks are largely business and commercial structures that trace the fascinating, dynamic diversity of a unique period of changing technology and taste. Unless we understand and appreciate the nature of this heritage, our best efforts are doomed to fail.

*See note on a booklet describing these tours, p. 79.

†To be published in England shortly and reviewed in these pages.



block plan

key

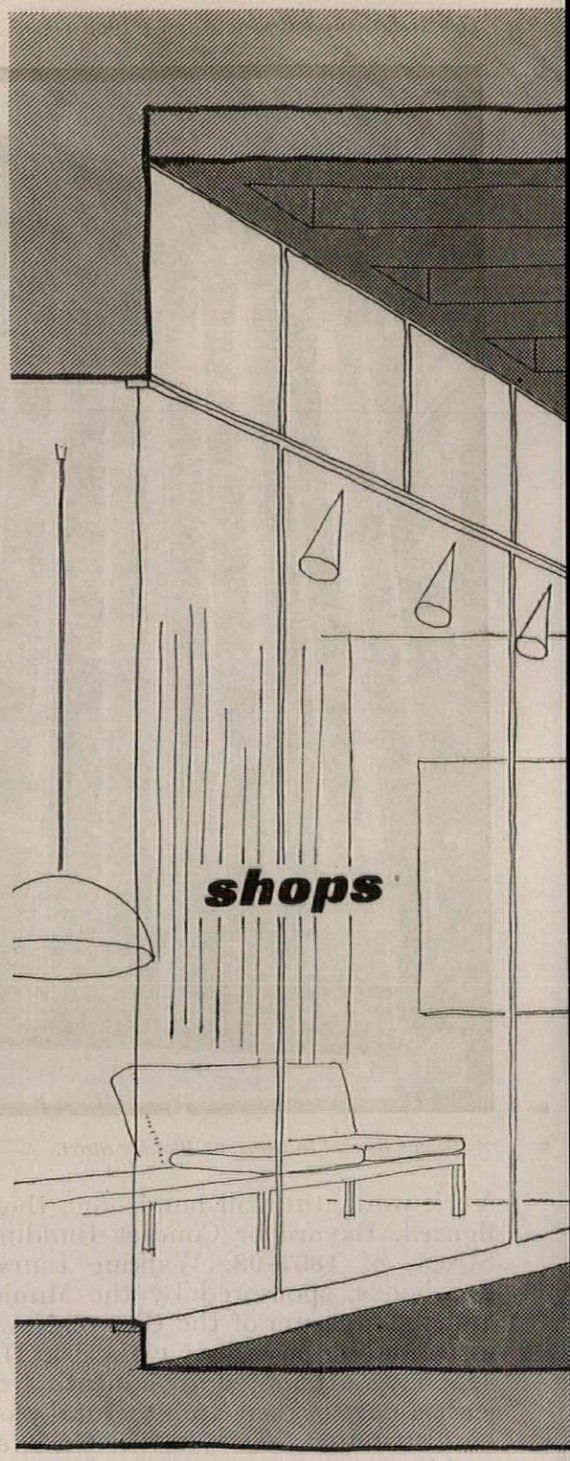
1. meat and fish market
2. service road and loading bay
3. new retail market
4. shops at ground and gallery levels, offices over, in five-storey block
5. shops and offices in high block
6. new Woolworth building with perimeter shops at ground and gallery levels
7. future market extension with shops
8. proposed Sheaf market
9. proposed raised pedestrian way

RETAIL MARKET, SHEFFIELD

ARCHITECT | **J. L. WOMERSLEY (Sheffield city architect)**

site plan

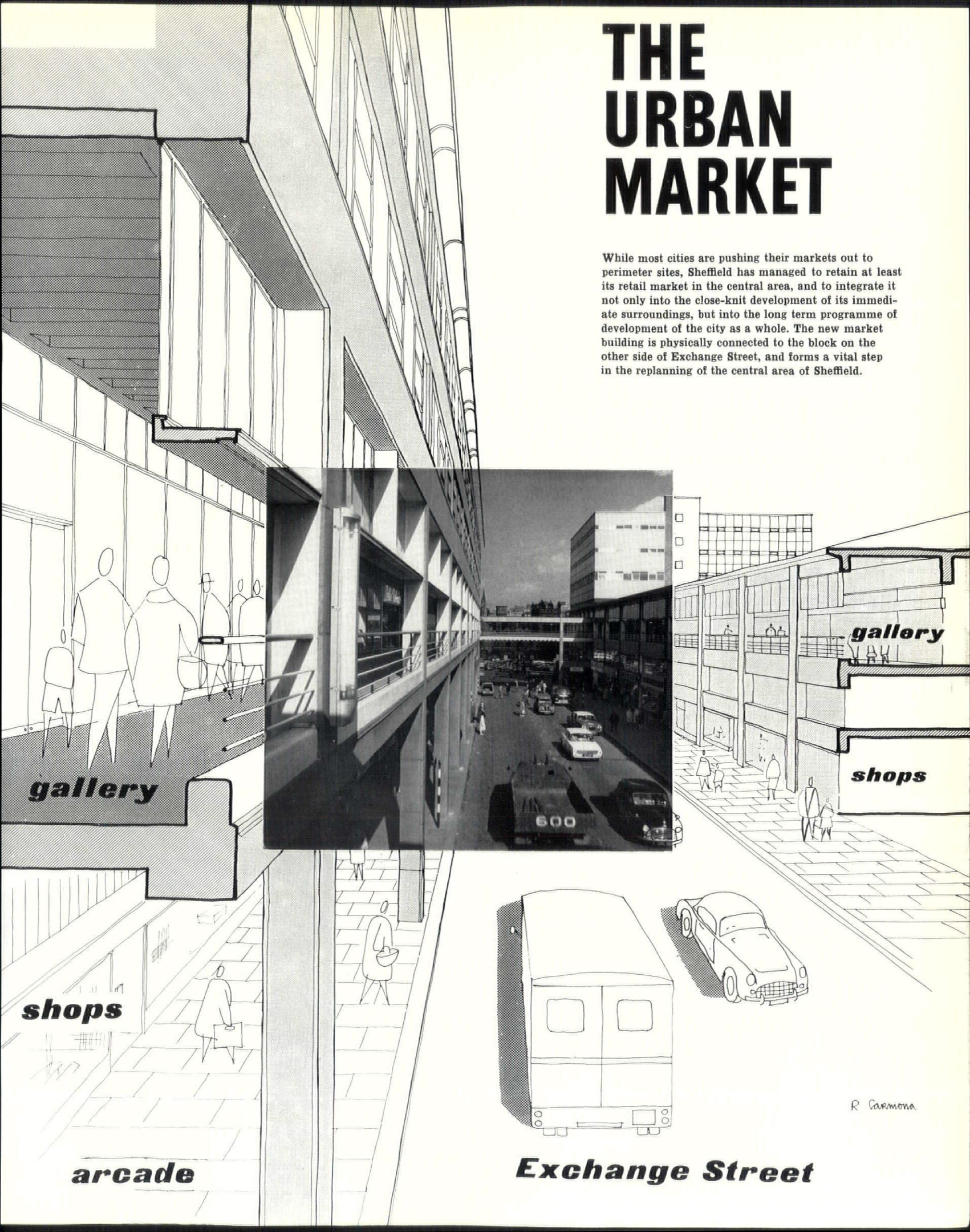




north-south section through retail market, Exchange Street and Woolworth building

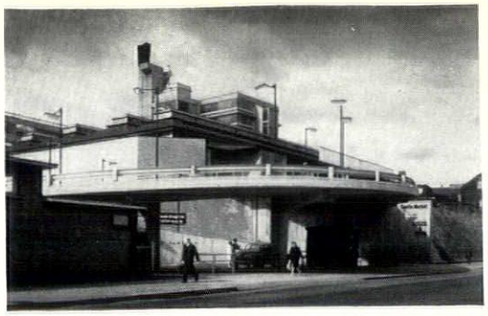
THE URBAN MARKET

While most cities are pushing their markets out to perimeter sites, Sheffield has managed to retain at least its retail market in the central area, and to integrate it not only into the close-knit development of its immediate surroundings, but into the long term programme of development of the city as a whole. The new market building is physically connected to the block on the other side of Exchange Street, and forms a vital step in the replanning of the central area of Sheffield.



RETAIL MARKET, SHEFFIELD

1, view from Castlegate; the new spiral service road is in the foreground and, behind the old meat and fish market, is the top of the ten-storey block of shops and offices attached to the new market building. 2, the ten-storey block from Waingate. 3, close-up of the ten-storey block showing, under the office floors, the gallery which connects with the top floor of the market—
see section on page 91.



1

This ten-storey market building in Castle Hill, which provides shops and offices as well as a new retail market, is the main stage in the progressive reorganization of Sheffield's wholesale and retail markets, involving, among other moves, the removal of the wholesale market from its old central to a suburban site and the release of the old Norfolk market hall for development as shops and office. This development, by private enterprise (architects, T. and P. Braddock), has been completed simultaneously with the construction by the city of the retail market building illustrated here, the two buildings being connected by bridges across Exchange Street.

Work has begun on the design of a further extension of the new markets building along Waingate, adjoining the old meat and fish market which is being retained, new goods access to which has been built as part of the present scheme. This reorganization of the market is the prelude in its turn to the replanning of much of the central part of the city, especially the area east and south of the group of markets, between the latter and the Midland railway-station. On high ground to the east of the latter area is the Park Hill housing illustrated in the AR in December, 1961.

The market itself has been designed on two main levels with a mezzanine level above each. To ensure maximum yield from the site the perimeter is taken up by street frontage shops and a 'Gallery' pedestrian shopping level connected by bridges across the street to a similar arcade on the adjoining building. Above, five office floors are provided on the Waingate frontage and two on Exchange Street. Pedestrian circulation is kept separate from vehicular circulation and goods access.

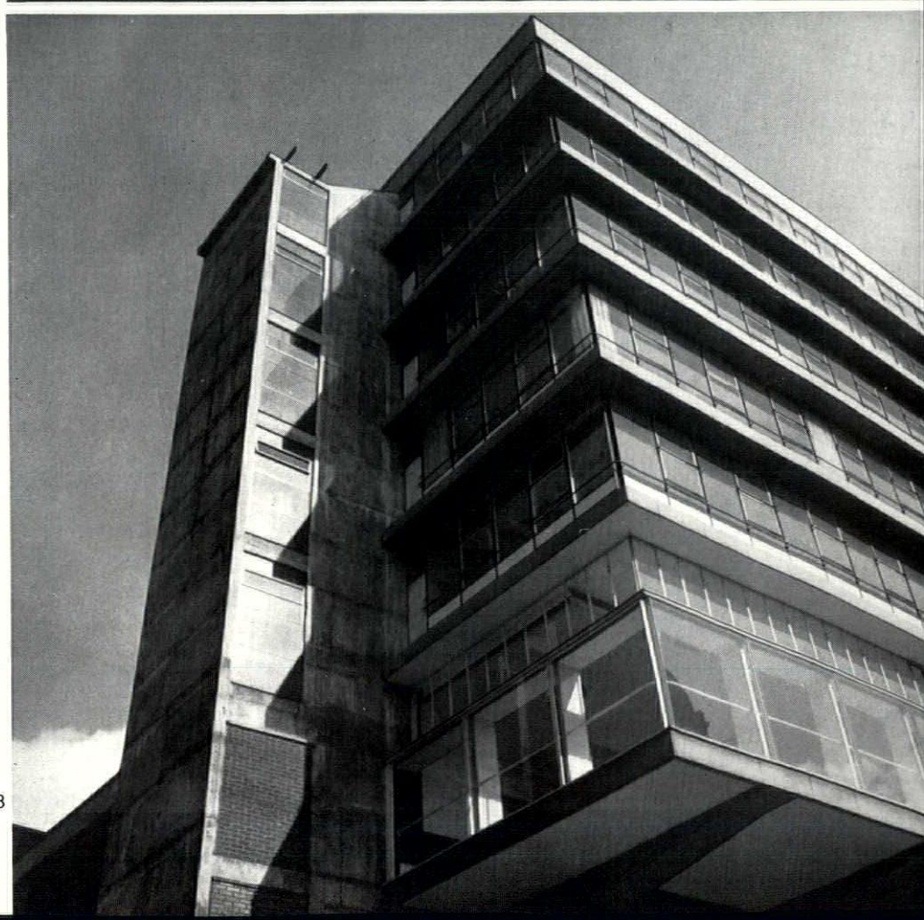
Goods access at the lowest level is by way of a loading dock constructed beneath the existing meat and fish market, from which dry goods reach all parts of the building by means of a subway and service lifts. Part of the loading dock is used for the removal of refuse from chutes that discharge into mobile receptacles. Alongside is the fuel-oil delivery point. Meat and fish traffic is dealt with at a higher level by way of a spiral ramp.

All the shops have two or three (and in one case four) floors, served from the subway by lifts and stairs. By taking advantage of the varying street levels it has been possible to provide one direct access to the upper market hall and two access points midway between the floor levels of the upper and lower market halls. The future extension along Waingate will provide direct access to the lower market hall level.

The upper level is top lit and has openings in the floor to allow natural light to penetrate downwards. Frequent stairs and ramps connect the various levels



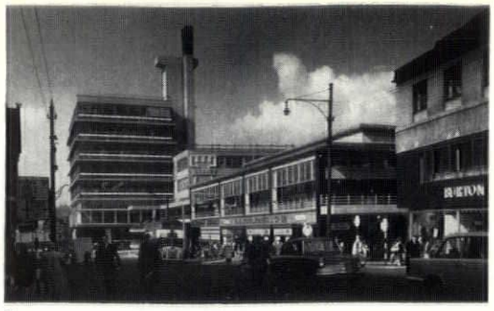
2



3



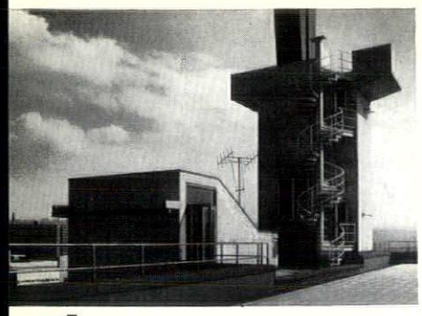
4



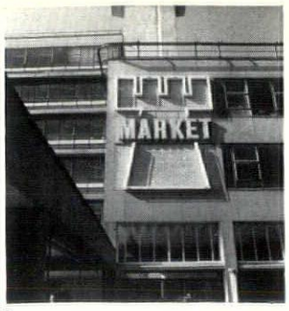
5

4, view from Castle Street, looking along Exchange Street, with the market beyond the ten-storey block. 5, looking along Haymarket towards Waingate, past the privately-developed block of shops and offices which is shown again on the left of 6, which is a view along Exchange Street in the opposite direction to that in the drawing on page 87. The market, on the right, is clad with 2-in. thick grey terrazzo slabs with infilling of Uxbridge flints and standard section steel curtain walling.

6



7

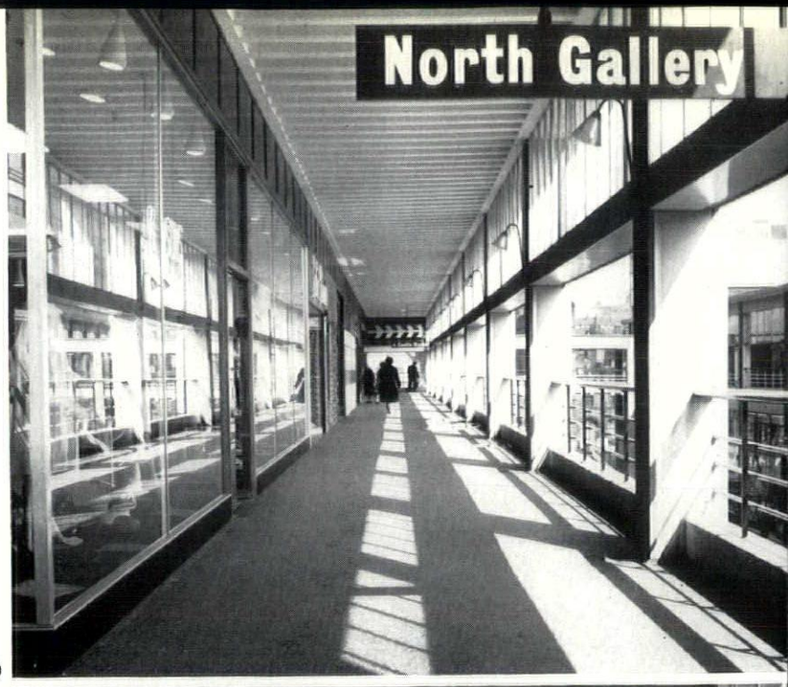


8

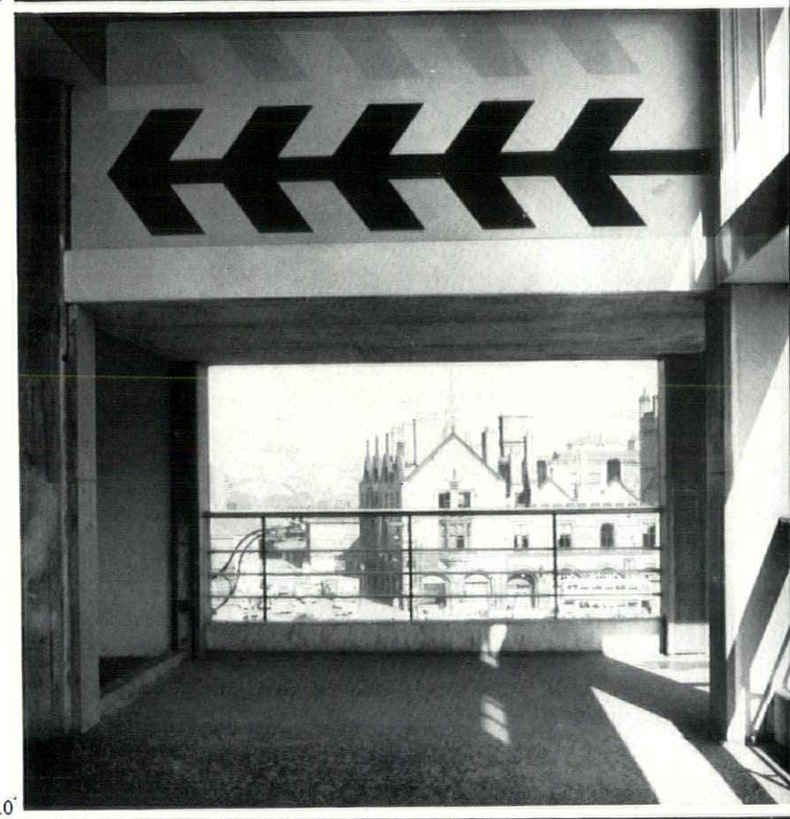
and the meat and fish market which has been given a new entrance on the north side by a spiral ramp from Castlegate, designed specially for shoppers arriving by bus. The mezzanine floors encircle the market area and subdivide the main east-west space into five parallel halls, the most westerly of which also serves as a foyer to the upper floors of the building and is kept open after the market is closed. At mezzanine level are stall stockrooms, lavatories, market offices, cafés and showrooms.

The building has a reinforced concrete frame with in-situ concrete floor slabs and stairs in the market area. Office floors are beamless tile slabs. Roof-slats are also hollow tile. The frame is clad externally with 2in. thick grey terrazzo slabs used as permanent shuttering; infilling is Uxbridge flint bricks. Window-frames and curtain walls are built up of standard steel sections set directly into the structure. The market halls have a mechanical heating and ventilation system.

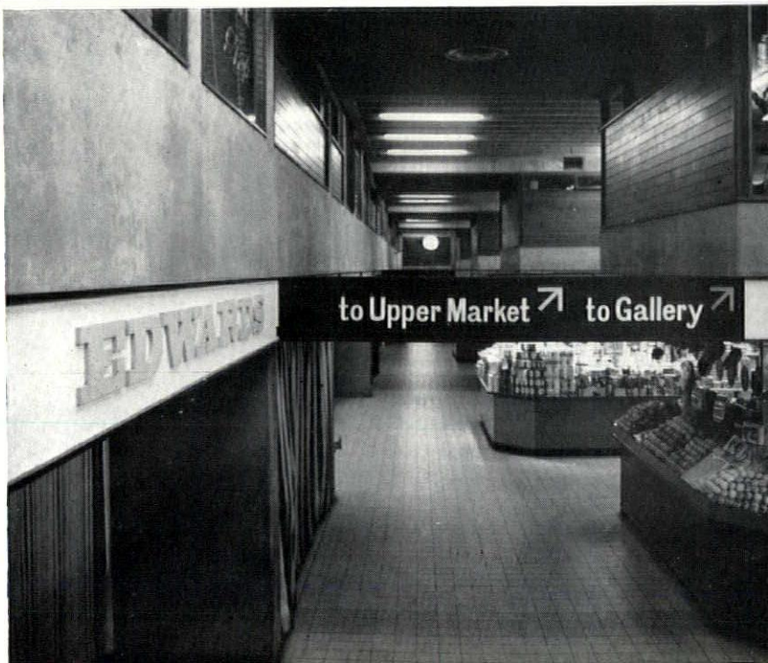
Architectural staff under the city architect: deputy city architect, W. L. Clunie; assistant city architect (central area), A. G. Derbyshire; job architects, J. R. Taylor, J. S. Mackie, J. R. Baldwin. Structural consultants, Ove Arup and Partners. Heating and ventilating consultants, G. N. Haden and Sons. Quantity surveyors, Cyril Sweett and Partners.



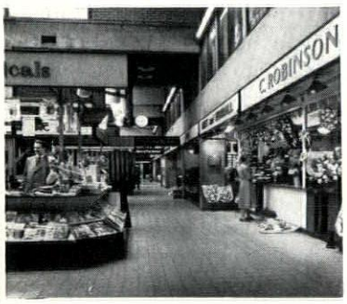
9



10



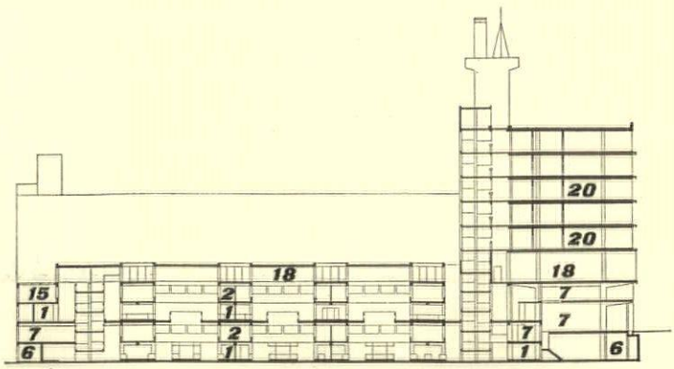
11



12

7, lift machinery and ventilating equipment housed on the roof. 8, market sign in Exchange Street. 9, the market gallery which runs alongside Exchange Street. 10, the gallery at a junction with a bridge. 11 and 12, two views of the interior of the market. Floors and stairs are paved with ceramic tiles, the walls are fair-faced concrete or brick, or finished with ceramic mosaic and glazed tiles. Ceilings are either fair-faced ribbed concrete or asbestos fibre board.

photographs by H. de Burgh Galwey

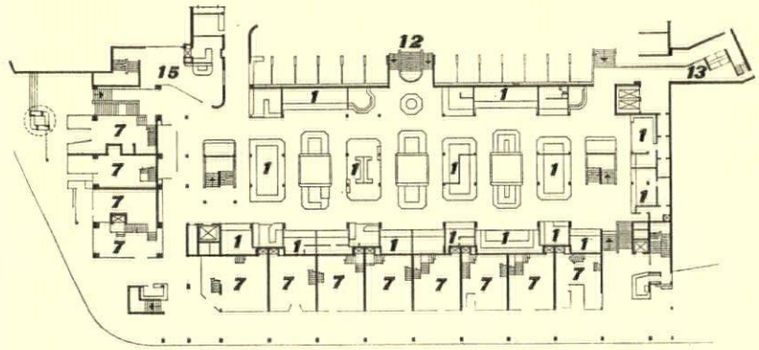


section

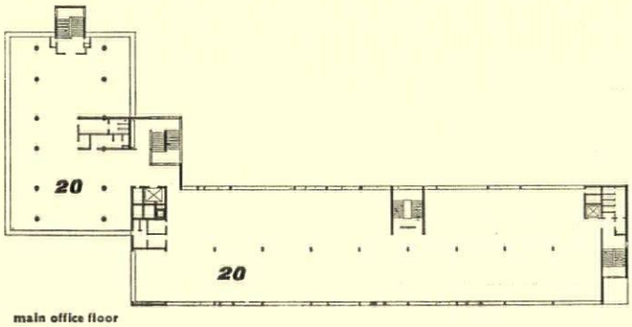
RETAIL MARKET, SHEFFIELD

key

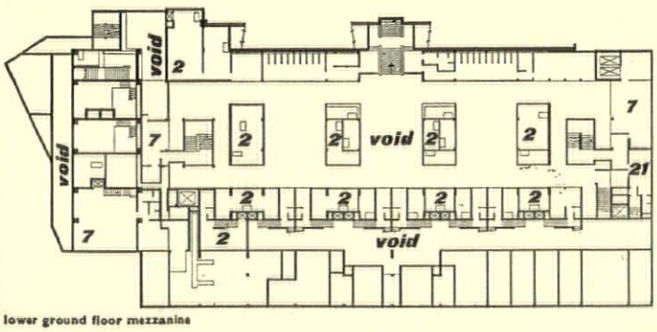
1, stalls.
2, stock rooms.
3, warehouses.
4, loading dock.
5, refuse dock.
6, service subway.
7, shops.
8, sprinklers.
9, sub-station.
10, boilers.
11, plenum chamber.
12, meat and fish market.
13, refuse chutes.
14, extract fans.
15, restaurants and cafes.
16, banks.
18, gallery.
19, bridge.
20, office space.
21, market police.



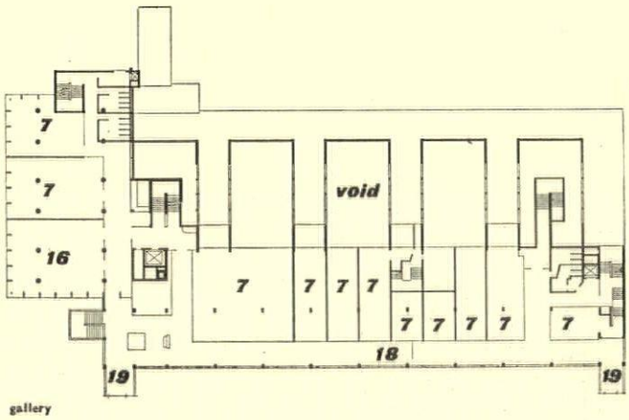
upper ground floor



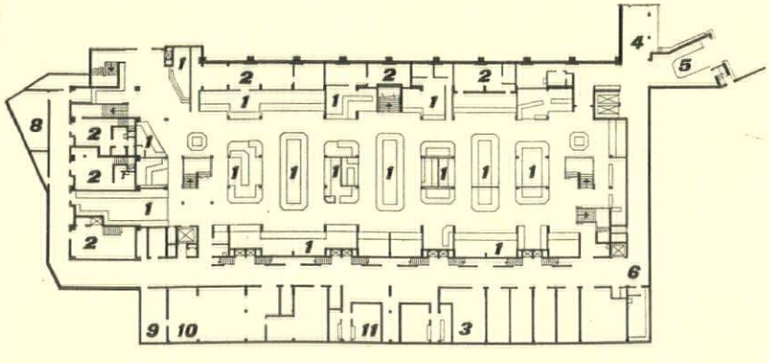
main office floor



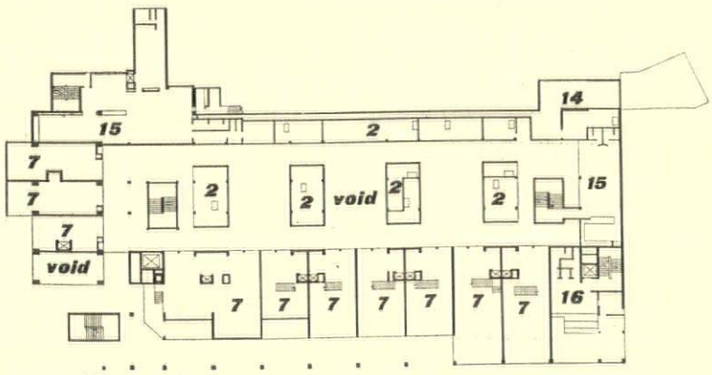
lower ground floor mezzanine



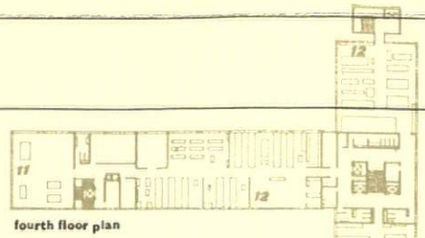
gallery



lower ground floor



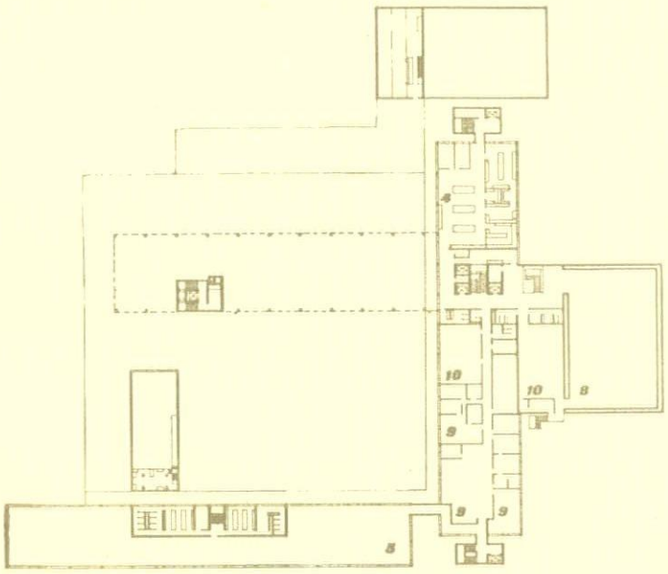
upper ground floor mezzanine



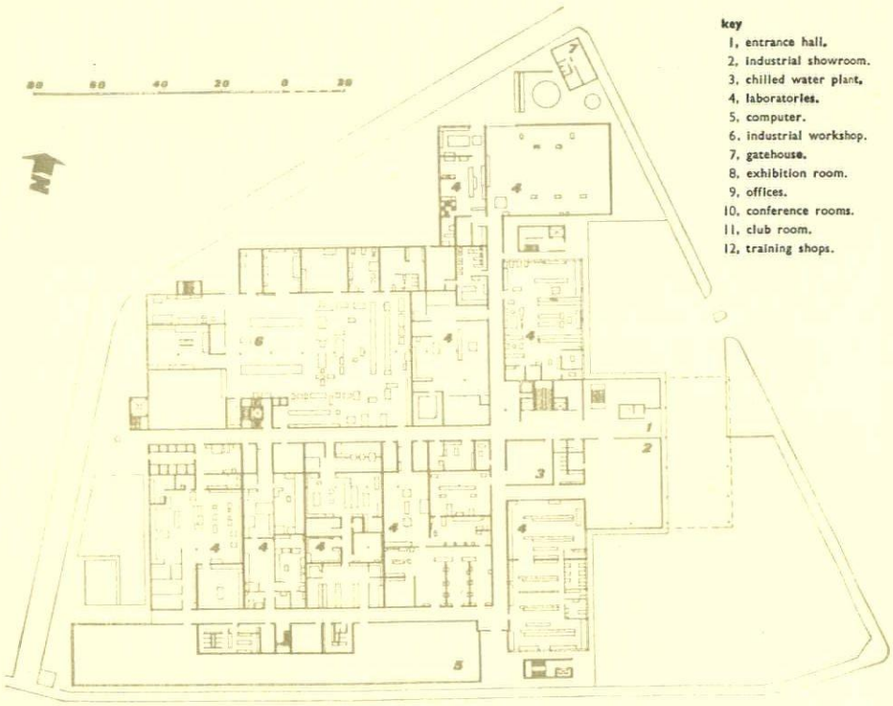
fourth floor plan

OFFICES AND LABORATORIES, FULHAM

ARCHITECTS | **E. R. GOLLISTER AND ASSOCIATES**

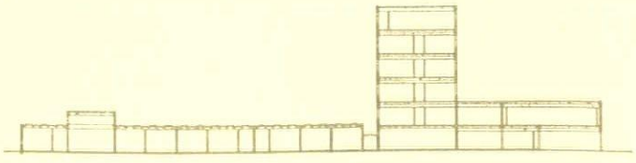


first floor plan



key
1, entrance hall.
2, industrial showroom.
3, chilled water plant.
4, laboratories.
5, computer.
6, industrial workshop.
7, gatehouse.
8, exhibition room.
9, offices.
10, conference rooms.
11, club room.
12, training shops.

ground floor plan



section

The building is for the North Thames Gas Board and contains workshops, classrooms, offices, dining-rooms, lecture-hall and exhibition space. It also houses the Watson House Research Laboratories of the Gas Council. The site is in Peterborough Road, London, S.W.6, near the northern end of Wandsworth Bridge.

220,000 sq. ft. of floor area was required, of which 127,000 sq. ft. had to be at ground level. Since the total area of the triangular site was only 152,000 sq. ft., which had to include a service road round the perimeter, the various departments that could be raised above the ground floor are planned as a T-shaped six-storey block. This is supported clear of the single-storey buildings beneath it to allow them to have continuous roof-lighting. A two-storey block along the south frontage of the site is almost entirely devoted to housing an electronic computer and its associated services. A two-storey entrance-block projecting from the eastern side of the six-storey block has the exhibition space on its upper floor.

The structure is reinforced concrete with prestressed floor-beams. The column span is 50ft. with 20ft. spacing along outside walls. Services run between the soffits of the floor beams and the suspended ceilings beneath them. The building is faced with curtain-walling consisting of a mild-steel framework of cruciform cross-section, with glass infill-panels. The spacing of mullions throughout the building is 3ft. 4in.. Mullions and transomes are covered by shaped stainless steel plates clipped on after glazing.

The three façades of the exhibition wing, over the entrance, are covered by a relief designed by Mr. John Piper and executed by Gillespie and Manzerolli Associates. It consists of 29 panels, mostly 12ft. high and 9ft. wide, making a total length of 300ft., of polyester resin reinforced with glass. The panels were first moulded in wax which was cast in layers within a wooden framework, the latter being then fitted over the brick panels of the building. The layers, which remain separate, can be carved with a knife according to the depth of relief needed. This technique gives a matt finish which will withstand the weather (as distinct from the glossy finish associated with fibreglass), and has the advantage that the wax can be melted down and used again.

Executive partners: architecture, T. Dixon; engineering, A. J. Leggatt; quantity surveying, J. F. Bylett.

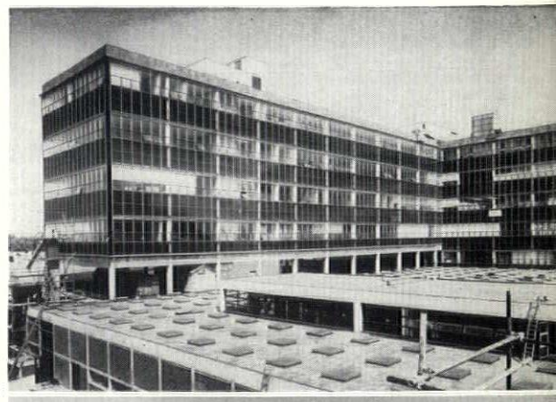
INDUSTRIAL NERVE CENTRE

1, the staircase at the south end of the six-storey block. 2, from the south-west; 3, from the west. 4, the two-storey computer block on the south side. 5, from the south-east, with the entrance block on the right.

1



2



3

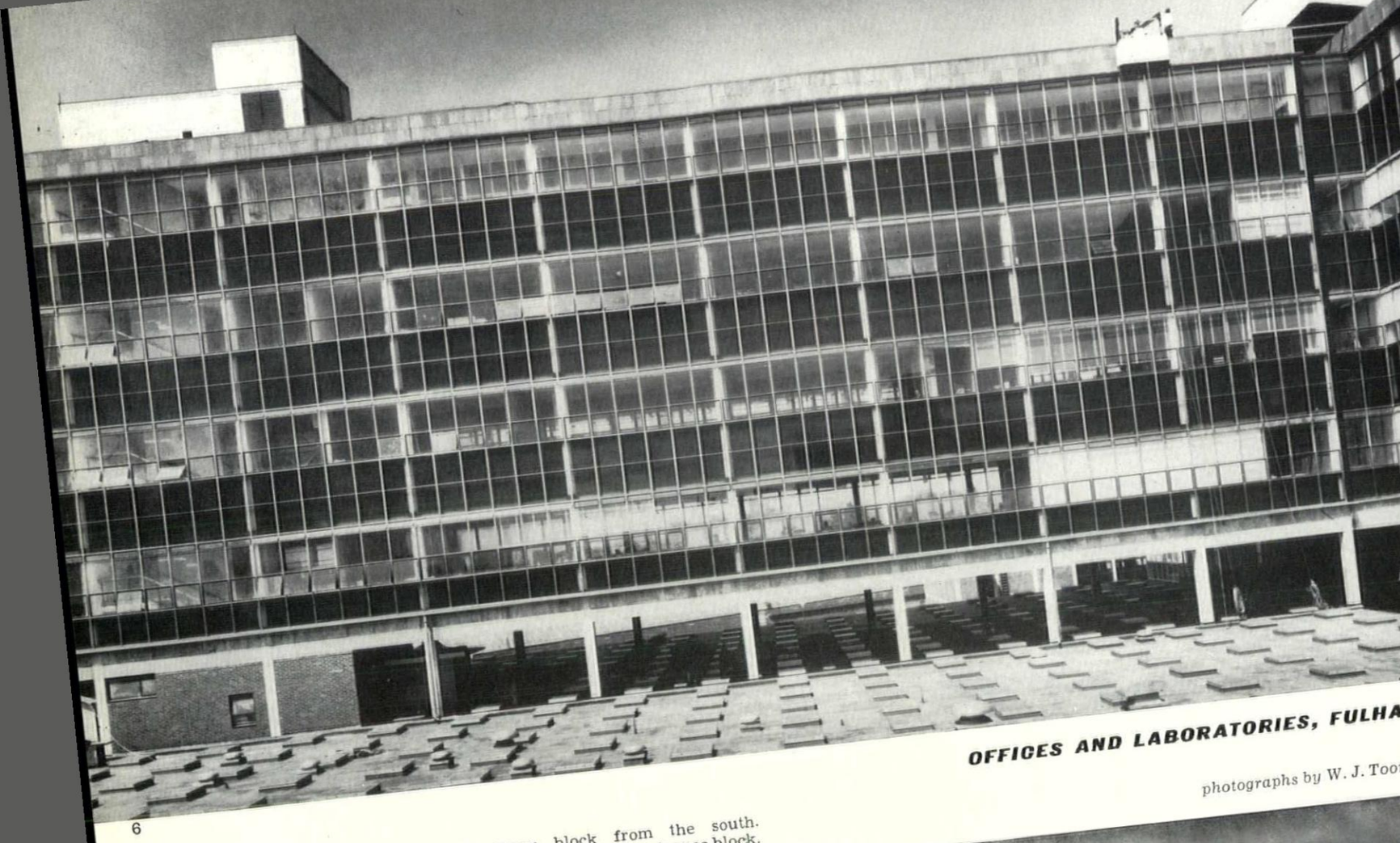


4



5





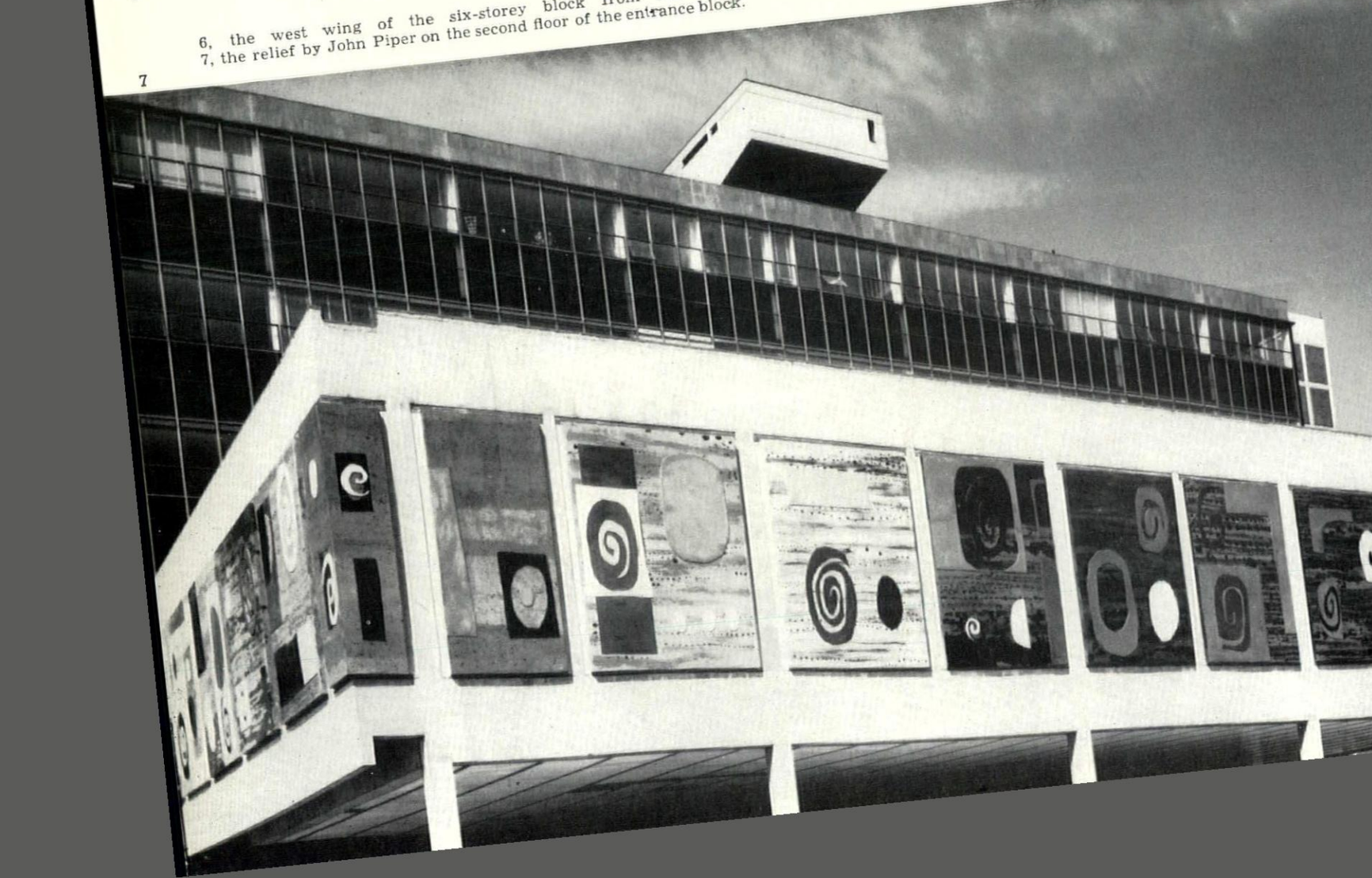
OFFICES AND LABORATORIES, FULHA

photographs by W. J. Too

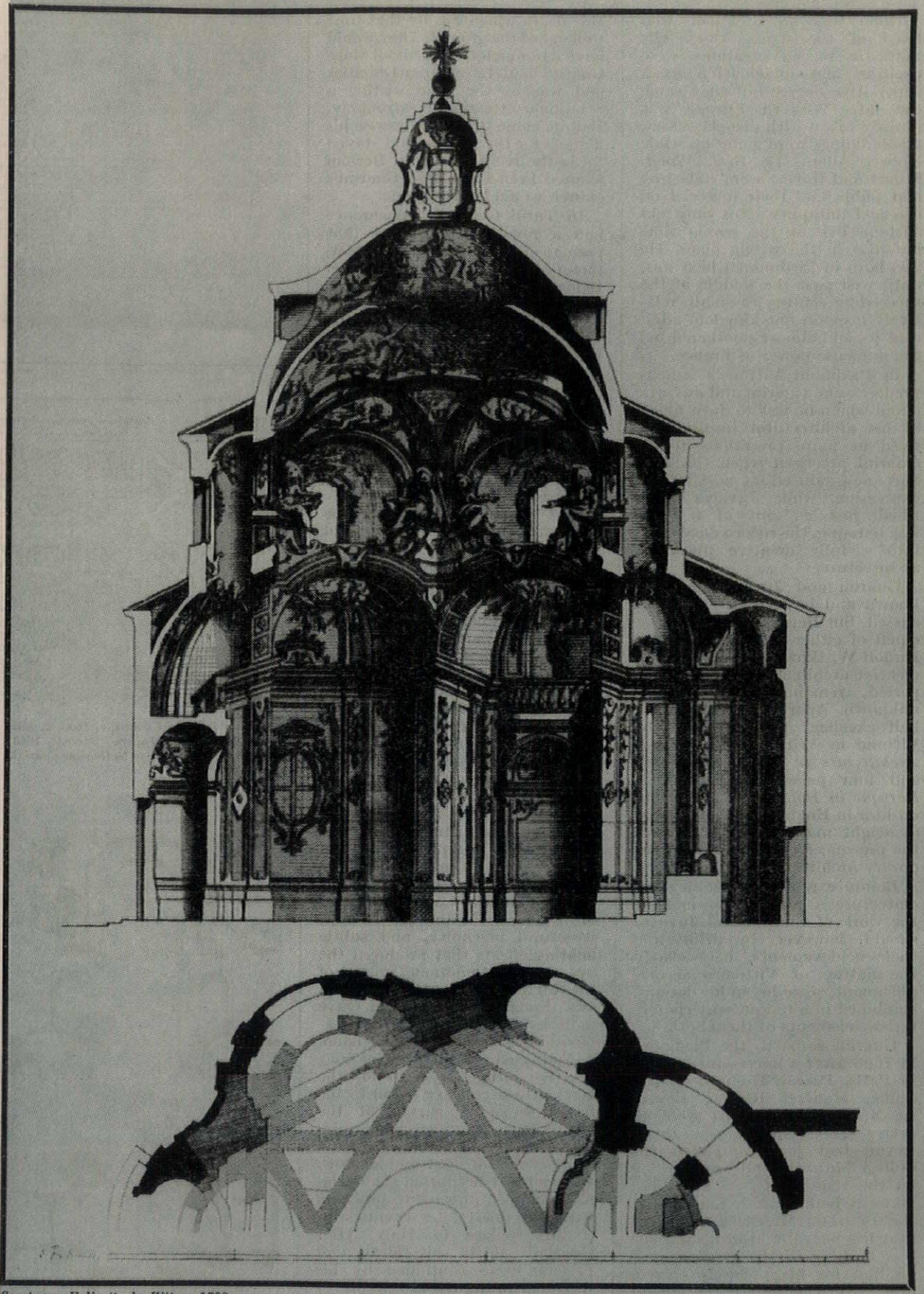
6

6, the west wing of the six-storey block from the south.
7, the relief by John Piper on the second floor of the entrance block.

7



HENRY A. MILLON



Sanctuary, Valinotto, by Vittone, 1738.

VITTONE

In spite of the attention that Professor Wittkower has drawn in recent years to Bernardo Antonio Vittone (1702–1770), *the most baroque of Italian eighteenth-century architects, this article by Professor Millon of the Massachusetts Institute of Technology is the first appreciation of his work to appear in English.*

VITTONE

Vittone was an architect who lived at the wrong time. His fantastic rococo creations were exciting and imaginative to a superlative degree but they came too late—Western Europe was already taken with neo-classicism. His buildings were going up while Robert Adam, Le Roy, Wood, Stuart and Revett were collecting and publishing their material on classical antiquity. Not only did Vittone live at the wrong time but also in the wrong place. He was born in Piedmont which was, until well past the middle of the succeeding century, a small, relatively insignificant kingdom adjacent to, and almost smothered by, the immense power of France.

In Piedmont Vittone's famous predecessors, Guarini and Juvarra (from whom he was to draw much of his architectural inspiration), lived at more propitious times. Guarini practised when the high baroque produced its most replete expression, while Juvarra flourished just as, out of a tired late baroque, the rococo developed into a fully creative phase of architecture.

Guarini and Juvarra are well known and have been often discussed, but Bernardo Vittone, the equal of either and, according to Rudolf Wittkower 'the only really creative architect Italy had at this period,' remains today virtually unknown. Apart from five and a half excellent pages devoted to Vittone in Wittkower's *Art and Architecture in Italy*, 1600–1750, and four pages in Lees-Milne's *Baroque in Italy*, there is nothing on him in English. This historical oversight may be largely due to the preconceived ideas of contemporary architectural writers.

Before examining Vittone's architecture a preliminary look at the work of Guarini and Juvarra should, however, by delineating their achievements, help clarify the nature of Vittone's accomplishment, since he, in his designs, combined in a unique way characteristic elements of them both.

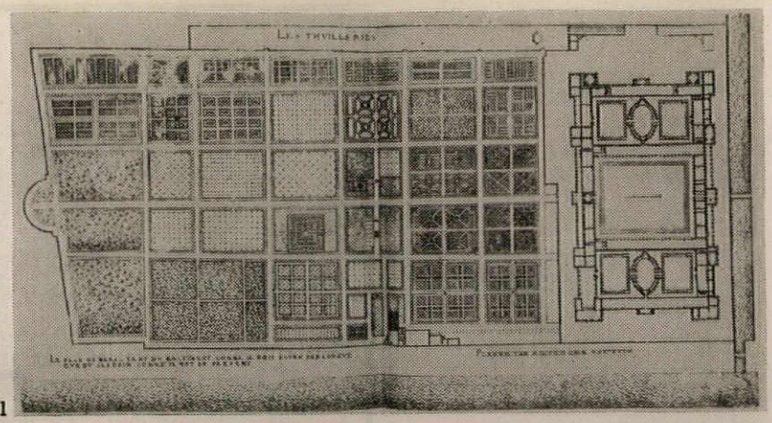
Guarini came to the Piedmont in 1666 after a successful sojourn in Paris. Pascal, Desargues, Mersenne, Molière, Racine, Levau, Le Nôtre, and Mansart were all active while Guarini was there. Levau had just completed the Collège Mazarin, and was working on the remodelling of Versailles; Mansart had the new Louvre and the Bourbon Mausoleum 'on the drawing board' and in his old age was basking in the glory heaped on him for his precisely correct and overwhelmingly successful Maisons and Val-de-Grâce. Le Nôtre's remodelling of the sixteenth-century random checkerboard pattern of the Tuileries gardens into a geometrically unified and interwoven scheme which formed a logical unity, 1 and 2, was to set the pattern for garden design throughout Europe for the next hundred years. Paris was also host to Christopher Wren and Bernini. Sir Christopher during his stay probably went to visit Guarini's church of Ste. Anne Royale, 3, which was by that time well out of the ground. They would have had much to talk about since Guarini had taught mathematics and was at the time writing a reactionary treatise on astronomy. Bernini came to Paris to revise his designs for the Louvre and stayed to do the King's portrait. Bernini assured Frenchmen that Guarini's church would be handsome.

In Turin Guarini's appearance had a revolutionary effect that permanently transformed the character of Piedmontese architecture. Before Guarini's arrival the better local architects such as Amedeo Castellamonte and Carlo Morello were producing weak academic versions of Late Mannerist and Early Baroque buildings while contractors, amateurs, and dilettantes were producing still weaker interpretations of what the local masters built. Within a few years Guarini's vigorous structural systems and dynamic spaces produced in Turin an architectural climate second to none in Italy and one that proved to be most influential in Central Europe.

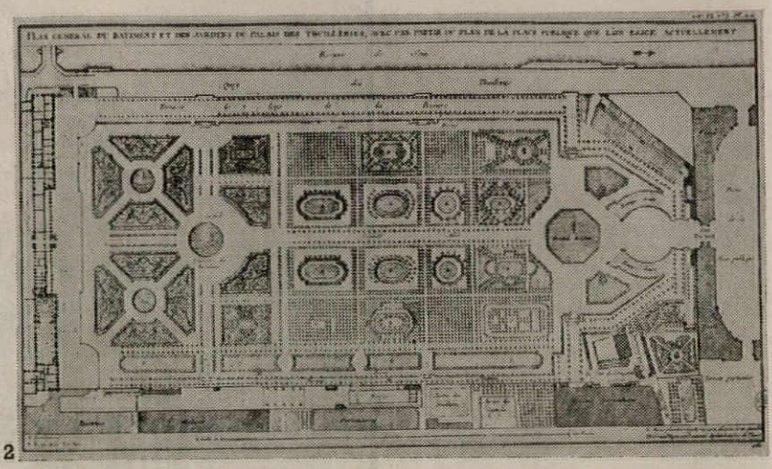
In the seventeen years remaining in his life Guarini revolutionized spatial concepts and structural procedures in Piedmont, most particularly with S. Lorenzo, 1666, 4, and the Chapel of the Sudario, 1667, 5, and, through his publications, laid the foundations for much of the late baroque and rococo which was to captivate most of Central Europe. S. Lorenzo hit Turin like a bombshell. The complex plan, dynamic wall surfaces, violently shaped and interwoven spaces, intricate structure, and the virtuosity of light control were completely new to Turin. Even in all Italy there was no Late Baroque church that equalled Guarini's achievement in S. Lorenzo. With the colour, structural ingenuity, and subtle lighting effects that produced the overwhelming emotional impact of the Chapel of the Holy Shroud (SS. Sudario), 6, Guarini gave more evidence of his fertile imagination. The Palazzo Carignano, 7, confirmed still further Guarini's creative originality. From the terracotta decorative detail to the broad sweeping curves of the facade there was everywhere evidence of his phenomenal control of mass and of light and shadow. Without any hesitation the Carignano stepped forward to proclaim itself the finest late seventeenth-century palace in Italy After Guarini's death his ideas and projects were continued by his followers during the last decade of the seventeenth century, but all building ceased when the Piedmont became the scene of some of the bitterest battles of the War of the Spanish Succession.

The Peace of Utrecht gave the Kingdom of Sicily to Vittorio Amedeo II, Duke of Savoy. In 1714, Vittorio Amedeo went to Sicily to be crowned and while there chose Juvarra to remodel the Royal Palace at Messina.

In 1714 Juvarra was appointed Royal Architect at a salary three

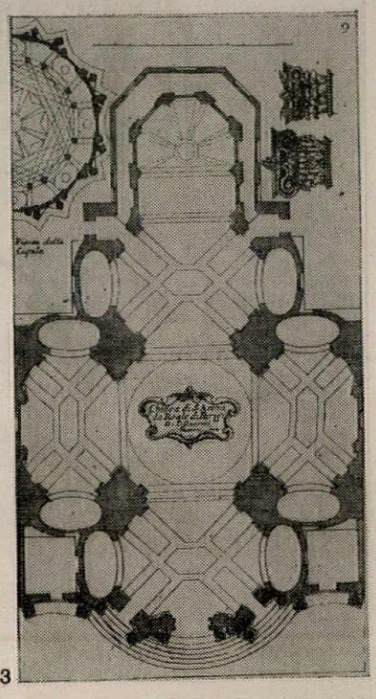


1



2

1, *plan of Tuileries Gardens*, c. 1600. 2, *plan by Le Notre for the Tuileries Gardens*, 1666. 3, *St. Anne Royale, Paris, by Guarino Guarini, before* 1666.



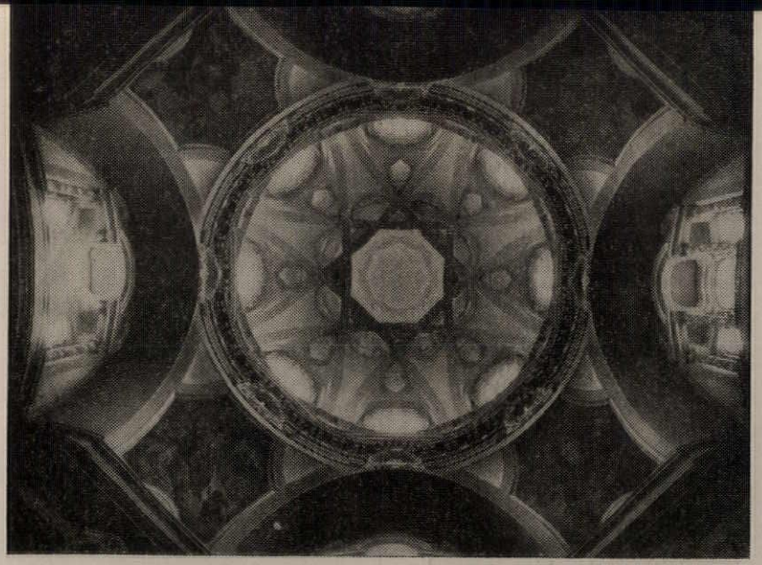
3

times that which Guarini had received only thirty years earlier. He immediately began work on the Basilica of Superga, 8. Success followed success in Turin and spread his fame throughout Europe. The King of Portugal requested his service from Vittorio Amedeo and after Juvarra completed the work in Lisbon he went to England and to France. Upon his return to Turin, Juvarra produced, in his full maturity, the Palace at Stupinigi, and the Church of the Carmine, which are among the finest works of the early rococo in Italy. Juvarra with his fluid elegance, lightness and openness was opposed to the vigorous, virile, taut and massive forms of Guarini and constituted a second profound influence on Piedmontese architecture.

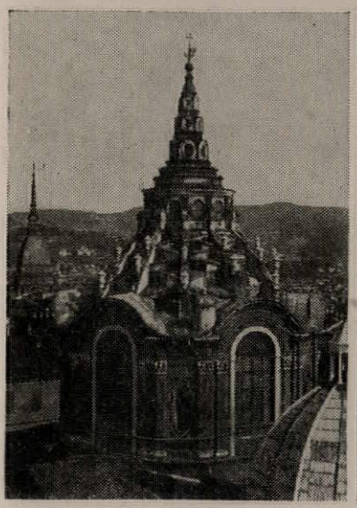
Guarini's architecture is massive, and uses structural systems of a complex nature, and a limited number of materials in a highly expressive way, Juvarra's is light and airy, does not emphasize the character or nature of the material employed in its construction, and uses largely traditional building techniques with perhaps an attenuation of structural elements.

Guarini designed spaces that were not separate additive units but active spaces that were integrated and dependent upon one another. He suggested movements which were then checked and produced thereby a tension between parts. Juvarra, in his early buildings, used static sharply defined spaces, but late in his life began to merge his spaces into a fluid, elegant, graceful whole (Stupinigi and the Carmine).

Guarini used predominantly complex rhythms for the surface articulation of his architecture with decorative motifs that were inventive, personal and bizarre. He employed a full range of colour and value emphasizing rich blacks, dark reds, medium greys, and light yellows in his interior marbles and a dark red natural brick for exteriors. Juvarra, on the other hand, used easily comprehensible



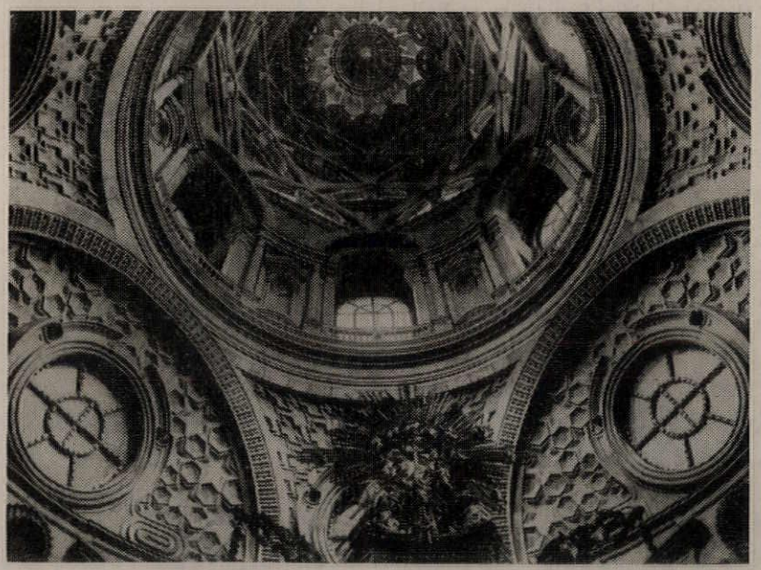
4



5



8



6



7

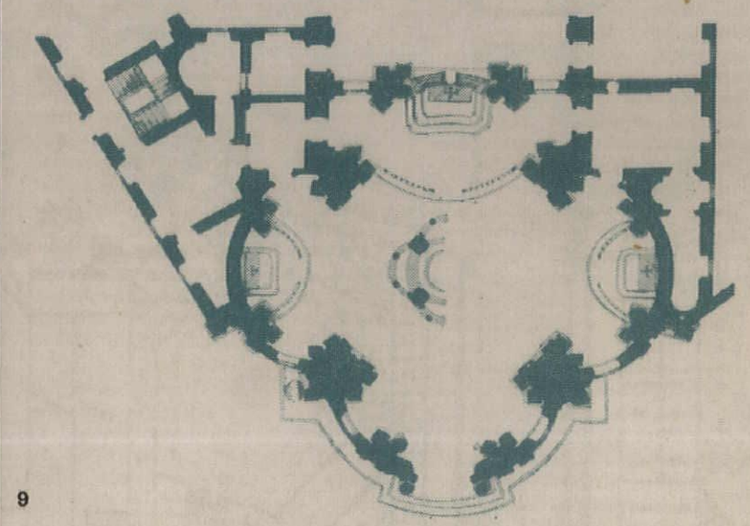
surface rhythms and adapted and varied traditional decorative schemes and motifs in a free and inventive way. Juvarra's interior colours were in a high-keyed range with light and brilliant reds, intense blues, light yellows, light and intense greens, and both pure and creamy whites. Guarini occasionally shields forms and spaces from direct light to contrast them dramatically with spaces flooded with light while Juvarra tends to bathe his buildings and spaces in a uniform, all-revealing, classical light.

At first glance the two disparate views of architecture seem to be at such variance that to attempt a reconciliation would be foolhardy if not impossible. Bernardo Vittone does the seemingly impossible and combines elements of them both. He takes aspects from Guarini and Juvarra, fuses them and produces an amalgam that is eternally astonishing in its technical mastery and overwhelming in its spatial play and decorative fantasy.

From Guarini Vittone selected complicated structural systems and active but interdependent spaces which were combined with the delicate, light and airy qualities of Juvarra's architecture. Vittone took from Juvarra's architecture fluid spaces, a decorative vocabulary and a high-keyed colour range that, when infused with his spirit, produced a Guarinesque emotional intensity.

Sta. Chiara in Brà (1742), an excellent example of Guarini-





9

4, main dome of S. Lorenzo, Turin, by Guarini, 1667. 5, 6, *SS. Sudario, Turin, by Guarini,* 1667. 7, *Palazzo Carignano, Turin, by Guarini,* 1679. 8, *Basilican Church, Superga (Turin), by Filippo Juvarra,* 1718. 9, *Santa Chiara, Brà, by Vittone,* 1742.



10, *staircase of Palazzo Madama, Turin, by Juvarra*, 1718.

Juvarra fusion with its pierced double shell dome, skeletal structure, illusionism, rich colours, and exciting reflected and plunging light, 9, marks Vittone early in his career as one of the great masters of the one-room or the one-space building.

We know little of his early life. He was presumably born in Turin, where he grew up while Juvarra was building the Basilica of Superga, S. Filippo, and the Palazzo Madama, 10. Vittone's first known work was done for Guarini's unfinished Palazzo Carignano. Prince Vittorio Amedeo of Savoy-Carignano (second cousin to the king) wished to have a wooden fence separate the palace courtyard from the garden that stretched westward towards the Po. Copies of Vittone's design and detailed specifications exist, but the simple, straightforward design has little to commend it. The specifications dated 1730 are signed B. A. Vittone, Arch. He was about 28 years old and nothing is known about his architectural training. Vittone said (in his *Istruzioni Elementari . . .*) that he was a pupil of Juvarra but, until the present, this has not been taken seriously since records show that he did not even attend the Accademia di San Luca in Rome until 1730. The Carignano document gives new credence to his own statements. In 1732 at the Accademia in Rome Vittone, like Juvarra, won first prize in architecture after only two years of study. Vittone returned to Piedmont in 1733 where he remained for the rest of his life.

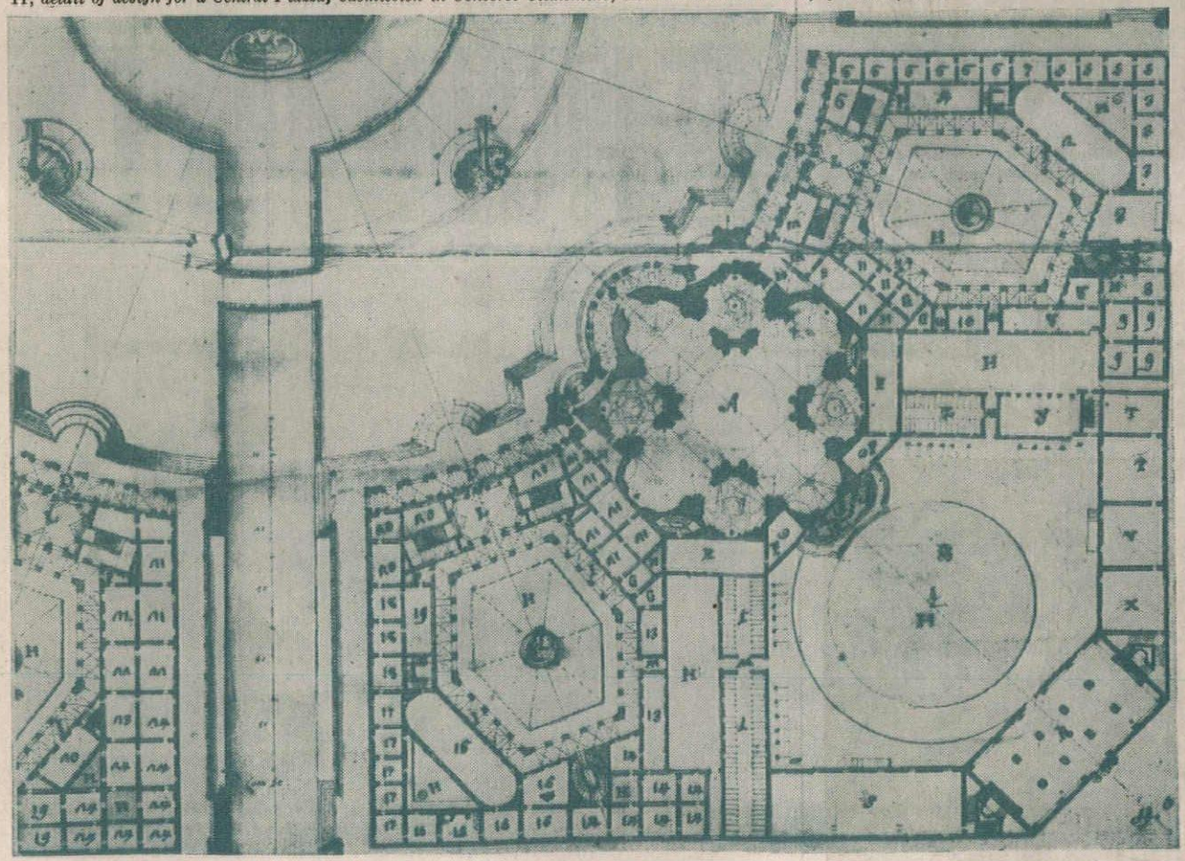
Between 1737 and 1770 he built over 27 churches, three hospitals, three or more palaces and numerous altars and chapels. Not one of his churches is large and for the most part are parochial churches in small villages or towns. Vittone prepared for publication Guarini's unfinished *Architettura Civile*, which appeared in 1737, and published on his own (1760 and 1766) four volumes on architecture running to well over a thousand pages. The publication was in preparation over a period of years and several of the architects of the next generation were trained by working on the illustrations.

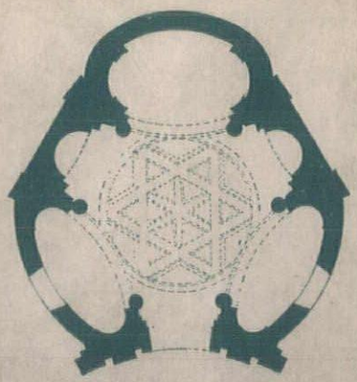
Vittone never married. He apparently was an irritable, cantankerous tyrant. Soon after his death his heirs were sued by his assistants to recover money that he owed them for years of work which they had been too timorous to claim. The royal house was aware of his talents (he had been given a gift of fifty doubloons by Carlo Emanuele III when he won first prize in 1732) but for some reason chose instead as architects the aristocratic dilettante, Benedetto Alfieri; the classical great-nephew of Juvarra, Francesco Martinez; or the dry and dull Aliberti and Ravelli. Vittone never received a major royal commission. Either the king was displeased with Vittone's personality, or Vittone's mature manner was not appreciated by the crown.

Vittone shows a tendency to combine Guarinesque and Juvarresque forms in his earliest designs. His large plan for a Central Piazza (which was one of his prize drawings at the Accademia di San Luca in 1732) shows him principally dependent on the Bramante - Michelangelo - Bernini - Fontana-Juvarra tradition, but the church in the lower right, 11, has satellite chapels which are vaulted in a conspicuously Guarinesque way.

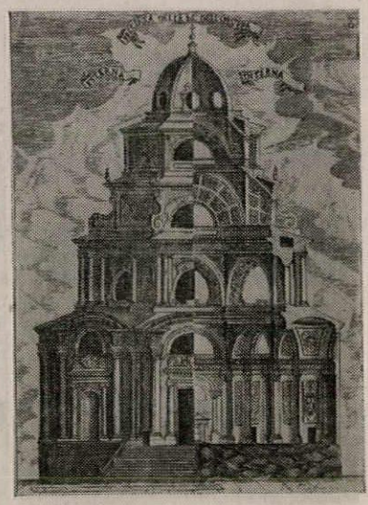
In his earliest complete buildings Guarini's influence is somewhat stronger than Juvarra's. The cemetery chapel of S. Luigi Gonzaga at Corteranza, 12, 13 and 14 (surely designed by 1737), and the astonishing Sanctuary at Valinotto, (see headpiece, page 95) begun in 1738, both have Guarini's characteristic star-shaped, interlaced arches of San Lorenzo, Turin; the equilateral triangle-hexagon relationship of the SS. Sudario, Turin; the use of reflected light to illuminate part of the dome structure (San Lorenzo); a four-tiered pagoda-like shape seen in Guarini's project for the church at Oropa in the volume published by Vittone, 15; and Valinotto has a pierced multiple dome construction that is reminiscent of Guarini's San Gae-

11, *detail of design for a Central Piazza; submission in Concorso Clementino, Accademia di San Luca, by Vittone*, 1732.

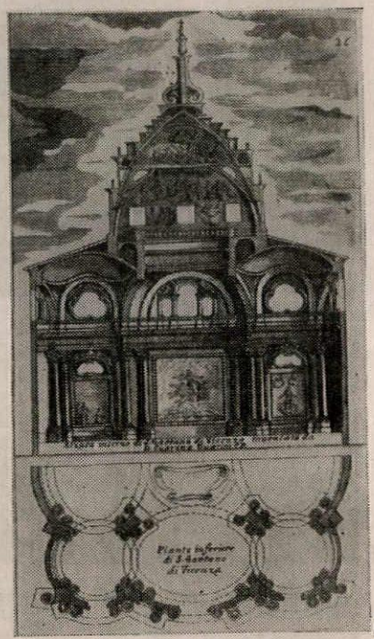




12, *plan of S. Luigi Gonzaga, Corteranzo Monferrato, by Vittone*, 1738.



15



16

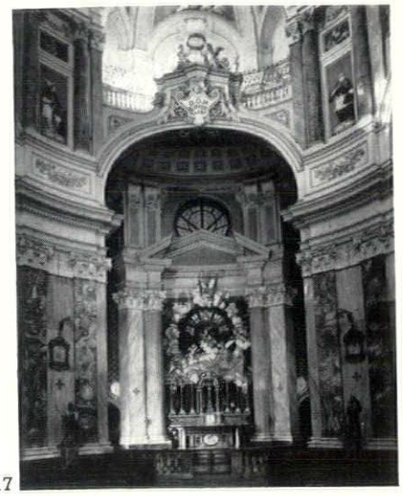
15, *Sanctuary, Oropa, by Guarini.* 16, *S. Gaetano, Vicenza, by Guarini.*

13



14

13, 14, *interior and exterior of S. Luigi Gonzaga, Corteranzo Monferrato, 1738, by Vittone—see plan, 12, on facing page.*

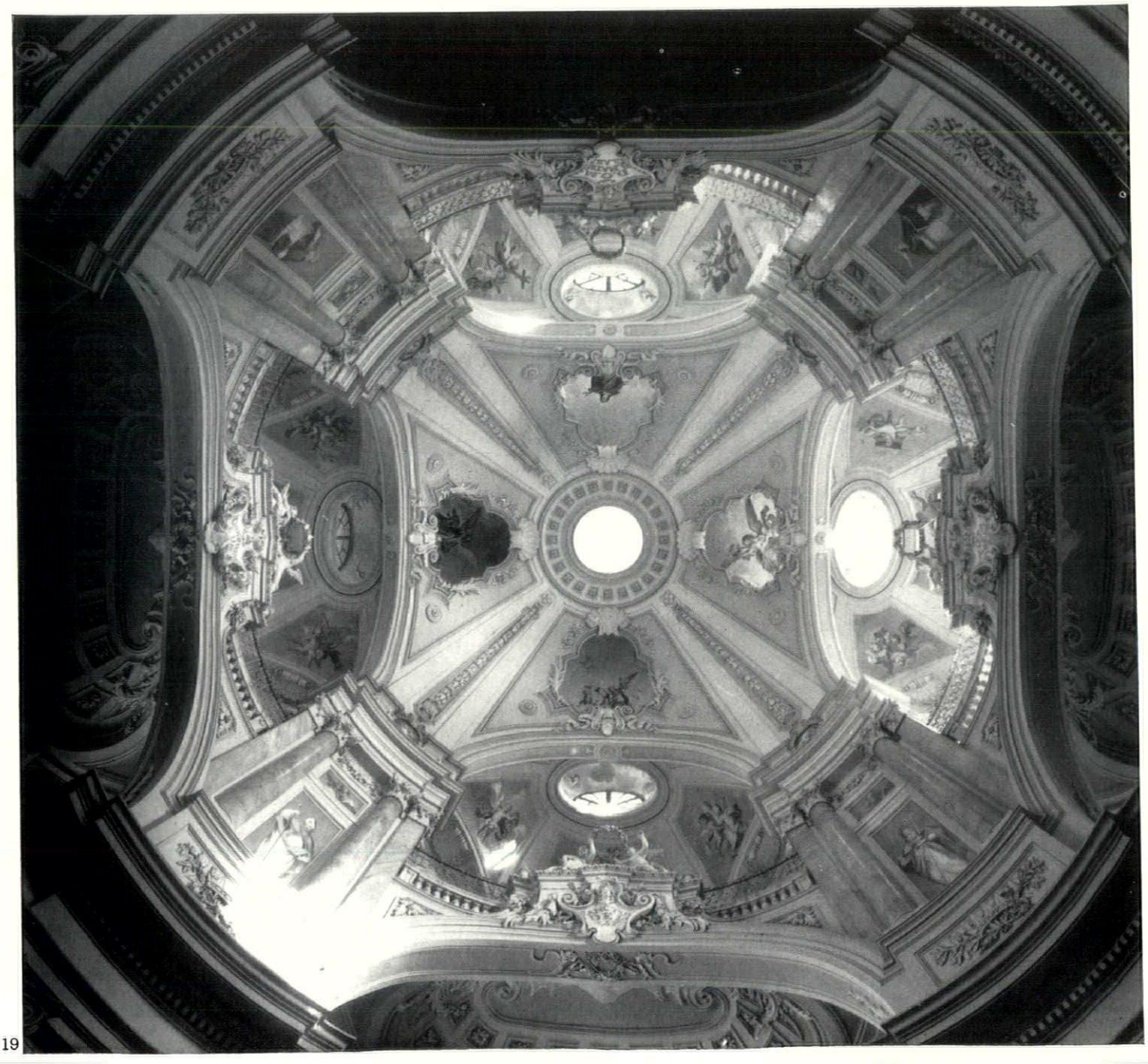


17



18

Sta. Chiara, Brà, by Vittone, 1742. 17, *the main altar;* 18, *gallery;* 19, *the dome.*



19

tano in Vicenza, 16. There is, however, little of the full-blown massiveness that is associated with Guarini but, instead, the lyrical lightness and simplicity characteristic of the rococo and the late works of Juvarra.

In San Lorenzo in Turin there are eight binding arches that form an open octagon which supports a large lantern in what is Guarini's characteristic utilization of a structural necessity to obtain a stunning emotional effect. At Valinotto Vittone uses similar interlaced arches, hexagonal in plan, to frame twin painted domical surfaces illuminated by a mysterious reflected light. Vittone's arches are not structural and only place an intervening web of material (in this case brick masonry) between the viewer and a contrived scene. Valinotto represents the illusionism of the make-believe world of the eighteenth century in contrast to the illusionism of the 'real' world of the baroque.

Vittone's work ripens to full maturity in the early 1740's. After primitive attempts for a distinctive vocabulary in the late 1730's he developed a full language of forms and structure in the '40's which had its first (and perhaps fullest) expression in the magnificent church of Sta. Chiara at Brà, 17 and 18.

Begun in 1742 for the Clarissan nuns, in plan the church is circular with four almost semi-circular niches added at the cardinal points. Four piers with paired pilasters define the central area and rise to support a dome. The four chapels that complete the lower half of the church act as large niches extending the space in all directions. Above the chapels a gallery, open to the interior, completely encircles the building. A second dome that covers the entire church is supported by the exterior walls of the gallery. The inner dome, supported by the four piers, stands free of the outer dome and the space between them is illuminated by dormer windows that cannot be seen from the pavement. The inner surface of the outer dome which is illuminated by light reflected from the outer surface of the inner dome contains frescoes that can be seen through large perforations cut in the inner dome.

At the upper level, the exterior walls of the church are those at ground level with the gallery occupying the space given to the chapels below. The effect is that of two separate buildings—one somewhat smaller set inside the other and just touching at the central piers. All light for the church comes from an indirect source. It must pass through the gallery and then fall into the central space of the church.

The structure of the central space stands free of any wall and consequently becomes slender, delicate, and expressive of its skeletal nature. The normal column - pendentive - drum - dome - lantern sequence (which repeatedly emphasized the horizontal by the nature of the division), that came in with Brunelleschi and had been the standard method for covering a centralized space up to the time of Borromini, has in Sta. Chiara become exceedingly equivocal. The column-arch-pendentive relation is absent. Since the space is circular there is no necessity for a pendentive region. The inner dome rests on four piers and four pairs of columns in what would have ordinarily been the drum region. Vittone has the drum area, if it be that, penetrated by arches of the lower main order, 19. The parts are no longer clearly defined. The interior dome is itself broken into by arches that span from each of the pier-column groups of the drum region, and is still further perforated by the irregular triangle-shaped peep holes. The exterior walls, seen through the screen of columns that support the interior dome, rise to a series of oval domes lighted by oval lanterns which enlarge the space of the building as they flood it with light.

Instead of becoming more enclosed as it rises (as most earlier buildings) the upper spaces in Sta. Chiara at Brà appear to expand and become more active. At the gallery level, what was at the the ground level a relatively simple centralized space, becomes a complex spatial and structural experience with screening piers, hidden light sources, illusionistic effects, multiple domes, and unseen but implied spaces.

The multiple spatial effects relate Sta. Chiara to the late buildings of Juvarra such as Stupinigi and the Carmine. In the Carmine, 20, Juvarra carried the side chapels well up into the barrel vault of the nave where they are covered by oval domes similar to those in Sta. Chiara at Brà. Juvarra has a screening arch in its normal lower position which, however, serves only to emphasize the extent of the void and its verticality. The suggestion of vertical unification of space in the nave of the Carmine by Juvarra was developed by Vittone into one of his principal features. When Vittone makes intentional confusion of the division of the church into its separate zones (column-arch-pendentive-drum-dome) by making the zones penetrate each other, the result is a profound emphasis on the vertical. Horizontal continuity is broken and vertical continuity is reinforced by emphasizing the line through paired pilasters in the lower order, to paired three-quarter columns supporting the dome, to paired ribs on the inner dome. The vertical unity allies Vittone's central planned buildings of this period (including S. Bernardino, Chieri, 1740, and Sta. Chiara, Turin, 1745) most closely to medieval central plans and not to the Brunelleschi-Bramante tradition.

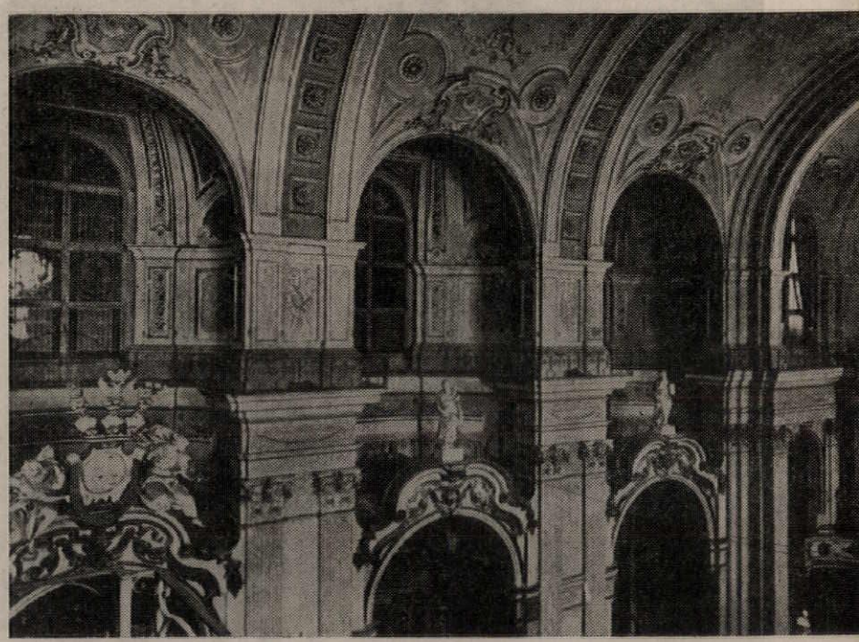
In the late 1740's and the early 1750's Vittone also used the standard order-pendentive arrangement to prepare for a dome over a central space with a square plan. In each case, however, the pendentive is scooped out so that above the interrupted circle formed by the pendentives there is repeated the square shape of the plan at ground level. The most successful of the 'gouged-pendentive' buildings is perhaps the church of Santa Maria di Piazza in Turin done in 1751, 21 and 22.

In plan the church is a longitudinal rectangle (with rounded corners) ending in a square choir narrower than the width of the nave. The centre of the nave is covered by a Guarinesque low oval ribbed dome resting directly on normal pendentives. The dome is pierced by eight horizontal oval windows which emphasize the star form as well as admit an abundant amount of light which falls vertically into the centre of the nave. The two curved ends of the nave are similarly covered by pierced ribbed semi-domes in a manner not unlike Juvarra.

It is in the vaulting of the square choir that the singular genius of Vittone takes special form. From the four corner pilaster bunches there is the beginning of a perfectly normal pendentive intended to change the shape of the choir to a circle so that a circular drum and dome might be placed on it. The pendentives in S. M. di Piazza have gigantic bites taken out of them leaving a circular cornice with four three-quarter circle lobes occurring at the corners (other churches with a similar configuration are the chapel of the Albergo di Carità, Carignano, 1749; S. Antonio Abbate, Turin, 1750; SS. Pietro e Paolo, Mondovi Breo, 1755; and Sta. Croce, Villanova di Mondovi, 1755). The result is a fusing of the spaces where they were formerly divided.

Vittone places a small attic pilaster at either side of the gouged-out hole and rests on them a standard Guarinesque ribbed star dome with penetrations and lantern. At the corners, over the scooped-out pendentives, he returns to the square plan of the choir floor below. Each side of the square receives three windows and the choir is lighted by a total of twelve windows instead of eight. That this was the reason cannot be doubted since Vittone himself said, in his *Istruzione Diverse*, that due to the scarcity of light he modified the building in several ways but the 'most notable element is the gouging out of the pendentives of the choir obtaining thereby openings for the passage of light introduced by the windows of the dome.'

Given the reason for the unusual appearance, it remains to determine whether the result is architecturally effective. The effect for one trained to see domes and drums resting solidly on a ring of masonry which rested equally solidly on pendentives and piers must have been astonishing. Even for us today, accustomed to diaphanous domes and lightweight vaults resting on needle points, the solution seems to destroy all the apparent weight of the structure and give it a light, airy, playful character totally in harmony with the remainder of the building and with all of Vittone's work. In his hand the gouges become a witty play on our architectural sensibilities which requires us to reassess our traditional values.



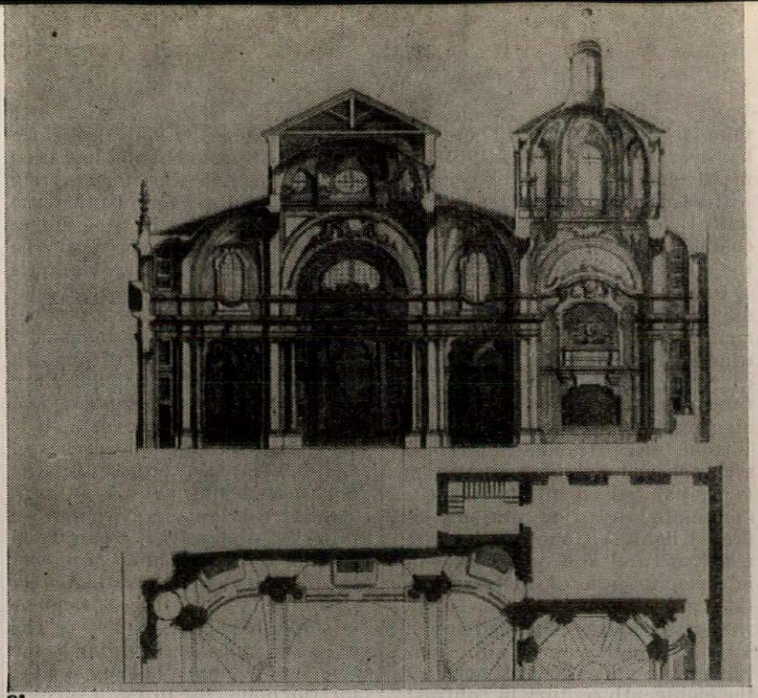
20, *Church of the Carmine, Turin, by Juvarra*, 1732.

After a period of relative inactivity in the 1750's, Vittone, in the last ten years of his life, devoted most of his energies to churches on the central plan. He seemed to take up again the problems he attacked earlier in Sta. Chiara at Brà, and in the churches at Rivarolo Canavese, 1759; S. Ambrogio di Torino, Turin, 1760; Riva di Chieri, 1766; and Borgo d'Alè, 1770, Vittone pro-

duced a series of inventive and exciting variations and elaborations on a theme. The spaces became more ample and there was a freer flow of space within and outside the building. The structure became lighter and the interiors were even more flooded with an airy diffused white light, which made his earlier buildings look enclosed and massive by comparison.

One of the best examples of the later phase of Vittone's career is the church of S. Michele in Rivarolo Canavese. In plan, 24, the church is an irregular symmetrical octagon with larger bays at the four cardinal points, and a long slender choir with two side chapels and an oval sacristy off centre to the right (the engraving is reversed). Set back from the street the entrance is framed by two curved lower pavilions that sweep out from the portico. The pavilions or screen walls are pierced at the lower level, 23, and continue the arcade that forms that side of the street. The fabric of the church is woven into the city—there is a temporary widening and opening of the street to mark the presence of a notable building. The facade itself has a second

21, *section of S. Maria di Piazza, Turin, and,* 22, *interior of choir dome; by Vittone,* 1757.

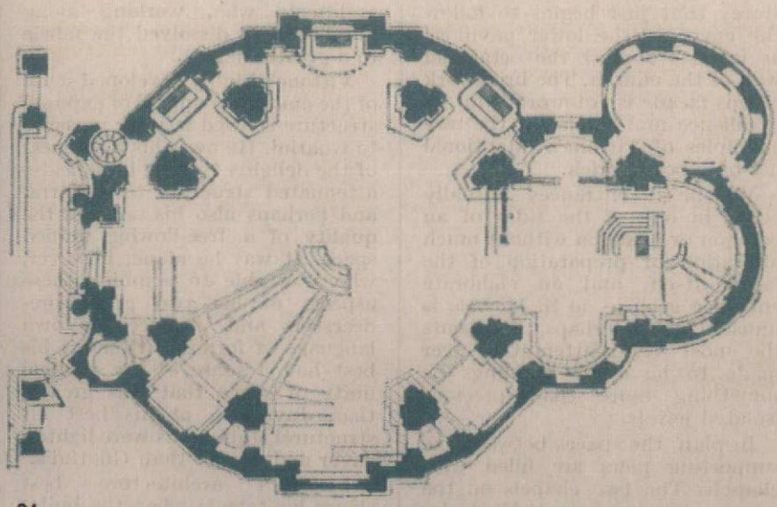


21

22



23



24

23–25, *S. Michele, Rivarolo Canavese, by Vittone*, 1759.

25



storey that just begins to follow the curve of the lower pavilions as it rests against the octagonal wall of the church. The brickwork of this facade is noteworthy for its excellence and is one of the rare examples of Vittone's intentional use of exposed brick.

Vittone's entrances usually occur in one of the sides of an octagon or hexagon without much alteration or preparation of the fabric itself, and an elaborate entrance such as in S. Michele is unusual and, perhaps, represents the most vivid attempt he ever made to have his buildings be something more than precious isolated jewels.

In plan, the spaces between the supporting piers are filled with chapels. The two chapels on the cross axis are emphasized by their size and by the arch and vault which span the area from pier to pier. Similar arches exist at the entrance and between the nave and the choir. The pair of piers which frame the smaller chapels, 25, are treated almost as a single element unified by the unbroken entablature and by the *coretti* half-way up their height. There are confessionals placed behind each pier in order to remove them, as Vittone says, from the public way. The four tight, dimly lit, low-ceilinged chapels contrast strongly with the open, high vaulted and reasonably well-lit crossing chapels. The effect is almost that of a Greek cross plan (four equal arms) existing simultaneously within an octagonal central plan.

In its vertical division S. Michele shows ambiguity similar to that in Sta. Chiara. The dome rests on a drum (which is also the pendentive region) formed by the arches of the main order. But the exciting confusion of Sta. Chiara at Brà is replaced in S. Michele by a serene fusion of the two elements into a thoroughly harmonious pendentive-drum region, which, by equating two different parts, serves to emphasize still further the vertical unity of the space.

At the lower level there are no windows for the confessionals or small chapels and they are in a very dim light. At the intermediate level (pendentive-drum) over the dark chapel and *coretti* there are large rectangular windows, and on the cross axis over the altar below large oval windows. The choir vaulting occurs at this intermediate level and it, too, is pierced by five oval windows over the main order.

Increasingly filled with light as it rises, the church has, at the third level, in the central dome, light entering through immense kidney-shaped windows almost as wide as the main arches. The dome is virtually hidden behind a filmy sheath of light that floats down over pinks, pale blues, light greys, and soft greens to the parishioners' world below. The effect is one of delicacy without fastidiousness. Only in the superb rococo achievement in Southern Germany and Austria were there architects who, working along parallel lines, dissolved the fabric to a greater degree.

Vittone's highly developed sense of the emotional appeal of exposed structure is owed in some measure to Guarini. He owes his awareness of the delights that lie in delicate, attenuated structure to Juvarra, and perhaps also his sense of the quality of a free-flowing unified space. It was he alone, however, who was able to combine these aspects of his two great predecessors and produce his own language of forms. Vittone at his best had a sense of the vertical unity of space that was greater than Juvarra's; at his best his structural statements were lighter, gayer and wittier than Guarini's.

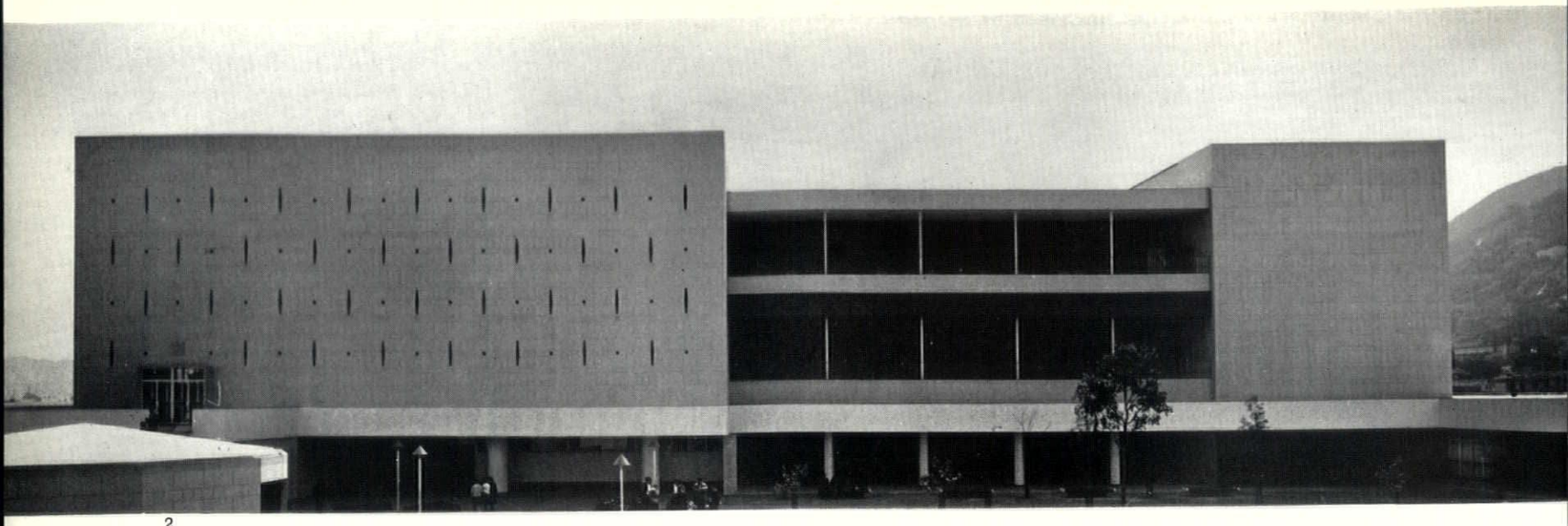
Vittone's architecture best shows his talents when the building is small enough for him to have complete visual control of all the elements at all times; when it stands isolated from its surroundings; and when it is predominantly a single space or a one-room building. He is at his best when working with curved surfaces and with attenuated structural systems; but his harmonious interiors are also due in great measure to the inventiveness of his architectural vocabulary and the ingenuity of his decorative ideas.

His buildings viewed from outside show a variable amount of concern for the characteristics of outline and mass. At times, as for instance at Valinotto and Sta. Chiara at Brà, the shapes compose well and are exciting and interesting in the changing size and shape of their tiers (that reflect the interior space), while at other times the exterior is heavy, bulky and not at all indicative of the space character of the interior (e.g. Grignasco; Riva di Chieri).

Vittone is weakest when he deals with a large group that has many different space requirements and covers a large area (see for example the Albergo di Carità at Carignano; the Ospedale at Casale Monferrato; or the Collegio delle Provincie in Turin).

While he never had the opportunity to work on a scale that would disclose his town-planning ability, it is apparent that, with his love for the small isolated structure with curved surfaces; with his inability to cope with large planar surfaces or facades; and with his often fumbling approach to the overall mass form, Vittone would not have approached the elementary level attained by Juvarra (whose ideas about urban design were a full 100 years behind his times).

Vittone shows himself to be an architect with strong limitations but also with impressive strengths. The architectural harmony achieved in his small churches by the use of unified space, soft colours, delightfully deceptive light controls, illusionistic quotations, decorative ensembles and expressive structure makes him one of the masters of architecture and his work worthy of an architectural pilgrimage.



2

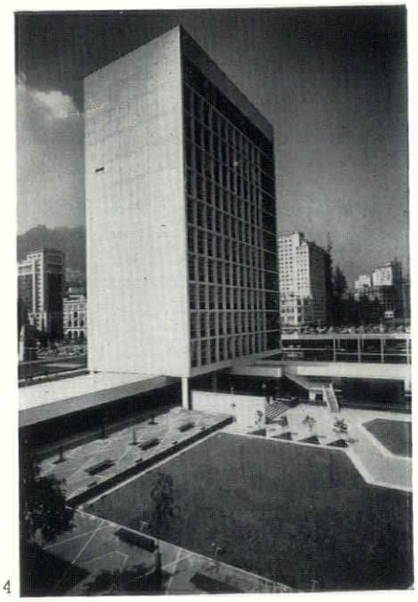
CITY HALL, HONG KONG

2, from the elevated promenade on the west side ; the central block containing the ballroom and restaurant is on the left and the theatre block on the right. Both blocks are faced with 4-in. dressed granite. 3, looking west along the covered way under the promenade. The main entrance of the central block is on the left. 4, the high block seen from the theatre, with the memorial garden in the foreground. 5, the south side of the air-conditioning plant room seen from under the high block, with the car park beyond. The base of the high block on the left is finished with Italian marble tiles and the wall of

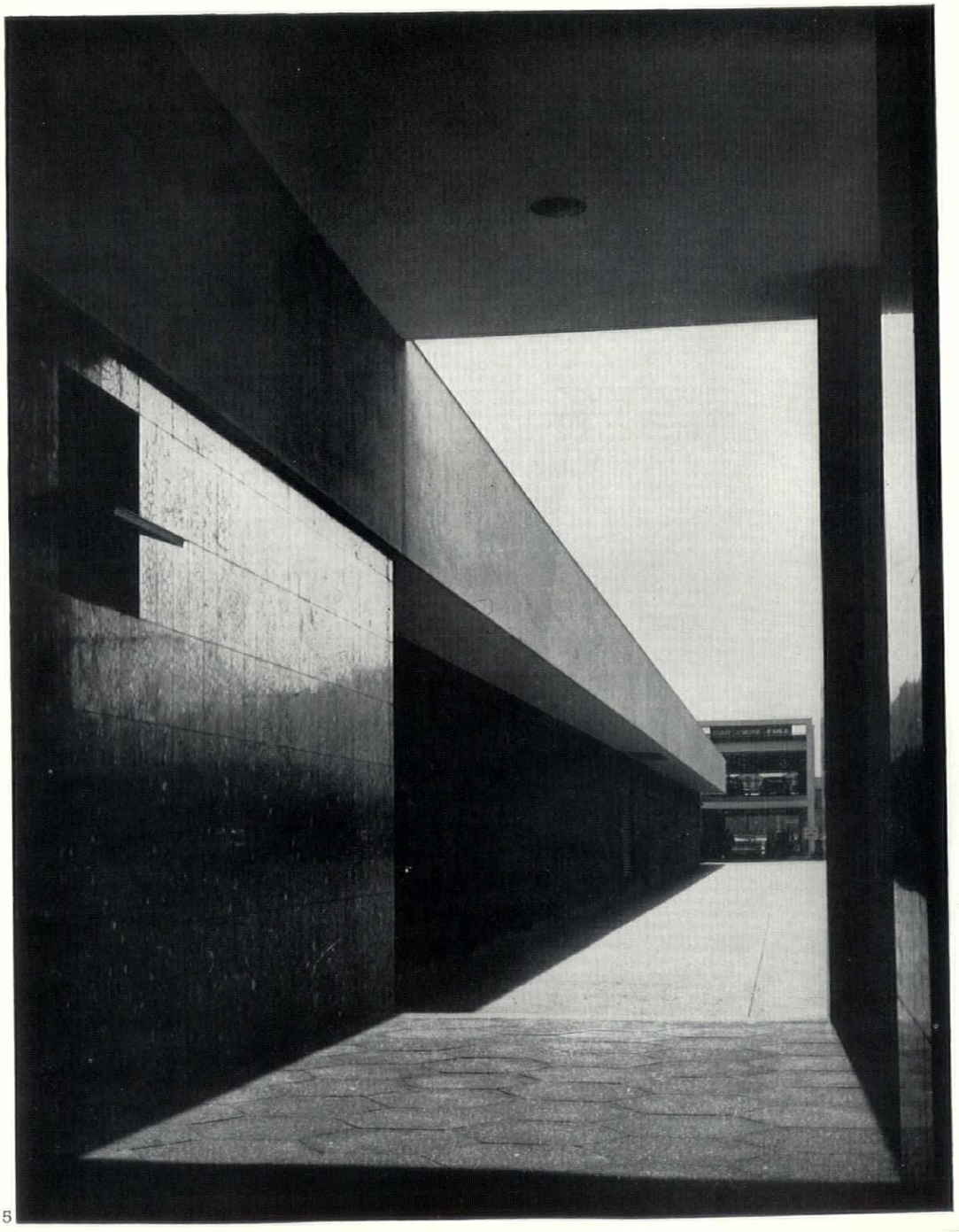


3

the plant room is of 9-in. blue engineering bricks. The large projecting band, which carries chilled water pipes, plumbing and electrical runs, is finished with Shanghai plaster.



4



5

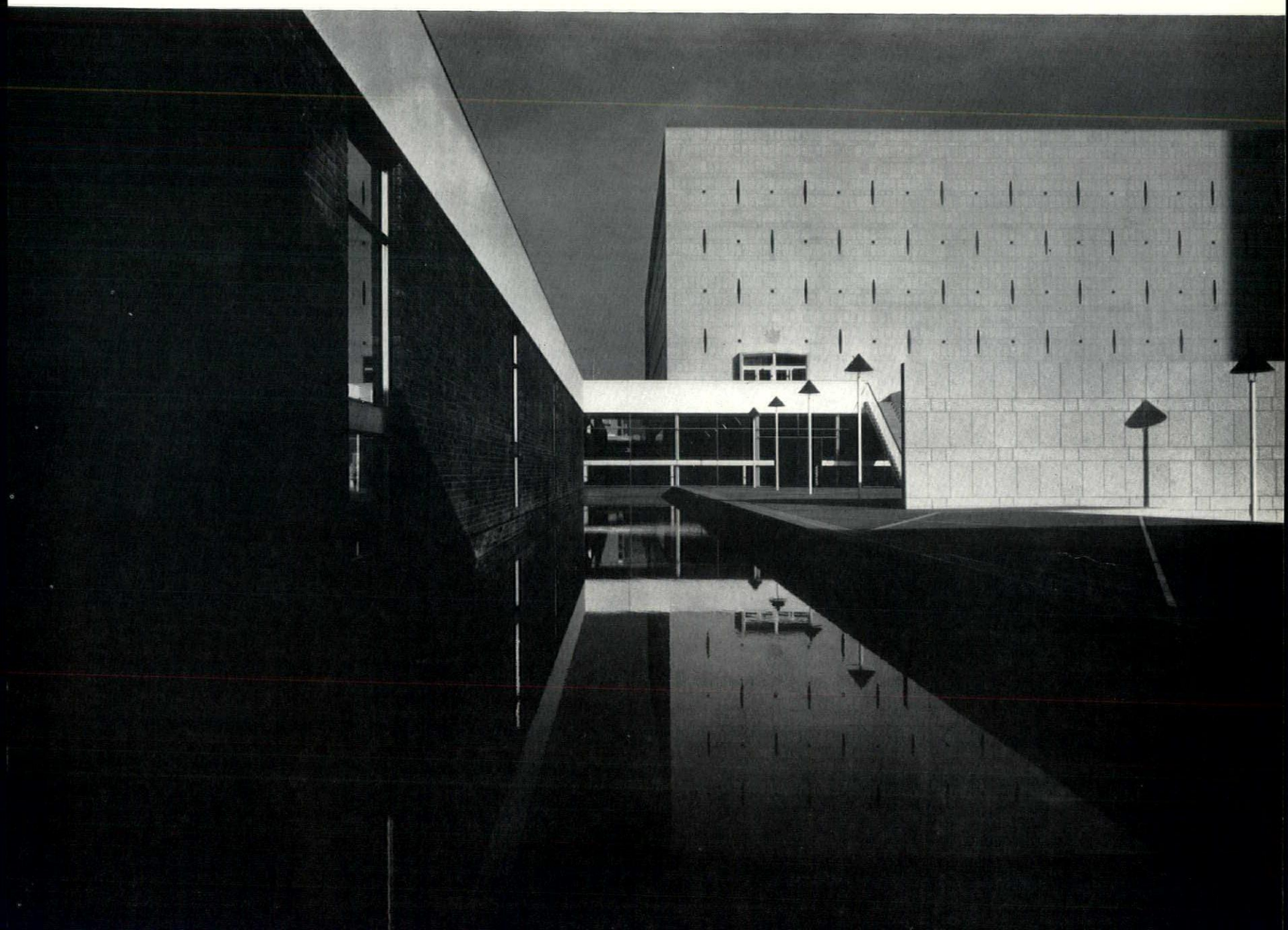
In most parts of the British Commonwealth the initials PWD (Public Works Department) have come to be associated only with dreary, routine official architecture. In Hong Kong it is not so; ever since the war the architectural office of the Colony's Public Works Department has, under a succession of chief architects, set the pace in making the new architecture in Hong Kong as lively and enterprising as any in the Commonwealth. The department's latest and most important building, the city hall completed only this year, is illustrated on the following pages.

THE PWD SETS THE PACE

CITY HALL, HONG KONG

ARCHITECTS | ***A. FITCH AND R. J. PHILLIPS (of the Public Works Dept. Hong Kong Government)***

1, the central block from the memorial garden.



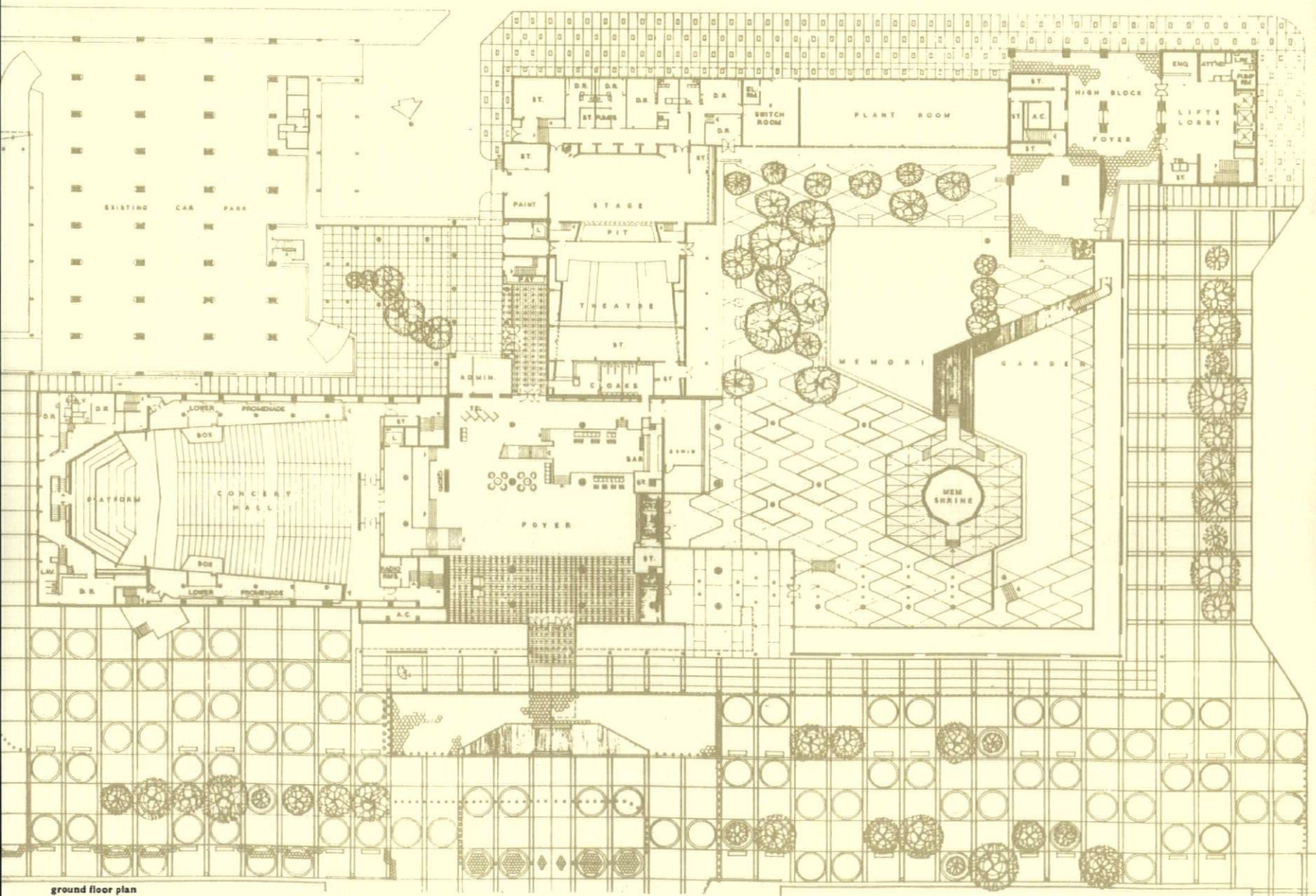
The building is sited on the waterfront on land recently reclaimed from the harbour. The area allocated to the city hall was 3¾ acres. On either side of it are covered car-parks, one of which, west of the city hall, is used in connection with the ferry crossing the harbour to Kowloon and includes a covered way for ferry passengers and a concourse. Between the city hall and the waterfront is a public pedestrian promenade and a pier for the use of important visitors.

The city hall is composed of five units: a central block (containing main entrance, foyer, ballroom and banqueting room), the concert hall, a small theatre, a tall block (with offices, lecture-rooms, libraries, exhibition rooms, etc.) and a memorial garden. The foyer in the central block also serves the concert hall and from it a staircase leads to the foyer of the theatre on the first floor. It has a secondary entrance from opposite the eastern car-park, and contains a bar and booking offices. The ballroom is at first-floor level and will accommodate 250 couples with sitting-out space and a bar overlooking the harbour. From it is reached a high-level walkway between the harbour and the memorial garden. The banqueting room is at second-floor level. It seats 500 and is served by a kitchen at the same level equipped for both Chinese and European cuisine. It can also be used as a public restaurant and as circulation space in connection with the balcony level of the concert hall.

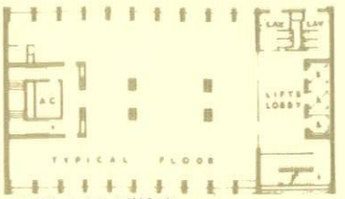


6, aerial view looking south from above the harbour.

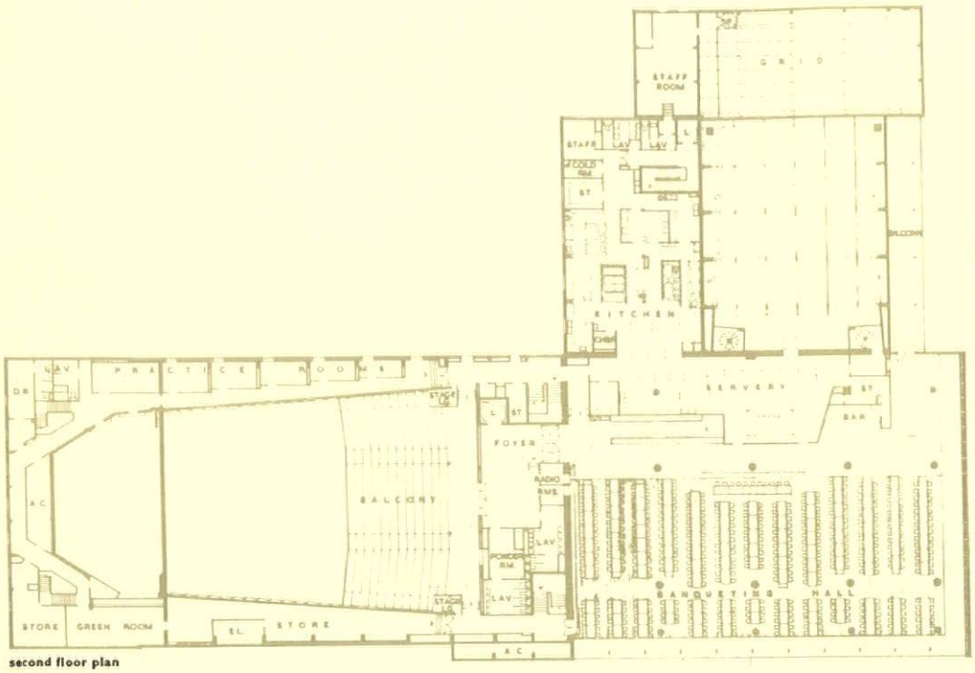
The concert hall seats 1,500, with a stepped platform for 100 musicians and space behind for a choir of 120 which can also be used for public seats. It is primarily intended for orchestral performances but is adaptable and equipped for Chinese opera and other theatrical



ground floor plan



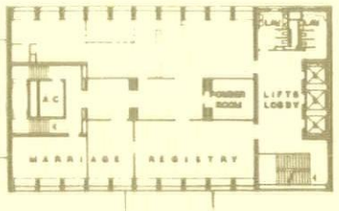
upper floor plan, tall block

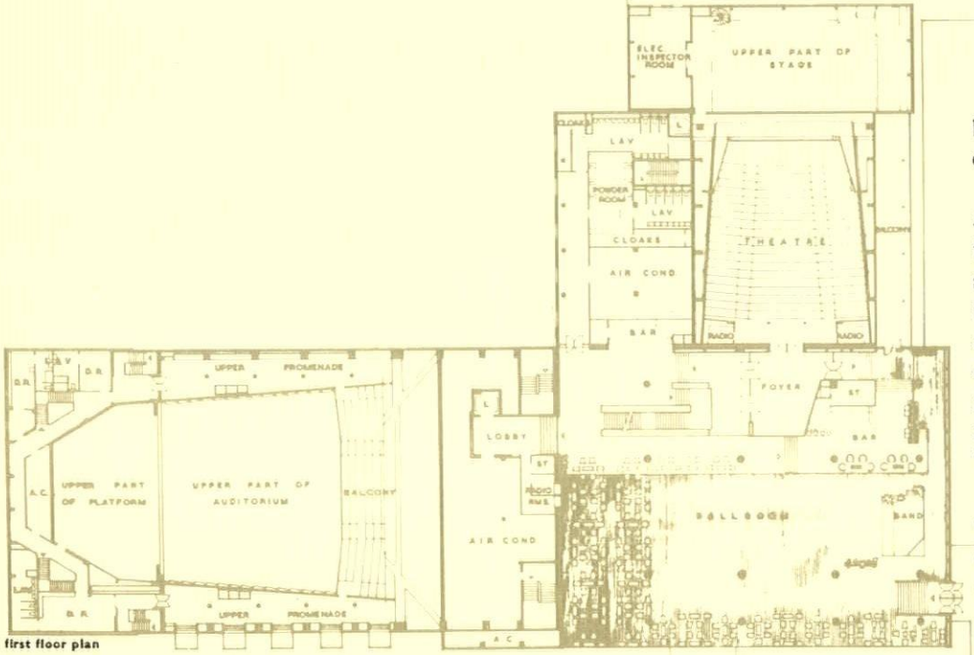


second floor plan

purposes. This is done by making the platform and side reflectors, and the pelmet which forms the proscenium, movable; as also are the choir stands and orchestra stepping. An orchestra pit can replace the first two rows of stalls and the front gangway. Dressing-rooms, etc., occupy three floors at the back of the stage, and alongside the auditorium are four practice-rooms.

The theatre seats 467 and has full stage equipment including a deep fore-stage of Elizabethan type which can be removed to expose an orchestra pit. The theatre is also equipped for showing films, and its acoustics are designed to be suitable also for chamber-music. Dressing-rooms, scenery stores, workshops, etc., are





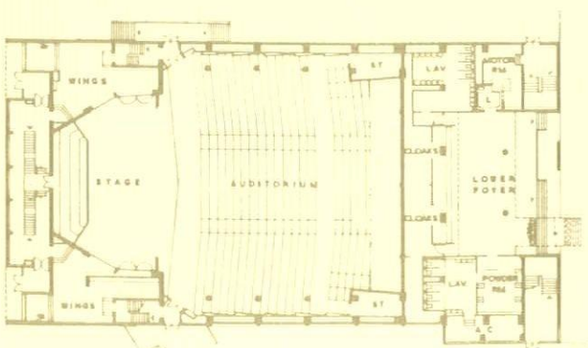
first floor plan

back-stage and are separately reached from the stage entrance facing the car-park.

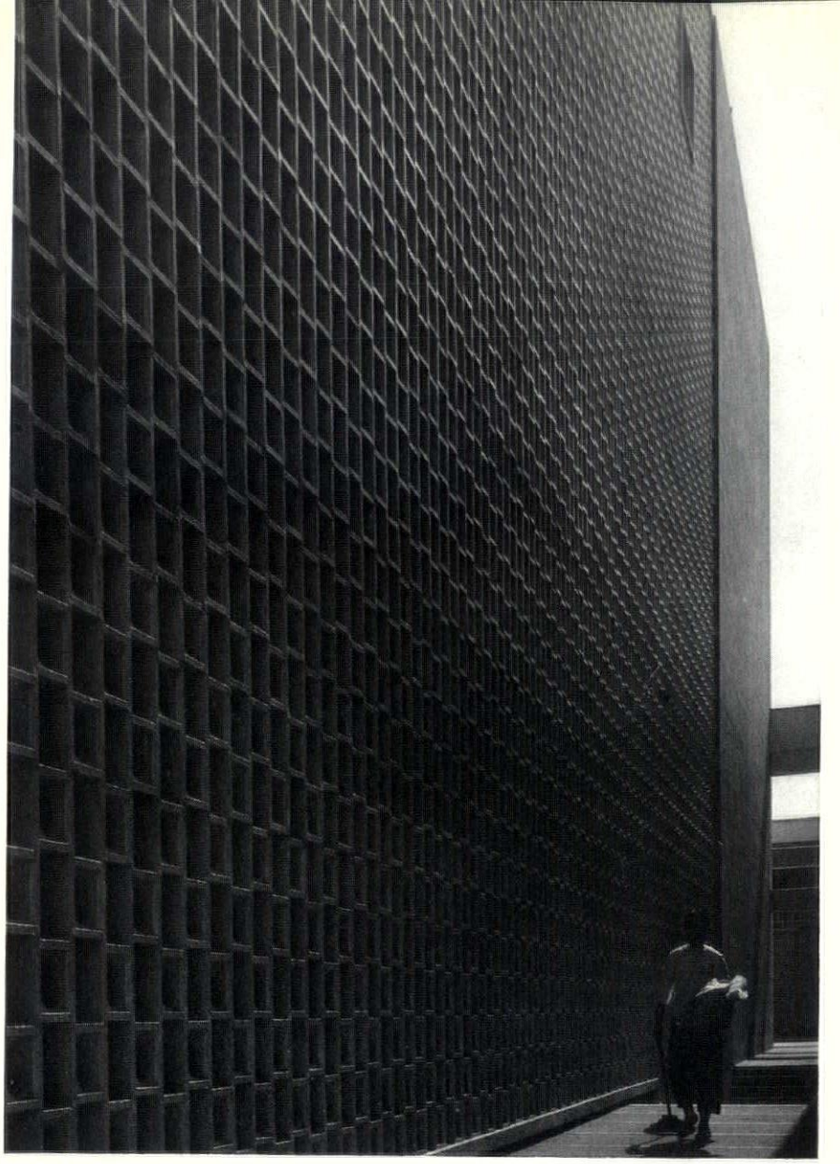
The high block has twelve floors, with marriage-room and registry occupying the whole first floor, libraries the second to sixth floors, an exhibition room the seventh, lecture-room the eighth, offices and workrooms the ninth and a museum and art-gallery the tenth and eleventh. The memorial garden, enclosed by a colonnade and high-level walkway, has grass and other planting, paving, a pool and, in the centre, a polygonal shrine commemorating the members of the Hong Kong Volunteer Corps who died between 1941 and 1945.

The whole structure rests on piles and has a reinforced concrete frame. Steel trusses are used for the concert-hall auditorium, where the large-span roof has also to support the suspended fibrous-plaster ceiling, a flat concrete intermediate ceiling and the ribbed precast concrete members of the roof itself. In the high block infill materials are mosaic, Shanghai plaster and stove-enamelled asbestos. Its base is faced with Italian marble tiles. The concert hall is faced for the most part in dressed granite, with a base of blue engineering brick which continues along the central block to form the wall around the memorial garden. All furnishing, carpeting, etc., was designed or selected by the architects. The whole building is air-conditioned.

Structural engineers, S. L. Au, S. C. Kung, H. K. Lee. Electrical engineers, W. J. Hampton, H. K. Lee. Air-conditioning engineers, J. Lim, A. J. Gayne. Acoustic consultant, H. Creighton. Quantity surveyor, R. B. Hanna.



lower ground floor plan



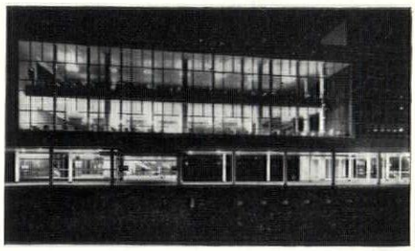
7

7, the concrete pot grille which forms the wall on the south side of the concert hall, where it makes a courtyard with the secondary entrance, shown in 8.



8

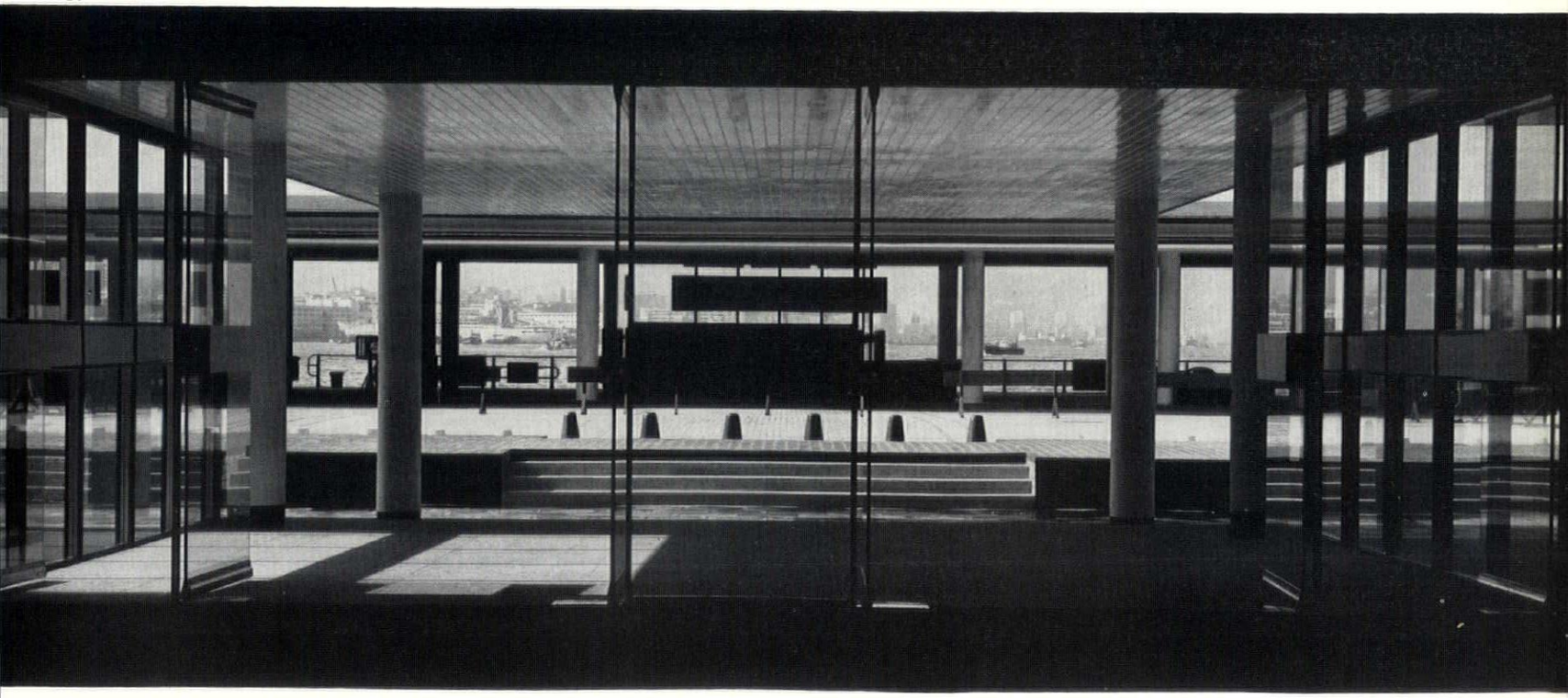
9, the central block at night, seen from the pedestrian piazza on the waterfront. 10, looking out from the entrance foyer to the piazza and harbour.



9

CITY HALL, HONG KONG

10





11

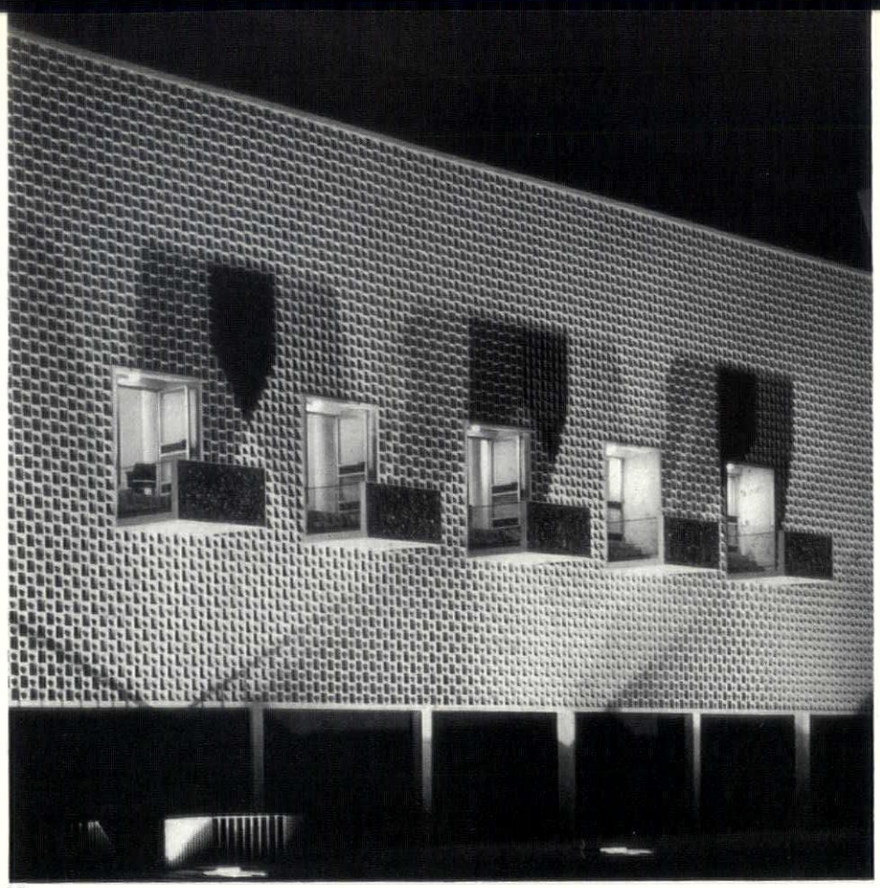


12

Facing page: 11, the secondary entrance of the main foyer; the patterned wall is of ceramic mosaic tiles. 12, spiral staircase to the elevated promenade outside the main entrance.

CITY HALL, HONG KONG

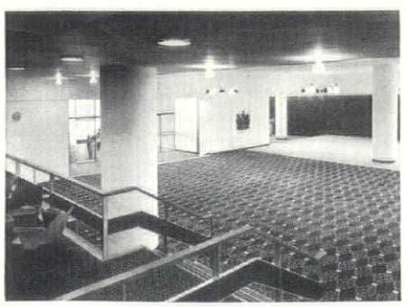
13, the floodlit north wall of the concert hall; the balconies are off the upper promenade. 14, the main staircase in the foyer, with the raised bar area on the right. 15, the foyer seen from the staircase. 16, the main staircase at first-floor level.



13



14



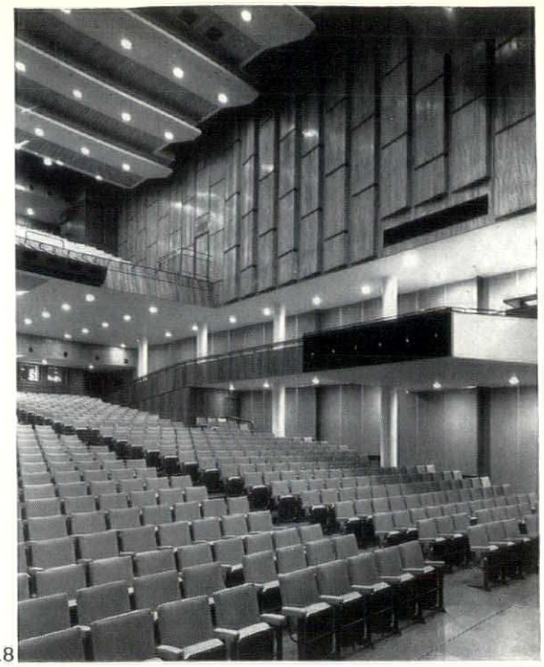
15



16



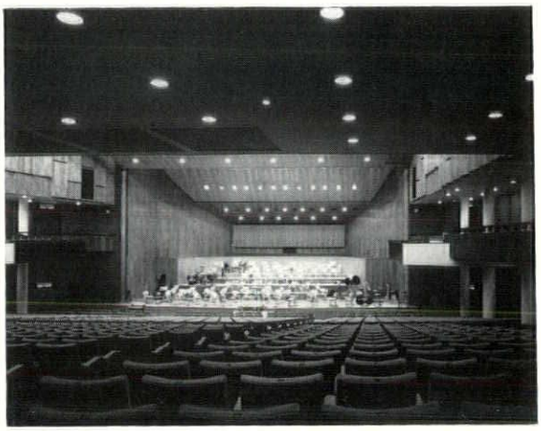
17



18



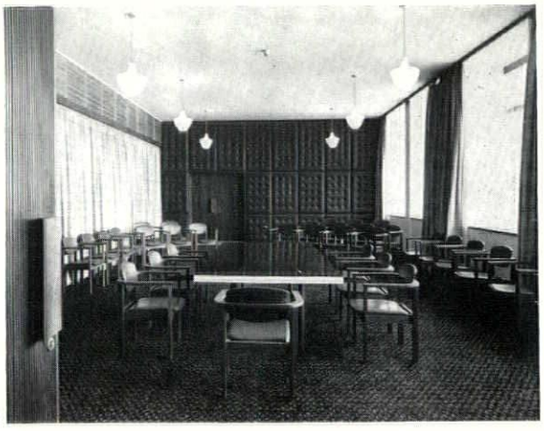
19



20



21



22

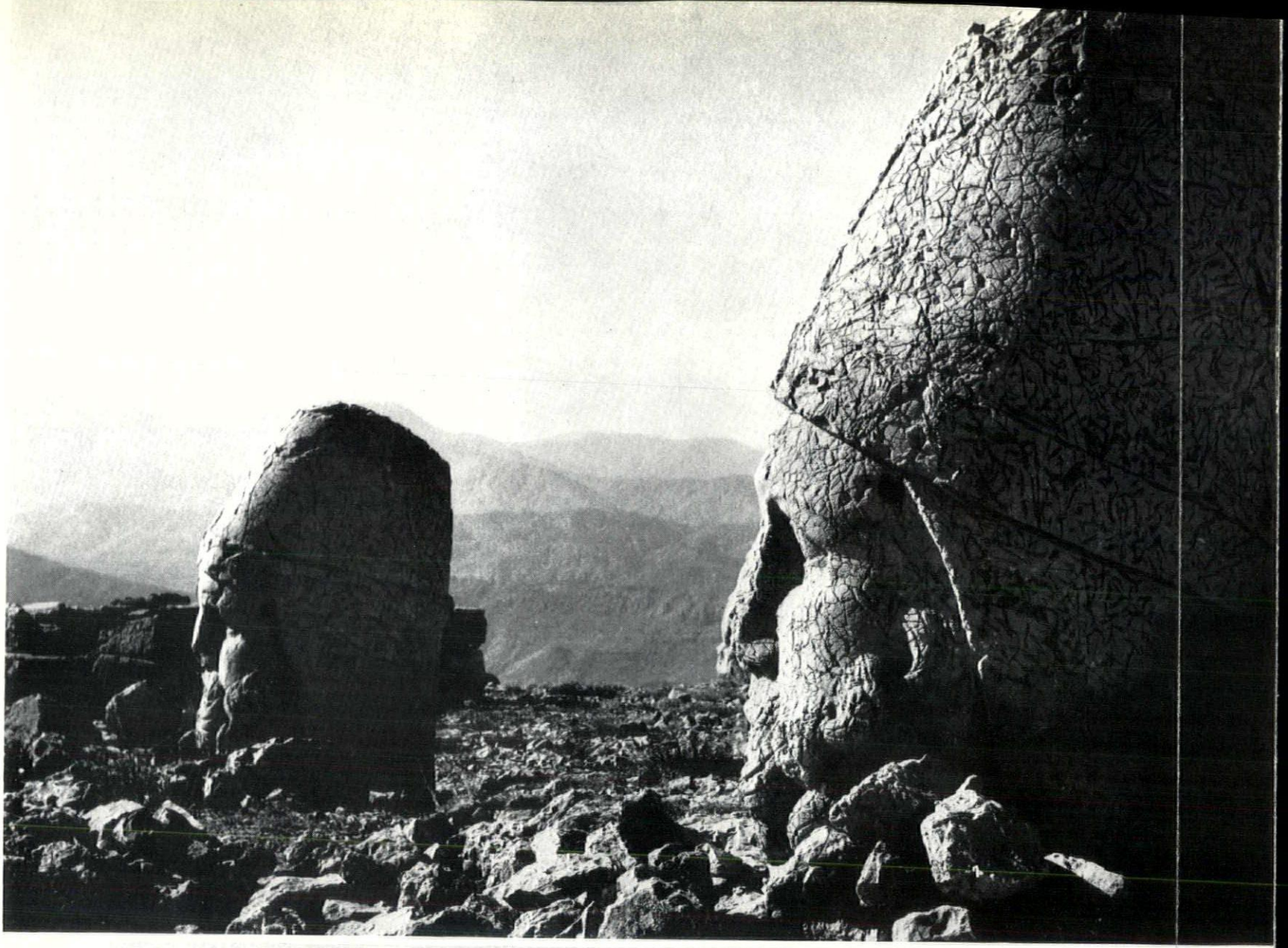
17, the ballroom showing the teak and anodized aluminium clad steel joists which span through two floors, supporting the north window against winds of typhoon force. 18, the concert hall auditorium ; the walls are faced with Akoume veneered plywood and the front of the box with black leather. 19, the concert hall looking towards the auditorium. 20, the concert hall looking towards the stage. 21, the theatre auditorium. 22, the marriage registry in the tall block. The furniture was designed by the architects; the leather panels on the end wall are in ' lucky ' Chinese red and the linen curtains are of a bamboo colour.



key = proposed new buildings

A Town Hall
B Courts of Justice
C Crown Square
D Magistrates Court
E Legal Library
F Ryland's Library
G footbridge
H small square
I J existing shops
K office block
L large square
M office block
N Albert Square
O St. James's Square
P St. Ann's Church
Q small square

St. Ann's Church
KING
BRIDGE STREET
JOHN DALTON STREET
St. James's Square
parking under
CROWN SQUARE
Courts of Justice
DEANSGATE
parking under
Albert Square
Town Hall
N
0 100 200 300 400 500 feet



3



4





5

6

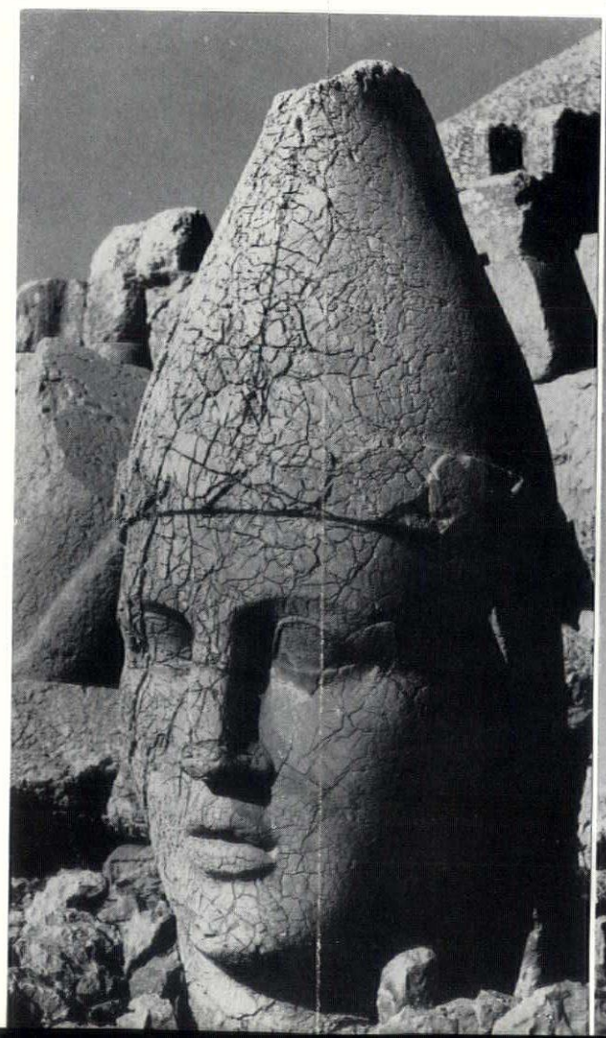
7

3, 4, *close-up views of two heads and a guardian eagle and lion on the west terrace of the tumulus.* 5, *a row of almost-complete statues on the east terrace; these figures are about twenty-eight feet high.* 6, *an ancestor of Antiochus I and,* 7, *Antiochus himself.* 8, *one of the columns of the Roman bridge that leads to the monument.*





8







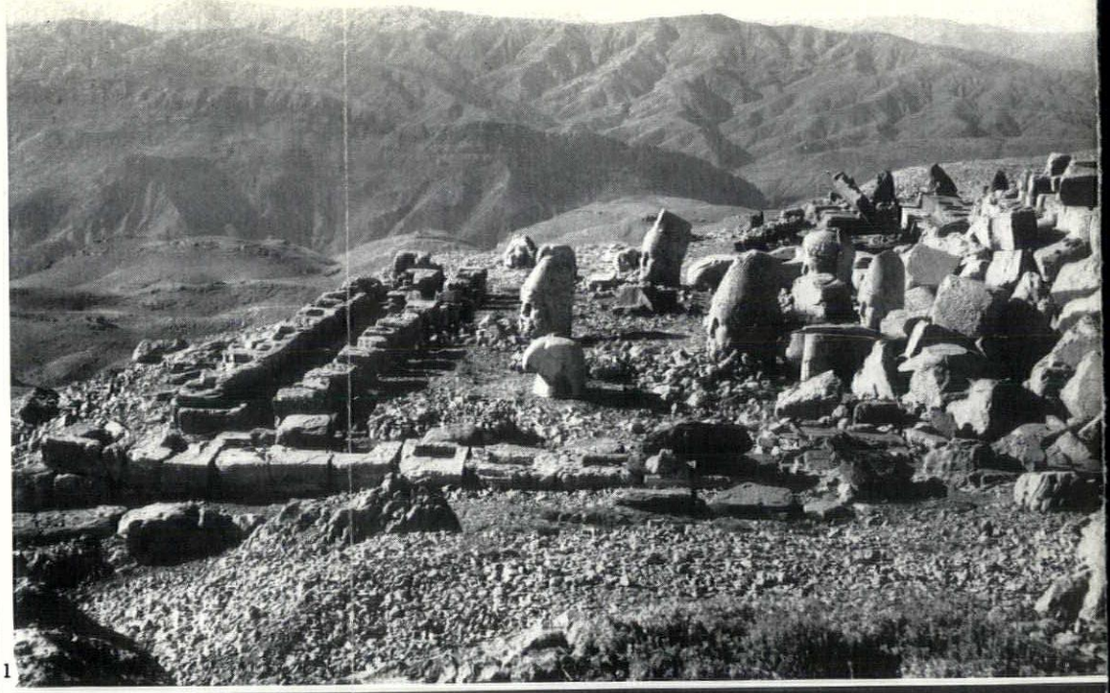
COMMAGENE

Antiochus I, king of Commagene, erected on the top of Nemrud Dagh, a 10,000 ft. high mountain in Anatolia, a colossal monument to himself, his ancestors and his gods. In a tumulus covering the top of the mountain it is believed that his remains still lie buried. He surrounded it and decorated it with figures towering 30 ft. above their base.

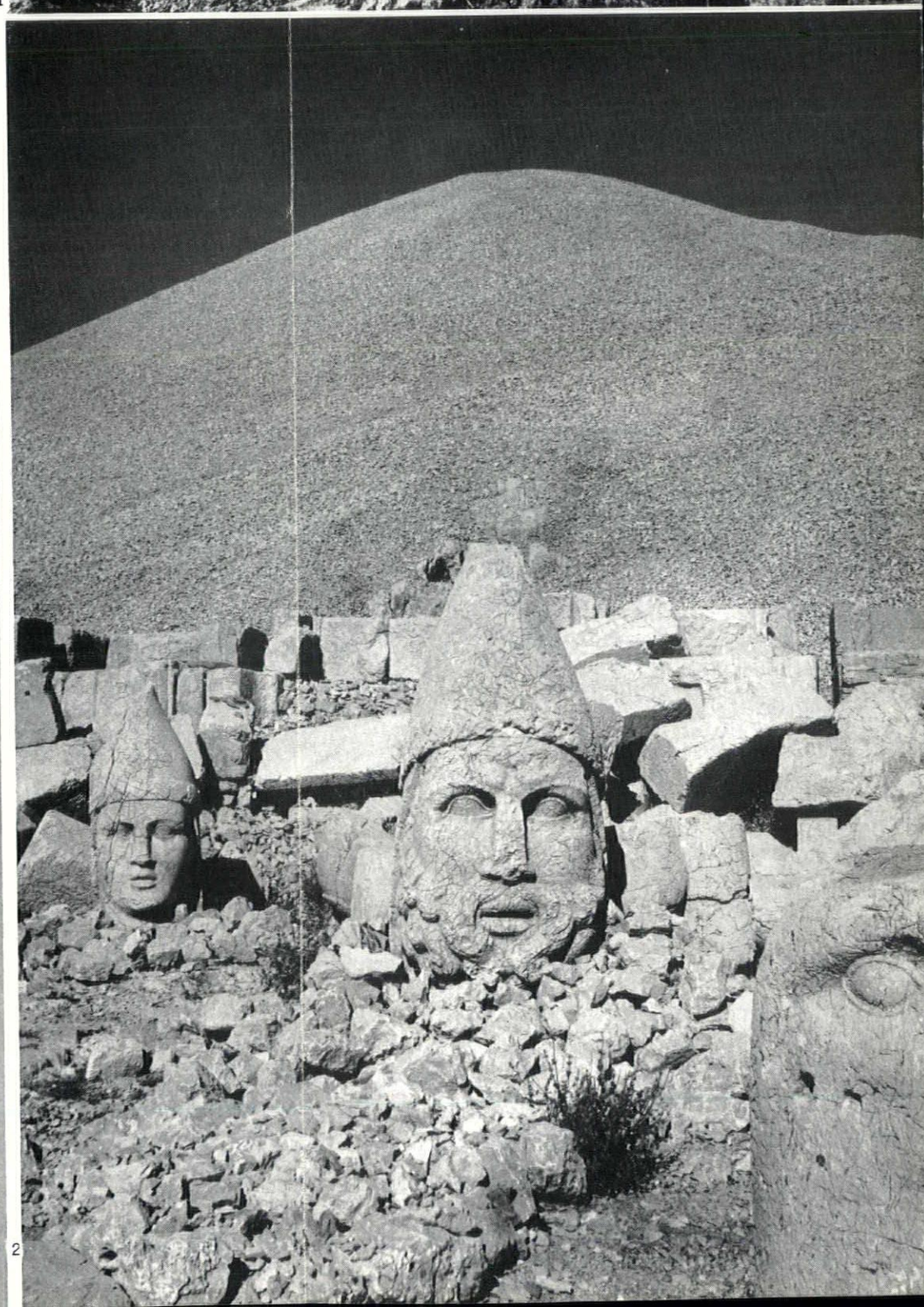
Commagene was one of the richest, although one of the smallest, of the Anatolian kingdoms conquered by the Romans, since it stood astride one of the old trade routes between West and East. It formed at first a buffer between the Roman and the Parthian empires, but Antiochus I, who ruled from about 69 to 34 BC, signed a treaty with the Roman general Pompey in 64 BC, and in AD 73 the kingdom was finally absorbed into the Roman Empire by the Emperor Vespasian.

Little is known about Commagene, though surviving remains indicate a rich civilization, unique in its own way, in which Greek and Persian cultures merged. Antiochus I claimed descent from Alexander the Great through his mother and from the Achaemenid dynasty of Persia through his father. The capital of the kingdom, Samosat, was on the plain beneath the mountain bearing Antiochus's monument, and little of it remains, though a village, peopled by Arabs and Kurds, which now occupies its site is called Samsat.

The first excavations at Commagene were made by German and Turkish archaeologists in 1883. In 1953 the American archaeologist Theresa Goell led an expedition there and her work still continues, though the tumulus on top of the mountain has not yet been opened. The statues flanking its entrance, and adorning the two terraces round it, are the chief subject of these photographs taken recently by **Ara Guler.**



1



2

1, 2, scattered remains of the monument to Antiochus I on the west terrace of the tumulus; the head in the centre of 2 is of Zeus —see also the cover of this issue.

*This drawing by David Gosling gives a bird's eye view from above Manchester Town Hall, **A**, looking towards the new Courts of Justice, **B**, and shows the proposed redevelopment of this central area of the city. The scheme is shown in plan below and described in the following article.*

MANCHESTER REUNITED

report:

In the City of Manchester Plan of 1945, the space between the existing Town Hall and the future Courts of Justice, 500 yards away, was visualized in axial terms as a grand 'processional way' with the towers of the two buildings closing the vista at either end.

For a number of reasons this Beaux Arts gesture has now been abandoned in favour of a more relaxed official scheme, prepared by the Corporation's planners and architects, who have collaborated unusually closely, and sparked off by Ian Nairn's article in the AR for August 1960. It consists of a sequence of interrelated pedestrian spaces, essentially human in scale (see facing page).

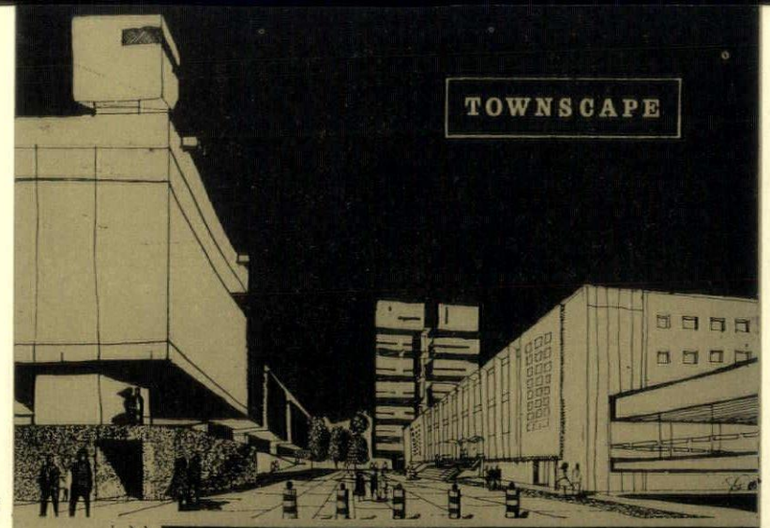
The original idea was dropped, not only because fashions have changed, but because the need for a processional route between Town Hall, **A**, and Courts of Justice, **B**, was in question. It was discovered that in fact the judges would rarely proceed directly from one to the other, but go via the cathedral, so the use would be limited to an occasional royal visit. Also, the recently completed Courts of Justice building not only has no tower to answer that of the Town Hall, but is dwarfed in scale by the latter (which is Neo-Gothic Waterhouse, a pitch black building of tremendous punch), a point that is further emphasized by the fall in the ground between the two (approximately 30 feet). In addition the opening up of the west side of Albert Square, well proportioned as it stands, was seen to be a step backwards.

The new scheme, by comprehensive redevelopment, aims at the creation of a civic precinct in which pedestrian movement is freed from traffic; it is regarded as only the first stage in the provision of a pedestrian network for the whole of the centre of the city.

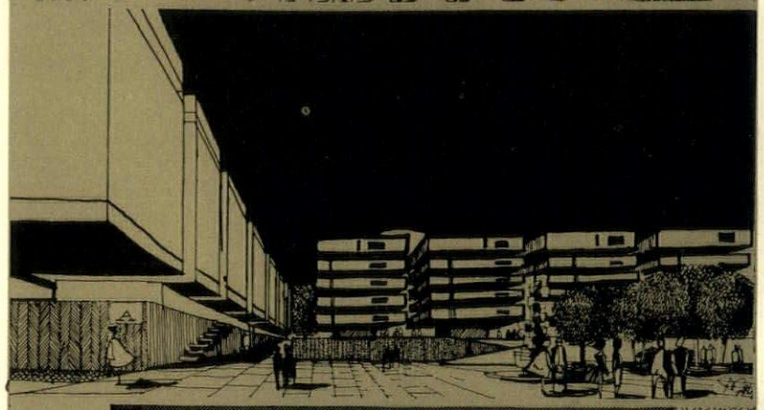
The route from Town Hall to Courts of Justice is cut by Deansgate, a busy thoroughfare, and to maintain continuity it is intended to bridge over the road at this point. The Albert Square/Deansgate section will contain a large pedestrian square, a meeting place where people can stroll, shop or just sit; this is something Manchester badly needs. Here the emphasis will be on gaiety and life. By contrast the Deansgate/Courts of Justice section will aim at a quiet collegiate atmosphere.

To visualize the scheme when complete (see drawings on this and following page) we follow the pedestrian route from the west or Courts of Justice end of the site:—

1. The pedestrian sequence begins on entering Crown Square, **C**, from Bridge Street. Here traffic will be generally limited to setting down at the Courts. The square has been greatly reduced in size from the 1945 plan so that the new Courts building, **B**, will dominate the space



1



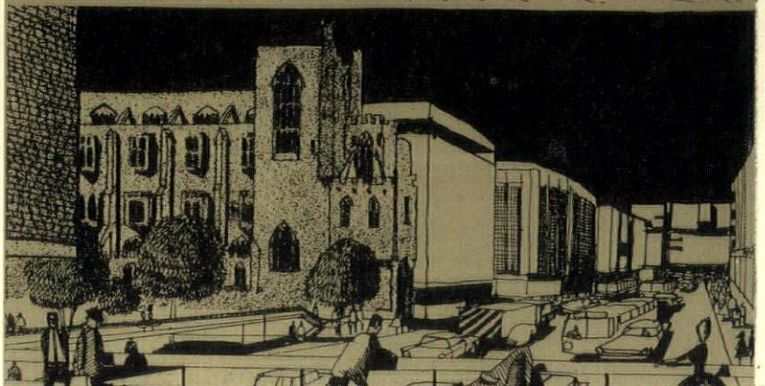
2



3

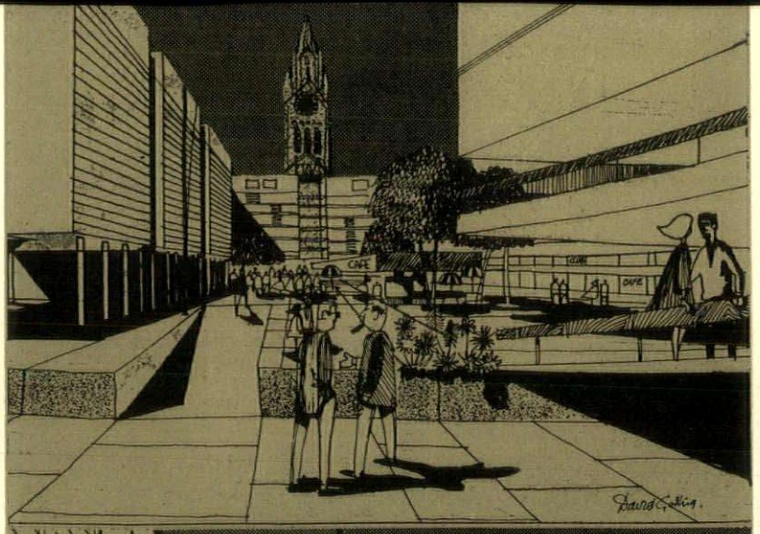


4

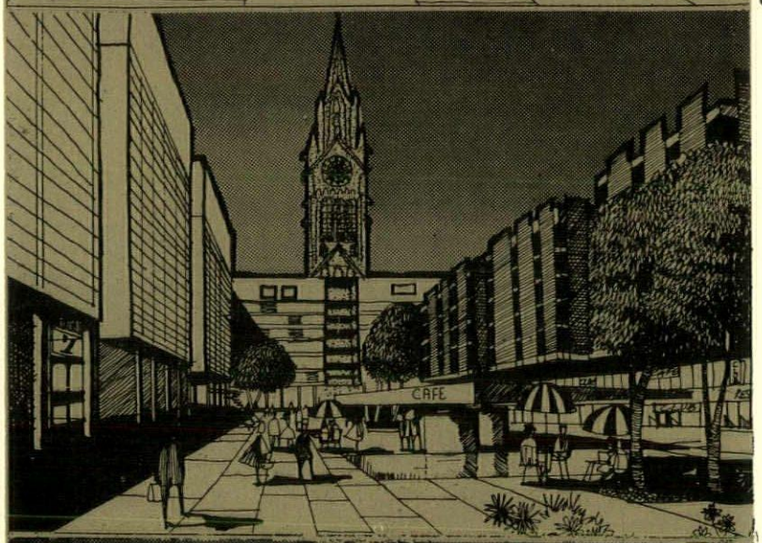


5

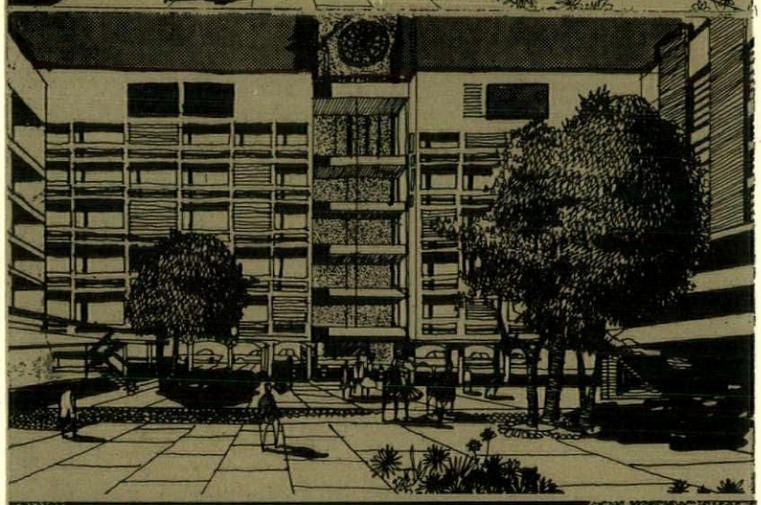
*These sketches by David Gosling, **1-9**, show in sequence the views which would be seen by following the proposed pedestrian route from Crown to Albert Square.*



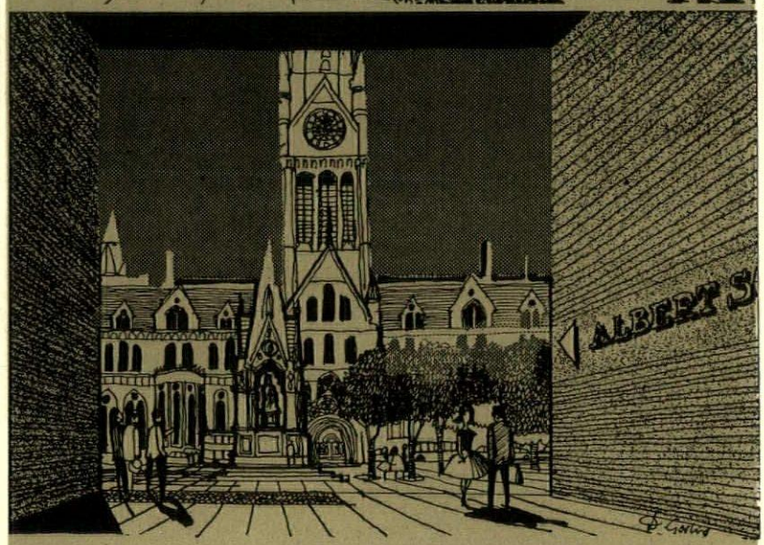
6



7



8



9

in front of it. The square is almost enclosed and is visualized rather in the nature of an Italian piazza. The future magistrates court, ***D***, may be built as a short tower to give a vertical accent to the square and act as a foil to the mass of the main court building (on right).

2. Turning with our back to the Courts, we see a ramped footpath rising from the left-hand corner of the square; the beginning of a pedestrian channel. It passes between small, almost domestic-scale buildings containing barristers' chambers, solicitors' offices, etc., the character being modelled on the Inns of Court. Making use of the fall of the site, these buildings are raised on a plinth which contains car parks and servicing.

3. At the top of the ramp it is intended to create a rather introspective dignified atmosphere. On the right is a small tree-shaded square at a lower level, in front of the proposed legal library, ***E***, and beyond it, (but not seen on the sketch) is a quiet courtyard, ***Q***, hemmed in on all sides, its character similar to that of the Inner Temple.

4. The lower half of the route ends abruptly at Deansgate with sudden exposure to the rush of traffic and the colour and activity of a shopping street. Here the route spans the traffic stream by a pedestrian bridge, ***G***. Ahead stands the great tower of the Town Hall.

5. On the bridge looking along Deansgate. To the left is Rylands Library, ***F***, genuine perpendicular and the only historic building in the area. It has been freed from the surrounding buildings and is flanked by grass and trees.

6. A ramp leads down from the bridge into the upper or eastern half of the site. By contrast with the legal precinct we have just walked through, where the emphasis has been on quietness, we are now in an area where liveliness, colour and noise will be encouraged. Here the buildings are high and faced with marble in black and white. To the right (but not shown on drawing), immediately on crossing Deansgate, is a small square intended as a new speakers' corner, ***H***. This lies between the existing Harrison, Gibson and Washington buildings. Ahead is the main piazza, ***L***, traffic free and inviting.

7. The centre of the new square provides colour and gaiety which the black and white backdrop of the office blocks will set off to advantage. There are trees, cafés, restaurants, pubs, kiosks, colourful signs, flowers, seats and water. This is intended as a focal point.

8. The end of the new square is closed by a long office block, ***M***, above which soars the Town Hall tower, which has been a landmark all the way. A glass link in the centre of the block gives a screened view of this tower and the building is raised on columns so that the activity of Albert Square can be glimpsed beneath it and the square is not completely isolated.

9. Penetrating beneath this block we are out in Albert Square, ***N***, and receive the full visual impact of the Town Hall, the climax of our walk.

Note: another pedestrian sequence (see small arrows on plan) will connect with the route just followed at square ***L*** *and contain the sequence to St. Ann's Church described by Ian Nairn*. These two routes are seen as the start of a pedestrian network for the whole of central Manchester.*

* ARCHITECTURAL REVIEW, August, 1960, page 117

The scheme was prepared by the Manchester City Surveyor's Department in close collaboration with the City Architect's Department.

Rowland Nicholas	City Surveyor.
J. Hayes	Deputy City Surveyor.
J. P. Bamber	Assistant City Planning Officer
John Millar	Chief Assistant Planning Officer.
Edgar Rose	Senior Assistant Planning Officer
S. G. Besant Roberts	City Architect.
S. A. B. Heppell	Deputy City Architect.
David Gosling	Senior Assistant Architect.

Comment

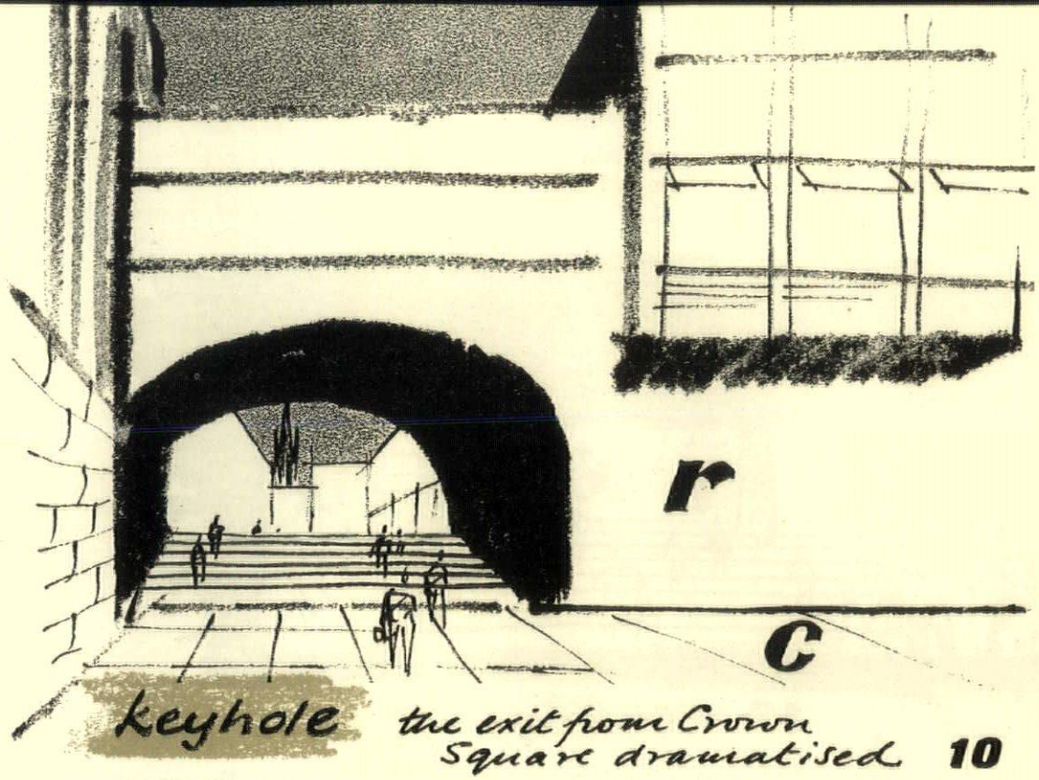
by . . .

Kenneth Browne

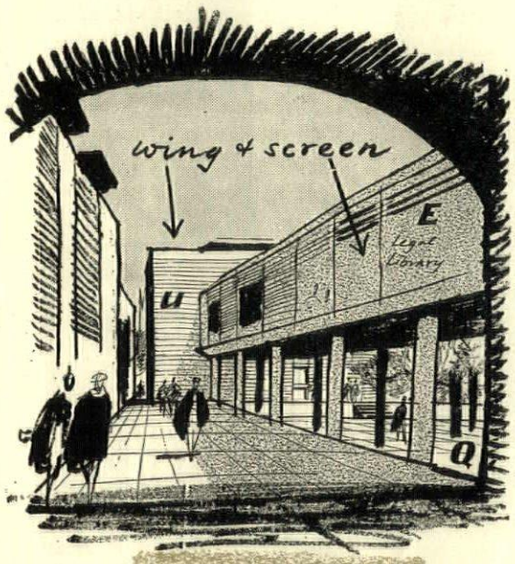
This interesting scheme just shows what can happen when city planners and architects get together, instead of remaining locked in their water, or rather idea, tight compartments. It deserves to succeed but will only do so if, and it's a big if, the commercial developers carry it through in the same spirit. The present standard of office building in Manchester is not encouraging.

Having abandoned the axial processional way, thank goodness, it seems to me that the new scheme now needs to escape further from the drawing board and grow in the eye. As it is, T squares being what they are, you can look right through it from end to end like a gun barrel (from A to B) for there is a dead, repeat dead, alignment of the pedestrian route. If this is pedestrian territory with the eye moving at walking pace, it needs more to bite on, more mystery, more variety of experience, and the route needs to feel its way along the plan rather than be a slot cut through it. Again, it needs breaking down into lengths the eye can assimilate. There are various ways in which this could be done: For instance, starting at Crown Square, ***C***, and therefore going uphill:

keyhole, 10. The entrance to the pedestrian route from the square could be made dramatic, instead of commonplace, and net a segment of the sky at the same time; always a good townscape gambit (compare with ***2***). Then, having climbed under the arch:



keyhole the exit from Crown Square dramatised **10**

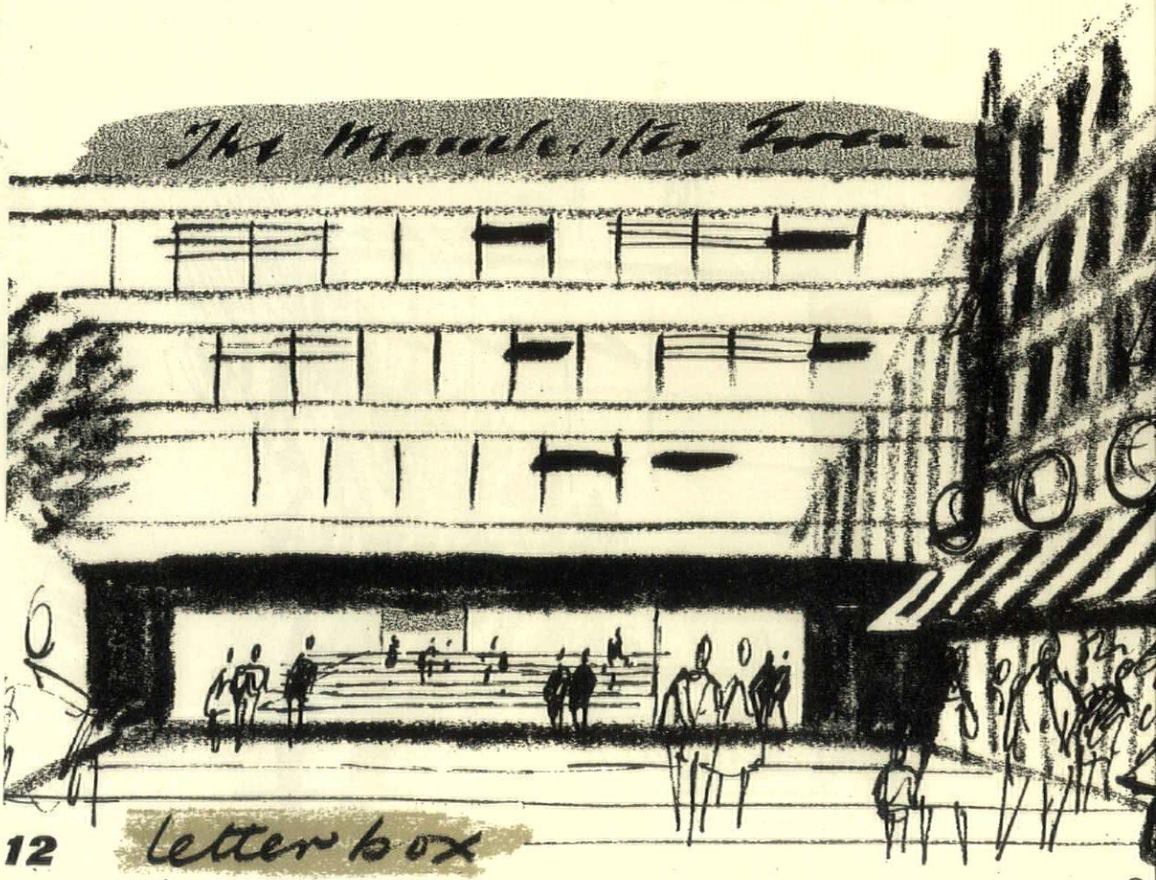


11 wing & screen

wing and screen, 11. The library ***E*** might be brought forward on columns forming a semi-transparent screen to the tree-shaded courtyard beyond and thus stating the choice, right or straight on? Again, the corner ***u*** if projected to form a stage wing would restrict the passage at this point and halt the eye (compare with ***3***).

letter box, 12. The crossing of Deansgate by footbridge as suggested (see ***4***) is not really satisfactory. The crossing should seem inevitable. All right if you are going downhill, but trudging up, who will make the additional climb if they can chance their neck on the level? Sewers, etc., permitting, a shallow tunnel under the road would be kinder on the legs, and on the eyes, for it would again limit the distance seen. The street wall of shops could be maintained, better for the street, and the footpath run beneath in a low, wide letter-box slot.

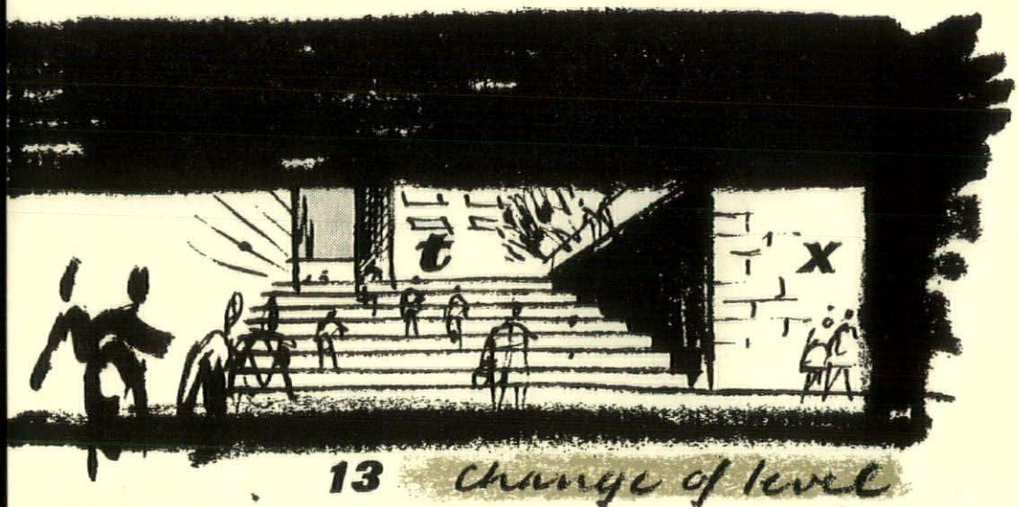
change of level, 13. Beyond the road, steps would then climb to square ***H*** (speakers' corner) from which, looking back, there would be the sudden surprise of the busy shopping street and its traffic. The change of level could be emphasized by a retaining wall ***x***. By another



12 letter box

the pedestrian route slotted under Deansgate

narrowing at *t* the impact of the main square *L* would be kept until the last moment.



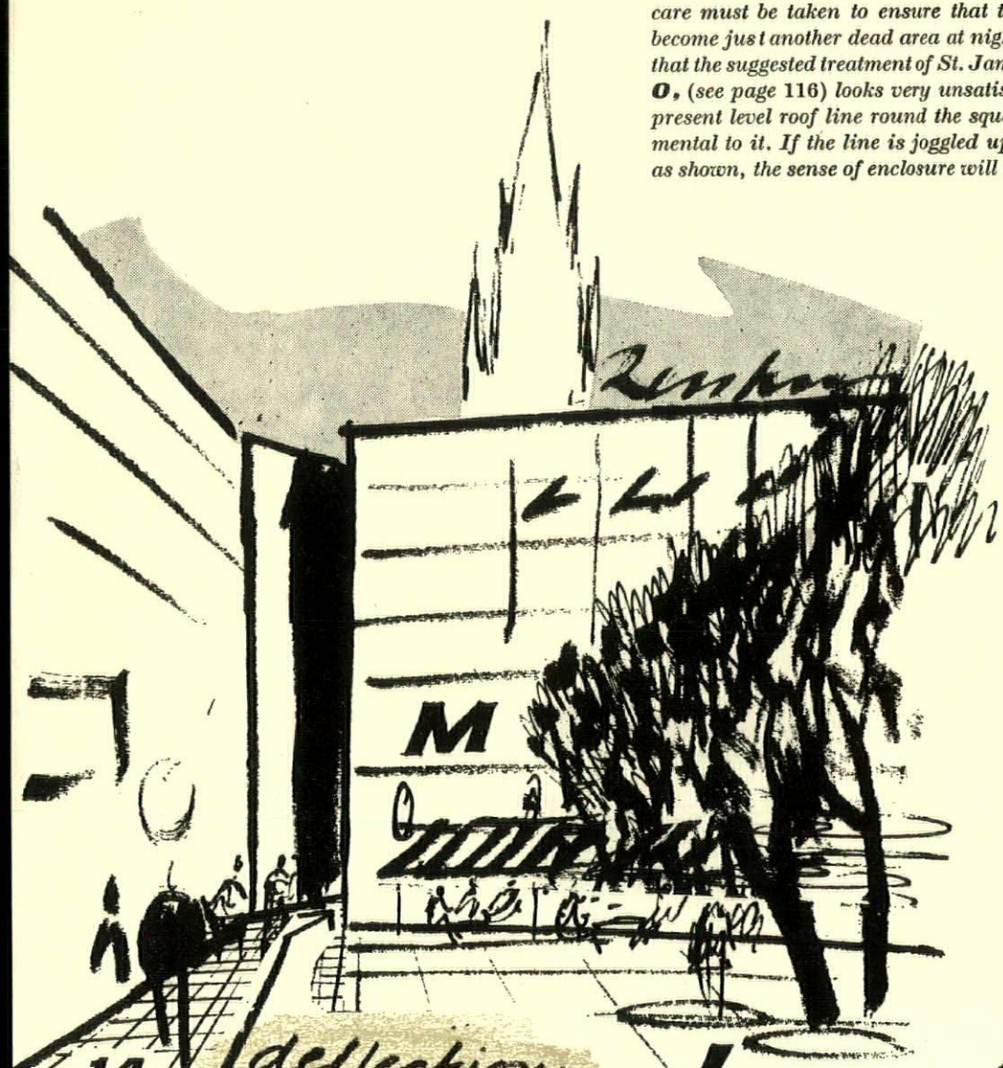
13 change of level

At the far end of the square drawings *6, 7, 8* are rather misleading. In fact, as the plan shows, office block *M* and the Town Hall are set at an angle to square *L* so the axial view shown in *7* would not happen; (a good thing too and incidentally the transparent vertical slit bisecting the face of block *M* would be unfortunate). Why not use this angled block to achieve surprise by:

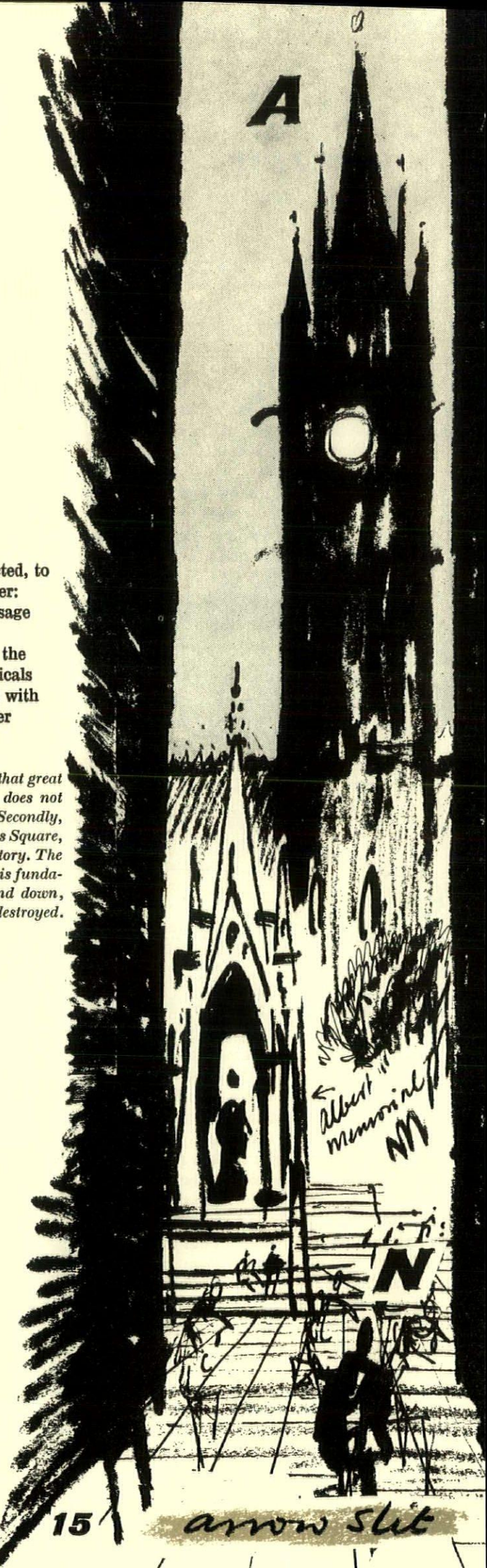
deflection, 14. The eye deflected, to what? We do not know until we enter:

arrow slit, 15. A narrow passage through block *M* forming a canyon into Albert Square and emphasizing the climax of our walk, the soaring verticals of monument and tower *A* (contrast with *9* where by entering the square under block *M* the upward movement is cancelled out).

Note: other comments would be: Firstly, that great care must be taken to ensure that this does not become just another dead area at night. Secondly, that the suggested treatment of St. James's Square, ***O,*** *(see page* 116*) looks very unsatisfactory. The present level roof line round the square is fundamental to it. If the line is joggled up and down, as shown, the sense of enclosure will be destroyed.*



14 deflection



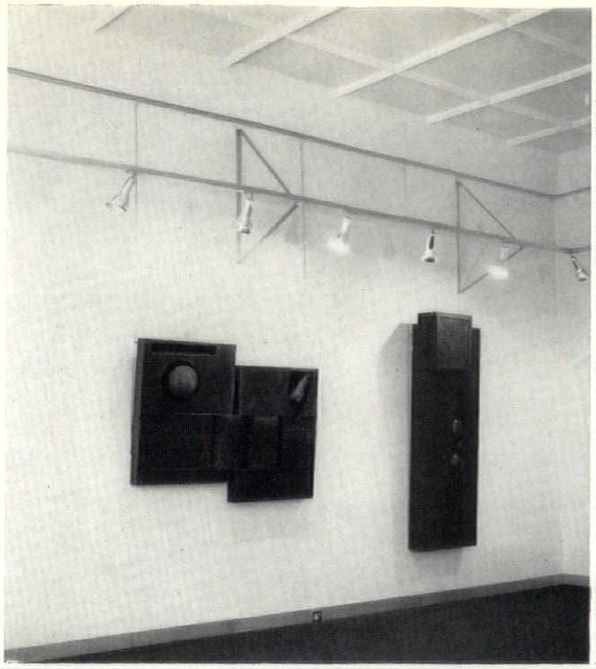
15 arrow slit

ID

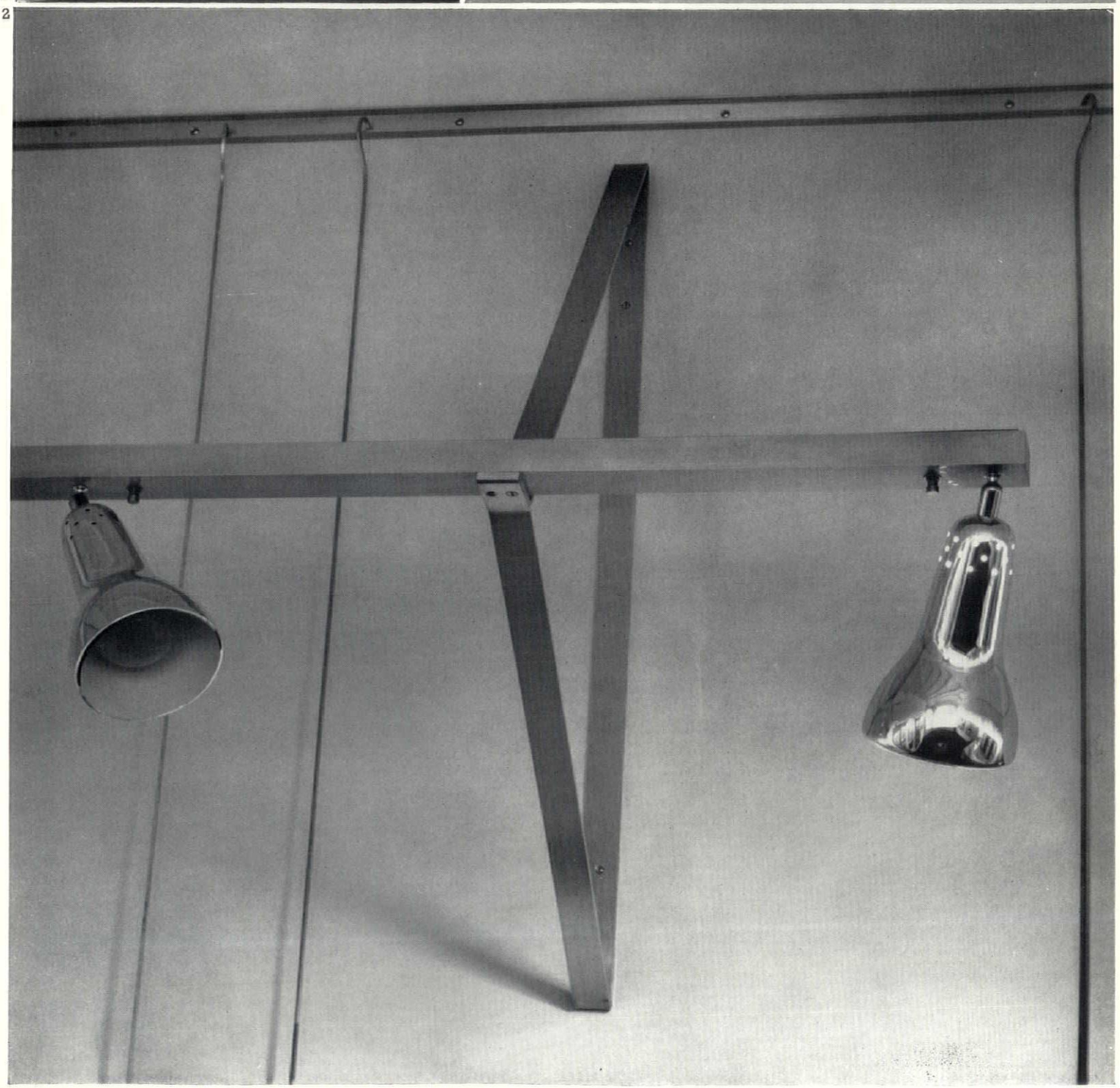
a monthly review of interior design

Art Gallery in London W.1

architect: Cedric Price



1
2



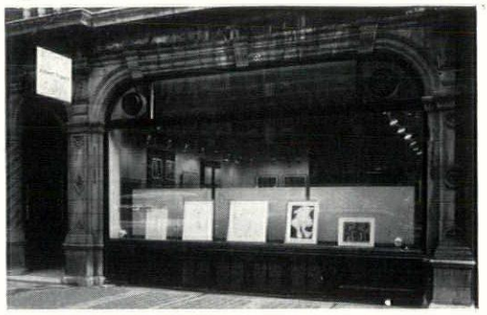
1, 2, aluminium lighting channel and strap bracket; individual switching to each light; exhibits hung from steel rods hooked into aluminium channel under cornice.



4

Occupying a single vast room which is, effectively, one bay of an Edwardian shop-block in Duke Street, just south of Oxford Street, the Robert Fraser gallery has storage space in the basement below, and a small office area at the back.

3



3, the exterior ; the gallery occupies the full width of the bay.
4, view into the gallery from the office area, with stairs down to basement beside the display-storage counter, centre. The entire gallery can be supervised by a single person sitting at the table in the foreground—a rare economy in West End galleries of this size and type.

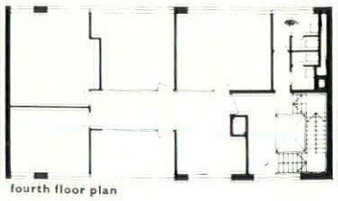
art gallery

Architects' Office in the City

ID

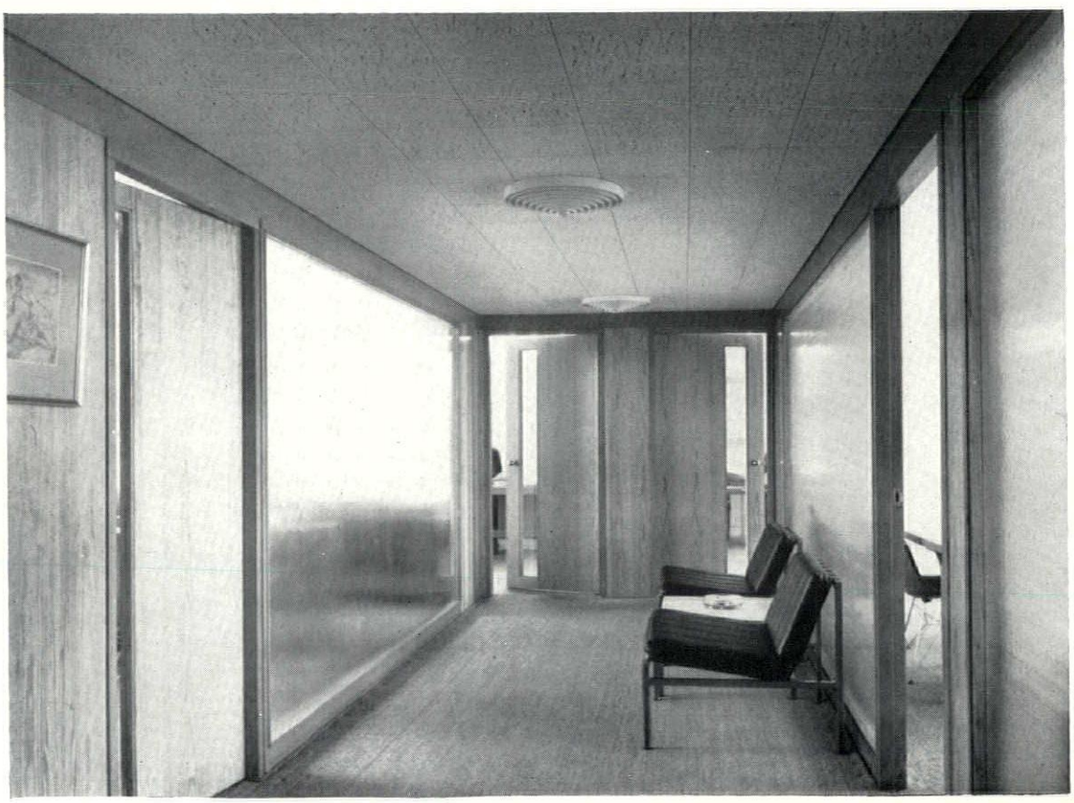
architects: Yorke, Rosenberg and Mardall

A complete new building for the architects' own occupation is an innovation for a private office in Britain. In this case the site, between Greystoke Place and Bream's Buildings, added further unique features, and town-planning and other requirements imposed severe restrictions on the overall form of the block. Of the six storeys, three are open drawing-office areas, the rest are used for private offices and special services.



fourth floor plan

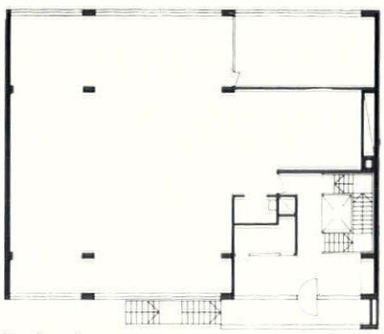
5



5, the corridor serving the partners' offices on the fourth floor ; walls of obscured glass in pine frames, lowered ceiling of acoustic tiles.



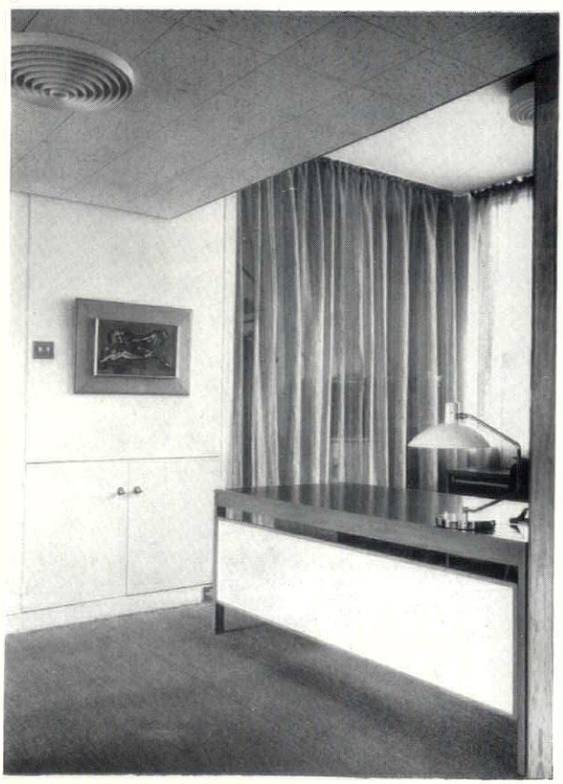
7



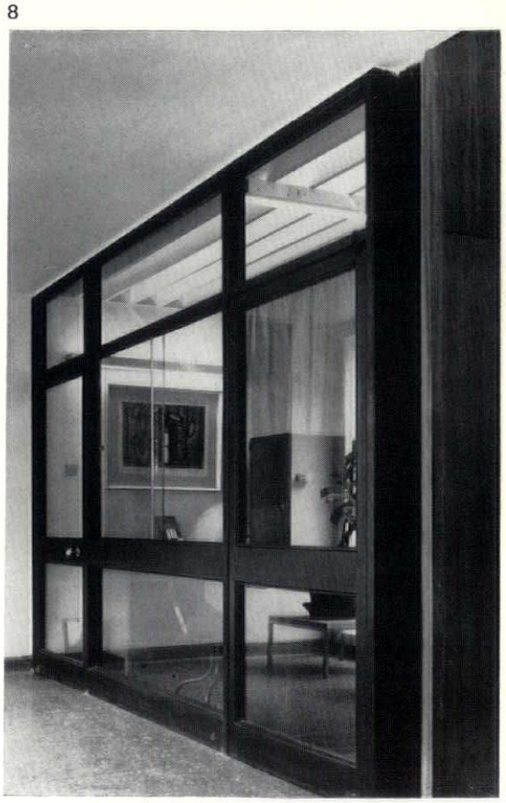
first floor plan

architects' office in the city

6



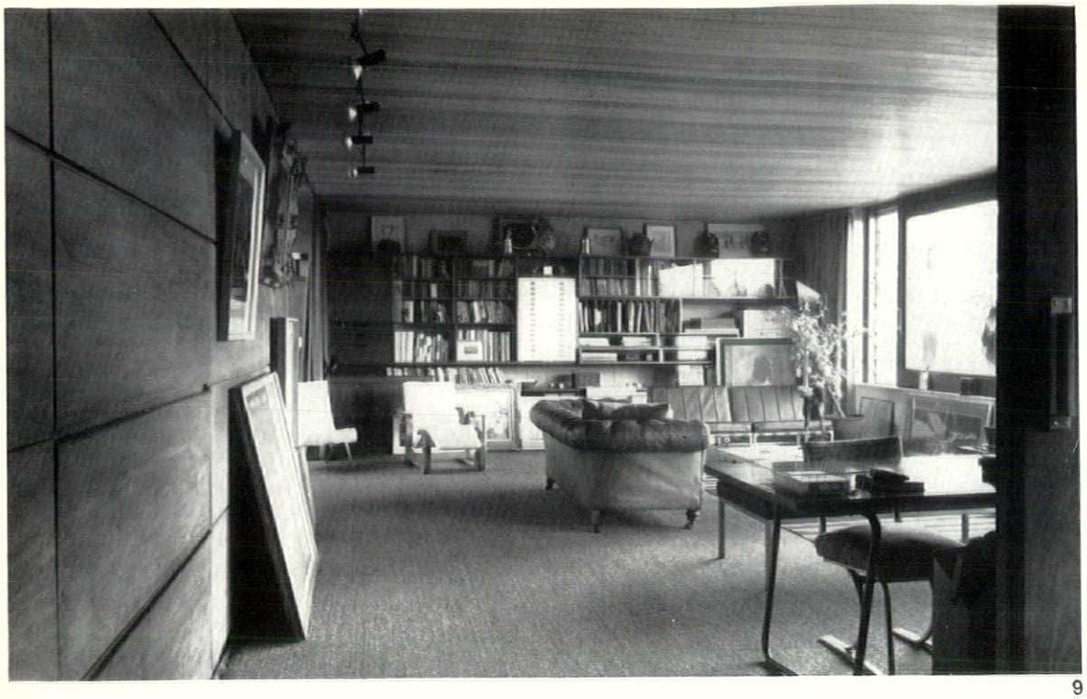
8



6, secretary's desk and alcove at end of partners' corridor (adjacent to duct on plan, opposite) showing the effect of the lowered ceiling.

7, the staircase and lift-shaft rising from the entrance hall at the first floor (see plan above). Precast terrazzo treads rest on a reinforced concrete spine-beam spanning from floor to floor. The all-glazed lift-shaft is framed in matt-black finished steel sections and all other steel-work in the hall is finished the same colour.

8, the enquiry/telephonist enclosure in the first-floor entrance hall.



9

architects' office in city

ID

9, the sitting/conference area in the fifth floor pent-house—as befits a pioneer practice of such standing, the furnishings are in themselves a potted history of the modern movement.
10, the exterior seen from the south, across the former churchyard of St. Dunstan's in the West.

10

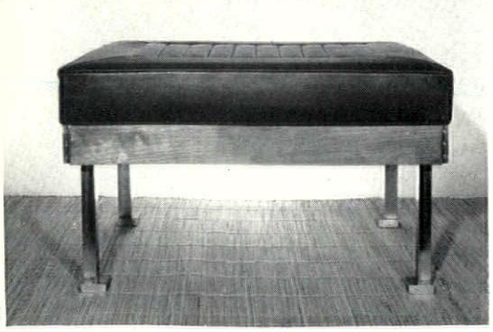


DR
design review

Heavy duty furniture

Though unconnected with the art gallery on pp. 121-2, this range of furniture, to be manufactured by Aerofoam, is also the work of Cedric Price. Comprising single and double stools, tables, etc., all standing on variants of the same standard chassis, it is intended for use in areas of heavy wear, such as airport passenger terminals.

1, a single stool with black leather upholstered top.
2, a corner of a similar stool, showing the massive angle that forms the main leg, terminating in an equally massive steel foot concealing a nylon glider. Finishes for the exposed structural parts are stainless steel or satin chrome—the wooden member secured by reversed steel angles at the corners serves to locate the seat.



1



2



ON TRIAL

6: MIES VAN DER ROHE

almost nothing is too much

REYNER BANHAM, in the last of this series of articles, discusses the reality of the Machine Aesthetic in the light of technological resources

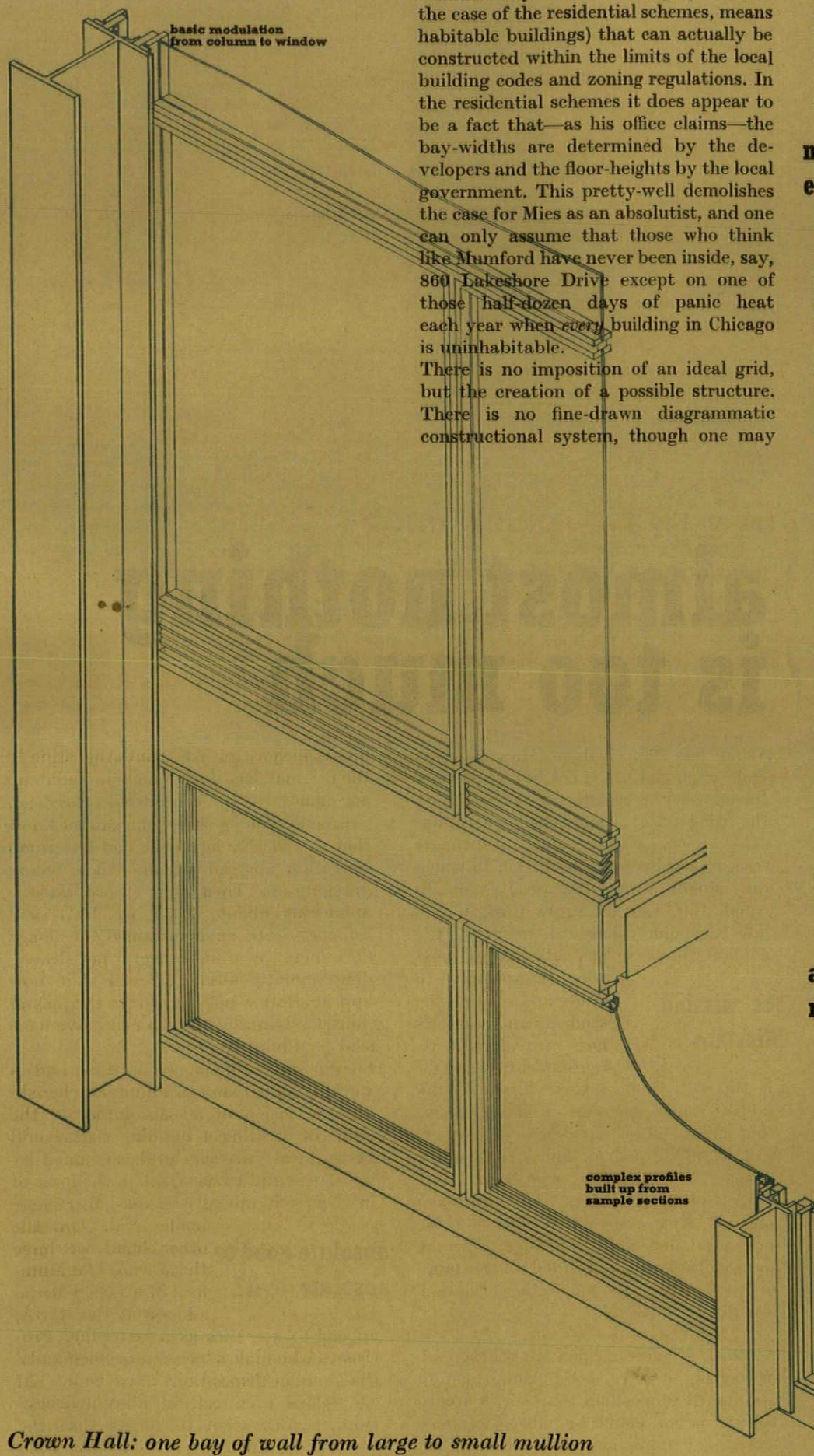
What has happened to Mies van der Rohe's fan-club? It is not five years since the image of his architecture gripped both the rising and the established generations of architects as an absolute, an ultimate term in architectural perfection to which they might aspire, but rarely hope to equal. But now, as Mies's work moves into the final phase of mastery, the adulant following has fallen away; just when there is most to study and admire, the students and admirers have turned their attention elsewhere. Or is this the wrong interpretation of the facts? Some observers would propose that Mies himself has fumbled the perfection of his system, failed to find (or utter) the ultimate proposition. And others, again, would have it that in making his style its own, Chicago—most provincial and inward-looking of world metropolises—has imprinted on it a taint of provincialism that makes the revelation less than ecumenical.

the missing Miesians

All these attitudes, which are widespread in varying degrees, stem from the unquestioned proposition that Mies's architecture is, or could be, absolute, perfected, a Platonic ideal. His tendency to quote authorities like Saint Augustine in the original has done much to build up an image of a committed classicist, expecially among those who cannot know that this merely means he had a German education instead of an Anglo-Saxon dragging-up. Then, too, those gnomic aphorisms about *Wenig ist Mehr* and *beinahe nichts*, have sustained the image of a man pursuing a very fine-drawn diagrammatic absolute, even if it now appears (following a hint from the master himself) that they may, in fact, have been said by Philip Johnson.

So, on the one hand, we have (or had) a world-wide network of admirers, cherishing the vision of an absolutist on the point of creating a building that would be an ideal Cartesian grid, sustained by pure logic and transparent to the light of intellect—Steinberg's graph-paper joke made real. On the other hand we have those who, like Mumford in his Gold Medal address at the RIBA, appear to see Mies as a latter-day Procrustes who makes 'peremptory demands' that human dispositions must be altered 'to fit his architectural idiosyncrasies.' Both parties seem to forget that the survival of the *Bauhütte* on East Ohio

absolute good or absolute evil?



Crown Hall: one bay of wall from large to small mullion

Street depends on its ability to produce commercially viable buildings (which, in the case of the residential schemes, means habitable buildings) that can actually be constructed within the limits of the local building codes and zoning regulations. In the residential schemes it does appear to be a fact that—as his office claims—the bay-widths are determined by the developers and the floor-heights by the local government. This pretty-well demolishes the case for Mies as an absolutist, and one can only assume that those who think like Mumford have never been inside, say, 860 Lakeshore Drive except on one of those half-dozen days of panic heat each year when *every* building in Chicago is uninhabitable.

There is no imposition of an ideal grid, but the creation of a possible structure. There is no fine-drawn diagrammatic constructional system, though one may find attempts at such systems by most of Mies's independent followers—Saarinen, Jacobsen, Bunshaft—as if they, like the impatient birds in the fable of the nest-building lesson, had dashed off without waiting to hear the whole story, and settled for an early version. Yet the closer one stands to Mies's actual buildings, the less likely does a perfected system appear—the blobby slurps of black mastic down the side of the glazing bars to the front of the Campus Chapel at IIT make it clear that there are occasions when almost nothing is nothing like enough. The close student of Miesian detailing will soon be forced to the conclusion that a perfected system is not the goal.

nothing like enough

This may sound blasphemous, but it will stand examination. Let us suppose that each successive version of Mies's glass-and-steel building-envelope is not a step towards a desired ideal, but 'a damnable interruption of the process of development,' to quote René Bonnet's complaint at having to actually *race* the cars he designed for Le Mans each year. The difference might be barely visible even in passing the whole of a man's life-work under review, but the divergence of intention is fundamental and still too little understood. The attempted progress towards an ideal which cannot be realized in the fallible world is the common ambition of classicists and is at least as old as Greek philosophy; the development from one *ad hoc* compromise solution to another without an ultimate goal, is something that has only come in consciously with the rise of mass-production technology and research. Its lack of any acknowledged ultimate destination appears dangerous to some social critics, but there is, in fact, a goal in view—a goal that is constantly under revision. Where the classicist defines his goal *a priori* and before setting out, aiming to fall short of it by as little as possible, the development engineer defines his goal in the light of what he has learned to do better since the last time he designed a comparable product, the goal being an improvement he believes he can achieve, noting how the elimination of Mk I faults in Mk II has produced fresh problems for solution in Mk III, and how the function to be performed has, in itself, been altered by the progress from Mk I to Mk II.

adjustable, non-ideal

While CLASP is a text-book example of this kind of non-idealistic development, and can only be understood in these terms, the progress of Mies's architecture

within any one period of his mature career answers well enough to stand up to this kind of analysis as well—his brick houses in Germany would make quite as rewarding a study in this light as his American glass-houses. In both cases we should discover that the form started as near-ideal as is humanly likely at the beginning of the process, and that the development must therefore have some other objective than the attainment of an ideal.

If we read Mies in this sense, two aspects of his work need re-examination: the detailing of his walling systems and, arising from this, his general relationship to the technological dispensations under which he has elected to work. There is no doubt that many European architects, nourished on the legend, are more disappointed than they are prepared to admit, when they see the real buildings in Chicago for the first time because they entertain a mental picture that is too close to the graph paper ideal. But Mies's detailing does not consist of ruled 4H lines on smooth paper; the stuff of his architecture is glass, with slight but visible shakes and rolls in it, and veritable pieces of genuine metal, having bulk, weight and surface, held together by fixings that—with the best supervision in the world—cannot be made either invisible or perfectly regular. Mies, in other words, has the same mundane materials and problems as any other working architect, but on East Ohio they use the optimistic, not pessimistic, verbal formula 'How else shall we make architecture except from the means of construction?' This question is self-begging, as well as rhetorical—it is really a statement of intention, and the intention will bear examination. Mies's buildings are visibly made of what they are made of—pieces of material, each doing something useful towards the function of the building, and combining to make architecture. Subtleties and ingenuities enough to fill a book are involved in the hierarchical series of re-entrants and projections by which Mies modulates his way from the face of a structural column to the window that adjoins it.

the stuff of architecture

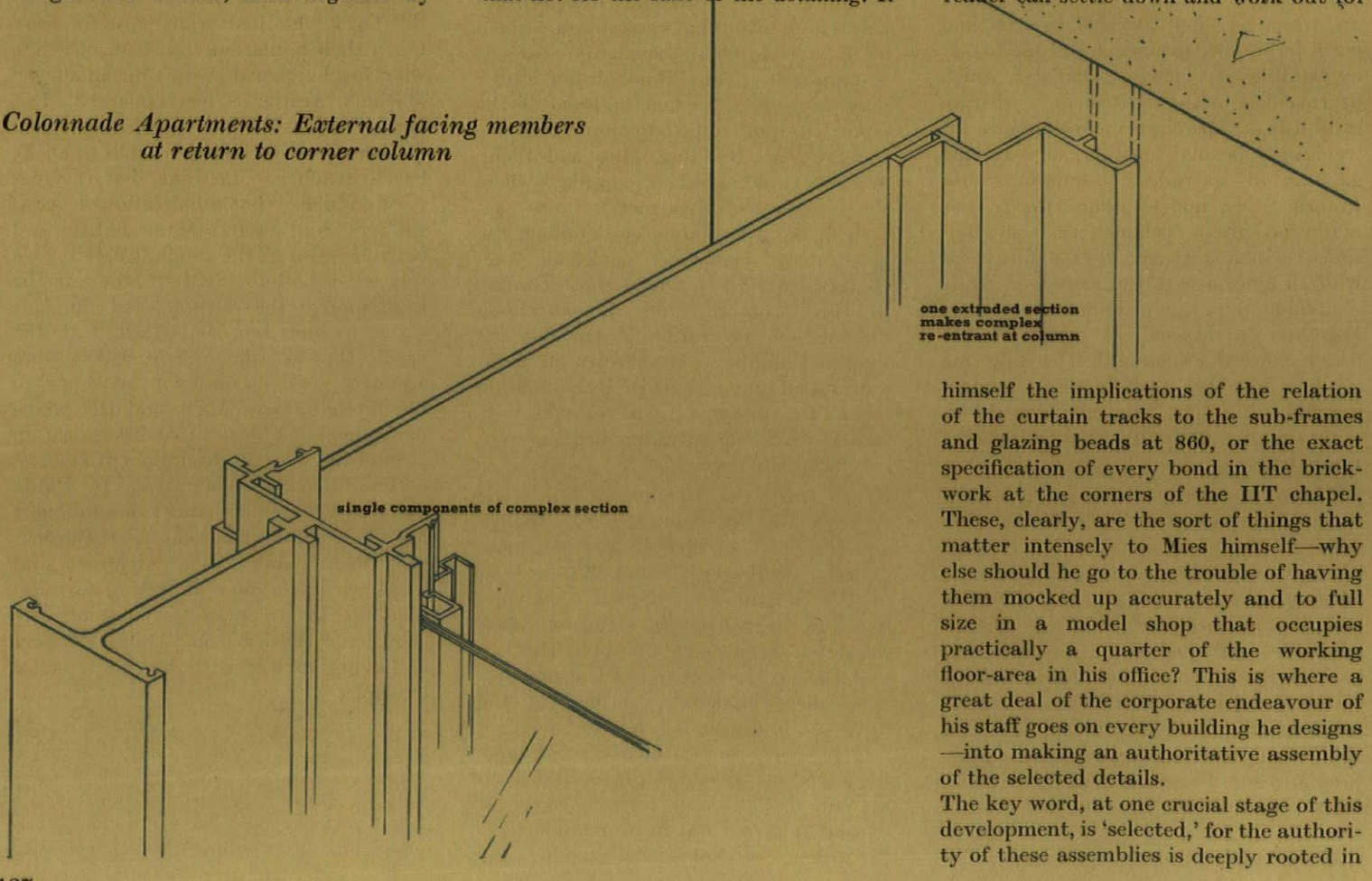
The detailing of Crown Hall (the architecture school on the IIT campus) alone would afford such a study, but where in the literature available to the general student is there an informative close-up detail of Crown Hall's rich and imposing hierarchies of components? The published close-ups of Mies's details can be numbered on the thumbs of one hand—the corner of the Alumni Memorial Hall at IIT, and that not for the sake of the detailing. If the energy and intellectual capacity that has gone into the disputation of the aesthetic meaning of that corner (whether it makes the wall planes finite or fictively continuous) had been devoted to the astuteness with which that corner has been made up from two I-beams and an angle, the whole study of Mies would be in a brighter condition, and more so, yet, had the study extended to the same building's window-frames, or the quite extraordinary corner details of the Commons building.

the craftsman's detailing

Much has been said about the craftsmanly quality of Mies's buildings, but the only writer who has done much to help the general reader to form a solid and dependable picture of this quality is Ludwig Hilberseimer, who, of course, has known Mies since before the time he was practically hand-picking individual bricks for the Lange house at Krefeld. Young writers, who have joined the fan-club more recently, are quick off the mark with moral equivocations about the 'false' mullions of 860, Lakeshore Drive, but seem never to have examined the details really closely. Hilberseimer does at least publish large sections of assembly drawings, so that the attentive reader can settle down and work out for himself the implications of the relation of the curtain tracks to the sub-frames and glazing beads at 860, or the exact specification of every bond in the brickwork at the corners of the IIT chapel. These, clearly, are the sort of things that matter intensely to Mies himself—why else should he go to the trouble of having them mocked up accurately and to full size in a model shop that occupies practically a quarter of the working floor-area in his office? This is where a great deal of the corporate endeavour of his staff goes on every building he designs—into making an authoritative assembly of the selected details.

The key word, at one crucial stage of this development, is 'selected,' for the authority of these assemblies is deeply rooted in

Colonnade Apartments: External facing members at return to corner column



their air of having been made up from stock sections (as the steel ones commonly are). Compared with the steel and aluminium detailing of 860 Lakeshore or 900 Commonwealth, the cladding of the Seagram Building, made up from bronze specials, looks gimmicky and unconvincing. It lacks that peculiar authority that US speed-buffs often believe to reside in hot-rods, built up from catalogued parts and adapters, but not in all-out racing specials which are purpose made and purpose designed right through.

the acceptance hot-rodder

Mies's detailing of this really authoritative quality adumbrates an almost unique attitude to technology—he accepts it. To be more precise; his very relaxed attitude towards it depends largely on his ability to select an array of techniques that lie readily to hand and exploit them within their accepted working limits. Whatever Machine-aesthetic dreams may have buzzed into his head from the atmosphere of *Berlin um 1922*, when he came to build in the 'twenties, it was in brick, and the variations in approach between, say, the Wolf house and the Lange house, are variations in current attitudes to brick-laying (Wolf, Dutch and arty; Lange, plain but rich).

So, when he finally turned to steel and glass, he stepped into what was practically an established Chicago vernacular, which he revealed to the light of day, with an established repertoire of techniques for welding I-beams together or carrying glazing in extruded aluminium subframes. Mies, not to mince words, has made no great technological contributions—which is why he always fails those who, in ignorance of the scope and limits of technology, have hailed him as a Machine-Age Messiah, a status he has never claimed for himself. The following he has lost are merely the gimmick-minded whizz-kids, who are now drumming up an equally distorted estimate of Louis Kahn.

But the problems raised by his acceptance-attitude remain while the fan-club departs. The great virtue of the hot-rod method—and this cannot be said too often or too loud—is that it demonstrates how to make architecture out of what is available, not just once, as with the Charles Eames house, nor through shock tactics, as with Bruce Goff's army-surplus architecture, but by taking thought. Such a method is the antithesis of, say, Buckminster Fuller, a technologist by nature and methods, who has blazed through architecture leaving behind a trail of barely exploited possibilities for other people to develop. Mies, an architect to the marrow, has walked along the shores of technology and made architecture from what he picked up along the way.

But is there not some reciprocal responsibility? The situation is not the same as that existing at the highest 'two cultures' level, where a man must either accept the disciplines of science in their totality or leave them alone. An attempt to pick out a science you like the look of, merely leads to situations like the widespread disappointment of architects who liked the look of sociology because it didn't seem to need much maths. But the fact that one lives in the other culture does not prevent one from picking out methods and products of technology that suit one's purposes, because they are, after all, merely ways of getting jobs done, and are amenable to the rules of common sense.

But it still seems to leave some mental, even moral, imbalance. There is nothing to prevent a man from making architecture out of the means of construction *and from nothing else*—the unspoken implication of the quotation given higher up. But why not restore the balance by also making means of construction to serve an architecture? I suspect that this is a question that cannot be answered on East Ohio even though its existence is admitted ('Your Buckminster Fuller may be right . . . when we build on the moon,' to quote office opinion again). On the Seagram Building, Mies and Philip Johnson could call their own plays where the elements of construction were concerned, but the gimmicky detailing, the grotesquely elaborate backstage mechanics required to secure that detailing to the structure, and the affectedly 'brownstone' coloration of the skin, all suggest that they were thrown off architectural and moral balance by a situation where the means of construction were open to almost untrammelled and unprecedented choice.

technological equilibrium

By contrast, the detailing of Colonnade Apartments, in Newark, NJ, though equally open to choice, and far more elaborate in its profiles and sections than on the Seagram, is completely convincing. And the explanation seems to be that the detail is here all aluminium. This is a material in which Mies has had previous experience, unlike the bronze of the Seagram, but, also, it is a material where a large order implies the ability to name your sections. Because a fresh die has to be cut for all long runs, a choice of section is as natural in aluminium as is the absence of choice in steel, where the economics of rolling-mill manufacture still make fancy sections pretty well impossible. In other words it is still a question of making architecture from what is available. We are still walking the shore of technology but a more sophisticated beachcombing technique has tempted us a little way into the surf.

specials from stock

Very little has changed in fact, and the moral basis of the operation has not changed one whit. It is still necessary to make the authoritative choice, though the nature and temporal location of the selection has been altered. What was once achieved by patient experimenting with the arrangement of adjacent metal sections until the authoritative solution appeared must—in complex extruded sections—become the moral authority to reject a prototype, scrap a die, and do it all over again. The process is an even tougher and more demanding one, and in this light one can begin to see just why 'almost nothing' has proven much too much for the technology-fanciers. Mies's work offers all sorts of easy answers—you can copy his details as you can those of the Parthenon—but they are valueless in repetition, and so the boys who just want answers have taken their adulation elsewhere, which is what has happened every time an alleged Machine Aesthetic has collapsed. But Mies is not a Machine Aesthete, he is a craftsman of technology, and what he has to teach is something that is never very popular—that architectural responsibility is continuous and unremitting and extends down to the smallest detail. This was what Lethaby had to teach at the beginning of the century, and the fans deserted him too, but they had the excuse that he was no great shakes as an architect. Fashion moves away from men like Lethaby and Mies, and the whole new school of Chicago that has grown up around the Miesian disciplines of IIT can be described as 'conservative' by Philip Johnson before the manner of building is ten years old. But no one has the excuse that Mies is not a great architect, and when we have got over trying to build him up as an aesthetic absolute we shall have the less comfortable prospect of having to live with him as a moral example.

the morality of selection



Offices and Showrooms, Sloane Street, London

ARCHITECTS: J. DOUGLASS MATHEWS AND PARTNERS

This building, a development by the Cadogan Estates, is at the southern end of Sloane Street, on the west side, and is occupied by Messrs. Troughton and Young. The seven storeys, including basement, give a floor area of just over 50,000 sq. ft.

On the ground floor are an entrance hall for the offices above, three shops, all with frontages to Sloane Street, and a walk through to Pavilion Road at the back which also gives access to the rear part of Messrs. Troughton and Young's lighting showrooms. The basement is used for storage. Behind the building are four garages with two mews flats over, and parking space.

The building has a reinforced concrete frame, each floor being subdivided by one row of columns. The external wall-structure of the upper floors, which is carried on



1



2

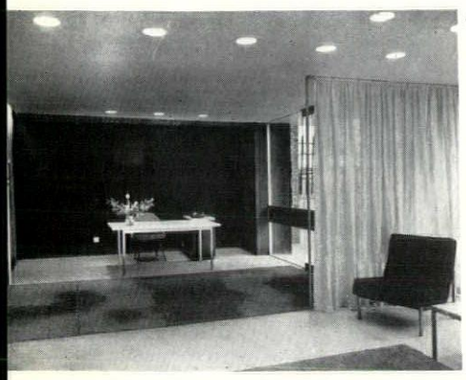
1, *the main façade in Sloane Street at night.* 2, *close-up of the main façade and entrance.*



3

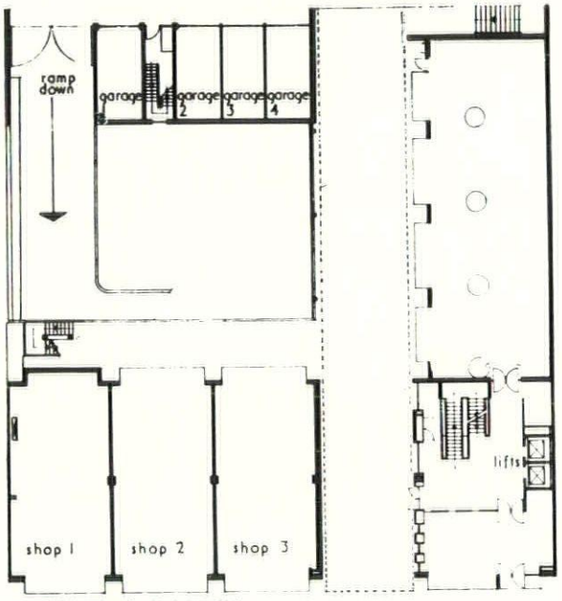
beams supported on the cantilevered floor-slab, consists of precast concrete cruciform units, joined together by steel pins and set 3 ft. in front of the glazing line. They have an aggregate of white Italian marble, ground to a smooth finish and treated with a silicone sealer to keep water out. Inside the building service ducts run in false ceilings in which lighting troughs are recessed. They include ducts for air-conditioning. The air-conditioning plant, together with water-tanks and lift-motors, is in aluminium-clad, steel-framed structures on the roof. The treated air is fed down the ends of the building in separate hot and cold ducts, mixed at four points on each floor and fed along a duct incorporated in the glazed walling. The rear windows have external sun-blinds to prevent over-heating.

Consulting engineers, C. V. Blumfield & Partners. Quantity surveyors, Gardiner and Theobald.

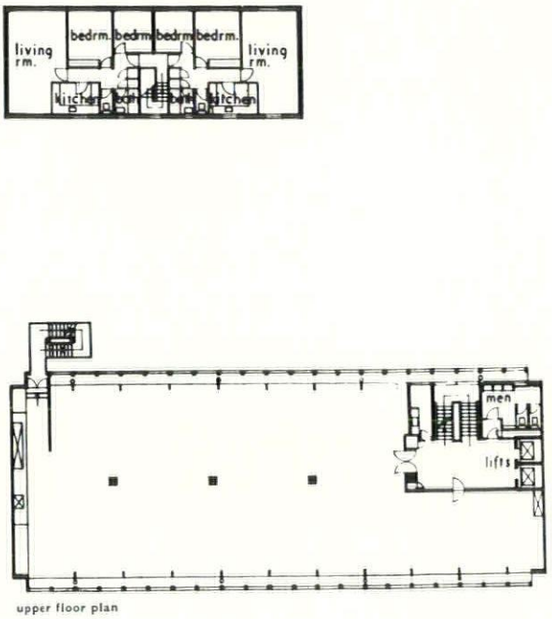


4

3, the lighting showrooms on the ground floor (on the right in plan alongside). 4, the entrance hall and front showroom.



ground floor plan (scale $\frac{1}{40}$ in = 1ft)

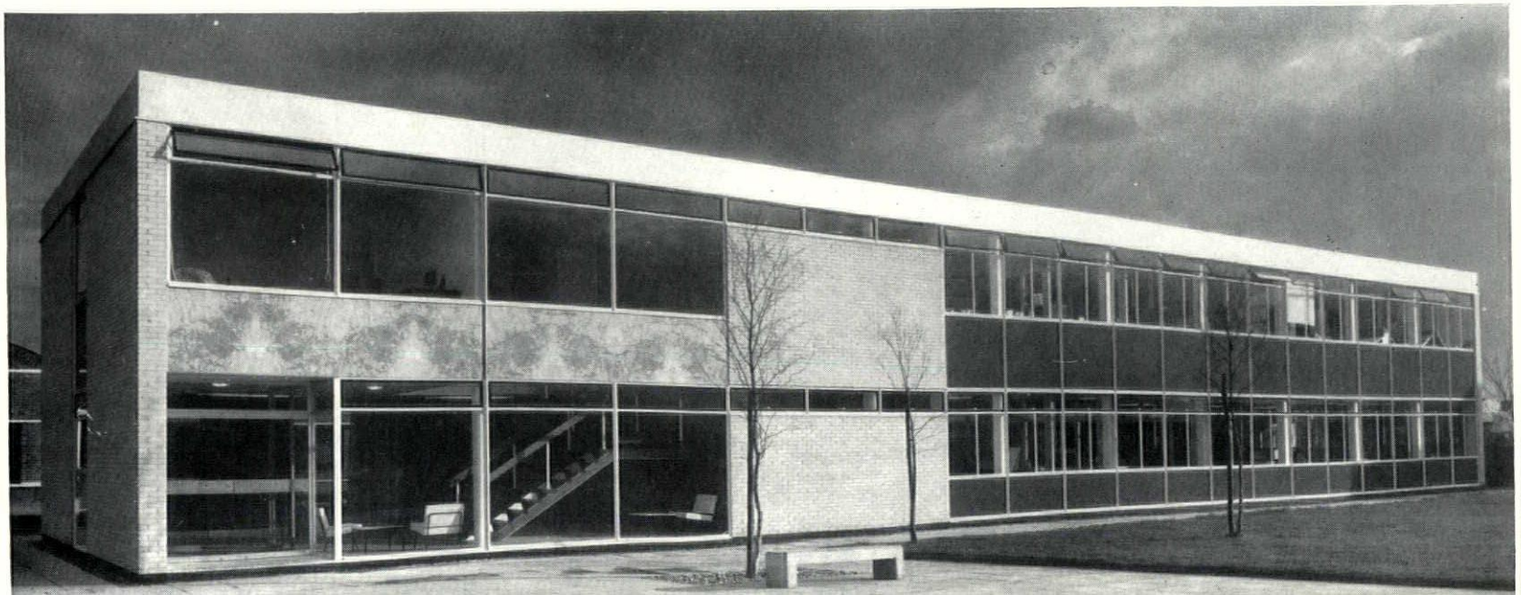


upper floor plan

Industrial Offices, Cwmbran, South Wales

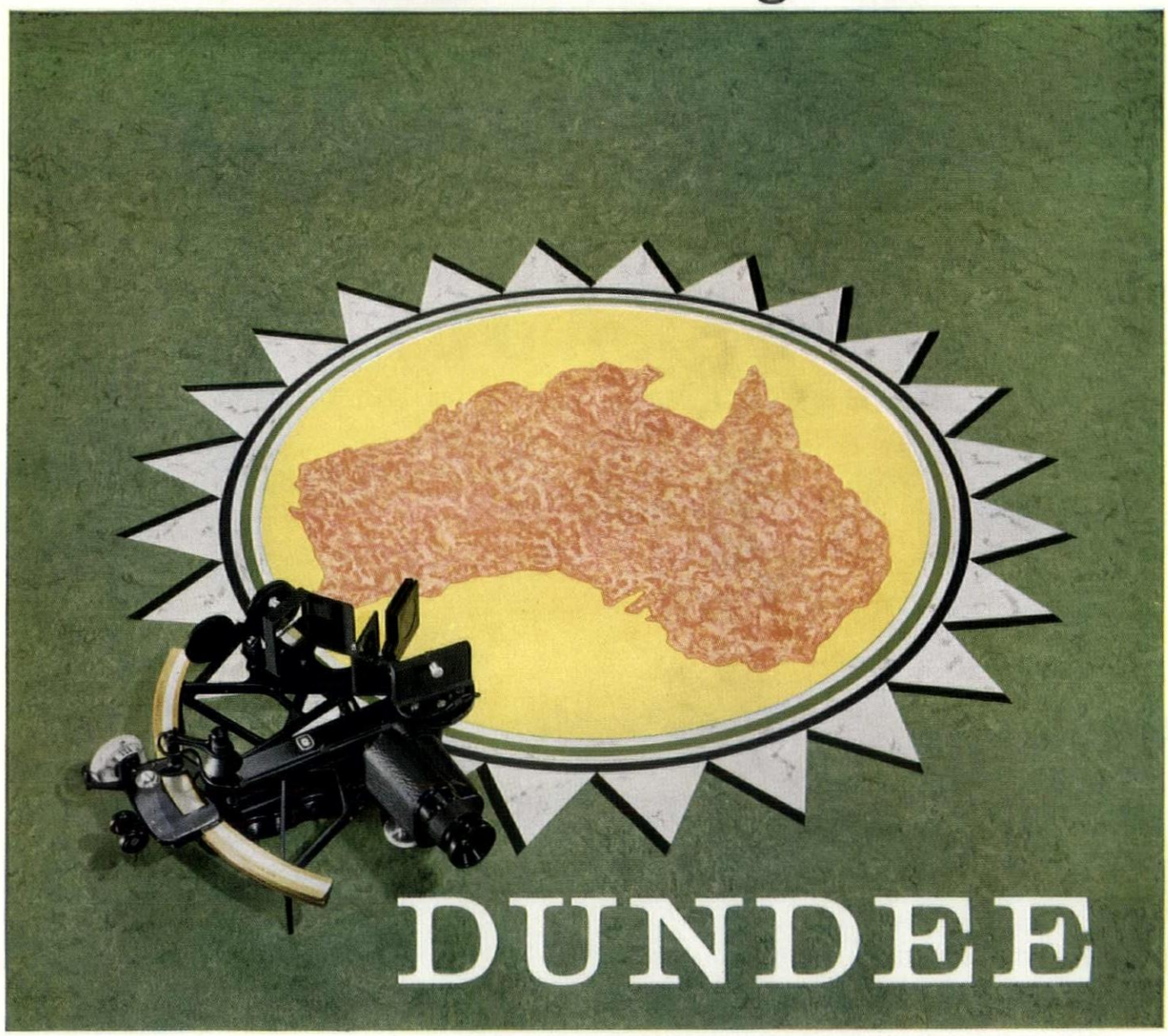
ARCHITECTS: CLIFFORD TEE & GALE

1, *the main elevation and entrance.*



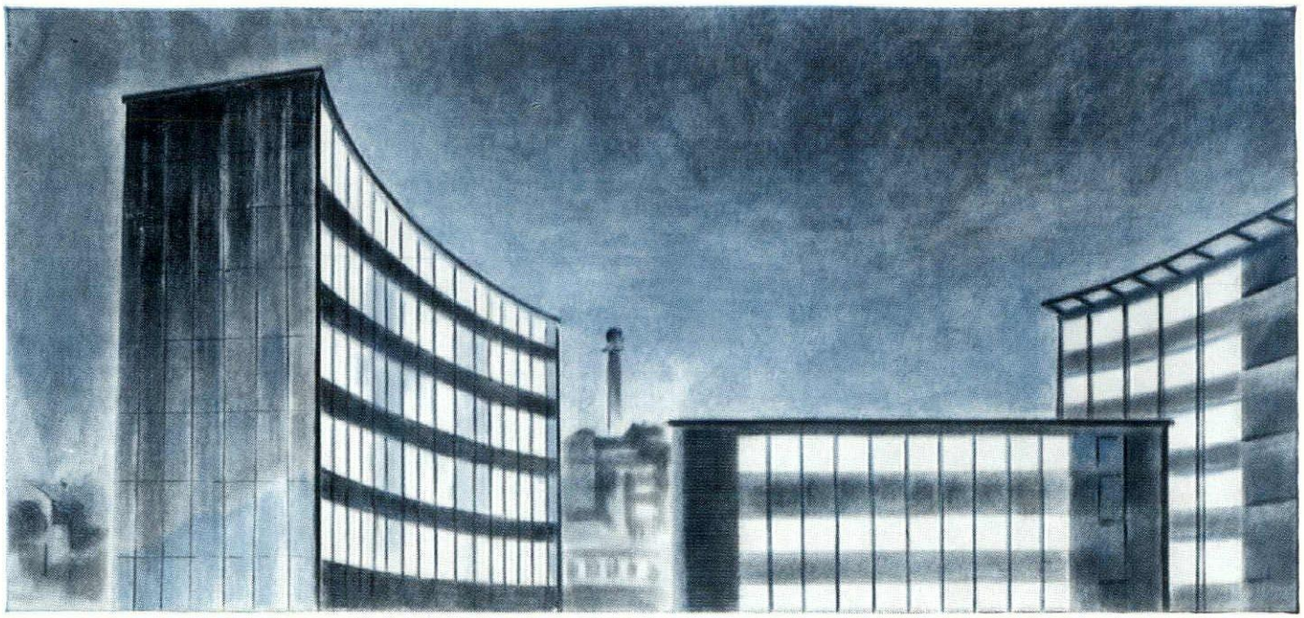


DUNDEE on the high seas



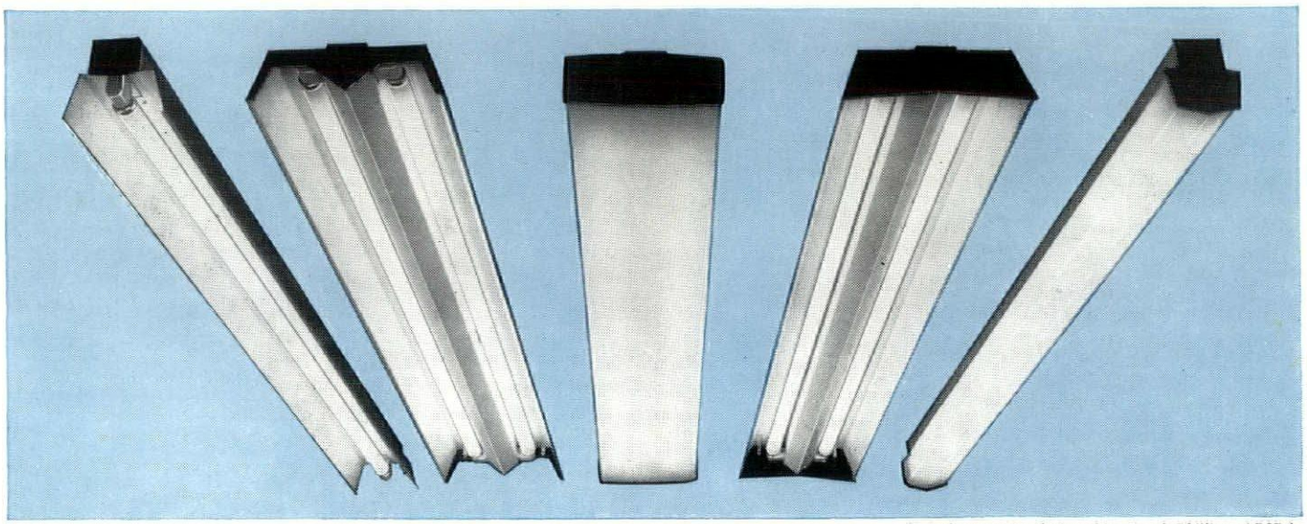
There's scope for imagination with DUNDEE Linoleum and Vinyl Asbestos tiles. Long lasting and easy-to-clean, they bring colour and gaiety to floors everywhere. For full details of the special contract ranges, write to:—

The Dundee Linoleum Company Limited, Dundee House, 39-44, Little Britain, London, E.C.1



ULTRASLIM

FLUORESCENT LIGHTING FITTINGS



Twin lamp series designed by Derek Phillips, ARIBA.

These ULTRASLIM Fittings from the TUBALUX range are available in single and twin versions for 4ft. and 5ft. lamps, and as pendants or ceiling fittings either singly or in continuous runs.

Suspension centres are variable even to one per fitting on continuous runs.

The range covers battens, closed and open top metal reflectors, "Diakon" reflectors (with and without closed ends) and diffusers.

The Architect and Consulting Engineer can use this range of fittings in a variety of ways to suit almost any interior layout and electrical installation.

TROUGHTON & YOUNG

TROUGHTON & YOUNG (Lighting) LIMITED
WANSDOWN PLACE, FULHAM ROAD,
LONDON, S.W.6. *Telephone:* FULham 9581

Showrooms:

The Lighting Centre, Liscartan House, 127 Sloane St., S.W.1

This is an office block to serve the factory of the Saunders Valve Company on the industrial estate at Cwmbran, built for the Industrial Estates Management Corporation for Wales. It is a two-storey building, plus a small basement heating-chamber, giving a total floor area of 9,250 sq. ft.

The entrance hall, at one end of the rectangular block, leads to conference and reception rooms; otherwise (except for lavatories, etc., on each floor) all the space is subdivided as offices. A separate entrance connects with the factory at the back.

The building is steel-framed and continuously glazed on a 6 ft. module, with brick walling for the lavatory section and brick end walls. Heating is by ducted warm-air from an oil-fired unit, with air inlets on the 6 ft. grid round the perimeter of the building at skirting level.

Partner in charge, F. W. Gregory. Project architect, E. M. Hemsoll. Assistant architect, J. B. Hall. Quantity surveyors, Reynolds and Young.

Industrial Offices, Cwmbran, South Wales

2, *the entrance hall.* 3, *the ground floor conference room.*

2

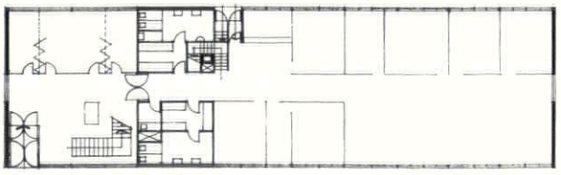




3



first floor plan



ground floor plan

EXHIBITIONS

PAINTING AND SCULPTURE

I've got nothing new to say about Francis Bacon. His work still acts on me like a life-enhancing poison. I have acquired the need for it, and it's possible that someday I may have to be disintoxicated, as if I were an opium-eater. Meanwhile, the paintings assembled for his Tate Gallery retrospective exhibition gave me the same old eery, irresistably fascinating sensation of being in the presence of immaterial visitants, wearing human flesh.

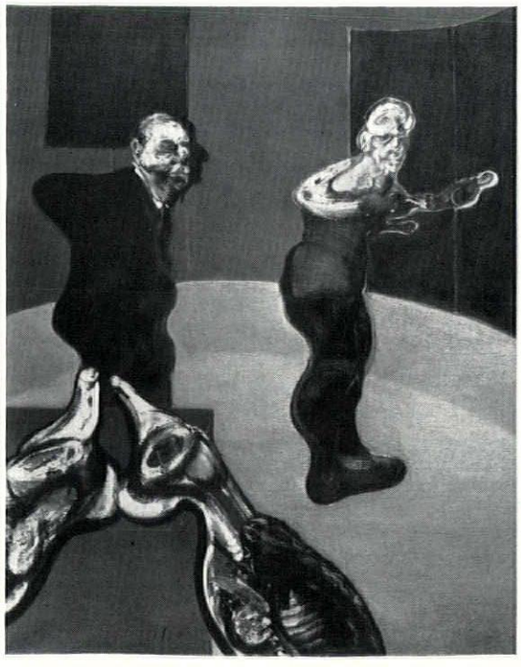
Sir John Rothenstein remarked in his introduction to the catalogue that 'there is still no sign of the emergence of an accepted estimate of Bacon's stature,' and prophesied that the show would probably 'intensify the division and deepen critical confusion.' The division he has in mind is based on a false antithesis, and is one of the causes of confusion. Some people say that he's a great painter, but others say that he is abnormal, sensational and even obscene: for some reason that escapes me, they all agree that he can only be one or the other. Then again, they all agree that someone is guilty of something or other. They only disagree as to whose culpability is being exposed. The critics who think he is a great artist say that he is accused of exaggerating because the accusers are trying to put off knowing what beasts they are. (In other words, if you don't recognize your own handiwork in the last panel of the triptych reproduced here you are a hypocrite!) The other side says, plaintively, 'the guilt is always somebody else's; it doesn't become one's own.' (Never mind; if you go on complaining he may paint your portrait.)

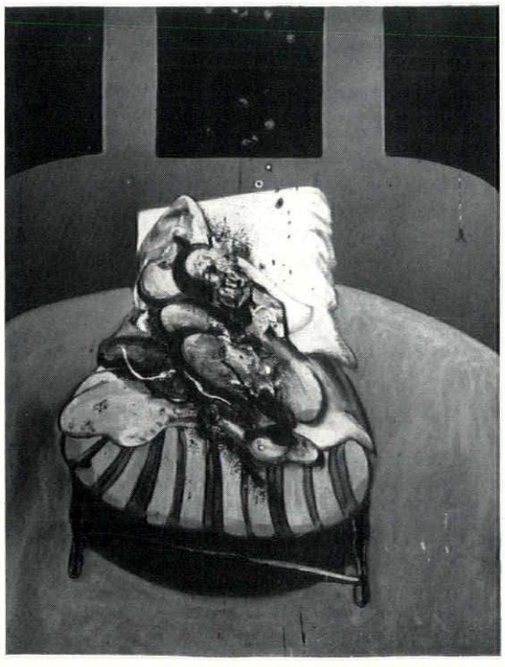
Sir John includes my name in a list of critics who have helped to 'clarify the workings' of Bacon's imagination; but I deny ever attempting such a thing. Sir John doesn't really believe it either, because he quotes some of my sayings as examples of the unbalanced criticism that can be produced by Bacon's 'most ardent advocates.' One of these little gems is my suggestion that he 'discovers in the act of painting the felicities of the death-warrant,' and as luck would have it I found on another page of the introduction this remark of Sir John's: 'he (Bacon) told me that he cannot recall a day when he did not think of his death.' Even so, I would be prepared to admit that I exaggerated, if I could forget the seductiveness of the brushstrokes which delineate the figure in the last panel of the triptych.

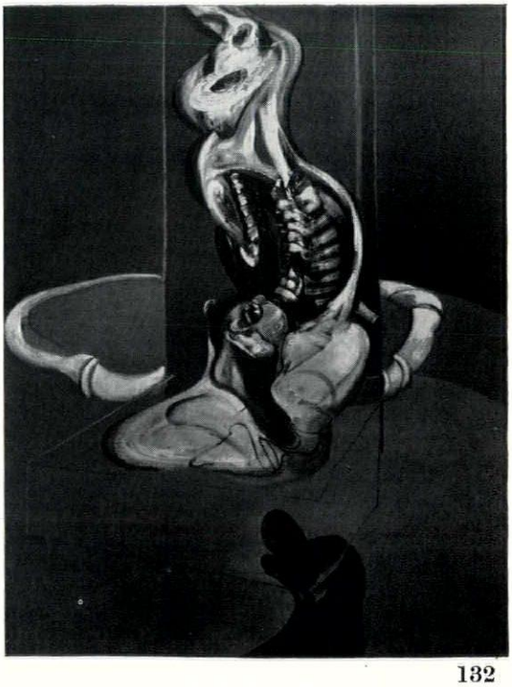
Another of my remarks, quoted for the same purpose, reads: 'he might be said to have covered the lamp-shades of his immediate predecessors with human skin,' and whilst admitting that it is both obscure and far-fetched, I think I should add that it was involved with something I was saying about Bacon's ability to reconstitute the significance of the surrealist *personnage* in terms of human appearance, and that I introduced the reference to the hobby of a notorious concentration camp commandant to give some sense of the potency of Bacon's figures compared with the assemblages of surrealism. (An example of his own use of assemblage is the painting called 'Study for the Nurse in the Film *Battleship Potemkin*,' in which he fits a naked body to a paraphrase of Eisenstein's close-up of the head of a woman wearing eyeglasses, who is screaming with pain and terror, and as Mr. Alley so rightly says in his careful catalogue notes, 'there is no point in the film where she appears unclothed.')

I think that what Sir John really dislikes about my writing is that it does not hide the pleasure I derive from what he calls 'the element of sheer horror' in Bacon's work, and which I am more inclined to call a penchant for extreme situations.

There is one other remark of mine, overlooked by Sir John but quoted more than once in the past as intemperate criticism taken to the point of absurdity, which I regard as central to my advocacy. It is the assertion that Bacon is unquestionably the greatest painter of flesh since Renoir. I am puzzled that this claim should seem intemperate. His paint textures are soaked in his knowledge of the flesh, and it is because he is concerned less with the human form than the substance of which it is made that he can take advantage of chance when he 'splashes the stuff down.' He paints flesh as it is lived in, not as it is seen; so a photograph suits his transforming purpose better than a posing model. He paints the stuff that gives pain and pleasure, that gets scarred and stained by use and ends up as carrion.







1

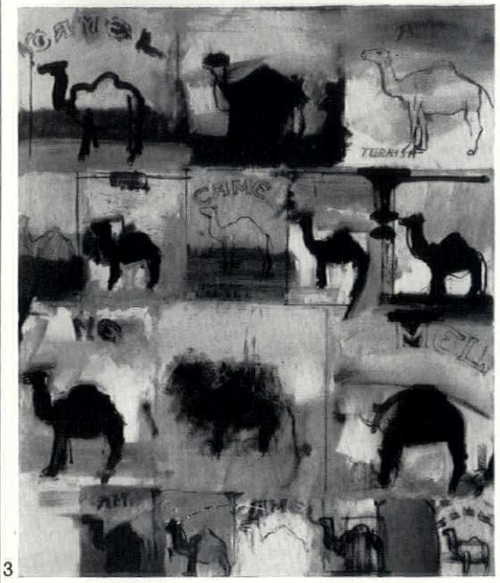
It seems to be taken for granted by all the critics who admire his work that he is a great tragic artist. I suppose the idea is that we are purged by horror and come away feeling wonderfully shook up and nobler than we thought we were. Personally, I find the idea rather disgusting and I think that such critics don't pay enough attention to their reactions.

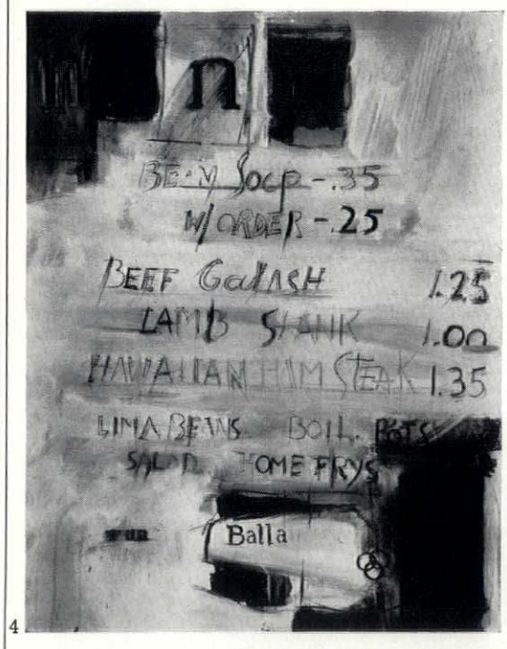
I think that his work is an expression of the revolt against conscience, and the triptych, 1, which brought his retrospective to a crimson close—it could well be one of the works Sir John calls 'manifestly tragic'—seems to me to be on the verge of saying something precise about the nature of this revolt. The two surrealist *personnages* composed of meat which stand in the foreground of the first panel are obviously in collusion but they are not necessarily plotting against the two clothed figures walking towards the next panel. They could also be their 'disquieting muses' or fairy godmothers, watching over them and guiding their uncertain steps. Montage, the mere fact of juxtaposition, insists that the two clothed figures are in some way responsible for the condition of the figures in the second and third panels, but doesn't deny the possibility that, having undressed, and for the sake of privacy, they have now been put into separate panels. The blood from the figure in the second panel is still shooting up to the ceiling. We are witnessing the moment of assault, but no one else is present. Ronald Alley has pointed out to me that the figure in the third panel is probably based on a photograph of Mussolini hanging upside-down after his death. But it also contains reminiscences of Bacon's earlier images of screaming heads and of his recent paintings of nudes with their legs in the air, so I wouldn't be surprised if it had arrived at this situation of its own accord. It could be considered as a sequel, so to speak, to the paintings of nudes with their legs in the air. I would like you to try to imagine that the figures in the second and third panels, who have so evidently been victimized, are not victims at all, for I have the impression that Bacon is showing us a sort of condemned playground and that he is saying, perhaps with a touch of malice, that we are absolutely free to do what we like with ourselves.

The paintings of Larry Rivers have immense charm. He has developed a technique of paraphrase which is not dissimilar to that of Francis Bacon, but he operates at a much lower emotional level, His delightfully smudgy paint gives common objects and conventional drawings of the nude a faintly ambiguous air, as if, in a mild and desultory way, he were casting doubt on the reality of the exterior world.



2


3

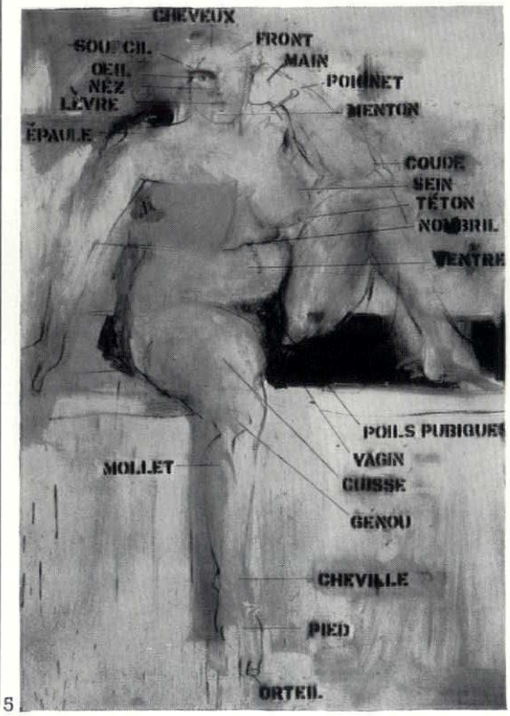


4

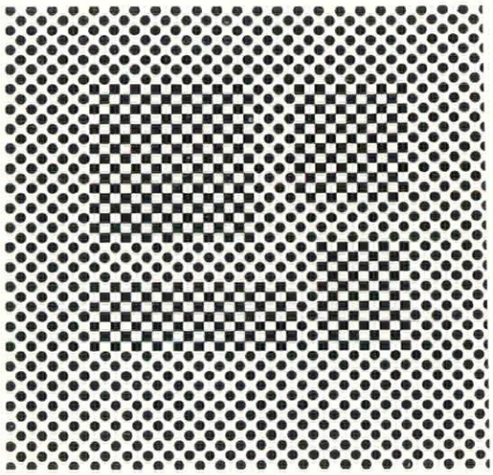
He has a big reputation in America, and his initial London show, held at Gimpel fils, was accompanied by rather threatening statements from two well-known American critics, who no doubt once had dreams of being Security Men. Mr. Hess is not quite so truculent as Mr. Ashbery, and his claim that Rivers 'undresses all his models' is rather endearing. Here, for the first time it seems, is a naked banknote, 2, a bared pack of camels, 3, and a de-frocked menu-board, 4. But John Ashbery warns us that we'd better give up trying to find out what Rivers is doing because we can't put ourselves 'in a position towards his work that he himself hasn't just taken and is now walking away from.' Then he puts his face very close to the reader and goes into a strange leering and spluttering act. 'What,' he asks, 'could be sexier than the artist's own wife?' Then he gives the reader a nudge calculated to knock him sideways (he only writes for the boys) and continues: 'Here, wait a minute, he is going to label all the parts of her body including the ones that interest you most, because he is really in quite a hurry and by the way did you know that you are coming with him? Oh yes you are. There is no more time to think what his work is like because he is slowly pulling out of the station.'

Pulling out slowly in the opposite direction, just in case Mr. Ashbery was still with him, I noticed that the painting of Mrs. Rivers had only one eye, 5. I hope that this only means that Mr. Rivers is demonstrating in his boyish way that he is first and foremost an artist. Perhaps the closely guarded secret of what he is up to is to be found in the words of an old pop song which is obviously due for a revival: 'It aint what you do, it's the way that you do it.' At any rate, Mr. Rivers's way of doing it is quite marvellous.

Bridget Riley, holding her first exhibition at Gallery One, gave an enchanting display of the new illusionism. Using strictly geometrical forms, she created poetic and inventive, if sometimes eye-straining, effects of movement. One of her black and white pictures, entitled 'Escaping Centre,' depicted the fifteen phases of the well-planned escape of a dot from an



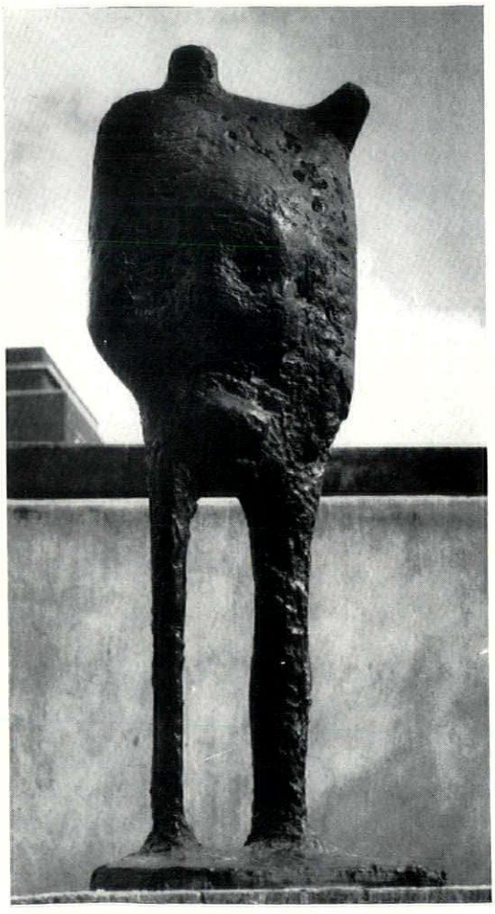
5



encompassing circle. The handsome eye-twicher reproduced here, 6, is called 'Hidden Squares.'

The recent exhibition of Kenneth Armitage's sculpture at the New London Gallery disclosed a somewhat desperate and so far unsuccessful search for new and impressive forms. He appears to have been looking at the work of others with a distraught eye, and some of the bronzes he has produced are queer, blank, blunted things derived from the imagery of other sculptors. Nevertheless, the influence of Moore's recent modelling and of Anthony Caro's sculpture of the pre-girder period, 7, seems on the point of bearing fruit, and his work may well be moving into a new and powerful phase.

Robert Melville



SEATTLE WORLD'S FAIR

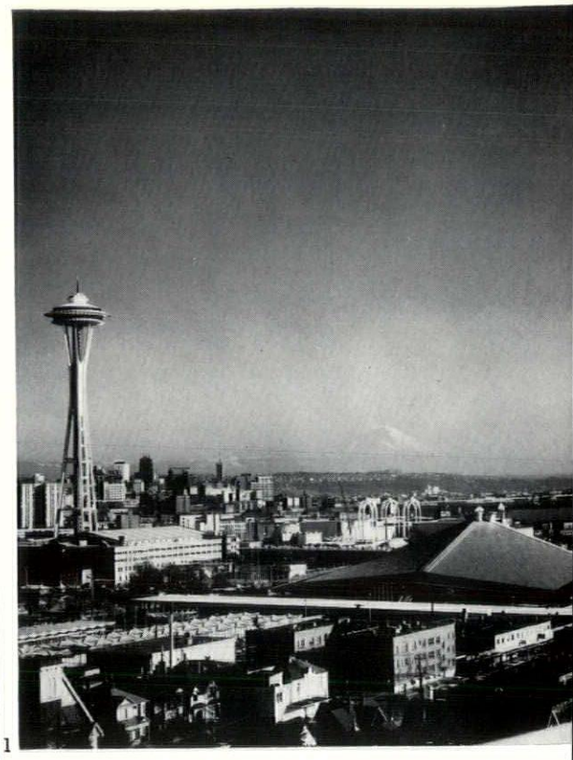
The Century 21 Exposition is, possibly, the least sophisticated International Exhibition ever staged under BIE rules—and none the worse for that.* Affectionately known in some quarters as 'the first county fair of the space age' it breathes the relaxed but stimulating air of a true fair, with little of the status-seeking pomposity that chills the visitor's heart and numbs his feet at more consciously megalomaniac affairs. Of its two most expensive buildings, the Space Needle, left in 1, remains a monstrous though profitable gimmick, its design failing to rise above what it obstinately persists in resembling from all angles—a pedestal ashtray for a race of giants.

The other, the Colisseum, right in 1, is more modest, more functional and more satisfying as architecture. Designed by Paul Thiry with Hostmark and Associates as engineers, it is simply a giant roof spanning 360 feet clear, 2, carried on four enormous compression trusses grounded in massive concrete abutments, 3. Unfortunately its contents are not in the same class—the 'theme exhibit,' housed in a cloud of cubes and reached by a 'Bubblelator' (frontispiece, page 83) is a sorry jumble of watered-down Charles Eames display techniques and shop-soiled Madison Avenue aspirations whose image of the Ultimate Good is, characteristically, a Christmas tree loaded with tinsel goodies.

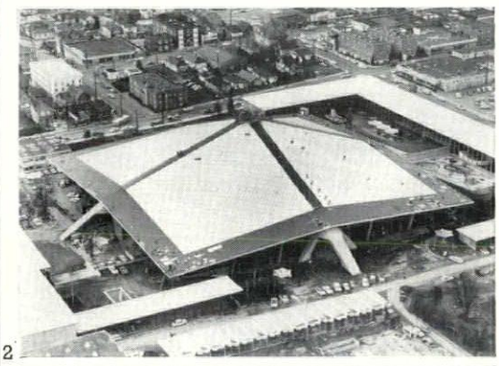
All this one can take, or let alone—the Colisseum itself is a permanent structure anyhow—since the barker's pitch is native to the fairground. But one cannot treat the main Federal pavilion so casually. It houses the largest science exhibit ever staged by the Federal Government, in a mock-gothic extravaganza of infernal ingenuity and almost complete architectural vacuity, 4. Despite his public pronouncements, it remains difficult to understand what can have been in Minoru Yamasaki's mind in designing this affront to the progressive aspirations of science, and to the townscape *genius loci* of Seattle, for the Science Pavilion stands on the one part of the fair site that is high enough to command a view of Puget Sound—and turns its back on it. A small door leading to an afterthought-looking balcony has to be found before the stirring panorama of water, hills and industry can be viewed.

To the other contributing exhibitors, Paul Thiry's master-plan gave no such opportunities to waste. A straightforward grid of boulevards and malls, interspersed with plazas and such, offered the rest of the national pavilions, industry exhibits and amusement concessions, the equivalent of

* Bureau International d'Expositions, the body which allocates international fairs between competing nations.



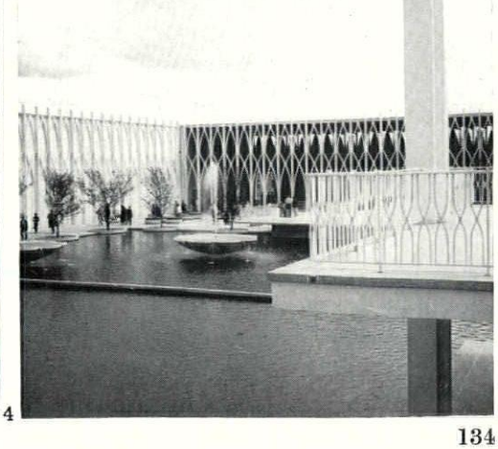
1



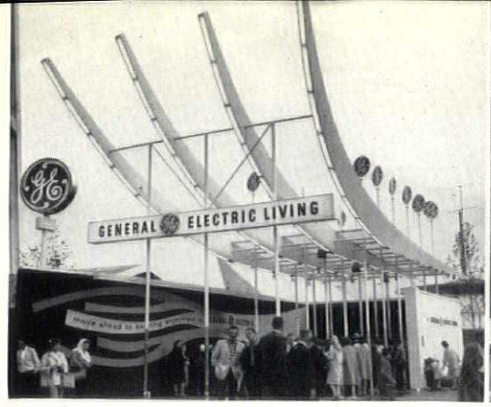
2



3



4



5



6



7



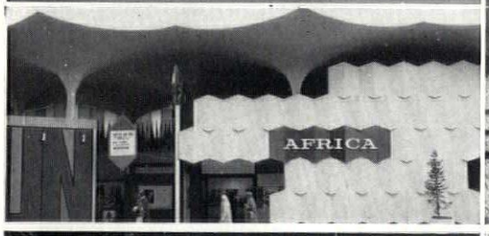
10



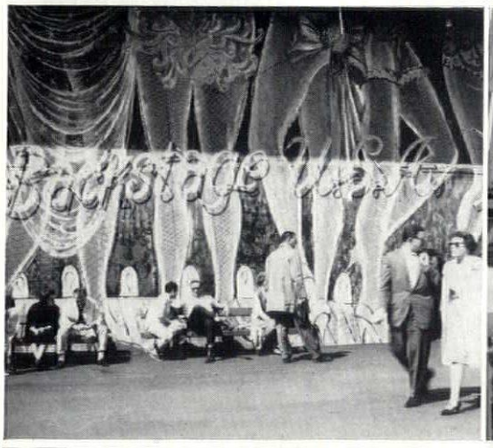
8



11



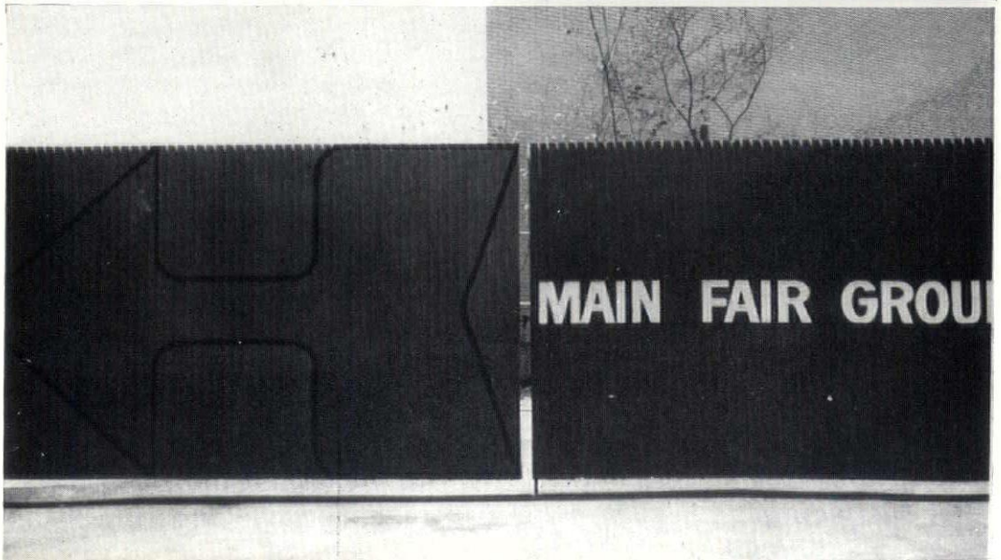
9



12



13

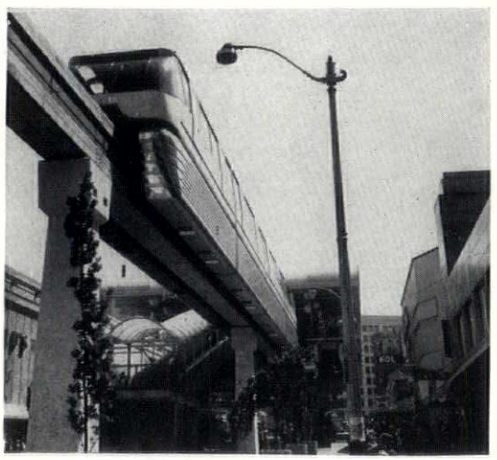


14

street frontages or courtyard sites. They responded with pavilions that ranged from the routine corn of the GEC exhibit, 5, by way of Beverley Pick's middle-of-the-road British Pavilion, to IBM's sophisticated symbol game, 6, in a pool between two Philadelphia-style mausoleum roofs by Charles Broudy, visible behind the *Electricab* in 7. Inevitably this situation produced the kind of fairscape it deserved, 8, but in odd corners a sterner discipline asserted itself, as where institutional exhibitors had tried to live up to Walker and McGough's Proctor-formed concrete vaults 9, or a sudden gleam of visual poetry would appear as the sun caught, say, the fountains outside the Canadian exhibit, and the gaily flipped-up and flipped-down tented roof of Victor Steinbrueck's kiosk for the American Institute of Architects, 10, caught in the shadow of the Colisseum.

Yet what held the fair together were the outcrops of honest showmanship that showed that the solid P. T. Barnum bedrock was never far below the surface. It was everywhere in the bars and kiosks: it was there in Matsushita and Shimizu's prize-winning fountain, 11, more subtly; it was there with no holds barred in the girlie-shows, 12, and wild-rides, 13, of the Gayway. Best of all, it combined with the new American typography to produce some of the most decoratively informative sign-posting in the fair, 14. And it was there too in the Alweg monorail that connected the fair and downtown Seattle, 15, with the wild utopian promise that, one day, commuting might be a real fun thing to do—a soberly practical form of urban rapid transport that will have paid for itself and more before the fair closes in October, and yet is the most consistently crowded promise of Century 21 that the fair has to offer.

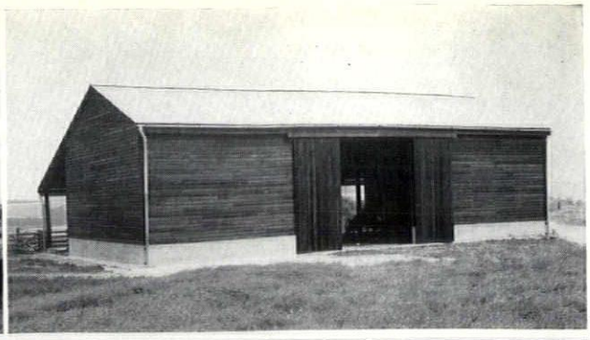
P.R.B.



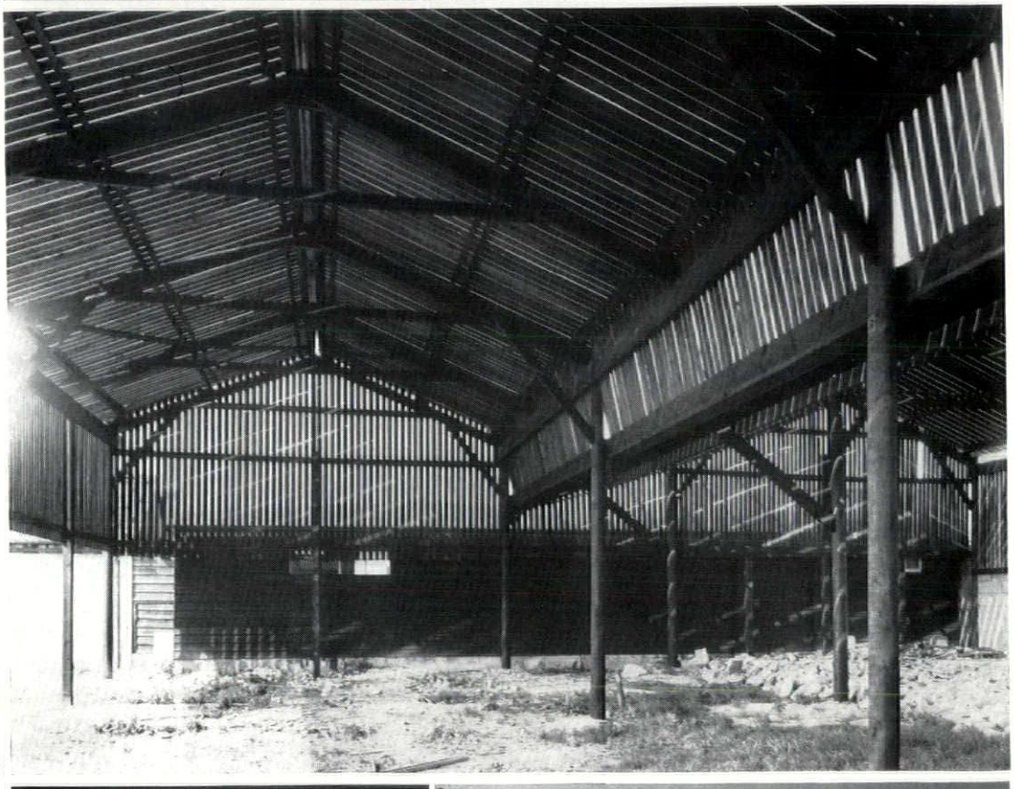
15



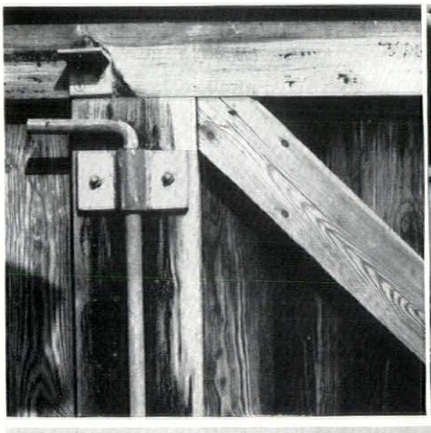
1



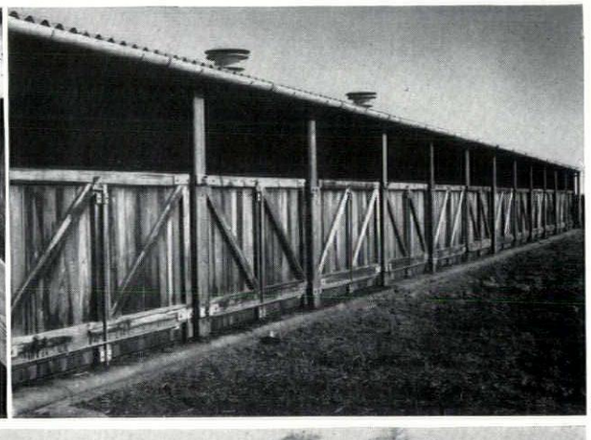
2



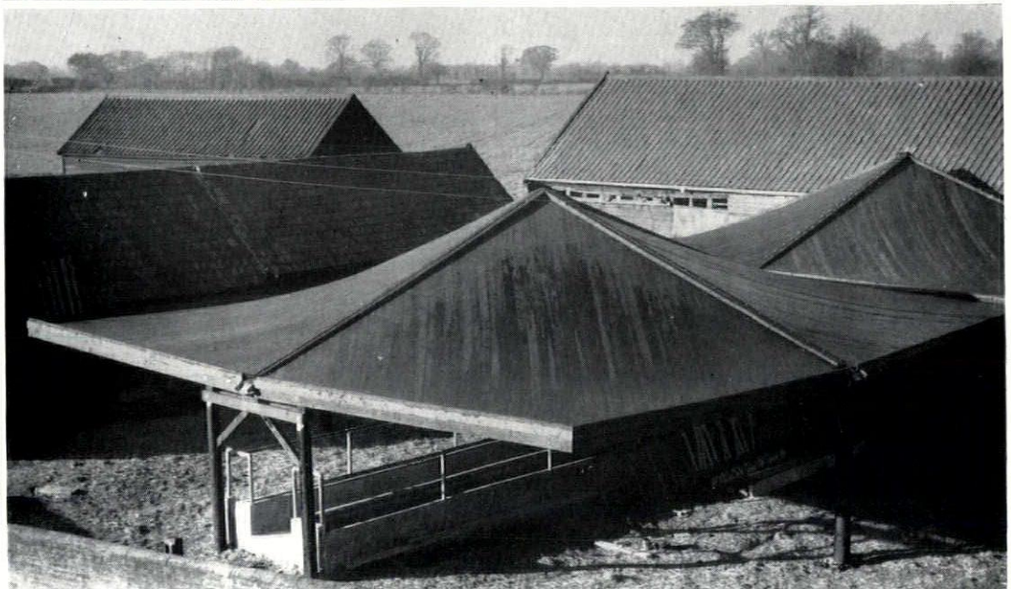
3



4



5



6

FUNCTIONAL TRADITION

WOODEN FARM BUILDINGS

While the improvement of both the aesthetics and the performance of the standard kit of concrete parts from which most farm buildings are made, remains the most urgent problem in rural design, wooden buildings offer an alternative that can be economically competitive with the concrete kit, can offer comparable performance, and successfully avoid the architectural and landscape objections that are justifiably levelled at the asbestos-and-breeze-block exteriors that so often go with the standard concrete frame.

Even without benefit of architect, but simply by going to a progressive supplier* an enterprising farmer can get a building of decent functional-tradition appearance, 1 (a barn at Alresford) or even something of more notable character such as 2, at Berwick St. James, near Salisbury, or 3, a Yorkshire-boarded covered yard at Heaverham, Kent. All three of these buildings depend on a structural system of pole uprights and trusses as elementary as those in Palladio, as can be seen in 3—a type of construction that comes close to the ideal of perfect simplicity that is an absolute desideratum in farm buildings, but here gains an honest elegance from the economy of materials and the clarity of the fixings.

But add to the capacities of such a supplier, a shrewd designer with an eye for plain blunt detailing (galvanized welded steel on pressure-impregnated timber as in 4) and a feeling for visual niceties that is exemplified by the 'handing' (two left, two right) of the diagonal braces on the piggery doors in 5, and it becomes possible to think of a tolerable contemporary wooden architecture for farms. In fact, Charles Smith, of Dunmow, a consultant farm engineer, is as able in large things as in small details, and has designed some of the most remarkable post-war farm buildings in Britain.

At Stutton, Suffolk, on the basis of the pole structure discussed above, he has roofed a cattle-yard, 6, with warped slabs of laminated timber, supported only at the opposite corners of each slab, either by a single pole or by a pole-portal straddling the central feed passage. At Holbrooke, Suffolk, another property of the same owner, and again working with Burt, Boulton and Haywood, he produced the

*In this case, Messrs Burt, Boulton and Haywood. The Editors wish to thank Mr. John Voelcker for drawing attention to this firm, and Mr. Philip Grindell of Burt, Boulton and Haywood for his assistance in collecting material for this note.



7



8

9



striking barn seen in 7, again with a warped slab roof of in-situ laminated timbers, 8, in three layers. Again there are pole supports only at the low corners, but here there is also exterior walling in which solids and openings, old materials and new (the windows are in corrugated plastic) are combined in a manner, 10, that

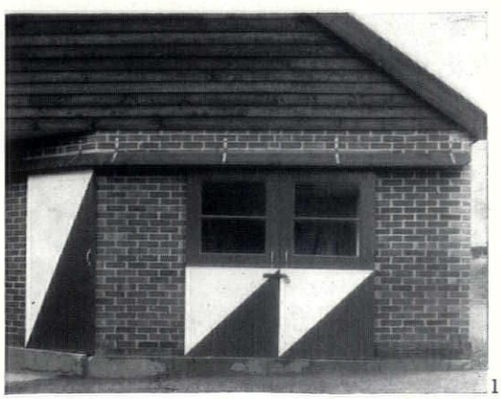


10

will surely earn the barn a place in someone's book of 'anonymous architecture.'

Architects as such seem to have been slow getting into timber farm buildings; the only architects' work that will stand comparison with Smith, of Dunmow, is also in East Anglia—the conversion, by Fielden and Mawson, of Norwich, of an open yard and cattle sheds at Forncett St. Mary, Norfolk, into a covered cattle yard, 9, with feeding passage (under the lower side of the roof), bedding area for a Jersey herd of some sixty beasts, and surface silo. The existing sheds and auxiliary structures had to be considerably altered to accommodate the new arrangements, and the modifications, though equally well detailed, reveal an approach, 11, that is in sharp contrast to Smith's. Although the structure at Forncett is in sawn timber, not poles, the architects are developing a pole system of their own, whose appearance (in all senses of the word) will be keenly awaited, because pole-structures look as if they may have a considerable part to play in what the Age of Reason would have called Rural Improvements.

C. Forehoe



11

SKILL

HOSPITAL WARD FURNITURE
2, BEDSIDE LOCKERS, OVERBED TABLES, AND METHODS OF SCREENING

This is the second article of this series by Anthony Wylson. This month he reviews the various articles available in the three categories under discussion. He also considers the British Standards relevant to these.

The prevailing attitude towards ward furniture plays a significant role in the complex that forms the patient's environment. In most cases under present conditions, the effect will be piecemeal—a collection of units selected by various methods. Ultimately it will be advantageous to work to some degree of co-ordination. The Ministry of Health is concerned with modular systems applicable to ward design and the Supplies Division is preparing Equipment Schedules to supplement the Building Notes. A comprehensive method of selecting furniture or establishing design criteria, formulated by a representative group, would be of great value. Any development in ward design must establish what furniture should be built in (relative to services, permanent needs, etc.) and what should remain essentially mobile.

The existing system of ward design is based on the combination of fixed service points and light mobile easily-cleaned furniture. For instance, the trend in ward bed design is towards a manoeuvrable unit that can serve as a trolley giving, at the same time, the appearance of furniture the patient associates with relaxation and domestic comfort. The non-clinical ward furniture in addition to the bed is concerned with the patients' ancillary requirements, accommodation of the patients' day to day needs, adequate lighting and means for gaining temporary privacy. These units, bedside lockers, overbed tables and screening, have developed mainly along the lines recommended by British Standards BS 1765 : 1951, BS 2403 : 1954, BS 1805 : 1951.

Bedside lockers

The bedside locker holds the patient's day to day needs—clothes, toilet accessories, books, food, etc., a mixture of necessities and personal interests. The 'plant' for a long-stay patient is obviously different to that of a short-stay patient—an immobile patient's range of accessibility is different to a patient who can lean over to grasp an item from a low-level shelf. The level of a patient in a high-low bed must affect the design of the bedside locker. In the case of contagious diseases, orthopaedics and surgical cases, a high standard of hygiene to combat cross-infection will necessitate facilities for meticulous cleaning.

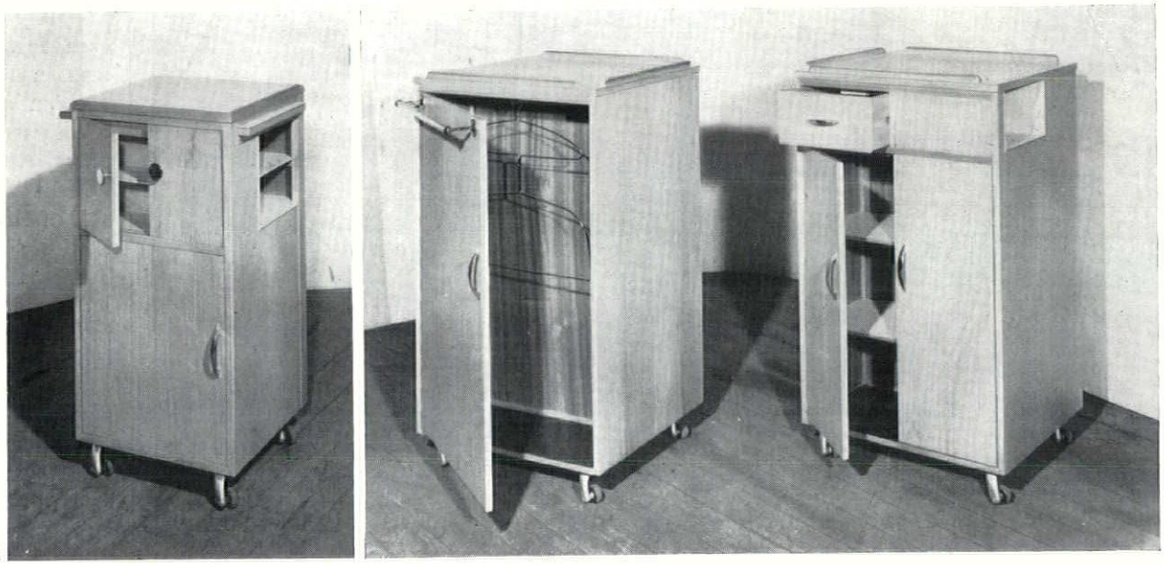
Thus criteria for the selection and the design of bedside lockers will result from a formulation of patients' and staff requirements. BS 1765 : 1951 sets out with this approach but soon slips into strict dimensions and examples that have formed the basis of the wide range of units manufactured. The method of devising this standard was based upon a criticism of existing furniture and lacks an appraisal of fundamental issues such as the accessibility of the patient. A new standard is being considered to combine a wardrobe compartment to anticipate the early ambulation trend in hospital practice. This trend results 'in less space being required for storing patients' food and more space being required for clothing.' It is recommended that an optional feature, a small wardrobe unit 5 ft. high and deep enough to take two or three garments on coat hangers, should be added to the back of the locker. It was also suggested that, amongst other items, a detachable mirror and one section of the compartment lockable should be included.

Following these recommendations, bedside lockers have been developed along three basic forms: the pedestal unit; a combination of pedestal, seat and overbed table; and a combination of pedestal and wardrobe.

The pedestal type, based on BS 1765 : 1951, includes a multitude of variations each to suit a particular hospital (in some cases bearing its name). The recommended dimensions are 34 in. to 38¼ in. with a width of 19 in. and a depth of 17 in. for adult lockers and a height of 36 in. and 14 in. width and depth for children's lockers. Dimensions are recommended for compartments for various uses, and if a sliding table is incorporated this is to be between 14 in. and 18 in.

It is recommended that clothing should be accommodated in the lower section of the locker (on the principle that the patient would be out of bed when these are needed). The upper section is devoted to compartments for food, toilet articles, books and personal effects, but this facility should be related to whether or not and what type of overbed table is used in conjunction with the locker. It is pointed out that food, toilet articles and clothing should be in ventilated compartments and that compartments with doors should be provided in preference to drawers. The latter should be considered in relation to the side from which the locker is operated. Obviously wide doors limit the 'reversibility' of a unit.

It is suggested that lockers should be mounted on castors. This facility



1

1, 2, pedestal lockers by Charles Bryant and Sons; the locker in 2 has a recessed hanging space. 3, locker with recessed towel rail by T. and R. Hollington. 4, combination locker, seat and table by Charles Bryant and Sons.

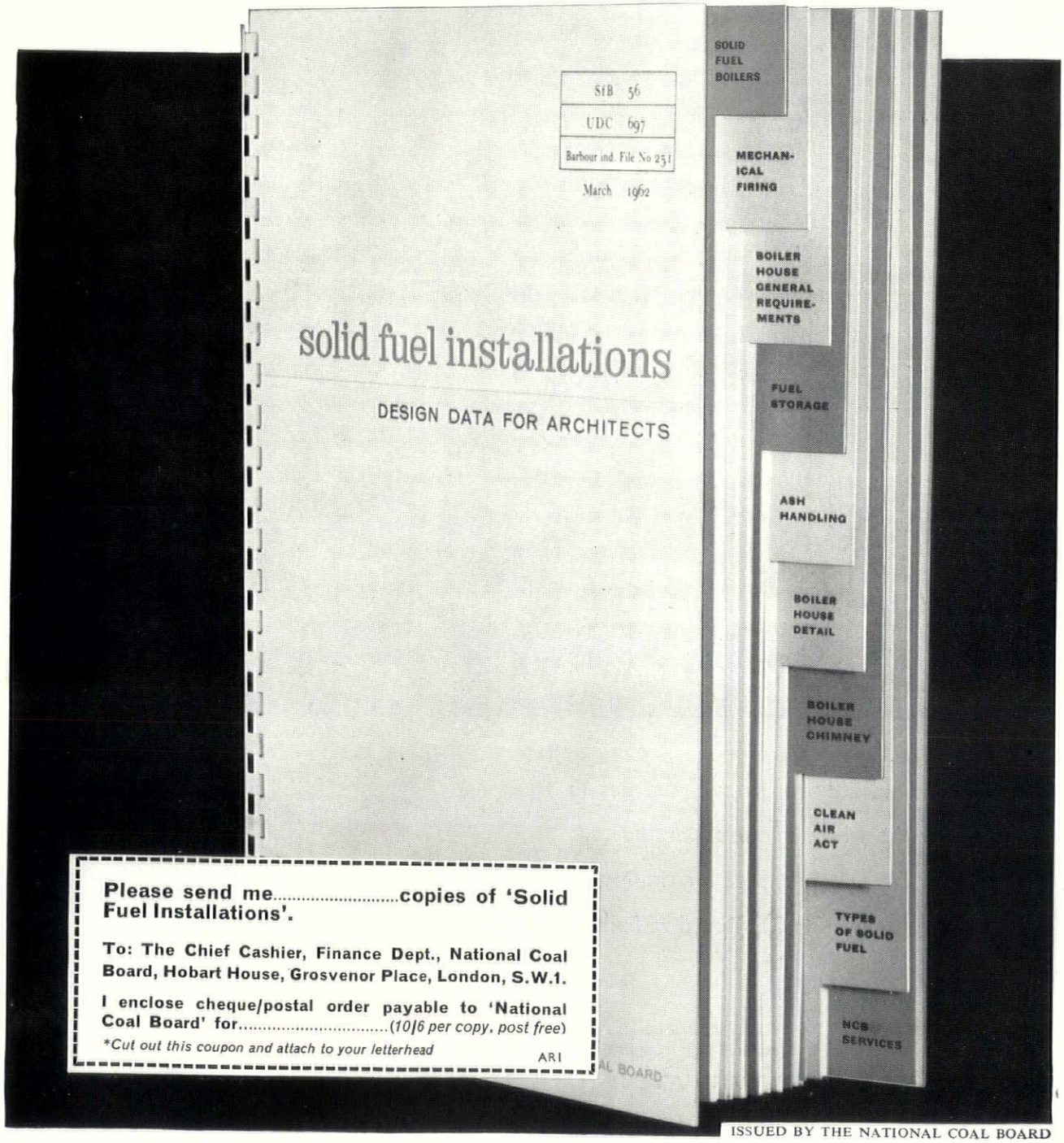


3

Vital new reference book!

Here is all the information to put the busy architect in the picture on modern automatic solid fuel equipment used in Municipal buildings, Industry, Commerce, etc. At-a-glance sections provide the help that architects will need at sketch plan stage—information available in a sensibly arranged thumb-indexed book, concisely written and profusely illustrated with photographs, diagrams and graphs.

Ask your Secretary today to send the coupon below*, attached to your letterhead, and make sure of your copy. There is a charge of 10/6d. towards the cost of this invaluable book, which has been produced in close co-operation with the architectural profession and has been awarded a Certificate of Merit in the 1962 trade and technical literature competition of the R.I.B.A. and the Building Centre.



Please send me.....copies of 'Solid Fuel Installations'.

To: The Chief Cashier, Finance Dept., National Coal Board, Hobart House, Grosvenor Place, London, S.W.1.

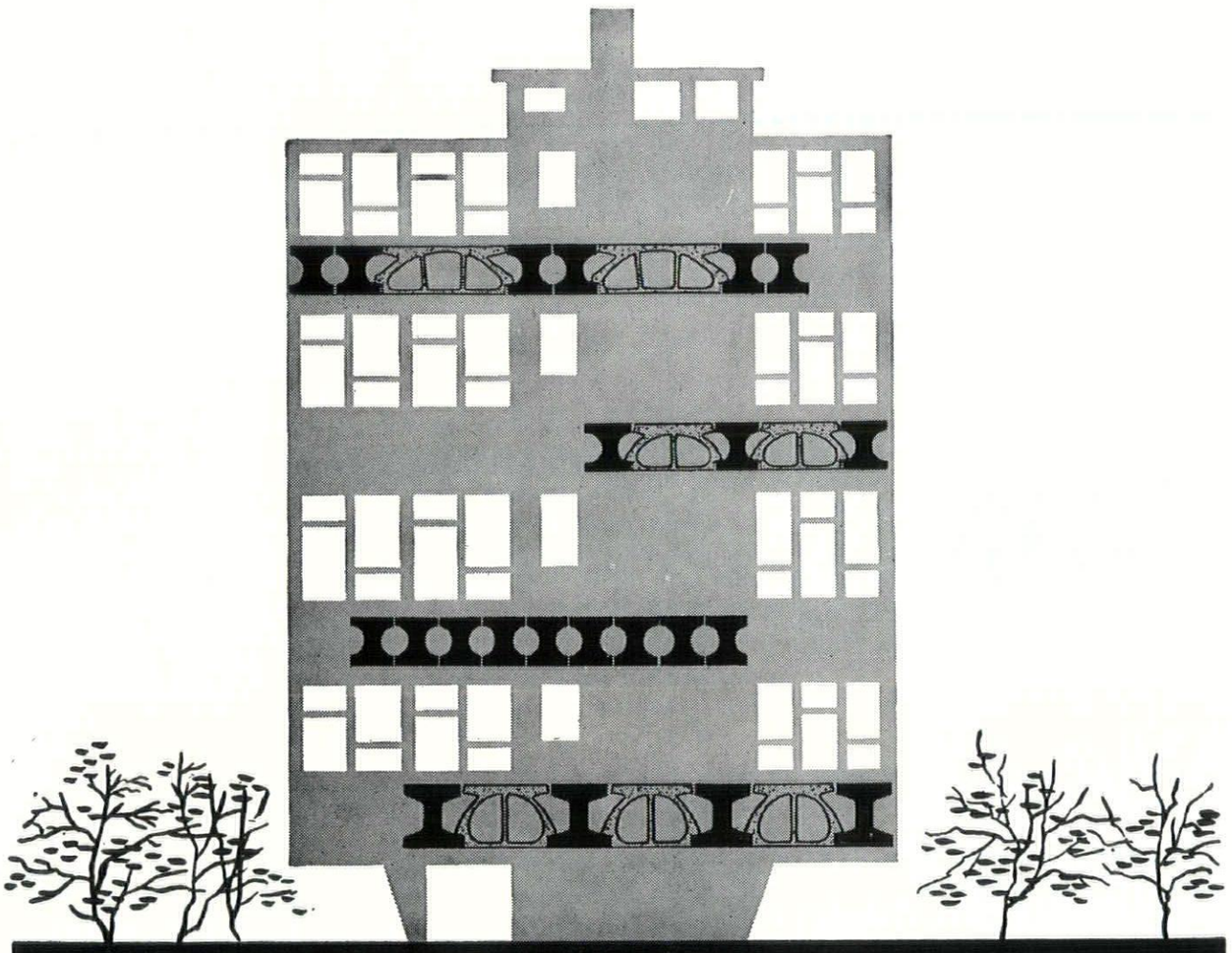
I enclose cheque/postal order payable to 'National Coal Board' for..... *(10/6 per copy, post free)*

**Cut out this coupon and attach to your letterhead*

ARI

ISSUED BY THE NATIONAL COAL BOARD

Pierhead



prestressed concrete floor construction...

Pierhead Ltd are the sub-contractors for the whole of the superstructure of the new premises for the North Thames Gas Board at Fulham

Chartered Architects and Consulting Engineers
E. R. COLLISTER AND ASSOCIATES

North
PIERHEAD LTD
Speke Boulevard
Liverpool 24
Telephone: Hunts X 1311-2-3

Midlands
PIERHEAD LTD
189 Hagley Road
Edgbaston, Birmingham
Telephone: 5307

South
PIERHEAD LTD
Faggs Road, Feltham,
Middlesex
Telephone: 6591/4

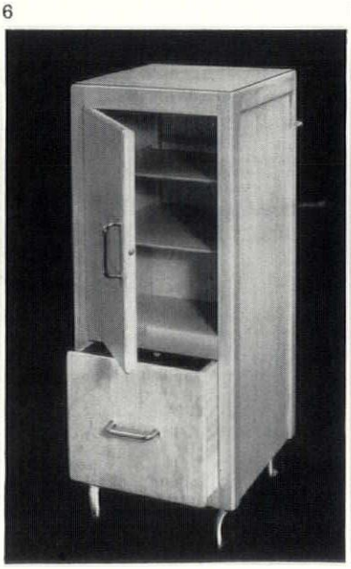
Table 1: Bedside Lockers

Manufacturer	*Materials and features*
John Bentley & Co. Ltd., 270 Broad Street, Birmingham.	Range of pedestal and combination lockers in timber construction. Model B.S.2 has slide-out shelf and compartments as recommended by British Standard. The model S.B.3 incorporates bedside seat and table and provides two open compartments at bed level.
Charles Bryant and Sons Ltd., Bryant Street, Birmingham, 18.	Range of pedestal, combination and wardrobe lockers. Some units use sliding panels or bottom hung flaps instead of a drawer unit. The latter is supported horizontally when open, to provide extra work space. Bryant also provide tubular metal skids as an alternative to castors. The wardrobe locker H.1609 provides a narrow section for hanging clothes in addition to shelves.
Calthena Limited, Leestone Road, Sharston Industrial Estate, Sharston, Manchester, 22.	Wide range of pedestal, combination and wardrobe lockers. The pedestal No. 5533 provides two simple compartments. The 'Mobileg' locker provides a 24 in. overbed table without a boot. The protecting flap is supported by an arm linked to a stabilizing leg.
W. H. Deane Limited, Woburn Green, High Wycombe, Bucks.	Wide range of pedestal, combination and wardrobe lockers. Compartments in pedestal units closed by sliding doors or bottom hung doors supported horizontally when open. Slide-out table (15 in. in 'Paddington' model), incorporated tubular steel skids as an alternative to castors. 'Runwell' range combine 5 ft. 6 in. high wardrobe and 32½ in. high locker. Pedestal ranges from £12 15s. 6d. to £21 12s. 6d. on castors. 'Runwell' A and B £18 9s. 3d.
Edward Doherty (EEDEE)	A wide range of pedestal and combination lockers obtainable from the leading surgical houses. The 'Lydney' locker for geriatric units, provides a clothes hanging space and three open compartments. A specially designed locker in tubular steel frame with timber components gives emphasis to the trolley-like manoeuvrability and open accessible space required.
G. A. Harvey & Co. (London) Limited, Villiers House, Strand, London, W.C.2.	Lockers in metal construction—pedestal and combination types. Combination model shows interesting use of cupboard door incorporating storage space for detachable book rest and mirror.
H. Hawkins & Sons, 7 Hawkesworth Road, Bromley, Kent.	Metal pedestal type bedside locker with tubular steel frame, consisting of drawer and cupboard. No. 1088 has intermediate open shelf.
T. & R. Hollington Limited, 54/42 Rivington Street, London, E.C.2.	Combination and pedestal lockers. Pedestal units include slide-out tables, bottom hung doors supported horizontally when open and sliding doors. Model 269 provides compartments and clothes hanging space.
Hoskins & Son Limited, Nepture Works, Upper Trinity Street, Birmingham, 9.	Range of pedestal and combination lockers. No. 2080 pedestal locker in metal construction. No. 8076 interesting unit with form of a 'bureau' on tubular metal frame (excludes clothes compartment).
Manor Joinery Works Limited, Barking-by-Pass, Barking, Essex.	Range of 'Trinal' pedestal type lockers in timber construction designed by Frank Mortimer. Range includes children's locker with deep drawer at low level. Price range from £13 18s. 3d. to £15 15s. for children's locker and £14 14s. to £21 15s. 9d. for other pedestal units depending upon quality.
Richard Orton Limited, 78 Junction Road, London, N.19.	Range of pedestal lockers in timber construction. Some units with slide-out shelf. Price range from £7 17s. to £17 5s. 8d.
Albert Phillips Limited, Excelsior Works, Eyre Street, Spring Hill, Birmingham, 18.	Range of metal pedestal and combination units on tubular metal frame to form skids or castors. Range of double lockers accessible from either side for two patients. Pedestal unit with slide-out seat (avoids boot protection).
Southern Brothers Ltd., Bolton, Lancs.	Pedestal and combination lockers in metal construction. Both incorporate drawers and cupboards.
J. Nesbit-Evans & Co. Ltd. Wednesbury, Staffs.	Range of metal lockers. No. 559 designed for long stay patient.
Tullis Industries Ltd. Gerrards Cross, Bucks.	Swedish manufactured lockers in metal construction. Nattbord 7301 with overbed table.
Chas. F. Thackray, Park Street, Leeds, 1.	Range of lockers in timber and metal construction.
Hospital Metalcraft Ltd., Ashton Vale Road, Bristol, 3.	'Bristol Maid' metal bedside locker stove enamelled with formica top. £9 17s. 6d. ex works.
Gibbons, St. John's Works, Wolverhampton.	Steel bedside locker on castors, stove enamelled, aluminium silver with anodized aluminium fittings.
Sadgrove & Co. Ltd., Tudor House, 194-196 Old Street, London, E.C.1.	Range of pedestal lockers in timber construction with the 'Hertford' wardrobe locker, 21½ in. × 21½ in. × 36 in. high.

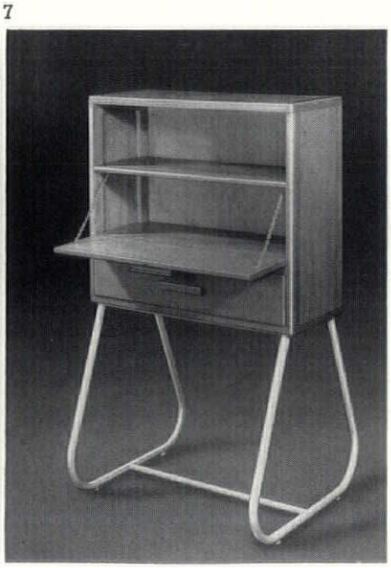
5



6



7



5, pedestal locker on skids by Charles Bryant and Sons. 6, 'Trinal' children's locker by Manor Joinery Works. 7, locker by Hoskins and Son.

has been taken up by one hospital who recommended that the unit should be easily rotatable. The BS also points out that the locker should be easily cleaned and disinfected. The examples follow these recommendations, giving typical lockers for use without overbed tables, with overbed table, with special overbed table having compartments, typical locker for infectious diseases with simple line to facilitate disinfection and typical children's lockers for short-stay and long-stay.

Criticisms of the units are :

1. That the patient puts the wrong items in compartments. The use of the compartments should be more obvious.

2. Sliding drawers and table tops are difficult to clean out. The units should be designed to be wiped down with disinfectant and thus clean lines, coved corners and impervious surfaces are important.

3. The overall effect of the ward should be considered (for example recessed towel rails give a better

impression than the projecting rail).

The combination locker with seat and overbed table is a bulky piece of furniture. The over-turning effect of the flap-up overbed table is counteracted by a boot-compartment that also forms a seat. Although this seat is a useful item for visitors or staff (dispensing with chairs) it is not available when the overbed table is in use. There is also criticism of some methods of supporting the flap-up table. This obviously must be sturdy and reliable. If the table is used over the bed, this type of locker can only be used with a high-level bed.

The combination of locker and wardrobe unit is a departure from the idea of light movable furniture. The extra height incorporated in some cases could well be used to provide accessible shelves. Furthermore there must be an optimum size in furniture relative to the problems of mobility, storage and cleaning, before 'building-in' such accommodation is more satisfactory.

Apart from these main trends, there have been few suggestions to improve the form of the locker. A 'bedside bureau' by Hoskins & Son runs alongside the bed and gives consideration to the accessibility of the patient (i.e. the proportion of the unit that lies adjacent to the bed and projects above the level of the mattress). Stanley Cox Limited is developing the idea of incorporating electrical services into the locker, providing an overbed light, nurse call, point for inspection lamp, radio control, etc. This brings these facilities away from the wall and into a more accessible position and would mean the one wiring connection with a skirting duct. Edward Doherty (EEDEE) produced a unit specially designed for a particular hospital which took the form of a trolley-bureau, but the idea was not taken up.

The BS also is concerned with materials of construction for both timber and metal lockers. Apart from the sturdiness required for ward furniture, the materials and details should be developed for a specific method of cleaning. There is a trend towards simplifying compartments and covering surfaces with melamine plastics. Inaccessible crevices should obviously be avoided.

Overbed tables

There are two main trends in tables suitable for use over a ward bed—the bridge type that is supported either side of the bed, and the cantilever type that is supported on one side only.

BS 2403 : 1954 establishes the simple form of bridge type specifying basic requirements relating to materials, dimensions and construction of tubular metal frame overbed tables. It recommends diameter framework and a table top of 30 in., 36 in. or 42 in. by 14 in. or 16 in. with a $\frac{3}{4}$ in. space between the underside of the table top and the supporting tubular framework. The BS emphasizes the need for hygienic detailing and aims to relate dimensions to recommendations on hospital beds. With the advent of the high-low beds, adjustability of height is important. This is a facility that has been developed for geriatric cases to make the table suitable for use with both beds and chairs.

The cantilever overbed table requires a sturdy frame to withstand the overturning effect. These are particularly suitable when there are attachments and contraptions (e.g. orthopaedics) around the bed. The cantilever type would have to be particularly sturdy if used as a resting table for heart cases. In most examples the top is constructed of timber and such facilities as tilting to form a book-rest, compartments for toilet articles, flap-up mirror, are provided. A system of suspending a book over a patient (so that a patient can read while lying flat) is also available.

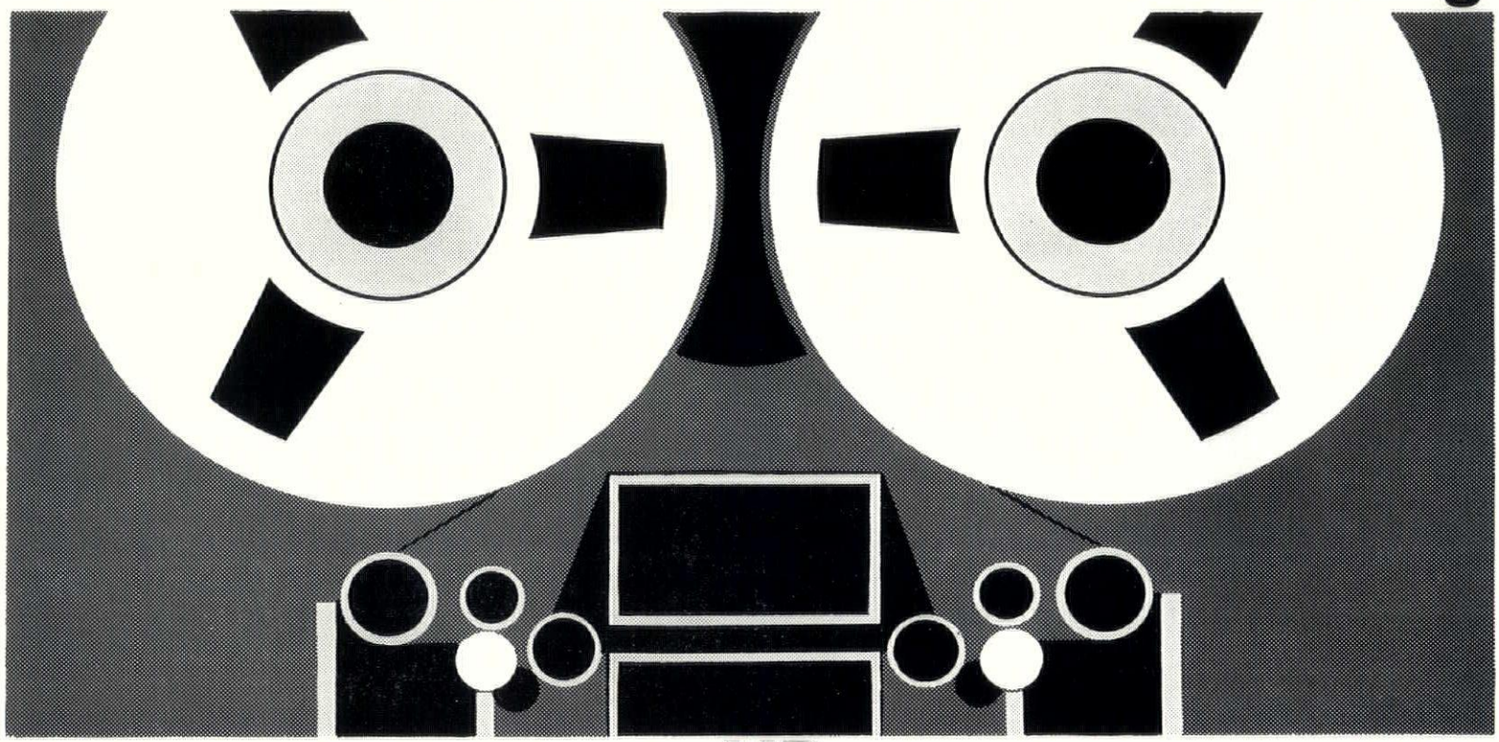
The majority of manufacturers produce the British Standard tubular steel bridge type overbed table. This is a simple construction consisting of frame and table top. The frames sit on either castors, stub feet or a skid form. There are several examples of adjustable height bridge type units. Hoskins & Sewell Model Y 1841 S will rise 6 in. from 3 ft. 2 in. and the Model Y 3247 will extend 12 in. from 3 ft. 5 in. The Phillips overbed table No. 21483 is adjustable from 39 in. to 45 in. in height and the Eedee 'Hadleigh' unit extends from 33 in. to 45 in. The Barford models A.1 and A.3 are also adjustable in height. The Hoskins & Son model 2063,

[continued on page 142

Table 2: Overbed Tables

Manufacturer	*Construction and size*	*Price*
Metalliform Limited, Hoyland Common, Nr. Barnsley	Stove enamelled, tubular steel bridge type. Formica top with raised hardwood edges on three sides.	M.T.F.201 Continuous Frame on 2 Horna castors—£6 18s. 9d. or 4 Horna non-clog castors—£8 12s. 6d. Tilting top £1 2s. 6d. extra.
G. McLoughlin & Co. Ltd., Victoria Works, Oldham Road, Rochdale, Lancs.	Stove enamelled, tubular steel bridge type. Formica top with raised hardwood edges on three sides.	2 Horna castors and rubber stump feet—£5 5s. 6d.
John Bentley & Co. Ltd., 270 Broad Street, Birmingham, 1.	Stove enamelled tubular steel bridge type with 2 ft. 6 in. × 1 ft. 3 in. top in Formica or polished wood. Height 39 in.	Fitted with four castors—£5 18s. 6d.
Hoskins & Sewell, Midland Works, Bordesley, Birmingham, 12.	Model Y 1841 S bridge type. 1 in. tubular legs and cross rails, $\frac{7}{8}$ in. telescopic extension. Top size 24 in. × 12 in. or 30 in. × 15 in. Height 3 ft. 2 in. to 3 ft. 8 in. Model Y 3247, bridge type similar to Y 1841 S but on castors and extendable by approximately 12 in. Height 3 ft. 5 in. Model Y 3285. Cantilever type 1$\frac{3}{4}$ in. post with 1$\frac{1}{4}$ in. tube. Top plastic covered 30 in. × 15 in. Adjustable 12 in. centre portion for reading. Height adjustable from 37$\frac{3}{4}$ in. to 46 in. Model O 1218. 27 in. × 12$\frac{1}{2}$ in. top with tubular steel frame on castors. Model Y 3265 24 in. × 12 in. with continuous tubular steel frame. Model Y 30418 30 in. × 15 in. top with tubular steel frame on castors and stub feet. All bridge type, no height adjustment.	£7 4s. 3d. and £7 17s. 9d. £7 4s. 4d. and £7 19s. 3d. £12 15s. £5 19s. 6d. £4 14s. and £5 8s. 10d. £5 8s. 7d. and £6 3s. 6d.
Evered & Co. Ltd., Surrey Works, Smethwick, 40. (Phillips Overbed Tables.)	Range of bridge type tubular welded steel frame units with inset metal tops or Formica. Height non-adjustable but to order. No. 21455. Bridge type continuous tubular steel frame. Formica top set in chromium-plated fittings—easily lifted out for cleaning. Top 24 in. × 18 in. Non-adjustable. Height to order. No. 21483. Bridge type—welded tubular steel frame. Formica top 30 in. × 15 in. or 24 in. × 18 in. Fixed or tilting top. Adjustable height 39 in. to 45 in. 4 castors.	On enquiry.
Calthena Limited, Leestone Road, Sharston Industrial Estate, Manchester, 22.	Cantilever type in stove enamelled welded tubular steel. Height adjustable by box construction pillar from 29$\frac{1}{2}$ in. to 44$\frac{1}{2}$ in. Formica top incorporates flap with mirror and a washable plastic multi-compartment toilet tray. Flap also acts as a book rest when in forward position.	
Pel Limited, Oldbury, Birmingham.	Bridge type continuous stove enamelled tubular steel frame. Top 27 in. × 14 in. Height 38$\frac{1}{4}$ in. Width 41 in.	
S. Barford & Son Ltd., Tottenham, N.17.	Model A.1. Bridge type stove enamelled or chromium plated welded tubular steel construction. Adjustable height. 4 castors. Full length Warerite top. Model A.2. Continuous frame model on alloy domes. Alloy domes on base to prevent wear on tubes. Model A.3. Adjustable height and adjustable angle hinged top. 4 castors. Model A.4. Frame of steel tube with 2 castors and 2 rubber feet. Model A.5. With 4 castors. Non-adjustable.	
Carters (J. & C.) Limited, 65 Wigmore Street, London, W.1.	'Paragon' table. Cantilever type in tubular steel construction. Height adjustable from 27 in. to 42 in. Angle of top adjustable. No castors—domed feet. Top 24 in. × 18 in. in mahogany veneer. Fawn polychromatic enamel stand.	£6 12s.
Eedee furniture marketed by: Blackwell Young & Co. Ltd., 57/58 Broad Street Avenue, Blomfield Street, London, E.C.2.	The 'Jubilette.' Cantilever type on continuous tubular steel frame finished in polychromatic fawn enamel. Adjustable in height and tilt. Top 19$\frac{1}{2}$ in. × 14$\frac{1}{2}$ in., veneered mahogany plywood with sides of natural coloured beech. Height 25 in. to 43 in. Also 'Jubilee' with top 24 in. × 18 in. Cantilever type. The 'Tiverton.' tubular steel frame. Adjustable height. Top veneered in oak or Formica. Finished in polished chrome plate or enamelled polychromatic fawn. Top 26$\frac{1}{2}$ in. × 15$\frac{1}{2}$ in. The 'Excelsior' cantilever type constructed for heavy duty. Top 36 in. × 18 in. Adjustable height. Mounted on 4 castors. The 'Peter Pan' cantilever type metal finished in polychromatic fawn enamel. Top 23$\frac{1}{2}$ in. × 14$\frac{1}{2}$ in. Adjustable height and tilt. Books and papers held by chromium plated supports. Height 28 in. to 40 in. Mounted on 2 castors and 2 stump feet. The 'Paragon' cantilever type. Metal finished polychromatic fawn enamel or chrome plated. Top 24 in. × 18 in. Adjustable tilt and chromium plate racks to hold papers or books. Height 28 in. to 40 in. The 'Dignity' bridge type. Finished chromium plated or silver enamel. Hardwood top polished or overlaid with Formica. Height 39 in. Unit set on 4 castors. The 'Tenbury' bridge type. Continuous tubular metal frame. Finished in chromium plate or stove enamelled silver or white. Hardwood top polished or inlaid with lino or plastic. Height 40 in. The 'Hadleigh' bridge type in tubular steel. Finished in chromium plate or stove enamelled silver or white. Hardwood top polished or inlaid with lino or plastic. Height adjustable 33 in. to 45 in. Mounted on 2 castors and 2 stumps.	
Hoskins & Son Limited, Neptune Works, Upper Trinity Street, Birmingham, 9.	Bridge type stove enamelled tubular steel construction with plastic faced tops. Model No. 2032. 2 castors, 2 stump feet. Model No. 2113A. Continuous frame. Model No. 2043. Adjustable height 31 in. to 43 in. 2 castors, 2 stump feet. Model No. 2063. Adjustable height 31 in. to 43 in. Height adjustment by winding handle for ease of patient On castors or stump feet. *Cantilever type.* Model No. 2263. Adjustable height 31 in. to 43 in. Mounted on castors. Top can include small vanity box with mirror.	

COMPUTERS are exacting



ABOUT AIR

precision air by

HADEN

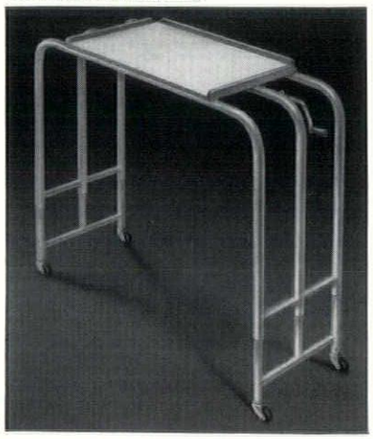
Heating,
Air Conditioning,
Piping and
Sanitary Engineers.

Whether it's being told what to think or remembering what it's told, a modern computer is often a complex and delicate installation that needs clean air of specific temperature and humidity if it is to do its work efficiently. Many of the components are temperature sensitive or change their physical characteristics with variation in relative humidity. The computer itself gives off quite a lot of heat, adding to the problem of air conditioning.

This is where Haden come in with 'precision air'. Installations are air conditioned to precise limits of Temperature, Humidity and Filtration. It is one of the many examples of specialist installations that Haden are tackling in many varied Industries.

Just how precise is 'Precision Air'? It depends on what you need, and the Haden technical people can give you advice on this too. But if you need, say, Temperature maintained to an accuracy of 0.1°C, Humidity varying only 5%, and Filtration at better than 98% of particles 5 microns in diameter, if you need air with this order of precision, Haden have supplied it, and can do it for you.

G. N. HADEN & SONS LIMITED, 7/12 TAVISTOCK SQUARE, LONDON, W.C.1. *Branches throughout the United Kingdom and Overseas.* TW8



8

continued from page 142]

which is adjustable from 31 in. to 43 in., is manipulated by a winding handle which is accessible to the patient.

In the case of the Eedee units, adjustment extends from 28 in. to 40 in. to suit both ward beds and chairs (as for geriatric cases).

There is more variety in the appearance of the cantilever type overbed tables and the majority are adjustable in height. Cantilever tables consist of a sturdy column with cantilever arm to support the table and a projecting base to counteract the overturning effect. The Hoskins & Son table is of relatively light construction and gains strength by extra bracing from the base to the column. The Eedee unit combines height adjustment with tilting facilities. The height adjustment of the Calthena overbed table is controlled by means of a winding handle accessible to the patient.

The top section of both types of overbed table ranges from a plain surface to tilting sections, sections with drawers and sections with accommodation for toilet articles.

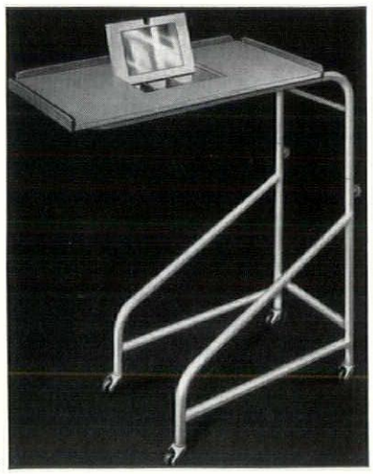
Methods of screening patients

This is a most important consideration. The network of suspended rails that is apparent in large wards arises from the need for ventilation over cubicle curtains and established ceiling heights. It is encouraging to see in small ward design (in particular the proposed design for St. Thomas's, where the corridor ceiling height is the same level as the cubicle rails) that cubicle rails become less conspicuous. In some American hospitals the ceiling height of small wards permits the curtain track to be built into the ceiling and ventilation is achieved by means of a strip of nylon mesh along the top of the curtain fabric.

BS 1805 : 1951 is concerned with the problem of mobile screens and curtain cubicles. It recommends the use of mobile screens where permanent or semi-permanent methods of screening are found to be unsuitable. The Standard screens consist of a range of 2 ft. to 5 ft. folds of 2 ft. width and 5 ft. 6 in. to 6 ft. high. The screens are mounted on castors and the fabric attachment should

[continued on page 144

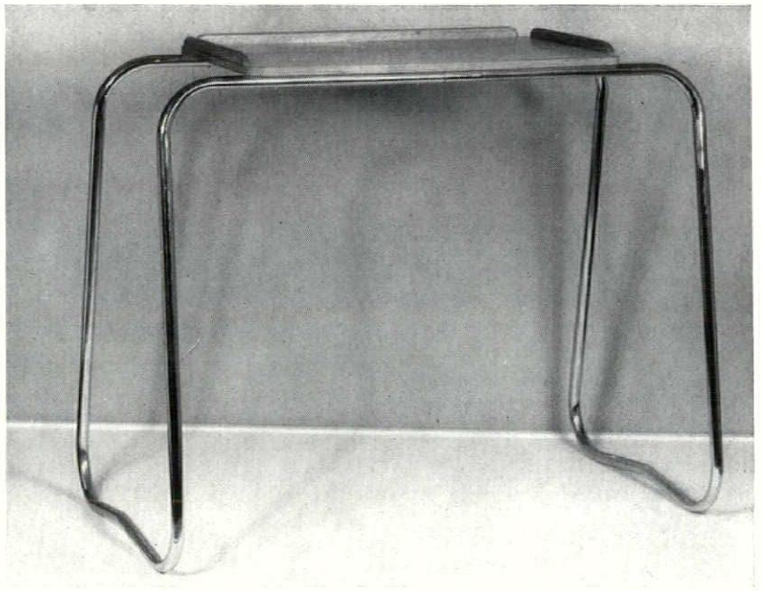
8, 9, overbed tables by Hoskins and Son. 10, adjustable overbed table by E. Doherty. 11, standard bridge overbed table by Apex Steel Furniture Co.



9



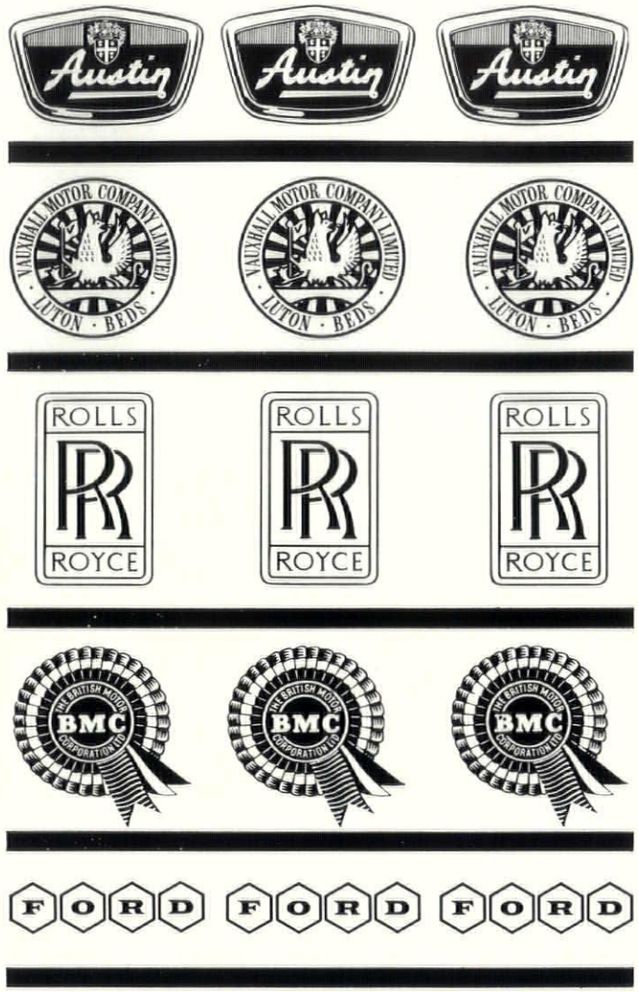
10



11

Table 2: continued

Manufacturer	*Construction and size*	*Price*
Shaw Manufacturial Co. Ltd., 80–86 Ossery Road, London, S.E.1.	Model 121 and 121/A. Bridge type framed in stove enamelled or chromium plated tube. Height 38 in. Width 42 in. Formica or Warerite tray 30 in. × 15 in. Shown with 2 stump feet and 2 castors.	Model 121: 4 rubber feet—£3 16s. Chromium plated—£5 18s. 4 castors—£4 12s. Chromium plated—£6 14s. Model 121/A: £3 18s. Chromium plated—£6. 2 castors, 2 rubber feet—£5. Chromium plated—£7 2s. 2 castors, 2 rubber feet—£5 3s. Chromium plated—£7 18s.
	Model 121/B. Bridge type similar to 121 but with adjustable book-rest 10 in. wide in centre section of tray. Model 137. Bridge type, stove enamelled or chromium plated. Adjustable overbed table. Height adjustment 30 in. to 40 in. Width 42 in. Tray 30 in. × 15 in. Shown with 4 castors.	Model 137: £5 3s. to £8 6s.
Charles Bryant & Sons Ltd., Bryant Street, Birmingham, 18.	Model No. 1590. Bridge type in stainless steel. Tray in Formica 30 in. × 16 in. Height 39 in. Model No. 1592 as 1590 but with tilting top.	
Surgicon Limited, Tower Works, Brighouse, Yorks.	Bridge type tubular steel overbed table, mounted on 4 castors, Formica top. Sizes 33 in. × 14 in. × ¾ in. top.	£4 19s. 3d.–£6 3s.
Southern Brothers Limited, 82 Georges Road, Bolton, Lancs.	Bridge type tubular steel overbed table—continuous frame or mounted on castors. Formica top 33 in. × 14 in. × ¾ in. Clearance 37 in. height × 43 in. wide.	
Gallops & Rye Arc Welding Company, Rock-a-nore, Hastings.	Bridge type in tubular steel mounted on 4 castors. Top 27 in. × 14 in. Height to suit.	
Sadgrove & Co. Ltd., Tudor House, 194–196 Old Street, London, E.C.1.	Bridge type in tubular steel on castors or skids.	£9 7s. 6d. Continuous frame £4 13s. 6d. Standard.
J. Nesbit Evans & Co. Ltd., Wednesbury, Staffs.	Bridge type with adjustable height from 36 in. to 44 in. on castors.	
Dual Furniture, Dare-Inglis Products Ltd., Du-al House, Byron Road, Harrow, Middlesex.	R. J. 91 and O.B. 177 tubular bridge type tables. Top size 30 in. × 15 in.	



Taking the brake off store traffic. Immediate accessibility . . . fast handling . . . free flow . . . maximum space saving . . . these are the essentials of modern storage efficiency, and they have been achieved in some of the car industry's greatest and most famous factories by the installation of the Gascoigne Kee Klamp Storage System. Because the Kee Klamp System is completely flexible, and because of the specialised knowledge that goes with it–knowledge gained throughout the field of industry–the storage, selection and handling of virtually any materials can be similarly streamlined. From a searching study of your storage, and store traffic requirements, our storage engineers will evolve for you a Gascoigne Kee Klamp installation that will make a major contribution to overall efficiency. May we discuss this with you in detail?
GEO. H. GASCOIGNE CO. LTD., 579 Gascoigne House, Reading, Berks.
Telephone: Reading 54417 (3 lines). TL.3

continued from page 142]

permit easy removal for cleaning. A representative range of companies concerned with movable screening are :

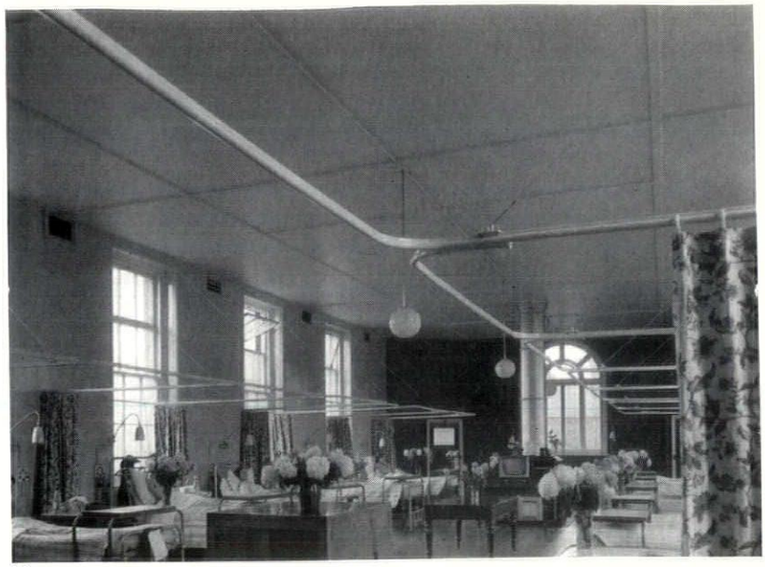
Southern Brothers Limited
Surgicon Limited
Hoskins & Sewell Limited
Blackwell Young & Co.
Metalliform Limited
Albert Phillips Limited
Dare-Inglis Products Limited

The units range from approximately £5 for a 3-fold to £9 for a 5-fold. Hoskins & Sewell manufacture a 4-fold unit with 18 g sheet aluminium panels which costs £17 9s. 3d. Blackwell Young & Co. market a screen in timber construction. A continuous hinge between folds or continuous curtain should be selected where it is necessary to obviate draughts or to give maximum privacy.

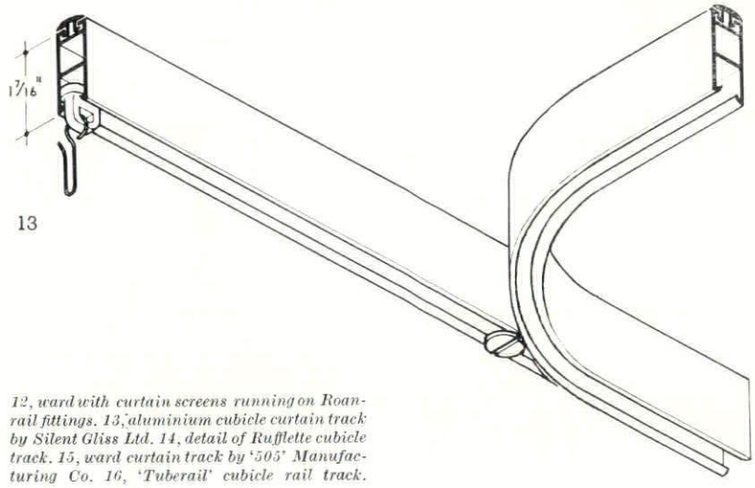
The construction of curtain cubicles in this country has been developed along two main patterns, one in which the curtain track and supporting rail are integrated and one in which they are separate features. The first, as in the case of Silent Gliss gives a profile that is easily cleaned. The advantage of the second, as in the case of that produced by 505 Manufacturing Co., is that a section of the curtain track can be removed with the curtains instead of unhooking individual runners thus saving on time. In most cases nylon runners have been adopted to give noiseless operation. A simple method of attaching and detaching curtains should be selected as they are frequently removed for cleaning. Curtain runs should be designed to give standard lengths and heights to make them interchangeable. Either a track can be suspended from the ceiling or, in the case of high ceilings, they can be suspended by angled ties from the wall. The selection of fabrics is one that has been given considerable attention. Any material that increases fluff is not acceptable and there must be resistance to the collection and release of dust (with bacteria) in clouds when the curtain is moved. Inflammability, ease of hanging and washing, permanence of colour, sufficient weight not to be effected by draughts and economy are important factors. There should be no electrostatic risk.

Natural fibre fabrics have been used to a great extent and special finishes are being developed to resist dirt or dust. Plastics have been developed to limit electrostatic hazards and to overcome previous

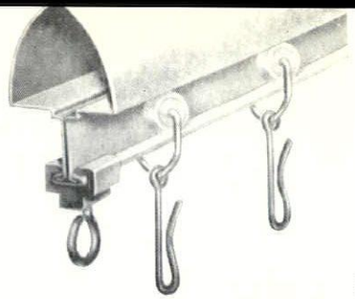
[continued on page 146



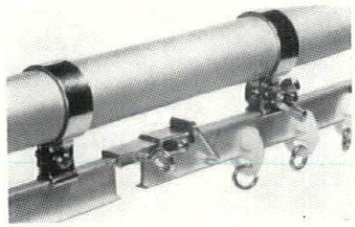
12



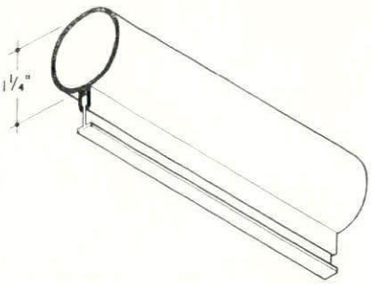
13



14



15



16

12, ward with curtain screens running on Roanrail fittings. 13, aluminium cubicle curtain track by Silent Gliss Ltd. 14, detail of Rufflette cubicle track. 15, ward curtain track by '505' Manufacturing Co. 16, 'Tuberail' cubicle rail track.

Table 3: Cubicle Curtain Rails

Manufacturer	*Construction and size*	*Price*
505 Manufacturing Co. Ltd., St. Paul's Square, Birmingham, 5.	1 in. × 14 g. anodized aluminium tube with anodized aluminium curtain rail suspended beneath. Silent nylon gliders. Can be suspended direct from the ceiling by a cantilever tube or steel covered cable from the wall. A section of the curtain track can be removed with the curtain. This is particularly designed for use with Terylene or other drip-dry materials. Using this method the curtains are rapidly and easily taken down each week, given a rinse in a suitable bactericide and allowed to drip-dry. This system permits overlaps in curtain assuring for greater privacy.	Approximately £6 per bed space.
'Rufflette,' Thos. French & Sons Ltd., Chester Road, Manchester, 15.	Overhead suspension. Track in pressed steel, ivory stove enamelled. Runner wheels of moulded nylon, and carry extra a stirrup and ring or stirrup and hook. Track and suspension rail integrated.	Track section, 4s. 8d. per foot. Nylon wheeled runner with hook 50s. 6d. gross.
ICI	Curtain tracks around hospital beds only. This system of nylon track and runners would require a suspension rail in addition.	
Druce & Co. Ltd., Baker Street, London, W.1. 'Tuberail.'	System consists of a structural rail with track integrated along underside with a plastic insert. Runners are of either fibre or nylon. System supported by suspension wires (at an angle from the wall) or suspension rods from the ceiling. Curtain hanging by button-hole method or pocket heading tape method.	
Hunter & Hyland Limited, Ingrave Street, London, S.W.11. 'Huntland.'	Tubular rail with track attached immediately below. Rail can be suspended from ceiling or walls. Constructed in 1 in. 16 WG. steel tube stove enamelled. Finished in white, cream, brown bronze, aluminium bronze or chromium plated. Light or heavy anodized aluminium Huntland rail (for curtain runners) attached.	
Roanoid Ltd., Renfrew Road, Paisley.	All-plastic curtain system, suspended from wall or ceiling. Rail formed by a finned extrusion over a drawn steel tube, overall section under 1 in. diameter, plastics selected from low or anti-static material. Fabricated in the factory. Curtain is attached to ring type runners.	
Silent Gliss, 29-30 Windmill Street, London, W.1.	Constructed of anodized aluminium with nylon accessories. System can be supported by wall or ceiling suspension. Enamel siliconized for lubrication. Gliders of white nylon run inside inserted channel.	From 2s. 6d. per foot complete with accessories.
J. Avery & Co. Ltd., 81 Great Portland Street, London, W.1.	Tubular rail 1¼ in. diameter with 'I' section track immediately below. System can be suspended from ceiling.	
Tidmarsh & Sons, 1 Laycock Street, London, N.1.	As Avery.	
Resistoid Limited, Back Manor Street, Fountain Street, Bury, Lancs. 'Cresistoid.'	Plastic extruded on to ¾ in. diameter steel tube. Plastic runners that operate along channels on side of tube.	Approximately £6 10s.-£8 per bed plus fixing charge of £2 5s.-£3.

NEWS FROM HULL



Victorian house converted into luxury flats

"Ideal-Standard" equipment installed

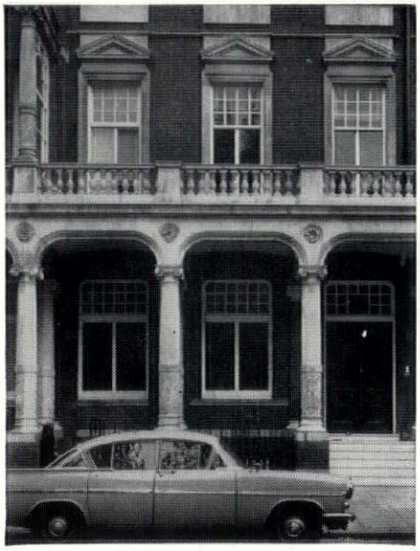
ARCHITECTS: *Messrs. Humphrey & Lipski*

ARCHITECT IN CHARGE: *D. A. Moody, A.R.I.B.A.*

BUILDING CONTRACTOR: *G. Holland & Sons Ltd.*

A dilapidated Victorian terrace house overlooking Cadogan Square together with its adjoining mews stable has been converted into two luxury flats, two maisonettes and a mews cottage, together with basement accommodation for a porter.

Nothing has been spared to make this new accommodation as luxurious and impressive as possible. The emphasis has been on high quality fittings throughout—full central heating, a marbled entrance hall, with a specially planned main entrance to give increased spacial effect and a bathroom with each bedroom. In these bathrooms "Ideal-Standard" equipment has been used throughout. The baths are the "Master Classic" modern in design with an integral apron front, coated with high quality porcelain enamel. The wash basin, bidet and water closet are from the "Kingston" suite. The "Kingston" pieces are possibly the best examples in this country of modern bathroom equipment design. They have gracefully simple lines, smooth rounded contours and an individual elegance. Like other "Ideal-Standard" equipment they are manufactured from vitreous china, the toughest most hygienic and durable material available. It is impossible for germs to lodge and breed in "Ideal-Standard" vitreous china ware which also has a high resistance to harsh treatment and fracture. The inhabitants in the new flats and maisonettes in Cadogan Square can be sure of one thing—their bathrooms are as practical as they are luxurious.



The exterior of the Cadogan Square flats

"Ideal-Standard" "Master Classic" and "Kingston" are Trade Marks of Ideal-Standard Limited.

573

continued from page 144]

'brittle' effect. The recent development of a material made of 100 per cent woven glass fibre has stimulated interest.

The material does not appear to collect dirt as easily as fabric curtains and immersion into disinfectant and hanging to drip-dry is sufficient for cleaning. It is recommended that cubicle curtains should be a neutral pastel shade, 'not to disturb the seriously ill and to avoid noticeable fading through cleaning.' It is also suggested that curtains should hang 6 in. from the floor and an allowance of 20 per cent should be made for fullness.

THE INDUSTRY

Combined heating and lighting system

Copperad Limited and Benjamin Electric Limited have combined to produce a unified system of heating and lighting for industrial uses, 1.

The unit consists of twin runs of radiant strip heating surface between which is mounted electrical trunking. This trunking can be arranged to carry continuous or spaced light fittings.

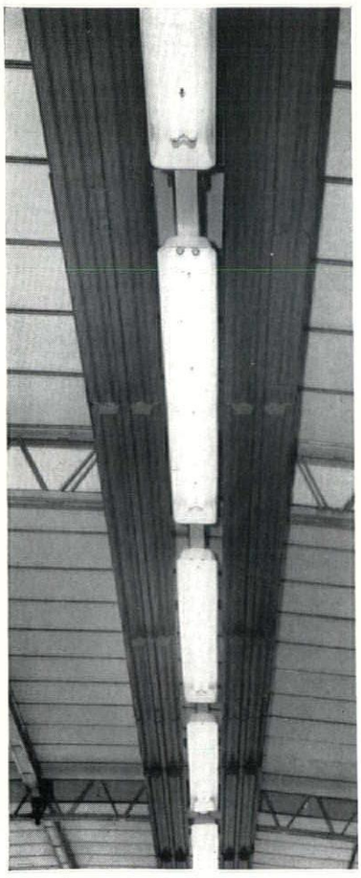
The heating strips are designed for operation on steam or hot water and a wide range of heat outputs can be achieved according to the heating medium used. The variation can be from 372 B.t.u./hr. per foot run when run on low temperature hot water up to 1,416 B.t.u. on steam at 150 p.s.i.g.

The lighting too is capable of wide variation by suitable choice of fittings and spacing up to a maximum of 1,900 lumens per foot run. If desired, incandescent lamp fittings can be used in place of or in addition to fluorescent ones. The trunking carrying the fittings also has spare channels available for other wiring such as internal telephones, loudspeakers, clock systems and light industrial electrical services. Provision can also be made for the support of standard busbar trunking if required. The support brackets can in addition be used to provide support and a certain degree of concealment for other piped services.

Differences in thermal expansion between the heating surfaces and the trunking are allowed for by a roller plate suspension system. This allows the use of continuous runs of up to 400 ft. without the use of expansion joints in the pipework. Units are available in standard lengths of 20 ft., 10 ft. and 5 ft.

The manufacturers claim that important economies can be achieved since one set of supports services both heating and lighting services and they feel that the neat appearance and technical advantages will appeal to all concerned with industrial building.

*Copperad Limited, Colnbrook, Bucks. Benjamin Electric Limited, Tottenham, London, N.*17.



1

Air conditioning without refrigeration

More and more in this country building owners, particularly in the larger buildings, are becoming conscious of the benefits to be gained by the adoption of air conditioning even for our so-called temperate climate. The true nature of comfort conditions on which any system must be based is not always easy to define, but even these wide subjective reactions are capable of some definition in broad terms.

In cases where dust and dirt exclusion are imperative, air conditioning must be adopted. This was the problem posed by CAV Limited to their architects, Clifford Tee and Gale, and their heating engineers, G. N. Haden and Sons. The technical director of CAV Limited suggested a possible solution in the light of his own experience in providing ventilating facilities for armoured vehicles in hot climates. This was based upon the sensation of coolness achieved by speeding up the flow of air. The idea was taken up and, after much experiment and research, was incorporated in the design of the new laboratory at Acton for CAV Limited.

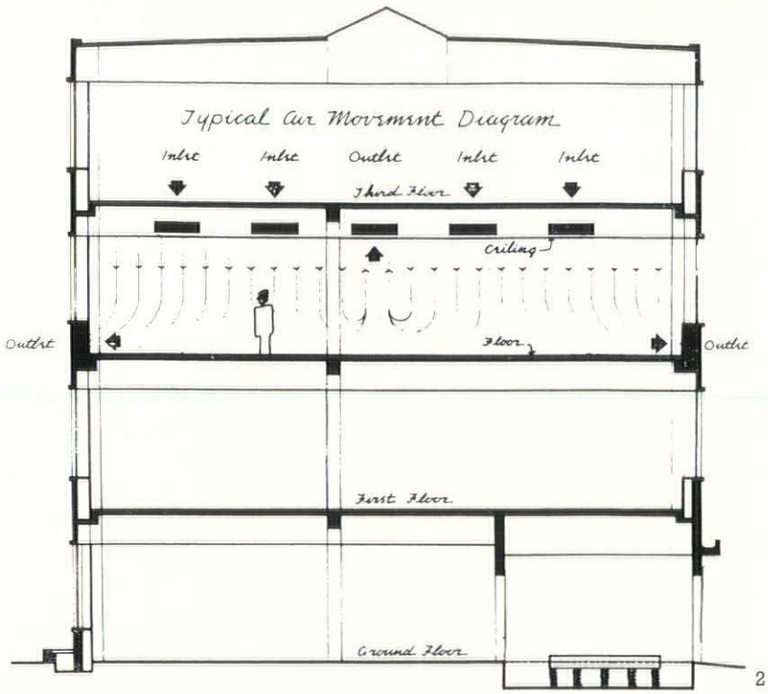
The general floor design required complete flexibility of partition layout with the added problem of achieving this air conditioning within any possible layout. The final answer was provided by pairs of 6 in. wide ducts running across the building, each pair at 6 ft. centres. These ducts were made flush with the Frenger ceiling and carried flush light fittings. They were perforated by $\frac{3}{4}$ in. diameter holes at 2 ft. centres and air was introduced and extracted by these. In addition perforated skirtings were provided in the melamine faced inner skin walls to permit the use of the space between inner and outer skins as additional extracts. The entire building is heated by this air system with fabric losses made up from the radiant Frenger ceiling.

In the summer months when no heating is required, a cooling effect is achieved by the speeding up of the air flow to give a sensation of coolness at ambient temperature.

The whole system is governed by zoned thermostats linked to an electronic control unit. The incoming air is washed, heated if necessary, and filtered by an electrostatic filter.

It has been proved by actual experience that this unusual system works most efficiently to meet all possible variations of outside weather conditions from a heat wave to a blizzard.

G. N. Haden and Sons Limited, 7-12 *Tavistock Square, London, W.C.*1.



2

2, diagram showing air movement in the new 'Haden jetted air conditioning' system at the Research and Engineering Laboratories of CAV Limited at Acton. 3, laboratory area showing Frenger ceiling, ducts and light fittings.



3

Room heating

The summer period is the time when appliance manufacturers get their new season's products under way to be ready for the autumn and early-winter rush. Announcements have been appearing for several months now of the new season's appliances ranging from the technical advance to the latest sales gimmick. Two products introduced last spring illustrate very clearly these two extremes.

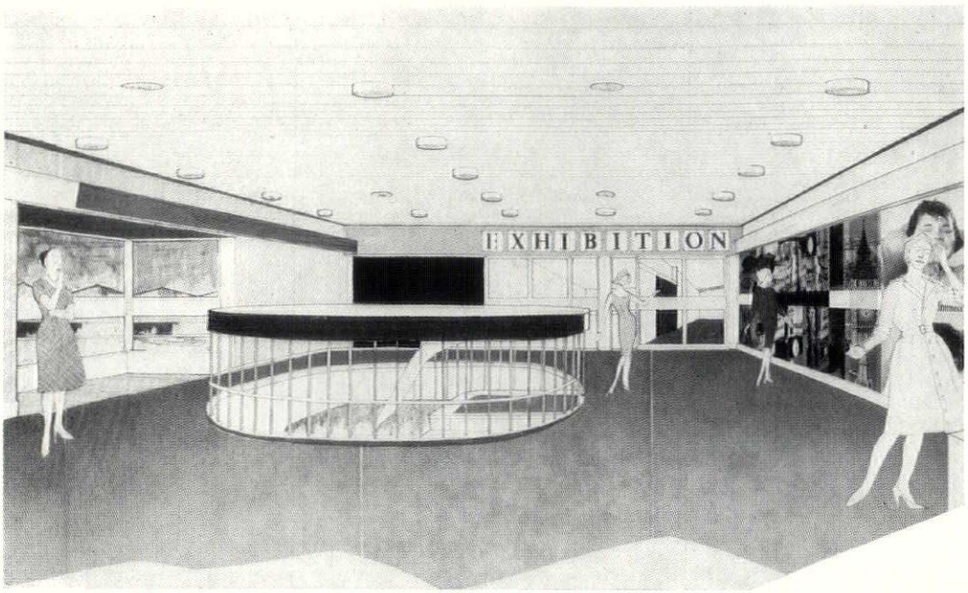
The emphasis today is on smokeless appliances and quite naturally gas and electricity form attractive fuels. Over the past few years one has grown to expect technical development from the electrical side and rather more of the 'mutton dressed up to look like lamb' from the gas people. But our two manufacturers have reversed the expected form.

After more than five years' research and development, Bratt Colbran have produced the 'Crystalglow,' a gas fire with the radiant area fully enclosed behind a screen of fireproof glass rods, 4. This has the effect of preventing cool air from being drawn directly on to the radiants, cooling them and diluting the hot products entering the heat exchanger. By so doing, chimney draught conditions are stabilized and it becomes possible to maintain a much higher efficiency irrespective of weather, flue and room conditions. In fact, an increase of efficiency of 20 per cent to 30 per cent is claimed. Approximately three-fifths of the heat produced is convected, the remaining two-fifths being radiant heat. The radiant units protected by the glass rod screen do not have their radiant effect reduced by this screen. The rods themselves, while protecting these units, are claimed not to



4

[continued on page 148



North Thames Gas Board
New building at
Peterborough Road, Fulham

(illustrated on pages 92 to 94)
Artist's impression showing Foyer and entrance to Exhibition

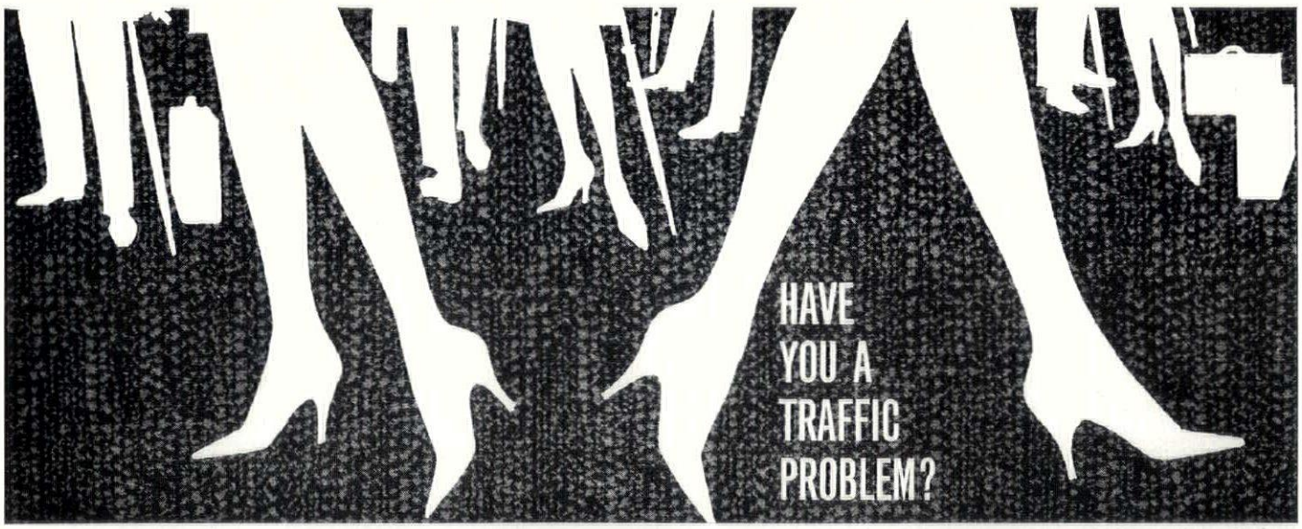
EXHIBITION CONSTRUCTION BY

For Exhibition Stands where quality is the keynote, G. & W. Waller Ltd. are consistently undertaking work throughout the world, adding prestige to both British Industry and Architecture.

G. & W. WALLER LTD.

16-18 BALHAM GROVE · LONDON, S.W.12

Telephone: KELvin 5511 (5 lines)



CARPET TRADES LIMITED KIDDERMINSTER

By-pass it—with new, stronger *Super* Lokweave!

Following on the success of the popular Lokweave range, a strengthened woven Wilton with the pile locked through to the back, Carpet Trades Limited now introduce Super Lokweave, again a woven Wilton (with its all wool pile locked through to the back) but this time more hardwearing than ever. Super Lokweave is ideal for all types of contract installations—it's really tough *and* it's beautiful. In a range of nine new styles and designs in smart, modern colours, including Moss Green, Golds and Amber Glow. Super Lokweave is made only in 27″ width body. For name of nearest stockist, or in case of difficulty, write to Carpet Trades Limited, Kidderminster.

Carpets are supplied only through normal channels.

continued from page 146]
bow or discolour and, if liquid should be accidentally spilt on them, they will not shatter. The design is attractive in its simplicity giving full value to the technical advance embodied in its function.

Unfortunately it is not possible to say the same of our other example. This time it is electrically operated. Perhaps we have come to expect too much in the way of advance from the electrical industry. This latest addition can certainly stake no claim to advance. Rather is it in the nature of a recession. A few years ago Sofono produced solid fuel appliances commendable both for appearance and technical efficiency. Their entry into the electrical field produced neat sensible designs, but this year they have descended on the market with a fascinating throwback to the 'thirties. Their latest product is an inset fire designed to be fitted into an existing fireplace with radiant elements incorporated in a grate-front and the fireplace filled with artificial coal (or logs, if preferred) complete with orange bulb and flicker effect. Most of us no doubt hoped that the age of sham and mock effects was past. Evidently at least one manufacturer is out to prove us wrong.

Bratt Colbran Limited, Radiation House, North Circular Road, London, N.W.10.

Sofono Limited, 4 Stratford Place, London, W.1.

Colour consultant for linoleum and tiles

Most of the paint manufacturers have over the past decade become aware of and tried to meet the architect's demands for colour to apply as finishes to their buildings. The effect of thoughtless colour application to even the best of designs can be quite disastrous, but paint is only one of the sources of colour available in a building. Others can have an even more lasting effect because of their permanence. Flooring and wall tiling are two such items.

Michael Nairn and Company Limited have appointed Alexander C. Hardy as colour consultant to their design department to review their ranges of lino and vinyl floor coverings. Mr. Hardy has also been appointed colour consultant to Richards Tiles Limited. In the past there has been a gap in communication between the architect and the manufacturer of materials. Neither has seemed to be aware of the other's problems or even prepared to consider them. These appointments at least point the way to closer future co-operation, and co-operation is essential if effort is not to be uselessly consumed.

Alex Hardy is a well-known figure in the architectural field. He is at present lecturing at Cambridge, but is shortly to start a new department of Building Science for the University of Durham. He is also chairman of the RIBA Text-books Sub-Committee, a member of the Daylight Sub-Committee of the National Illumination Committee and is an acknowledged authority on environmental design with particular reference to heat, light and sound.

With Nairns he is reviewing the colour ranges with particular reference to BS 2660. With Richards he will advise on the publication of a projected series of booklets on the functional application of colour.

The two appointments are an indication of the fresh approach of manufacturers to the problems of architects. Let us hope that Mr. Hardy's acceptance is an indication of a fresh approach by architects to the problems of manufacturers.

CONTRACTORS etc

Retail Market, Sheffield. *Architect:* J. L. Womersley (Sheffield city architect). *General contractor:* Wm. Moss & Sons Ltd. *Sub-contractors: Heating and ventilating:* G. N. Haden & Sons Ltd. *Automatic sprinklers:* Mather & Platt Ltd. *Fire extinguishing equipment:* Pyrene Co. *Lightning conductors:* R. C. Cutting & Co. *Piling:* Cementation Co. *Pre-cast bridge beams:* Pierhead Ltd. *Lifts:* Otis Elevator Co. *Pre-stressed concrete lintols:* Cable Covers Ltd. *Roller shutters and collapsible steel gates:* G. Brady & Co., Haskins Ltd. *Metal windows and roof lights:* Mellowes & Co. *Glass lens roofs:* J. A. King & Co. *Suspended ceilings:* Wm. Proctor & Sons Ltd. *Handrails, cleaning rails, metal doors, guardrails:* Smith Bros. & Widdowson Ltd., Chapel Fabricating Co., Wm. Garratt & Sons, Metalcraft Ltd., Armco Ltd. *External terrazzo cladding, terrazzo w.c. partitions:* Art Pavements & Decorations Ltd. *Ceramic floor tiling, ceramic and glass mosaic, insitu terrazzo:* A. Cumberlidge. *Semastic and vinyl floor tiling:* Semtex Ltd. *Air grilles to doors:* Air Conditioning & Engineering Ltd. *W.c. coin latches:* Lockerbie & Wilkinson Ltd. *Metal w.c. partitions:* Williams & Williams Ltd. *Unistrut stall frames:* Sankey Sheldon Ltd. *Rubber doors:* Neville Watts & Co. *Aluminium stockroom ladders:* Lloyds Alloys Ltd. *Stainless steel entrance doors and screens, illuminated signs:* J. Curtis & Son Ltd., Geo. Barlow & Sons Ltd., A. Edmonds & Co. *Metal partitions to offices:* Rowe Industries Ltd. *Laboratory equipment in offices (waterworks department):* Baird & Tatlock Ltd. *Fire alarm system:* Associated Fire Alarms Ltd. *Pre-cast spiral stair treads:* Girlings Ltd. *Steel duct flooring:* John Thompson Beacon Windows Ltd. *'Isora' illuminated ceiling:* Insulatall Services Ltd. *Glass showcases and glass doors:* Henry Bingham & Co. *Aluminium lighting channels and expansion joint covers:* Portobello Sheet Metal Works Ltd. *Asphalt roofing and flooring:* J. Hadfield & Sons Ltd. *Acoustic wall panelling to Waterworks Department offices:* Coronet Engineering Co. *Office furniture:* Conran Ltd. *Venetian blinds:* Venetian Blinds Ltd. *Clocks:* Synchronome Co. *Internal telephones:* Telephone Rentals Ltd. *Traffic signals:* Automatic Telephone & Electric Co. *Paints:* Goodlass, Wall & Co. *Shop fitters:* A. Davies & Co.

Offices and Laboratories, Fulham. *Architects:* E. R. Collister & Associates. *General contractor:* Trollope & Colls Ltd. *Sub-contractors: Structural:* Pierhead Ltd. (Engineering Div.). *Ciment fondu:* Lafarge Aluminous Cement Co. *Tentor bar:* GKN Reinforcements Ltd. *Pre-stressing anchorages:* Cable Covers Ltd. *Pre-stressing strand:* Rylands Brothers Ltd. *Piling:* West's Piling & Construction Ltd. *Curtain walling, windows and balustrading:* Morris Singer & Co. *Electrical installation:* T. Clarke & Co. *Heating and ventilation:* Brightside Heating & Engineering Co. *Roof lights:* Faulkner Greene & Co. *Lift installation:* Hammond & Champness. *Window cleaning gear:* Palmer's Travelling Cradle and Scaffold Co. *Balustrading:* G. Wright. *Ironmongery:* Finch Engineering Ltd. *Steel partitions:* Auland Ltd. *Wood block floors:* Viger Brothers Ltd. *Thermoplastic and cork flooring:* S. Bennett & Son (Wood Flooring) Ltd. *Plumbing:* Matthew Hall & Co. *Terrazzo, marble floor tiles:* Alan Milne Ltd. *Paints:* Fields Ltd. *Gantries:* Cox and Fairbrother. *Glazing:* James Clark & Eaton Ltd. *Window gear:* Arens Controls Ltd. *Doors:* John Sadd & Sons Ltd. *Oil boiler:* GWB Furnaces Ltd. *Convectors:* F. H. Biddle Ltd. *Water booster plant:* C. G. Pillinger & Co. *Sprinkler system:* Mather & Platt Ltd. *Pressed steel water tanks:* Horsley Bridge & Thomas Piggott Ltd. *Pipe lagging:* Newalls Insulations Ltd. *Air conditioning ductwork:* J. Gardner & Co. *Air filters:* Intermit Ltd. *Fans:* Woods of Colchester Ltd. *Exhibition contractor:* G. & W. Waller Ltd. *Suspended ceilings:* Hall & Co. Ltd. *Illuminated ceilings:* Ionlite Ltd. *Vinyl flooring:* Edward Stuart Ltd. *External murals:* Gillespie & Manzaroni.

City Hall, Hong Kong. *Architects:* A. Fitch and R. J. Phillips (of the Public Works Department, Hong Kong Government). *Sub-contractors: Kitchen equipment:* Radiation Catering Equipment Ltd. *Stage equipment:* Hall Stage Equipment Co. *Stage lighting:* Strand Electric & Engineering Co. *Folding door gear:* Esavian Ltd. *Roller shutters:* Gibson & Co. *Fibrous plaster ceiling reflectors:* David Esdaile & Co. *Supacourt plaster acoustic tiles:* Petradene Ltd. *Auditorium seats:* Cox & Co. *Metal windows:* Crittall Manufacturing Co. *Haystack lanterns:* Henry Hope, & Sons. *Sound amplification:* Ampex. *Furniture:* Hille. *Fire detection equipment:* The Minerva Detector Co. *Blue engineering bricks:* Stoneware. *Recessed manhole covers:* Dudley & Dowell. *Movable trestle tower:* Access Equipment Ltd. *Floor springs:* Samuel Elliott & Sons Ltd. *Clocks:* Gent & Co. *Rydura wall panels:* Ryjack Productions Ltd. *Photographic mural:* The Autotype Co. *Gas water heaters:* Ascot Gas Water Heaters Ltd. *Gas operated incinerator:* Southalls Ltd. *Perspex exit signs:* Lettering Centre. *Lift:* Express Lift Co. *Electric power transformers:* English Electric Co. *Emergency lighting equipment:* Nife Batteries. *Cold cathode lighting:* Thorne Electrical Industries Ltd. *Electrical water boilers:* GEC. *Perforated metal panels:* Harvey & Co. (London) Ltd. *Air conditioning:* American Engineering Corp. *Light fittings:* Troughton & Young (Lighting) Ltd., GEC, George Forrest, Thorn Electrical Industries. *Ironmongery:* James Gibbons Ltd., Josiah Parkes & Sons Ltd., Edwin Showell & Sons Ltd.

Art Gallery in London W.1. *Architect:* Cedric Price. *General contractor:* H. J. Knights & Co. *Suspended ceiling in office and basement:* Hermaseal Acoustics Ltd. *Work surfaces:* Formica. *Paint and plastic screens:* ICI. *Aluminium (channels, straps, etc.):* Alcan. *Folding door:* Horsley Smith & Co. (Hayes) Ltd. *Light fittings:* Courtney Pope (Electrical) Ltd. *Wash hand basin:* Adamsez Ltd. *Electric fans:* Vent-Axia. *Chairs:* Hille of London, Rymans. *Furniture, screens, fittings and metal work:* H. J. Knights & Co.

Architects' Office in the City. *Architects:* Yorke, Rosenberg & Mardall. *General contractor:* Trollope & Colls Ltd. *Sub-contractors: Demolition:* Goodman Price Ltd. *Electrical:* Bell Bros. & Co. (London) Ltd. *Heating:* Weatherfoil Heating Systems Ltd. *Lift:* Otis Elevator Co. *Metalwork and lift enclosure:* Wessex Guild Ltd. *Tiling:* W. B. Simpson Ltd. *Joinery:* Knowles Woodworking Ltd., W. J. Lacey (Hounslow) Ltd. *Roofing:* William Briggs & Sons Ltd. *Terrazzo:* Malacarp Terrazzo Co. *Vinyl flooring:* Holmsund Flooring Ltd. *Carlite plaster:* Plastering Ltd. *Acoustic tiles:* Baxenden Chemical Co., Armstrong Cork Ltd. *Cement:* Blue Circle. *Reinforcement:* Square Grip Reinforcement Ltd. *Patent flooring:* Spanform Ltd. *Patent timber roof to penthouse:* Cawood, Wharton & Co. *Windows:* Tomo Trading Co. *Window gear:* Arens Controls Ltd. *Bricks:* Archibald Bathgate Ltd., Richard Parton Ltd., Hall & Co. *Hoganas tiles:* Langley London Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Electric light fittings:* Atlas Lamp Works Ltd., Fog og Morup, Bell Brothers, Rada Ltd. *Paint:* Screeton Paintmaker Ltd. *Veneers:* William Mallinson & Sons Ltd. *Flush doors:* Gliksten Doors Ltd. *York stone paving:* S. Marshall & Son Ltd. *Ironmongery:* N. F. Ramsay & Co. *Glass:* Pilkington Bros. Ltd. *Sliding screen gear:* E. Henderson Ltd. *Hot water heaters:* Ascot Gas Water Heaters Ltd. *Cookers:* Cannon Industries Ltd., Radiation Ltd. *Glass louvres (Nacosash):* N. V. Appleton Ltd. *Tea making equipment:* Oliver Toms Catering Equipment Ltd. *Drawing office equipment, furniture, carpets and curtains:* H. J. Ryman Ltd., Knoll International Ltd.

Offices and Showrooms, Sloane Street, London. *Architects:* J. Douglass Mathews and Partners. *General contractor:* Holloway Brothers Ltd. *Sub-contractors: Aluminium cladding:* Roberts Adlard Co. *Curtain walling:* Holoplast Ltd. *Electrical installation:* Troughton & Young Ltd. *Air conditioning:* Benham & Sons Ltd. *Lifts:* Hammond & Champness Ltd. *Patent glazing:* British Patent Glazing Co. *Cork tile, lino tile, lino and thermoplastic skirtings:* Semtex Ltd. *Internal steel partitions:* Waddells (SSE) Ltd. *Metal shop front:* A. Edmonds Co. *Hardwood block flooring (mews flats only):* Horsley Smith & Co. (Hayes) Ltd. *Terrazzo:* Marriott & Price Ltd. *Collapsible gate:* Haskins Ltd. *Double hung aluminium sashes and steel casements:* Alumin Building Components Ltd. *Pre-cast units:* Shockcrete Products Ltd. *Flush doors:* John Sadd & Sons Ltd. *Internal access and ventilation panels and louvre grilles:* Ace Air Conditioning Ltd., Bruce Briston Ltd. *Sanitary fittings:* John Bolding & Sons Ltd. *Up-and-over doors:* Westland Engineers Ltd. *Louvres:* Greenwoods & Airvac Co. *W.c. compartments:* Venesta Ltd. *Kitchen units:* Jayanbee Ltd. *Slate cills:* Bow Slate & Co.

Industrial Offices, Cwmbran, South Wales. *Architects:* Clifford Tee & Gale. *General contractor:* E. Taylor & Co. *Sub-contractors: Structural steelwork, reinforced concrete:* T. C. Jones & Co. *Roofing:* Robertson Thain Ltd. *Window walling and fascia:* John Williams & Sons (Cardiff) Ltd. *Marble facing:* Walter W. Jenkins & Co. *Heating installation:* Air Heating Ltd. *Sanitary fittings:* Rowe Bros. & Co. *Asphalte flooring, linoleum, tanking and plinth:* The Western Trinidad Lake Asphalt Co. *Terrazzo flooring and cills:* Mosaic & Terrazzo (Newport) Ltd. *Wall tiling:* Carter & Co London Ltd. *Partitioning:* Norwood Steel Equipment Ltd. *W.c. cubicles:* Flexo Plywood Industries Ltd. *Suspended ceilings:* Rudders & Paynes Ltd. *Entrance staircase:* Bigwood Bros. (Birmingham) Ltd. *Ironmongery:* James Gibbons Ltd. *Sliding door gear:* E. Hill Aldam & Co.

PERMAPLATE

REGD

by Bradford Glass

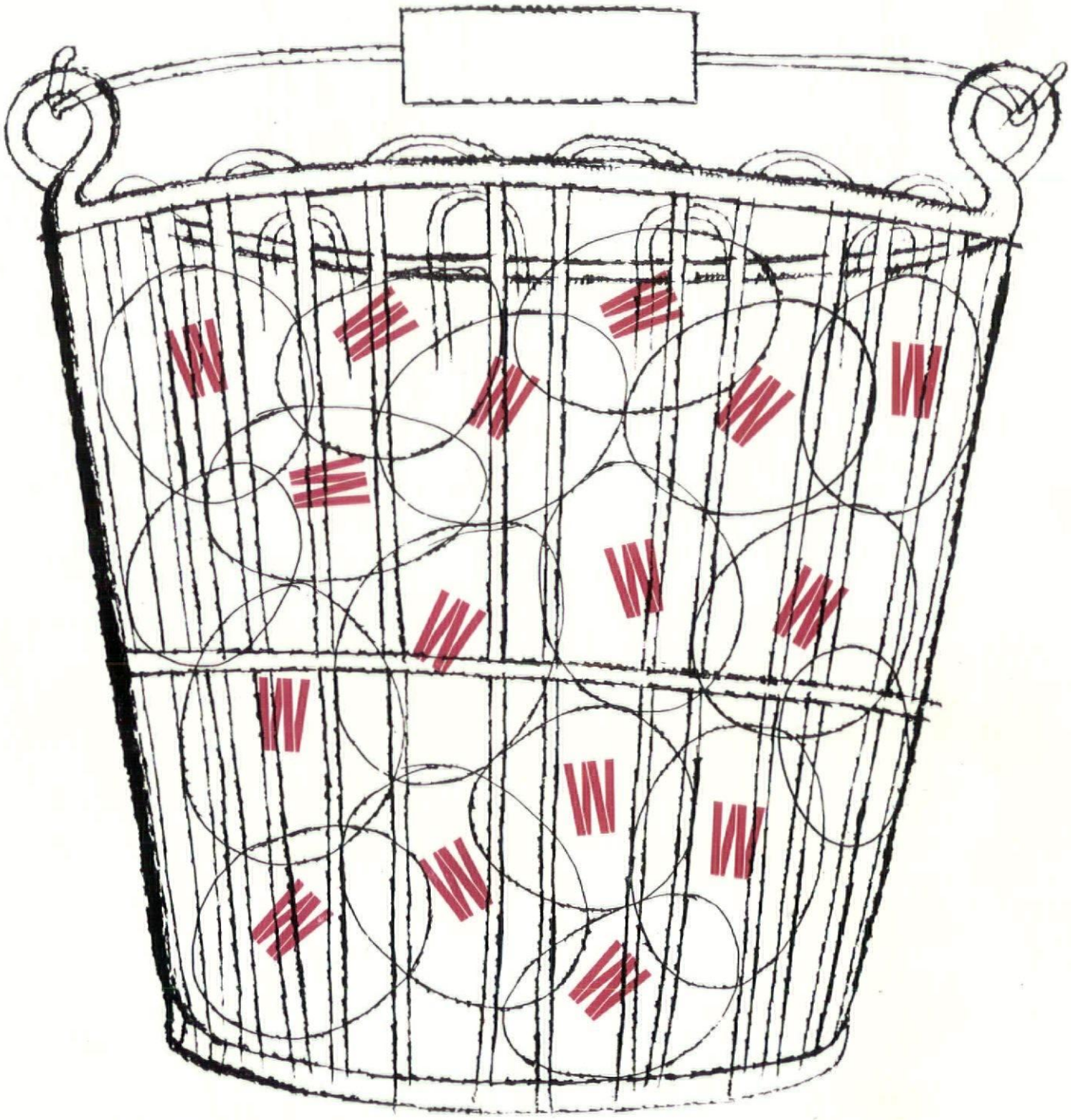
PERMAPLATE



—fully toughened polished plate glass . . . at least four times stronger than ordinary plate glass, and available in thicknesses of $\frac{3}{16}''$, $\frac{1}{4}''$, $\frac{5}{16}''$, $\frac{3}{8}''$, and $\frac{1}{2}''$. Maximum manufacturing size $92'' \times 62''$. Technical information and prices are readily available.

BRADFORD GLASS CO. LTD., *Manufacturers of Permaplate*
Spring Mill Works, Manchester Road, Bradford 5. Telephone: 26386

ALL THE EGGS ARE FOUND IN OUR BASKET



THE WINCILATE GROUP SERVICE – Finest slate quarried and selected. Architects' requirements discussed and drawings prepared. WINCILATE slate cills, surrounds, copings, cladding and flooring precision finished, delivered and fixed. For further details and information sheets, phone or write to – The Wincilate Group, The Town Hall, Bow Road, E3

To get the best service in *slate*, specify WINCILATE by *name*.

ADV 2203

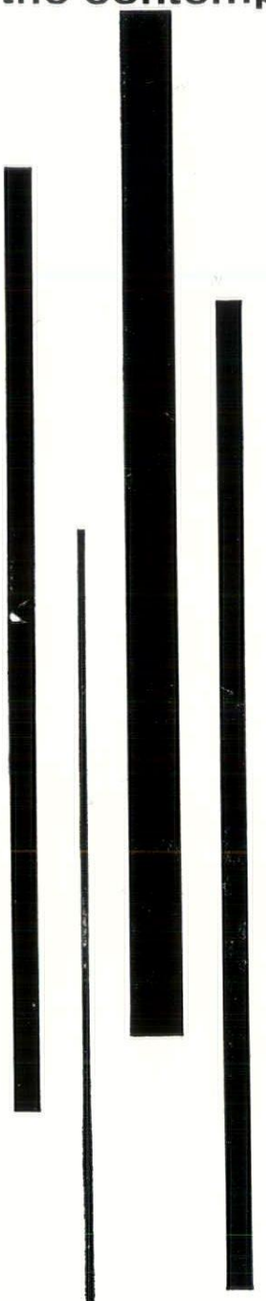
The Wincilate Group: The Bow Slate and Enamel Company Ltd, Aberllefeni Slate Quarries Ltd, The Slate Fixing Company, Lloyd Quarries Ltd, Goddard and Son, Manorian Ltd

JAPAN 1962

A SPECIAL ISSUE OF THE ARCHITECTURAL REVIEW
VOLUME CXXXII NUMBER 787
SEPTEMBER 1962 FIVE SHILLINGS



Stone faces the contemporary facts



...WITH *THINWALL STONE CLADDING

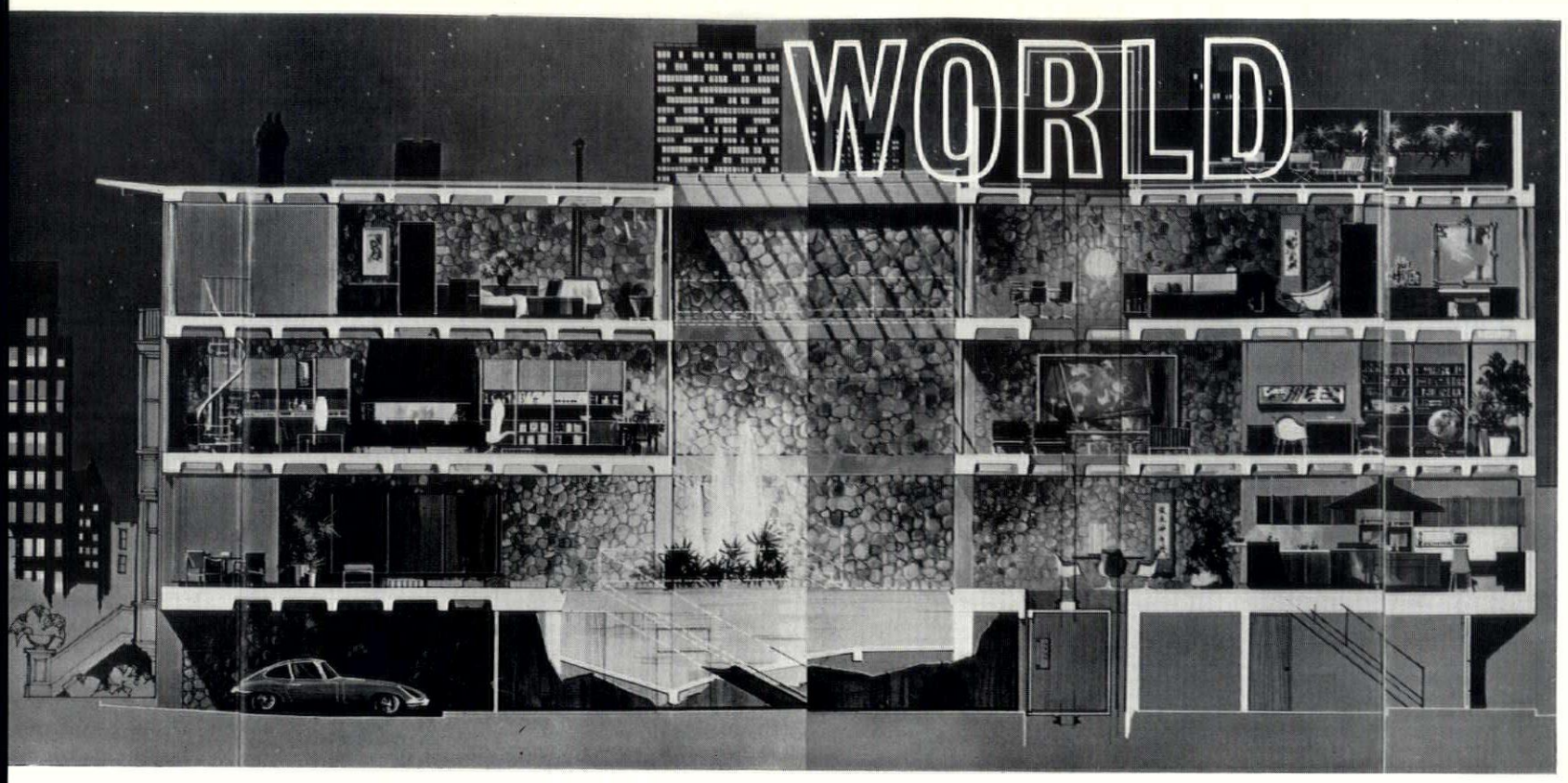
The Stone Firms' Thinwall system of stone cladding utilises thin slabs of natural Portland stone as a permanent shuttering to a concrete wall. It is economical, rapidly erected, needs no temporary external shuttering, ensures flank walls of minimum overall thickness and subsequent savings of floor area. Substantial additional economies can be achieved where a suitable modular size of stone slab can be adopted.

*PATENTED

If you would like further information regarding the Thinwall system please write or telephone.

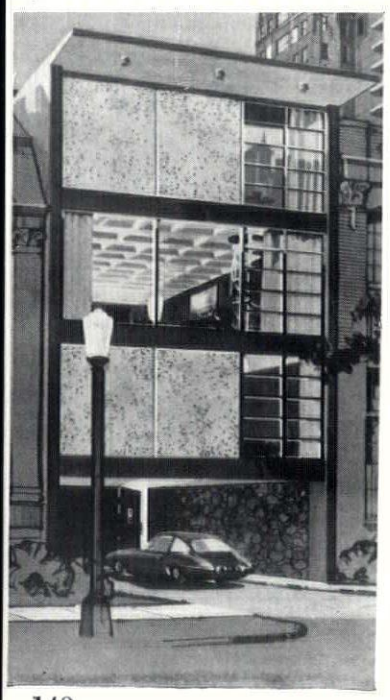
the stone firms ltd. THESSALY ROAD, LONDON, S.W.8 Telephone: MACaulay 6644

A MEMBER OF THE BATH AND PORTLAND GROUP LIMITED



MEDIUM TOWN HOUSE

Discussions of the influence—pernicious or otherwise—of the mass media on architecture are commonly ornamented with ritual references to 'the women's magazines.' There would seem now to be a better case to make reference to 'the men's magazines' or —more precisely—to '*the* men's magazine.' The Playboy Town-House, 1, represents the first serious collision between architecture and *Playboy* magazine, whose circulation now puts it *primus inter pares* in the field of publications aimed at 'the sophisticated urban male.'



3

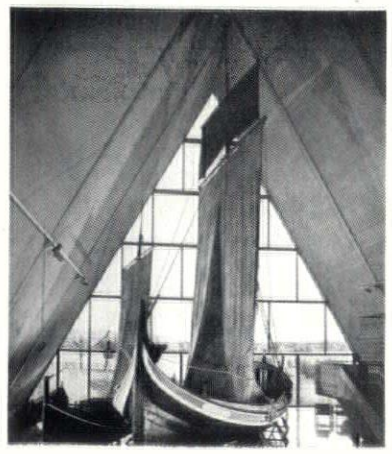


The basic *parti* of the Playboy house is not exceptional—the occupied areas are located at the opposite ends of a narrow lot (presumably in Chicago) with the almost-mandatory pool in the intervening well (though the skylight roofing of this well is less routine). The elevation of R. Donald Jaye's design, 2, shows conservative Chicago-style matt-finished metal and exposed aggregate used to create the architectural equivalent of Ivy League dress—again, no surprise. The great interest of the scheme—outside the fact that it should appear at all in such a magazine—lies in its presentation. The literary description makes going that is as stiff as it is nauseating—'casually strewn about the spacious rec area is a colorful plenitude of oversized foamfilled cushions to facilitate poolside lazing, etc.'—but the graphic presentation is notable for the manner in which it makes the design perfectly clear without resort to a plan. Admittedly, the plan is of the simplest, but this fact one deduces with ease from the large rendered section, spread over two double-page spreads and reconstituted in 1, and a number of interior perspectives such as 3, an 'elbow bender's view of almost the entire length of the house' from the dining room to that plenitude of poolside cushions.

This is all made perfectly clear, but what architectural magazine, illustrating the same house, could have brought itself to dispense with the sacred ritual of printing a plan? The medium has a lesson to teach here—an increasing number of buildings today are conventional in plan (for outside causes such as narrow sites) but of greater interest in section: for these, the plan might well be skipped, for the sake of a section as explicit as 'illustrator Humen Tan' has made this one.

ANCIENT SHIPS—III

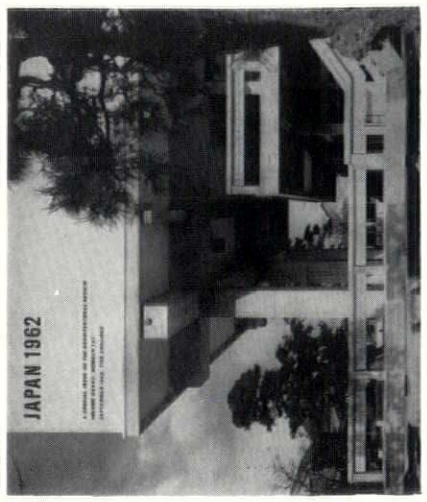
There seems to be some need for an urgent examination of the *Zeitgeist* in order to discover just why boat-museums should be one of the compulsive architectural themes of 1962. Following hard on Gizeh (World, February, 1962) and Alkarret (July, 1962) come the completed buildings, 4, of the Norwegian Shipping Museum which has been built alongside the hall



4

ACKNOWLEDGMENTS

Cover, Toshio Taira; 1, 2, 3, 4, 8, 13, 14, 27, 28, 30, 31, 33, 34, 35, 36, 37, 39, 40, 44, 45, 48, 51, 53, 54, 57, 58, 59, 60, 64, 65, 66, 67, 68, 70, 71, 74, 75, 76, 77, 79, 80, 81, 82, 85, 89, 93, 101, 109, 110, 118, 123, 125, 126, 127, 130, 148, 149, 150, 152, 161, Richards Arphot; 6, 182, *Bauen & Wohnen*, Zurich; 7, *Shinkenchiku*; 9, 11, 12, 15, 16, 22, 23, 24, 25, 26, 114, 115, 116, 117, 119, 120, 135, 137, 138, 139, 140, 141, 142, 185, 189, Akio Kawasumi; 17, 18, 154, 155, 180, 181, 186, 187, Chuji Hirayama; 21, Kiyoshi Otsuji; 42, Yoshio Watanabe; 43, 108, S. Shigihara; 46, R. T. Paine; 49, 50, 52, 55, 56, 69, 72, 73, 78, 83, 84, 96, 97, 98, 102, 105, 106, 107, 132, 178, 179, 183, Toshio Taira; 99, 100, Takenaka Co.; 103, 104, Shokokusha; 111, 112, 113, 128, 153, 177, Kiyoo Kanayama; 121, 122, 124, 129, 131, 136, 145, 156, 184, Yukio Futagawa; 143, 151, Fumio Murasawa; 144, Aso; 163, Bunji Kobayashi; 176, Kokusai Kenchiku; 190, O. Murai. The two line drawings on page 192 are from Prof. Kobayashi's *Japanese Architecture*. Thanks are due to *Bauen & Wohnen* for information about the plans of some of the buildings reproduced.



This month's cover *is a view looking into the open lower floor of Kiyonori Kikutake's museum and art gallery at Matsue (see pages* 180 *and* 181*), a representative example of the modern architecture, influenced by Le Corbusier and making expressive use of exposed reinforced concrete, for which Japan is at present notable and to which much attention is given in this special issue.*

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

VOLUME 132 NUMBER 787
SEPTEMBER 1962

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents: Librerie Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

Directing Editors	*J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson*
Executive Editor	*J. M. Richards*
Assistant Executive Editor	*Reyner Banham*
Assistant Editor (Production)	*William Slack*
Features Editor	*Kenneth Browne*
Technical Editor	*Lance Wright*
Assistant Editor (Counter Attack)	*Ian Nairn*
Staff Photographers	*De Burgh Galwey, W. J. Toomey*
Advertisement Manager	*F. G. Dunn*

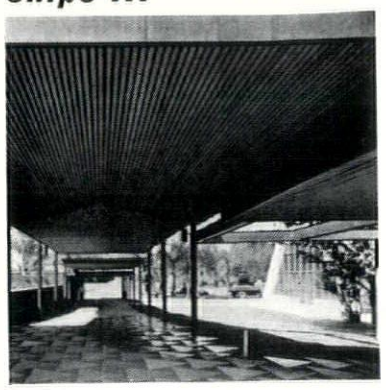
CONTENTS

149 World
153 Views and Reviews

JAPAN 1962

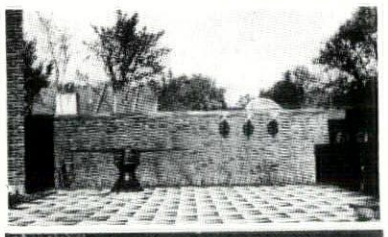
156 Frontispiece
157 *First day*
158 *Second day*
160 The Organisation of the Profession
161 *Third day*
169 *Fourth day*
171 *Fifth day*
175 The Japanese Hotel
177 *Sixth day*
178 *Seventh day*
184 *Eighth day*
187 *Ninth day*
188 Transport and Tourism
191 *Tenth day*
193 *Eleventh day*
197 *Twelfth day*
198 *Thirteenth day*
203 Town Planning in Evolution
211 *Fourteenth day*
214 *Fifteenth day*
216 *Sixteenth day*
216 Architectural Education
219 *Seventeenth day*
220 *Eighteenth day*
221 The Architects

Ships III

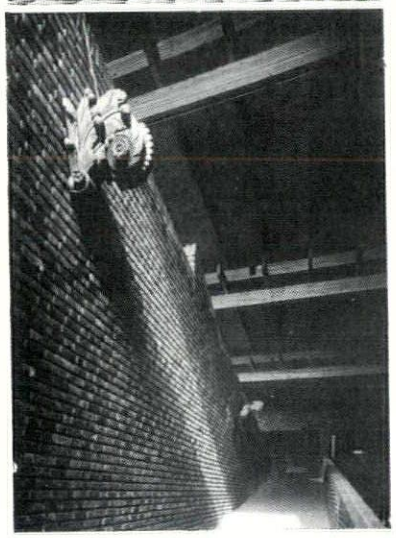


5

containing the polar ship *Fram* at Bygdoy. Designed by Trond Eliason and Birger Lambertz-Nilsson, the new museum consists of a boat hall of the same triangular section as the *Fram*-house, connected by a covered way, 5 (*Fram*-house just visible on right), to a group of lower buildings in which brick walling is used outside, 6,

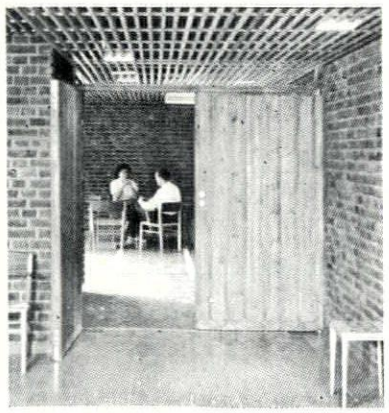


6



7

and inside, 7, with telling effect, especially where wooden joistwork or nautical bric-à-brac (or both) come into the scene as a foil. However, the nautical presence cannot be essential, since the same issue of *Arkitektur* (2, 1962) also illustrates a social research centre in Oslo, 8, by the same architects (plus P. and M. Cappelen) which uses people with equal success.



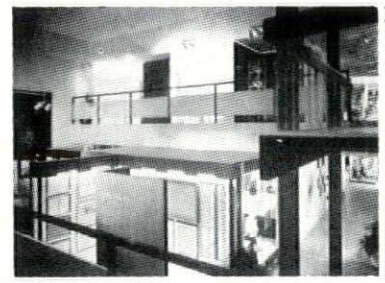
8



9

THE FOURTH?

How many design-centres are there in the world? *Interiors* (May, 1962) identified Miami's as the fourth, but was counting only big-league examples such as London's, Die Permanente in Copenhagen and the National in New York. In scope, the Miami Centre is more comparable to British provincial examples such as Bristol, but the building that houses it is in a class by itself. Designed by James L. Deen, its main display space is a multi-level affair whose detailed working out, 9, is from the hand of Henry End, grand master of Miami interior design, who has exploited this tall space to give both excitement and calm, 10, as and where needed. (Mr. End will be remembered by readers of the AR as the interior designer of The Carlton Tower Hotel, ID, August, 1961.) The first director of the Miami Design Centre is Robert Thornton, attendance has already passed the respectable figure of 3,000 visitors weekly.

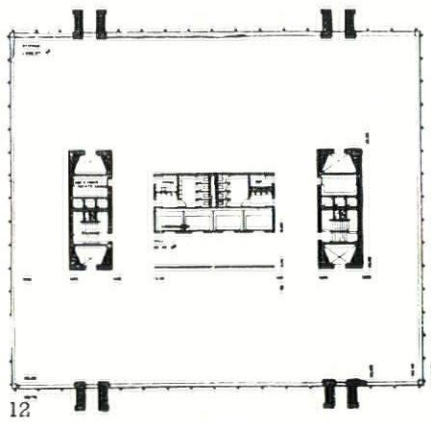


10

PEUGEOT TOWER

Prize winning Scheme for Buenos Aires

Apparently under the impression that architecture is a sub-division of the World Cup, *Habitat* announced (March, 1962) that Plinio Croce and the rest of his team had 'gained for Brazil the Grand Prix . . . in the competition for the design of the Peugeot Building in Buenos Aires.' Leaving sporting rhodomontade on one side, however, the project, 11, by Croce, Aflalo, Gasperini and Suarez was by far the most immediately convincing of the 226 submitted, if only because their perspectives were of such unusual quality. The scheme is of more than superficial interest, although there is little doubt that its choice of structure will be hammered by purists—as the plan shows, 12, the twinned columns on the outside hardly give notice of the massive service-boxes with which they are aligned inside, and which probably do most of the load-carrying. The actual dimensions of these structural units are not easily appreciated at first because of the immense scale of the tower, which has forty-six floors above datum (including three service floors) and six floors of mechanical-access car-parking below three basements. This will clearly be one of the phase-four (post-Pirelli) skyscrapers to watch, if only to see how much of the competition design survives into the built version.



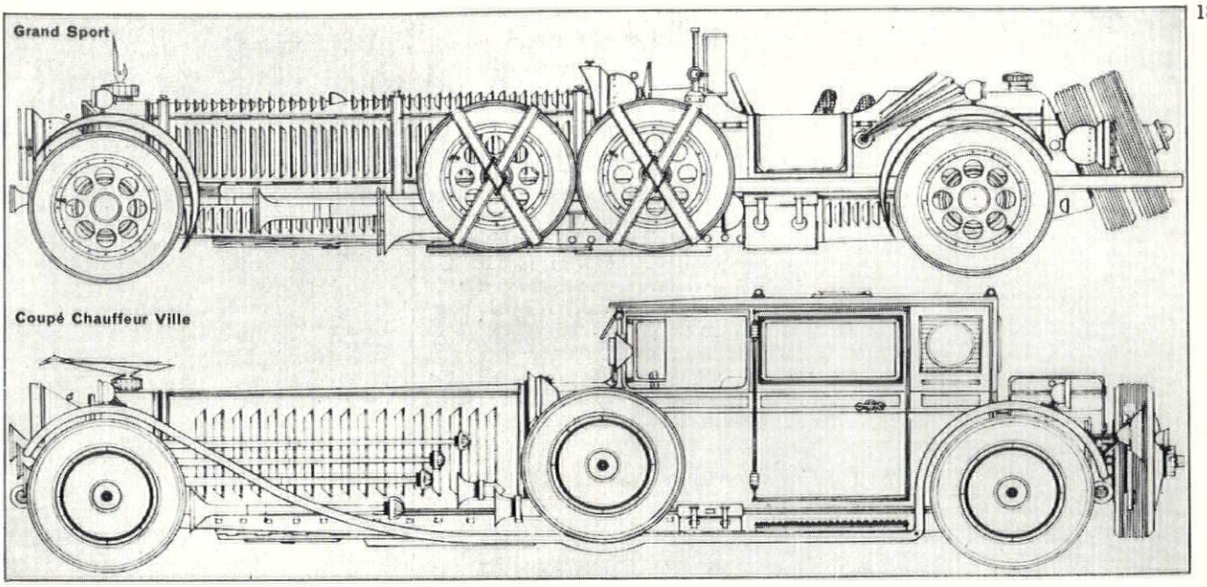
12

11

AUTONEOHISTORICISM

Many of those who are called to worry about the state of architectural design have expressed concern at the possible connection between the vintage car cult and the revival of the forms of the architecture of the Twenties, but have refrained from speaking because there is an obvious difference between driving a car built in 1920 (which is no worse nor better than moving into a badly heated, and mildly insanitary Georgian house) and erecting buildings in which sundry tricks of *de Stijl* and *manière Corbu* are used in order to illustrate historical learning and put the clock back. The precise automobilistic equivalent of neo-Historicism has now appeared, however, in the fantasy-designs, 13, of Pierre Dallegret, a French devotee of the days *quand les Mercedes étaient blanches*. These drawings have acquired something of a legendary status, but their definitive publication in the German teen-and-twenty magazine *Twen* (6, 1962) establishes them firmly in the twist-kitsch belt, which is probably where they belong, in company with Miss Dorothy Provine, shimmy dresses, and other gimmick-manifestations of the Twenties Revival —their exaggerations and mechanical crudities are unlikely to recommend them to serious Vintage-enthusiasts any more than the gimmicks of the architectural Neo-historicists to the serious student of the Twenties.

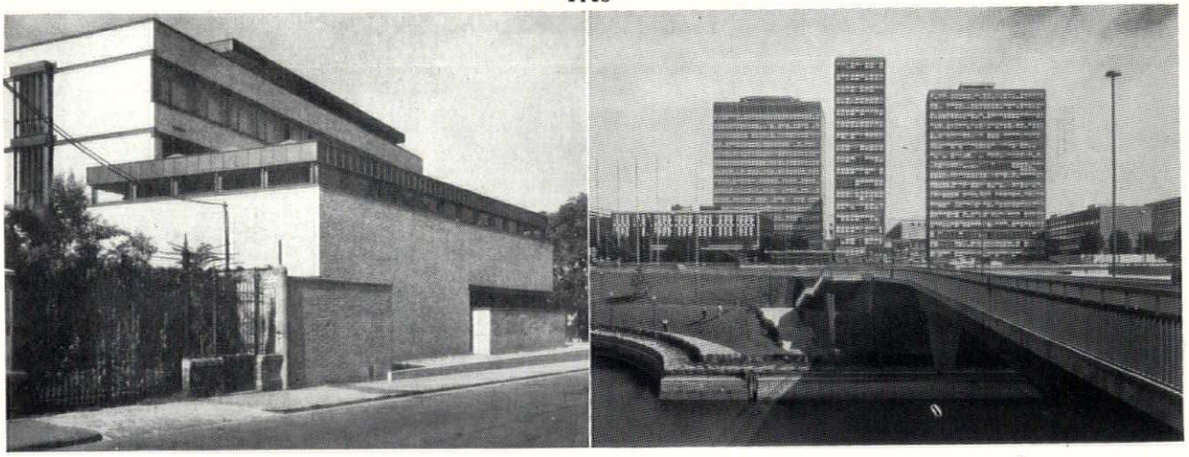
13



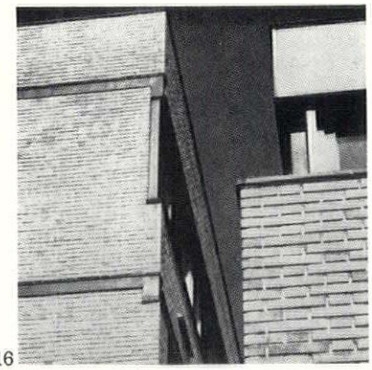
14 15

STRANGERS

Here are the two classic architectural double-takes of 1962: one with an obvious claim to be a work of Alvar Aalto, 14; the other with an equally strong superficial claim to be recent Chicagoan work of Mies van der Rohe, 15. Neither, in fact is what it appears to be, both are in Italy, but there the resemblance between the two cases ends. Enzo Zacchirelli's Johns-Hopkins Centre at Bologna gets even more Aaltoan as one draws closer to it, in some ways, and much of the detailing, 16, demands very direct comparison with buildings like Aalto's insurance offices in Helsinki. But the massing too, 17, is Finnish in its accent—to such an extent that *l'Architettura* (June, 1962) went to the extent of showing the same view in an almost too appropriate snowstorm, 18. One wonders in what way the importation of a markedly foreign style of architecture is felt to be appropriate to an American institution in an Italian town, though it does not appear that the functional performance of the institute has in any way suffered from so frank a styling job.



16



17



18



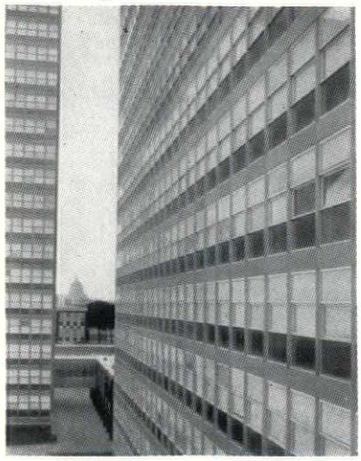
The Miesian apparition is a more tenuous architectural ghost, however. Designed by one of those seemingly *ad hoc* Italian partnerships—Cafiero, Ligini, Marinucci and Venturi—to re-house the Ministry of Finance, it occupies a site by the *metropolitana* station at EUR (Terza Roma), and gives a convincingly Miesian image only in the view across the water. At closer view, the ancillary buildings, 19, speak a different language, and the main structures prove to be Mies

19



Strangers

20

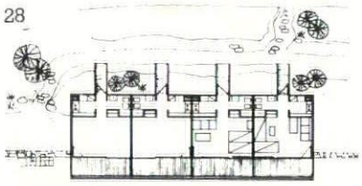


without the detailing, and are therefore empty ciphers, architecturally nothing, 20. In a negative sense, indeed, Miesian studies may be enriched by the way in which the buildings show how the manipulation of the corners becomes pointless without Mies's characteristic manipulation of the facade mullions, since this may call in question the widely held opinion that Mies's applied mullions are 'un-necessary.'

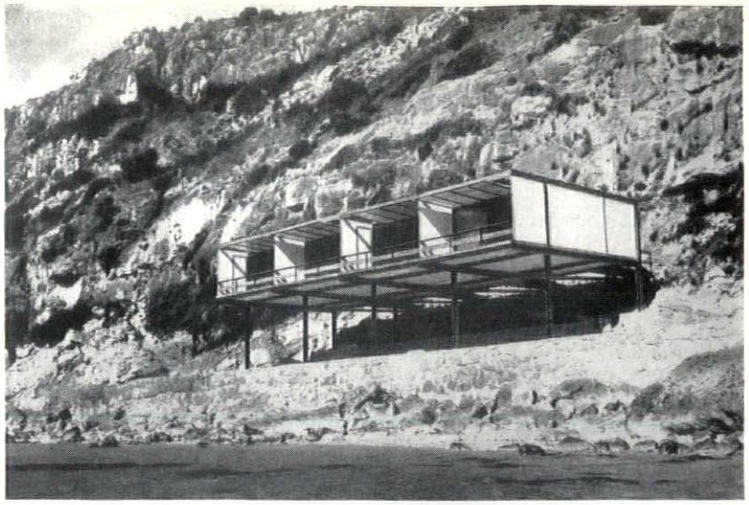
SEASIDE SIMPLICITY

One of the more intriguing features of the architecture of Portugal is that, the few works of genuinely modern intention that emerge from the generally disappointing background have an honesty and authority that commands respect. *Domus* recently (July, 1962) published a group of small pre-fabricated beach-houses, 27, at Galapos, designed by Eduardo Anahory, that seem to have preserved certain basic virtues of modern architecture that have been mislaid in other, perhaps more affluent, societies. The spare, rectangular aesthetic is not unknown in other seaside settings: Craig Ellwood's work comes to mind, and the symmetrical plans of the individual house units, 28, make the comparison almost necessary. Yet

28

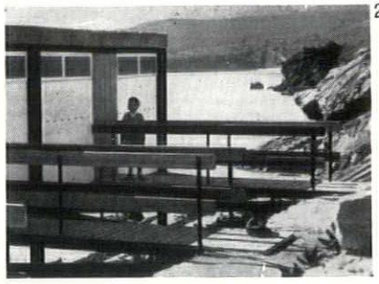


27



the simplicity that comes in Ellwood's work from immense sophistication and conscious restraint clearly arises in Anahory's from the techniques available, such as the use of plastic-faced cork panels. Nowhere is this inherent simplicity more apparent than on the entrance side, 29, where the balustrades of the entrance bridges—black steel uprights carrying two planks—are clearly above any suspicion of fashion-following.

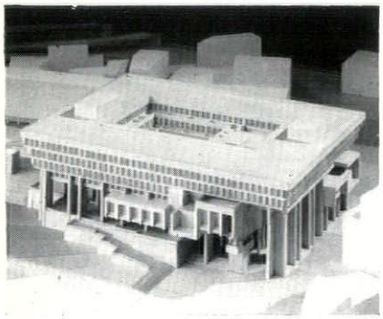
29



A CITY HALL FOR BOSTON

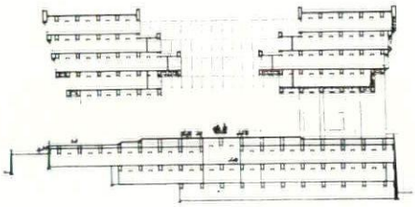
As might be expected in the present state of American architecture the recent competition for a new city hall in Boston, Mass., produced many weird and wonderful designs, but the winner, 21, though certainly original,

21

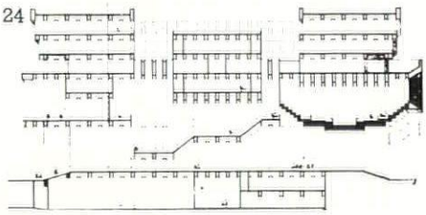


will stand close critical and functional inspection. Designed by a team all based on Columbia University—Gerhard Kallmann (who has contributed to the AR), N. M. McKinnell (English and, like Kallmann, English trained) and E. F. Knowles—the project stratifies horizontally into three major components: the base, which builds up to the highest level of the ceremonial public access from the city square, the administrative offices, raised above the base, 23, on massive in situ concrete columns placed in a grid that can be seen in 22, and the ceremonial elements (council chamber, etc.) which are suspended between the upper and lower components as shown in the section at 24, and erupt on the exterior as massive and apparently out-of-scale elements, 25, cragging out over the public access from the square. Attempts by European critics to pretend that the design was lifted from Le Corbusier's La Tourette, will not stand examination and merely exhibit that superficial formalism that they are currently so quick to find in US critical writing.

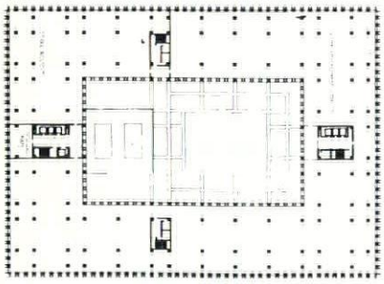
23



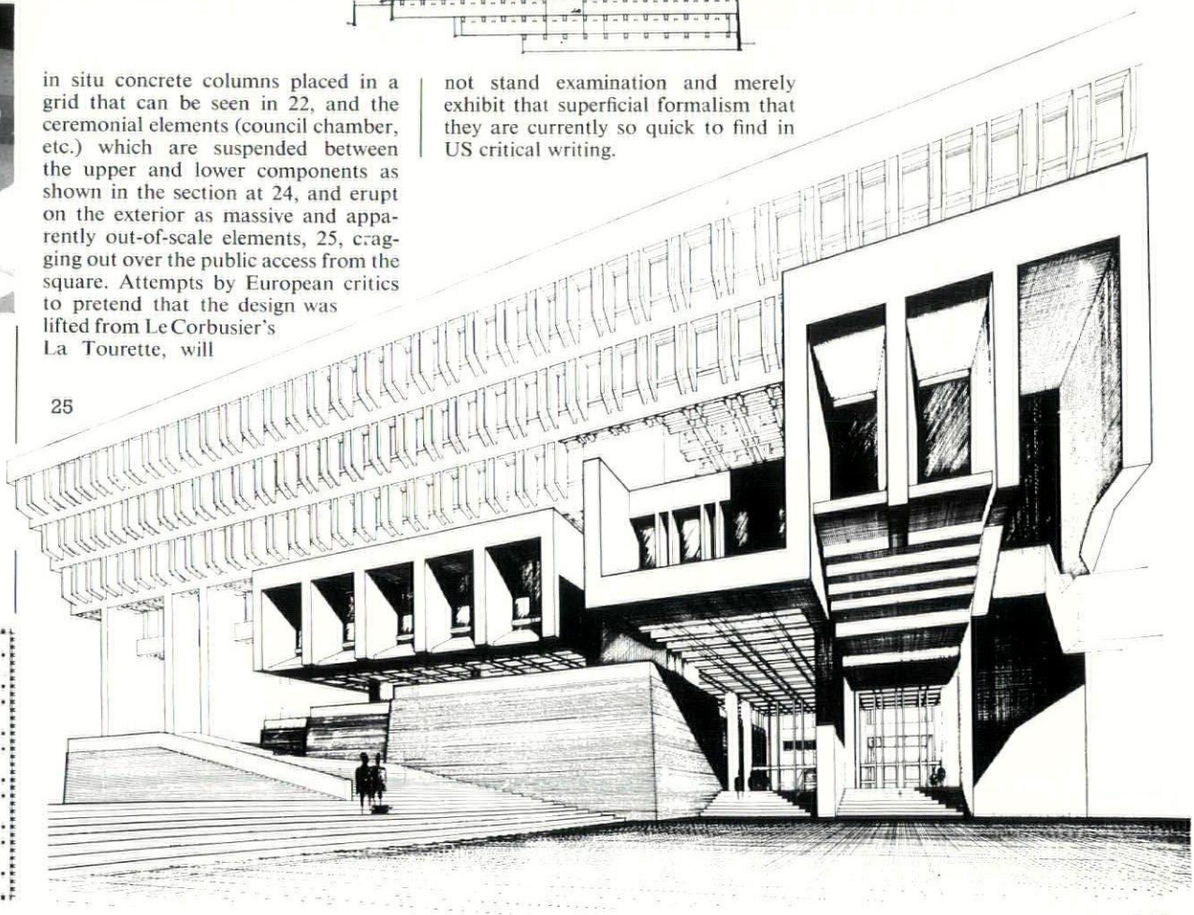
24



22



25



views and reviews

MARGINALIA

CARTER'S LONDON

Since the days of hope immediately after the last war, there has been a conspicuous decline in the number of publications in which planners set out to communicate the broader vision to a wider public, and the appearance of acute new problems in town-planning, such as traffic segregation and giant developer-projects, has produced no notable attempts to popularize the planners' views on these subjects—a lack that became painfully obvious from the misguided commentaries provided by even well-disposed newspapers during the Piccadilly enquiry. It is to be hoped, therefore, that E. J. Carter's, *The Future of London*, which Penguins are bringing out this month (price 4s. 6d.), will be the first of a second generation of planning literature aimed at the intelligent man in the motor-choked street. As might be expected from Bobby Carter, his view of London is essentially an architect's view, a *progressive* architect's view which is nicely summed up by the fact that the book opens with a quotation from William Morris, and concludes with the words '. . . for all the world to see that we are, in fact, a civilized people.' But the tone of the writing is blessedly free from exhortations and pious hopes; what the reader is offered is a comprehensive view of the present state of the great Wen, and the proposals at present in train to either restrain its maladies or cure them. The reasonable, matter-of-fact tone is matched by a liberal supply of facts and citations from original documents for the intelligent reader to get his teeth into, but it is all well-digested and arranged so that the flow of the argument is not clogged by the information. In sum, an exemplary demonstration of how to fill a long-felt want.

THE ARTS IN CITY COMPANY HALLS

The picture below, 1, shows the sketch-model of Louis Osman's setting for 'El Amor Brujo,' a ballet by de Falla, which was presented as part of the City of London Festival at Carpenters Hall on July 19. The painted background was by Frank Avray Wilson and was 13 ft. 6 in. high.

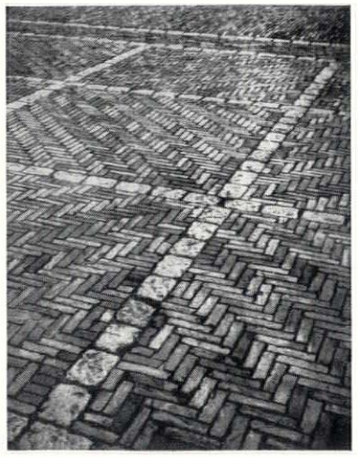
The halls of London city companies were, in past centuries, the settings for much intimate artistic performance, but they are unlike concert halls and require special treatment for proper presentation. Many works of the great Renaissance masters, such as Montiverdi, were conceived for the great rooms of Royal Palaces and such works are appropriate to the intimate and personal atmosphere of the City Livery Company Halls. During this concert in July de Gabarain sang 'Psyche' which was written by de Falla as if taking place in the Tocador de la Reina of the Alhambra Palace. It is a pity that use for artistic purposes has not had more consideration in the considerable rebuilding that has taken place since the destruction of so many of the old City halls during the war.



1

PFLASTER

Hitherto, floorscape has been a study for the aesthete and the working designer of the spaces between buildings, not for the historian. This, clearly, was only a transient situation, and the inevitable German scholar has now made his appearance with a well-documented study of the field. Fortunately, Heinz Wolff's *Pflaster in alten Städten* (Paving in ancient cities) is brief and, although not aesthetic in intention, his choice of illustrations suggests he has a true eye for the art of ground-cover as well as for the techniques of road-surfacing. The motivation for this study seems to have been partly practical, however, since the publishers, the *Deutsche Kunst- und Denkmalpflege*, appear to have been advising on the restoration and relaying of the paved areas in certain historic centres. It is therefore good to know that such work is not being carried out simply on the basis of a straight copy of what was known (or thought) to have been there before, but in the light of a broader study of the principles and methods of ancient paving, including examples taken from towns where ancient floor-laying techniques have survived to the present day—one of his most striking examples of a straightforward repeating pattern comes from The Hague, 2, and was laid in our own century.



2

LANDSCAPE STUDIES

The present rather meagre facilities for the study of landscape architecture in Britain are to receive a welcome (and not unexpected) extension through the foundation of a two-year diploma course at Edinburgh University for students already holding qualifications in such fields as architecture, forestry or geography. The course is to be provided under the aegis of the Department of Architecture and is to be under the supervision of Britain's most learned landscapist, H. F. Clark.

CORRESPONDENCE

ITALIAN TOWNSCAPE

To the Editors.

SIRS,—I was interested to read Mr. de Wolfe's suggestion in his excellent, timely re-evaluation of Italian town-planning that wings, baffles, and so on, used as visual punctuation in the street, should come from the theatre. It is, of course, quite the other way about. The theatre technician borrowed from the town-planner. Perspective scenery was first used at the turn of the fifteenth-sixteenth centuries; the scene designers were in fact trying to reproduce what they knew well from their cities, and from painting. A description of Bibbiena's *Calandra* at Urbino in 1513 is typical of many: 'The scene was made to resemble a very lovely city with streets, palaces, churches, towers, real streets and everything in relief, but assisted by beautiful painting and clever perspective.'

Painters (and quite obviously town-planners) were well aware of the dramatic excitement of the baffle and the partly visible. Early *trecento* painting is full of little theatrical set-pieces that were actually only achieved in the theatre some 200 years later.

It is a stunning indictment of the turgid banality of contemporary town-planning that Mr. de Wolfe should have to plead quite so hard. Thank heavens that he does.

Yours, etc.,
VICTOR GLASSTONE.
London, W.2.

EXPLOSION IN A CHURCH

To the Editors.

SIRS,—Your May 1962 frontispiece is misnamed since it portrays a diabolical manifestation to some obscene cult. Despite some Gothic details, the building is completely introspective and shows an ungothic lack of interest in natural light.

The right-hand side of the picture, 3,



3

is lit by the 'revelation,' showing a nameless beast and a tortured and naked figure which may be either priest or statue, while a blinded magician rushes across the aisle. Beyond, the rood screen pulsates with naked pagan statuary which contrasts with the dark and ambiguous creatures above the screen. The site of the high altar is surrounded by visible darkness.

Ritual murder is taking place before an image to the left of the picture, while a group of figures in an adjacent bay combines to form a crowned and brooding presence of fantastic di-

mensions. A winged horse presides over an adjacent entablature.

I would like to quote the various artists whose manners are imitated in various parts of this extraordinary picture. However, I will not deprive other people of that innocent enjoyment!

Yours, etc.,
JOHN WHEELER.
Brisbane, Australia.

BOOK REVIEWS

SISTER ARTS

SPACE FOR LIVING: LANDSCAPE ARCHITECTURE AND THE ALLIED ARTS AND PROFESSIONS. *Edited by Sylvia Crowe. Djambatan Amsterdam* 1961. 72*s*.

LANDSCAPE ARCHITECTURE. *By John Ormsbee Simonds. Iliffe Books London Ltd.* 95*s*.

Since the decision was taken in 1959 to close the three-year full-time diploma course in landscape architecture at the University of Reading, the Institute of Landscape Architects has done a lot of soul-searching into what the subject is and how it should best be taught.

Space for Living is the published account of the International Federation of Landscape Architects' conference held in Amsterdam in 1960. The theme: landscape architecture and the allied professions. Lectures were given by thirteen experienced people, and sifting through their personal opinions, the answer to 'what is it?' comes out as the art of designing the living environment of man. That such a person should be called a landscape architect is open to doubt, for he is necessarily a synthesizer of what G. A. Jellicoe maintains is a minimum number of eight 'sister arts' (you start with philosophy).

It is not conceived as a book and suffers the common malaise of inconsistency. Even the typography varies (W. Sandberg's piece on modern art is set throughout in e e cummings lower case). The unconscious disagreements are more interesting than the frequently repeated catch-phrases, and aside from its being a record it is hard to see what kind of readership it is aiming at.

So far as the landscape architect himself is concerned one gets the sinking feeling that he is expected to be another administrator; yet another *uomo universale*. There does not appear to be one thing which he alone can contribute to the team, which is further witness to the arguments over what is the single discipline to be taught landscape students. Halprin and Glikson are for ecology, Shepheard for drawing—'if you absolutely cannot draw at all, then I think you had better give up altogether.'

It does seem that if landscape architects concerned themselves with single art-works rather than the organic expression of the worldscape, there would be less frustration all round.

John Ormsbee Simond's *Landscape Architecture* is another printed lecture; the results of teaching at the Carnegie Technical Department of Architecture. The experiences of a lifetime's practice, teaching and travelling compounded in a single volume. The attempt is ambitious, but does not succeed. He tries to say too much.

In Chapter I, 'Fundamentals,' subheading 'Man,' the reader has to break in mid-sentence to read a 240-word quote from Richard Neutra. There are 68 more quotes to come ('read them at the beginning of each chapter or the end?').

A book on the landscape design process is an imperative necessity; this author makes a brave, if expensive, attempt. That you come out feeling punch drunk may mean that the task is impossible; that there is no single discipline; that the landscape architect is the team member who spends more time than anyone else in the snowfall of memoranda notes.

Shenstone was honest enough to call his attempt at the subject *Unconnected Thoughts on Gardening* (1764). To read his lucid prose after Simond's marathon of scissors and paste is as deeply satisfying as a cigaren after 40 filter tips.

L. J. Fricker

FRINGE THEATRE

THE THEATER OF THE BAUHAUS. *By Oskar Schlemmer, L. Moholy Nagy and Farkas Molnar; translated by Arthur S. Wensiger; introduction by Walter Gropius. Wesleyan University Press.* $7.50.

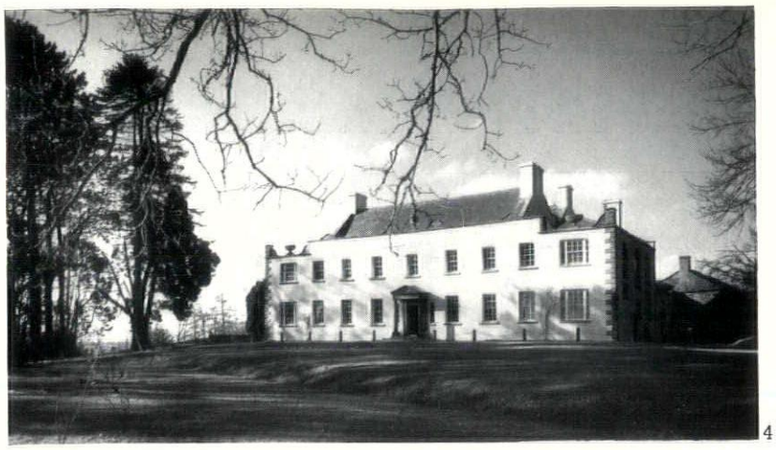
The reprinting, in English, of *Bauhausbücher* in their original format and typography continues at an irregular pace, and *The Theater of the Bauhaus* is a fair sample of this enterprise which must be praised for what it attempts even while recognizing that it is doomed before it starts. Bauhaus prose (some of it almost forty years old in this instance) resists translation, the resultant English text resists the procrustean exercise of forcing it into Moholy's layout, and this is made the more difficult by the addition of a discursive Gropian introduction, footnotes, and a translator's apologia at the end. And yet, if no one tries to achieve this work of historical restitution, how will the growing hordes of junior Anglo-Saxon studentry ever know the impact of the now impossibly-rare originals?

In the present case, the confusion is compounded by the inclusion of a Schlemmer text (*Bühne*) that was not in the original and is three crucial years more sophisticated than the rest of the 1924 texts, and by Gropius's piece which, as usual, displays 20/20 hindsight, having been written in 1961. Nevertheless, one applauds the basic effort, and recognizes that an introduction of some sort is needed, and that the supplementary Schlemmer text belongs here if it is to be reprinted at all. Once the enterprise had been undertaken, this, logically, was the only outcome.

Reservations aside, what do we learn about the Bauhaus stage? Chiefly that it was entirely absorbed with peripheral and non-dramatic aspects of theatre, with masks, props, lighting, space-concepts, typography, costumes, silhouettes, mechanisms. When it makes passing reference to human action on-stage, it seems incapable of distinguishing between drama and improvised therapeutic psycho-drama. As represented in this book it was to be a gimmick-theatre of *Uebermarionetten* which has found its fulfilment, now, not on any stage, but in Mike Mercury and the other sophisticated puppets of the TV *Supercar* series. This may seem a hard judgment on an organization devoted ultimately to the *Gesamtkunstwerk*, to the total collective work of art. Yet, in transposing this concept from the basically theatrical form in which Wagner had conceived it in his music-dramas, to the basically architectural form in which it appears in Molnar's *U-theater* or in Gropius's Total-theatre, totality seems to have been debased. The sheer mechanics of a structure in which every conceivable form of drama could be performed, resulted in a building whose complexity looks dangerously like an end in itself, an extroversion of the backstage technologies to a frontstage position where they would effectively smother the drama itself. The effect of building any of these grandiose projects would have been to drive the living theatre into tents and open-air performances to escape from the total threat of total imprisonment in gadgetry.

Yet this, surely, cannot be the case, since some sort of theatre flourished with well-documented enthusiasm throughout the Weimar and Dessau years of the Bauhaus. In spite of the anti-theatrical mechanisms and manoeuvres presented in this book, the Muse did not kilt up her skirts and run. The reason why she appears to have found the Bauhaus *Aula* a congenial fane is suggested by one remark of Schlemmer's and one photograph. In *Bühne*, Schlemmer recalled 'this pleasure through creation was especially strong at the beginning (not to say the infancy) of the Bauhaus in Weimar, and was expressed in our exuberant parties, in improvisations, and in the masks and costumes which we made.' This, together with a group photograph of the entire community gooned-up for a Bauhaus dance in Weimar, suggests what the memories of Bauhaus veterans seem to confirm —the true vitality of the Bauhaus theatrical experiment lay in its prolonging and exalting a house tradition of expressionist horseplay, charades and masquerade; something so obvious to Schlemmer and his contemporaries that it needed no explaining; something so inaccessible today that all we have left is Schlemmer's '. . . universe of walls, props and other stage equipment' without the players, or the scripts, for which it was specifically conceived.

Reyner Banham



4

Ardress House, County Armagh, has been restored and repaired, 4, *under the direction of Robert McKinstry, on behalf of the National Trust Committee for Northern Ireland—a branch of the Trust that gets less credit than it deserves for the care it takes for an outstanding group of country houses that are almost unknown outside Ulster. Originally a simple manor house without architectural pretensions, Ardress was given symmetry and style by its architect-owner, George Ensor, in the late eighteenth century. He also called in Michael Stapleton of Dublin for the plaster work, which is of an extremely high quality,* 5, *and its restoration by McKinstry, with advice from James Lees-Milne, is a welcome example of architect/historian collaboration.*



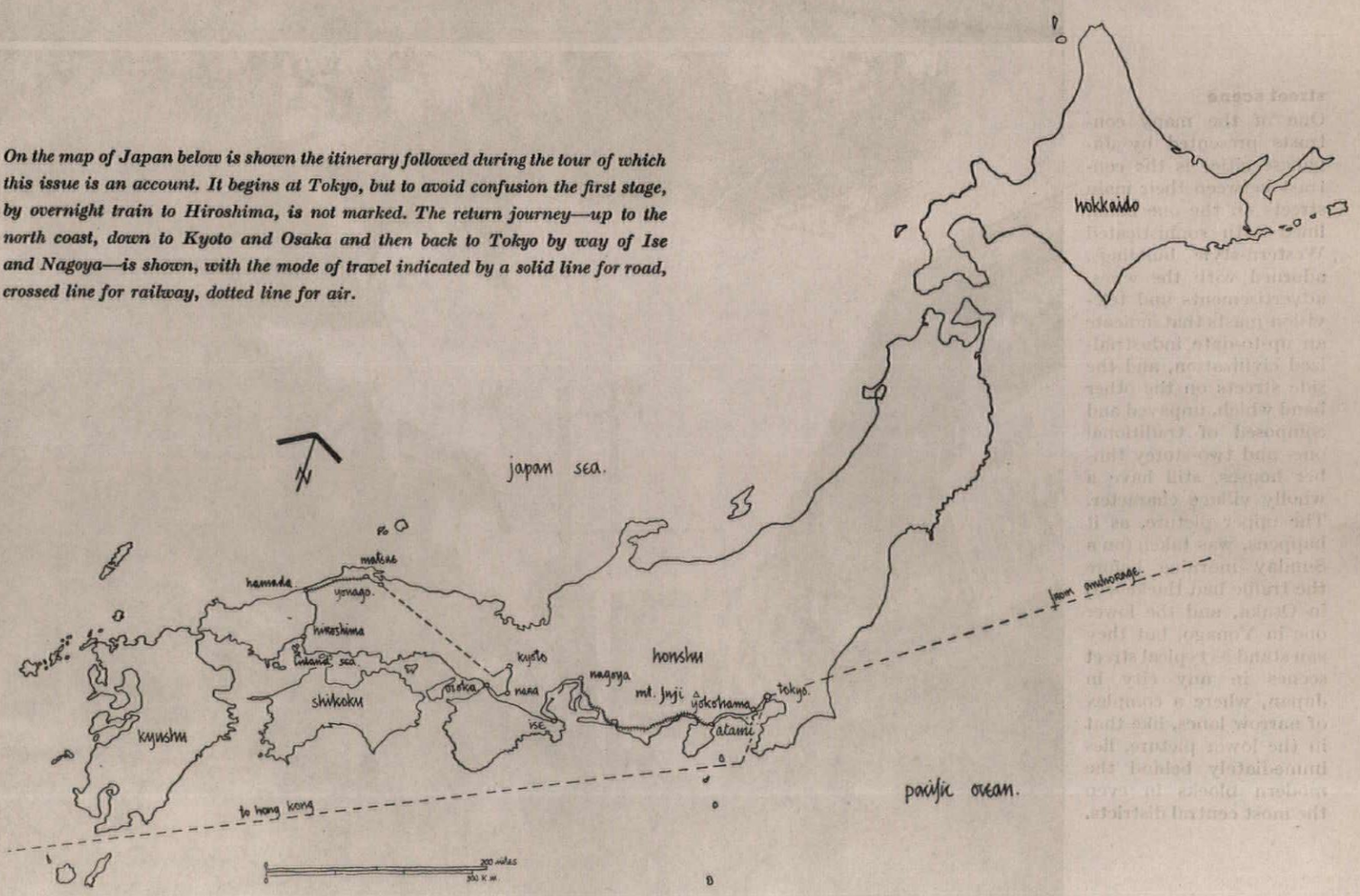
5

a special issue of The Architectural Review

JAPAN 1962

written and edited by J. M. Richards

On the map of Japan below is shown the itinerary followed during the tour of which this issue is an account. It begins at Tokyo, but to avoid confusion the first stage, by overnight train to Hiroshima, is not marked. The return journey—up to the north coast, down to Kyoto and Osaka and then back to Tokyo by way of Ise and Nagoya—is shown, with the mode of travel indicated by a solid line for road, crossed line for railway, dotted line for air.







street scene

One of the many contrasts presented by Japanese cities is the contrast between their main streets on the one hand, lined with sophisticated Western-style buildings, adorned with the wires, advertisements and television-masts that indicate an up-to-date industrialized civilization, and the side streets on the other hand which, unpaved and composed of traditional one- and two-storey timber houses, still have a wholly village character. The upper picture, as it happens, was taken (on a Sunday morning before the traffic had thickened) in Osaka, and the lower one in Yonago, but they can stand as typical street scenes in any city in Japan, where a complex of narrow lanes, like that in the lower picture, lies immediately behind the modern blocks in even the most central districts.

This special issue is the outcome of a visit to Japan by the REVIEW'S *Executive Editor. It takes the form of an illustrated day-to-day narrative, interrupted by short articles on various aspects of the Japanese architectural scene and by illustrations of some outstanding modern buildings. Since a tour of less than three weeks can neither be comprehensive nor entitle the author to write with real authority, these claim to be no more than the author's personal impressions. No opinions are given that were not formed on the spot and no buildings illustrated that he did not see.**

Grateful acknowledgements are due to the Japanese Foreign Ministry whose hospitable invitation was the occasion of the author's visit, to Mr. S. Shigihara of the Foreign Ministry who acted as guide and interpreter, to Professors Kenzo Tange and Takamasa Yoshizaka who, on behalf of the Japanese Architects' Association, helped the Foreign Ministry to plan the author's itinerary, to Professor Tange also for the trouble he took and the time he spent helping the author to spend his own time wisely and enjoyably, to the many other Japanese architects who showed him buildings and answered his questions and to the magazine Shinkenchiku *for help over photographs.*

first day

The tedious journey to London airport can appropriately be occupied, as the car ploughs its way among the diesel-fumes along the somewhat improved highway carved through suburbia, in trying to eliminate from one's mind, in order to arrive in Japan as free as possible from preconceptions, the ready-made picture, sub-consciously pieced together since childhood, of the country and its people that everyone carries about with him:

A picture of a people 'clever as a pack of monkeys,' able to imitate anything, inscrutable beneath their courteous manners; of gardens full of dwarf trees, stones, ponds and little bridges; of cherry-blossom, paper lanterns and distant views of Mount Fuji; of the modular planning of traditional houses and ceremonial tea-drinking seated on cushions on the floor. A picture of cinema films full of subtle imagery and violence; of over-decorated vases, the hideousness of *cloisonné*-ware, verandahed tea-houses imitated in Bournemouth; as contrast, the exquisite design of cutlery and little boxes seen at international exhibitions. A picture of a small-statured people (except when they are wrestlers), frequently spectacled, emotional, friendly but implacable as enemies; of stylized women (Utamaro) with high-piled hair stuck with wooden pins, warriors in chain armour, waterfalls (as in Hokusai and Hiroshige prints) and coolies in the rain wearing wide-brimmed straw hats; of bicycles and cameras cheaply and expertly manufactured. A picture of remote wars fought from battleships with rows of upright funnels; more recently, of jungle warfare: the horrors endured by prisoners and world guilt about Hiroshima; of modern architecture, strongly influenced by Le Corbusier, vigorously rectilinear like timber turned to concrete; of teeming cities where the mysterious East mingles untidily with the industrialized West.

The effort is made, and the car pushes its way past the huddle of shacks along the airport boundary and through the tunnel to the new completed long-haul passenger building: a very respectable building, cleanly and boldly finished inside, with nothing to affront the most design-conscious visitor except the stock of souvenirs in the gift-shop. The usual long delay before departure, with nothing to do but drink unwanted cups of coffee and stare out of the windows, brooding on the seemingly insoluble problem of the clutter that occupies the spaces between buildings.

Take-off at last: the aircraft a DC8c, its spacious interior only marred by opulent but inappropriate brocade upholstery. Stewardesses (now that air travel is accepted as a matter of routine by everyone, the term air-hostess can surely be discarded) in Japanese dress—kimono and obi; but how difficult for an Englishman (inherited memory of generations of light opera?) to regard this particular foreign costume as anything but fancy dress; no other—certainly not the Indian sari—is so difficult as the Japanese to accept objectively away from its native land. The process of ridding one's mind of preconceptions is clearly not so easy as was thought.

No such problem over the next Japanese custom encountered: a basket brought round containing damp towels, steaming hot and rolled into little sausages, for wiping one's hands and face—the prelude, which one never ceased to welcome later, of every Japanese meal and a service provided in bars, inns and railway-trains. Next, though the flight to Paris is only 35 minutes, a snack on a tray: strawberries and cream, sweet biscuits, coffee or tea—the first of those oddly composed meals characteristic of long-distance air-travel, served at strange intervals and in a strange order, that do so much to upset one's already confused conception of the passing of time.

Paris soon—a very brief stop; disappointment at the new Orly airport buildings, which are smartly modern, curtain-walled with panels of ugly colours and planned as a deep inarticulated mass, formless externally and depressing internally by reason of the permanent artificial lighting required.

Off again to Copenhagen—a strangely domesticated city to be the taking-off point for the North Pole. Another meal on a tray, this time a multi-course lunch; chop-sticks provided but not obligatory; Japanese dishes if preferred. The route passes over Cologne and Hamburg, but nothing visible except a layer of cloud above which the high-flying jet aircraft cruises in bright sunshine.

Copenhagen in an hour and a half: down through the cloud; glimpses of ice (or could it be detergent?)

*With the exception of some of those that accompany the biographical notes on Japanese architects at the end of the issue.

floating in the dark waters of the sound; hazy roofs and towers and masts of shipping; touch down in a snowstorm. But the stop at Copenhagen a pleasure because of its charming airport buildings: discreet outside, airy and unusually agreeable in, high-roofed and with something of the character of the turbine-hall of a power-station, with overhead walkways supported on gantry-like exposed steel frames; austere but good in colour and scale. 'Finger' circulation system as at Gatwick: two 'fingers' with elegant louvred sides. In the waiting hall, a closed-circuit television announcing system, efficiently operated in a variety of languages, its only blemish the wan, momentary, meaningless smile put on by the announcer at the end of each statement, before her face is faded from the screen—it seems to be common to all uses of television that announcers feel obliged to offer viewers a smile, shy, toothy or bland, whether there is anything to smile about or not.

Away again after refuelling in less than an hour, up through the low cloud, on the long flight, straight over the Pole, to Anchorage in Alaska. It's now just on 2 p.m. Flight time is 8 hours, so we shall arrive about 10, but as Anchorage time is eleven hours behind Copenhagen time we shall in fact arrive at 11 in the morning—three hours before we left; another complication of jet air-travel (and a tip to all such travellers: don't continually alter your watch as the official time changes; leave it as it was or you'll have no means of knowing when you need sleep or a meal).

Up the coast of Sweden. Holes in the clouds show blue-grey sea but the shore-line and the many water-courses frozen; a snow-covered landscape varied by dark patches of forest, soon becoming hillier and less forested, the only snow-free places the rocky sides of mountains. Next across Norway from Oslo to Trondheim, but cloud again obscuring the land below. Then along the coast to Bodo; after that, straight for the Pole, passing over Spitzbergen on the way.

4.14 p.m.: a present of an egg-timer—its significance unexplained, but it is one of the traditions of long-distance air-travel in the first class that souvenirs and comforts should be continually distributed in the intervals between the distribution of drinks, lavish (though progressively indefinable) meals and, in the case of Japanese aircraft, steaming rolled-up towels. In such air-travel, if nowadays in travel of no other kind, pampering the traveller is still thought proper and so is the creation of an enjoyable atmosphere of conspicuous waste.

By Spitzbergen the sky has cleared—brilliant weather now: snowfields far beneath, interrupted by angular mountains; then soon the Arctic sea, solidly frozen, crossed by zig-zag channels differentially coloured as with washes of Payne's grey. But soon these blue-grey tones disappear—the water, one supposes, is now more deeply frozen—and then the creeks or channels disappear in their turn, giving way to the featureless flatness of the Polar plain.

Broad daylight still. When we had climbed above the clouds on leaving Copenhagen the sun was low in the sky but shining strongly into the port-side windows, and there it has remained since we are flying as fast as the earth is turning. On over the Pole itself. The sun stands still, and time (and indeed the vibrating aircraft) seems also to stand still while underneath unrolls, like a sugar-coated abstract painting, the flat dreamy Polar landscape, white and grey-white, covered with a network of fine ridges touched by the evening light and emphasized by sharply cast shadows—the whole scene sparkling in the sun.

Seven hours from Copenhagen and a change of landscape: the mountains of Alaska, which come into view as a voice on the loudspeaker announces the expected arrival at Anchorage at 10 p.m. (11 a.m. local time); it is snowing hard there, says the voice, and the ground temperature is 30 below freezing.

Dramatically mountainous country now, tree-clad with curly rivers and pear-shaped lakes; the whole land glazed with ice. On the right, Mt. McKinley, over 20,000 ft., the highest in North America, its snowy pyramidal peaks reaching above the layer of cloud that now appears below us, like a cluster of islands in a woolly sea. Down into cloud out of the still bright sun, circling over frozen inlets, low cliffs, fir forest; no sign of life until the markings of a runway in the snow and a barely visible huddle of huts.

The cutting edge of the icy wind as one walks from the warm aircraft to the group of huts constituting Anchorage airport; then the overheated interior—suddenly very American: juke-boxes and slot-machines; tourist advertisements for the 49th State; ugly paintwork; shoe-shine seats elevated like thrones; tawdry local souvenirs and jumbo postcards. And then, just as one is beginning to reflect on the tastelessness of the casual Americanized scene, a sight of some local inhabitants—airport workers, perhaps, or mechanics or truck-drivers from the nearby town—exemplifying the characteristic dandyism of American working clothes: in this case, high boots, fur caps, waterproof jerkins, worn with a becoming negligence.

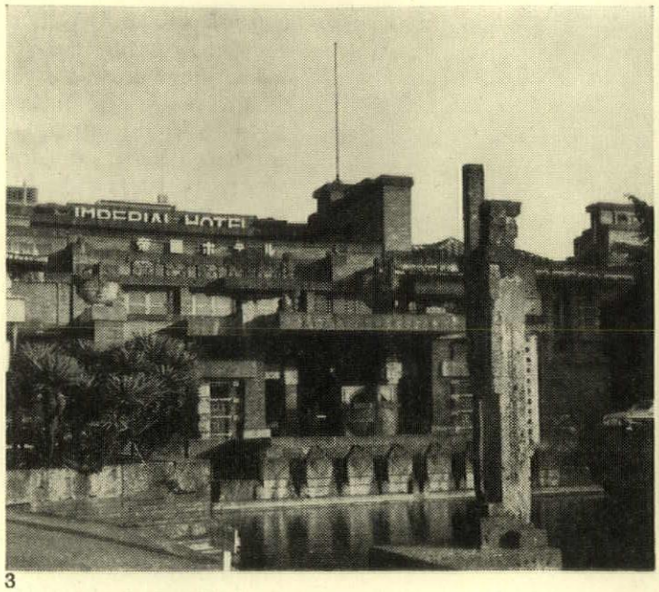
Out again into the blizzard for the last leg of the trip. Men standing on the wings of the aircraft brushing off the snow. Take-off 12.40 p.m. local time; estimated flight time to Tokyo seven and a quarter hours. Out of the clouds into bright sunshine, but the clouds thinning soon: frost-bound inlets, snowfields, sunlit mountains. Across the mountains in brilliantly clear weather and out into the frozen Bering Sea. Then cloud below again, obscuring further view.

We are now losing time instead of gaining it. Tokyo time is five hours ahead of Anchorage, so we shall get there soon after 3 p.m. Having gained so much we are still in the day we started, but soon we cross the International Date Line and suddenly it is the same time next day, as we drum away over the North Pacific, visible now through breaks in the clouds, a deep grey-blue with fragments of broken ice.

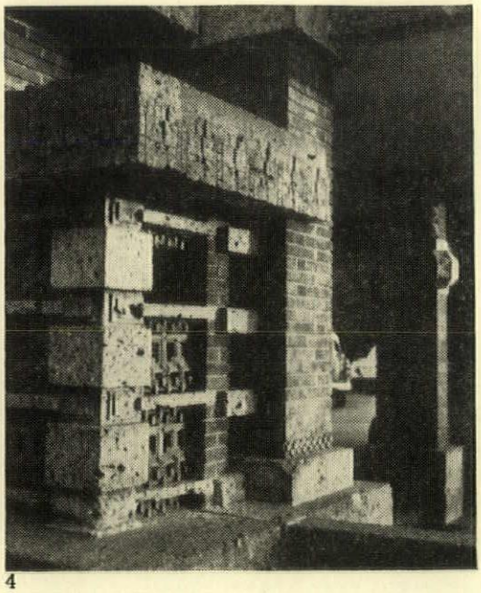
second day

The limitless blue of the Pacific—Coleridge's 'wrinkled sea,' though it is a puzzle how he knew about this, never having been up in an aeroplane. In our cosily furnished cabin, hurtling through the upper air at 540 m.p.h., preparations for still another meal. Which meal, it remains to discover. By London (and therefore by one's stomach's) time it is 1.30 in the morning, much too early for breakfast; at Anchorage, which we have just left, it is already past lunch-time; by Tokyo time it is only 10 a.m. The meal turns out to be an elaborately planned dinner, but most passengers are by now too bemused by hour upon hour of unnatural daylight and too unsettled by changing pressures, temperatures and meal-times—as well as already too lavishly fed—to want to do more than nibble here and there and drink perhaps another glass of the frequently offered health-preserving champagne.

Over it one drowses and dreams, trying to read but unable to concentrate. Then, 2.10 p.m., Tokyo time,



3



4

3, *Frank Lloyd Wright's Imperial Hotel, Tokyo: the main entrance front seen from across the pool that occupies the centre of the forecourt.* 4, *a close-up inside the porch, showing the textures in brick and stone.*

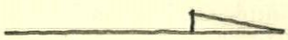
the first sight of Japan—the eastern coast of the main island of Honshu: shallow bays outlined by sandy beaches, wooded country beyond, a little snow on distant mountain-tops. Circling to land at Tokyo airport: glimpses of shipping, clusters of cylindrical petrol-tanks, the paraphernalia of a busy harbour. The airport itself—under reconstruction as airports always seem to be—the usual bustle and scurry on disembarking, then the long car-ride to the centre of the city.

The route from any airport to the city it serves tends to show the city's worst aspect (even visitors to delectable Paris experience disillusionment on the way in from Le Bourget), and Tokyo is no exception. Factories and shacks and a quite terrifying wirescape; a widish street thronged with noisy traffic and lined with a disorderly array of makeshift-looking two-storey buildings—workshops, dwelling-houses, open-fronted shops—largely timber-built, grey and dust-covered in the chilly sunshine of an early spring afternoon. Winter is the dry season in Japan and this one has been drier than usual.

The shed-like buildings interrupted by the carved brown gateways of Buddhist temples; also, strangely enough, by the high protective netting of golf-practice schools, for a craze for golf is just now sweeping Japan. Soon larger, more sophisticated buildings, but no more sign of formality or arrangement—the little timber houses still scattered among them. At last, after many stops and starts in ever denser traffic, block on block of big city buildings, some crowned in distant views by strange lattice-steel towers, and, facing a wide main street, crouching at the back of its drive-in forecourt, the squat brown frontage of the Imperial Hotel.

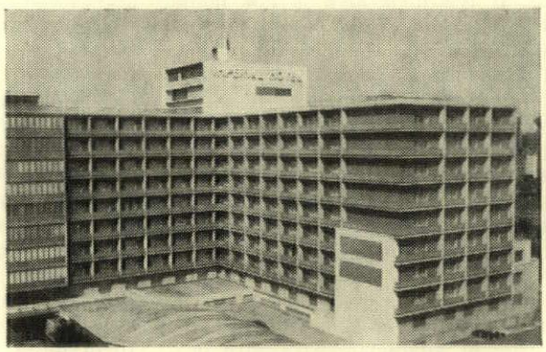
The Imperial Hotel, Tokyo, Frank Lloyd Wright, completed 1922, one of the famous monuments of the early days of modern architecture (and threatened, like so many of them, with demolition), is made of the same material inside and out: yellow-brown brick and a strange, pitted, tufa-like stone. The outside is very little changed until you go round to the back and find the hideous, modernistic annexe that has recently been built on. Inside much has been altered (and the big banqueting room, bombed in the war, was rebuilt by the US Army in a style only vaguely resembling Wright's original), but the entrance and main lobby retain their basic, and very impressive, spatial arrangement: a broad low-ceilinged lower vestibule—a slight slope to its floor the only relic of the celebrated earthquake—leading to a high galleried foyer with garden courts beyond: effective and agreeable if you can manage not to scrape your elbows on the detail.

The bedrooms pleasantly old-fashioned; deep mosaic-surfaced baths; lifts called 'Fuji'; the intriguing discovery that light-switches in Japan are turned up for on and down for off (other reversals of English custom revealed themselves later: when beckoning with his hand a Japanese turns the fingers down, not up; he cuts wood by pulling the saw towards him, the teeth being set the other way; direction arrows, for whatever purpose, have one barb instead of two, thus:



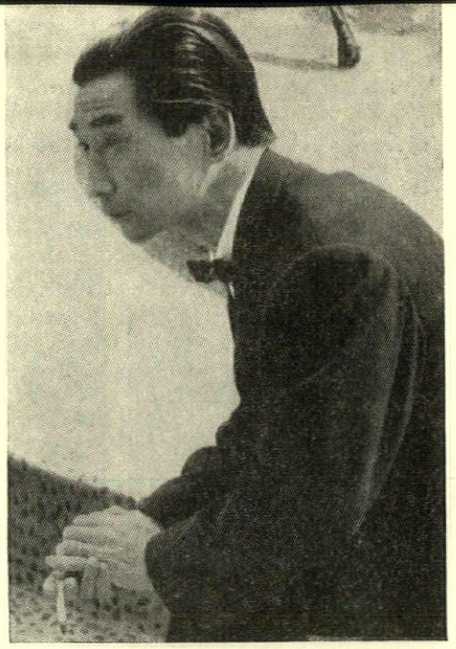
But not much time now for observing local differences—or for that matter for unpacking—because Tange is in the lobby and in half an hour there is a drinks party, to be followed by supper, given by the members of council of the Japanese Architects' Association.

Kenzo Tange: professor at Tokyo University; designer of many remarkable buildings (of which more later) and author of a widely noticed new plan for Tokyo; mentor of the more intelligent young architects; quiet spoken, as are all Japanese, with an amused but watchful look and an incisive mind. Japanese architects are refreshingly free from the arrogance architects often display in the West.



5, the brutal and characterless annexe which has been built on to the back of the Imperial Hotel.

Off with Tange, driving in the dusk along a bewildering sequence of contrasting streets—big city



6, *Kenzo Tange.*

boulevards off which lead narrow lanes, sometimes steep and twisting, all teeming with people and noisy vehicles—the traffic in Tokyo seems nearer than in any other city to the stage where it will simply seize up altogether. In spite of the area over which the city spreads, the space occupied by roads is relatively small;* and another difficulty is that one-way traffic systems cannot easily be adopted because no street has a parallel one a practicable distance away. The underground railway is equally congested. A special body of men called 'pushers' is employed on the platforms to cram the last passengers into the carriages so that the doors can close and the trains move off.

No street looks complete—half old, half new—and modern commercial buildings alternate with groups of timber houses. Tokyo, more than any city imaginable, is an agglomeration of tiny villages, and village life goes on unchanged in the back land behind even the most central modern blocks. Neon lights reaching up into the sky give some coherence in the gathering darkness to the chaotic urban scene.

Arrival at the Architects' Association party and a great feeling of relief when confronted by the group of welcoming faces: they are all different. Was it only a legend learnt in childhood that to a Westerner all Oriental faces look the same—or was this only supposed to apply to the Chinese? Anyway the fear, created by this legend, of the social embarrassment that might be caused by not being able to distinguish whom one had met before and whom one had not, is now allayed: Japanese architects, at least, are as different from one another, even to the Western eye, as readers of THE ARCHITECTURAL REVIEW.

Ten or a dozen are present, among them Kunio Maekawa, this year's president of the Association and, along with Tange, the outstanding member of the modern group of architects, Kenzo Ichiura, a specialist in landscape, Takamasa Yoshizaka the shock-haired professor at Waseda University, Junzo Yoshimura, Yoshiro Taniguchi, Kisaburo Itoh, belonging to a somewhat older generation than the others (who are in age mostly well below fifty), Ryuichi Hamaguchi, a youngish architectural critic.

Talk at first on many architectural topics, but over drinks and then over supper it gradually settles down to a subject that seems particularly to be exercising the minds of the Japanese architects at this moment: that of the organization of the profession, the proper qualifications of the architect and his relationship to engineers, contractors and the like—a subject of course that the Japanese are not alone in worrying about but, judging from the information acquired on this occasion and later, their professional problems are more serious than most.

* 9.2 per cent of the total, which can be compared with 23 per cent in London, 25 in Paris, 35 in New York and 43 in Washington.

THE ORGANIZATION OF THE PROFESSION

A Government licence is required to practise architecture. It is obtained after passing an examination controlled by the Ministry of Construction, and every building project must be in charge of a Government-licensed architect except for the traditional type of small house, if the floor area is not more than 100 square metres, which can be put up without supervision by a builder—in fact, a carpenter, since small houses are almost invariably of timber.

This sounds like a satisfactory enough system, but the first problem arises from the low standard of the qualifying examination, which is largely technical in its scope. Of the 30,000 Government-licensed architects in Japan, a great many are more what we might call building engineers or technicians.

These and the other less well qualified members of the profession constitute a kind of second class of architects, who have not taken a university course and passed the national examination, but have had six years' experience and have passed a local examination. But they too, it must be made clear, count as architects and can take charge of buildings.

The Japanese Architects' Association (*Nihon Kenchikka Kyokai*)—in certain limited ways the equivalent of the RIBA*—demands a high qualification but has a membership of only 450. It is an autonomous body (reconstituted in 1956) with no statutory position, electing its own members on the basis of reputation and executed work, after they have been sponsored by two existing members, as in a club. There is also a society to which architectural technicians who have not the qualifications to claim membership of the Association belong—the *Kenchikushi-Kai.*

The Japanese Architects' Association thus constitutes an unofficial élite, composed almost wholly of architects in private practice, and it has had to withstand over a number of years the strong pressure of the contracting industry against the architects' professional independence. For the big contracting companies—and this is another of the problems the profession is faced with in Japan—have their own architectural departments, some of them on a considerable scale. In the five biggest companies,† which are powerful organizations concerned also with building-finance and investment in property and land, these departments each employ a hundred or more architects, and they are responsible for more than a third of the total building work in the country.

The architects so employed are not eligible for membership of the Architects' Association. This exclusiveness on the part of the Association obviously has its dangers—among them the danger of putting the private architect on a pedestal and cutting him off from contact with the most important bulk of building activity and the development opportunities and opportunities of widespread technical co-operation that go with it. But it is a stand that had to be taken; otherwise there was the probability, when construction grew to an enormous volume after the war, of the architectural profession being wholly absorbed by the building industry and design standards and standards of service to the public being overwhelmed by commercial expediency. The Government—that is, the Ministry of Construction—exercises no professional control over the mass of architects when once they have passed the qualifying examination, and only the Architects' Association sets standards of professional conduct and responsibility and forbids undercutting of fees and the like.

In spite of the smallness of its numbers and the relatively small size of its members' offices—the largest contain perhaps forty or fifty assistants, but most far fewer—the Association has considerable prestige, partly derived from the independence of outside pressures that it has struggled to preserve, partly, it must be said, to good relations with

* It has its headquarters in Tokyo and branches, analogous to the RIBA Allied Societies, in Nagoya, Kyushu—the southern island—and Kansai (the name given to the central area of Japan containing the cities of Osaka and Kyoto).

† The Obayashi and Takenaka companies with headquarters in Osaka; the Taisei, Shimizu and Kashima companies in Tokyo.

the upper levels of the social stratification that is still of some importance in Japan and partly to the fact that important civic and similar commissions have lately gone to its members as a result of intelligent patronage or their own success in architectural competitions—commissions which have brought its members prominently before the public eye.

The Association seems to be well aware of the dangers of isolation and—under Maekawa's presidency especially—has been actively concerned about modern trends in architectural organization and the need for the architect to keep pace with them. But the need is felt, in self protection, to go on putting independence first. One incidental effect of the, so to speak, alternative bodies of architects within the contracting industry is the temptation they offer to private architects to delegate to the contractors some of their responsibilities. The contractors with architectural offices of their own are also, of course, among those which, following the usual tendering system, execute the private architects' designs, and some of the latter have adopted the practice of handing over only sketch designs, allowing the working drawings to be made in the contractor's architectural office, but this is a practice generally frowned upon by the private architects.

The best of the big contracting firms achieve, it should be said, in some of their work, first-rate standards of design, especially in office and industrial buildings; they have learnt much, in design and technique, from America. The best work of the Takenaka and the Obayashi construction companies in particular is as good of its kind as that of all but a few of the private architects, though perhaps more dependent on accepted modes of modern styling—see some of the office buildings illustrated in this issue. Lower down the scale such styling predominates. They are notably up to date and efficient, with branches in most of the big cities. Though they have the advantage of the accumulated experience of many similar jobs, they have not the incentive to undertake development or research work, which is chiefly done in the universities —see the article on Architectural Education.

Some experimental work seems, however, to be going forward within the industry on the subject of the greater industrialization of building components, but this suffers from not having the interest and support of the more aesthetically educated younger architects—the price, perhaps, that has to be paid for the Architects' Association's necessary policy of avoiding entanglement with the building industry. The whole process of industrial integration is, in any case, only beginning. It chiefly shows itself in research into methods of house building in concrete, the traditional timber having suddenly become expensive.

One other form of architectural office has still to be mentioned. There are several big design offices—again employing some hundreds of architects—which, though operating as self-contained organizations, are in fact dependents of some of the big industrial and commercial corporations which play an important part in Japanese life, extending their operations over many different fields—banking, import and export, investment, manufacturing and trading generally. The architectural offices of this type were mostly set up in the first place in order to provide these corporations with the architectural services they needed—to design branch banks, factories, stores, garages and the like. Thereafter they expanded to take on private commissions as well, so that they now continue, as it were, under their own impetus but still with the advantage of being regularly fed with commissions from the parent company, which still also maintains some financial control.

The most notable of these is the Nikken company, founded and controlled by Sumitomo, a vast organization including among its activities banking, insurance and mining and controlling important elements of the Japanese chemical, aluminium and metallurgical industries. The Nikken company has four divisions; architectural, electrical, general engineering and civil engineering. The Nikken architectural office has done some distinguished work, at least as good as the best that comes from the big contractors' architectural departments. Its head office is in Osaka. It has branches in Tokyo, Nagoya and Fukuoka and an organization somewhat resembling that of Skidmore, Owings and Merrill in America. The biggest industrial corporation of all—Mitsubishi—controls a similar office. Architects working in such an office, since they are not directly involved in the contracting industry, are not debarred from membership of the Architects' Association, and several of the chief designers in these offices have in fact been elected to it.

If the big contractors' architects are responsible for a little over a third of the building work in Japan and private architects a little under a third, the remaining third is done by Government departments or other official offices such as those of the prefectures or municipalities. A lot of this is routine work, somewhat uninspired, but better quality work is achieved, as elsewhere, when there is someone outstanding in charge of the department. A notable instance in Japan is the architectural department of the Ministry of Posts and Telegraphs which, under the leadership of Hideo Kosaka, has set a standard new to official architectural offices and has acquired such a reputation that Kosaka and his staff have been called in to design public buildings outside the post and telegraph field, as in the case of the Foreign Ministry building in Tokyo. Kosaka is the one official architect with the same standing and reputation in sophisticated circles as the senior members of the Architects' Association.

The fact that there are only a few first-class architects recognized as such outside the profession, makes it difficult for young private architects to get work to do—even architectural competitions tend to be limited to invited entrants—and to start up on his own needs a bigger effort than elsewhere. It also needs capital, because there still survives a paternalist tradition whereby architects do not discharge staff when temporarily short of work. Such difficulties may, however, have the advantage of driving the enterprising young architects, however ambitious they may be to run their own practices, to get experience in the meantime in the big contractors' and similar offices, and some are doing so, impelled no doubt also by the greater opportunities offered there to get close to new industrial ideas and methods. Nevertheless the separate status of the private architect who belongs to the Association, with his professional and aesthetic conscience, and the unorganized remainder is still the dominating factor in Japanese architecture.

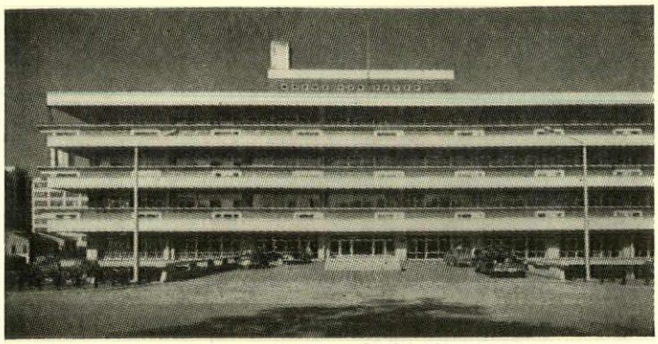
third day

A morning spent on a series of courtesy calls: on the Foreign Ministry (formal conversation and polite exchanges with the vice-Minister, over little cups of scalding tea); on the Ministry of Education (ditto, ditto); on the British Ambassador. The Embassy unmistakable, but not undignified, Ministry of Works neo-Renaissance, built in 1925 and standing in a large compound which also contains the Chancellery and several commodious houses for senior Embassy staff. Between these calls a more extended view of central Tokyo: many new and still uncompleted city buildings, scattered rather than forming a compact built-up core, mostly commonplace in style such as might be found in Philadelphia, Birmingham or Sydney, of even height but given a certain strangeness by the miniature Eiffel towers—in fact radio transmission towers—and the advertisement-bearing superstructures that spring from many of their roofs. One not-so-miniature, but more slender, Eiffel tower closes many city vistas.

The central part of the vast sprawling city is prevented from being utterly formless by the presence, right in the middle, of the vast tree-planted grounds of the Imperial Palace, a private open space abruptly and picturesquely defined by a moat with huge sloping retaining walls on the inner side faced with uncoursed stone, giving the roads that surround it on the outer, public side an open boulevard character. There's a recurring demand that these Palace grounds should be made available for building, to ease congestion at the centre, but they don't seem to be taken seriously by the planning authorities—and rightly, since they provide a unique and invaluable breathing space. But a plan for taking traffic tunnels underneath them—one of several official measures for easing the flow of traffic—seems sensible, has been

agreed to in theory but in practice is going forward all too slowly.

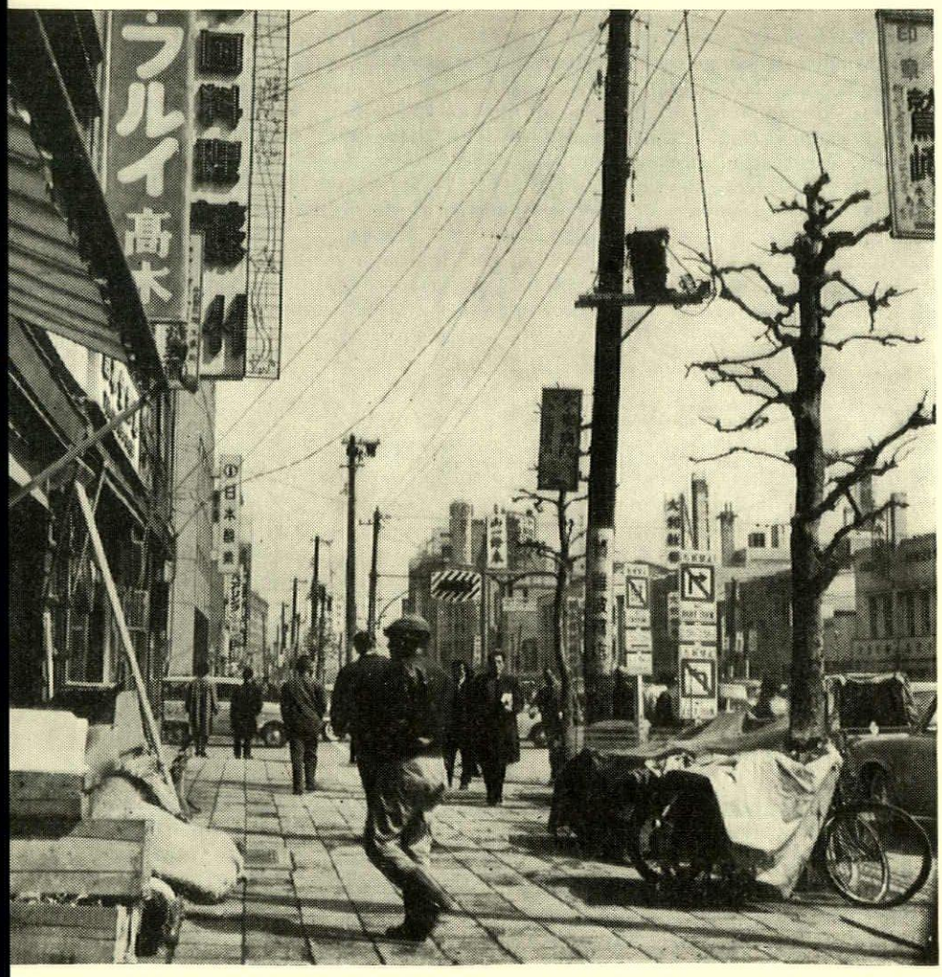
The Foreign Ministry is a respectable though unexciting modern building (architect, Hideo Kosaka, architect to the Ministry of Posts and Telegraphs, who acquired this commission by winning a limited competition). Other Government buildings as conservative and dull as they tend to be everywhere, the only exception being the newly completed



7, Diet Library, Tokyo, the outcome of an open competition.

Diet Library, a four-storey building with a strong horizontal emphasis, a little confused in its detailed wall treatment, perhaps because, although it was the subject of an open competition in 1953—the first big competition staged after the war—the winning design, by M. Tanaka and M. Ohdaka, was taken out of their hands and executed by the Ministry of Construction.

8, Tokyo street scene. With its advertising signboards displayed vertically to take Japanese writing and its profusion of wires and poles to carry them, it is typical of the main thoroughfares of this and most other cities.



The problem of finding one's way about Tokyo. Not only is the layout of streets without pattern or consistent direction; the streets have no names. Some main streets have the remains of numbered boards put up in desperation by the American occupying army, but these count for little. There are main districts with names that everybody knows, smaller districts or wards within them, and then even smaller local neighbourhoods based on the village structure, and the process of finding an address is one of tracking it down, narrowing the range of enquiry until you are near enough for anyone to tell you where it is to be found—a process which seems to work, but at the cost of long drawn out colloquies with taxi-drivers and bystanders.

The authorities are said to be planning a means of more systematically identifying streets; of what kind does not seem to be known. It may be—as some philosopher has already suggested—that the present situation does not represent so much the negation of method as a stage of development beyond mere arithmetical order towards some profounder kind of apprehension.

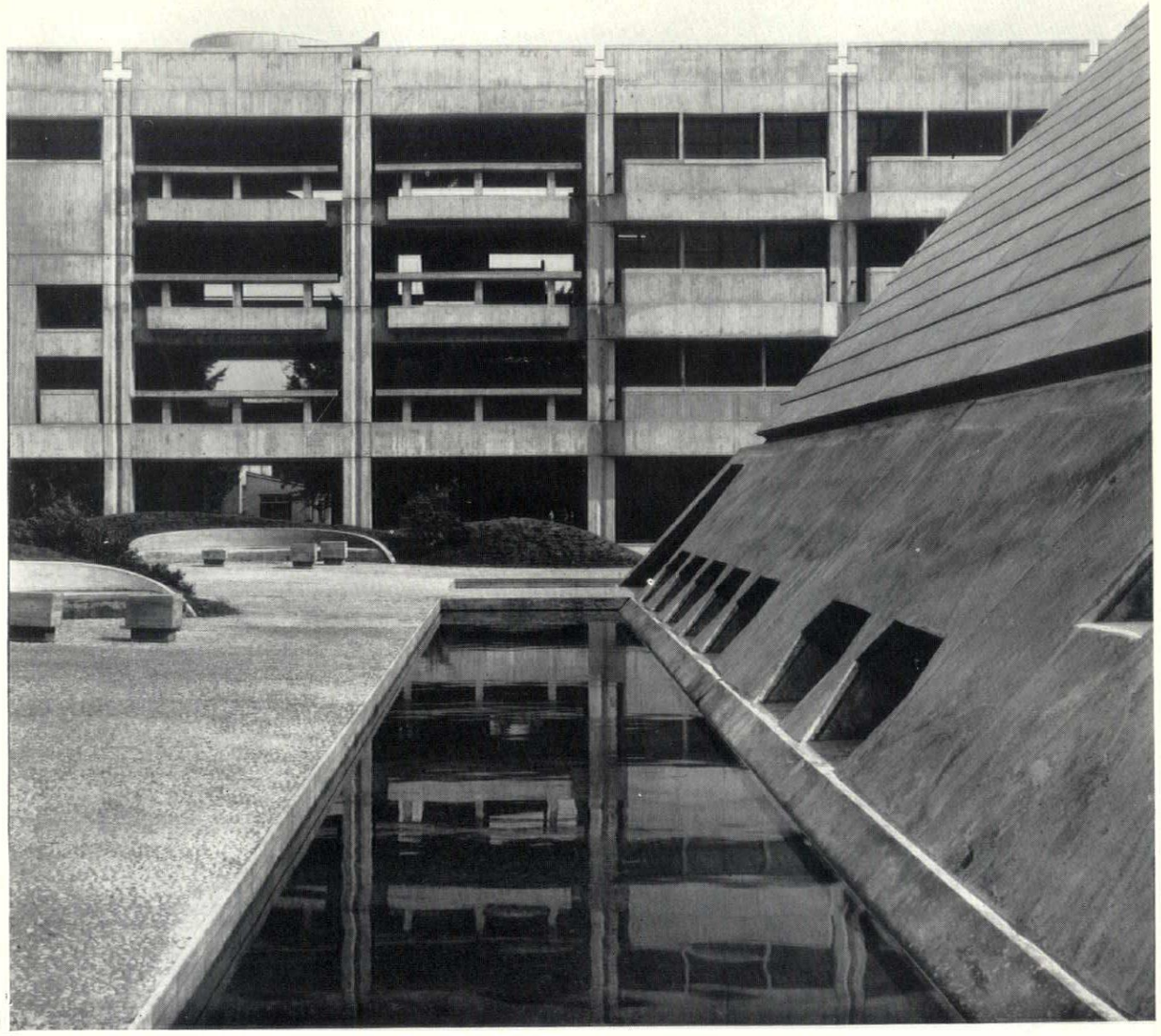
Wirescape everywhere; trees tightly wrapped in straw against the frost, and grass (except where diligently watered) a yellow brown—it will only become green as the summer goes by, summer being also the rainiest season. The quantities of people in the streets, but all purposefully moving along (in contrast to the equally crowded streets of Indian cities, where the people seem instead to be standing around waiting). Their courtesy: no one stares at foreigners, so that even the most self-conscious can feel at ease. People with white gauze surgical-type masks covering their mouths and noses and tied with tapes behind the ears—a wide-spread habit, presumably against Asian flu or perhaps simply the cold spring air, which doesn't seem to inhibit communication.

After lunch, to Maekawa's office, a long three-storey reinforced concrete building with open ground floor, glass-walled above, that he built for himself in the difficult years just after the war. It houses about forty assistants. More talk, over little cups of tea, about the state of architecture and the status of architects and then out in his car for a visit to some of his buildings.

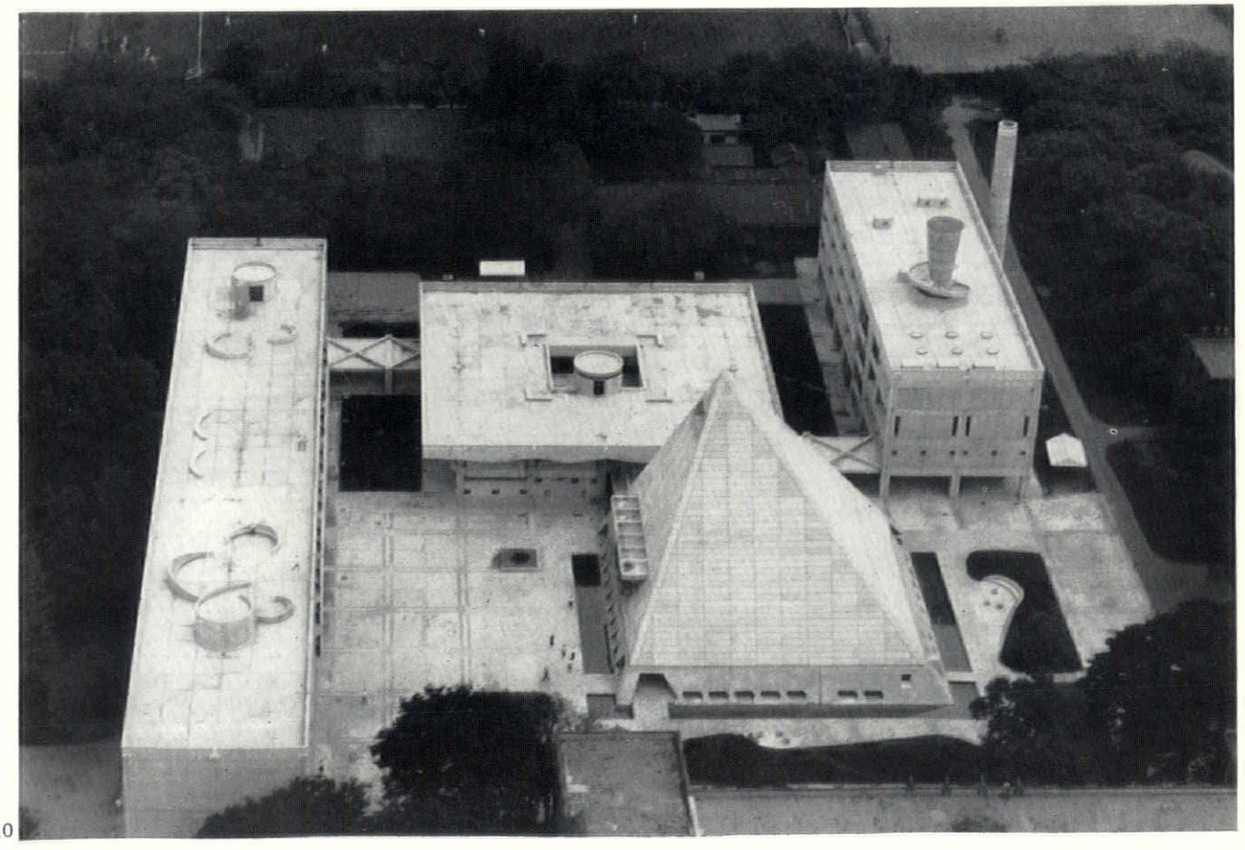
First to a new range of buildings for Gakushuin University, an ancient establishment that in feudal days was a school for the sons of nobles, now one of the forty or fifty universities that Tokyo possesses. An exciting moment this: the first sight of an example of that new architecture in exposed concrete by means of which Maekawa, Tange and one or two others have drawn the eyes of the West to what is going on in Japan. By no means a disappointment: the influence of Le Corbusier evident but fully assimilated; a pyramidal lecture-hall in the centre of a courtyard formed by rectangular buildings of varying façade pattern but given coherence by their consistent scale and by the way the deep-set apertures emphasize the weight and solidity of concrete slab walling.

Next to Ueno Park, a public park in north-eastern Tokyo within which, standing close together, are two buildings of outstanding importance for modern Japanese architecture. The first of these is the Museum of Western Art, built in 1959 to house paintings and sculpture—mostly French—bequeathed by a

[*continued on page* 169



9

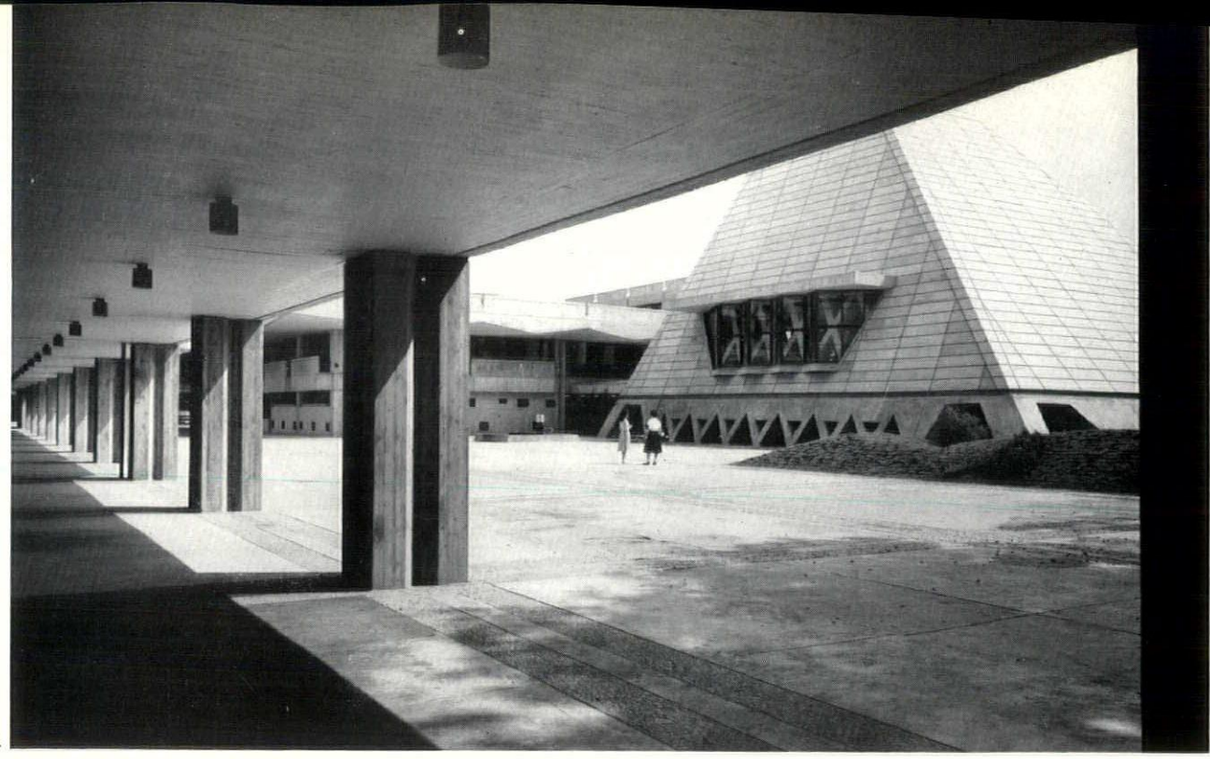


10

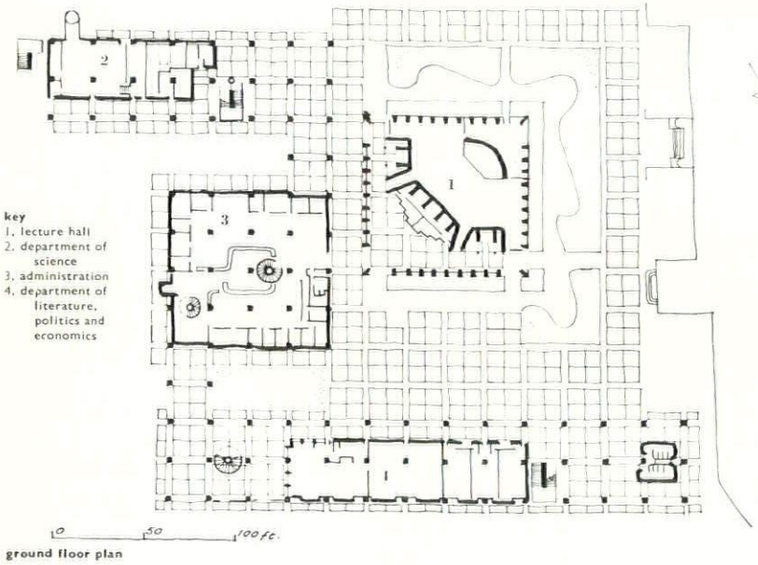
Gakushuin University, Tokyo

architect, Kunio Maekawa

These additions to one of Tokyo's many universities consist of four buildings—see air view, 10: a four-storey building, 9, providing research accommodation for the staff of the departments of political science, economics and literature as well as a couple of lecture rooms, another four-storey building of science laboratories, a two-storey administration building and a pyramidal lecture-hall seating 700. The lecture-hall is in a paved courtyard, enclosed by the other new buildings and some of the earlier buildings and entered underneath the research block (left in 10). Its pyramidal shape prevents it cutting off too much light from the surrounding court and permits good lighting inside.

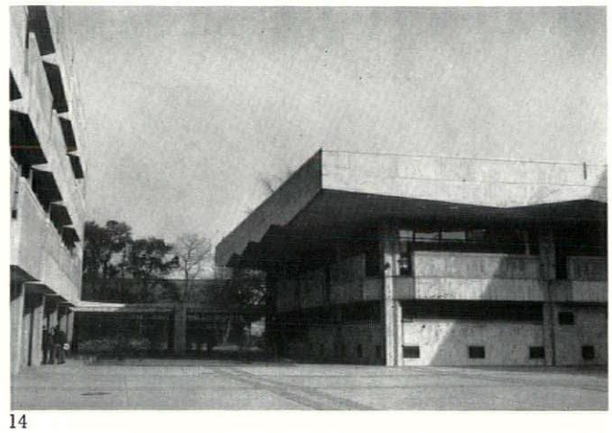


11



ground floor plan

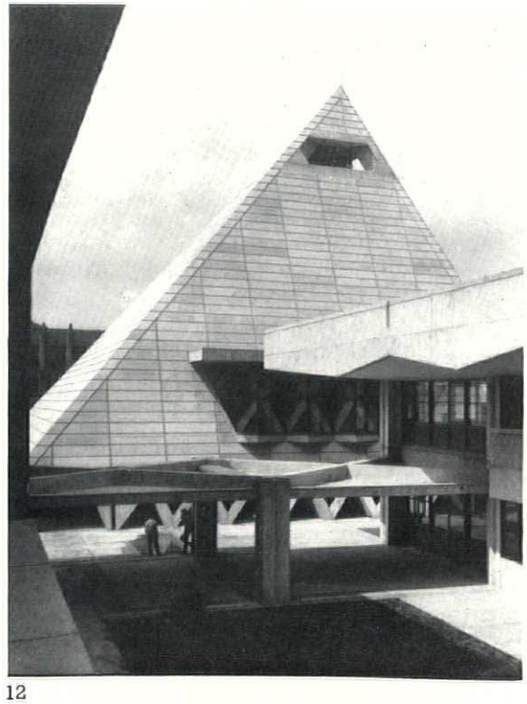
11, the lecture-hall and the paved and planted courtyard from beneath the research building. 14, the administration building; research building on left.



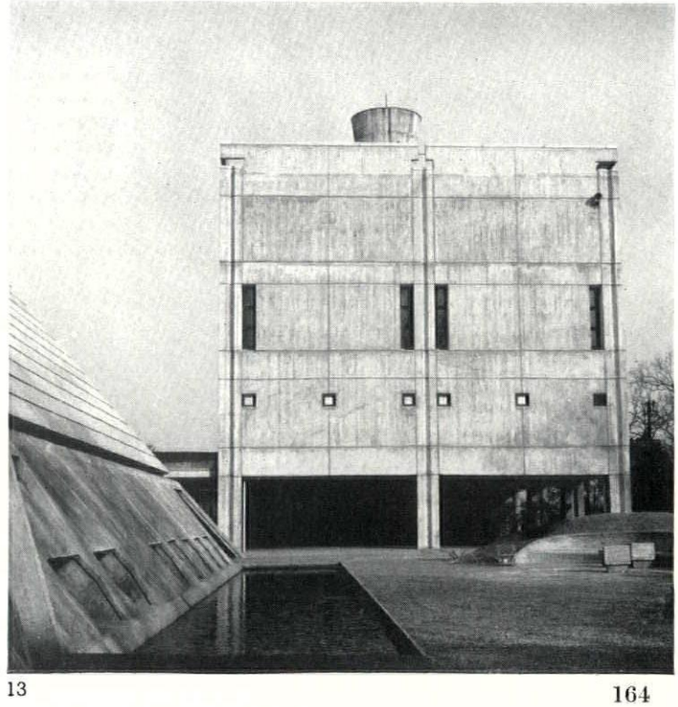
14

12, lecture-hall, administration building (on right) and the covered way that connects the latter with the science block. 13, the end of the science block, with the foot of the pyramidal lecture-hall on the left. 15 (facing page), beneath the arcade formed by the frame structure of the lecture-hall. 16, the interior.

Gakushuin University



12



13



15

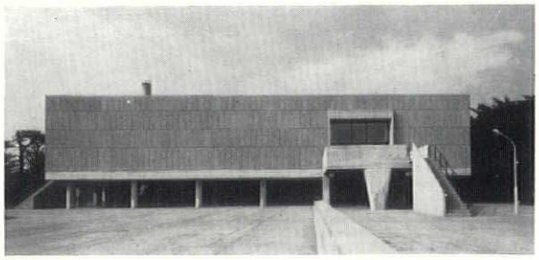


16

Museum of Western Art, Tokyo

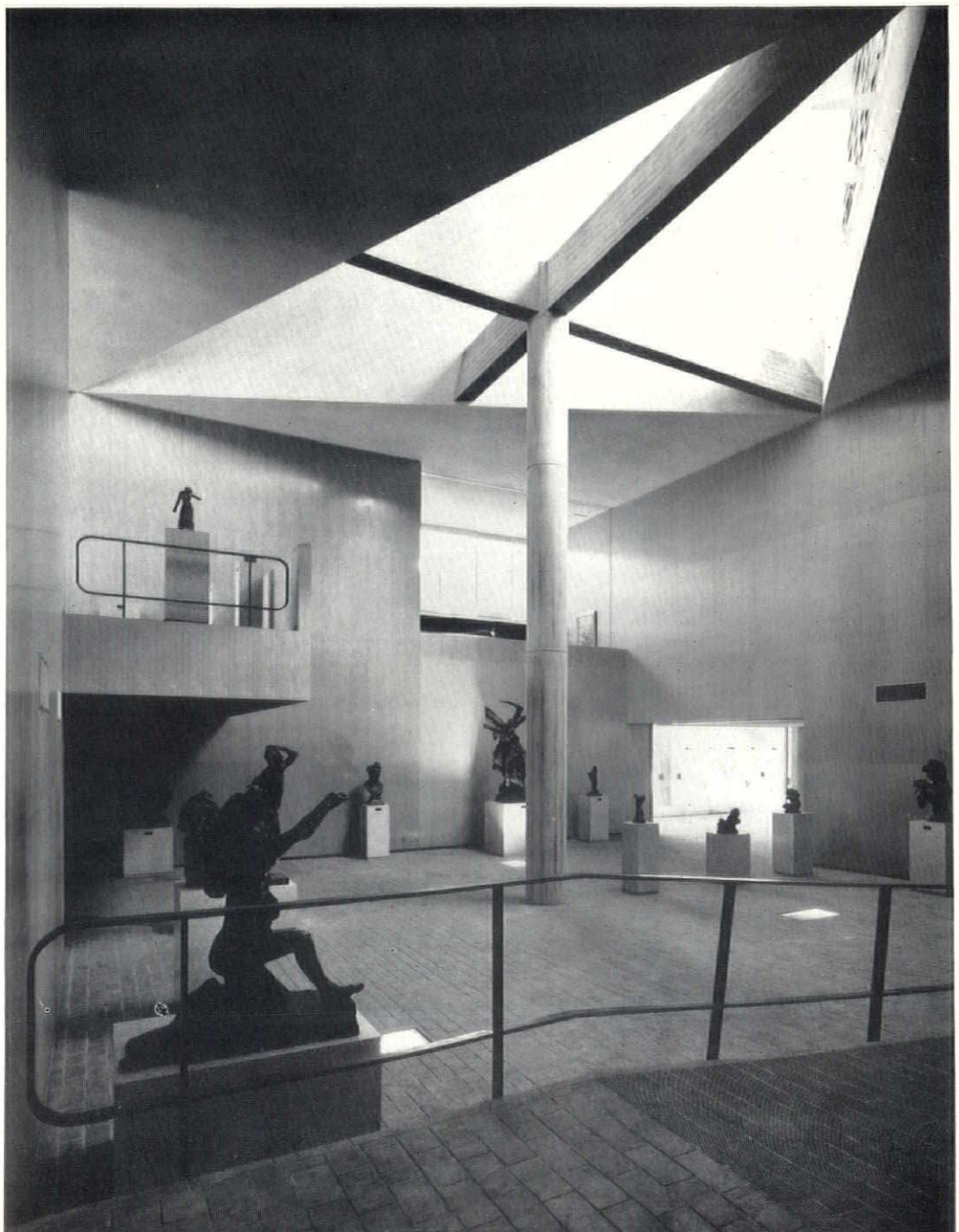
architect, Le Corbusier

Executed according to Le Corbusier's design by three Japanese architects (Maekawa, Sakakura and Yoshizaka) who had worked in his office in Paris, the Museum, in Ueno Park, Tokyo, stands behind



17

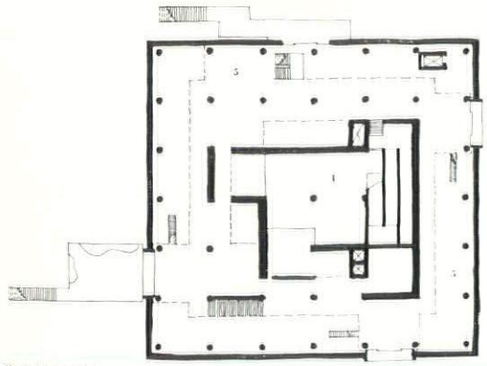
a paved forecourt used for the display of sculpture. The paving, 17, extends beneath the building, and the rest of the ground floor is largely given up to a two-storey sculpture hall, 18, the picture-galleries being arranged round its upper part on the first floor (see plan overleaf). These are reached by a ramp.



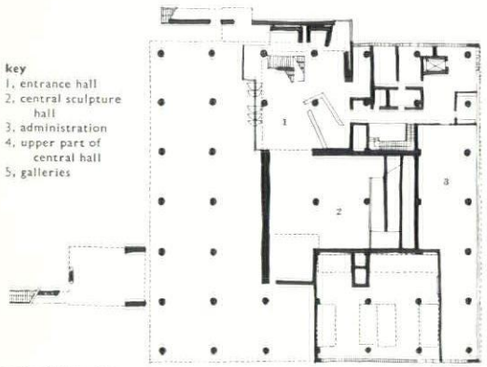
18

Museum of Western Art

19, glazed roof structures that take light down into the galleries below. 20, typical first-floor gallery.

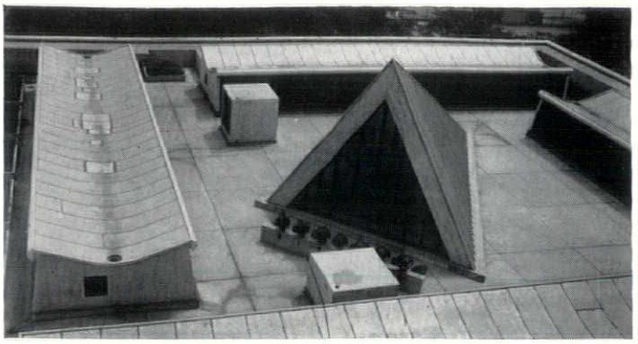


first floor plan

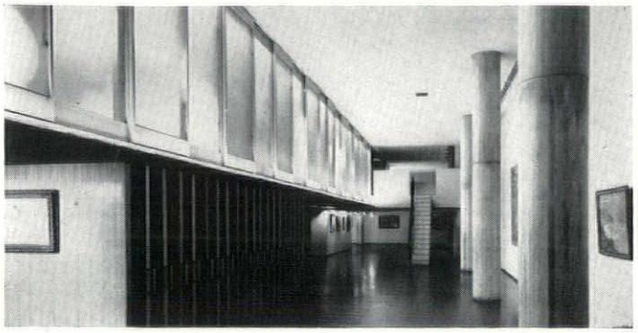


key
1, entrance hall
2, central sculpture hall
3, administration
4, upper part of central hall
5, galleries

ground floor plan



19

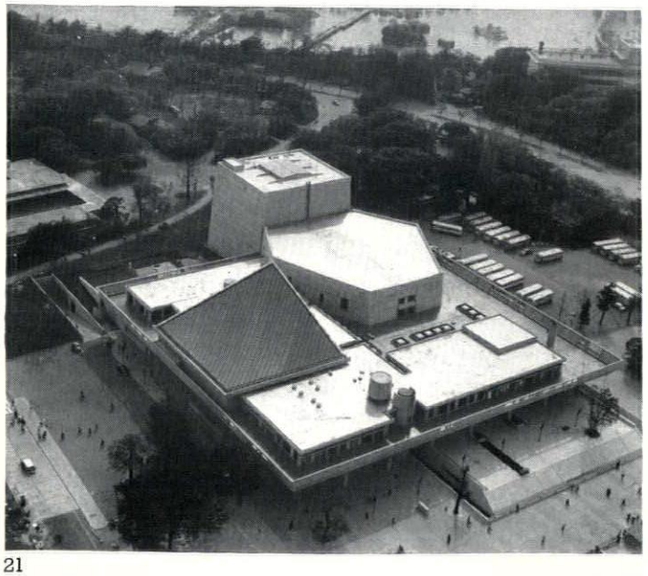


20

Festival Hall, Tokyo

architect, Kunio Maekawa

Contains a hexagonal main auditorium, designed for concerts and operas, a small auditorium on the first floor, square in plan but with circular seating, an exhibition gallery and a restaurant. 21, air view. 22, outside of the stage tower, faced with pebble-surfaced concrete slabs. It has double walls for sound insulation owing to the nearness of a railway.



21

22





23



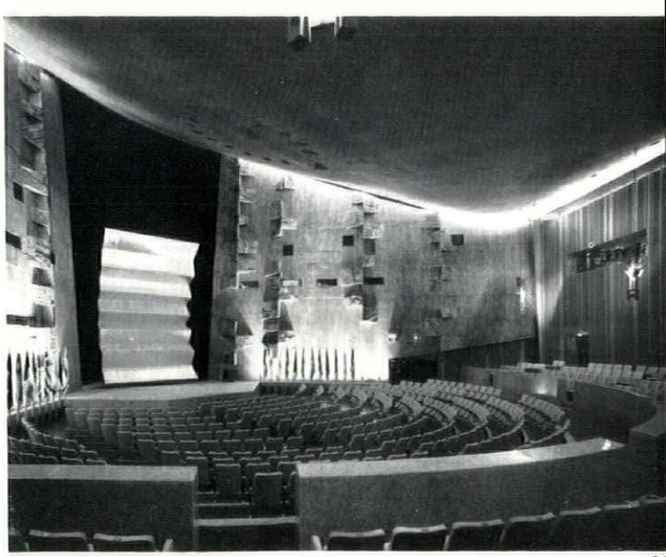
24

23, the festival hall from the entrance forecourt (photograph taken from the roof of Le Corbusier's Museum of Western Art—see pages 165-166). This side of the building faces north-east. 24, close-up of the entrance front, showing the contour of the terrace overhang with concrete surface showing marks of timber shuttering. The building was completed in 1961.

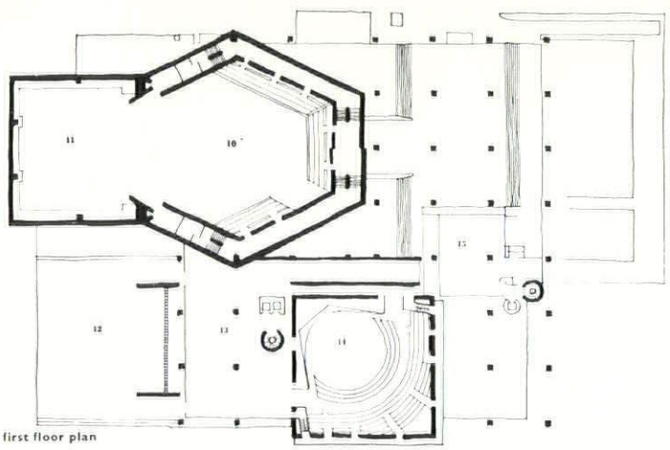
25

Festival Hall, Tokyo

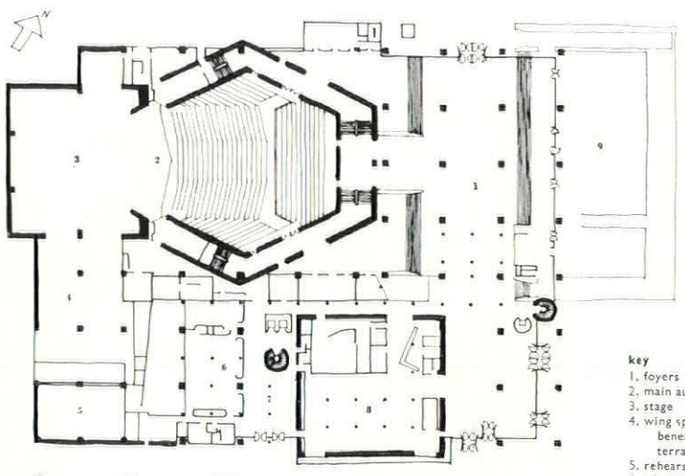
25, the main double-height foyer showing the first-floor restaurant projecting into it. On the extreme left is the battered wall of the main auditorium. 26, inside the small auditorium; concrete wall-sculpture by Masayuki Nagare.



26



first floor plan



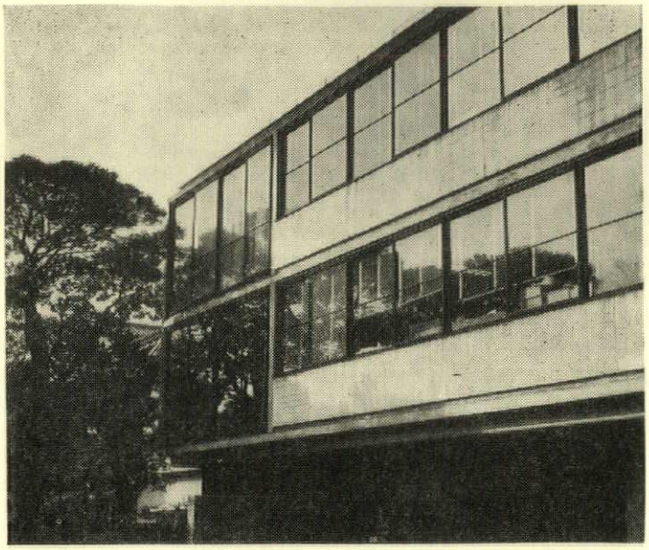
ground floor plan

key

1. foyers
2. main auditorium
3. stage
4. wing space beneath upper terrace
5. rehearsal room
6. administration
7. stage entrance
8. exhibition gallery
9. terrace
10. upper part of auditorium
11. stage tower
12. terrace
13. foyer
14. small auditorium
15. restaurant and bar

continued from page 162

collector, the late Kojiro Matsukata; the building designed by Le Corbusier and executed for him by a trio of Japanese architects—Maekawa, Yoshizaka and Junzo Sakakura, all three of whom had worked in Le Corbusier's office in Paris, Maekawa and Sakakura before the war, Yoshizaka after. The Master's visit to Japan in 1955 was, one gathers, very brief and, perhaps for this reason, the building has less impact than



27, *Maekawa's office, designed by himself — see page 162.*

his great works, though one should remember that it is only part of a more ambitious, uncompleted project.

Outside it is disappointingly neat: a square mass raised on pilotis, the only elements with any plastic vigour being a couple of external stairs. Inside, the central hall, rising through three storeys, does show Le Corbusier's customary command of space, but his special interest was clearly the lighting of the exhibition galleries for which he devised a characteristically ingenious and original system, bringing the light down from a series of glazed roof-structures into narrow wells descending into the gallery-space, from which it is taken downwards through horizontal grilles to illuminate the wall surfaces and the pictures on them, and at the same time outwards to throw light across to the opposite wall. It is a system which perversely, though its aim is the exact control of light and though it succeeds in introducing natural daylight into unexpected recesses of the interior, has proved exasperatingly inflexible in practice. The curators of the gallery find it difficult to provide any given group of pictures with the consistency and intensity of lighting they require.

Alongside the Museum—indeed towering somewhat over it—one of Maekawa's most important buildings, the Tokyo *kaikan* or festival hall, roughly the equivalent of London's Royal Festival Hall but containing a small as well as a large auditorium, the former at first floor level. The foyer of the main auditorium particularly well handled spatially; such of its walls as are not glazed consist of the rear walls of the hexagonal auditorium, sloping inwards and faced with pebbly textured pre-cast slabs—the same surface that is used on the outside of the pyramidal roof higher up. This use internally of materials that the Western eye would expect to find more often on the outsides of buildings is typical of modern Japanese civic buildings. It gives them vigour and masculinity as well as, sometimes, a degree of grimness. The inner walls of the main auditorium are decorated with somewhat aggressive cut-out shapes in wood; the small auditorium much more successfully with projecting squares of concrete looking as though they were the outcome of some natural cataclysm—what might be called a kind of *béton trouvé.*

The exterior shows Maekawa's talent for the expressive use of concrete, which the heaviness of the vertical members (required as a precaution against earthquakes) does not seem to spoil. The main cornice has the curved profile that Maekawa has used in several buildings—a profile functionally justified as a way of giving shelter from the rain without cutting off too much light, but in which some people have found a reminiscence of the characteristic shapes of traditional Japanese roof-structures.

In the evening, a stroll about the Ginza area of Tokyo with its main thoroughfare containing the big department stores. Brassy, uninhibited, commercially competitive, it looks its best at night when its vulgarities are subdued and illuminated advertisements, flaring up into the sky, take over. Tokyo does these advertisements and sky-signs splendidly—additionally attractive no doubt to the Westerner who cannot read what the writing says, but raising the whole question of how much they derive their vitality from their spontaneous, anarchical quality and whether this could ever survive an attempt to design them as a conscious form of civic decoration.

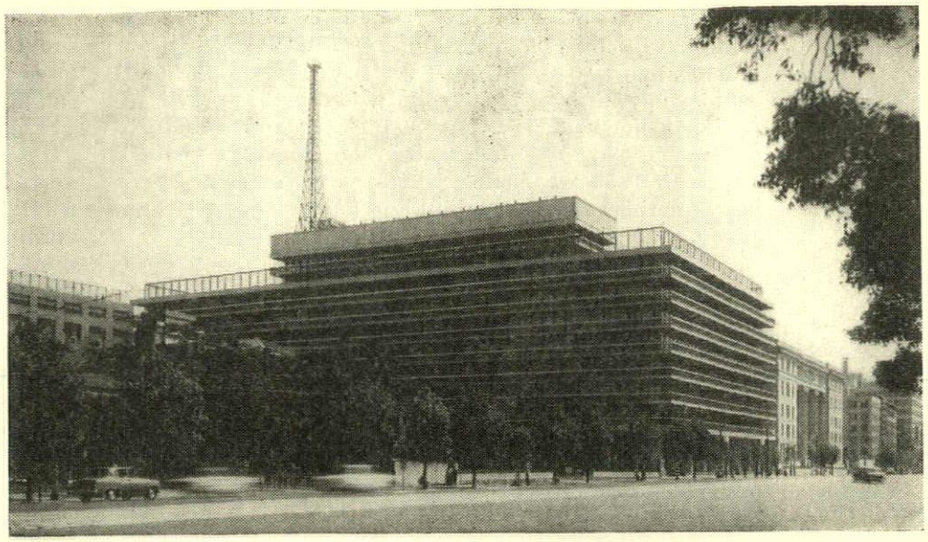
Almost alongside the Imperial Hotel, a barely completed new office building of unusual competence and sophistication, occupied jointly by the Tokyo telephone company and an electrical manufacturing company. Its quality is noteworthy because it came from the architectural office of one of the big contracting firms—the Obayashi Company—whose significant place in the modern Japanese architectural scene has already been noted.

fourth day

In the morning a call on Yasugoro Yoshioka, the founder and proprietor (formerly also the editor) of Japan's largest architectural magazine, *Shinkenchiku.* He has more or less retired now and lives in a cosy villa with cage-birds chattering in a neatly tended back-garden: a venerable but bright-eyed and charming figure in heavy brown robes, tied with

28, *in the Ginza area of Tokyo; note the characteristic advertising superstructures.*





29, *telephone building, Tokyo—see page* 169: *an example of the sophisticated style of city architecture of which the best of the architects' departments run by the big contracting companies are capable, in this case the Obayashi Company.*

a black sash; slow conversation with the aid of an interpreter across the polished table over tea and sweetmeats speared on slivers of bamboo, in which the old man showed understanding and curiosity about happenings all over the world. Then to the magazine's offices—exactly like any architectural magazine's offices. *Shinkenchiku* has a monthly circulation of 30,000 copies and brings out an English-language edition (*The Japan Architect*) with a circulation of 6,000.

After that to a lunch-party, arranged by the magazine, to meet a group of the younger architectural critics. A first experience of a Japanese style restaurant: approached like so many of them by a winding cobbled pathway from the street, flanked by evergreens and with water trickling among the cobbles; shoes off at the doorstep, then by narrow passages, wood-panelled with windows looking on to more evergreen shrubs that make gardens out of the minutest spaces, to the large high-ceilinged dining-room. In the centre a long, low table at which one sits on flat cushions cross-legged on the floor—racked soon, if one is a Westerner, by aching knee-joints and cramp in the thigh-muscles until one gives in and unobtrusively extends one's legs under the table.

Saké in little china cups, constantly replenished, and delicious Japanese food, the appeal of which subsequent experience confirms. It could not be more different from Chinese food, with which most Westerners are already familiar. Instead of being a mixture of ingredients, generally served wet, it is dry (except for the variety of soups), mostly baked or grilled, and each ingredient is separate and distinct. It is always beautifully garnished and served in an almost architectural pattern of dishes and bowls; colour and texture valued at the same time as flavour. Lobster, crab and a great variety of fish superlative, though the slices of tunny-fish or bream served raw take some getting used to. The foreigner soon learns to avoid small items like certain pickles that he finds too pungent for his Western palate, and a dried seaweed that appears at almost every meal. Meats and fish are dipped—a severe test of the skilful handling of chopsticks—into little bowls of soya sauce. The sign that the sequence of minuscule courses is coming to an end is the arrival of bowls of rice. This is accompanied by soup and perhaps pickles; it may be followed by fruit, certainly by tea.

The fellow guests: half-a-dozen architectural critics. In Japan, strangely enough considering the relatively tentative stage that the organization of the profession has reached, the critic is an accepted if youthful figure, and the number of architectural magazines—running to nearly fifty, though some are small and infrequent—offers enough scope to allow criticism to be a full-time occupation, and the critics' opinions have some outside influence on the award of commissions.

Present: Hamaguchi (acquaintance already made), Tsutomu Ikuta, Noboru Kawazoe, Charles S. Terry (*Shinkenchiku's* American translator who interprets) and other members of the magazine's staff. The critics are primarily critics of aesthetics, and are almost uncannily well informed about developments in all parts of the world; they are in contact with current interest in Gaudi and want to know what has become of Lubetkin, but though eager and intellectually mature, they appear to be far less interested in, for example, low-cost housing, the relation between architecture and town-planning and the industrial evolution of new building methods—a reflection perhaps of the cleavage between the leading private architects who are their heroes and mentors, and the busy, aesthetically anarchical commercial world where architecture and contracting are inseparably mingled, which the critics for the most part despise.

After lunch to the Olympic stadium in the Sendagaya district, an impressive enough but architecturally not very distinguished oval concrete arena designed in 1957 by the Ministry of Construction, where work is just beginning on the task of increasing its seating capacity from 55,000 to 85,000 in preparation for the Olympic games to be held at Tokyo in 1964. With standing room the enlarged stadium will hold 100,000 people.

More evidence of the enthusiasm for golf that is sweeping Japan: it is Saturday afternoon, and along the forward edge of the upper tier of seats, thirty feet or more above the ground, is a row of young golfers, silent and as intent and self-sufficient as a row of anglers beside the Seine, indefatigably practising driving. Each stands on a square of coconut matting and has a crate beside him filled with dozens of golf-balls. One by one he tees them up and drives them away into the open spaces of the arena, where the groundsmen go about their business of laying turf and repairing the surface of the running-track, disregarding the rain of golf-balls but protecting their heads with portable wire shields like sections of a nursery fire-guard.

From the stadium to the Suidobashi *Noh-gakudo*

(theatre) to see a *Noh* dance in progress. This is a formal, symbolic dance-sequence that has been performed in almost unchanged style since the fourteenth century, unintelligible to the foreigner—and, one suspects, to most Japanese—but the subject of a cult, like the cult of the ballet among the British, on the part of devotees who form themselves into clubs where they discuss and analyse the classical repertoire of *Noh* dances.

The theatre crowded with people of all ages, some quite poorly dressed, listening and watching with intense concentration or in a kind of hypnotic doze, some following the proceedings with the help of printed texts like concert-goers following music with a score. A square boarded stage with sloping roof, projecting into the auditorium and reached by a raised gangway running along one of the side walls. Dramatis personae: a girl dancer, brightly costumed, who glides, advancing and retreating with little steps, reinforcing her gliding movements with stiff gestures of arms or fan; a kind of chorus, lined up in two rows along the side of the stage, kneeling and seated, immobile except for occasional minor but significantly timed changes of position and the opening and shutting of fans, joining vocally with the wordless music; an orchestra of three or four—stringed instruments and drums, the latter beaten with the flat of the hand to the accompaniment of curious, abrupt hooting cries on different notes whose rhythms it takes a while to pick up.

The dance, which continues for many hours during which members of the audience come and go, is too archaic and formalized for the stranger to appreciate, but is elegant, mysterious and suddenly moving when the evident rapport is felt like an exchange of wireless signals between the dedicated actors and the devotees who are concentrating every faculty on their performances.

Straight from the *Noh* theatre to the main railway terminus to catch the night train for Hiroshima—a twelve-hour journey. Bustle and clamour; the station—halls, staircases and platforms—packed with people, but once on the train order, quiet and control. Well-appointed sleeping compartment (the ingenious space-saving design of all such places, in plan and in section, has its special appeal to the architectural eye) and a punctual departure; slippers, dressing-gown and toothbrush provided. Dinner in the restaurant-car and a long walk back, staggering as the train sways round a curve, between the curtained bunks of the third-class sleepers through which limbs protrude and are withdrawn as the inhabitants acrobatically disrobe within. Early to bed as the train—there's nothing quite so foreign as the noises foreign railway trains make in the night—grunts and rumbles its way across the central plain of Japan.

fifth day

After drawing the blinds at first light to observe the unfamiliar countryside—rocky, forested hills and bright green valleys of patch-work cultivation—a call from a kindly conductor to explain that an early rise has become unnecessary because, owing to engineering works, the train is running a couple of hours late. Breakfast in the restaurant-car and eventual arrival at Hiroshima—in fact, two and a half hours late, to the great satisfaction of many of the passengers; for this is a limited express, for which a supplement has to be paid over and above the ordinary fare, and the rule is that if such a train is more than two hours late the supplement is refunded. Long queue at the station of passengers getting their money back.

By taxi through the streets of the reborn city, which now has a population of nearly half a million. The main streets, at least, have been rebuilt to a reasonable width, but scrappily and with that brittle, makeshift character that seems normal even in the centres of Japanese cities; the architecture miscellaneous and undistinguished.

An excursion by car to Miyajima, a famous Shinto shrine. Hiroshima is built on a delta where the Ota River flows into the Inland Sea. The road crosses several branches of the river, now very dry, revealing wide gravelly beds, and then runs close to the sea-





30, *Hiroshima street scene; comparison with* 1 (*frontispiece*) *and* 8 (*page* 162) *shows how closely Japanese cities are coming to resemble each other.* 31, *large but miscellaneous buildings—all of course new—in Hiroshima's main street.*

shore past straggling fishing villages—the Hiroshima region is one of the main centres of the oyster fishing industry. Piles of oyster shells alongside the road; some to be ground up for fertilizer, others—already strung together on strings like calcined Christmas decorations—to be suspended in the sea for the young oysters to attach themselves to.

Outside Hiroshima a point where old timber houses can be seen leaning at odd angles; it's a mile and a half from the point where the atomic bomb dropped, far enough for the houses to survive, though



32, *Miyajima: buildings of the Shinto shrine.*

pushed sideways by the blast. On to Miyajima, an offshore island reached by ferry, the location of the shrine, otherwise hardly visible among thickly planted woods, marked by the huge red Torii gate (the structure, shaped like the Greek letter π, that forms the entrance to all Shinto shrines) standing romantically in the sea.

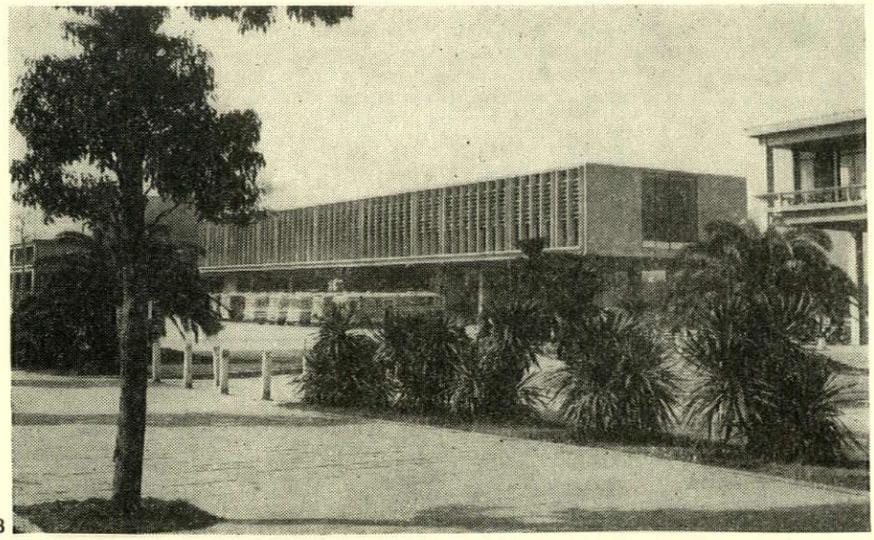
The shrine itself a complex of timber buildings, gaily and newly painted in red-lead colour, some built over the water, some climbing the hill towards a crowning pagoda; the whole approached from the landing-stage by a long double line of tawdry souvenir shops. Crowded with visitors—the Japanese are indefatigable patrons of their own tourist sights—all with cameras. Incidentally the visitor to Japan need never feel self-conscious or marked out as a tourist because of going about the streets with a camera; the Japanese carry them everywhere, but they seem to use them chiefly for photographing each other.

Back to Hiroshima and, after lunch, to the Memorial Park, where the one large building that in part survived the atomic bomb—a hall for industrial exhibitions—has been preserved as a grim memento, its dome a skeleton open to the sky, and where also stands Tange's grey concrete memorial hall. This is a long exhibition gallery, walled with vertical louvres, raised on pilotis: a simple impressive conception, though roughly finished and not well maintained. Inside, a permanent exhibition—models, charts, relics and horrifying close-up photographs—of the atomic destruction, that one visited from a sense of duty and shrank away from at every step, almost as much appalled by the groups of chattering school-children who stared apparently unmoved by the most macabre exhibits. But it may be that insensitiveness is not the explanation; simply that they had lived with the idea of such horrors all their lives.

In front of the memorial hall: the 'peace bridge' across one of the arms of the river, with parapet designed—fantastically but very successfully—by the sculptor (and garden and furniture designer) Isamu Noguchi. Then to the only other new building of interest in Hiroshima (apart from the prefectural offices, which are dull but workmanlike): the Roman Catholic church by Togo Murano, an older pioneer of modern Japanese architecture; a building with an exposed concrete frame and infill walls of pinkish brick, influenced perhaps by Perret. It has a detached tower with a baptistry at its foot, oddly Byzantine in style.

Tange's memorial hall, incidentally, is rather important in the history of modern Japanese architecture, being (with the possible exception of Antonin Raymond's Reader's Digest office in Tokyo, of which more later) the first of the modern buildings in exposed reinforced concrete which have drawn the eyes of the rest of the world towards Japan. There are in fact four pioneer buildings from which the most interesting modern architectural developments

[*continued on page* 175



33

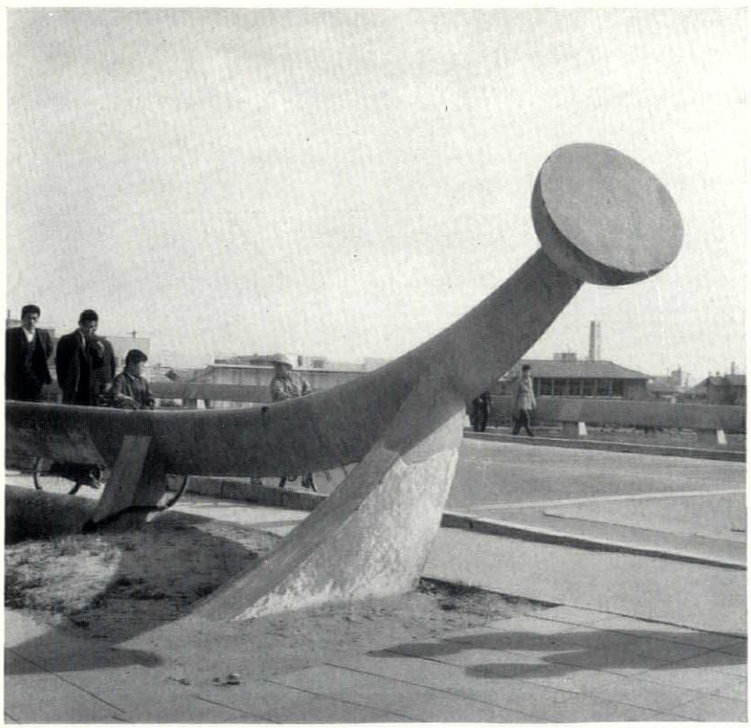


34

33, *Tange's memorial hall at Hiroshima, taken from the end of the Peace Bridge—see facing page.* 34, *close-up of one end of the building. In the distance, through the* pilotis *can be seen the dome of the only building that survived the atomic bomb, now preserved in its ruined state as a monument.*

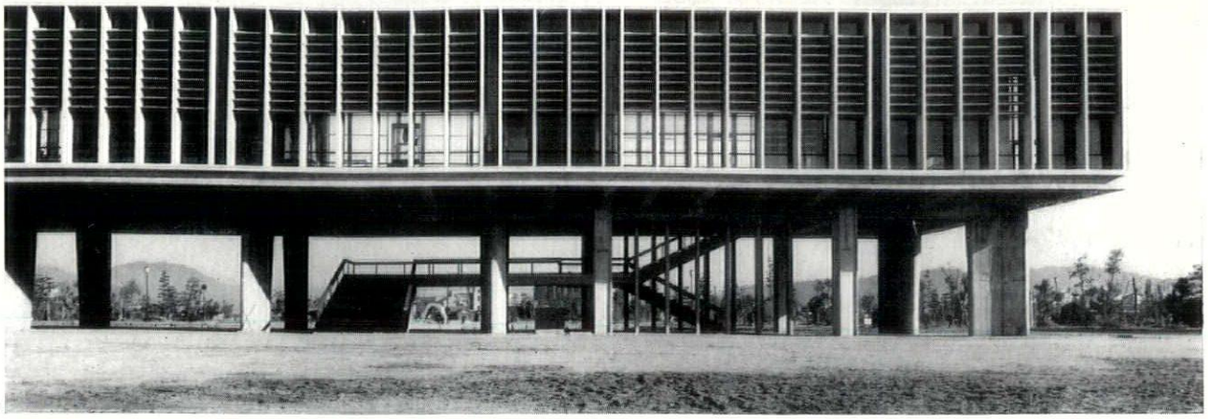


35, at Miyajima, an island in the Inland Sea, near Hiroshima, with a celebrated Shinto shrine: the 55-foot high red-painted *torii* gate standing in the sea. The photograph is taken from the shrine and has the mainland in the background.



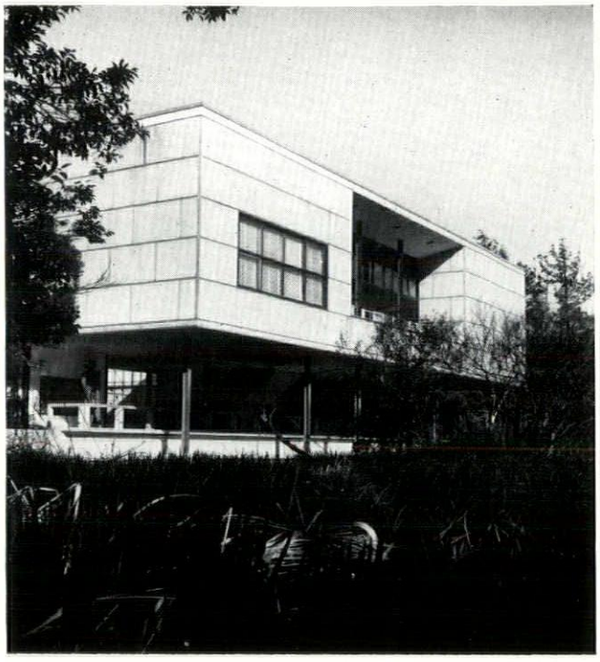


At Hiroshima: 36, the 'peace bridge' near the memorial hall with sculptured parapet by Isamu Noguchi. 37, the Roman Catholic church—architect, Togo Murano.

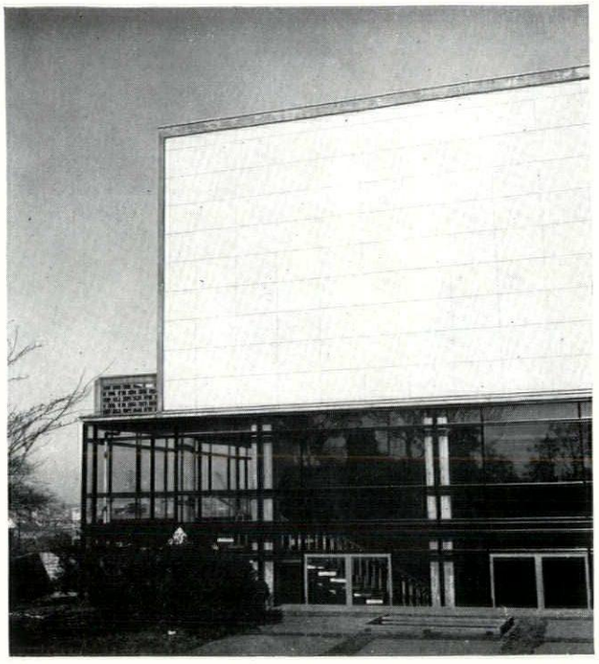


38

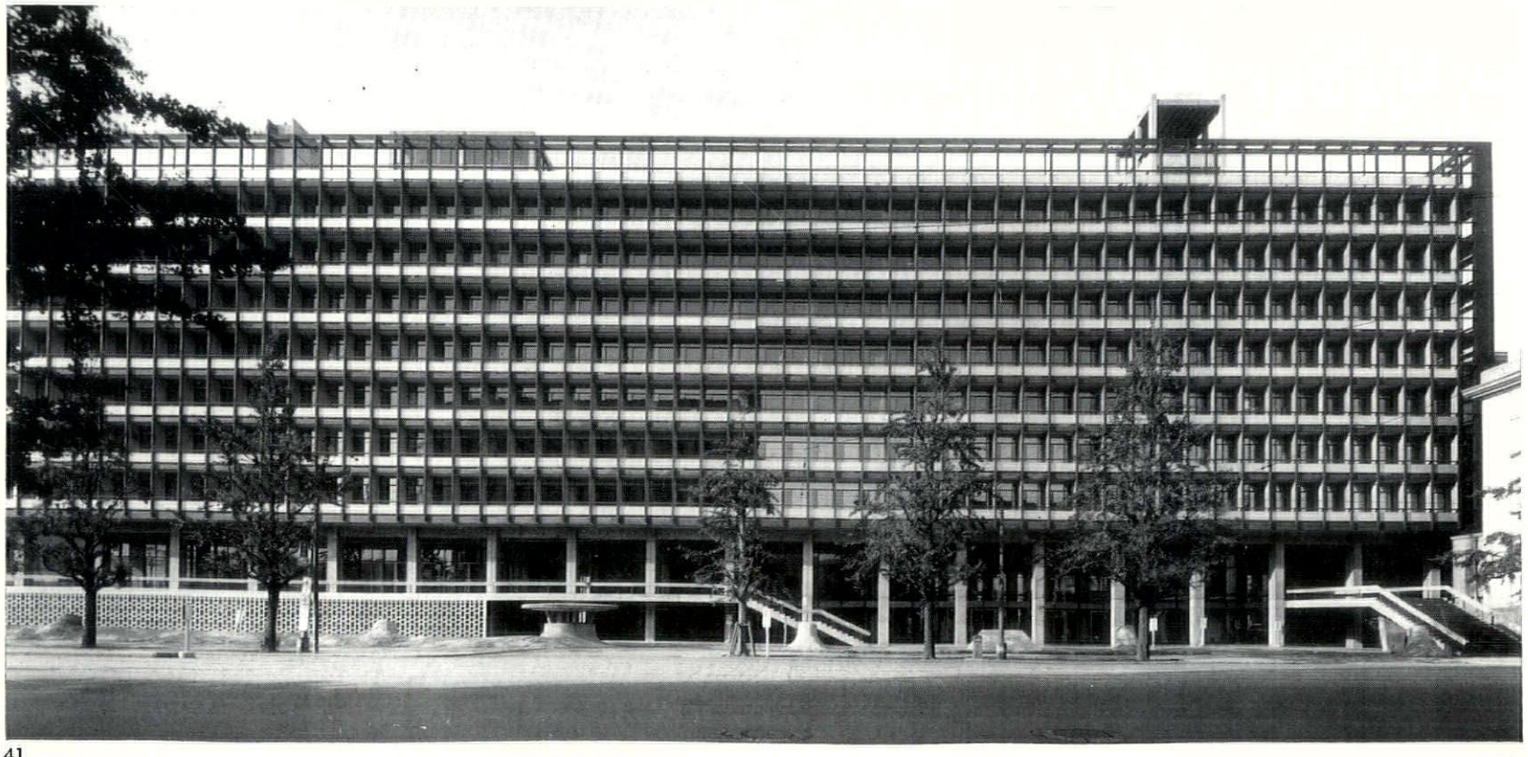
On this page, the four pioneer buildings by Japanese architects which constitute the classics of the early years of modern architecture. 38, Tange's memorial hall at Hiroshima, 1950 (see also page 172); 39, Sakakura's art gallery at Kamakura, near Yokohama, 1952; 40, Maekawa's concert-hall and library at Yokohama, 1954 (the photograph shows the end of the concert-hall wing from the rear courtyard); 41, Tange's city hall at Tokyo, 1956.



39



40



41

continued from page 172]

in Japan all stem: Tange's memorial hall at Hiroshima (1950); Sakakura's art gallery at Kamakura (1952); Maekawa's concert hall and library at Yokohama (1954) and Tange's city hall at Tokyo (1956). The last two were the outcome of limited competitions, with about six architects, including Maekawa, Tange and Sakakura, invited to take part in each case.

Then to the hotel—a *ryokan* or Japanese-style inn. In the big cities and tourist resorts there are of course many Western-style (or more precisely, American-style) hotels, but the Japanese hotel determines the way of life of the normal traveller and gives the visitor a taste of the many still formalized aspects of Japanese life. For this reason, and because architecturally it is related to the long-standing and still lively tradition of the Japanese house, the hotel, its layout, conduct and customs, are worth some detailed attention.

THE JAPANESE HOTEL

It generally exposes only blank walls to the street, or a high garden fence interrupted by an arched opening. It is turned inwards on itself. It is seldom more than one storey high, though there may be minor changes of level within.

The deeply bowing proprietor greets the customer in the doorway. Bowing behind him are members of his staff, including the maid who is assigned to look after the visitor—or a small group of visitors—throughout his stay. Before stepping over the threshold he of course removes his shoes, which he doesn't see again till it is time for him to leave, and he puts on one of the pairs of heel-less slippers that are waiting in a row. In these he slops along behind the maid, who is carrying his baggage and leading the way to the room—or, if it is an hotel of some pretensions, the suite of rooms—allotted to him. Here he will sleep, eat and sit; Japanese hotels have no public rooms except the communal bathroom and perhaps a banquet room that can be hired by touring parties.

The way to one's room is by a succession of passages with paved or boarded floors, sometimes open to the garden on one side, sometimes simply with a view of the garden through continuous sliding windows. Every hotel is planned round a garden, which extends into bays and pockets so that the windows of each room overlook a private patch of garden. Sometimes the garden has water running through it, which the passages cross by arched bamboo bridges. Sometimes rooms or suites of rooms take the form of detached pavilions, reached by paths or covered ways across corners of the garden. The style of such gardens is too well known to need description: the various elements that make up the Japanese garden: smooth rocks, pools, plants and trees trained and meticulously shaped, are familiar the world over, cunningly placed and combined to provide balanced compositions or unexpected vistas from every viewpoint.

The layout of the hotel is inevitably a tortuous one, with many turning passages and re-entrant angles, to allow each room or suite of rooms to have a garden view without being overlooked by the windows of other rooms. Even on confined town sites such garden outlooks are the rule, though the patch of garden outside the window may be only large enough to contain a single tree, three bushes, one large stone and a little area of raked gravel, enclosed by a boarded fence but arranged to give an impression of complexity and extent.

Arriving at his own suite of rooms, the visitor will find first a little entrance vestibule, perhaps paved or cobbled, on the level of the passage he has been walking along. Here he must discard his slippers before stepping up on to the floor of the room which is covered, wall to wall, by the ubiquitous straw matting or *tatami*—the sharp scent of new *tatami* greets the visitor directly he enters nearly every Japanese hotel. When he has shuffled his feet out of his slippers the maid will promptly turn them to face the other way, so that they are ready for his toes to be slipped into as soon as he may want to leave his room again.

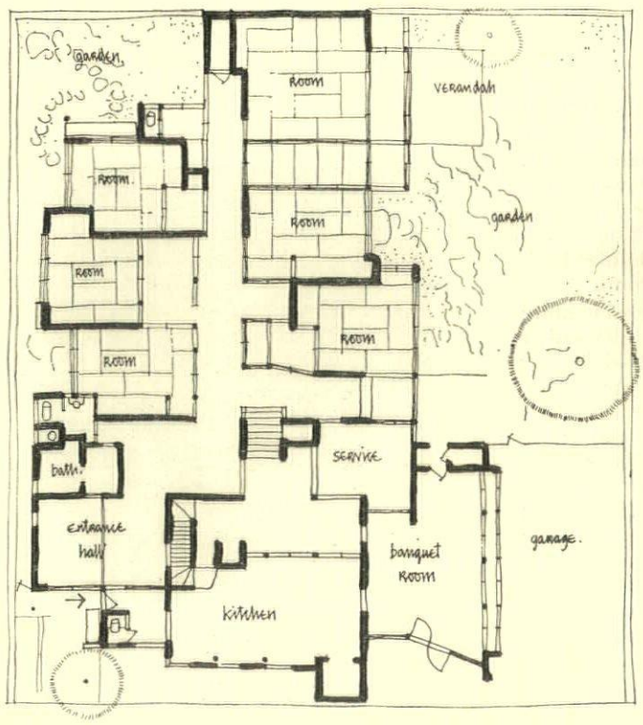
A typical suite of hotel rooms (see plan overleaf) consists of an inner and an outer room together with a terrace or sitting-place with full-width window looking on to the garden. The rooms themselves are lit partly from this window, by means of the light that comes through the paper-covered screens that divide one room from another, and partly from panels in the ceiling, similarly formed of paper (the rest of the ceiling is probably plaited bamboo), so that the light is even in quality and comes from no particular direction.

The screens between room and room slide in overlapping sections. They are of wood, very lightly framed, so they slide easily. A characteristic sound in a Japanese hotel is the gentle clatter of sliding screens as, otherwise noiselessly, the maids go about their business. Sliding screens also conceal cupboards in the other walls, and when the screens are closed there is no way of telling where the wall opens and where it doesn't. One gets a nervous feeling that a panel in any wall of the room may open at any time and the maid pop in.

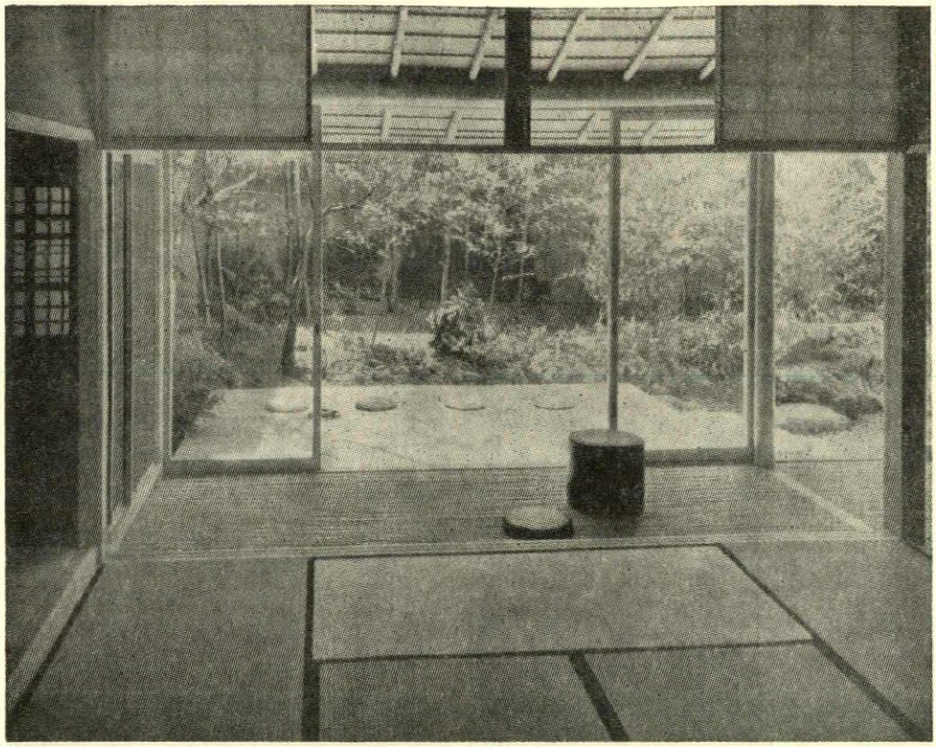
In a little room off the entrance vestibule is a lavatory—perhaps a wash-basin as well, if the hotel is very up to date—and there are small circular rush mats to serve as stepping-stones across the cobbles.

The rooms have no furniture, except a low square table in the centre of the inner room, with flat cushions arranged round it, and a folding mirror in the outer room, on the level of the floor since the user sits cross-legged in front of it. The *tatami* takes the form of mats of standard size (6 ft. by 3 ft.), bound with fabric round the edges. According to the well-known Japanese modular system, used also for the traditional-style house, the mat forms the basis of all room-sizes. The subdivisions of walls and windows, including the sections of which the sliding screens are built up, coincide with the dimensions of the mat, so that a uniform linear pattern and system of proportion unite the whole interior. In the typical suite of hotel rooms shown on the plan overleaf, the inner room is a 6-mat room, and the outer an 8-mat room. The generous size of some hotel rooms derives from the Japanese custom of travelling in families and groups, half a dozen people often occupying one room.

The manner of life in a Japanese hotel is strictly according to custom. Immediately on showing the room, the maid produces tea and then takes out from one of the wall-cupboards a lacquer tray containing a set of robes with



Plan of a typical small hotel of traditional Japanese type. It is a town hotel on a restricted site surrounded by a boarded fence. The access street is at the bottom of the plan and the visitors' entrance is through a minute garden at bottom left. Beyond the entrance hall is the communal bath and beyond that the rooms or suites of rooms, each with a private garden outlook. The size of the rooms is indicated by the number of mats. More rooms are in a partial upper storey.



42, typical visitor's room in a Japanese hotel, showing the floor covered with tatami *and verandah and garden beyond. This is in fact the Hasshokan hotel by Horiguchi referred to on page* 198.

wide hanging sleeves: a short cotton robe, a long padded one with a sash to tie round the waist and a short outer jacket. The visitor undresses forthwith (if he is Japanese he lets himself in fact be undressed by the maid, who takes his clothes away to wash and iron), he puts on the robes and sets off to the communal bathroom, a largish room with the bath, which is permanently full of very hot water, sunk into the floor. In all but the most unsophisticated hotels there is nowadays a separate bathroom for men and women.

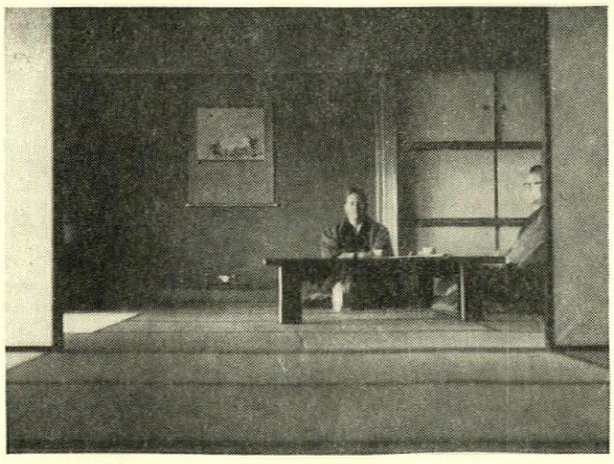
You must not wash or use soap in the bath since the water is not renewed for subsequent bathers. At the other side of the room are hot and cold taps projecting from the wall at skirting level, together with soap, a little wooden stool to squat on and a wooden vessel for sluicing water over one's body. Having cleaned and rinsed oneself with the help of these, one climbs down into the bath and sits up to one's neck in the steaming water, chatting to one's friends and fellow-visitors, for as long as is agreeable. Then one dries, puts on the layers of heavy robes, which one wears for the rest of the evening, and shuffles back along the passage to one's own rooms.

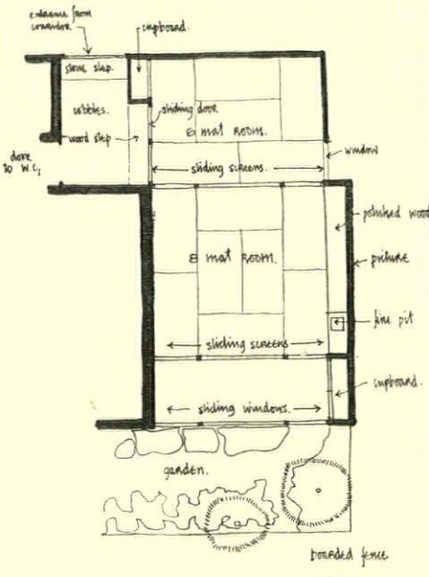
The thickness of the robes is needed because the rooms have no heating—unless the weather is quite cold when a small charcoal brazier may be brought in. Private houses are equally unheated and very cold in winter, to which the Japanese are accustomed, and wear layers of thick underclothing. The central heating of houses and traditional-style hotels is almost unknown because they are built of wood, bamboo and paper—all inflammable; most types of construction normal in the West are ruled out by the likelihood of earthquakes. Concrete, instead of timber, frames are practicable, but are not popular for domestic, hotel and similar building because the Japanese like soft wall surfaces which means a separate wall-lining, and therefore greater expense, if concrete is used. They are also domestically conservative.

After the bath—dinner, which the maid brings in and arranges on the low table in its multiplicity of little dishes. You sit cross-legged (unless in one of the occasionally-met-with luxurious rooms with a pit beneath the table containing burning charcoal in which you can dangle your legs, warming your toes and preventing the warmed air from escaping with a quilt tucked round your knees). The maid sits—or rather kneels—at table with you and whatever travelling companion may have joined you for the meal, assiduously replenishing the little china cups of saké and prattling away with local gossip and small-talk—to make agreeable conversation to visitors is a part of her training. The maids are mostly plumpish country girls. The hours are long—about seven in the morning until perhaps midnight—and willing girls are becoming difficult to get. But the atmosphere in which they work seems generally to be a happy one—that of a large chattering family. In one typical hotel with 32 bedrooms there were 26 maids, as well as kitchen and other staff.

Every now and then the maid leaves the table to fetch another course, involving herself in a seemingly endless process of kneeling and rising: up from her knees to carry a tray to the screen; down again to place it on the *tatami*; straighten up to slide a panel open; down to lift the tray across the threshold; up again to carry it to the outer screen and so on; a process that is repeated with every duty she performs since it is a rigid custom that she should kneel when sliding screens open or shut or taking anything up or putting it down—all done silently except for the clatter of the screens and the soft padding on the *tatami* of her white-clad feet.

In a Japanese hotel, the visitor pays for room, dinner and breakfast, but the cost is more dependent on the quality of the meals than on the room itself and the same room can be engaged at widely differing prices according to how luxuriously the visitor wants to eat. Dinner is long drawn out and afterwards it is time for bed. The maid removes the table and its cushions and, going to one of the wall-cupboards, takes out the bedding: mattress, pillows and two or three quilts. With these she makes up a bed in the centre of the room, carefully and exactly equidistant from every wall. It is comfortable enough—in fact all the arrangements are wonderfully well-thought-out and comfortable—as well as visually restful because of the way this domestic architectural tradition avoids surrounding the occupants of a room with a permanent clutter of possessions. Only the Westerner finds himself conscious of the lack of anywhere to put things down in a completely furniture-less room without even a shelf. He must stoop over his suitcase on the floor; his watch and spectacles must simply be placed somewhere on the *tatami*; even the robes he is provided with have no pockets.



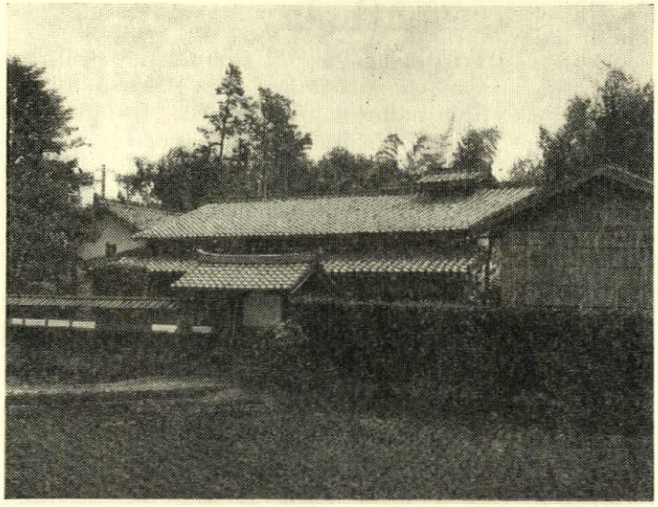


The Japanese hotel: 43, dinner at the Torikyo Hotel, outside Atami (see page 211); the sliding screen separating the two rooms that comprise one visitor's suite is wide open; the low square table, removed when dinner is over, is the only piece of furniture. On the right, plan of a typical suite (lobby; 6-mat room; 8-mat room; verandah) in the hotel at Hiroshima. For a typical hotel exterior, see page 198.

sixth day

Up early to catch a long-distance bus across the mountains to Hamada, a town on the opposite coast, facing the Sea of Japan—the journey from Hiroshima will take nearly five hours. Crowds in the bus terminal, lining up for the smart new buses that set off every few seconds; long-distance bus travel is an important part of modern Japanese life, and in remote places such services, many of which are run by the railway companies, are superseding the branch railway lines.

Dashing up-to-date vehicles—Japanese-made, like most of the cars in the streets—with white or shiny aluminium bodies gaily painted in the manner of children's toys with stripes and panels of primary



44, *a typical farmhouse enclosed by trees. The gateway leads into the garden forecourt.*

colours. Radio music while you travel. Out of Hiroshima through the crowded narrow suburban streets —so narrow that the side of the bus almost touches as it goes by the open-fronted shops, the builders' yards, the small timber houses and workshops that line the route—no pavements in these streets. But soon country of a kind begins, though farmhouses, standing almost on the road frontage, are so close together the impression is still that of a built-up area.

Hiroshima is surrounded by pointed, forest-clad hills with power-lines strung across them, separated by broad valleys, intensively farmed. The cultivation very meticulous, as though each plant was separately tended and every square foot of ground continuously hoed. Wheat in tidy ridges; bright green patches of various vegetables, some under polythene cloches; rice-paddies terraced up the hillsides with stone-faced retaining-walls; round haystacks with a pole up the middle.

The farm buildings of timber, long and low with projecting eaves giving sheltered storage space; their roofs thatched with reeds or covered with grey or brown glazed tiles; the farmhouse itself reached through a densely planted miniature garden, with evergreen bushes and orange trees laden with fruit, the garden walled in by a wooden fence and a tall arched gateway. Few birds to be seen, and no livestock in the fields except occasionally cattle pulling ploughs and chickens in coops; no farm buildings on the land except those grouped closely round the farmhouses—every scrap of available land made use of for growing things.

A splendidly effective traffic-sign in main road villages: wherever the road turns sharply, facing the oncoming traffic stands the cut-out figure of a policeman, full-size and in natural colours, his arms raised over his head—threatening enough to cause the most impetuous driver to slow down.

The problem of rural depopulation: the young men tend to leave the primitive, laborious life on the land for the attractions of town life and industrial employment, and they are further discouraged from staying in the country by the marriageable girls being even less willing to stay. Farm life is hard for women, who have to do a lot of the work. The fields are too small, the ground too irregular, the crops too various for the wholesale mechanization that would make a reduced farming population possible. Some signs of mechanization, however, such as motor cultivators being pushed along the furrows.

Wilder country soon, with the mountains steeper and closer together as the road winds up into them; no room for cultivation except in small stream-watered valley; deep snow by the roadside as we cross the highest pass (1,800 ft.). Then down the winding, gritty road to more farmland and the dusty, unpretentious town of Hamada.

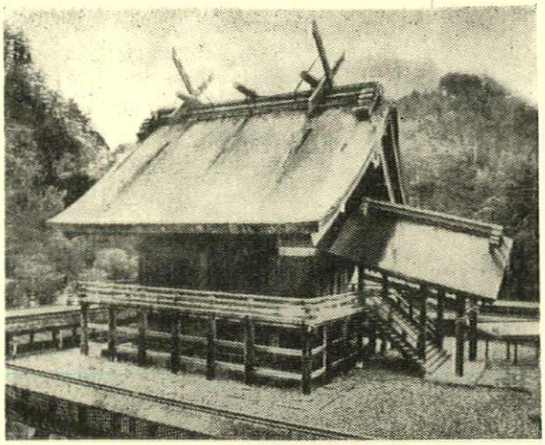
From Hamada, where the bus-route terminates, by car to Gotsu, bumping over wretched half-made dusty roads—the surfaces of minor roads, and of some main roads, are appalling in Japan but there is a big programme of arterial road construction (see article on Transport and Tourism) which in a short time will bring about a great improvement.

Gotsu is a smallish coastal town with wood-pulp and rayon factories; a brief stop there to look at the new town-hall, just completed and due to be officially opened the following month. Designed by Yoshizaka, professor at Waseda University, Tokyo, it is a somewhat brutal building well sited on the spur of a hill overlooking the town. The central block loses in expressiveness by having its concrete walls rendered and painted, giving it to the Western eye something of a 1930-ish character. More successful is a wing which, dramatically suspended on V-shaped columns, projects over the hillside. The interior is gloomy but has a good entrance hall with paved floor and a staircase with a timber handrail of interesting profile.

Little cups of tea with municipal officials; then by train (one and a half hours) along the indented rocky



45, *traffic sign at the end of a village street.*

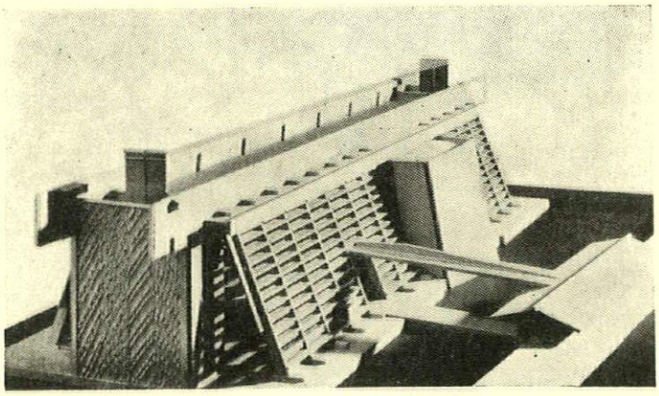


46, *one of the buildings at Izumo Grand Shrine: timber and thatch, typical of the pre-Buddhist style.*

coast to Izumo, where another famous Shinto shrine stands at the end of a grove of pine-trees. The usual barn-like buildings with vast timber roofs, projecting eaves and rafters curled up at the end; in this case the timber unpainted but touched with gold; the inner buildings dating back 200 years (though rebuilt then in a style centuries older); the most prominent building only four years old, having been rebuilt after a fire. The Japanese seem to be continually reconstructing their ancient monuments in accordance with religious custom or because they are dilapidated or have been burnt, which has happened often since all the buildings are of timber, but it never seems to worry the Japanese visitor when little that is in fact ancient remains—how different from the Western tourist where the guarantee of something being genuinely old takes precedence over the degree of interest or beauty.

Izumo Grand Shrine has the unusual interest of a modern building in prospect—a new treasury to house and exhibit the shrine's various relics and antiquities—designed by Kiyonori Kikutake, one of the best of the younger generation of Japanese architects. The treasury, due to be finished next year, represents an unusual as well as an enlightened piece of patronage on the part of the chief priest, since religious institutions—in Japan as elsewhere—normally show very conservative taste, and the new building is prominently sited alongside the main entrance forecourt.

The chief priest, a distinguished, relaxed personality; tea with him in his office where a balsa-wood



47, *model of Kikutake's design for the new treasury at Izumo.*

model of the new treasury was displayed: an oblong building with steeply sloping walls giving it an almost triangular section. The structure is four reinforced concrete columns between which span prestressed beams 160 ft. long. The side walls have a pattern of rectangular concrete panels with glazing between the ribs. Then to look at the site, in the company of a young assistant from Kikutake's office: foundations poured and the column reinforcements showing as clusters of steel rods against the sky.

From Izumo on by car over even more uncomfortable stony roads. A rice-growing area, especially the reclaimed land alongside Lake Shinji, which is cut off from the sea by a narrow neck of land and which the road skirts on its southern side. Prosperous-looking farmhouses enclosed by close-planted screens of tall trees as protection against the sea-winds. Arrival eventually at Tamatsukuri, a resort standing above the lake, and the usual elaborate welcome at another —this time luxuriously planned and up-to-date— *ryokan* or Japanese-style hotel.

seventh day

To Matsue—partly along a new toll-road; a fair-sized city (population about 100,000) sited where Lake Shinji almost joins up with an inlet from the sea; the capital of Shimane prefecture (a prefecture in Japan is roughly equivalent of an English county, or more exactly perhaps to a French *département*). Matsue is unusual for having been almost undamaged in the war. Most Japanese towns of any importance were half destroyed in air-raids (or rather by the fires that followed air-raids); Matsue, having been spared, preserves more pre-war character than the others and is more consistently furnished with timber houses of traditional style.

A visit first to Matsue castle, a fortified residence typical of a number to be found in Japan, mostly of the seventeenth century: multi-storey, set back at each level with gabled pagoda-like roofs; white plastered walls above a ground floor of large polygonal stones; inside, huge reddish timbers and ladder-like stairways. The castle enclosed in pleasantly landscaped grounds, reached by steep gravel paths and gateways in the surrounding wall.

From the castle across the river for a duty visit to Lafcadio Hearn's house, which has been devotedly preserved. It is looked after by an old lady who remembers him quite clearly; attached is a little museum with the touching array, usual in such places, of his manuscripts, pipes, walking-sticks and the desk at which he wrote. This most famous of the many Westerners who became Japanese scholars and devotees of ancient Japanese lore lived here when he was old, after he had married his Japanese wife and become a Japanese citizen, until he died in 1904. Though such assiduously preserved interiors, musty and little visited, are always sad places, this had the added interest of being an untouched example of the modest private house of about 1810: one-storey, timber-built, presenting a secretive frontage to the street, the rooms, one leading from the other, floored with *tatami* and looking out through their sliding screen-windows on to densely planted—now rank, green and mysterious—patches of garden.

Next an utter contrast: to the centre of the town to look at the prefectural museum and art-gallery, completed nearly four years ago. Designed by Kikutake; a highly sophisticated reinforced concrete building, and like most Japanese architecture of the modern school showing the influence of Le Corbusier, but perhaps in this case more particularly the influence of his work in India. The main display space is one large first-floor gallery with a row of columns down the middle, lit through sliding-folding screens

[*continued on page* 183



48

48, a typical Japanese village, with timber-built, tile-roofed houses and shops, one or two storeys high, making a frontage continuous to the long, winding village street. This is part of the main road between Hiroshima and Hamada.



49



50



51

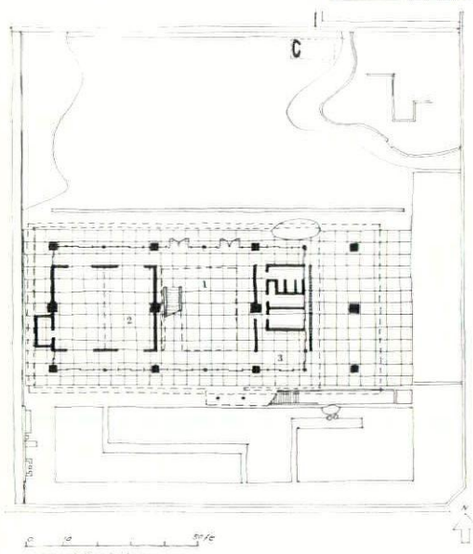
Gotsu town-hall, completed this year—architect, Takamasa Yoshizaka. 49, from below; 50, inside the entrance hall looking down the staircase; 51, close-up of the office wing. The dark bands above and below the windows are painted red.

Museum, Matsue

architect,
Kiyonori Kikutake

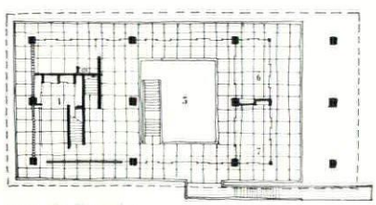
The museum and art gallery of the Shimane prefecture, of which Matsue is the capital: completed 1960. The main exhibition gallery occupies the whole upper floor of the building and is lit by sliding-folding windows at either end. These are seen closed in 52, a view from the east side.

52

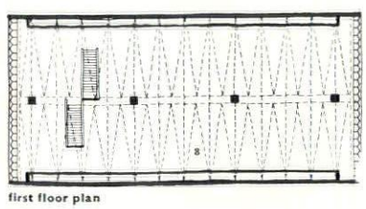


ground floor plan

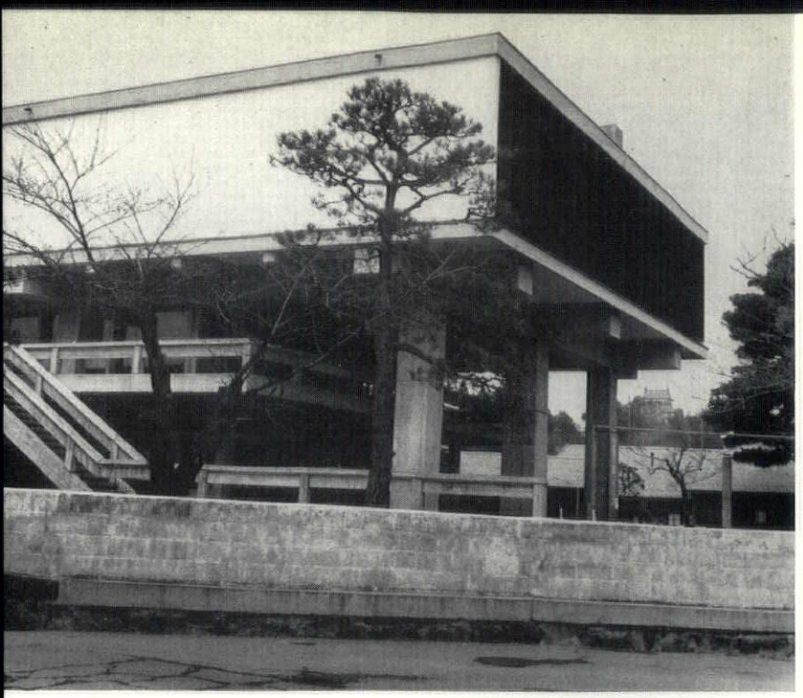
key
1. entrance hall
2. lecture room
3. office
4. storage
5. upper part of entrance hall
6. committee room
7. curator
8. exhibition gallery



mezzanine floor plan

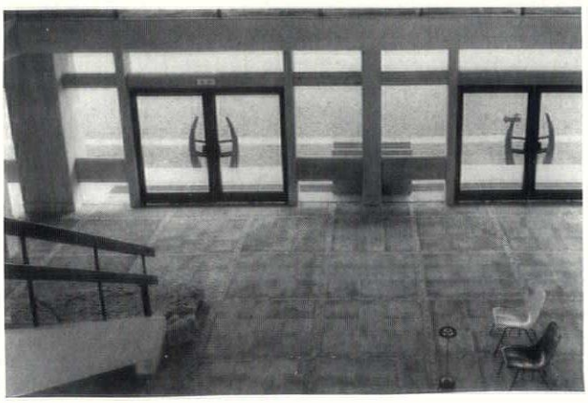


first floor plan

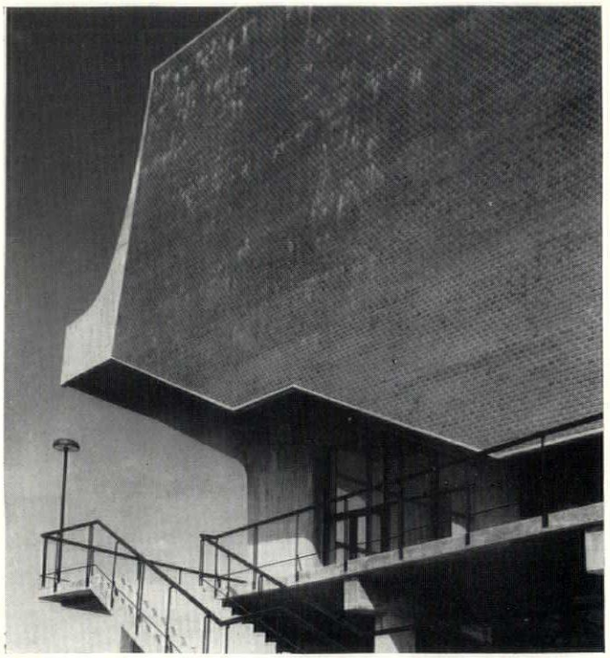




53, Matsue Museum from the south-east. 54, close-up of mezzanine staircase and balconies from the surrounding garden. 55, entrance hall and staircase.



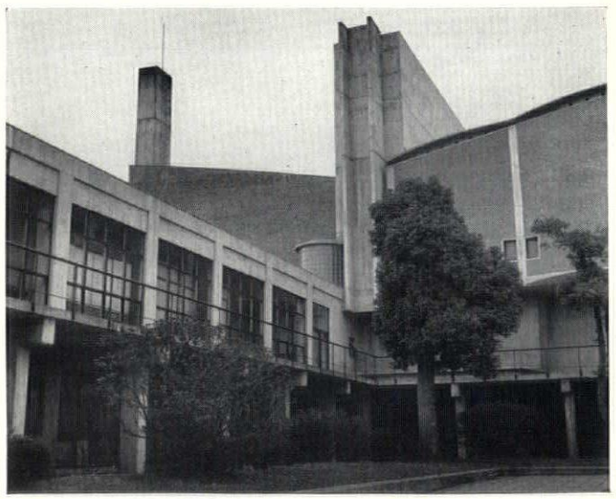
55



56



57



58

Auditorium, Yonago

architects, Murano and Mori

A municipal meeting and concert hall with a range of municipal offices attached to it, completed in 1960. 56, the flank wall of the auditorium, faced with red brick, and external staircase and gallery. 57, side view of the auditorium. The foyer is beneath the upper tiers of seats on the right. 58, stage end of auditorium with office wing on left.

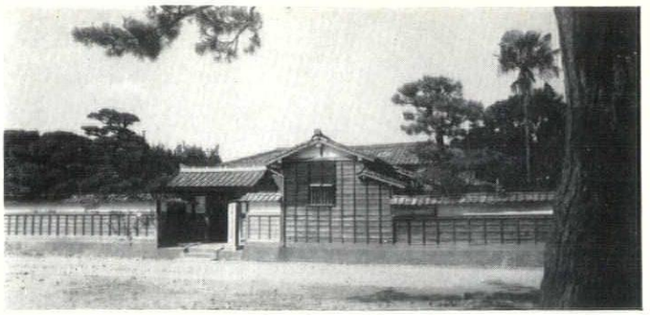


59

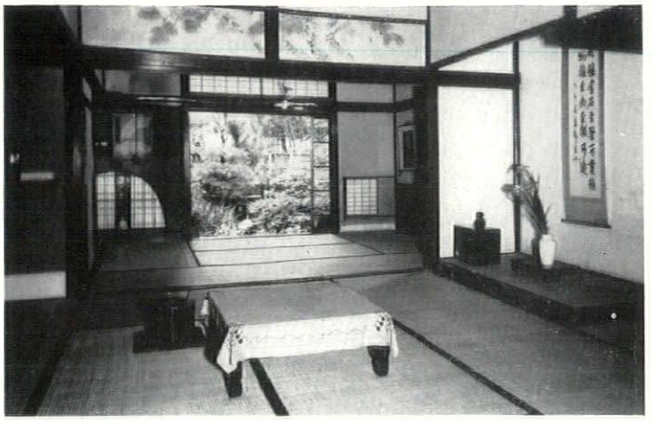


60

59, surviving houses of traditional type along the river-bank at Matsue. 60, keep of Matsue Castle, 1611; timber built with a stone basement: typical of the castles found in many parts of Japan—nearly all of the seventeenth century, a time of feudal warfare and the first appearance of Western military technology.



61



62



63

Lafcadio Hearn's house at Matsue—a typical private house of about 1810: 61, from the street (fenced-in garden and few windows looking outwards); 62, main living-room, with the customary sliding screens between straw-matted rooms; 63, verandah and garden.



64

64, Matsue; a main street in the modern part of the city, typical—in its incoherence, its makeshift appearance and its profusion of wire and advertisements—of most Japanese towns and cities. See comment on facing page.



65



66

65, glass-roofed shopping arcade off the main street of Yonago, decorated with sprigs of plastic cherry-blossom. 66, municipal offices, Yonago: typical of the better local official architecture.

continued from page 178]

at either end. It stands on a triple row of columns and the space underneath is penetrated by a system of stairs and balconies, with offices at mezzanine level. The supporting structure heavier than the Western eye is accustomed to because of earthquakes; the floating planes beneath interestingly handled; a very successful entrance hall—raw concrete, brick panels, sombre cool colours, staircase to the mezzanine with shiny black pressed metal handrail. Upstairs the sliding-folding gallery windows wouldn't open or close because the winch-operated mechanism had rusted up—presumably a result of the salt sea air.

From Matsue to Yonago, past level fields, a patchwork of greens with damp brown rice-paddies and farmhouses again closely wrapped in trees. Through the narrow main street of Yasuki and soon into the outskirts of Yonago—a large town (population about 80,000) chiefly dependent on pulp mills, its prosperity indicated by the forests of television aerials sprouting from the roofs of its close-packed wooden houses.

The makeshift appearance of streets and buildings which, together with the general untidiness of wire draped criss-cross and on poles up either side of the street, of rubbish and advertisements, one is coming to accept as characteristic of every Japanese town, as it sprawls untidily along its approach road; an ugliness and disorder no less evident in the centre. But by now, having been appalled by it to begin with, one is beginning to wonder whether one should be too censorious about this urban squalor—whether criticism by Western standards is justified or relevant.

A much-quoted explanation of this in James Kirkup's *These Horned Islands* is that the Japanese have a sense of beauty but no sense of ugliness. That is an appealing generalization but not wholly convincing if only because people much nearer home put up with ugly surroundings with no more complaint or evidence of being sensitive to them. But there must be some explanation beyond the absence of town-planning control, and perhaps it can be found in the meticulous tidiness of the cultivated countryside. Here everything is neat, well planned and precise, with every square foot of ground put to the best possible use. There is no sense of the freedom enjoyable in the more casual, broader spread of our own fields and woods and commons, and although the land that cannot be cultivated—the steep, rocky mountain sides, pine forests and unfertile uplands—occupies over 80 per cent of Japan, it has neither the accessibility, the variety nor the sense of being available for the ordinary person to use, of our own countryside—you can't walk over Japanese farmlands; they are nobody's playground. Outside the towns the Japanese are thus always under discipline, and only the urban scene offers a needed release: an outlet for spontaneous constructional energy, an opportunity for the enjoyment of anarchy and of the visual pleasures of accidental relationships. The towns, in fact, are their jungle.

A stop in the centre of Yonago to see the municipal auditorium, a boldly shaped structure, of reinforced concrete and pink brick infill, by Togo Murano. Like the work of some other modern architects of his generation—those who became involved in the new movement when they were already well established—it has something of an Art Nouveau flavour and also something Dutch about it: affinities perhaps with Dudok. Then a walk down Yonago's central shopping streets which have—like several other Japanese towns—glass-roofed arcades running off them, usually supported on thin iron columns, valued in summer when the temperature is suitable for strolling out of doors but rain incessant.

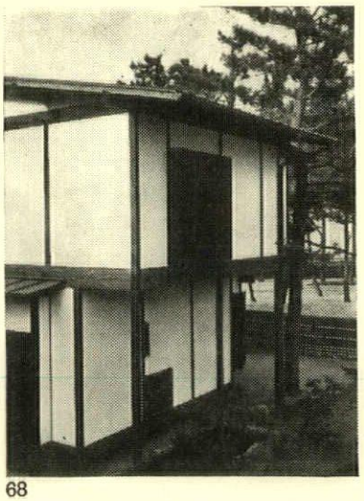
These arcades crowded with people and decorated with sprigs of plastic cherry-blossom, acid-pink, in anticipation of the coming cherry-blossom season—a season which is eagerly looked forward to as it draws near and the subject of endless discussion, of exchanges of mutual enthusiasm and pilgrimages to parks and public spaces noted for the richness of their display of blossom. An oddity: the models in dress-shop windows all blondes with Western features.

A glance at the municipal offices—like those at Hiroshima and Matsue, a commendably simple, modern, workmanlike building—then away from Yonago by car to the hotel at Kaike, a short distance away on the coast; another Japanese-style hotel, light and airy with long, rambling passages overlooking unusually spacious gardens; up-to-date but, like them all, wholly traditional in style and arrangement.

A curiosity in some Japanese hotels: displayed in a hall or passage is a long-tailed cock, a species of domestic fowl whose tail feathers, if given the chance,



67



68

Recent additions to an hotel at Kaike; architect, Isao Shibaoka. 67, *the bath-house from the garden.* 68, *corner of two-storey bedroom wing.*

cascade downwards to a length of several feet. To exhibit this the wretched bird is imprisoned in a piece of glass-fronted furniture like an asymmetrical grandfather clock, facing sideways and perched at eye level with room for his tail to grow downwards to the floor.

A stroll down to the shore—a sandy bay, enclosed by rocks crowned with stunted pine-trees—for a view over the wind-ruffled indigo-blue sea towards the invisible coast of Siberia; then a visit to another, neighbouring, hotel, similar in style but with some interesting recent additions. Kaike is a flourishing hot-spring resort, very popular with the Japanese; hence the presence of a number of up-to-date hotels. The buildings added to this one consist of a bath-house overlooking a broad beautifully planted garden and a residential wing opening off a sandy courtyard; architect, Isao Shibaoka. Both are timber-built, pleasantly and unaggressively modernized versions of the traditional style—the latter's rational, modular planning and elegant use of timber, plaster and bamboo demand nothing else.

Back to the other hotel for evening bath and dinner; the communal bath-room an unusually spacious and picturesque affair which pipes its water direct from the hot springs that emerge under the sea along this stretch of coast: a high-ceilinged room with one wall all window, opening on to the garden (with a terrace outside for the use of bathers when the weather is warm enough for throwing the window open) and a large, irregular-shaped sunken bath, surrounded and islanded with natural rocks. From apertures in the rocks the spring-water comes steaming out; it must be cooled on the way, because it emerges from the springs at a temperature of 187° F.

eighth day

From Kaike to Yonago again to catch the daily plane to Itami airport, one hour's flight south-eastwards, which serves both Osaka and Kyoto; the usual wait in a crowded passenger hut and at last take-off—bumping over the runway and up into thick grey cloud. No view below until we are over Itami and on the point of landing.

A typical busy, untidy provincial airport and an even untidier road to Kyoto: the main highway between the second and third cities of Japan, 80 miles of continuous shacks, factories, wire-mesh fencing, power-lines and advertisements. A poorish road, but here—as elsewhere between big cities—new motorways are under construction. Those seen, however, give the impression of being already hardly wide enough for the increasing weight of traffic.

Into Kyoto, the historic capital of Japan and seat of the emperors, a sprawling city like Tokyo but not quite so shapeless because its streets are on a regular grid plan. Right through the city to the Miyako Hotel standing on high ground on the eastern side: a Western-style hotel this time, large and anonymous of the kind you might find in any big city, and a world away from the Japanese-style inn. Instead of being populated by quiet Japanese gentlemen taking baths, it is bustling with parties of loud-voiced American tourists: business men with cameras and rimless glasses and their wives with blue-rinsed hair who call to each other like seagulls as they swoop up and down the arcade of souvenir shops.

The hotel has a recently added wing (architects, Murano and Mori), looking towards the city, with a strongly modelled, balconied façade of which the first floor is projected forward above a bare brick ground floor. From the upper windows an instructive view of Kyoto in its setting of mountains, which surround it on three sides; on the roof of the new wing a kind of Japanese-style penthouse: suites of rooms surrounding a roof-garden in imitation of the traditional hotel with its garden courts and rambling passages.

After lunch, out into the city, to look first at the one important modern building Kyoto possesses: Maekawa's *kaikan* (or festival hall). This is similar to his building for the same purpose at Ueno Park, Tokyo, even more successful from the point of view of lucidity of plan and spatial arrangement, designed just before the Tokyo one but not executed till after. It was completed in 1960.

A notably mature design, with a large and small auditorium and a conference wing, interestingly planned on two sides of a terraced courtyard. The smaller auditorium, as at Tokyo, the more successful, but natural timber beautifully used throughout the interior, for acoustic as well as decorative reasons. In the foyers, rather garish wall decorations in coloured ceramics. As at Tokyo, the foyers are finished with richly textured materials—purple-brown brick, raw concrete and paving setts in large-scale patterns—such as the West associates more with the outsides of buildings. The external proportions strong but not cumbersome; the sad colour of untreated concrete in fact not disagreeable even in dull weather; the finish of the concrete good; a copper roof to the main auditorium. The cost of the building, £800,000, raised largely by a tax added to the charge for admission to

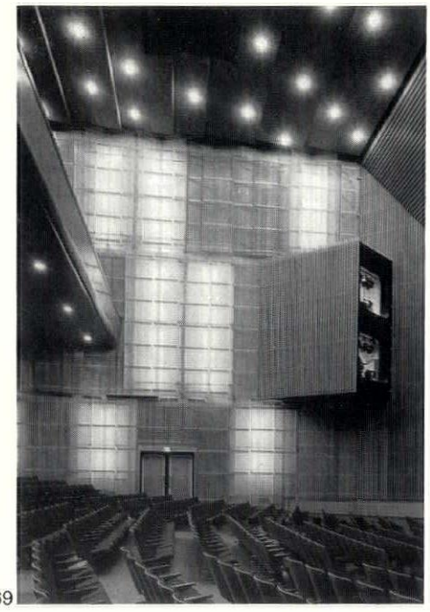
[*continued on page* 187

Festival Hall, Kyoto *architect, Kunio Maekawa*



70

Completed in 1960 and sited near the centre of Japan's ancient capital, this is the equivalent of the same architect's festival hall at Ueno Park, Tokyo (page 166), except that it also contains a conference hall and offices, occupying a separate wing

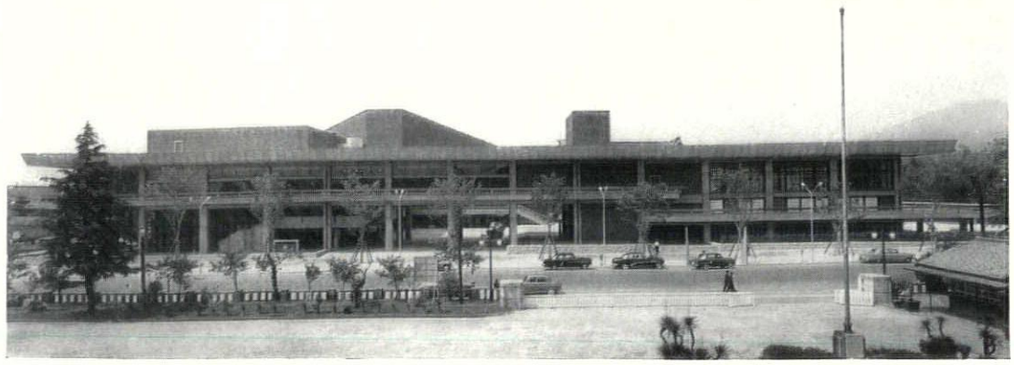


69

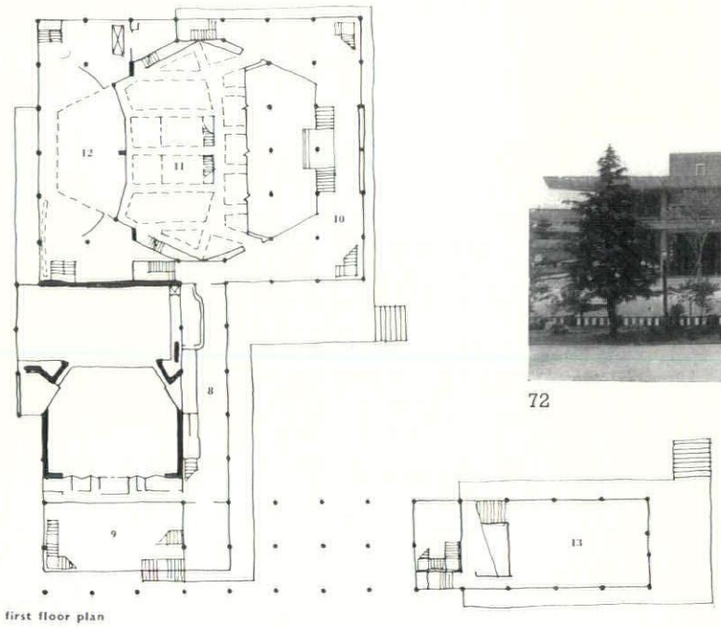
with their own entrance (see plans on next page). Compared with Tokyo, the positions of the auditorium are reversed, the small auditorium being at street level and the main auditorium one floor up. 69, the main auditorium showing split bamboo wall lining. 70, street frontage. 71, south-east corner, with terrace outside the first-floor conference hall.



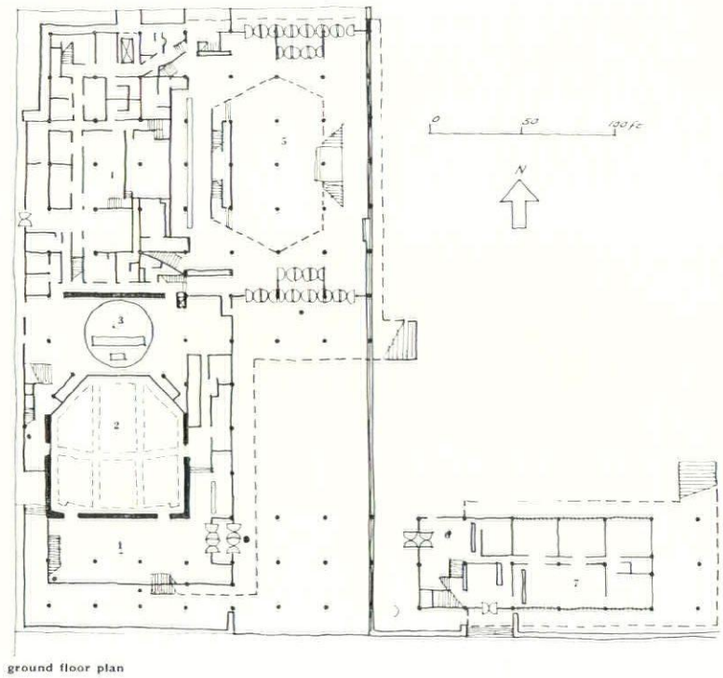
71



72



first floor plan



ground floor plan

Festival Hall, Kyoto

72, from the south, showing the way through beneath the first floor between the auditorium and conference wings. 73, interior of main foyer. Only the ground and first floor plans are shown alongside. The second floor contains the upper part of the main auditorium, with more foyer space, and committee rooms and a delegates' lobby in the conference wing.

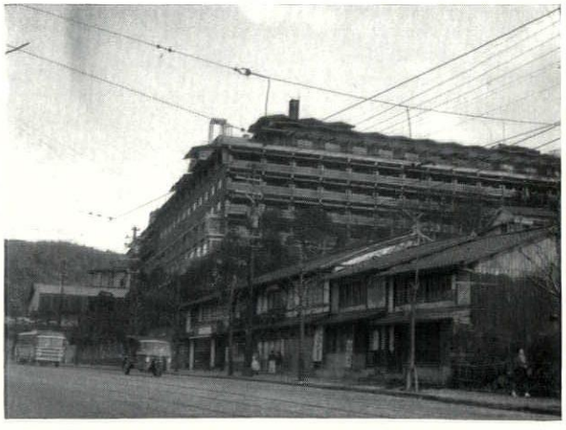


73

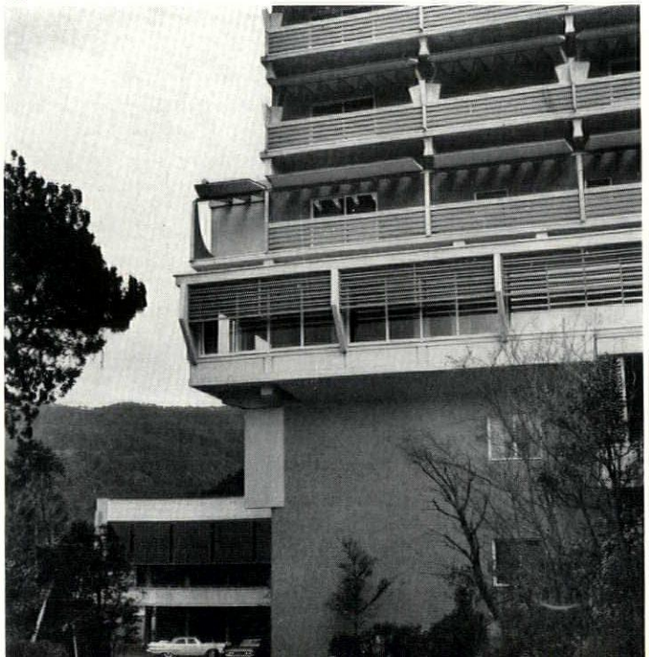
key

1. foyer of small auditorium
2. Small auditorium
3. stage
4. dressing-rooms, etc.
5. entrance foyer of main auditorium
6. entrance to conference wing
7. conference offices
8. restaurant
9. upper foyer
10. foyer of main auditorium
11. main auditorium
12. stage
13. conference hall

74



75



The Miyako Hotel, Kyoto; architects, Murano and Mori: 74, from the street, showing also typical two-storey town houses. The hotel's silhouette is given by the penthouse formed of Japanese-style rooms. 75, detail of wall and balcony treatment—hotel entrance on left.

continued from page 184]

the various tourist sights (temples, palaces and the like) in the Kyoto neighbourhood, thereby permitting the old world to contribute something to the embellishment of the new.

Back past the new post-office, a very decent, if somewhat unsubtle, modern building alongside the main railway-station, designed by Ko Yakushiji, an architect in the enlightened Posts and Telegraphs Department led by Hideo Kosaka—see page 161. The traffic moving faster than in Tokyo, partly because of the less tortuous street-plan and partly because of the existence of a few really wide, double-track streets created as it were by accident; when the war-time bombing was at its height, and whole quarters of the city were threatened with destruction by spreading fires, fire-breaks were created by tearing down rows of property, and these swathes cut through the closely built-up city remain as the new highways.



76, one of the wide double-track streets (the hedge seen bottom left forms the central reservation) carved through Kyoto on the site of war-time fire-breaks.

Out again in the evening to a dinner-party given by the Foreign Ministry: the host Ambassador Kohno, head of the ministry's Osaka branch office. Other guests: Foreign Ministry and municipal officials; local architects Hiroyasu Tomiie and Sano, secretary of the Kansai branch of the Japanese Architects' Association.

The Japanese custom of silently and formally bowing when anyone meets anyone else. The Westerner has three reactions: as regards the moderate bow between acquaintances, he soon gets into the habit of doing likewise; as regards the much deeper bow from the waist, palms on thighs, between strangers when introduced, he is a bit nervous of this, not so much from self-consciousness as because he is puzzled about knowing when to stop—two Japanese, mutually bowing, each one's forehead almost touching the other one's shoulder, seem to know when to straighten up again so that they do so perfectly simultaneously, though there is no sign of an exchange of signals; thirdly, as regards the obsequious bow of, for example, the welcoming hotel-keeper—down on the knees, palms flat on the ground, forehead touching the floor —at first he is embarrassed at what he feels to be an unnecessary as well as an unfamiliar gesture of servility, but soon he realizes that the gesture is based on formality and custom, and he accepts it as such —which does not however mean that he knows quite how to react while the gesture is being made.

The dinner-party held in a private room in a Japanese-style restaurant—a room glazed down to the floor along one long side and looking out on to an unusually beautiful garden. The ritual as before: cross-legged on a cushion at the low table: little cups of *saké*; the long drawn out meal of many courses served in an array of dishes and shiny lacquer bowls. But, since this is a somewhat ceremonious occasion there are, in addition, *geisha* girls whose job it is to minister and amuse.

Dressed in a traditional style peculiar to their calling, in the bright colours of tropical birds with long falling sleeves and skilfully manipulated trains; hair piled up, stuck with pins and crowned with tinsel ornaments; faces thickly powdered a matt white on to which are painted artificial eyebrows and mouths; these unreal, accomplished, doll-like creatures kneel beside the guest, replenishing his cup of *saké*, helping him to tit-bits from the dishes in front of him and making cheerful conversation in twittering, bird-like voices. Towards the end of the meal they get up and dance, to the accompaniment of the *sam-sen*, a stringed instrument like a guitar: slow, formal dances with gesturing of sleeves and fan; or they sing sad or gay little songs, returning to kneel beside the table between times.

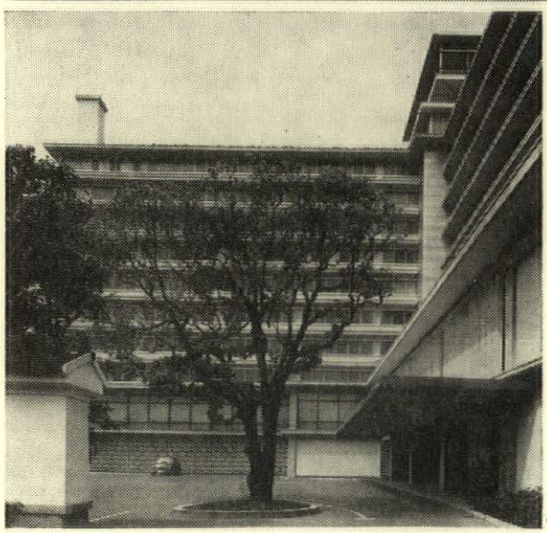
Pretty enough in their stylized way they nevertheless—it should be said in view of the misconceptions about the *geisha* sometimes current—are (to the Westerner anyway) without much sex-appeal; their manners are so formal and remote and the white socks they wear with a separate compartment for the big toe are rather off-putting to the Western eye, looking like hens' feet as they point them outwards in the dance.

ninth day

A day spent visiting historic sites, which abound in and around Kyoto. First to Nijo Castle, right in the city: a palace built by one of the *shoguns*, Tokugawa Ieyasu, at the beginning of the seventeenth century and enlarged by his grandson, who also incorporated in it parts of a neighbouring palace a few years older.

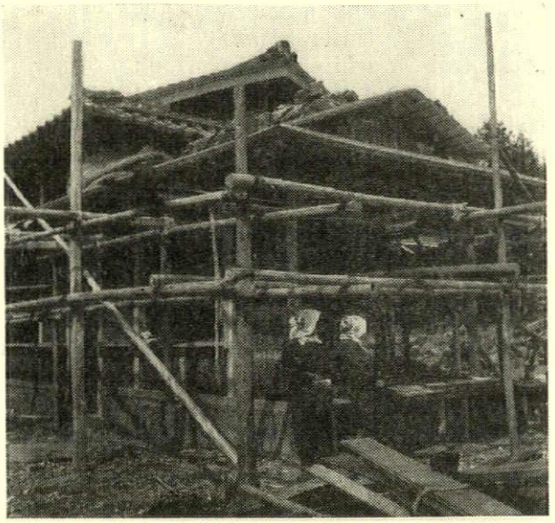


77



78

Two new buildings in Kyoto: 77, head post-office by Ko Yakushiji, of the Posts and Telegraphs architect's department; 78, Kokusai Hotel, by Junzo Yoshimura.



79, *traditional-style carpenter-built house under construction: note female labour.*

It was for the *shogun's* own use when he visited Kyoto—the *shoguns*, the real rulers of Japan, resided at Yedo (now Tokyo) while the titular emperors had their court at Kyoto.

The main group of buildings—the Ni-No-Maru Palace—consists of four square blocks staggered in plan so that they only connect at the corners, allowing each to overlook the garden—that *leit-motif* of Japanese architecture. A corridor runs round the perimeter of each; the first three contain audience chambers, with faded (but to experts important) paintings on their sliding screens; the last the *shogun's* private apartments. They are timber-framed, stuccoed buildings with heavy tiled roofs, and are enclosed by walls within which is a landscaped garden with great rocks and an irregular lake. Covering a much bigger area and enclosing also a second residence, itself protected by a moat, are outer walls with gateways and corner turrets—again of white stucco with grey roof-tiles and basements of stone—the whole surrounded by an outer moat: an impressive system of fortifications with an unusual breadth and simplicity and sense of space within.

Across the street from the castle gateway another modern hotel (architect Yoshimura, formerly professor at Tokyo University), a pile of long balconied windows towering above the narrow streets of little wooden houses and entered from the other side through a courtyard somewhat absurdly walled-in in the style of the castle opposite. From there out to the north-western edge of the city, to the Kinkaku-ji temple to see the so-called golden pavilion, part villa, part monastery, an ornate, heavily gilded affair, looking as bright as new and in fact totally rebuilt in 1955, reputedly in fifteenth-century style: the sort of filigree architecture the Western eye finds it very difficult to distinguish from every theatrical designer's idea of oriental magnificence, this one however having the attraction of standing in a splendid forested park.

Next to the Ryoan-ji temple not far away; just before reaching it a new small house by the roadside in course of construction, interesting to observe because the traditional method of house-building, still in use everywhere, can be seen in detail. It is a carpentry job, with the spaces between the timbers filled with brownish mud mixed with boiled seaweed. This will later be covered with weather-boarding or plaster.

The Ryoan-ji temple is a monument to be taken more seriously than the golden pavilion, not only for the temple buildings themselves, which are agreeable enough examples of the gabled broad-eaved timber architecture that is the type of the Buddhist temple all over Japan—this one is pleasantly approached by steep gravel paths winding among pine trees—but on account of the famous sand-garden that lies to one side of it.

Enclosed within a mud wall, kept low on the only side from which the visitor can look into it, this is a flat rectangular area of sand studded with rocks or groups of rocks like islands in a sandy sea, the sand being finely raked in a pattern of straight lines which become concentric circles round the bases of the rocks. Created in the fifteenth century by the artist Soami and endowed with mystical significance by the devotees of Zen, it is in fact, whether one chooses or not to read symbolic significance into the placing and relationship of the groups of stones, a three-dimensional abstract picture of wonderful calm, dignity, texture and colour.

Ryoan-ji temple, its paths, courtyards and terraces, thronged with a pushing crowd of school-children and other visitors, mostly herded into parties by uniformed guides carrying flags so that each member of a party can easily identify his own. These highly organized crowds of sightseers being characteristic of all the architectural monuments of Japan—they swarmed too along the paths leading to the golden pavilion and occupied nearly all the available ground-space, indoors and out, at Nijo Castle—something should be said here of the remarkable part tourism plays in Japanese life and the physical form in which it is organized.

TRANSPORT AND TOURISM

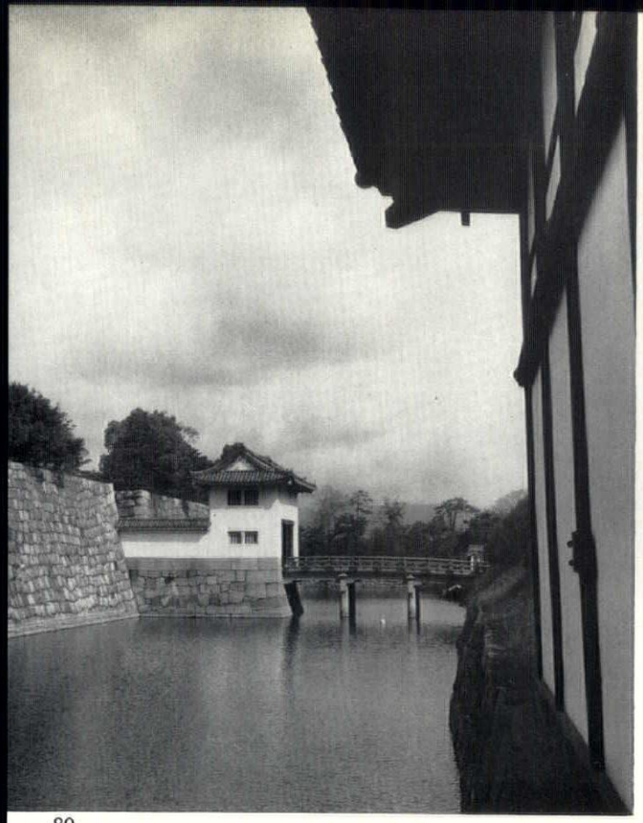
The two go together because the transport system is bolstered financially by the tourist trade, which is a flourishing one. Historic sites and ancient monuments, together with hot-spring resorts, national parks and the like, are all crowded, largely with Japanese, arriving and departing in buses. It is as though the streams of camera-hung, guide-book-carrying visitors in Florence, Capri and Venice all turned out to be Italians.

For the Japanese are indefatigable tourists in their own country—due one supposes partly to a mixture of cultural curiosity and educational policy; but largely also to the fact that travel abroad is almost impossible for financial and political reasons. Tourism is very highly organized and takes place largely in groups. Every social class participates. Schoolchildren travel round the tourist sites—the ancient castles, temples and shrines—in enormous numbers as part of their educational curriculum, though they must save up the money for it themselves.

These school sight-seeing tours, conforming to set itineraries, are adjusted as to scope and duration to suit children of different ages. At least once during their schooldays nearly all children manage to cover the whole country by means of such tours, which take generally about ten days. They carry picnic meals and sleep the night at inns, which again are very largely supported by the tourist trade. They convert their larger rooms into dormitories on demand, a dozen or more children bedding down on the *tatami* together.

One cannot arrive during the travelling season at a famous Buddhist temple or Shinto shrine, whether in a city or in the depths of the countryside, without finding numbers of the special—very smartly designed—tourist buses parked in rows under the trees and disgorging troops of children, the boys dressed in the military-style uniform that all Japanese schoolboys and students wear from the age of six until they leave the universities at twenty-two—black trousers and jacket, the latter fastened close round the neck, with brass buttons down the front—and the girls in their own slightly less stereotyped uniform—usually dark blue skirts and jumpers with sailor collars. There is no ascertainable reason why the boys' uniform takes its style from the army and the girls'

[*continued on page* 191



80

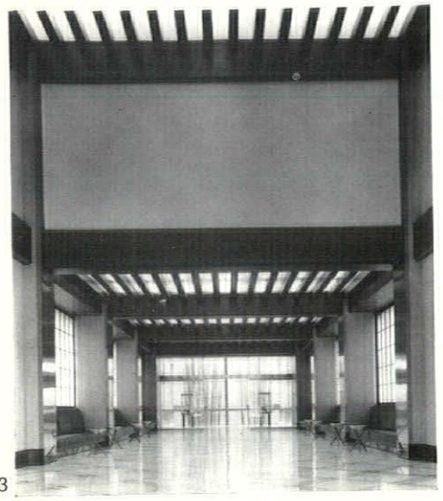


81

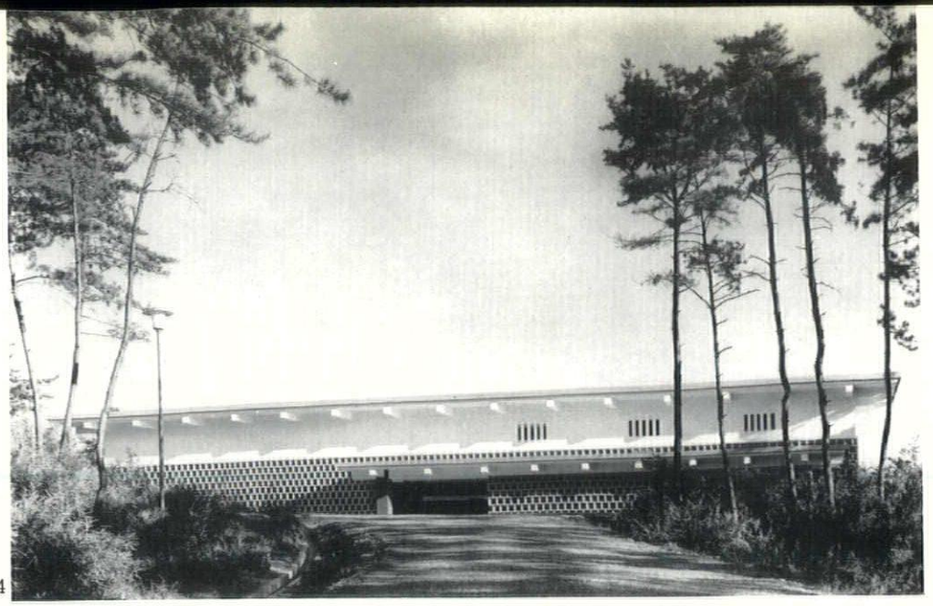
Historic buildings in Kyoto, representing three characteristic types. 80, Nijo Castle, a palace built by one of the shoguns in the early seventeenth century—looking along the moat to one of the gatehouses. 81, Katsura Palace, a seventeenth-century imperial villa, standing in a large landscaped garden. 82, the Ryoan-ji temple—typical of the wide-eaved timber buildings of the many eighth- to tenth-century Buddhist temples in the Kyoto and Nara areas. Ryoan-ji also possesses a famous sand garden—see facing page.



82



83

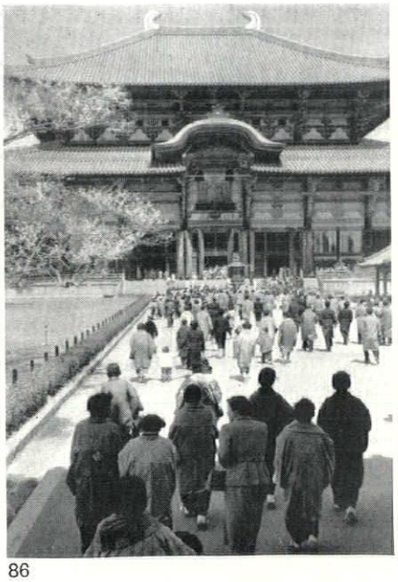


84

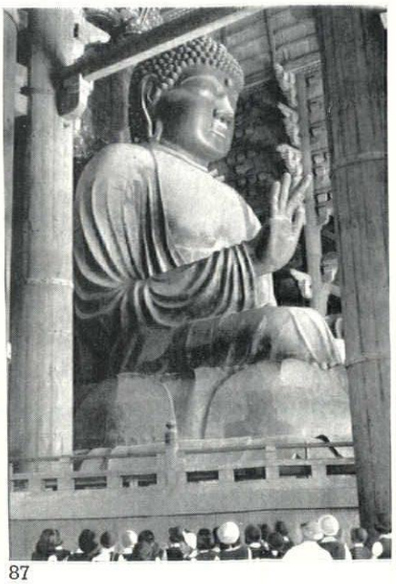


85

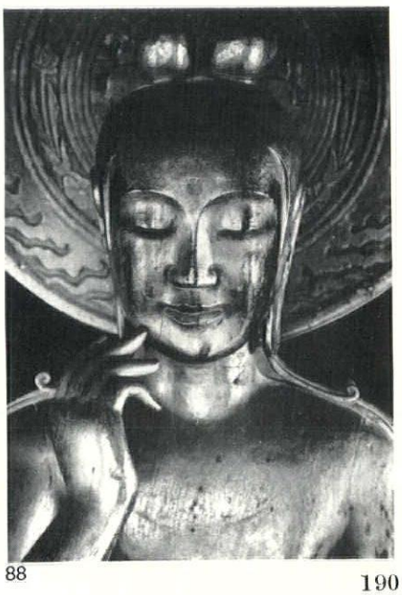
The Yamata art gallery, near Nara (see page 193)—architect, Isoya Yoshida. 83, looking into the main gallery from the entrance hall. 84, the entrance front. 85, the side of the building where the ground falls steeply to a lake, showing the link between the entrance wing (left), which also contains offices and a lecture-hall, and the gallery wing (right).



86



87



88

Monuments of Buddhist art and architecture. 86, Todai-ji temple, between Kyoto and Nara—note the crowds of sightseers which are a permanent feature of such monuments in the tourist season. 87, the great bronze Buddha in the same temple; in the foreground a touring party of schoolgirls. 88, the early wooden Buddha at the Horyu-ji temple. See also page 191 for a typical pagoda, the other type of building which, together with the barn-like halls (this page and page 189), the gateways and the treasure-houses, comprise the complex of buildings of the Buddhist temple.

continued from page 188]

from the navy. It is also, incidentally, noticeable that even when not in uniform very few of the schoolboy and schoolgirl generation wear traditional Japanese dress. Particularly among women, such dress is still common in the streets even of the big cities, but it looks as though within less than a generation kimono and obi will have disappeared from the scene, except perhaps indoors and in the remoter districts.

The touring school-children are well disciplined and follow a fixed route round temple courtyard, pagoda, treasure-house and landscaped garden in compact droves, listening to guide-lecturers, photographing each other in front of memorable backgrounds and investing in souvenirs and refreshments before piling into their buses to move off in convoy to the next place of call. But although their numbers are remarkable, they provide only one element of the throngs that people every ancient monument. There are similar organized parties of adults. Many Japanese people belong to clubs through which they save up money to go on sightseeing tours, often twice a year, often five hundred at a time, chartering a whole train or a whole fleet of buses. Especially addicted to this form of semi-educational amusement are farming people, who are prosperous just now owing to the Government system of subsidies. Like farmers everywhere they value good living, and so their tour programmes are also designed to allow them to sample the cooking of the region they are travelling in. Tours are also undertaken by parties of old people. It is an accepted custom to give presents to old people in the form of tickets for a sightseeing tour.

The prosperity of the bus companies is largely dependent on this highly organized group touring industry; they have special departments to cater for it and provide uniformed guides who carry flags so that stragglers can reunite themselves with the right party. And as many of the bus companies are subsidiaries of the railway companies, the prosperity of the former is passed on to the latter. It provides one of the reasons why the Japanese railway companies pay their way,* a thing railways in other countries seldom manage to do, though there are other reasons too: the fact (in the case of the Japanese private railways) that they are not confined to a single activity—they run bus services and manufacture buses and rolling-stock and can therefore co-ordinate road and rail traffic to suit the economic demands of each; and the fact (in the case of both the private and the national railways) that the road-system throughout Japan is not at present good enough to deprive the railways of their profitable traffic.

It may not, however, be so for long, because of the big programme of road construction now under way and the rapid increase in the use of motor-cars, an increase that has not in fact been deterred by bad roads—Japanese drivers subject their cars to treatment on rough road-surfaces that few other car-owners would countenance. But motor-cars will multiply as fast in the country as they have done in the towns when road conditions are better.

The new roads, it may be mentioned, are, although centrally planned, locally financed to the extent that many of them are toll-roads. They will remain so only until their capital cost has been paid off. The expectation is that this will take twenty or thirty years, but in some of the toll-roads already operating, such has been the traffic that the cost seems likely to be paid off in a good deal less. The amount of the toll varies; for an ordinary car it may be the equivalent of 1s. 6d., it may be as much as 5s.

Even in the cities new road-building programmes are not inseparable from tourism; for example Tokyo's very comprehensive programme, necessary in any case, has been given a special impetus by the coming Olympic Games. Of the twenty-three new cross-town highways planned (at an estimated cost of £130 million) eleven were designated by a traffic subcommittee of the Olympic organizing committee as being essential if the fiasco of the 1958 Asian Games was not to be repeated. On that occasion traffic congestion prevented some officials and many spectators from reaching the stadium at all on the opening day.

Some of these twenty-three highways are half built, some not yet begun; the chief cause of delay being the number of property owners who are reluctant to move—the Japanese are but slowly feeling their way towards the compulsory acquisition of land (see article on Town Planning). 6,000 houses or shops stand in the way of these new Tokyo roads, and by last autumn only the owners of 1,600 had signed evacuation contracts. Most of the others were holding out because they were not satisfied with the compensation offered. This is fixed by the city government on the basis of local land-values and the age of the building to be demolished, and is likely to account for 70 per cent of the whole cost of road construction.

Tourism, and the transport industry that thrives on it, is not restricted (except presumably in the case of the school parties) to archaeological and architectural sites. Other centres of activity are the hot-spring resorts and the national parks. The latter are about the only places in Japan where the countryside is accessible and people can enjoy getting close to outdoor life. The farmlands, because of the nature of agriculture—small patches of land intensively cultivated or rice-paddies perennially under water—are not accessible like the European countryside, and the only recreational use the steep, forested mountain sides are put to is a limited amount of skiing enjoyed by the middle-classes in winter-time. So in the summer season the national parks, especially those near the main centres of population, like the Ise peninsula and Hakone, draw enormous crowds.

The hot-spring resorts like Atami are very popular, not only among passing tourists but among holiday makers who, like the tourists, subscribe to clubs as a way of financing holidays there. Many trade unions run such clubs and maintain their own hostels in places like Atami (as the Russian factory unions do at the Black Sea resorts) and the big industrial corporations and some Government departments do the same, holidays there being organized on a co-operative basis.

Finally, mention must be made of the cherry-blossom season which gives tremendous impetus to tourism. It evokes fresh enthusiasm every mid-April, enhanced by local patriotism, and for a week or two half the people in Japan seem to be on the move, touring around viewing each other's blossom.

* A new railway line is even now being built: the high-speed Tokaido trunk railway connecting Tokyo with Osaka and Nagoya.

ninth day (continued)

In the afternoon to the Sanjusangen-do, a thirteenth-century sculpture-hall built to contain a statue of Buddha and a thousand supporting bronze images—which it still does, standing shoulder to shoulder like the crowds at a coronation: a simple rectangular building, whose name means thirty-three spaces—the number of spaces between the columns—claimed to be the world's longest timber building (390 ft.); complex internal roof structure, the heavy members barely visible in the gloom.

Then to the Katsura Palace, standing in its vast romantic garden, too famous to be described here. The building, an imperial villa of the seventeenth century, has a complex plan produced as it were by joining asymmetrically a number of rectangular pavilions, so that as you wander from room to little room, you are always turning corners and being confronted by a new outlook (through sliding window-wall or from open-fronted balcony) on to a garden vista carefully contrived to suit it. The palace is all on one level, but raised above the surrounding garden. Its plastered, timber-framed walls beneath a half-gabled overhanging roof covered with grey-brown thatch, allows one to note for the first time the distant origin of the simple, rational Japanese domestic style with which modern architects have discovered so many close affinities.

tenth day

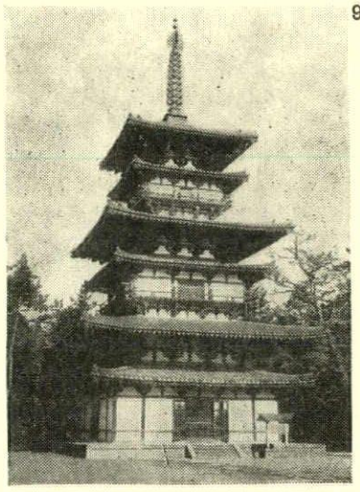
In the morning, by car from Kyoto to Nara, looking at various Buddhist temples on the way, mostly in the rain but taxis always carry paper umbrellas in the boot for the use of their passengers. At first through well cultivated country (this is one of Japan's two principal tea-growing areas), but later more forested and later still given over largely to bamboo plantations. Bamboo grown as a crop since it has many

practical uses; some of these unexpected, such as the long flexible bamboos used throughout Japan for clothes-lines, where in the West we would use cord or wire. This area recently devastated by a typhoon.

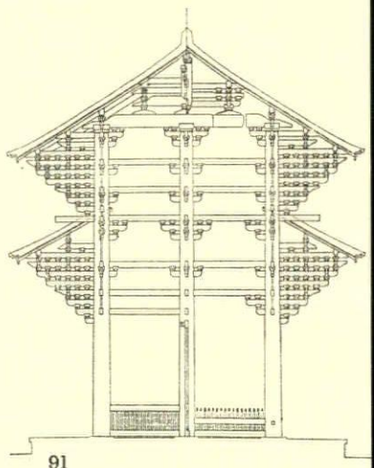
Bumpy, narrow roads, made the more difficult for traffic by constant bottle-necks in the shape of the long main streets of villages, where two cars can hardly pass and where the roadway is made narrower still by deep open ditches in front of the buildings along either side. But now and then a glimpse of the improved main-road system on which work is steadily going forward, as when our road passed under the new double-track highway between Osaka and Nagoya, sweeping across the country free of intersections: one of the first sections of the programme to be completed.

Here is not the place to describe the ancient Buddhist temples south of Kyoto and in the area round Nara. They are famous monuments and every detail is given in the text-books. Anyway, to the inexpert Western eye they look very much alike. Eschewing therefore all expertise on layout, roof-construction, carving and the like—to say nothing of their sculptural contents, another expert study on its own—it can be said that their visual appeal lies chiefly in their colour—sombre brown touched with faded red, occasionally enlivened by the brightness of new orange-vermilion paintwork, against the dark greens of the fir plantations in which most of them stand—and in the subtly proportioned spaces that the ranges of low buildings enclose and partially subdivide by means of the taller, asymmetrically placed elements like the pagodas and treasure-houses.

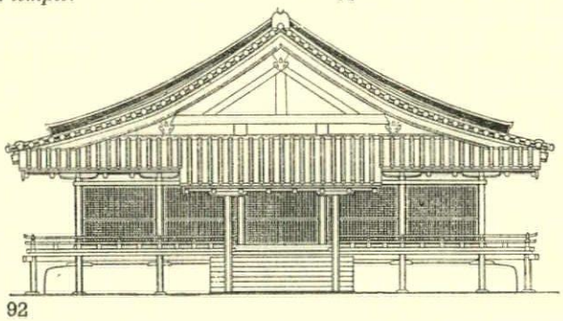
Again it is strange to find in temple after temple how little store seems to be set by the actual antiquity of the fabric. A building is revered as twelfth-century or whatever it may be even if it has been restored or rebuilt in quite modern times, as long as the old appearance has been exactly reproduced. The Daigo-ji temple with its miles of boundary walls—of plaster over a base of mud and bamboo, with stone bases and capped with grey tile—has a very fine tenth-century pagoda that was lately taken down and reassembled and defective parts renewed, the whole process taking six years, ending in 1954. Similarly the tenth-century Uji-byo-do-in temple a little farther along, famous for its eleventh-century bronze bell, was dismantled and re-erected just after the war (such work, if the building is listed as a national monument and protected as such, is paid for by the Government). And the Todai-ji temple, which houses an enormous bronze Buddha, was rebuilt in the eighteenth century after a fire. Now it has a sprinkler system like a city department store which keeps its timbers damp if the temperature rises above a certain point.



90

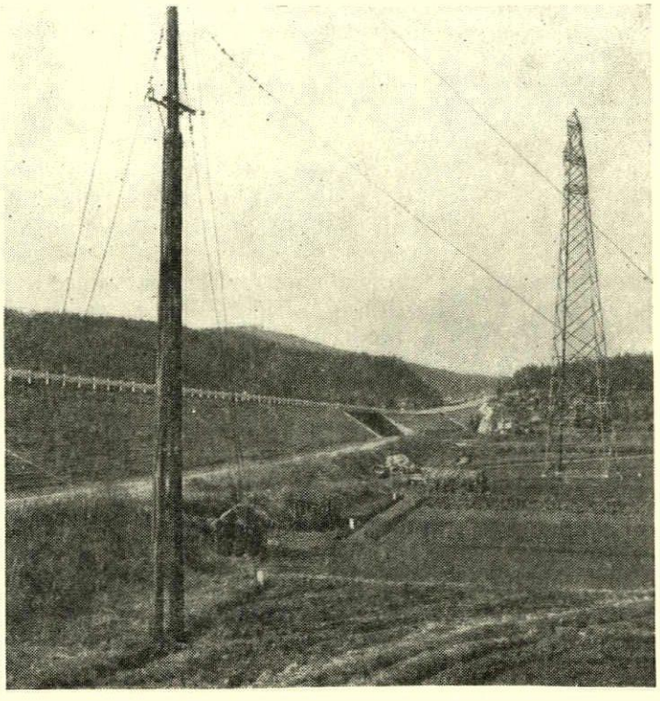


91



92

Buddhist temple architecture: 90, *a typical pagoda—at the Yakushi-ji temple, near Nara;* 91, *section through the south gate of the Todai-ji temple, showing characteristic bracketed construction;* 92, *elevation of hall at the Horyu-ji temple.*



89, *part of the new double-track highway between Osaka and Nagoya: in the distance, underpass and by-passed village.*

Happily the finest temple of them all, the Horyu-ji temple near Nara, has been very little rebuilt. It has a complete outfit of sturdy, eighth-century buildings enclosing a courtyard of splendid proportions; also, surrounding an adjacent courtyard, a nunnery (rather rare in Japan), an austere, beautiful early wooden Buddha ('National Art Treasure No. 1'), a clumsy modern concrete treasure-house made clumsier by traditional-style curly-eaved roofs (but fortunately well out of sight) and the usual avenue of trashy souvenir-stalls and pin-table booths.

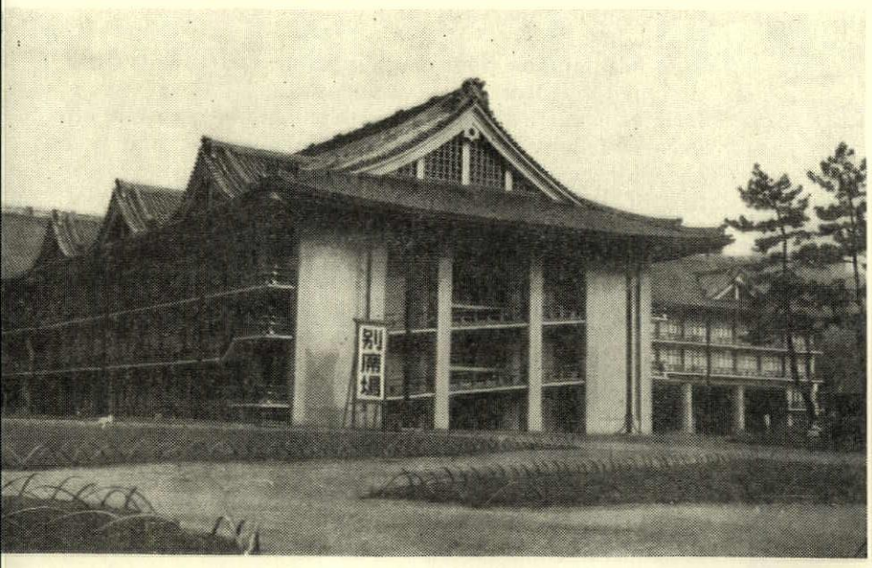
Such squalid appendages to historic monuments are another aspect of the curious contrast to be found all over Japan: reverence for beauty coexisting with frequent insensitivity to the process of desecrating it—a tendency, it must be acknowledged, noticeable in other countries as well. It is perhaps inseparable from the highly developed tourist industry which in these famous Buddhist temples is very much in evidence again. Buses full of school-children are unloading all the time, conducted parties queueing at gateways, crowds milling round each statue, pagoda and refreshment-booth, neat lines of parked buses filling every tree-lined vista.

Nara: the site of the ancient—even more ancient

than Kyoto—capital of Japan, now wholly a tourist town. Not a particularly attractive one, but not too large and well sited among rocky hills rising abruptly above their tree-clad lower slopes. In time for lunch at the Nara hotel, which stands on high ground at the edge of the town: a two-storey timber building, Japanese architecturally with low-pitched roof and widely overhanging eaves, but furnished and run wholly in Western style. Agreeably old-fashioned, with a spacious Edwardian air: lofty corridors lined with match-boarding; Turkey carpets, wide fire-places and basket-chairs; coils of rope outside each window for use in case of fire.

Off again in the afternoon on a sight-seeing programme which includes two more eighth-century temples (the Yakushi-ji and the Toshodai-ji) and the Kasuga Grand Shrine whose orange-vermilion buildings look almost luminous between the trees; but also, making a nice change, the modern Yamata art gallery. This is a rural gallery of Eastern art, founded and endowed by the president of one of the private railway companies, recently dead. The building was opened only eighteen months ago. It has a park-like setting of pine-clad hills surrounding a small lake, and was designed by a senior architect, Isoya Yoshida, who succeeded Yoshimura as professor at Tokyo University. An interesting, and in many ways effective, exercise in the art of architectural compromise: modern in plan-form and structure but with reminiscences of Japanese traditional styles. The total effect is agreeable, especially the warehouselike character of its plain walls and roofs, though it does not create a sense of leading anywhere interesting as do the more uncompromising concrete buildings by the architects a generation younger.

The walls a grid of concrete ribs protecting a mosaic surface in a vivid, somewhat harsh, blue-green; the interior beautiful: one large square gallery with a small garden courtyard in the centre containing tall bamboos, visible through its plate-glass walls but



93, a Japanese example of period-style architecture: a new range of buildings at Tenri University.

disappearing upwards out of sight. The exhibits—paintings, sculpture, ceramics and the like—mostly small; sparsely arranged and chosen on an aesthetic rather than an art-historical basis. The lighting and colour of the whole interior very good; also in the little lecture-hall that opens off the foyer.

On the way back to Nara, a golf-course with lavish club-house—one of a great number seen from car or railway train, recalling again the new Japanese enthusiasm for golf; and not only as a sport, for to certain sections, especially business sections, of society golf is coming to mean a lot socially and even financially. The subscription to these country clubs is relatively low but the entrance fee is often around £300 to begin with and increases thereafter, and since membership is transferable it is regarded as an investment, to be disposed of profitably when the fee has gone up. Membership of a golf club is one of the things the senior employees of big commercial firms expect to be given on their expense account.

A detour to visit an architectural curiosity that is at the same time a place of some significance in Japanese life: Tenri University, the headquarters of Tenri-ko, a sect of Shintoism founded about a century ago, which is very active and propagandist and a political force throughout Japan; and indeed abroad, since there are many foreign students at the university. Attached to it is a religious centre, where a festival is held twice a year to which groups of pilgrims come, including whole families at a time, from all parts of Japan. It is housed in ranges of traditional-style buildings, and the particular architectural curiosity is the vast new training centre, completed only in 1956. This is one of the largest recent buildings in Japan, designed in a ponderous ornate style, based on reminiscences of ancient Japanese temples (architect, Professor Shozo Uchida). The five-storey building (two storeys in the roof) provides half a million square feet of floor area. An extension, providing another 150,000 sq. ft., is under construction in the same style. It is comforting, of course, to an Englishman familiar with the tenacity of retrograde architectural ideas, to find that in a country as modern-minded as Japan such extravagant irrelevancies also survive. In China buildings of this kind—or a simplified version of them—are, it may be recalled, of course still the rule.

A night at the Nara hotel; surprise at seeing from an upstairs window, after darkness had set in, a blaze of coloured neon lights from a hill-top above the town—marking, it turns out, a newly installed American-style pleasure-park or Disneyland, providing the tourists who flock to this area with an alternative entertainment which must contrast very forcibly with the ancient temples, shrines and archaeological sites for which it is already famous.

eleventh day

Nara to Osaka, a distance of 28 miles by road. Round Nara is the centre of the goldfish-breeding industry and in the villages are little farms whose chief preoccupation is goldfish, whence they are exported to nearly every country in the world. Country roads again passing through the narrow streets of straggling villages; then a new toll road, well engineered though spoilt by the multiplicity of road-side advertisements. Wilder country as the road climbs upwards; flurries of snow on the pass; then the long zig-zag ride downhill again to the plain in which Osaka lies. Another—quite spectacular—toll-road; more frequent advertisements; thickening wirescape; then the industrial outskirts of Osaka and soon the built-up city itself.

Osaka, with a population of over three million, is the second city of Japan, sited at the head of an inlet at the eastern end of the Inland Sea. It is the most important commercial and industrial centre, though after the war some of the big corporations moved

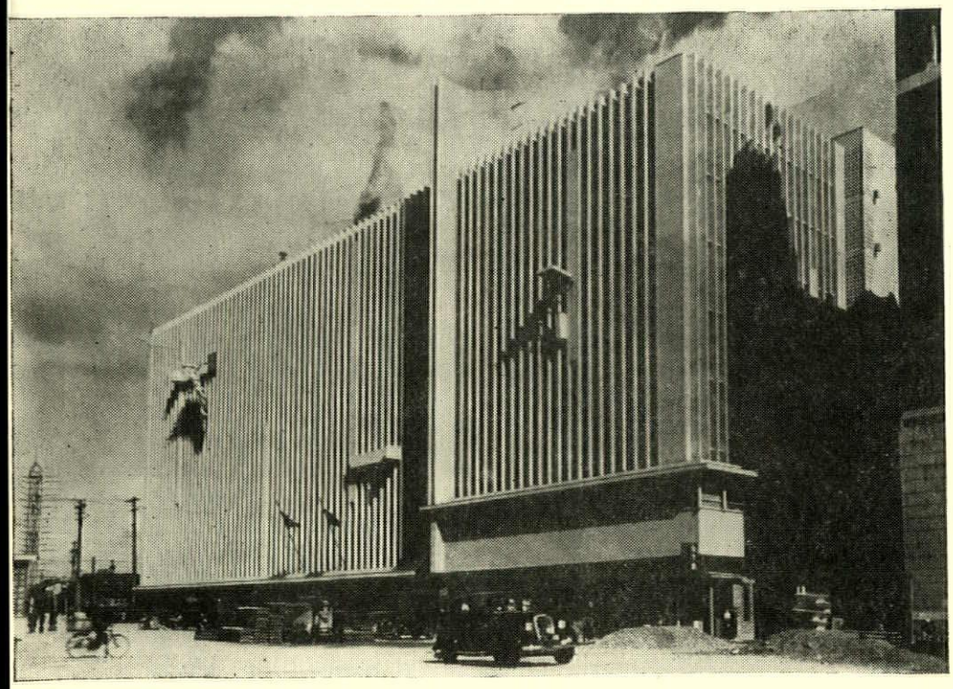
their head offices to Tokyo to be in touch with the Government departments administering the various new economic controls. Osaka even more than Tokyo has the air of a thriving, expanding commercial city—it plays the part of Sao Paolo to Tokyo's Rio, and has much of the Brazilian city's dynamic quality.

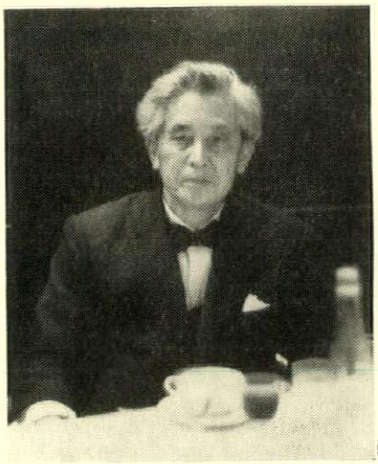
Though it was badly damaged in the war there are few signs of this now, but few signs also, right in the centre, of the opportunity being taken to do basic replanning. The streets, and the bridges spanning the two branches of the wide river that make the central business area into an island, are jammed with traffic. Blocks keep it stationary for minutes at a time. An ingenious technique of helping traffic flow—initiated in Osaka but now being tried out in Tokyo too: a local broadcasting station gives out continuous announcements about where in the city congestion is worst, which motorists receive on their car radios and can adjust their routes accordingly.

First to the Osaka Grand Hotel: large, luxurious, international style; then, after lunch, down to the lobby to meet one of the leading Osaka architects, Tyuichi Mori, the partner of Togo Murano. With him to look at some of the new buildings—which in Osaka are not so scattered among the old as in Tokyo, giving the city more of a metropolitan scale and density. Tange's Dentsu building on one of the river-banks, the headquarters of an advertising company, in exposed concrete with apertures punched in the façade in Tange's vigorous style; various other office buildings (illustrated herewith), some by private, some by contractors' architects, with aluminium exterior facings including one (the brand-new Shinhankyu building) in which the Takenaka Company has its own offices. Much sophisticated use of curtain-walls, in several cases quite up to Milanese standards and with the greenish glass often favoured there.

Belatedly, Osaka is taking some steps to improve the transport situation. The underground railway, built in 1952, is being extended, and some wide new boulevards have been built not far from the centre on ground cleared by war-damage. In one place the whole length of a disused canal is being filled in with a two-storey parking garage with a new roadway on top,

94, the Sogo store, Osaka, by Togo Murano, 1932: regarded as Japan's first example of modern architecture.





95

95, Togo Murano. 96, his Kabuki theatre in Osaka, designed in 1959 with reminiscences of the traditional theatre style.

96

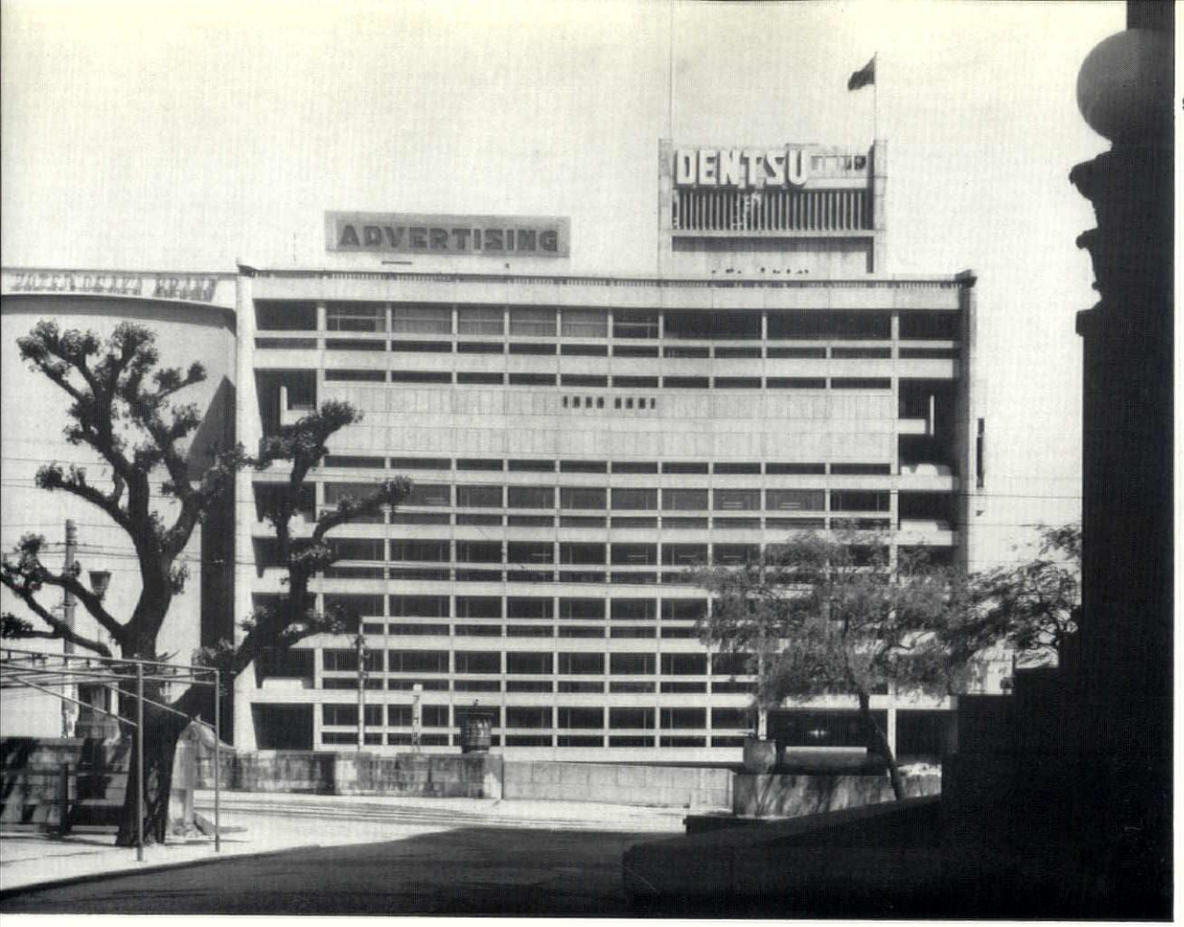


and—since Osaka had a bad typhoon last autumn with the whole centre of the city flooded, and the basements of buildings filled with water so that plants were put out of action and they had no electricity for a month—river walls are being built higher to prevent overflowing. A problem is that the land in the city is sinking because of the amount of water that has been extracted, and it is no longer permitted to use the underground water-supplies for cooling air-conditioning plants.

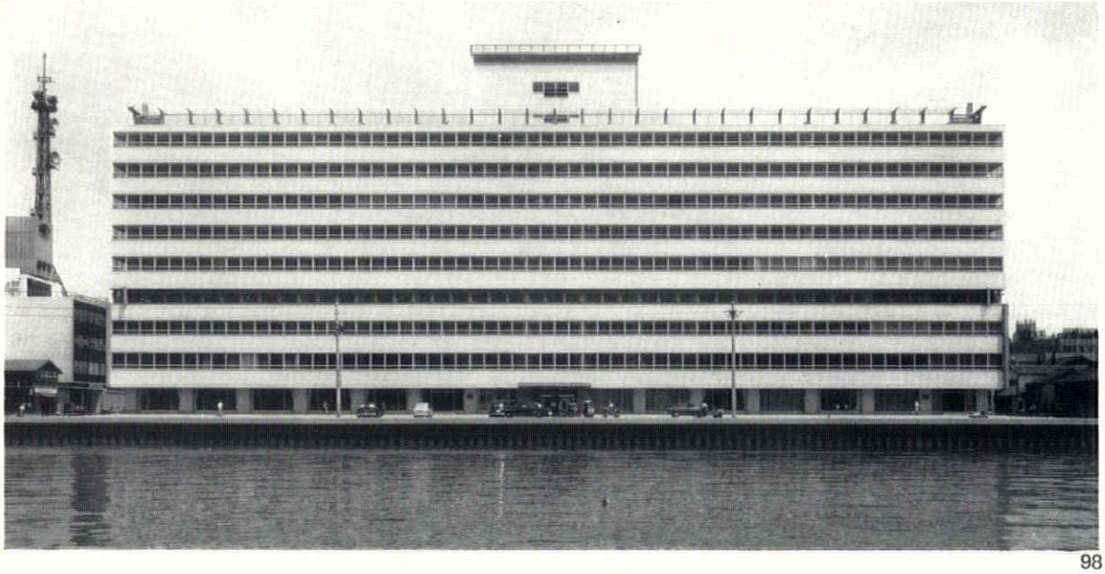
A halt at the Sogo building, a department store designed by Murano as long ago as 1932. It has a façade of vertical fins, faced with faience, to cut off excess of light from the sales floors within, and was the pioneer modern building in Osaka—perhaps the first in all Japan, if you don't count Wright's Imperial Hotel in Tokyo. A glimpse in passing of the late sixteenth-century Osaka Castle, a larger version of the one visited at Matsue, with stones of cyclopaean size lining the moat; then to a very odd building, also by Murano: a recently built Kabuki theatre with a street façade designed—at the insistence of the owner—with reminiscences of the traditional style. How complaisant a modern architect should be when confronted by a client with such notions is a matter on which there may be different opinions, but at least Murano has extracted some entertaining plastic shapes and some gaiety of rhythm from this somewhat irrelevant exercise. The theatre itself, seating 1,000 people, occupies the upper part of the building. Beneath it are foyers, cafés and the like with a restaurant in the basement.

Back next to the hotel, and in the evening dinner with a group of Osaka architects: Mori, Masami Tokunaga, the secretary (Sano) of the local branch of the Japanese Architects' Association (already met in Kyoto) and Togo Murano. Murano is one of the grand old men of modern Japanese architecture—

[*continued on page* 197



97



98



99



100



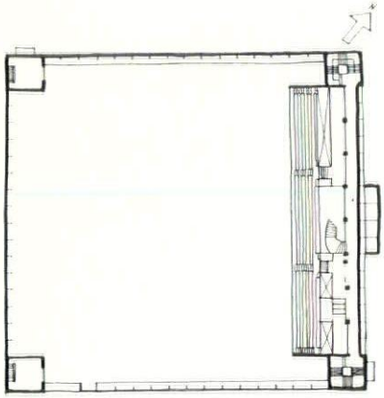
101

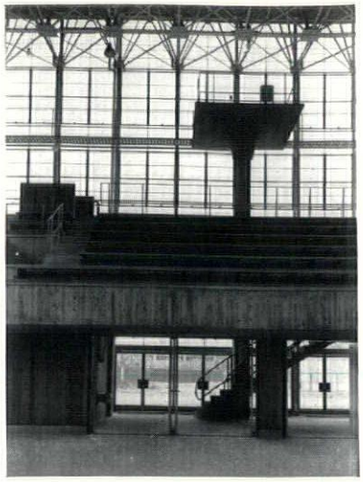
102



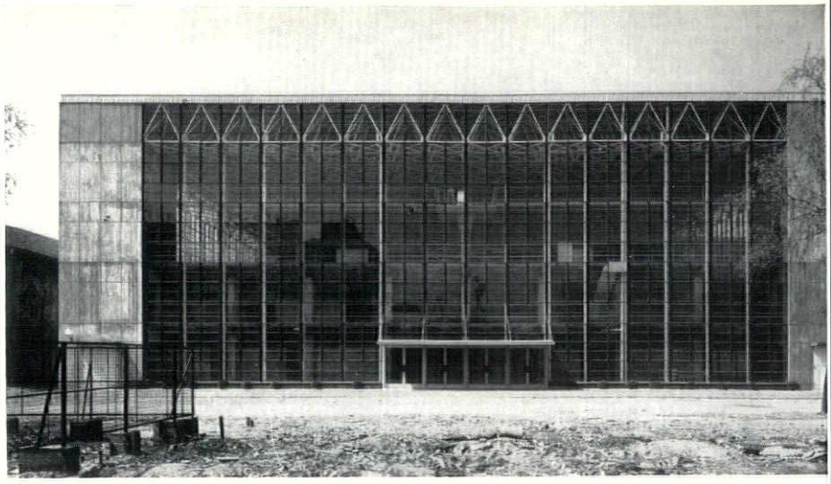
Office buildings in Osaka. 97, the Dentsu building by Kenzo Tange—in exposed reinforced concrete facing one of Osaka's rivers. 98, the New Osaka office building, by Murano and Mori, facing another branch of the river. The bands between the windows are of yellow brick. 99, 100, 101, three recent buildings by the architects' department of the Takenaka contracting firm: the Shinhankyu building (where the firm has its Osaka offices), faced in aluminium; the Kansai electric power building, the Kangin building. 102, another curtain-wall office building for the Nihon Sheet-glass Co. This is by the Nikken design office—see the article Organization of the Profession on page 160.

103





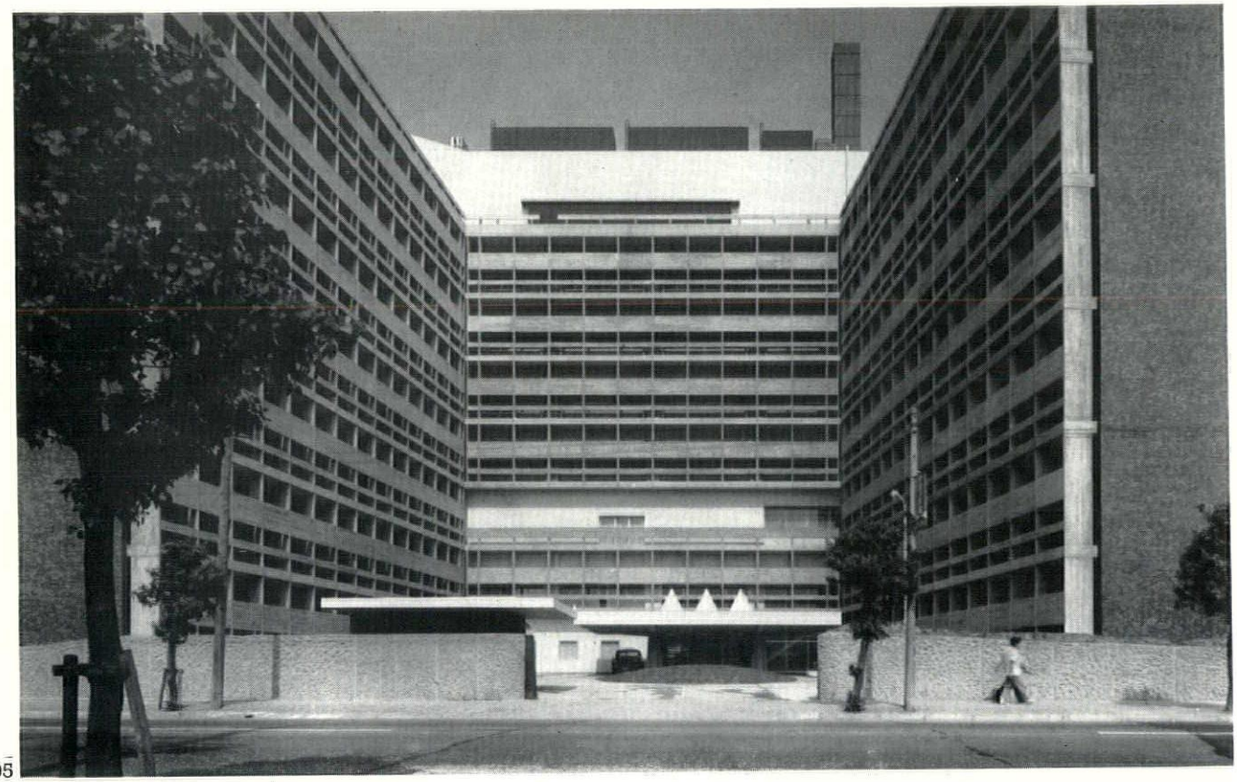
104



Completed 1958, for the employees of the Osaka area telephone and telegraph office: flat steel lattice roof supported on four hollow concrete corner piers. 103, interior showing balcony, seating 430 (plan on left). 104, entrance front.

Sports Hall, Osaka

architect, Masami Tokunaga



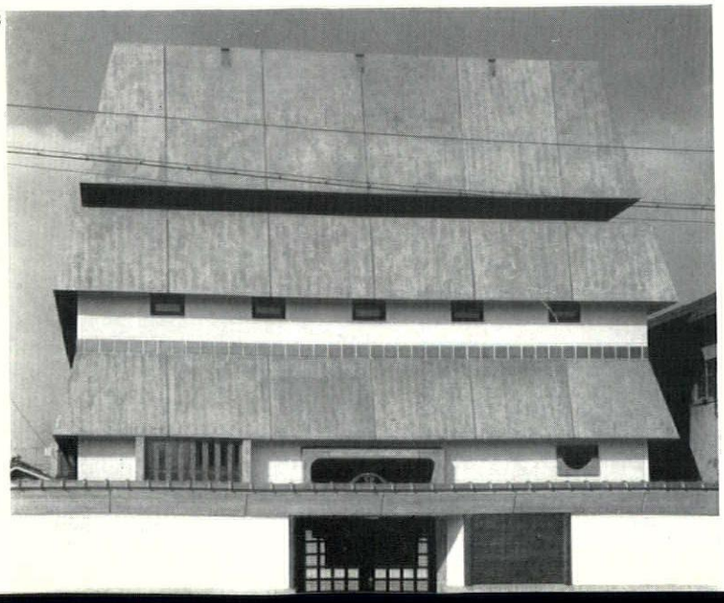
105

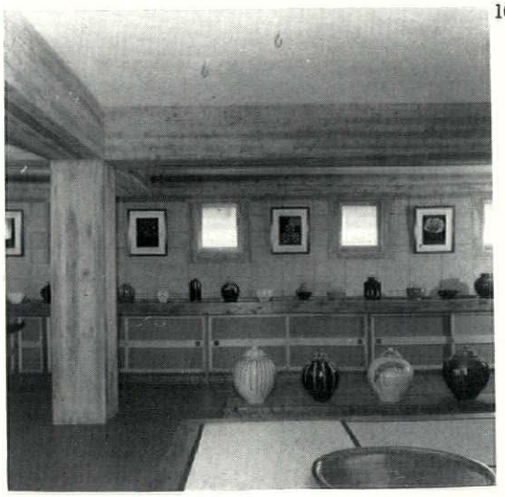
Pharmaceutical Laboratories, Osaka

architect, Junzo Sakakura

105, looking towards the main entrance which lies between two of the three parallel wings. The building, in one of the industrial areas of Osaka, is in reinforced concrete with brick facing to the end walls of each wing. It was completed this year.

106





107

Museum, Osaka

architect, Shizutaro Urabe

A museum devoted to folk arts and handicrafts: three storeys of galleries, each with side lighting and the exhibits arranged round the walls and on low central tables. 106, entrance front. 107, first floor gallery.

continued from page 194

buildings by him already seen in Hiroshima, Yonago and Kyoto as well as today in Osaka. Though 71 he is a man of intense vitality and alertness; his waving soft white hair and bow tie would label him a distinguished architect in any country. The conversation again reflects the Japanese architects' special concern with their status as professional men, with keeping their integrity in the face of new technical and commercial pressures (the 'package deal' in Japan is even more attractively wrapped up than elsewhere) and with all the other problems arising from the need of tried architectural methods to adjust themselves to the demands of a world involved in a bewildering process of change.

twelfth day

In the morning more new buildings in Osaka, where the architectural standard seems on the whole higher than in any other Japanese city, as well as the central parts of the city having a more coherent and sophisticated air. Taken by Tokunaga (one of the dinner-party last night) to see a sports hall designed by him about five years ago for postal and telegraph employees—a square box glazed on three sides—then into one of the industrial areas to see an extremely impressive building by Sakakura, only just finished: a triple block of pharmaceutical laboratories in exposed concrete; gable-walls faced with brick—the influence of Le Corbusier very evident. On the way back a stop at the Manakata Gallery, a small folk-art and handicraft museum built a year ago. This is an idiosyncratic and somewhat odd building, but it has originality and character. In shape a truncated pyramid containing three storeys of galleries with long slit windows at table level on one floor and small square windows on the next; again exposed concrete, roughly textured. The architect, Urabe, is in fact the staff architect to a big rayon-manufacturing company but was allowed to take this on as a private commission because the president of the company is interested in the encouragement of handicrafts.

The afternoon spent watching *sumo* wrestling, one of the great popular spectacles of Japan. The annual professional championships were being held in Osaka, for days past the sporting pages of the newspapers had been full of descriptions of the preliminary rounds and the usual sports-writers' gossip about the popular heroes taking part; the television screens had been occupied by almost nothing else. Now it was finals day, and crowds had been pouring all morning into the huge square municipal stadium, packed by the afternoon from floor to ceiling with over ten thousand excited fans.

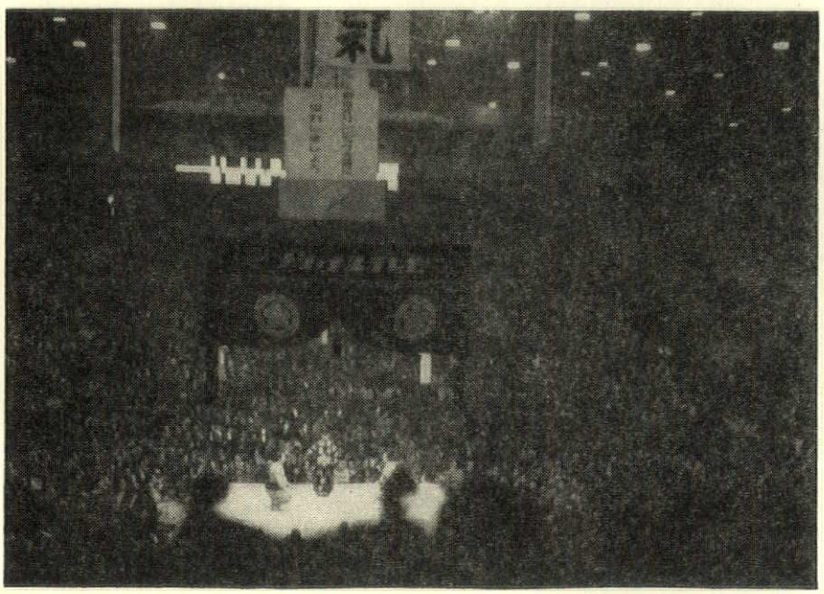
Seats rise steeply on all four sides of the wrestling ring in the centre of the floor. Studying the proceedings through binoculars or exchanging knowledgeable comments with neighbours, munching biscuits and chocolate and sucking tinned orange-juice through straws, the spectators sit packed elbow to elbow while television cameras whirr above their heads and bright lights in a suspended canopy pin-point the sanded surface of the ring through the smoke-filled air. The ring is about the size of a boxing ring but without ropes, its limits—a circle in fact as well as name—being simply marked out on the elevated floor.

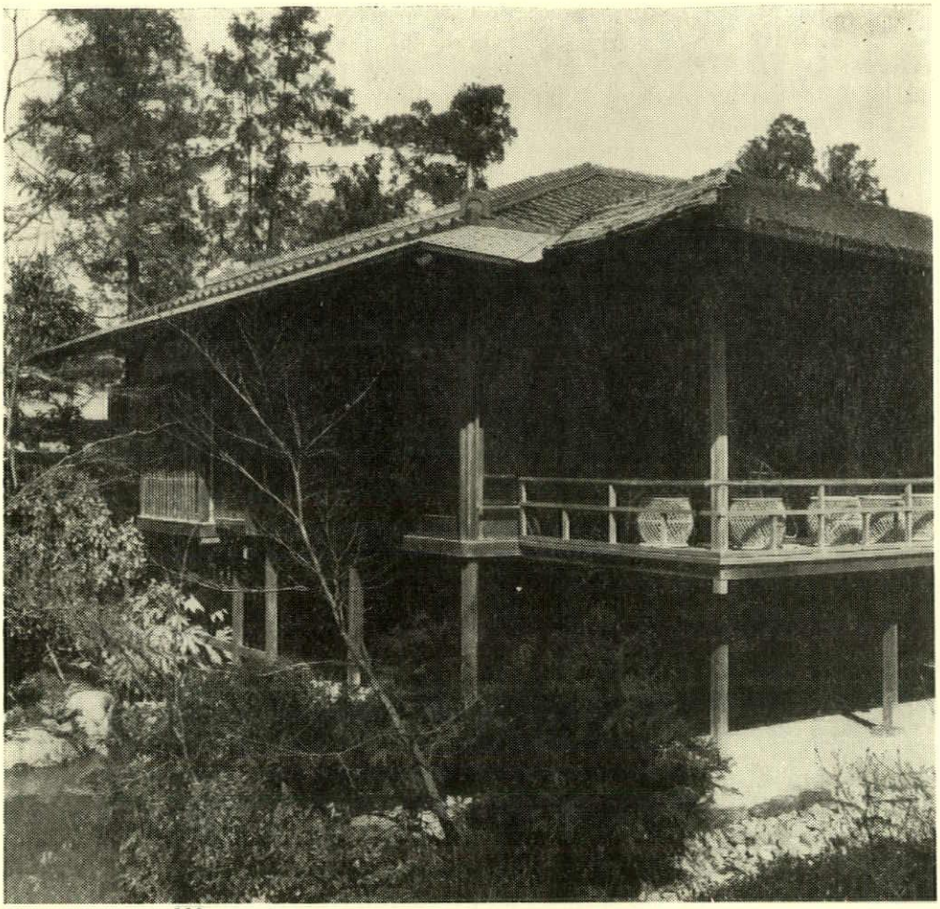
The wrestler wins when he has tipped, lifted or run his opponent out of the ring or thrown him so that his hand or knee rests on the floor. Bouts are quick—it is seldom more than half a minute, more often only two or three seconds, before one wrestler is caught off balance by some unexpected thrust or hold and then the match is over; the winner squats on his haunches on one side of the ring, the loser bows before him and both retire. What occupies the time is the preliminaries to each bout: a statutory four minutes during which the two wrestlers strut about the platform, throw handsful of salt on to the sanded surface to keep it damp with imperious gestures like monarchs giving largesse to the poor, limber up and observe each other according to a set ritual. Obeying the commands of the judge who stands at the side of the ring wearing ceremonial robes and gesturing with an odd-shaped baton (maybe a closed fan), they face each other, flexing their knees, crouching and straightening until it is time to break off and strut stiffly about for a little longer, airily ignoring each other's presence until the next stage of the ritual is due. Only when the judge gives the signal for the actual combat to begin do they become suddenly tense and spring together, gripping where they can.

The wrestlers are naked except for black cloth belts twisted round their waists and between their legs—belts ornamented with stiff archaic fringes. They are heavy men, with bulging arm-muscles and great protruding stomachs, their hair knotted on top of their heads. Contestant after contestant comes and goes, excitement mounts and shouting increases from the tiered seats as the crowd welcomes its particular heroes. And eventually the final bouts are reached in which the championship will be decided, and a rising young wrestler who has made a sensation by overturning the more noted champions day after day evokes yells of encouragement from his supporters as he flexes his muscles before facing his opponent in the last round of all. But he loses.

After the wrestling, goodbye to Osaka and a long evening journey by train and then by car to Nagoya, by way of Ise, almost on the Pacific coast, the site of one of the oldest Shinto shrines in Japan. Its plain barn-like grey timber buildings, though replaced as a matter of religious custom every twenty years, represent exactly the archaic style of religious architecture before the introduction of Buddhism early in the seventh century. Built always of cypress wood, simple in outline, with heavy roofs whose rafters dramatically cross at either end of the ridge, enclosed in high

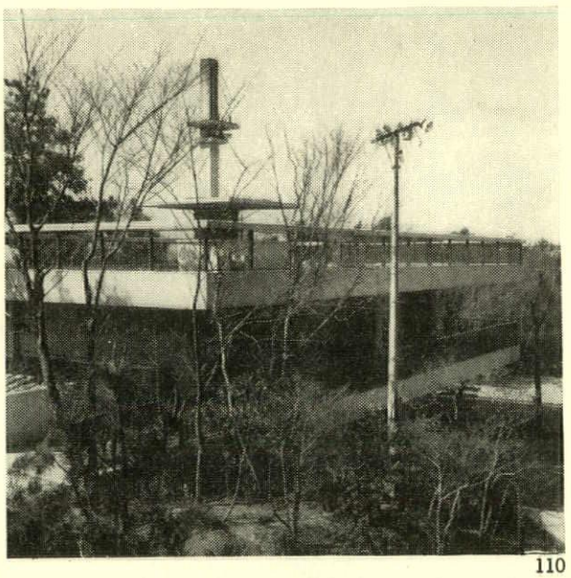
108, sumo *tournament in progress at Osaka: in the ring, which is illuminated from the hanging black canopy, the two wrestlers crouch, waiting for the signal to begin.*





109

The Hasshokan Hotel on the outskirts of Nagoya; architect, Sutemi Horiguchi. 109, *view from the garden of suite of rooms with verandah: typical of the architectural style of the traditional Japanese hotel—see the article on page* 175. 110, *club-house by the same architect on the adjoining golf-course.*



110

wooden palisades, they have the calm authority of absolute functionalism before the delight in carving and ornament blurred the structural simplicity of such buildings and complicated their geometry. The road approaching the shrine lined for some miles on either side with crude concrete imitations on posts of the stone lanterns that are themselves, to the Western eye, the least appealing features of the traditional Japanese garden. These hideous embellishments—the gift of a local magnate—were proudly installed only this year. But Ise has an unusually well designed bus station.

The railway from Osaka a private one, the Nippon-Kinki (the same railway whose president founded the Yamata art gallery, visited two days ago); said to be the best in Japan. This particular luxury train certainly very impressive, equipped with radio-telephones and stewardesses who come round with baskets full of the customary rolled-up steaming towels. The private railways are in any case more comfortable than the national, being of the English gauge—4 ft. 8½ in.; the national railways are only 3 ft. 6 in.

The train runs through plantations of small mulberry trees, grown for the silk industry, and later through flat, fertile plains dotted with small farms. This is a famous beef-producing region—the Matsusaka—but no cattle to be seen; they do not graze in the fields but are kept indoors all the time, fattening. Eventually to Nagoya and again for the night to a Japanese-style hotel (*ryokan*), familiar by now with life on the *tatami*, austere but refreshingly uncomplicated.

thirteenth day

First thing, a look round the hotel—the Hasshokan—designed soon after the war by the architect Sutemi Horiguchi in a modern simplified version of the traditional style; exquisite judgment in the choice of finishes and materials. It surrounds a large garden, more open than most, with paths winding through plantations round a little lake; overlooking the lake a wing containing an unusually lofty suite of rooms and long pillared verandah added eight years ago when the Emperor came to stay. Adjoining the garden a golf-course; the club-house, also by Horiguchi, a white concrete structure dominated by the horizontal line of its flat roof cantilevered over a terrace, the two buildings illustrating the abrupt transition Japanese architecture—to say nothing of Japanese life—is at present experiencing.

Then into the centre of Nagoya—the hotel was on the edge—for a meeting with a group of the local architects in the office of the local (Tokai) branch of the Architects' Association. Nagoya, Japan's third city commercially (though in general importance Kyoto undoubtedly comes next after Tokyo and Osaka), with a population of 1,650,000, was almost destroyed in the war, having been the centre of the aircraft industry. All is therefore new, with wide main streets but the brashness and incoherence that at the present stage seems inseparable from Japanese city development. But Nagoya also shows some of the lively, bustling quality one was so aware of in Osaka. As with Osaka also, one is quite unconscious of being in a seaport town. Nagoya is at the head of an inlet from the Pacific, but there is no accessible waterfront; only docks and wharves on the seaward side.

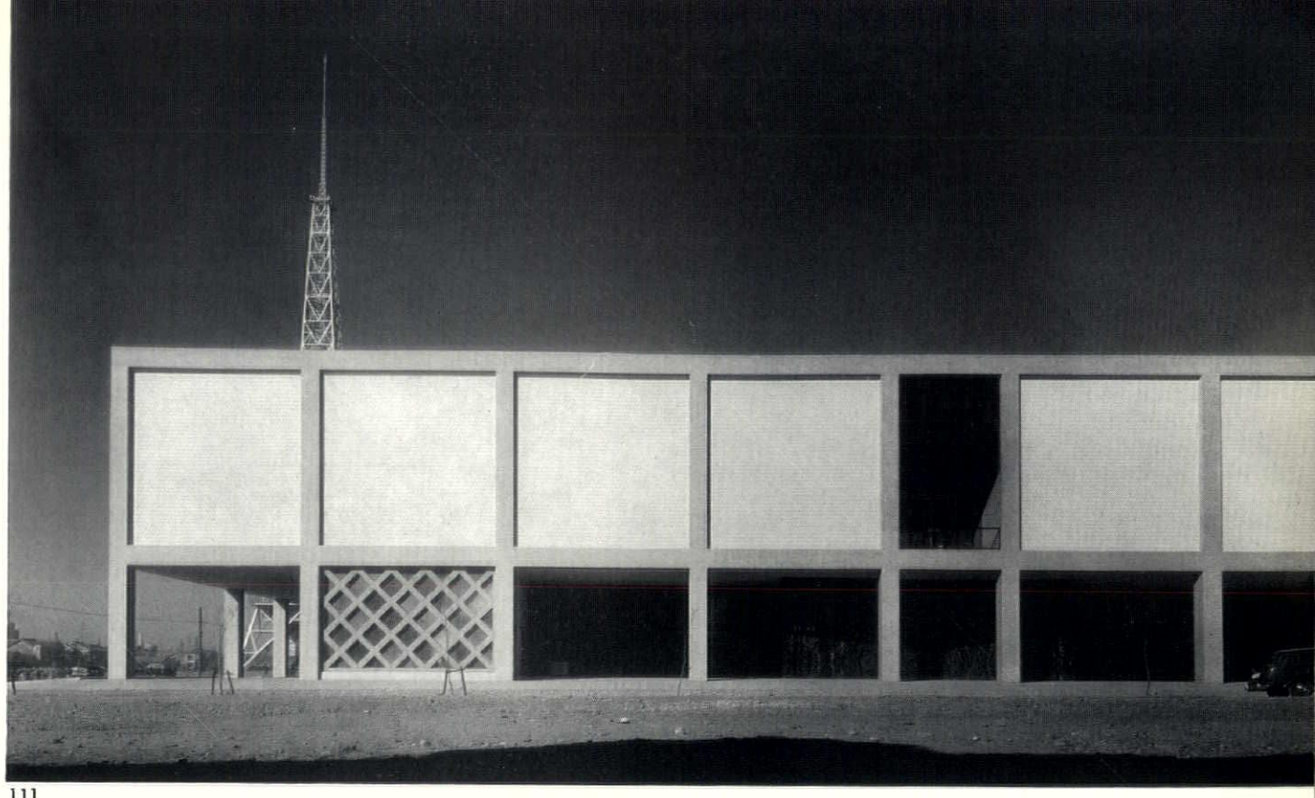
A few buildings in the main streets worth stopping to look at (page 203): a small branch bank for example, by Antonin Raymond, designed in 1950 and the first building in Nagoya to treat concrete as a material that could decently be exposed; close by, a sophisticated office building with continuous windows sepa-

[*continued on page* 203

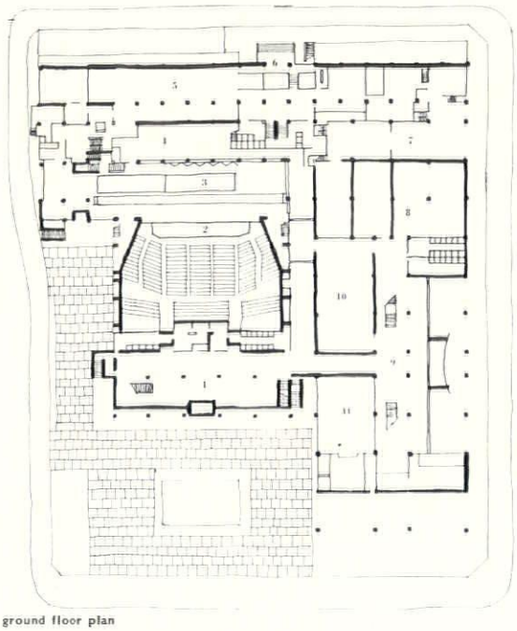
Civic Centre, Nagoya

architect, Hideo Kosaka

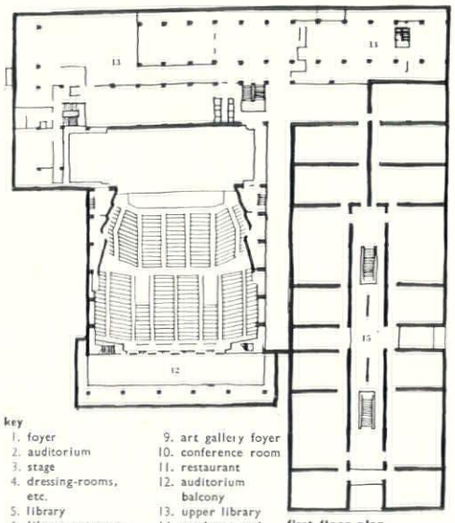
A cultural headquarters for the Aichi prefecture, of which Nagoya is the capital, containing auditorium, library, art galleries, conference rooms and (in the basement) a public restaurant. Instead of the more customary exposed concrete, the building has its frame faced in grey brick, with infill walls of white glazed tiles. It was completed in 1959.



111



ground floor plan

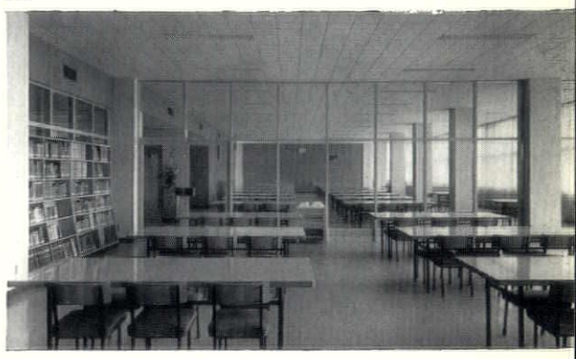


key

1. foyer
2. auditorium
3. stage
4. dressing-rooms, etc.
5. library
6. library entrance
7. administration
8. exhibition space
9. art gallery foyer
10. conference room
11. restaurant
12. auditorium balcony
13. upper library
14. catalogue and stack rooms
15. art galleries

first floor plan

113



111, street façade from the south. 112, from the city square in front of the entrance, showing the two levels of the auditorium foyer beyond the forecourt. 113, a library interior.

The auditorium is at ground level, with concert rooms and exhibition space alongside and the library at the back. On the first floor, besides the balcony level of the auditorium, are the upper library and the art galleries.

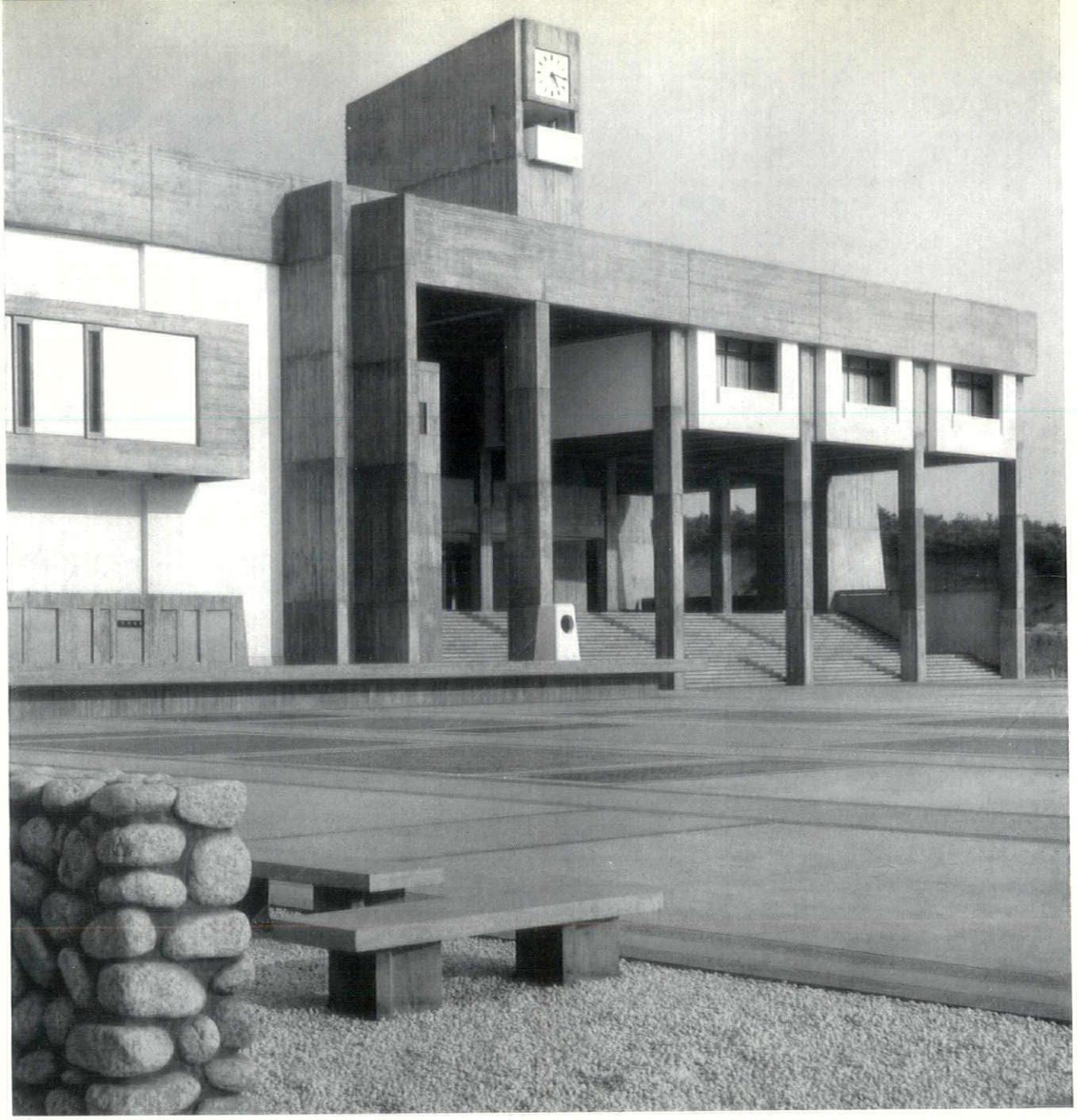


112

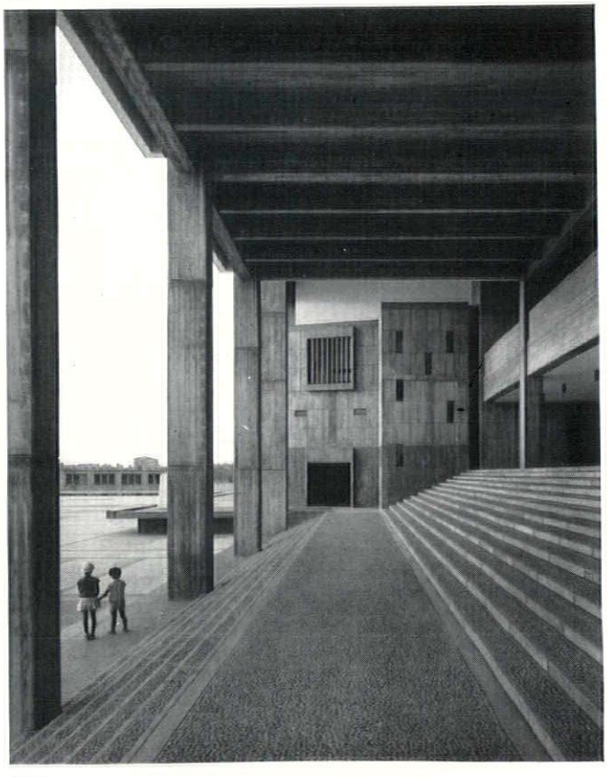
Auditorium, Nagoya University

architect,
Fumihiko Maki

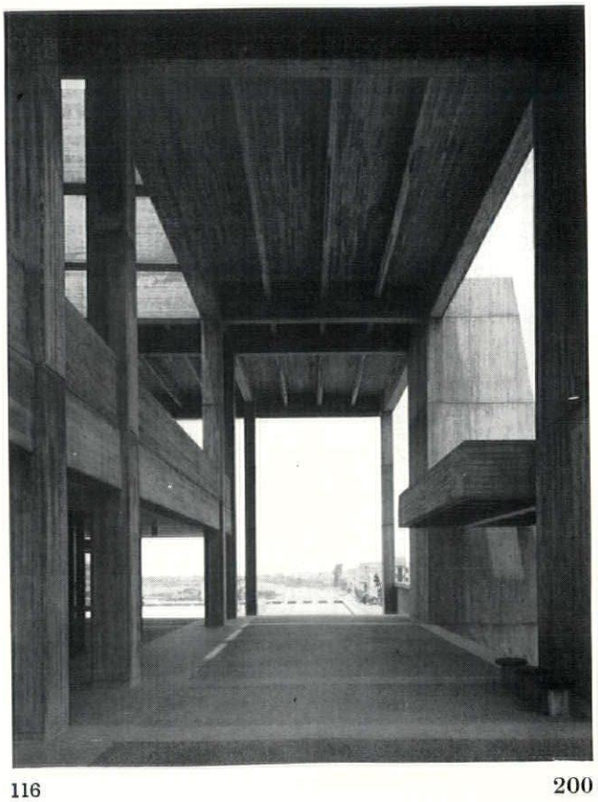
The Toyoda Auditorium, completed in 1961, is not only an important addition to Nagoya's university buildings, but is related to a comprehensive plan, now being implemented, to improve the eastern part of the city—the part farthest removed from the harbour—on the edge of which the university stands. The auditorium is on the axis of one of the new main highways —see page 204—and serves also, therefore, as a gateway to the university campus. It is nearly symmetrical, having a high open portico on either side of the auditorium, connected behind it by a foyer. The building is of exposed concrete, with plastered areas on the blank end wall of the auditorium and surrounding the windows of the first-floor president's and conference rooms. 114, from the paved forecourt between the building and the city. 115, 116, looking across and through the southern portico.



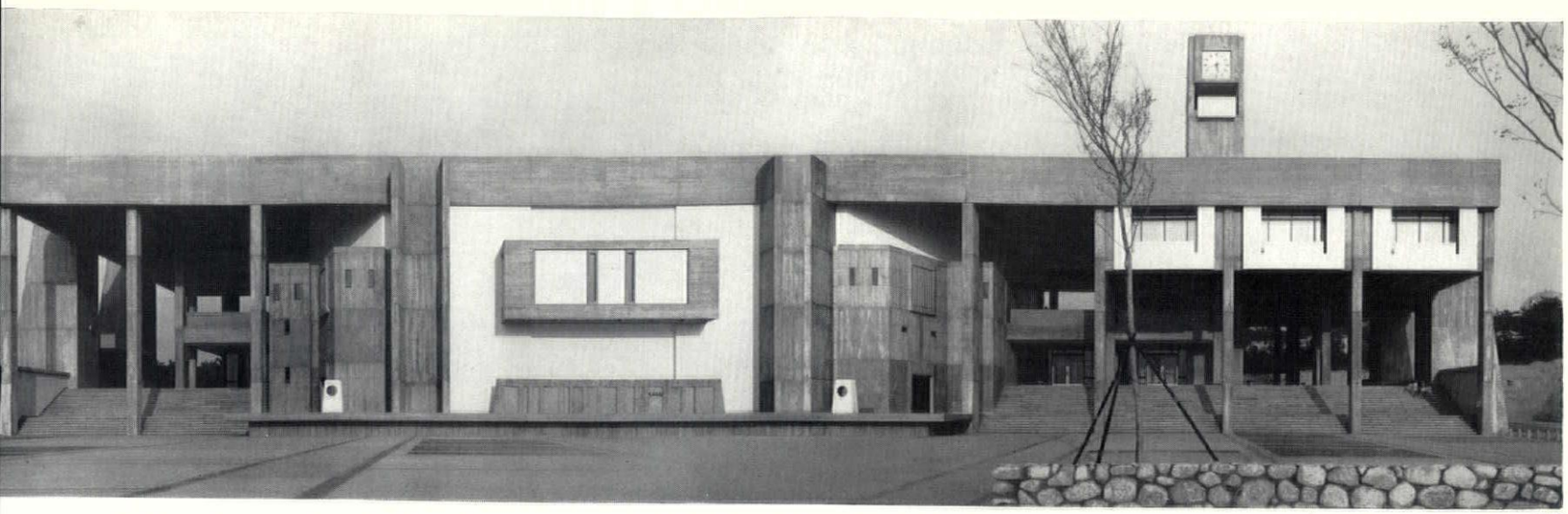
114



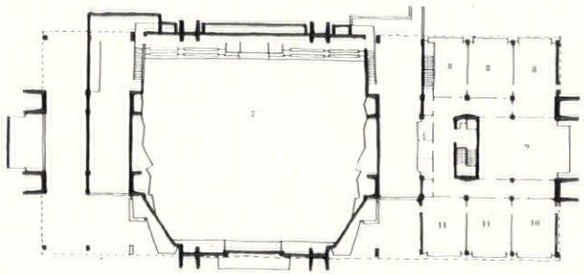
115



116



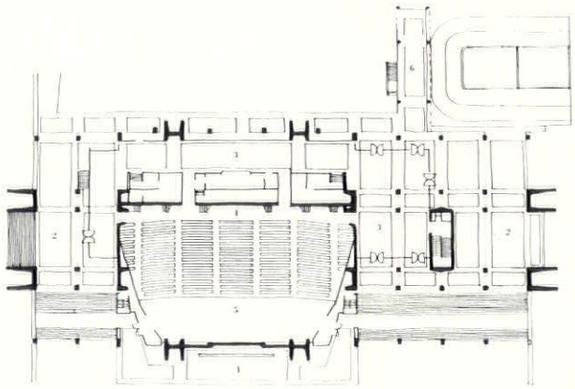
117



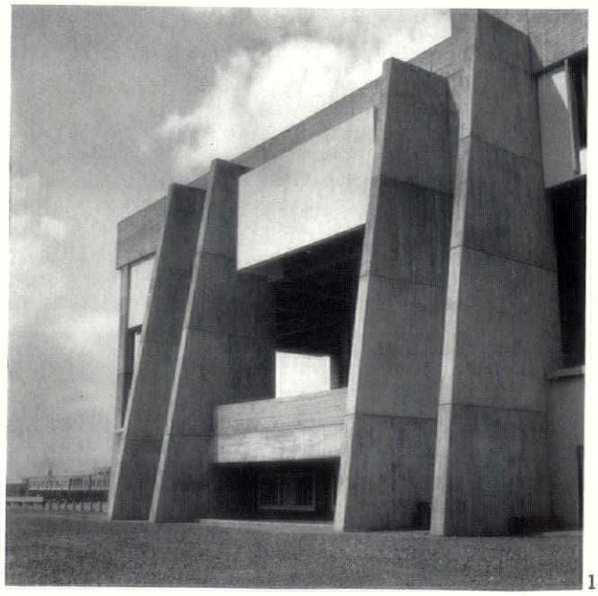
first floor plan

key

1. outdoor stage
2. portico
3. foyers
4. auditorium
5. stage
6. car-port
7. upper part of auditorium
8. conference rooms
9. large conference room
10. president's room
11. offices



ground floor plan

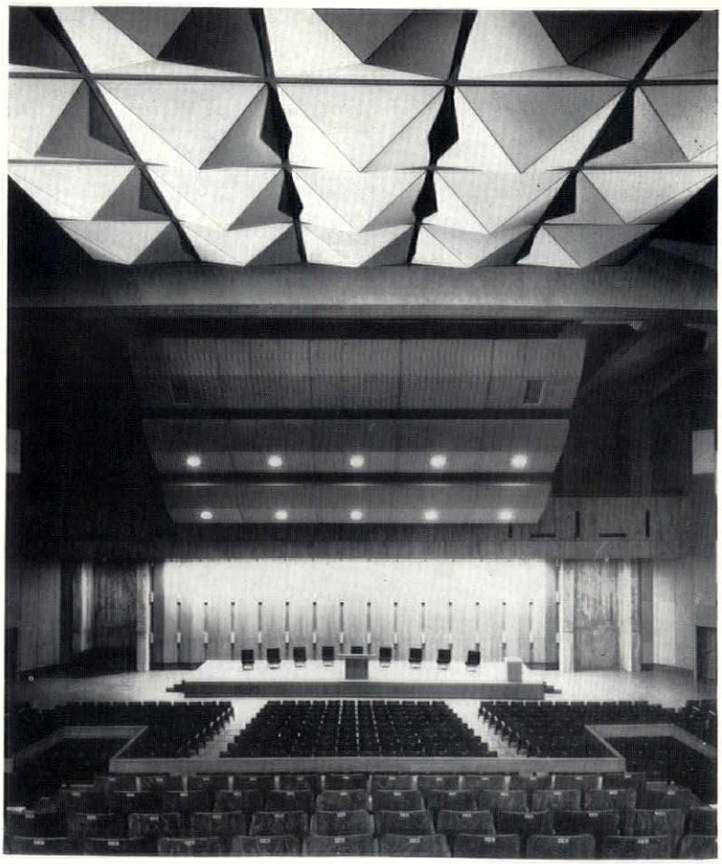


118

117, the main elevation facing the city. 118, the side wall of the southern portico. 119, the building from the high ground to the east. 120, inside the auditorium, looking towards the stage.



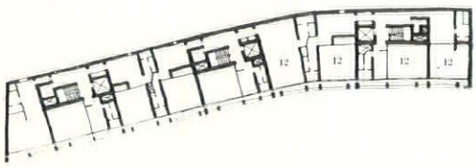
119



120

Hotel, Atami

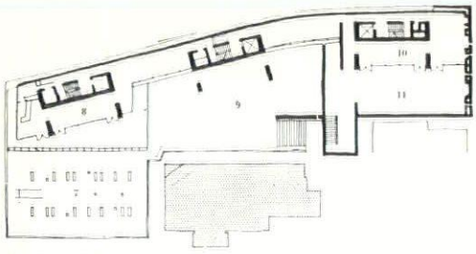
architect, Kenzo Tange



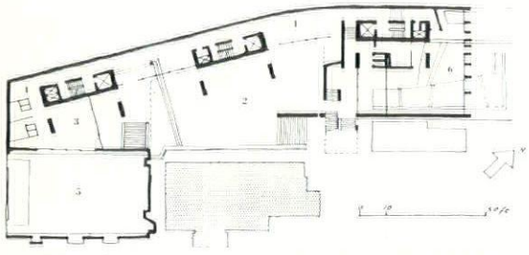
typical upper floor plan

key

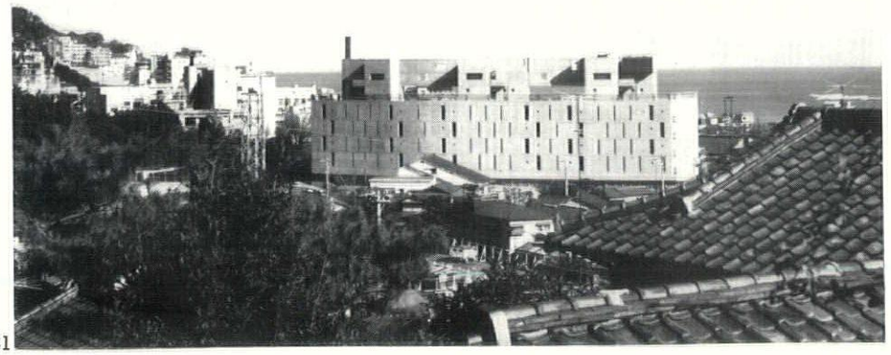
1. entrance
2. terrace (partly covered)
3. ante-room
4. pantry
5. banquet room
6. bath-house
7. roof garden
8. tea-room
9. upper part of terrace
10. games room
11. lounge and bar
12. bedrooms



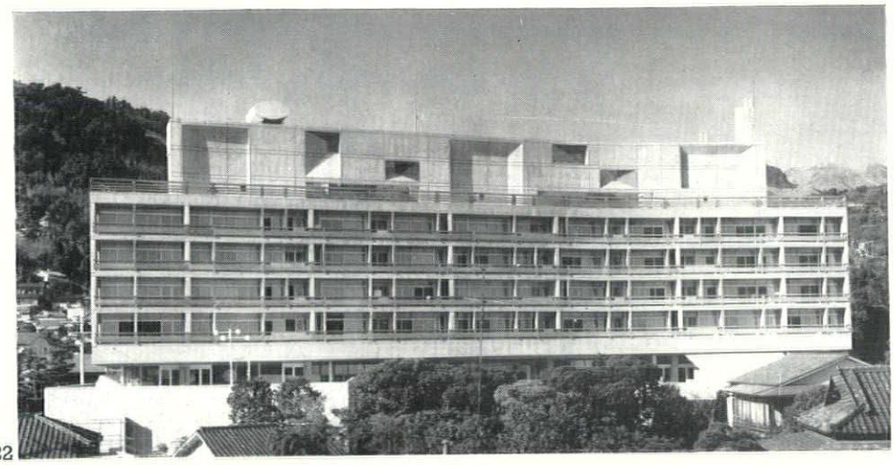
first floor plan



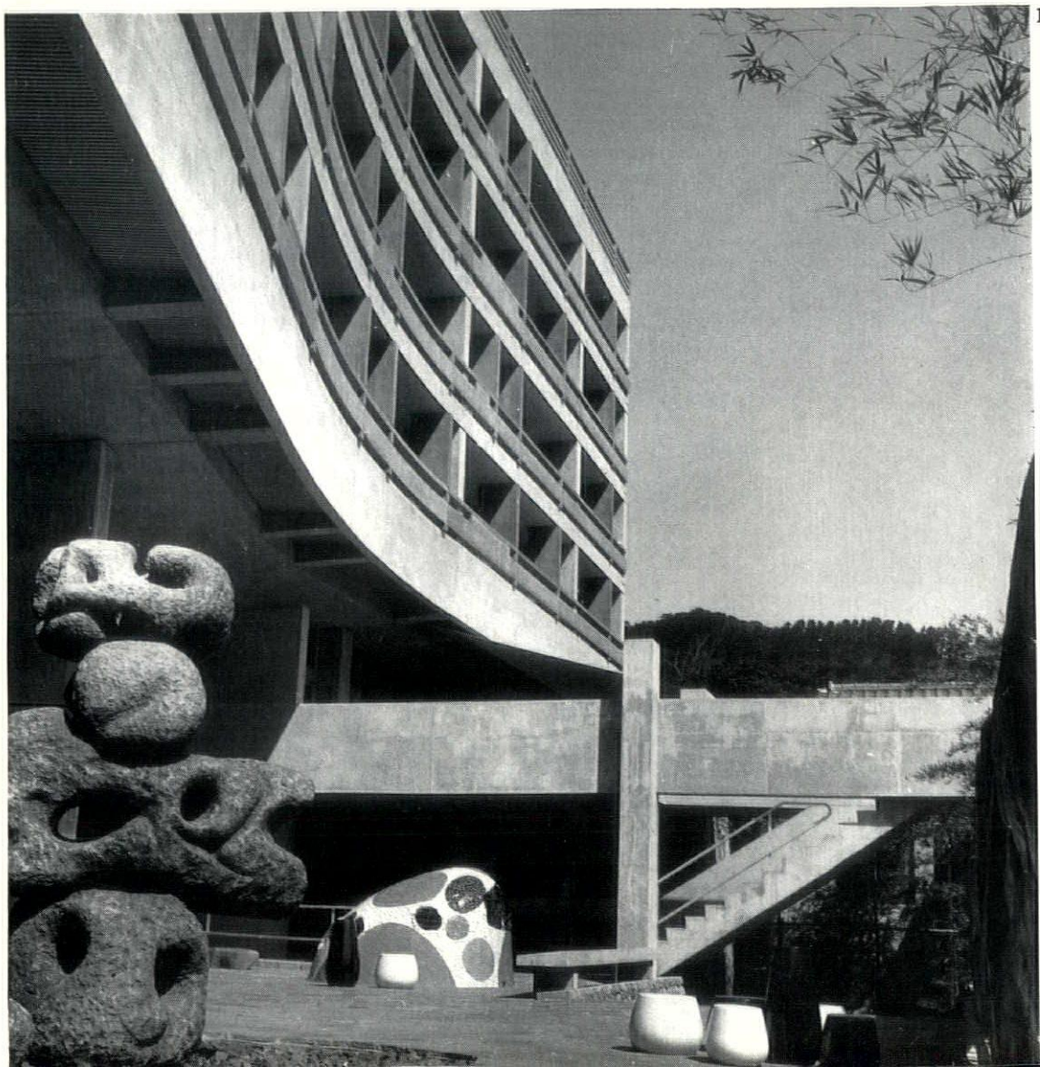
ground floor plan



121

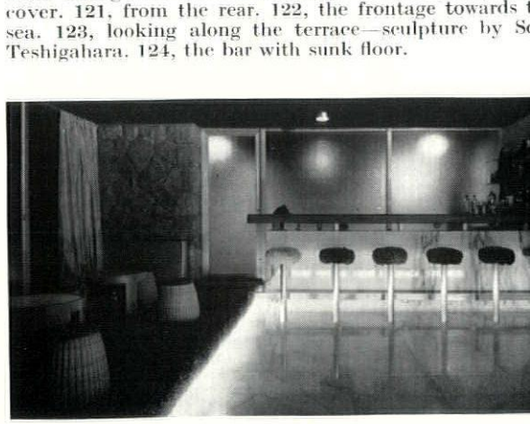


122

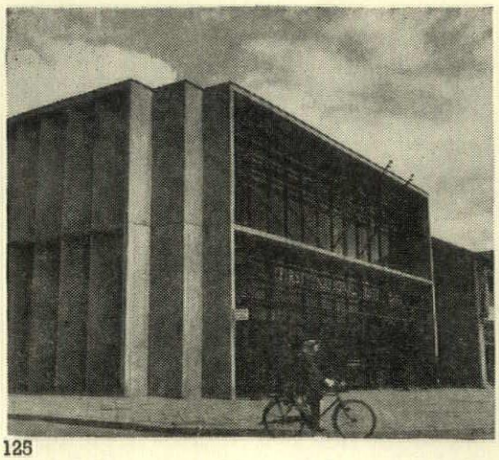


123

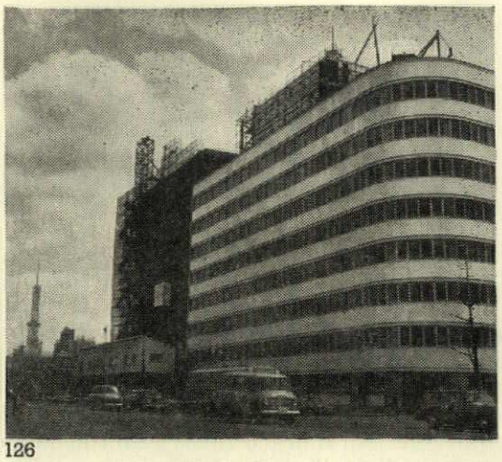
An addition to the small, traditional-style Atami Garde Hotel (shown shaded on the plans) over the tiled roof which the new building has views across the town to t sea. The bedroom floors (the upper four) are divided in three blocks, each with three suites (some furnished Western style, some in Japanese) surrounding a lift a stair core. The lower floors have a banquet-room, te room and games-room and a large terrace, partly unc cover. 121, from the rear. 122, the frontage towards t sea. 123, looking along the terrace—sculpture by Sc Teshigahara. 124, the bar with sunk floor.



124



125



126



127

New buildings in Nagoya: 125, *branch bank by Antonin Raymond;* 126, *office building with aluminium wall-cladding by the Osaka Design Office;* 127, *Government housing by the Nikken office—see page* 204.

continued from page 198]

rated by aluminium wall-cladding, designed for the Marubeni-Iida export and import company by the Osaka Design Office—an organization similar to Nikken. It seems to be these big impersonal offices with their industrial connections that are able to use Western or American building techniques with most assurance.

In the Tokai Architects' Association headquarters the conversation (with four or five architects and over the inevitable and welcome little cups of tea) chiefly on questions of town-planning and town development —not unnaturally, since Nagoya is a rapidly expanding city (its population is expected to be doubled in the next 25 years). Since it has recently faced the experience of almost totally rebuilding itself, the architects at least are conscious that although Nagoya made more than most cities in Japan of the replanning opportunities war damage offered, there is still lacking the will to look far enough ahead and the legislative and administrative machinery to make town-planning a positive and creative activity. This is a problem common to all Japanese cities, and may suitably be touched on at this point.

TOWN PLANNING IN EVOLUTION

The chaotic aspect of Japanese cities, described elsewhere in this narrative, and the traffic congestion prevalent everywhere, provide the visual evidence that among the most urgent needs in Japan are positive town-planning measures that go beyond the mere implementation of zoning and similar regulations. Japan has a rapidly expanding economy and is filled with industrial and commercial enterprise, which is inevitably accompanied by intensive urbanization, and this process has been so rapid that improvisation has been the only rule.

As in other countries moreover, where the devastation caused by war has been on a catastrophic scale, the urgent need simply to get things going again—people rehoused and the wheels of industry turning—resulted in hasty rebuilding without much time to think. Only to a small degree was the opportunity taken to improve the layout of cities. There were also political factors—not only the general reluctance of a competitive capitalist economy, as in America, to let planning interfere with individual enterprise, but a special reluctance to embark on planning legislation that implied the use of dictatorial powers. After the war the re-education of the Japanese people in democratic ideals and procedures was one of the aims of the Allied occupation, and a new democracy was the basis of the constitution Japan was presented with. The lessons were learnt, leaving however a praiseworthy instinct against undemocratic seeming procedures. But positive town-planning, which gives first consideration to the interest of the public at large, involves to some degree riding rough-shod over private interests. Reluctance to do so shows itself in Japan in many ways. If a new city highway is planned and a single property-owner proves unwilling to sell, the project is held up because compulsory purchase would savour too much of past dictatorial behaviours.

This is essentially a temporary, post-war attitude, and already attempts are being made to reconcile the need for planning with democratic ways of going about it; in fact new legislation exists which includes such necessary provisions as the compulsory acquisition of property in the public interest, though these particular powers have not yet been used. It is thought they may have to be used to get some necessary new highways built in Tokyo in time for the Olympic Games—see the article (page 188) on Transport and Tourism.

Apart from this particularly ambitious road-building programme in Tokyo, all Japanese cities have already replanning programmes of a sort, though for the foregoing reasons they are being but slowly implemented. Tokyo is the only city to have planning legislation of a fairly advanced kind with—at least in theory—a green belt area and sites for satellite towns. In Tokyo and elsewhere there is also the usual machinery of controls, not unlike our own: land-use zoning, for example, cities being zoned, like ours, for residential, commercial and industrial use. A distinction is made between industrial and semi-industrial, and there are zones in which some flexibility of use is allowed as well as those in which the use is rigidly enforced. Such town-planning is almost wholly two-dimensional and is chiefly concerned with road patterns and land-use. There are, however, height restrictions—100 ft. is the limit in Tokyo, though special permission for higher buildings is fairly freely given in certain designated areas.

An obstacle to good long-term planning just as serious as the lack of constructive legislation or powerful political incentive, is the absence of an established town-planning profession. Those who administer the present town-planning regulations are officials who have seldom had architectural training and are not expected to concern themselves with the more positive and visual aspects of long-term planning. But this problem is now being tackled: the first course in town-planning to be available anywhere in Japan starts this year at Tokyo University—the State university which already runs one of the leading architectural schools in the country. The town-planning course will take four years, so by round about 1966 there will be at least the nucleus of a body of professional town-planners. An initial difficulty the university is naturally meeting is where to find teachers with the right qualifications, but this will be overcome in time.

Another requisite is of course the will to plan. This is being to some extent created by the traffic and other kinds of confusion that reign increasingly in the cities; though it is being somewhat held back by excessive departmentalism in the Government. The necessary growth of an informed public opinion has been helped by the theoretical studies put forward by some of the far-sighted architects, notably Tange's and others' plans for the future of Tokyo, and the wide publicity they have been given. Such studies in fact, and the research work done by groups of the younger architects like the 'metabolism' group (see pages 214-215), make the total picture

far less discouraging than the foregoing account of the present limited town-planning activities might suggest. These researches challenge the whole conservative concept of city life on which the recent laisser-faire urbanization has been based. They try to face realistically the problems this process is throwing up and see the opportunity that lies in them. They furnish encouraging evidence that, in spite of being in some ways isolated from the tough world of technical and industrial development (see the article on the Organization of the Profession), some of the best architects openly and actively accept their profession's wide social responsibilities.

thirteenth day (continued)

An excursion with a party of the Nagoya architects (Iwawo Ishihara and Hirose—first name not noted—and one of the municipal housing architects) to see some of the new buildings in the city. First a large Government office building, for the postal administration, designed by Kosaka in the fluent, sophisticated, rectilinear style that has become the hall-mark of his Posts and Telegraphs architectural office. Then to the prefectural and civic centre flanking an open grass and tree planted square—an unusual feature in a Japanese city—also designed by Kosaka though in his private capacity. He won an international competition for the building in 1954, but it was executed, without any notable departure from his design, by the prefectural government architects.

It has a well organized plan, grouped round an auditorium seating 1,300 and including also a library and art-gallery. Outside, instead of the plastic, sharply modelled exposed concrete structure used by Maekawa in his equivalent buildings at Tokyo and Kyoto, it gets its character from its strongly expressed beam and post construction, with large areas of blank infill walling. The concrete frame is faced with grey brick, the infill walls are of shiny white tiles and the metal frames of the windows and glazed walls are black, giving a cool crispness to the whole composition.

Lunch in its basement restaurant, and then off to the university on the eastern edge of the city, passing on the way one of two new highways under construction that are to cross in the centre of the city—each 300 ft. wide, double-track with four traffic lanes in each direction. A bold enterprise, though seemingly somewhat primitive as a technique of traffic planning. In spite of its wide main streets, traffic congestion is nearly as much a problem in Nagoya as elsewhere because side streets are narrow and overbuilt. There is one short length of underground railway.

Also past one well designed high-density housing scheme, a group of parallel blocks with shops on the ground floor facing the street and an underground station beneath: concrete frame; mosaic wall-facing (page 203). It was designed by the Nikken office for the Government (as distinct from the municipal) Housing Corporation, which runs only a small architectural office and puts most of its work out.

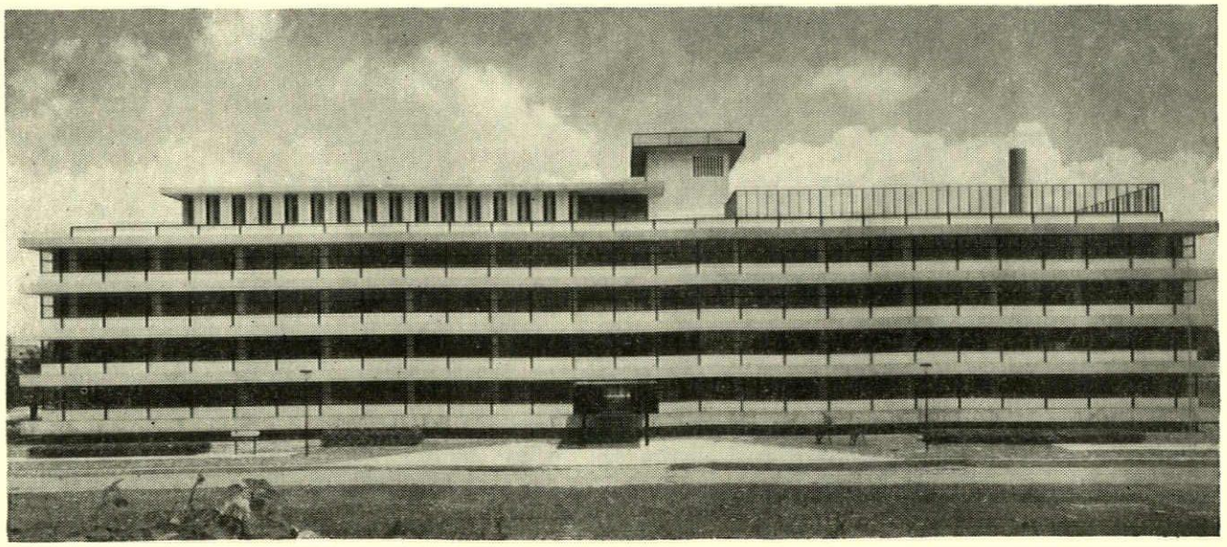
Then on to the university; dreary buildings except for the Toyoda auditorium (situated, incidentally, on the axis of one of the new 300 ft. cross-town highways), which was finished the year before last and (except for a surprisingly weak and unrelated clock-tower) is one of the most impressive of the modern buildings seen in Japan. Designed by a young architect, Fumihiko Maki; in fact his first job. He was in Tange's office and is now in America—teaching at Washington University

Besides the auditorium itself, which seats 1,600, the building contains, at first floor level, the university president's offices and a suite of conference rooms. Rising above a broad, gravelled platform, it consists of a blank-walled symmetrical block with a full-height portico at either end, each leading into the opposite end of a foyer that spans across the back of the auditorium. From the outside the porticoes give the plain rectangular building a fascinating spatial complexity and the whole exterior is enlivened by variations of surface modelling that might be described as mannerist but are never merely affected.

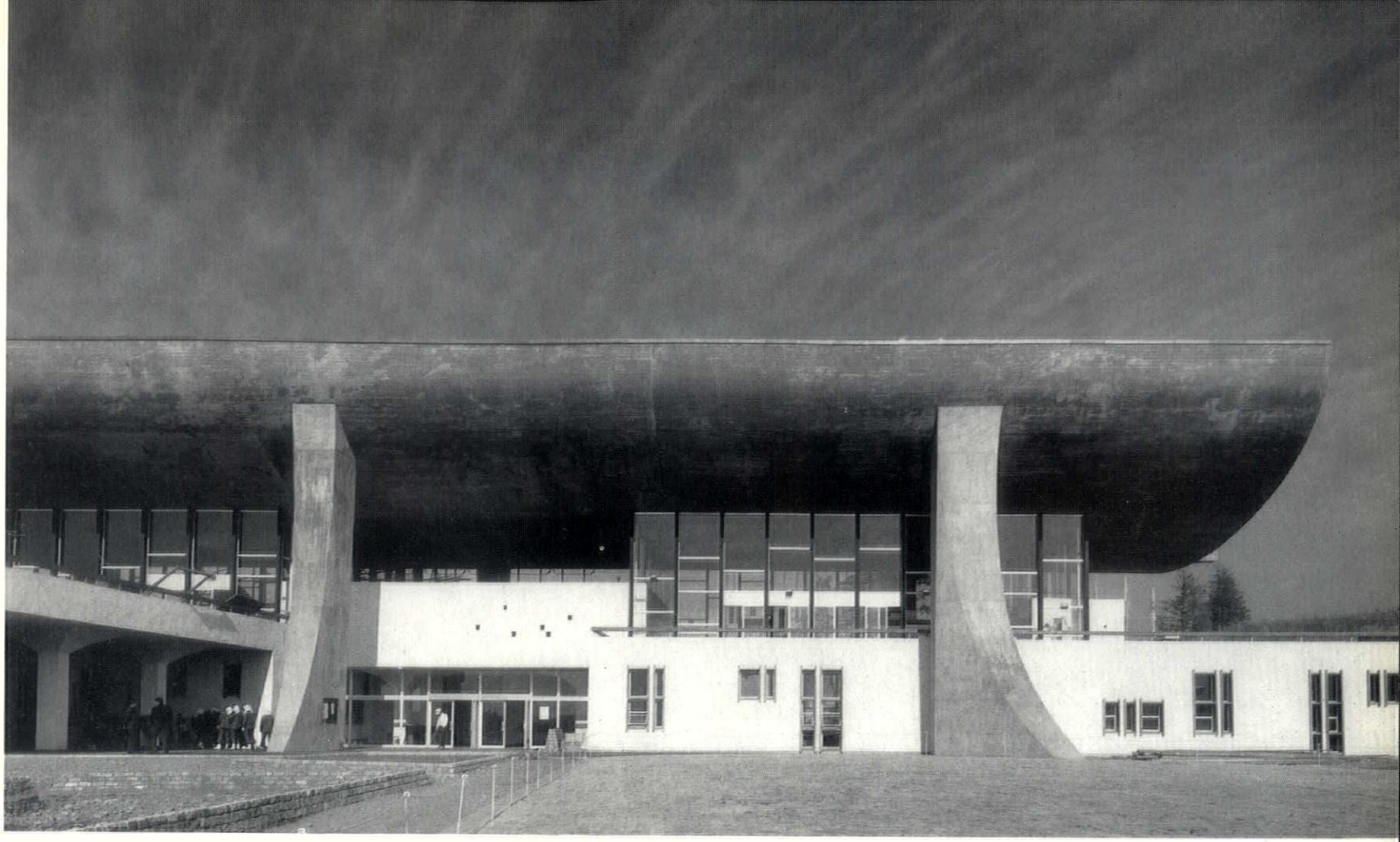
This modelling emphasized by panels, high up in the wall, rendered white. Otherwise the building is all exposed grey concrete, precise in finish and admirable in colour. Japanese critics protest that, containing as it does one great auditorium, the building should suggest this in its external form: a logical enough argument, but could one not also say that the prominence given to the two great porticoes equally—and perhaps more dynamically—suggests a building designed for quantities of people to crowd in and out? Inside, beautifully finished grey concrete too, and well used natural timber.

From the university to see a large municipal housing scheme, also on the outskirts of the city,

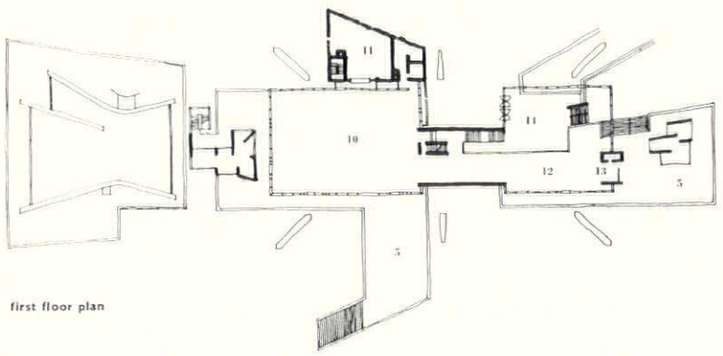
[*continued on page* 211



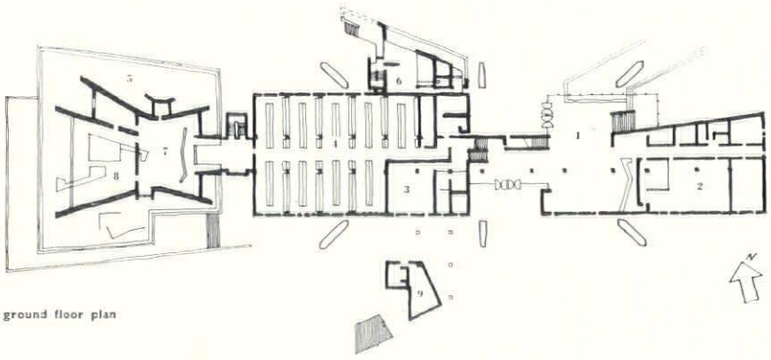
128, *headquarters building for the posts and telegraphs administration, Nagoya; architect, Hideo Kosaka.*



129



first floor plan



ground floor plan

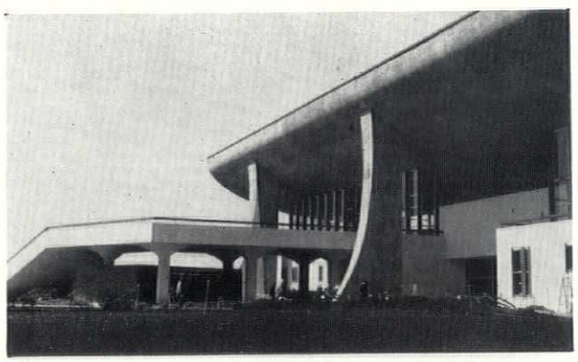
key

1. entrance hall
2. administration
3. ladies' locker-room
4. men's locker-room
5. terrace
6. showers
7. lavatory
8. communal bath
9. caddies
10. restaurant
11. kitchen
12. lounge
13. bar
14. upper part of hall

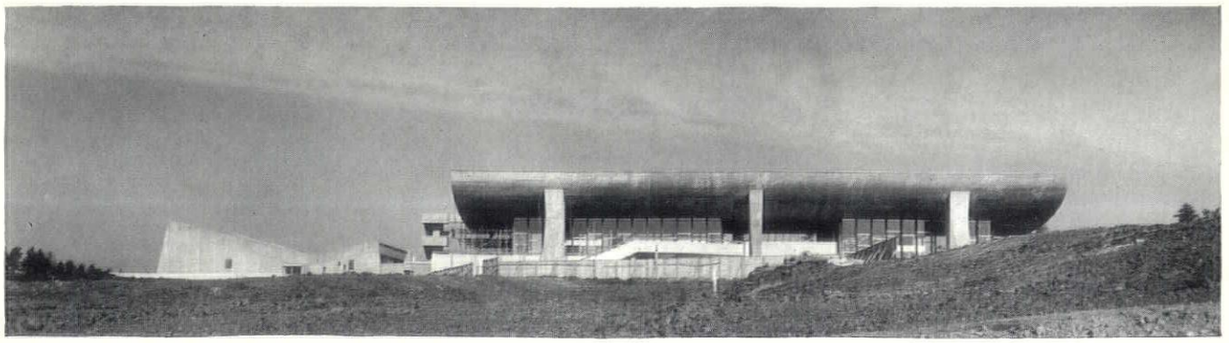
Golf Club-house, Totsuka

architect, Kenzo Tange

The whole building, except for the single-storey bath-house projecting at the western end, is covered by the upward-curving shell roof, supported on six reinforced concrete columns. The curtain-wall is aluminium with steel wind-bracing. Inside is a two-storey hall, lounge, restaurant and locker-rooms. Completed 1962. 129, from the south. 130, the same, distant view, with bath-house on left. 131, outside terrace and stairs.



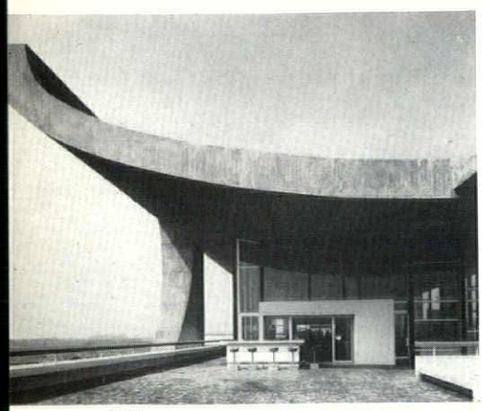
131



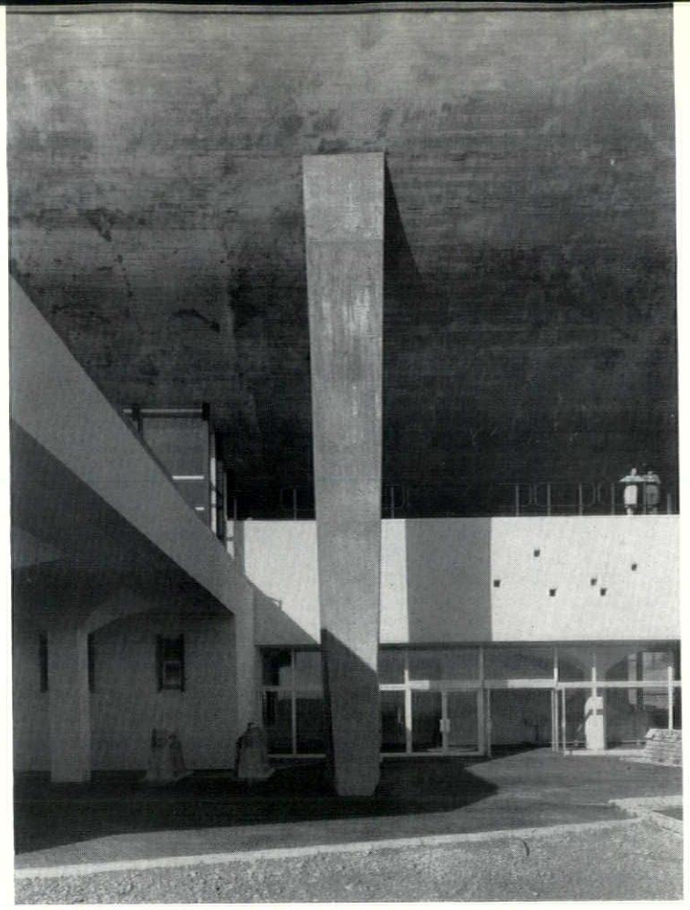
130

Golf Club-house, Totsuka

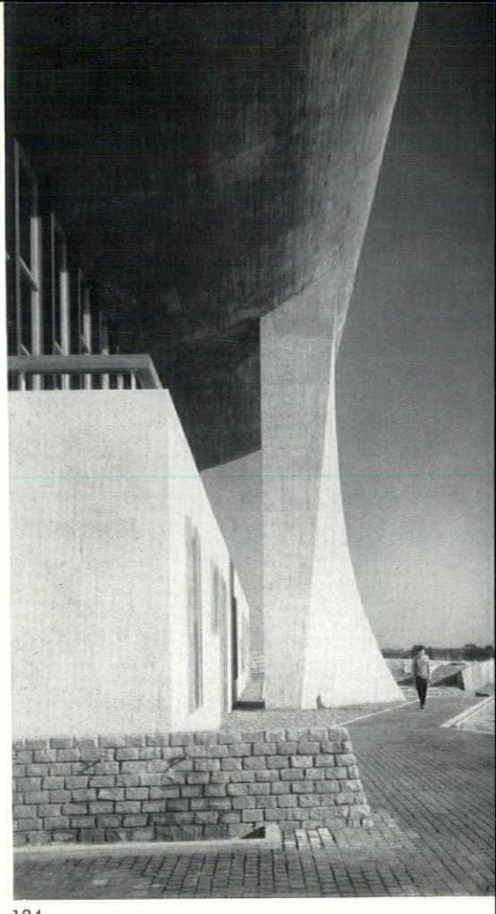
132, the first-floor roof-terrace outside the lounge. 133, lounge balcony with roof terrace on right, showing one of the columns that support the roof. 134, column on the entrance side.



132



133



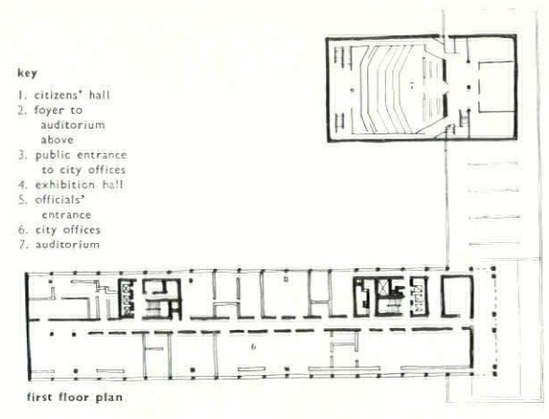
134

City Hall, Yokohama *architects, Murano and Mori*

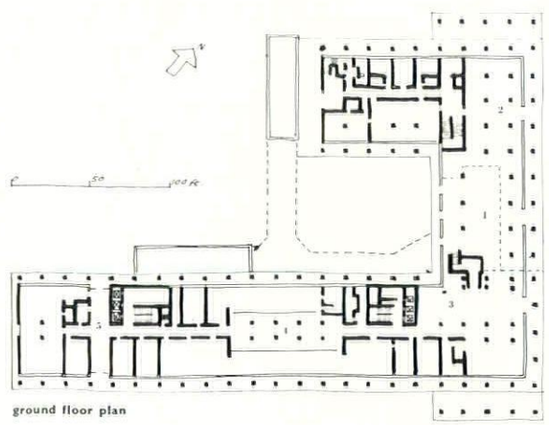
Completed in 1960, and the outcome of a competition, the building occupies a central site and contains the city offices and a first-floor auditorium. Much of the ground-space is given to a large columned citizens' hall. 135, south façade, in exposed concrete and red brick.



135



first floor plan



ground floor plan

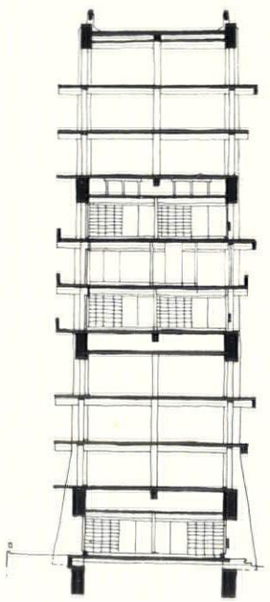


136

Flats, Harumi, Tokyo

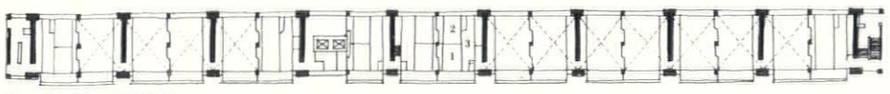
architect, Kunio Maekawa

A ten-storey block built experimentally by a Housing Corporation in 1959 in the Harumi area—an industrial and harbour area of Tokyo. Below the penthouse, three different floor-plans

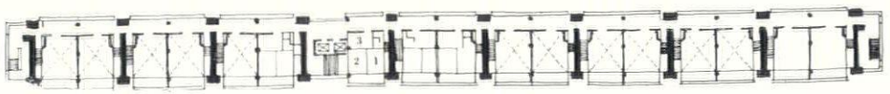


cross section

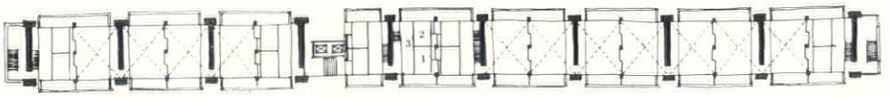
are each repeated three times—see plans on left—giving the balconied facade-pattern seen in 136. The section above is approximately twice the scale of the plans. This was meant to be the first of a series of such blocks, but subsequent building followed a different pattern—see page 215.



plan: 4th, 7th and 10th floors



plan: 3rd, 6th and 9th floors



plan: ground, 5th and 8th floors

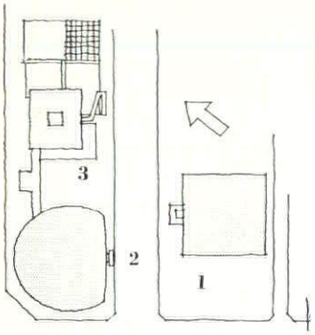
key

1. living-room
2. bedroom
3. kitchen-dining room

Trade Fair Buildings, Tokyo

architect, Masachika Murata

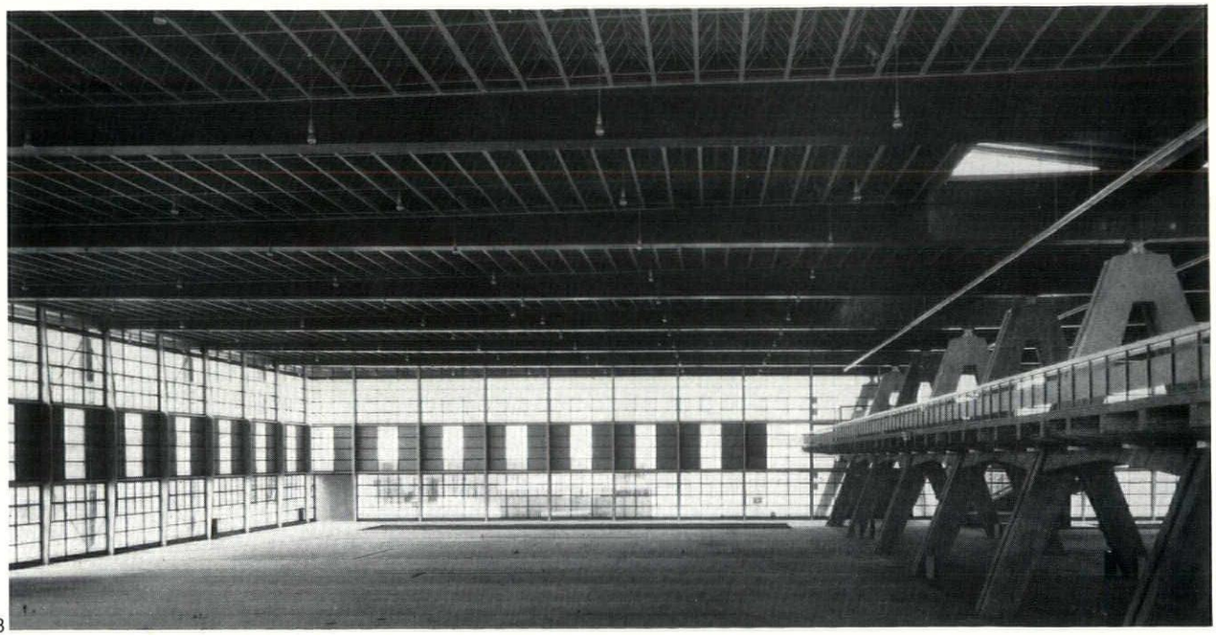
A centre for international and other trade exhibitions, completed in 1959. It consists of three halls (see site plan below) and a block of administrative offices. 137, entrance side of hall no. 1, a square curtain-walled building with the steel roof mainly supported by a central row of V-shaped concrete columns. These also support a gallery seen on the right in the interior view, 138. The roof is also tied down at each end by precast concrete posts with tension wires between. Engineer, Yoshikatsu Tsuboi.



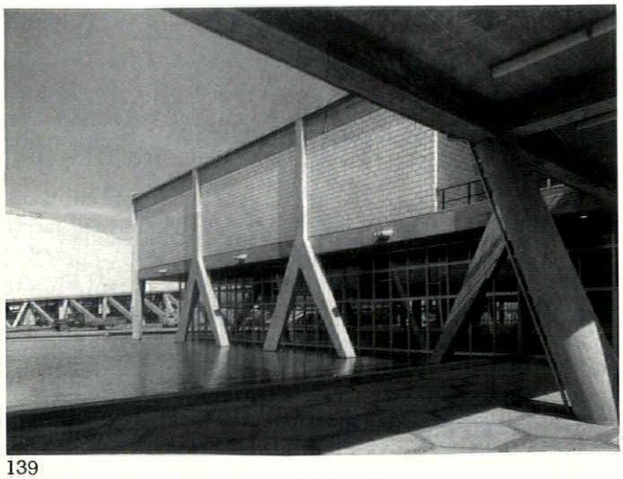
site plan



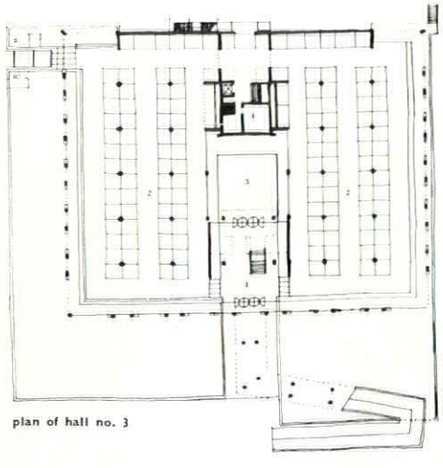
137



138



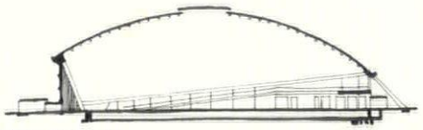
139



plan of hall no. 3

139, hall no. 3, raised on concrete columns and reached by a ramp. It is connected with hall no. 2 (facing page) by a bridge.

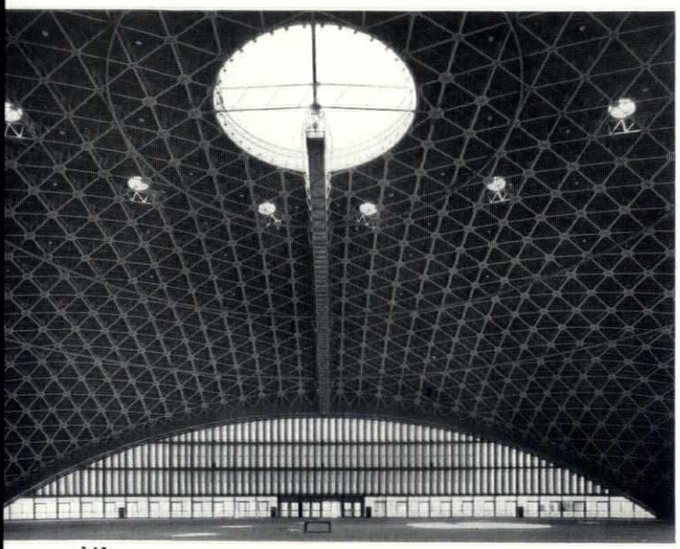
key
1. entrance
2. exhibition halls
3. courtyard
4. offices



section: hall no. 2

140

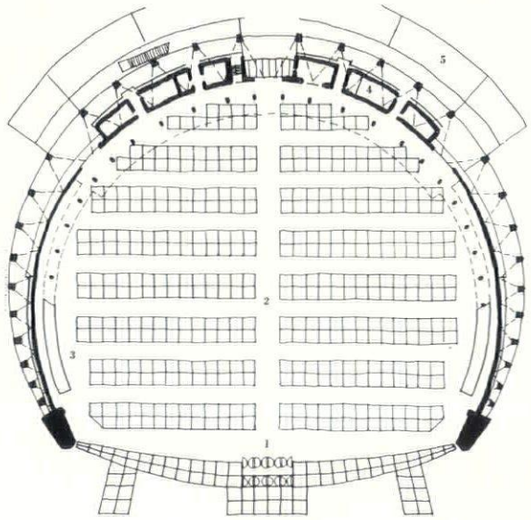




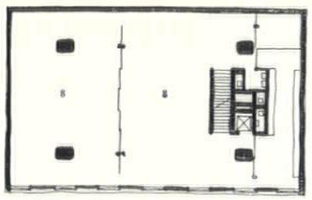
141

140, hall no. 2 (see site plan on facing page): a concrete shell with lattice-steel structure beneath. Height to top of dome, 103 ft. 6 in.; floor area, 117,000 sq. ft. 141, the interior, looking towards the entrance.

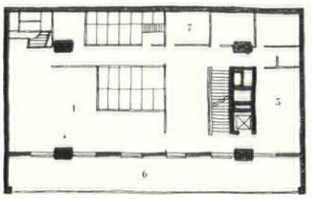
key
1. entrance
2. exhibition hall
3. ramp up to balcony
4. office
5. loading area



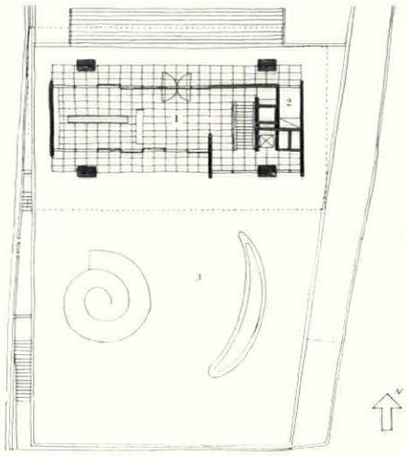
plan of hall no. 2



second floor plan



first floor plan



ground floor plan

key
1. entrance hall
2. caretaker's flat
3. garden
4. exhibition gallery
5. director's office
6. balcony
7. offices
8. classrooms

Sogetsu Art Centre, Tokyo

architect, Kenzo Tange



142

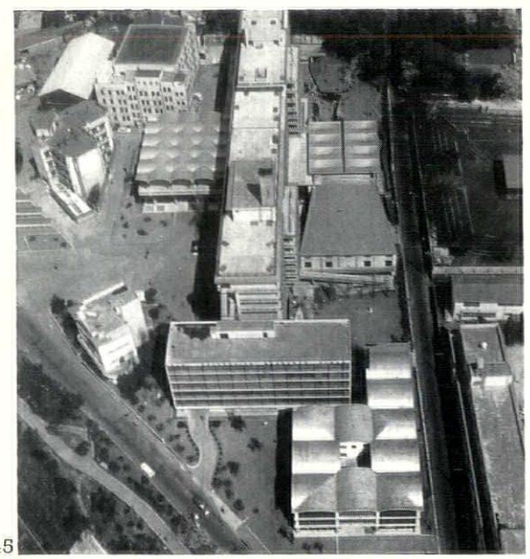
A building, completed in 1957, devoted to the art of flower arrangement, with teaching and display accommodation: in the basement a lecture-hall; on the ground and first floors, exhibition space; on the top floor two classrooms. 142, north side, faced with dark blue tiles. 143, from the garden court on the south side.

143



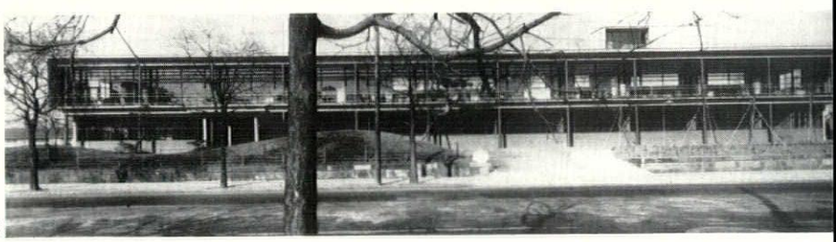


144



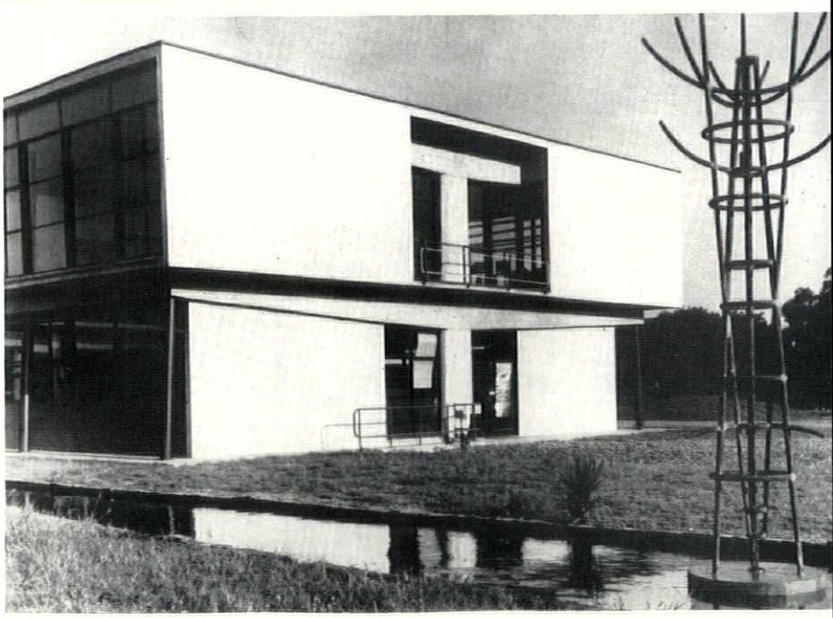
145

Hosei University, Tokyo, where a large group of buildings (architect, Hiroshe Oe) was completed in 1958. 144, interior of students' hall. 145, air view.

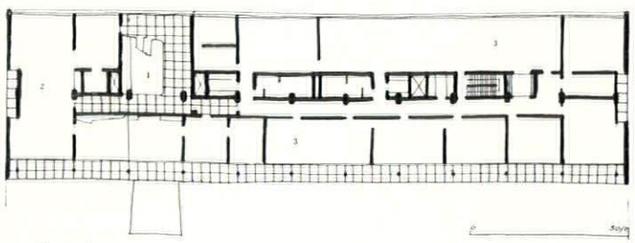


146

147



Reader's Digest, Tokyo *architect, Antonin Raymond*

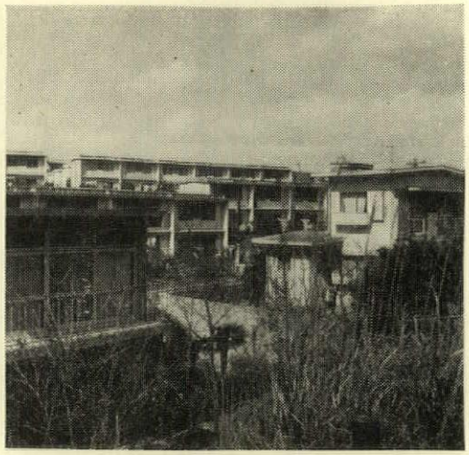


upper floor plan

key
1. staircase hall
2. editorial room
3. offices

146, frontage to the street. 147, end of building showing upper floor cantilevered from a row of central columns but also supported at the outer edge on steel columns sloping inward. The ground floor —which is similar to the plan shown—has a separate single-storey cafeteria behind, linked by a covered way. Completion, 1949.





148, 149, *municipal housing on the outskirts of Nagoya.*

continued from page 204]

begun in 1949 and just completed: 2,400 dwellings (which represents a population of something over 10,000); two primary and two secondary schools; shops occupying the ground floors of some of the blocks of flats; total area about thirteen and a half acres. Architecturally commonplace and somewhat drab, it has importance nevertheless as the first effort of its kind in Japan, public authority housing on this scale being something that is only just beginning to get organized. The scheme is mostly two-storey blocks, not very imaginatively laid out in short parallel rows; some four-storey; a few point-blocks, Y-shaped in plan. All are for letting except a few detached houses built for sale.

The site covers a series of bare gravelly hills. The roads keep to the valleys, with steep paths or access roads up to the groups of houses. Construction is reinforced concrete and concrete blocks, rendered; design by the municipal housing department. Public housing in Japan is organized simultaneously at three different levels: by a Government housing corporation, by the prefectures and by the municipalities. They all have a big programme in front of them, but in spite of much primitive and congested housing, there seems to be little in Japan that could be described as slum housing—certainly nothing like the worn-out industrial slums we know too well in the West.

Next to Nagoya railway station, to catch a luxury express (national railways) on the main line linking Osaka and Tokyo. But we are to get off at Numazu and change on to a local line which will take us across the Izu peninsula to Atami for the night. The train runs right along the coast, skirting an inlet celebrated for its eel-fisheries; through cultivated country with plantations of mandarin oranges, now loaded with fruit, and with tea-bushes climbing in long snaking terraces high up the hillsides; across wide, sandy estuaries.

Approaching the town of Shimoda, a first distant view of Mount Fuji—looking exactly like its pictures. Soon a much closer view, first on one side of the train, then on the other. Often, one is told, especially at this time of the year, Fuji is veiled in cloud, but today it stands clear against a pale blue sky, one of the few famous—and indeed hackneyed—sights that do live up to their reputation: a lofty (nearly 14,000 ft.) cone, streaked with snow at the top, rising from a level plain. Its charm is supposed to lie in its symmetry, but in fact it has several irregularities, including a projecting shoulder half-way up one side; but it has a wonderful air of floating detached from the lower landscape, and enormous scale in spite of having no foothills that build up to it.

To Atami well after dark: a garish, touristy hot-springs resort, one of the largest in Japan, popular also for trade-union conferences and the like—a mixture one might say of Scarborough and Margate. Slow progress by car through the noisy, neon-lit streets and then, thankfully, out of the crowded town to a modern *ryokan*, the Torikyo, beautifully sited on a steep hillside on the opposite shore of the bay: architect Taniguchi, one of the architects who was at the welcoming party the first evening in Tokyo.

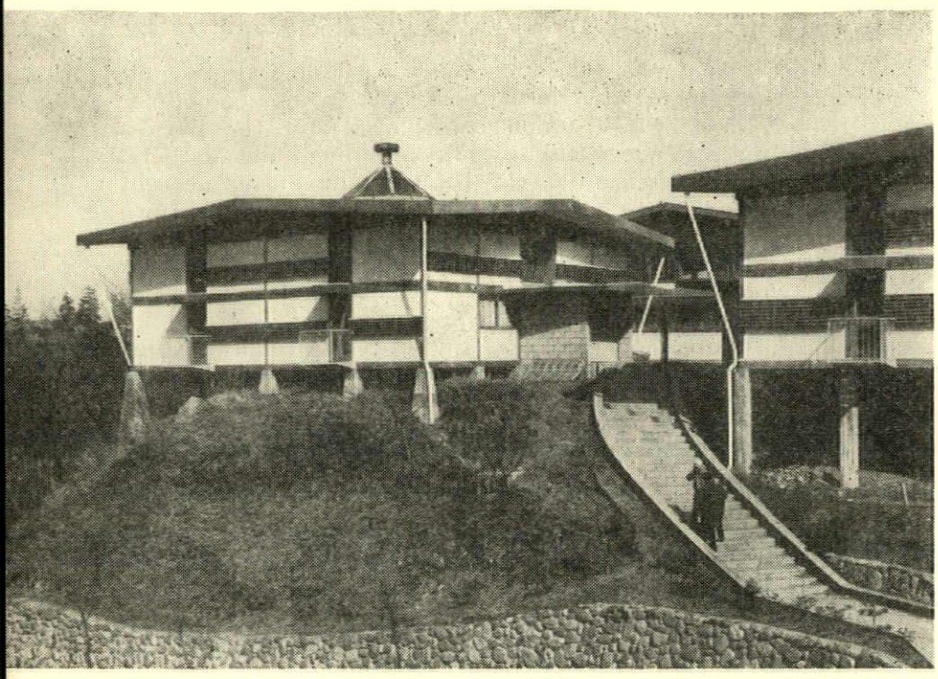
Only the entrance of the hotel at road level, then down flight after flight of stairs as the building steps down the hillside until it spreads out at the bottom into suites of rooms, some almost separate pavilions, planned in the usual skilful way to give privacy of outlook to each. From the windows a view across the water to the lights of Atami glittering along the shore and half-way up the opposite hill, and from the wide plate-glass windows of the communal bath a more romantic outlook still, for outside the windows is a terrace from which it seems to be but one step down to the rocks and the shimmering breaking waves.

fourteenth day

The view by morning light even more glamorous than the night view promised: the bedroom window looking straight across the bay; a wrinkled blue sea and rocky headland beyond; in the foreground a grassy slope, planted with a few choice trees, going steeply down to the water. Through the sliding windows of the bedroom balcony only two steps down to the pathway of flat stones, set into the grass, that marks the easiest way to the shore—but not all that easy on *geta*, the high-soled Japanese sandals found waiting on the balcony for the visitor's use. These consist of a wooden platform with a leather strap to go across the instep and two wooden blocks beneath to keep the sandal well above the mud and wet. Peasants and old people wear them all the time, making a musical clop-clop sound as they patter along the street, but their centre of gravity is so far back that the unaccustomed wearer tips alarmingly forward as soon as he tries to walk.

The sun is warm and the air still, suitable for strolling by the shore wearing only the hotel bathrobe, a pleasure that the chilly winds of the preceding days had made impossible. But no excuse to linger now, because Kenzo Tange has promised his company for this last day's journey back to Tokyo and is waiting at the hotel in Atami where he has been staying overnight—the Atami Gardens Hotel to which he has just added a five-storey wing.

So goodbye to the Torikyo (with a present from the proprietor on leaving of an elegant box containing two pairs of inscribed chopsticks, one a size larger than the other—his, as it were, and hers; the hotel is a favourite one for honeymoon couples to whom these boxes are presented as souvenirs); then back along the cliff-top road to Atami and a view, as one turns the headland, down to the waterfront: the sharply curved bay with its sandy beach lined with tall white hotels like a transplanted segment of the front at Weymouth. Up through the town to where the Atami Gardens Hotel stands on high ground: traditional style, but standing still higher beyond its thickly planted garden is Tange's new wing looking over the older hotel and the brown tiled roofs of the town to the sea.



150, *buildings near Yokohama for the municipal sports association, comprising offices, club-house and youth hostel.*

Beautifully finished concrete again, straight from the plywood shuttering though the arrises are so precise the shuttering might have been sheet-metal: a cool grey colour. The deeply recessed balconied front rises like a cliff above a broad paved terrace adorned with ceramic sculptures and mosaic wall-decorations by Sofu Teshigahara, known as a master of flower-arrangement but recently turned sculptor; their forms somewhat bulbous and colours garish—gay and holiday-like in effect but not really worthy of Tange's subtlety of form and judgment.

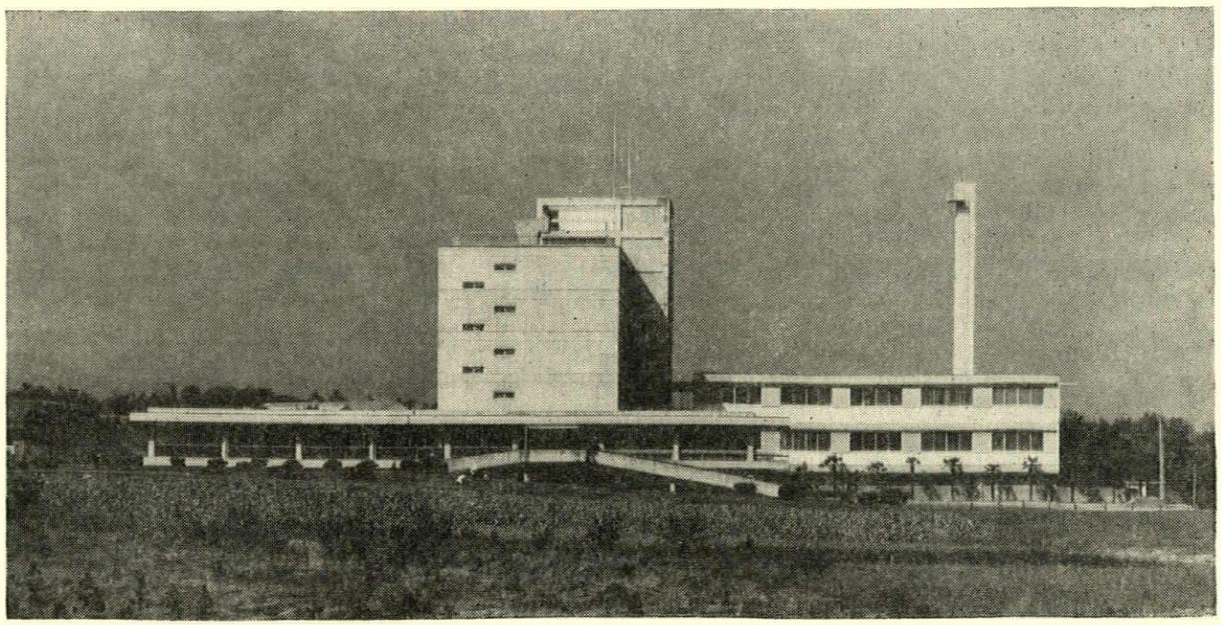
Inside the hotel: (a very luxurious one) the Western style predominates, but the Japanese style preserved for some of the rooms, spacious and beautifully furnished by Isamu Kenmochi, a designer who often works for Tange. Coffee in the bar, a charming room with the centre of the floor sunk one step down so that visitors unaccustomed to chairs and tables can perch comfortably round the edge.

Then off in the car on the long road back towards Tokyo, with various buildings marked on the map to be looked at on the way. The road mostly along the shore, through young fir plantations to protect the farmlands from the sea-winds; partly on one of the new toll-roads, with a very good surface but none too wide. First call—for lunch—at the Totsuka country club, one of the most lavishly appointed of the new golf-clubs that are springing up all over Japan (entrance fee said to be £1,000) and the club-house Tange's newest job—barely finished. It stands on the highest point of the bare, heathery landscape in which a 36-hole course is still being laid out and shows Tange at his most sculpturally uninhibited.

It has a huge inverted shell roof, supported on six reinforced concrete columns, and an elegant aluminium curtain-wall, with steel members introduced for wind-bracing. Over one hall there are two levels: a restaurant above and locker-rooms below; leading off the locker-rooms at the end of the building, a bath-house with wide views over the mountain landscape. The other half is one great space from the floor to the underside of the upward curving roof: a hall, with lounge and bar in a partial mezzanine—the whole space handled with Brazilian bravura and furnished, like Tange's Atami hotel, by Isamu Kenmochi; the interior air-conditioned.

A long dusty drive through the same sort of country, but villages now more frequent. We are travelling over the historic Tokaido road which students of Japanese prints will remember as the subject of several famous series by Hiroshige, depicting the stations on the road where travellers stopped to change horses and litter-carriers, rest and eat. The next stop in the outskirts of Yokohama, where Yoshinobu Ashihara has built (completed 1959) a handsome and workmanlike municipal hospital. Nearby another rather interesting group of buildings: offices, club-house and youth hostel belonging to the Yokohama municipal sports association, designed in the municipal architect's office. An obviously deliberate attempt to devise a modern version of the traditional Japanese style that has really come off: one of the few buildings seen, outside the range of timber-framed domestic buildings, where modern and traditional are in effect one.

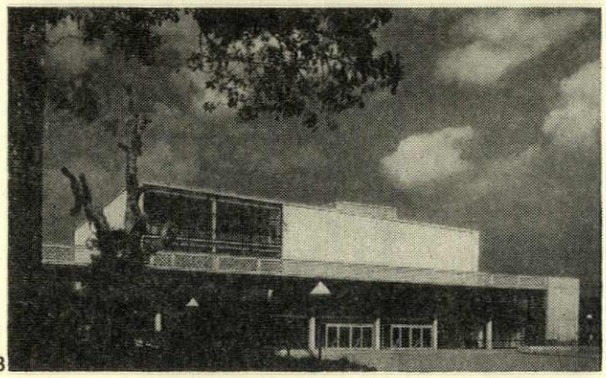
Before entering Yokohama itself, a detour down to the ancient coastal town of Kamakura (now a residential area for Tokyo), to see Junzo Sakakura's



151, *municipal hospital, Yokohama,* 1959; *architect, Yoshinobu Ashihara.*

152





153

Two early classics of the modern movement in Japan—see also page 174: 152, art-gallery at Kamakura, 1952, by Junzo Sakakura; 153, concert-hall and library, Yokohama, 1954, by Kunio Maekawa.

prefectural art-gallery (1952)—one of the four significant early works of modern architecture (see pages 172 and 174). A symmetrical building, elegantly proportioned and detailed, standing by a lake in a densely wooded park; planned round a central courtyard, open to the outside where it is entered by a wide flight of steps. Unlike the other pioneer modern buildings it is not of concrete, structurally, but has a steel frame with the upper storey, containing the galleries, cantilevered out, faced with concrete panels with aluminium trim. The ground floor in a tufa-like stone, resembling the stone Frank Lloyd Wright used in the Imperial Hotel at Tokyo.

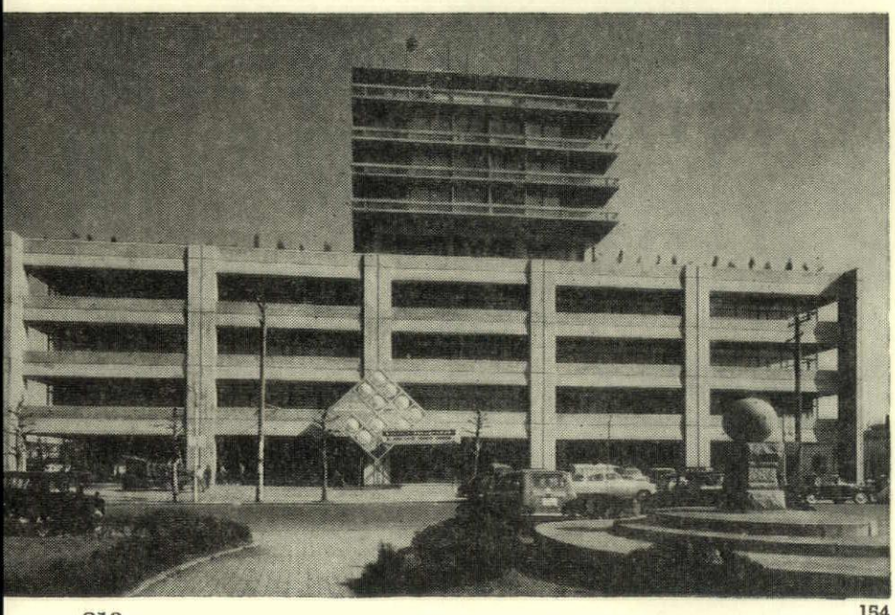
From Kamakura on into Yokohama, a seedy, windblown, unattractive city now. Before the war it was outstandingly civilized and cultured, being the main gateway to Japan from the outside world. But that role is now played by Tokyo, and Yokohama has run down, becoming more like an industrial suburb at the entrance to Tokyo bay, though preserving its entity as a city and having in fact a population of nearly a million and a half.

And it has some good buildings: notably the concert hall and library by Maekawa, another of the early classics of the modern movement (finished 1954), in a simpler, more rectilinear style than Maekawa's later works, with the two elements of the building connected by a bridge; and the city hall by Murano and Mori (1959), a tall square block with an exposed concrete frame with pink brick infill, and a somewhat hard, semi-industrial character, but fine in scale. Inside good public-spaces, finished with hard well-textured materials like stone setts and roughish tiles, somewhat sad in colour; tile murals by Murano himself.

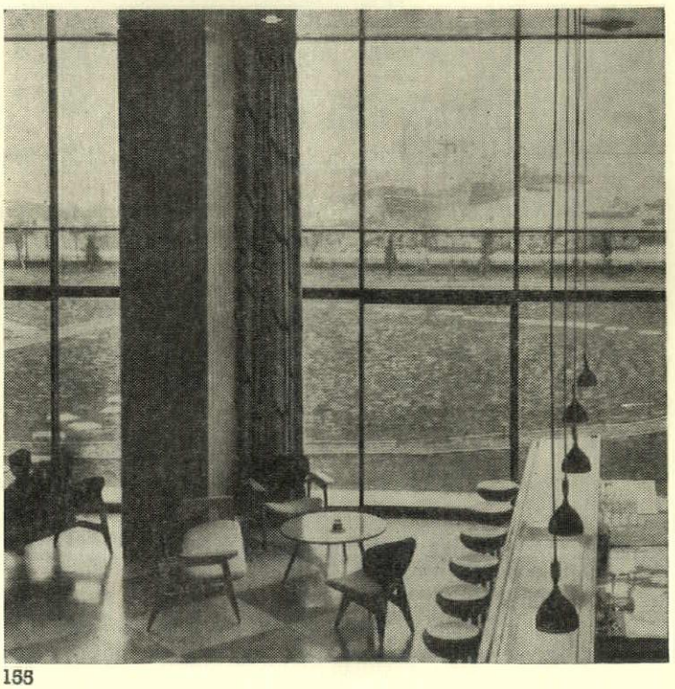
Also the Silk Centre in the harbour quarter, almost on the waterfront, a handsome building, also finished in 1959, by Sakakura. The lower part contains showrooms, conference rooms and so on connected with the silk industry; the upper part an hotel, in the form of a square tower perched in the centre of the wide rectangular block. Concrete frame and panel construction; exciting view from the roof over Yokohama harbour and an impressive quantity of ocean-going shipping anchored in the roads or crawling in and out.

Away from the Silk Centre as darkness falls and up the long, crowded road to Tokyo: an hour's drive through thickening traffic towards the sparkling neon-signs and dimly seen transmitting towers that identify the central Tokyo skyline; eventually to the Imperial Hotel, which now seems quite like home.

The Silk Centre, Yokohama, by Junzo Sakakura, 1959: 154, the frontage facing a city square; 155, from the fourth-floor cafe, with view over the harbour and its shipping.



154

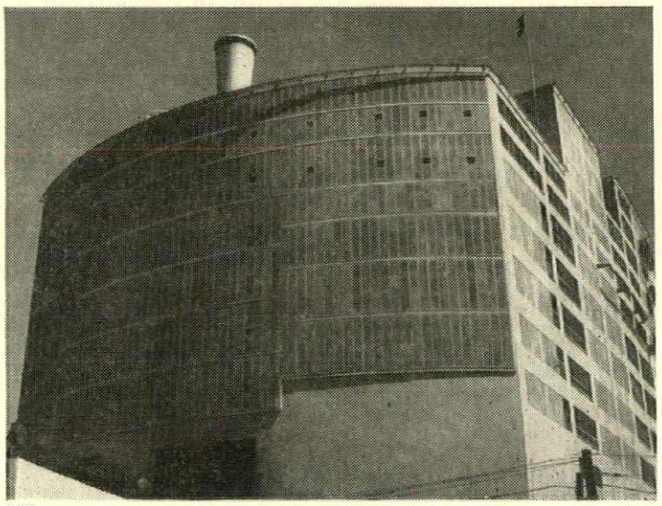


155



156

The Shibuya district of Tokyo: **156**, *showing Sakakura's store building combined with an elevated railway station;* **157**, *side view of the store.*



157

fifteenth day

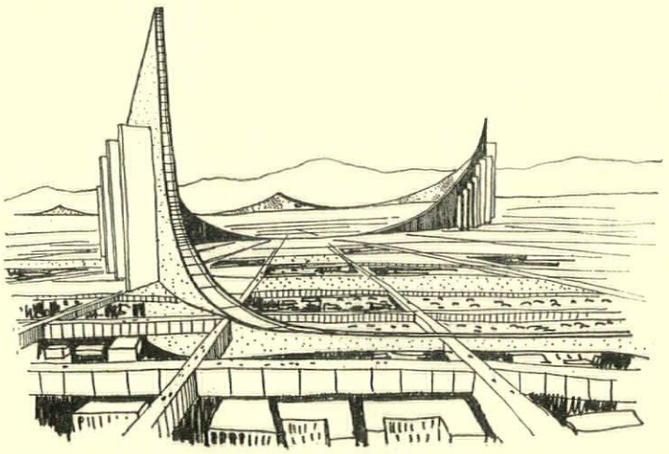
Another day with Tange; first to his office in Shibuya, a Tokyo sub-centre, as it might be Kensington High Street or Camden Town; its core a busy square, dominated on one side by a glass-fronted department-store by Sakakura, with which is combined an elevated suburban railway station. Nearby, facing a wide boulevard, a tallish rectangular office block with Tange's office—about twenty assistants—occupying the whole of one upper floor.

Discussion with him and his partner Kamiya about various of their projects, including two alternative schemes for the buildings they are designing for the 1964 Olympic Games in Tokyo: a covered swimming-bath with seats for 15,000 spectators and a small sports hall beside it. One scheme very plastic in form with a dished roof supported on catenary steel cables; the other more angular with a folded slab roof and the spectators grouped into triangular compartments of raking seats. Drawings of a civic auditorium, already nearly finished, at Nichinan in the southern-most island of Kyushu, with a foyer partially tucked under the upward slope of the back of the auditorium, and the one-pitch roofs of stage, tower, foyer and auditorium making a series of intersecting angles.

A model in the office of a building in Tokyo for the Dentsu Company, for whom Tange's riverside office-building in Osaka was designed, now at the working-drawing stage: a long rectangular building, raised off the ground, spanning between two towers containing lifts and service core and cantilevered beyond them; in reinforced concrete, but with the main longitudinal beams in steel to minimize depth; the façade in the form of a large-scale criss-cross grille, forming a kind of structural *brise-soleil*. This building, as well as others of Tange's, designed in conjunction with one of the two structural engineers of advanced ideas who have greatly helped the modern Japanese architects to achieve their free, adventurous structures, much as Arup and Samuely helped the modern English architects. His name, Tsuboi; the other, Yokoyama, works a good deal with Maekawa.

Lunch in the office—sent up in steaming lacquer bowls from a restaurant on the ground floor—with Tange and Kamiya and two architects of a slightly younger generation: Kiyonori Kikutake and Masato Otaka. Together with Maki (of the Nagoya auditorium, now in America) they are probably the best of the younger architects; those, that is, of round about 35, one generation after that of the three leaders of the modern movement in Japan: Maekawa, Tange and Sakakura. Kikutake (his art-gallery at Matsue already seen) has been practising on his own for a little while; Otaka has only just set up, was previously in Maekawa's office.

Both are deeply involved in theoretical study and research. Here can be found the serious thought about long-term problems that seems to be lacking in many



158, *a sketch from Noriaki Kurokawa's contribution to 'Metabolism' (1960), illustrating his conception of the future form a city like Tokyo might take: a 'wall city,' based on the use of the 'equipment wall' and transportation by monorail and moving corridors.*

parts of the Japanese architectural scene. Looking to the future, they and their like are an important element in Japanese architecture, with the potential influence that the English architects of CIAM had at the time when modern architecture in the West was finding its way, just before and just after the war, towards a conception of architecture that included some responsibility for the total physical environment.

One of their activities has been the formation, last year, of a study and research group under the name 'Metabolism' (the name indicating their vision of human society as a developing vital process), the

founding members of which were Kikutake, Otaka, Maki, another young architect (and protégé of Tange's), Noriaki Kurokawa and a young critic, Noboro Kawazoe (already met when first in Tokyo at the *Shinkenchiku* lunch). This group has already published a small book on 'proposals for new urbanism' containing city-planning projects, experiments with new types of urban conglomeration and the like, and individually—with support and encouragement from Tange—they have produced a number of impressive studies in housing and town-planning.

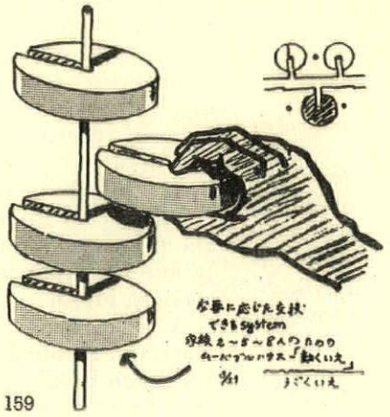
Energetic exchanges of views of these subjects over lunch; then off (still with Tange, Kikutake and Otaka) to look at more new buildings in Tokyo that shouldn't be missed. First to the Harumi area, an industrial one near the harbour, where Maekawa was asked in 1955 to design, by one of the semi-official Housing Corporations, an experimental multi-storey block of flats —experimental because at that time there was very little being done (there is still not much) in the way of high-density low-income housing in tall blocks, and because the earthquake problem made other countries' experience inapplicable. This block was built, and is a good example of Maekawa's vigorous handling of structural concrete, but for some reason the experiment was not followed up, and the rest of the estate was later developed with five-storey blocks (Maekawa's was ten-storey) of very poor quality architecturally.

Then to the Hitotsubashi secondary school where Kikutake has recently built a gymnasium with concrete external walling to which he has given a pattern by using diagonally placed shuttering boards (Le Corbusier's use of rough boarded shuttering to give a tough character to his concrete has not generally been followed in Japan, where exposed concrete is for the most part smooth and geometrically precise); and from there to Tange's Sogetsu Art Centre, a school of flower-arrangement with lecture-room, exhibition-hall, etc.: a compact, square, three-storey building behind a paved forecourt, with its cross-beam construction crisply emphasized and infill walls of dark blue glazed tiling.



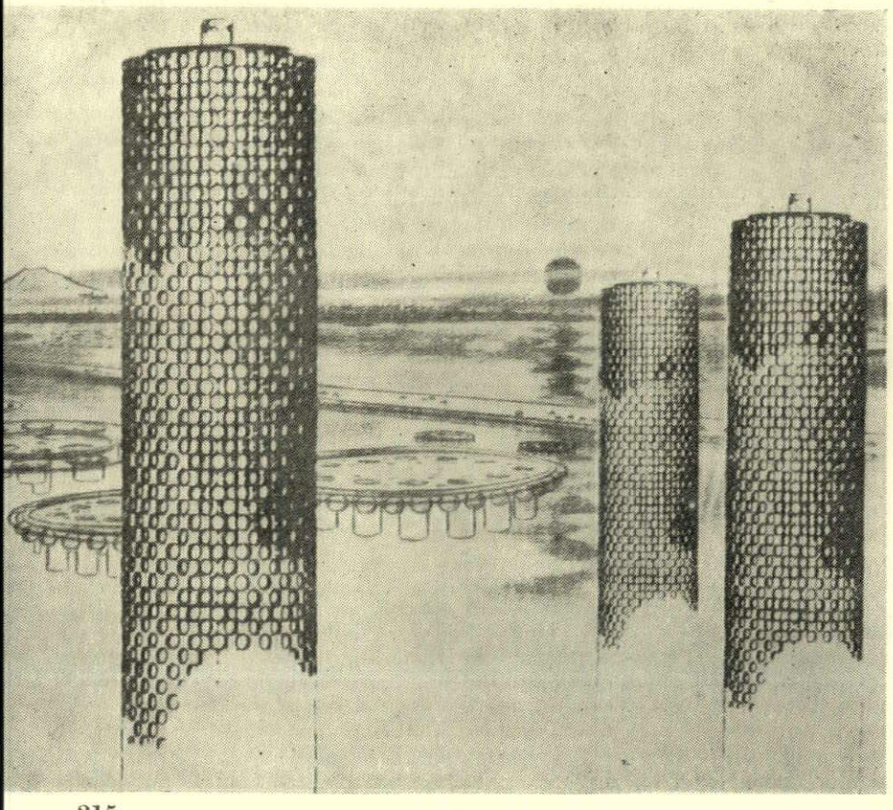
161, *development of the Harumi housing area, Tokyo, following the experimental block by Maekawa—page* 207.

Two more sketches from 'Metabolism,' the publication of the research group of that name; both are from Kikutake's contribution: 159, *diagram explaining his conception of city buildings formed of interchangeable circular dwelling units;* 160, *marine city with tower-shaped communities.*

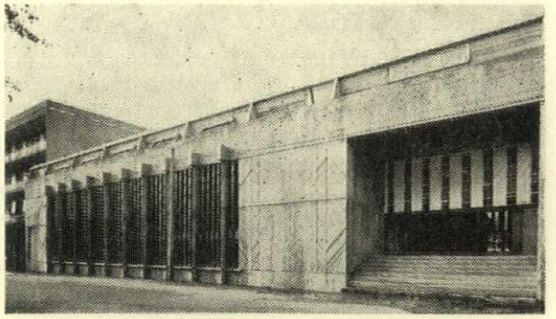


159

160



Next to the Trade Centre by Masachika Murata, a large group of buildings for trade and industrial exhibitions, consisting of three large halls, one covered by a vast saucer dome of steel-mesh supported by a concrete shell with zig-zag struts, obviously influenced by Nervi, and a two-storey brick and concrete administrative block; the whole very competently designed if somewhat cold, with a character hardly at all Japanese. The engineer responsible for these quite ambitious structures, Yoshikatsu Tsuboi.



162, *gymnasium by Kikutake* (1961) *for the Hitotsubashi secondary school, Tokyo.*

From there to Hosei University where Hiroshi Oe has built a group of vigorously modelled, well sited buildings (about the only good modern buildings at any of the Tokyo universities—except Gakushuin, see page 163); then back towards the centre of Tokyo to see one of Tange's best known buildings, his city hall (that is, city offices), the first important modern



163, *at Waseda University. Left to right: Naibu Akashi, professor in the architectural school; Professor Bunji Kobayashi, of Nihon University;* REVIEW *editor; Shindo Akashi, formerly professor in the architectural school.*

building in central Tokyo, completed in 1956 (see page 174): seven floors of offices above a high open ground floor; a grid of black-painted steelwork superimposed on the emphatically horizontal concrete façade pattern.

Other buildings noted in passing: one for the Swedish Embassy, by a Swedish architect working in co-operation with Maekawa, the result an amusingly well-balanced mixture of Swedish and modern Japanese styles; the neat but somewhat dull Nikko Hotel by Ashihara; a more ambitious modernistic hotel, but well done of its kind, by Sato Takeo—Tokyo has a vast programme of hotel building, inspired of course by the forthcoming Olympic Games, which will, by 1964, increase the capacity of the Western-style hotels in the Tokyo-Yokohama area from just over 7,000 beds at present to about 14,500.

sixteenth day

In the morning to Waseda University, which has one of Japan's two best architectural schools, the other being at Tokyo University. Most of the leading modern architects were at one or the other. Waseda has very drab buildings, designed for the most part by the university's own building and maintenance staff, but happily there has lately been a change of policy and new buildings, of which a number are in prospect, will be designed in the architectural school.

Received by two members of the staff (no students about, it being vacation time): Nobuo Hozumi a young assistant professor with an American background—he did a post-graduate course at Harvard and then worked with Saarinen, part of the time on detailing the Grosvenor Square embassy; Naibu Akashi, who runs a busy practice as well as teaching. He has just finished a lively looking industrial building with an exposed steel frame, roofed by a series of flat domes—a foundry for casting motor-car parts—in a Tokyo suburb—see page 230.

A tour of the school and a sight of some of the students' work; also of Akashi's office and the office of one of the senior professors, Professor Imai—away just now—who is building Gaudi-like churches at Nagasaki. Professors at Waseda have office-space in the school, and the assistants working there are largely post-graduate students. As well as building, they do quite a lot of research and development work—in fact this is the principal place where such work goes on. The professors' offices can afford to spend time on research because their post-graduate assistants are not fully paid, being still at the university on fellowships and grants.

The students' work very like the equivalent work of English students. The interests of the more advanced students centres at the moment, it seems, on three things: the relation between buildings and groups and rethinking of urban structures generally (signs here of the influence of Kikutake's and Okata's 'Metabolism' group); problems of industrialization, especially those related to the distinction, which is thought very important, between the changeable and the permanent elements in any structure; the assimilation of Japanese regional traditions into a valid modern idiom.

A long discussion about architectural education, then and at lunch. This in the staff refectory—joined for lunch by Shindo Akashi, Professor Akashi's father (formerly also a professor at Waseda, now retired, his opinions those of an older generation but he himself refreshingly open-minded and tolerant about developments he finds unsympathetic), and Bunji Kobayashi, professor of the history of art at the school of Technology, Nihon University, another of Tokyo's architectural schools, translator into Japanese of Nikolaus Pevsner's *Outline of European Architecture* and himself the author of a useful little book on historic Japanese buildings.

The systems followed in the architectural schools, the standard of education reached and its influence on standards in the profession are so important in Japan just now that they are worth going into in some detail.

ARCHITECTURAL EDUCATION

The surprising thing is that the original impetus of the Japanese architectural school system was English. In 1874 an English architect called Josiah Condor, who had been working in Japan and had acquired a great local reputation, founded the first school of architecture, on the model of the existing English schools, at Tokyo University, and Japanese schools have been run very much on English lines ever since. A statue of Condor stands in one of the Tokyo University quadrangles.

There are as many as forty or fifty universities in and around Tokyo of various kinds and origins. Most of them are private foundations, some very ancient. About twelve have schools of architecture. Waseda (on which these notes are based, though the pattern is much the same elsewhere) is one of the largest. Two or three others are about as large. Tokyo University, which vies with Waseda for leading place among the architectural schools, is relatively small. It cannot afford to expand so much because it is a State (as distinct from a private) university and has to charge much lower fees.

Waseda has about 180 students in each year. The course is one of four years—this is standard for all architectural schools. The staff would like to see it extended to five years but there are difficulties in fitting this into the university system and curriculum as a whole. At the end of the four years the students who pass out, taking their BA degree, are then eligible to sit for the Government examination qualifying them to practise

as architects. But they must have two years of office experience first.

This is the normal method of acquiring the necessary licence to practise and the method by which nearly all first-class architects qualify—see the article (page 160) on the Organization of the Profession. In theory it is possible for them to take the Government examination without having taken a university course and degree, if the candidate has had eight years of office experience, but in practice this is rarely done.

Waseda (and most of the other architectural schools) have ten times as many applicants for entry into the first year as they can accept. They therefore have a stiff entrance examination, about which there is the usual worry that the only practicable academic tests may exclude outstanding potential architects with a background or temperament that makes an academic examination no true test of their quality. The students pay fees—though not excessively high ones—except for about 10 per cent who have Government scholarships. At Tokyo University, since it is a State university, the number with such scholarships may be as much as 20, or even 25, per cent.

Much of the first-year course is given over to general education and mathematics, plus drawing and the history of architecture; no designing is done before the second year. After the second year, students tend to divide themselves into two streams, those that intend to specialize in technical subjects—structure, services and so on—and those specializing in architectural design (the future first-class architects). Here is the peculiarity of the Japanese architectural schools, and one of their weaknesses in the sense that standards set in the schools inevitably influence standards accepted in the profession.

All the schools of architecture in the universities are part of the faculty of engineering, and the architectural course caters for, and gives a degree to, students of whom a great many become what we might rather call building engineers. Although the Government examination covers design as well as techniques, and candidates take the same examination whichever they have specialized in during their university course, the standard of design in the Government examination is low. It has a distinct technical and practical bias. Though many of the so-called qualified architects therefore have more the character of building engineers, it should be made clear that civil engineering as such is a separate profession. The civil engineers have their own schools and their own examinations, within the same engineering faculty.

In certain specialized universities—which are in fact more what we would call colleges of technology—such as Nihon University in Tokyo, architectural and civil engineering students share the same first-year course. Otherwise there is very little collaboration between one department and another—let alone one faculty and another. Because of the extent to which purely technical skill and knowledge are accepted as the basis of an architect's qualifications, integration of the different disciplines, which English architectural education is now seeking to increase, may be said already to exist; and because of the tendency in Japan for the building industry to overwhelm the architect as an independent professional man (again see the article on the Organization of the Profession), closer ties with industry are not at this stage desirable. The need in Japan is therefore, in a sense, the opposite of that in England. The need is to separate the strictly architectural disciplines from the others.

Hence the importance of the graduate schools. After the standard four-year course, Waseda (and some of the other leading architectural schools) have a two-year Master course, followed by a two-year Doctor course. Not many students of course can afford to continue with these, and such additional courses do not assist qualification to practise through the Government examination—in fact they delay it by delaying the statutory completion of two years of office experience. But, however small their numbers, the students taking post-graduate courses have a significant role to play. They are drawn, of course, from those who have specialized in design rather than techniques, and it is by way of their programmes and studies that higher architectural standards can be put forward. They also provide the link with the more advanced and responsible élite of the profession: the members of the Japanese Architects' Association.

As compensation for delay in getting their licences to practise, students who have taken post-graduate degrees can usually claim higher starting salaries when they come to work in offices, and many of them also gain office experience while still taking their advanced courses, by serving as assistants in the offices which many of the university professors run in the school of architecture premises. This most of the universities give their professors facilities to do, though not all take advantage of it.

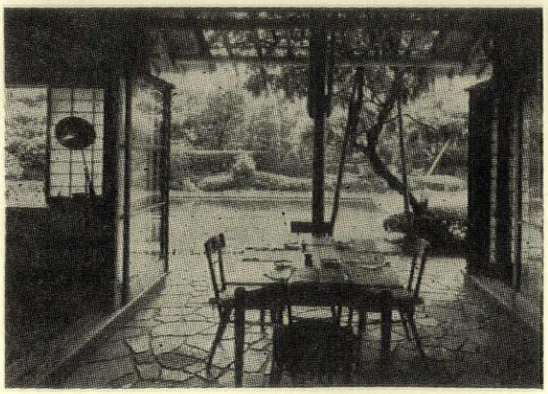
At Waseda and Tokyo Universities especially there seems to be a free and adult relationship between students and staff: much mutual criticism and exchange of opinions and arguments, including inevitably, as just now in England, much discussion about the methods of architectural education. Theories and ideas are freely canvassed, and on the need for a number of improvements—especially improvement in aesthetic and professional standards—both staff and students in the more enlightened schools of architecture fervently agree.

To get substantial changes made is more difficult, partly because the present courses are part of a fixed university curriculum and partly because they have to be directed towards enabling the student to pass the Government examination. It is the scope, the balance and the standard of this external examination that need improving, but this is outside the control of the universities. They are not even represented on any board of control, as the English schools of architecture are represented on the Board of Architectural Education. The Government examination is the direct and sole responsibility of the Ministry of Construction.

sixteenth day (continued)

In the afternoon, a call on Antonin Raymond. Logically some observations on his work should have come much earlier in this narrative because he is in many ways the father of modern architecture in Japan. He was Czech originally, but went to America in 1910 at the age of twenty and eventually became an American citizen. He worked with Cass Gilbert and then at Taliesin with Frank Lloyd Wright, and when Wright came to Tokyo to build the Imperial Hotel, arriving on the last day of 1919, he brought the young Raymond with him to act as his chief assistant on the job.

When the hotel was finished Raymond stayed in Japan and set up on his own. He had a small practice, mostly domestic, but built a hospital and one or two churches as well—all far more advanced than anything even being thought of in Japan. His own house, built in Tokyo in 1923, was the first building in exposed reinforced concrete. Among the young Japanese who worked in his office was Kunio Maekawa. During the war Raymond was back in America, but he returned to Japan in 1947 (to find his pre-war buildings virtually all destroyed) and now has a biggish practice and an office with fifty or sixty assistants—a practice in which his wife shares, especially over matters of interiors and furniture



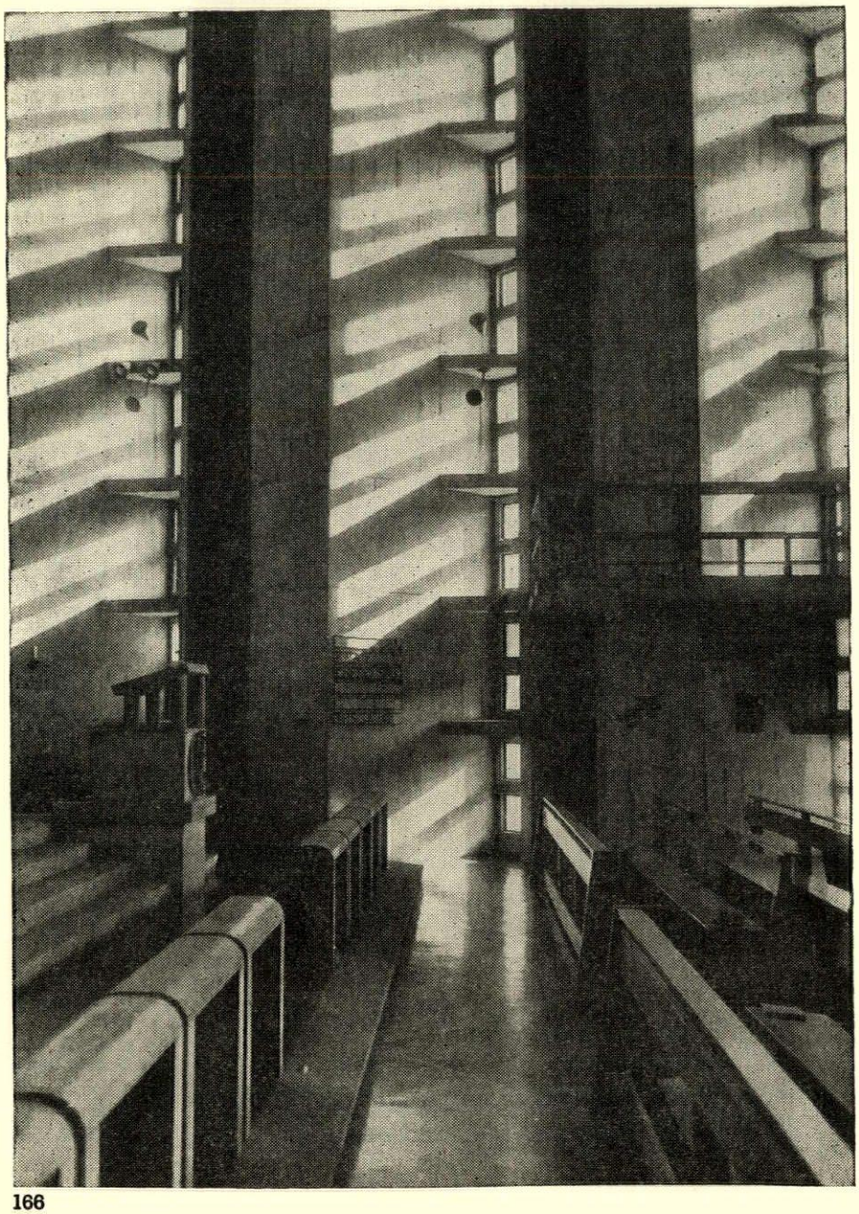
164, *Antonin Raymond's combined house and office: looking on to the garden from his own studio-living room at the back.*

design. In other respects, too, his office is unusually self-contained: he employs his own engineers, heating specialists and so on along with his architectural assistants, all of whom are qualified—no draughtsmen are employed as such.

St. Anselm's Church, Tokyo, by Antonin Raymond, 1955*—the first example of folded slab construction in Japan;* 165*, exterior;* 166*, interior, the north wall.*



165

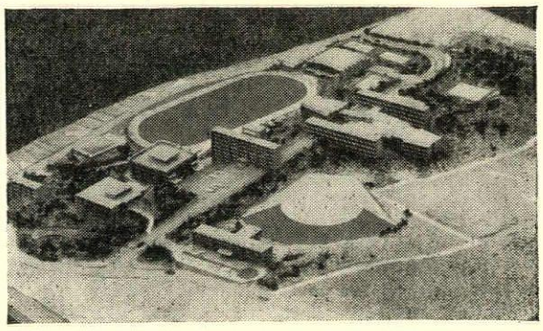


166

Raymond's house and office are combined: a wide-eaved, one-storey timber building of his own design, planned round a garden court; his own studio-living-room opening on to a terrace and then a garden of mature trees. In spite of his 72 years he has a vigorous, confident personality, holding strong opinions about the shortcomings and wrongheadedness of others. In a surprising variety of ways he has had a profound influence on the development of modern Japanese architecture; not only was he the first to introduce many Western techniques and demonstrate their aesthetic implications, but it was to some extent he who discovered for the Japanese the timeless significance and contemporary validity of their own architectural traditions, especially those of their timber-built domestic architecture. The basic virtues of the best vernacular architecture have never been better described than by Raymond himself in a dialogue with Kenzo Tange published a little while ago.

'Imagine my surprise on arriving in Japan'—this was in 1920—'to find here expressed in Japanese farms and Shinto shrines like Ise, all the features which we so ardently desired to re-create in the new architecture. A Japanese farm at the time of my arrival in Japan forty years ago was a marvel of integration, complete, and perhaps not to be found anywhere else in the world. It grew out of the ground like a mushroom or a tree, natural and true, it developed from the inside function absolutely honestly; all structural members were expressed positively on the outside, the structure itself was the finish and the only ornament, all materials were natural, selected and worked by true artist artisans; everything in it and around it was simple, direct, functional, economical. The people, their dress, their utensils, their pottery, paintings, gardens, all expressed a marvellous unity of purpose clearly developed through ages by a natural process like anything else in nature. . . . It contained absolute principles, which are always, were and always will be the same, immutable, unchangeable and which must guide us in trying to attain true beauty in architectural design.'

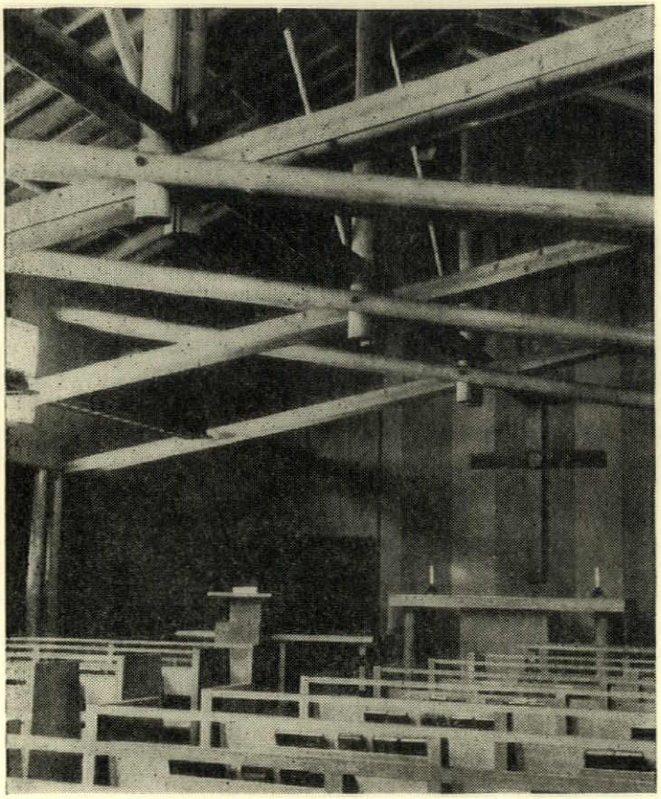
After tea and conversation with Antonin and Noemi Raymond, a walk with him round the office looking at some of the projects on the drawing-



167*, model for a new university at Nagoya, on which Raymond is now working.*

boards: houses, churches, the inevitable golf club and a large scheme for a new university at Nagoya; also photographs of his just completed Gunma music centre at Takasaki, with large fan-shaped auditorium. This is Raymond's own contribution to the growing body of work by modern architects in Japan that exploits the geometrical complexities of new types of reinforced concrete structure—unfortunately too far from Tokyo to be visited now.

Then off on a tour of some of Raymond's Tokyo buildings accompanied by Hiroshi Misawa, a young critic now working with him, and Michael Czaja, an assistant professor at Berkeley University, California, who is temporarily doing the same. First to a couple of Roman Catholic churches: St. Anselm's at Meguro, finished in 1955, with the first folded slab roof in

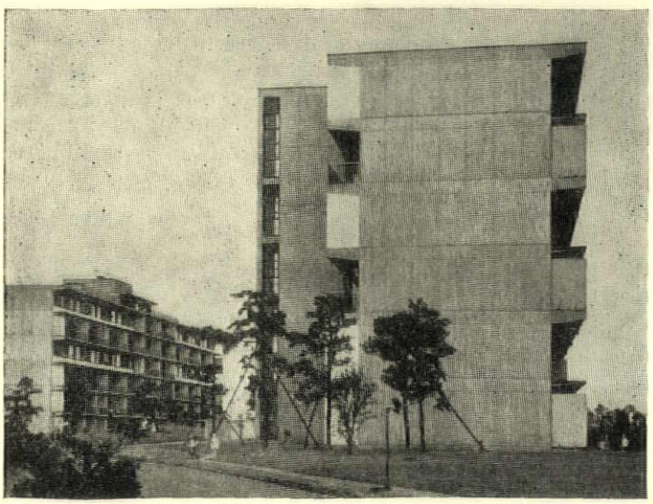




St. Alban's Church, Tokyo, by Antonin Raymond, **1956***—wholly in timber:* **168***, the interior;* **169***, gable end and porch.*

Japan; window-frames and railings of prefabricated reinforced concrete sections; furnishings also by Raymond and Noemi Raymond. Then St. Alban's at Mami-ana, also 1956; this time a timber building with an open roof economically contrived out of scaffold-poles bolted together; looks remarkably Japanese to anyone who didn't know that it would not in fact have been done like this by Japanese—an illustration of Raymond's instinctive apprehension of the real nature of the Japanese tradition.

Next to some flats he built for the American Embassy in 1952, in six-storey blocks, simple and well detailed; and finally to his Reader's Digest building of 1949, the pioneer modern building in post-war Japan. It faces the Hirakawa Gate of the Imperial Palace and is an interesting, clearly articulated design in the form of a long low block with a main first-floor slab cantilevered outwards from a double row of reinforced concrete columns, but also partly supported along each outer edge by thin steel columns which slope slightly inwards; louvred *brise-soleil* protecting the fully glazed windows of the offices above.



170*, staff flats for the American embassy, Tokyo, designed by Raymond in* **1952***.*

Then back to the Imperial Hotel, but away again almost at once to a farewell dinner in a Japanese-style restaurant given by the Foreign Ministry: the guests an agreeable mixture of officials and architects (including Tange and Maekawa). A last experience of the now familiar dinner-table ritual: the stresses and strains of the cross-legged posture, steaming hot towels, china cups of *saké* continually replenished by watchful serving-maids, growing pride in one's expertise with chop-sticks, Geisha girls again, doll-like, artificial and anxious to please, their dances and songs accompanied by the *sam-sen*. Back late through a city that even at night seems as packed with people and vehicles as it is in daytime.

seventeenth day

Packing; telephoned goodbyes; the car-haunted courtyard of the Imperial Hotel in the morning sunshine, its textured brick and stonework looking warm and solid in the brittle surrounding townscape. Then the long dusty car-ride to the airport; the usual alternation of queueing urgently to deal with formalities and waiting idly for the next thing to happen, staring out of the window at the construction work on new airport buildings and the multi-coloured aircraft with their tall tail-fins towering over everything in sight, like giant stranded tropical fish.

Off at last—this time by the South-East Asia route. The steep climb up into the cloud-flecked sky; the banked turn giving changing views of industrial landscape, wharves and shipping and the serrated shore of Tokyo bay; an island with a live volcano—our route takes us right over the crater, but the view into it obscured by curling brownish smoke—then the straightened course in clear blue weather along the southern coast of Japan.

The sea like obscured glass, with square-sailed junks standing in towards the shore. Thick layers of cloud, but a wonderful sight to starboard: snow-capped Mount Fuji rising solitary above the cloud like a cone-shaped island in the sea. The last sight of Japan: its southern fringe of islands seen through breaks in the clouds. Then south-westwards over the ocean.

Formosa invisible under cloud. Four hours after leaving Tokyo—Hong Kong. Low cloud over the Peak; the mountain-circled harbour, crowded with shipping; the airport inevitably under reconstruction. The remarkable growth of the colony in the last ten years, especially on the Kowloon side, the vast new public authority housing schemes climbing like perforated cliffs above the waterfront, built to the astonishing density of 2,000 to the acre—even Dolphin Square is only 430.

Next stop Singapore; flat bright-green jungle with broad waterways; the curious pattern of hill terracing, like a maze in a child's puzzle-book, as we turn to land. Monsoon weather here. Then over the ocean again; Colombo after dark, but warm and humid at the palm-fringed airport; Bombay seen only as chains and clusters of glittering lights as far as the horizon.

eighteenth day

Still dark at Beirut; then a grey European dawn. Frankfurt next, and as the Boeing 707 climbs steeply into the wet sky on the last leg of the flight homeward, the only task remaining, before subsiding into the semi-coma a long night of air-travel induces, is to try to dig out from a myriad of confusing impressions of modern Japan and its architecture those that are unique and essential to it.

Streets teeming with people, polite, disciplined and purposeful, familiar with every up-to-date gadget but still charmingly carrying their possessions in knotted coloured handkerchiefs (*furoshiki*, they are called); the impetuous traffic, especially motor-bicycles; wirescape and the makeshift appearance of city streets; the minute meticulous scale of agriculture, looking more like extended kitchen gardens than arable farmland; the beautiful quality of the light that comes through paper screens. The tenacity of surviving domestic traditions, shown both in the cohesion of family life and the conservatism of its architecture (though the passing visitor sees disproportionately little of the private side of life, so this aspect of the architecture is perhaps too little represented in the foregoing narrative); the civilized ritual of the Japanese-style hotel—still an authentic way of life although (one mustn't deceive oneself) in less than a generation it may become a way of life only kept going so that tourists can sample 'the real Japan.'

Gardens of course, lovingly planned and cared for, incorporated in every building scheme however densely used the ground-space, and obviously close to the hearts of nearly all Japanese people, though the visitor trying to take in a whole national scene in a couple of weeks finds the famous Japanese gardening occupying an unexpectedly minor place in it, as also do the much publicized arts of flower arrangement and the formal tea-ceremony, which determine the whole character of Japan for the readers of American women's magazines.

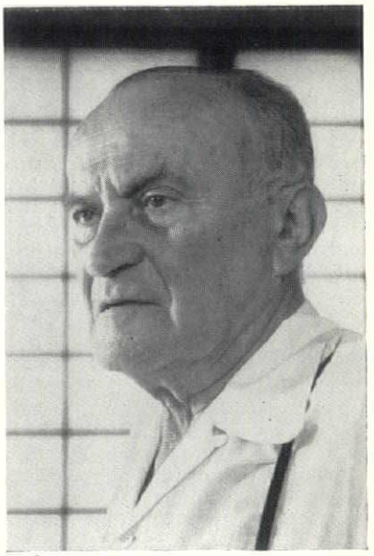
Children in great numbers, more emancipated than their uniforms might suggest, so rapidly detaching themselves from old habits and traditions that they will soon be hardly distinguishable, in their tastes, values and amusements, from any children in the Western world, especially American children. Already they are noticeably taller than their parents, which scientific opinion attributes to their legs growing longer because they spend far less of their lives sitting cross-legged on the *tatami*.

And as to architecture: it may be a truism that Japan is a country in transition, but in architecture it is also a quite inescapable circumstance. Not only are Western techniques, experiences and methods of building organization being even more energetically assimilated than in the past, and creating numerous vexing problems as part of the process, but the programmes architecture has to fulfil are in transition too. For example the question is often asked how soon the powerful, elaborately rationalized tradition of Japanese domestic architecture is going to re-emerge in modern guise, but the only answer can be that while ambiguity continues in the way houses are used—while Western furniture is still in the process of being introduced to confuse the ritual of Japanese-style living, while Japanese who live mostly in Western style still have one or two rooms in their house that they use in Japanese style, while the older generation conforms to one set of rules for dress and decor and domestic routine and the younger generation another—no clear-cut architectural solution can be looked for.

Nevertheless, out of the confusing, contradictory, changeable Japanese scene a nucleus of new buildings has already been created which, individually and collectively, makes a positive, original contribution to the world's architecture. Although the modern movement in Japan is only thirteen or fourteen years old, such buildings as those by Maekawa, Tange, Sakakura and their followers, to which special attention is given on these pages, have a maturity and sophistication unexcelled anywhere. What is more important, there is no pretence of finality in the achievement they represent; they are rather, in their Japanese context, a first break-through, the vital initial establishment of a modern design method and a recognizable modern aesthetic that can open the way for any number of subsequent developments—technical, industrial, sociological—and eventually perhaps for the broader conception of architecture's responsibilities in the fields of housing, town-planning and the like, that Japan now lacks. But with the energy and initiative being applied to fostering it, this is a conception Japan will not lack for long.

THE ARCHITECTS

Biographical notes on some of the leading modern architects practising in Japan, printed in order of seniority, and accompanied by pictures of characteristic buildings of theirs not included in the foregoing pages.

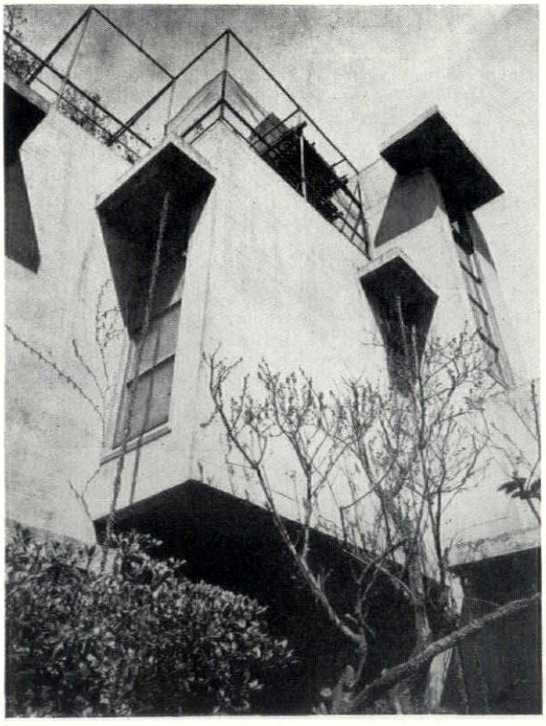


171, *Antonin Raymond.*

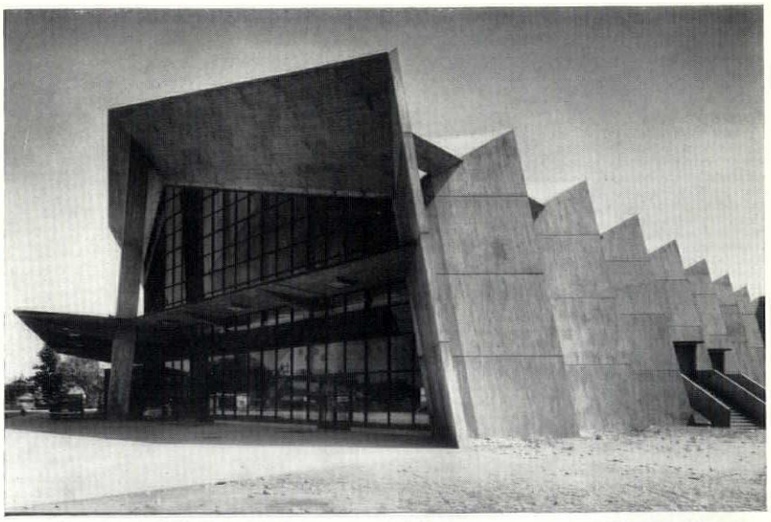
Antonin Raymond, b.1890

The father of modern architecture in Japan. He was born in what is now Czechoslovakia, educated at the University of Prague and went to America in 1910 where he entered the New York office of Cass Gilbert, who was then working on the Woolworth Building. Raymond supervised its construction. He returned to Europe in 1914, and worked as a painter in Italy where he met Noemi Pernessin, who became his wife and who ever since has been his architectural partner also. He returned soon to New York and was invited by Frank Lloyd Wright to join him at Taliesin. He stayed there for a year, leaving because Jacques Copeau offered him the job of remodelling the Garrick theatre, New York, for the French theatrical company *Le Vieux Colombier*, a venture backed by the French Government. After serving in the US Army he returned to Taliesin in 1919, at Wright's invitation, to work on the designs for the Imperial Hotel, Tokyo.

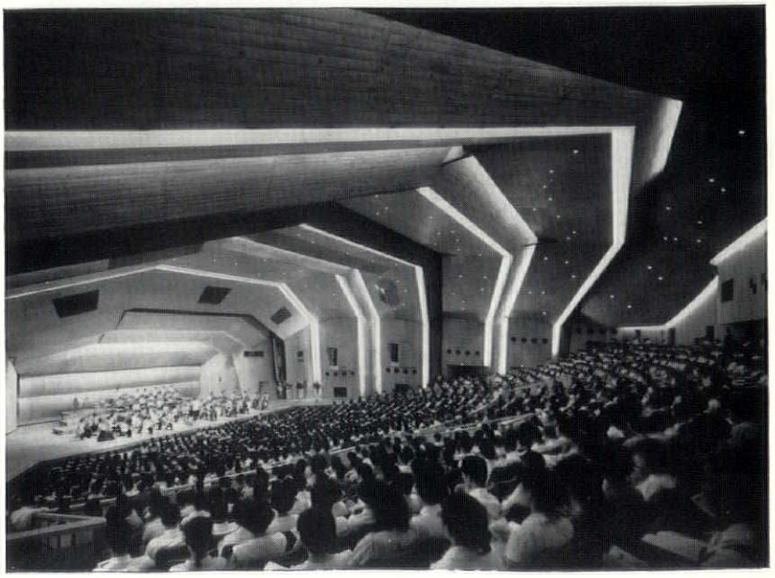
At the end of that year he accompanied Wright to Japan and stayed while the hotel (page 159) was erected. He set up in practice on his own in Tokyo and was one of the first to see the relationship between Japanese vernacular architecture and the modern ideas then emerging in Europe. Raymond's work was at first strongly influenced by Wright and then by Auguste Perret (he acquired a young Czech assistant, Bedrich Feurstein, who had been a pupil of Perret). Especially in the Perret style was the first large job he was given, St. Luke's Hospital, Tokyo, 1928. He also had in his office a number of young Japanese architects who became leading figures in the modern movement in post-war Japan, among them Junzo Yoshi-



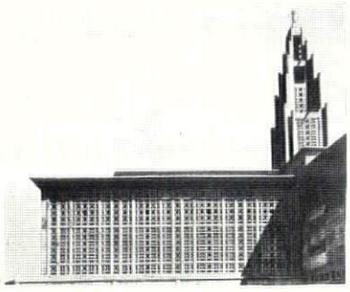
172



174



175



173

Pre-war buildings by Antonin Raymond: 172, *the house he built in Tokyo for his own use in* 1923—*the first example of exposed reinforced concrete.* 173, *chapel for the Women's Christian College, Tokyo,* 1934, *showing the passing influence of Auguste Perret.*

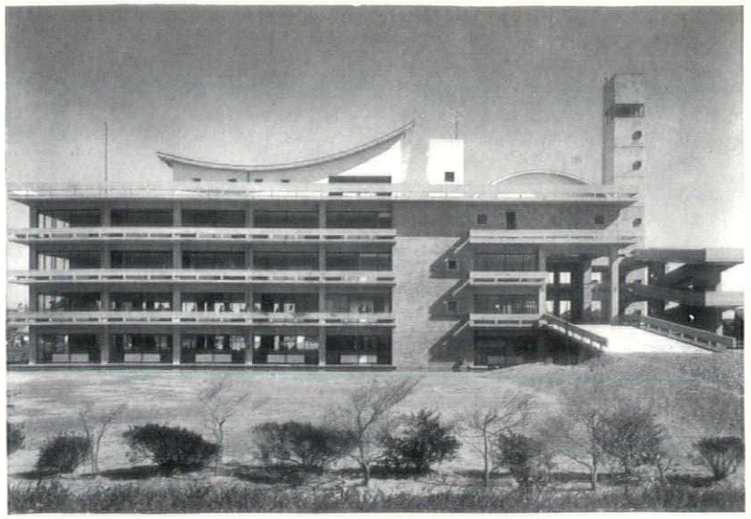
On the right, Raymond's newest building: the Gunma music centre at Takasaki. 174, *the entrance.* 175, *auditorium in use.*

mura and Kunio Maekawa. Other jobs by Raymond at this time included a school, the Women's Christian College and several houses. Among the last were a house for himself in Tokyo, 1923, which was the first example of exposed concrete in Japan, and a country villa for himself at Karuizawa, 1933, with the main structure in timber and one-way pitched roofs covered in thatch, which was illustrated and admired all over the world. In the 1930s he also built a number of churches.

In 1937 he left Japan to design a dormitory building in Pondicherry, in French India, and from there returned to America, where he worked until 1947. In that year he came back to Japan where he has practised ever since. His first job was the *Reader's Digest* building in Tokyo, 1949, whose local influence is noted on page 219. Other buildings, apart from several houses and his own combined house and office in Tokyo, 1952 (page 217), include a bank in Nagoya, 1952 (page 203), staff flats for the US Embassy, Tokyo, 1952 (page 219), a number of churches (see pages 218–219), a library for Mitaka (Christian) University, Tokyo, 1959, and the Fuji country club, also 1959. His latest job, and one of his largest, is the Gunma Music Centre, a prefectural concert-hall and theatre at Takasaki. For projects now going forward in his office see page 218.

Togo Murano, b.1891

One of the Japanese pioneers of modern architecture. He was at Waseda University in Tokyo, but worked thereafter in Osaka where he started in practice in 1929 (after working in the office of Setu Watanabe) and where he has had his office ever since though he has built in many other cities as well. In 1925 he designed the Sogo department store in Osaka (page 194), which was certainly the first modern building in that city and probably (if Frank Lloyd Wright's Imperial Hotel at Tokyo is discounted) in the whole of Japan. He has also designed, in recent years in conjunction with his partner Tyuichi Mori, department stores in Tokyo, 1957 (also for Sogo), and in Nagoya, the municipal auditorium at Yonago (page 194), the Roman Catholic cathedral at Hiroshima, 1955 (page 173), city halls at Yawata, 1959, and Yokohama, 1959 (page 206), a library for Kausai-Gakuin University, 1959, extensions to the Miyako Hotel at Kyoto, 1960 (page 186), the New Osaka office building, 1961 (page 195), and a twelve-storey Literature Building for Waseda University, Tokyo, 1962. Murano also designed recently (1958) in semi-traditional style, at the request of the client, a new *Kabuki* theatre in Osaka (page 194). Next year he is to succeed Maekawa as president of the Japanese Architects' Association.



177, *Hajima city hall, by Junzo Sakakura*, 1959.

Sutemi Horiguchi, b.1895

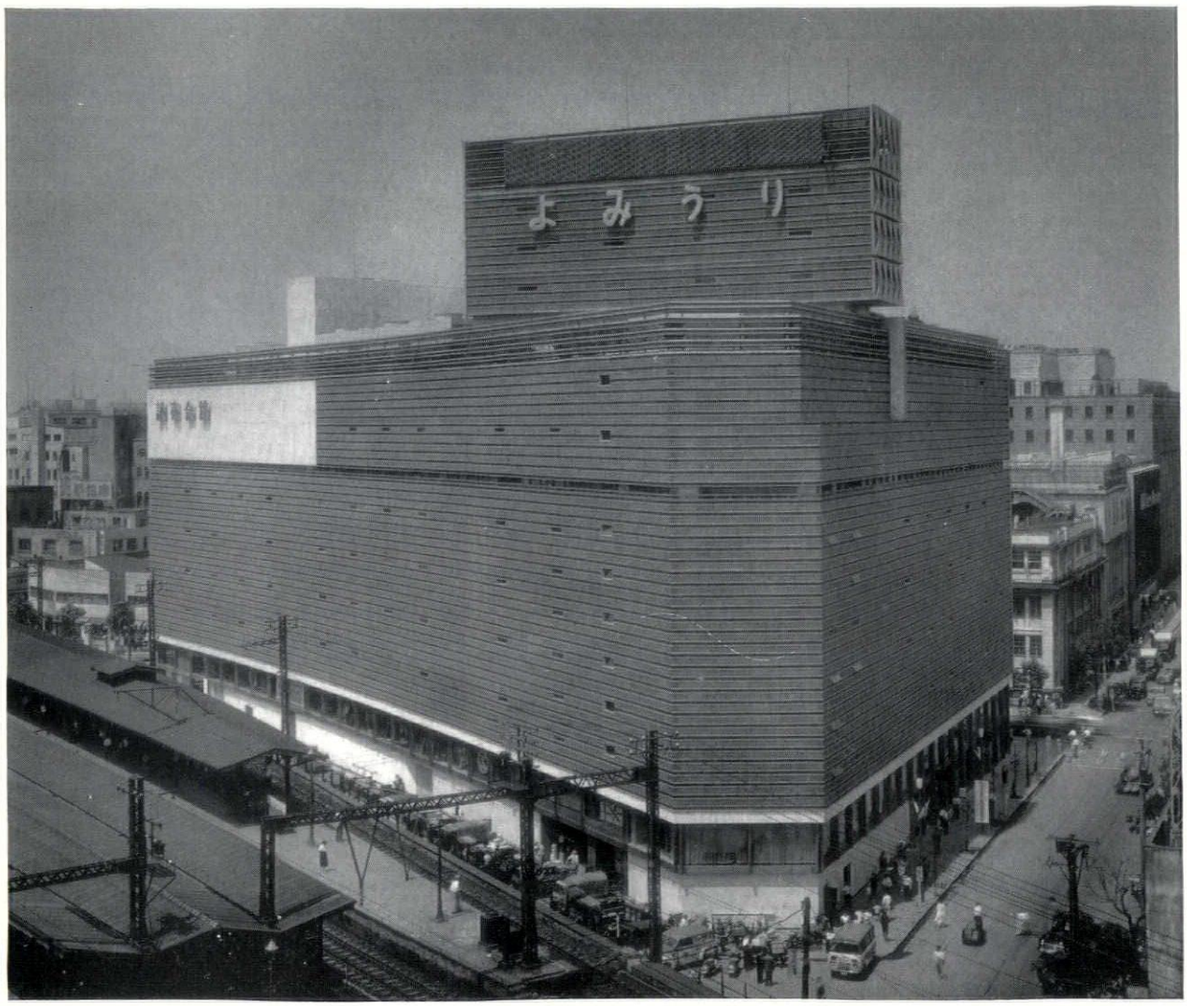
Another of the pioneers. His work serves as a link between the earlier exploitation of the modern elements in the traditional Japanese vernacular and the post-war modern idiom, his particular endeavour being the reinterpretation of the timber traditions of frame construction. He has written a number of books of which the first (published 1925) was *Modern Dutch Architecture* in which he introduced some of the European *avant-garde* work of the time to Japan. This book was the outcome of a journey to Europe which he made soon after completing his studies at the Imperial University, Tokyo, in 1920. He visited the *Bauhaus* and was particularly impressed by the work of the *Stijl* group in Holland. Before the war his practice was chiefly domestic. Since the war he has designed buildings for Meiji University, Tokyo (where he has been professor since 1949), the Japanese pavilion for the Sao Paolo biennale and the Hasshokan Hotel and adjoining golf-club-house at Nagoya, 1958 (pages 176 and 198).

Yoshiro Taniguchi, b.1904

Professor at the Imperial University, Tokyo (where he was also a student), since 1943 and, like Horiguchi, important as a link between the newer school of modern architects and the more conservative school that based its work more directly on Japanese vernacular traditions. He is also a writer. He has designed buildings for Keio University, industrial buildings at Chichibu, 1956, a number of houses, including a group of weekend houses at Karuizawa, an hotel outside Atami (page 176) and the Unknown Soldier's tomb and memorial alongside the moat of Chiyoda Palace, Tokyo, 1959.

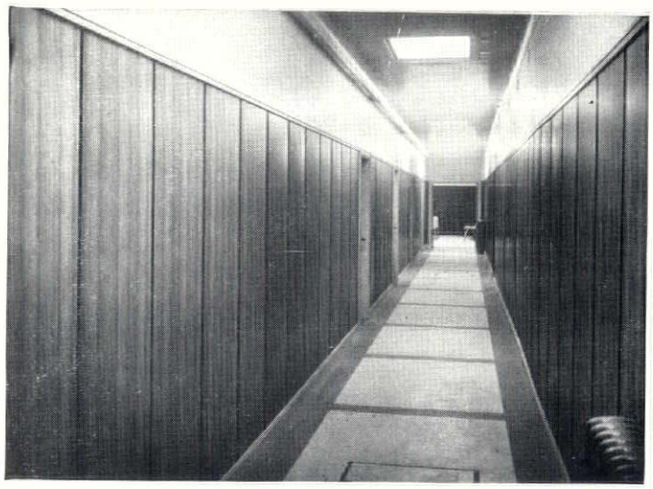
Junzo Sakakura, b.1904

The third of the trio of Japanese architects, the other two being Maekawa and Tange, who have led modern Japanese architecture towards its present high standing in the world. His ideas, and his handling of reinforced concrete, remain closest to those of Le

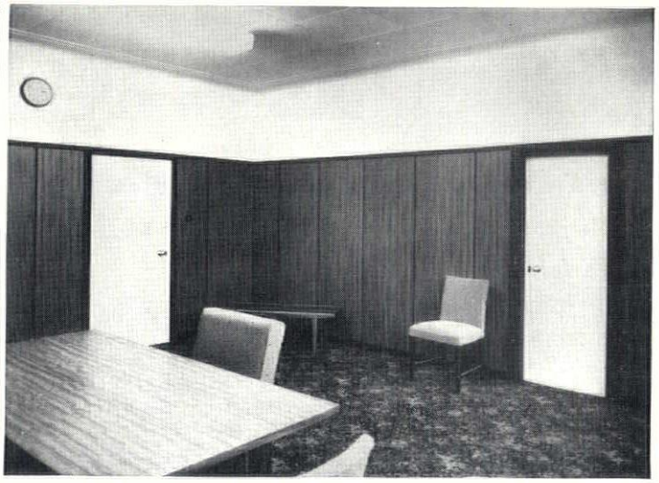


176, *the Sogo department store, Tokyo, by Togo Murano and his partner Tyuichi Mori*, 1957.

Northern Co-operative Society Ltd
specified
hardec



Main Corridor



Manager's Office

Throughout the premises of the Northern Co-operative Society Limited in Berryden Rd., Aberdeen, HARDEC was used for wall panelling.

Patterns Selected:
Walnut for the Manager's Office;
Elm in the Reception Area and Main Corridor;
Rosewood for the Conference Room.

Architects: A. C. L. Lemon, A.R.I.B.A.
Contractor: Alexander Hall & Co. Ltd, Granitehill Rd., Aberdeen



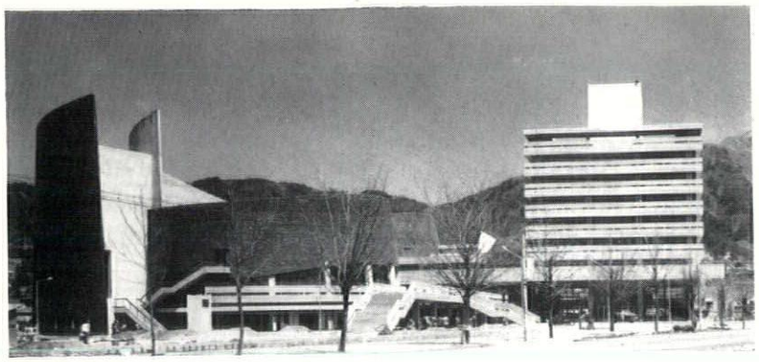
Reception Area

Hardec, the balanced melamine plastic faced hardboard

a product of Write now for full information and data sheets

AIRSCREW-WEYROC LIMITED Weybridge Surrey England

AP154





178 *and* 179, *Kure city hall, by Junzo Sakakura*, 1961.

Corbusier, in whose office he worked for eight years, 1929–37. Previously he had been at Tokyo University, but in the school of fine arts, not the school of architecture. While in Paris he designed the Japanese pavilion at the 1937 Paris exhibition, which first introduced modern Japanese design to the West.

Sakakura's first important building in Japan (like Maekawa and others he spent the war years in Manchuria) was the severely classical art gallery at Kamakura, 1952, one of the pioneer modern examples—see pages 174 and 213. He was also one of the executive architects for Le Corbusier's Museum of Western Art in Ueno Park, Tokyo, 1959 (page 165). Other buildings: Hajima city hall, 1959; Yamate high school gymnasium at Ashiya, in Hyogo prefecture; civic centre, Ueno; municipal gymnasium, Seijo; Silk Centre at Yokohama, 1959 (page 213); department store at Shibuya, Tokyo (page 214); pharmaceutical laboratories, Osaka, 1961 (page 196); Kure city hall, 1962.

Kunio Maekawa, b.1905

Has done more than anyone else to establish modern architectural concepts in Japan and has been (along with Tange and Sakakura) the pioneer among Japanese architects of the expressive use of reinforced concrete, which is Japan's special contribution to the modern architectural idiom. This work is strongly influenced by Le Corbusier, in whose office Maekawa spent two years (1928–30) after graduating from Tokyo University. On returning to Japan he worked with Antonin Raymond and at the same time formed a group of young architects to study and propagate the ideas he had learnt in Paris. He set up independently in 1935, but his career was interrupted by the war.

His first important building was the concert hall and library at Yokohama, 1954, for which he won the competition. This is one of the four classics of the first days of modern architecture in Japan—see pages 174 and 213. Other buildings: flats at Harumi, Tokyo, 1958 (page 207); cultural centre at Fukushima, 1958; community centre, Setagaya, Tokyo, 1959; festival hall, Ueno Park, Tokyo, 1960 (page 166); festival hall, Kyoto, 1961 (page 185); buildings for Gakushuin University, Tokyo, 1961 (page 163). Maekawa was also one of the three executive architects (along with Sakakura and Yoshizaka) for Le Corbusier's Museum of Western Art in Tokyo, 1959 (page 165), and the architect of the Japanese pavilion at the Brussels exhibition of 1958. He is this year's president of the Japanese Society of Architects—see page 160. He visited England in 1961 as leading Japanese delegate to the International Union of Architects' sixth congress in London and is a member of the IUA's executive committee.

Masachika Murata, b.1906

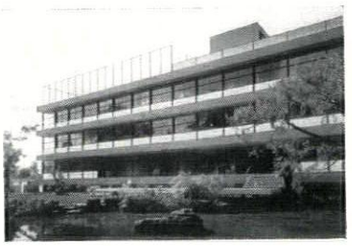
Was at Tokyo school of art and then studied architecture, first as a pupil of Shinichiro Okada and then with Kameki Tsuchiura. He then went to Europe, and although he did not work there as an architect, his subsequent work in Japan has more in common with contemporary European styles and is less evidently Japanese than that of most of the architects whose work is shown here. He was in Manchuria during the war and set up practice in Japan afterwards, beginning with an office building in Yokohama. He specialized in country clubs and hotels (Aichi; Oyamadai, Tokyo; Nagoya, 1954; Kirishima, 1957) until he was appointed architect to work with the engineer Yoshikatsu Tsuboi on the large group of buildings in Tokyo for international trade fairs, 1959—see page 208. Murata also designed the Tokyo municipal swimming stadium at Sendagaya, 1958, and is now working on a secondary athletics stadium for the 1964 Olympic Games at Komazawa Park, Tokyo.

Junzo Yoshimura, b.1908

A specialist in domestic work and interiors, having begun as a student of Japanese historical traditions at Tokyo art school. He worked in Antonin Raymond's office in Tokyo and then, in the early war years, in Raymond's New York office. He stayed some years in America, designing among other things an exhibition house at the Museum of Modern Art, 1954. On his return to Japan he became professor at Tokyo College of Art and has designed a number of houses, a hospital at Kambara and the Kokusai Hotel in the centre of Kyoto, 1961 (page 187).

Isao Shibaoka, b.1911

Studied at Tokyo University and has been in private practice since 1949. He has specialized in housing, and has designed several housing schemes for the employees of industrial companies (at Yonago and on the northern island of Hokkaido, 1952; at Makiyama, 1953; at Fukuoka, 1956). These gave him more scope for dealing with the layout and grouping of buildings than has come within the experience of most of the modern architects. Other buildings include hospitals and a cultural centre for the Tochigi prefecture, and additions to an hotel at Kaike (page 184). His houses include his own house in Tokyo, which also contains his office.

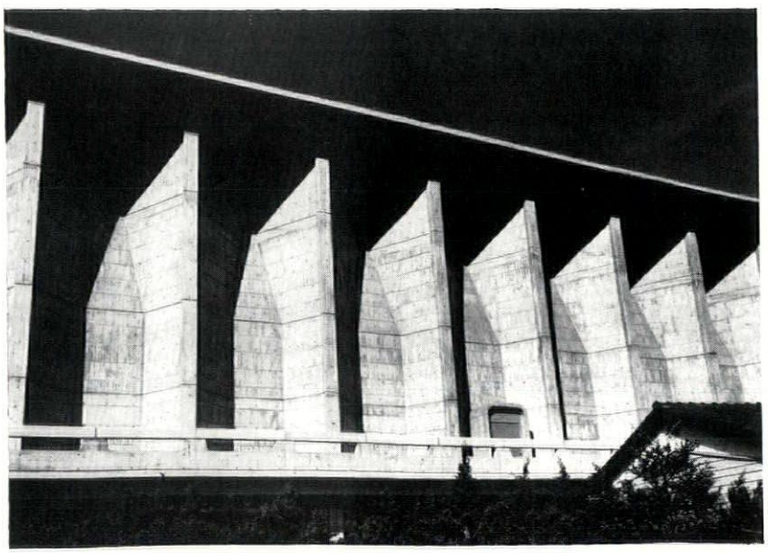


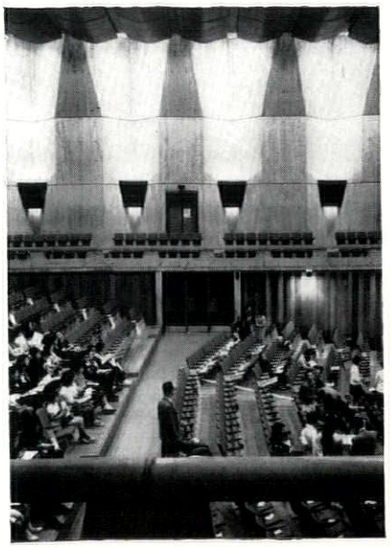
182, *postal and savings office, Kyoto, by Hideo Kosaka*, 1955.

Hideo Kosaka, b.1912

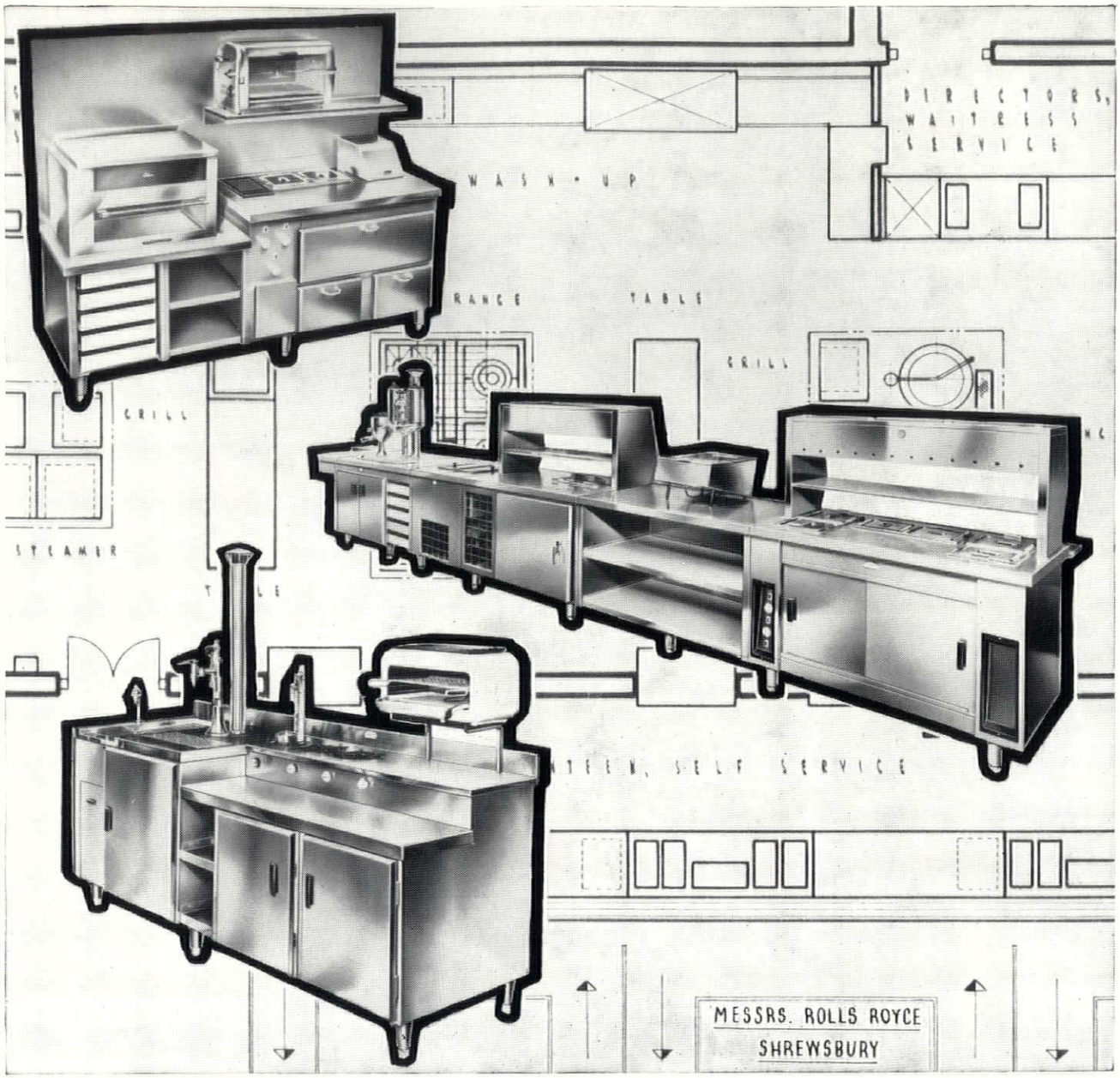
The outstanding official architect in Japan, though he has also designed a number of important

THE ARCHITECTS





180 *and* 181, *exterior (side wall) and interior of auditorium, Setagaya community centre, Tokyo, by Kunio Maekawa*, 1959



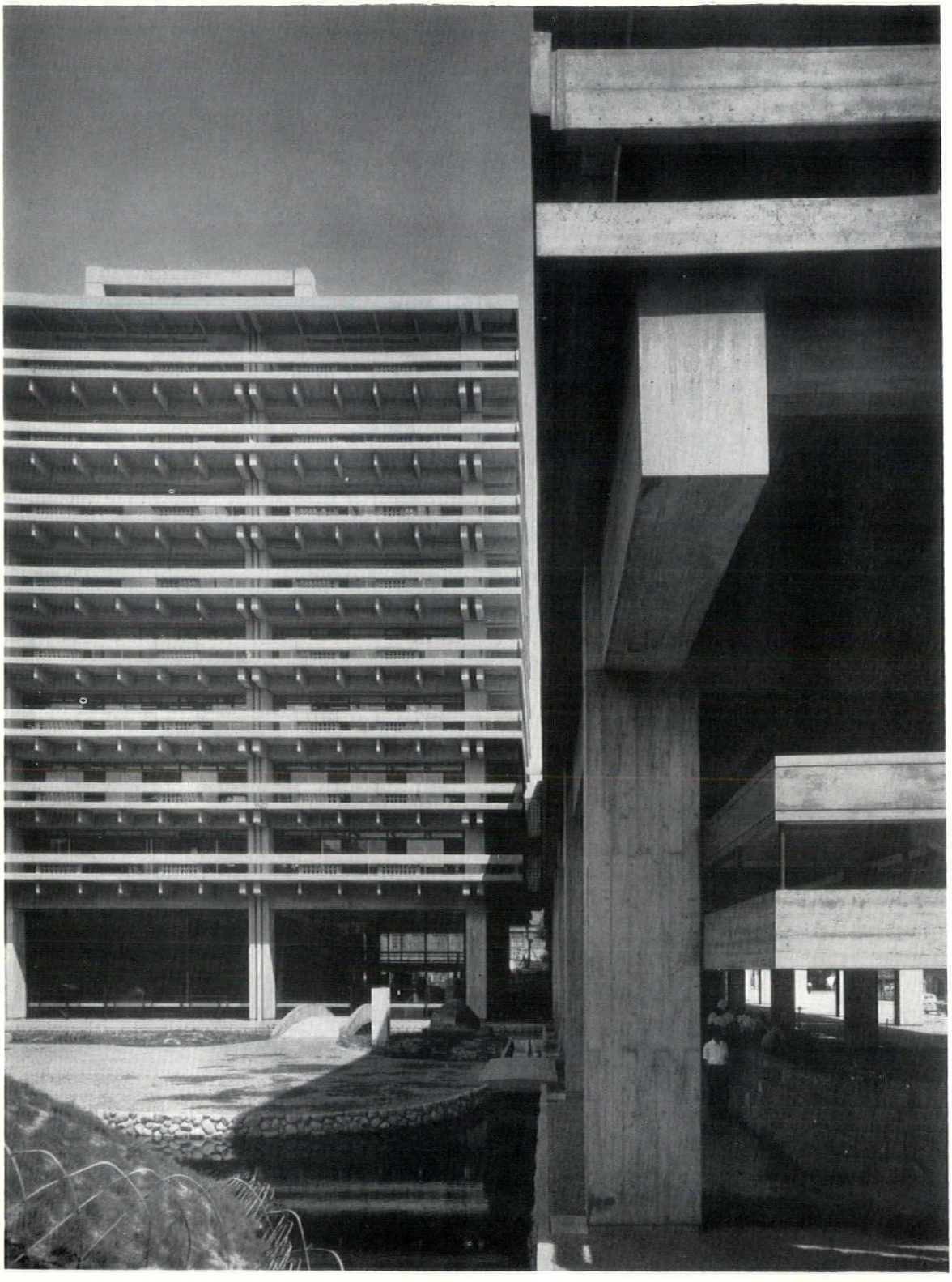
By appointment to Her Majesty The Queen Manufacturers of Kitchen Equipment

STILL'S the blueprint for better catering

As with all blueprints, everything necessary to help and assist architects engaged upon catering projects is included in Still's advisory service. This service has been devised to take the whole job out of the architect's hands—should he wish it—or work with him if preferred. The taking over of complete installations . . . the supply of layouts and all equipment . . . the design of new or modernisation of existing premises—are all covered in the unique Still's Blueprint for Catering. All this plus the experience and knowledge gained by Stills in their 80 years of practical experience. Should you require further information, please write to us and we shall be pleased to send you our illustrated brochure.

W. M. STILL & SONS LTD. 29/31 GREVILLE STREET, LONDON E.C.1. Tel: HOLborn 3744

Branches at
BRISTOL
MANCHESTER
GLASGOW
AP 349



183, *Kagawa prefectural offices at Takamatsu, by Kenzo Tange*, 1958.

buildings privately. He has been a senior member of the architects' department of the Ministry of Posts and Telegraphs since 1937 and its director since 1954, and it is due to him that postal buildings in Japan have an architectural quality found in no other Government buildings. He studied at Tokyo University, graduated in 1935 and spent a short time in Matsuda's office before joining the postal ministry.

The most important postal buildings for which he has been responsible are at Kyoto, 1955, Sapporo, 1957, Hiroshima, 1958, and Nagoya, 1959 (page 204). Buildings by Kosaka of other types include insurance offices at Sendai, buildings at Tokyo airport, 1955, a department store at Komatsu, the Aichi prefectural hall and art gallery at Nagoya (page 199) which he won in competition in 1954 but which was executed by the prefectural government architects (completed 1959), and the Foreign Ministry building in Tokyo, 1960, the first central government building in a modern style.

Kenzo Tange, b.1913

The best known outside Japan of the modern Japanese architects and one of the three leading members of the movement that has placed Japan on the international map during the last ten years, the others being Maekawa and Sakakura. As well as through his buildings, Tange has exercised influence, especially on the younger generation, as a writer and teacher (at Tokyo University), and through his planning studies, such as his development plan for the Tokyo area (first published in *Shinkenchiku* in March, 1961, and then, in English, in pamphlet form). He lectured in the USA (Massachusetts Institute of Technology), 1959–60.

He studied at Tokyo University (1935–38 and 1942–45), after which he worked in Maekawa's office. His first completed building was an exhibition gallery at Kobe, 1950; his most important early building the memorial hall at Hiroshima (pages 172 and 174), designed in the same year, which is the first of the four buildings that pioneered the exposed-concrete, Le Corbusier-influenced style. Another was his Tokyo city hall of 1956, which he won in competition (page 174). Other buildings: library for Tsuda College, Tokyo, 1933; assembly halls at Matsuyama, 1953, Bisai, 1957, and Shizuoka, 1958; town halls at Shimizu, 1954, Kurayoshi, 1956, Imabari (his birthplace), 1958, and Kurashiki, 1960 (see AR, February, 1962); printing works at Namazu, 1954, and Haramachi, 1955; Sogetsu Art (flower-arrangement) Centre, Tokyo, 1957 (page 209), Kagawa prefectural offices, Takamatsu, 1958; office building, Osaka, 1960 (page 195); hotel, Atami, 1961 (page 202); country club, Totsuka, 1962 (page 205); Nichinan cultural centre, Kyushu, 1962. For projects he is now working on, see page 214.

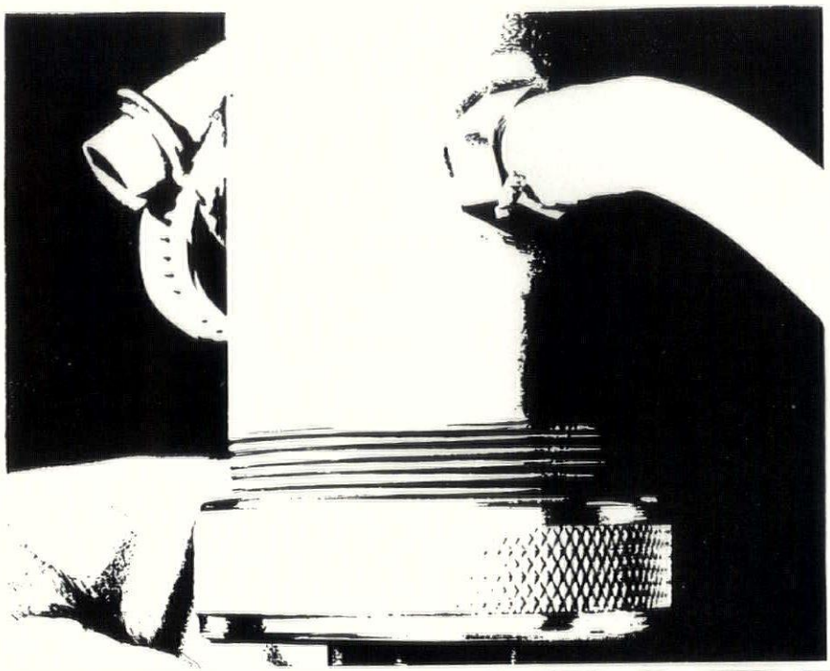
Tange is part author (with Noboru Kawazoe) of a handsome new book (1962) on the Ise shrine (page 197), with photographs of great beauty by Yoshio Watanabe.

Hiroshi Oe, b.1913

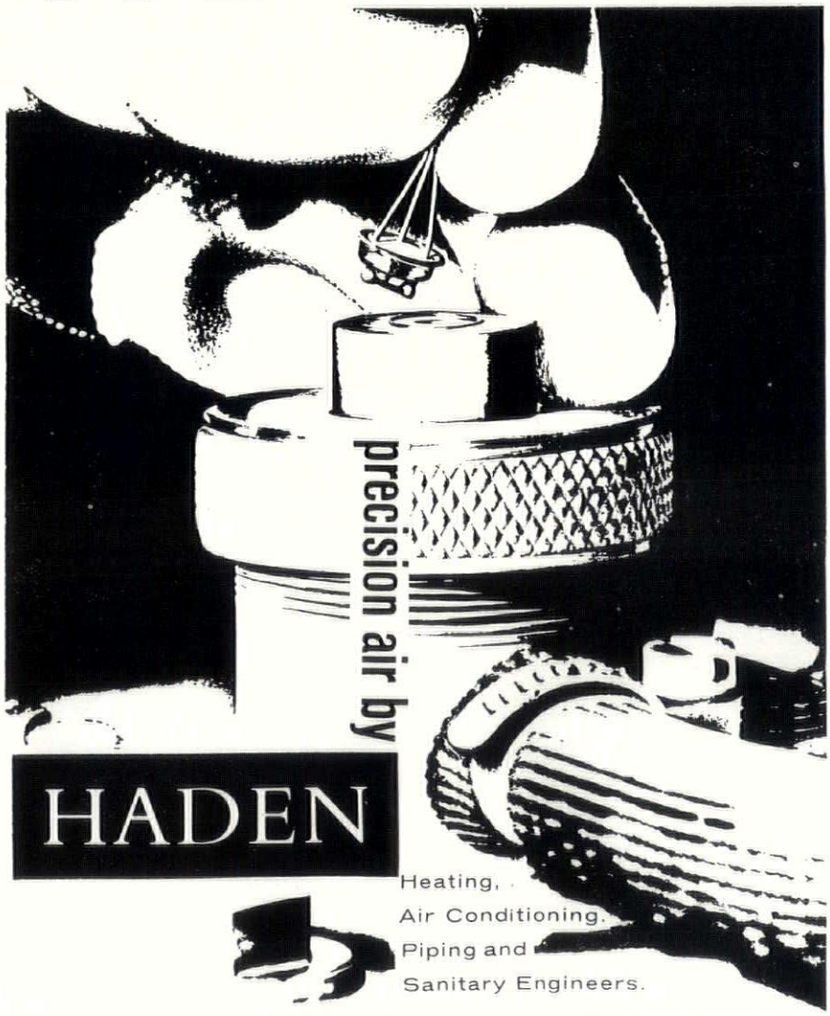
Specializes in school and university buildings. Besides being a practising architect he is professor at Hosei University, Tokyo, for whom he designed, in 1953 (completed 1958), an important group of buildings in reinforced concrete, almost the only buildings of architectural note put up by the many universities in Tokyo (page 210). He graduated from Tokyo University, and his buildings include houses, an office block (the Miki Building) in Tokyo and several schools, most notably his two Toyoeiwa-Sogakuin schools.

Takamasa Yoshizaka, b.1917

Professor at Waseda University and a writer (his books include one on Le Corbusier and a translation of *Le Modulor*) as well as a

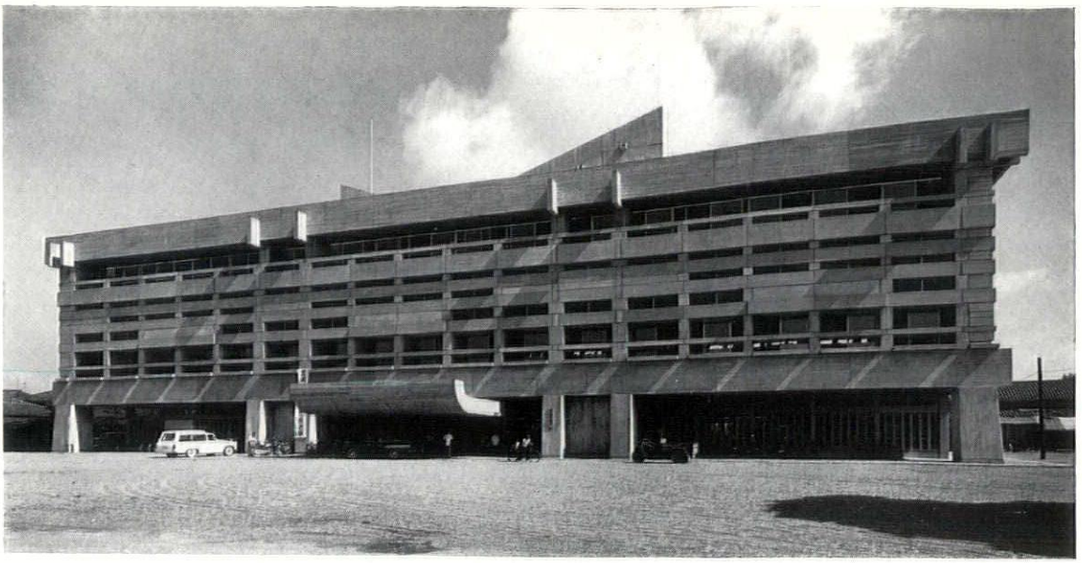


TRANSISTORS are TOUCHY ABOUT AIR

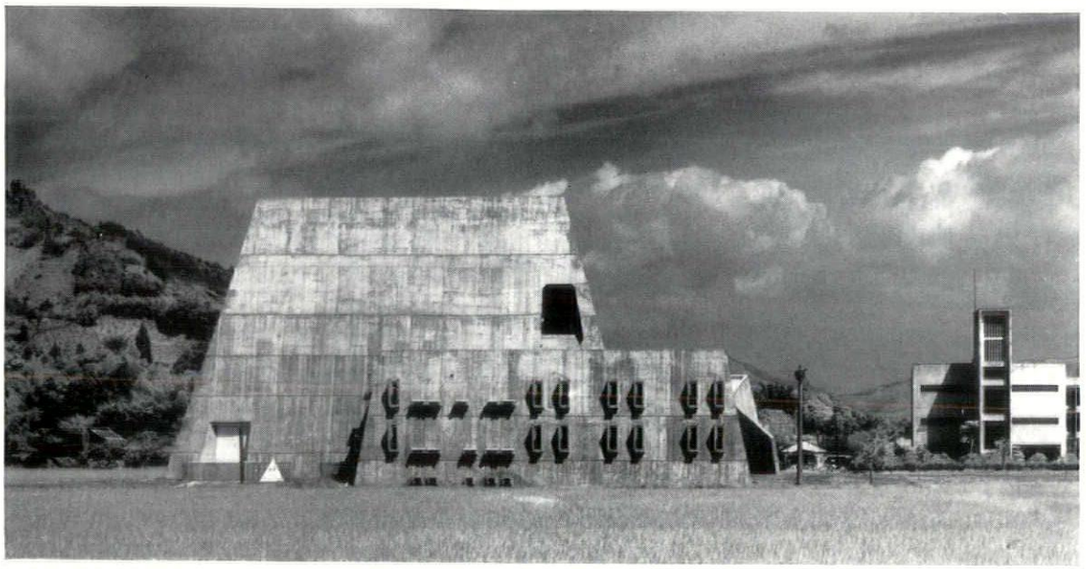


but only during manufacture. Transistors, the tiny, versatile newcomers that are revolutionizing the Radio and Electronics industries, must be made under very precise conditions. Once made, they put up with anything. Basically they consist of a crystal of Germanium or Silicon in a highly purified form (less than one part in 100 million of impurity) which is artificially 'contaminated' with a minute amount of another substance, under strictly controlled conditions. This is where Haden come in with 'Precision Air'. A transistor shop is air conditioned by Haden to very precise limits of Temperature, Humidity and Filtration. And just how precise is 'Precision Air'? It very much depends on what you do and what you need, and Haden technical people can give you advice on this too. But if you need, say, Temperature maintained to an accuracy of 0·1°C, Humidity varying only 5%, and Filtration at better than 98% of particles 5 microns in diameter; if you need air of this order of precision, then Haden have supplied it, and can do it for you.

G. N. HADEN & SONS LIMITED, 7/12 TAVISTOCK SQUARE, LONDON, W.C.1. Branches throughout the U.K; also in Africa, Middle East and Far East.



184, *city hall, Kurashiki, by Kenzo Tange*, 1960.



185, *cultural centre, Nichinan, by Kenzo Tange*, 1962.

practising architect. After a childhood spent in Europe (his father was a diplomat), he studied architecture at Waseda and stayed on there as a research graduate. In 1950 he went to Paris and spent three years in Le Corbusier's office. Since his return to Japan he has built houses in Tokyo and Kobe, the Japanese pavilion for the Venice *biennale*, 1956, lecture-rooms for Meisei University, Osaka, 1958, a teaching block for Kaisei University, Nagasaki, 1959, and a town-hall at Gotsu, 1962 (page 179). He was one of the three Japanese architects (Maekawa and Sakakura being the others) who acted as executive architects for Le Corbusier's Museum of Western Art in Ueno Park, Tokyo, 1959 (page 105).

Yoshinobu Ashihara, b.1918

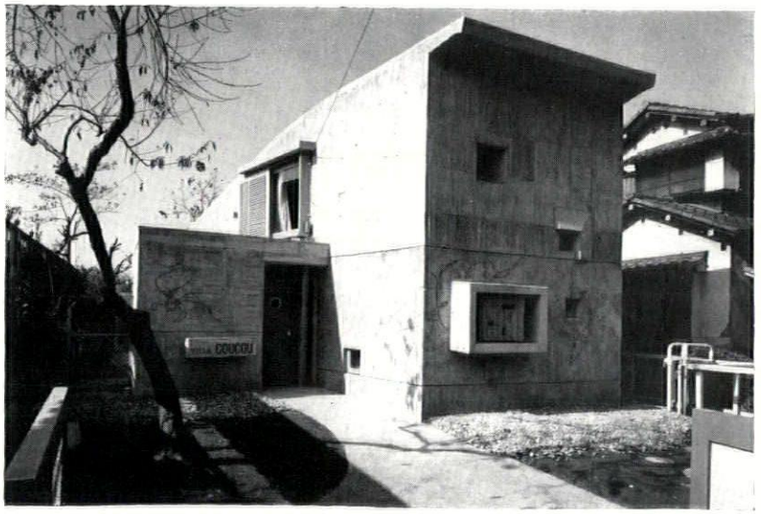
Graduated at Tokyo University and, after the war, entered Sakakura's office. In 1949 he set up on his own and designed a health centre at Yawata. In 1952 he went to America on a Fulbright scholarship, first to Yale and then to Harvard. After taking his Master's degree at Harvard he worked with Marcel Breuer. He returned to Japan in 1954 and has designed a number of houses, an office building (the Chuon-Koron building) in Tokyo, a women's hostel in Yokohama, an industrial club at Matsukama, the municipal hospital at Yokohama, 1959 (page 212), and the Nikko hotel in the centre of Tokyo, 1961. He is now working on a gymnastics hall at Komazawa Park, Tokyo, which (together with Murata's athletics stadium) will form part of the secondary arena of the 1964 Olympic games.

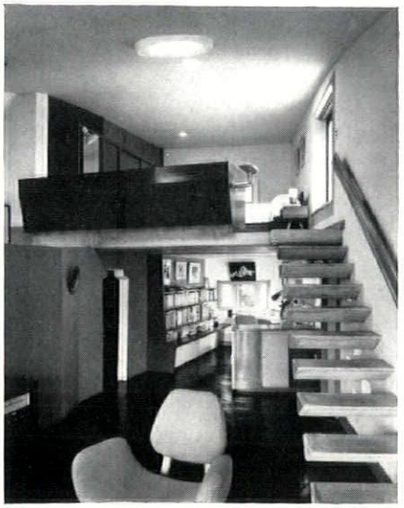
Masato Otaka, b.1923

A member of the five-man 'Metabolism' group—see under Kiyonori Kikutake below and on pages 214–215—whose town-planning studies are an important lead into the future. He was at Tokyo University and then in Maekawa's office, where he played a large part in the design of the concert-hall and library at Yokohama (pages 174 and 213), the cultural centre at Fukushima and the Harumi housing project (page 207). He has recently set up practice on his own.

Kiyonori Kikutake, b.1928

One of the most notable of the younger generation of architects which is following the lead of the small group—Maekawa, Tange, Sakakura—which established modern architecture in Japan as the West now knows and admires it. He and a group of young architects, some of whom had been fellow students with him at Waseda University under Pro-





186 *and* 187, *exterior and interior of a house in Tokyo (Villa Coucou) by Takamasa Yoshizaka*, 1957.



Think what you can save with EVERGLEAM vinyl

Here's a far better, quicker, cheaper way to decorate and protect walls, pillars, counter and table tops, sides of cabinets—even ceilings! Cover them with good, flexible, solidly built Evergleam vinyl by Goodyear. Just look at these advantages:

Durable. Won't crack, chip, warp, swell or rot. Resists dirt, scuffing, dilute acids, alkalis, alcohol. Stands the 'hot-pan' test.

Flexible. Curves easily round the sharpest corners. No joints, no edging strips!

No waxing. No scrubbing. A damp cloth keeps it sparkling clean.

Decorative. In an array of sealed-in colours, patterns, textures.

Used by organisations such as Butlins Ltd., C. & A. Modes Ltd., London Co-operative Stores Ltd.

Rolls of EVERGLEAM come in waste-saving widths and lengths.

GOODYEAR

Where to get EVERGLEAM

ALLIED MANUFACTURING COMPANY (LONDON) LIMITED,
Sarena House, Islington Park Street, London, N.1
CAN 3333 (20 lines)

ROWE BROS. & CO. LIMITED,
39/45 Victoria Street, Bristol, 1
Bristol 23171

D. H. RIDOUT & CO. LIMITED,
12 Stedman Road, Southbourne
Bournemouth 43213

VOGUE PLASTICS LIMITED,
63 Paradise Street, Liverpool, 1
Liverpool Royal 4567

BLACKHEATH PLASTICS LIMITED,
3-4 Cardale Street, Blackheath, Birmingham
Blackheath 2028

GLOVER & WOOD LIMITED, OF LEEDS,
Victoria Works, Leeds, 11
Leeds 36071

F. H. THOMPSON LIMITED,
Skinnerburn Road, Newcastle
Newcastle 33194

GRAHAM & WYLIE LIMITED,
Greenhead Saw Mills, Mill Street, Bridgeton, Glasgow, S.E.
Bridgeton 4831

SAULBOARDS LIMITED,
Haymarket Chamber, Norwich
Norwich 21663

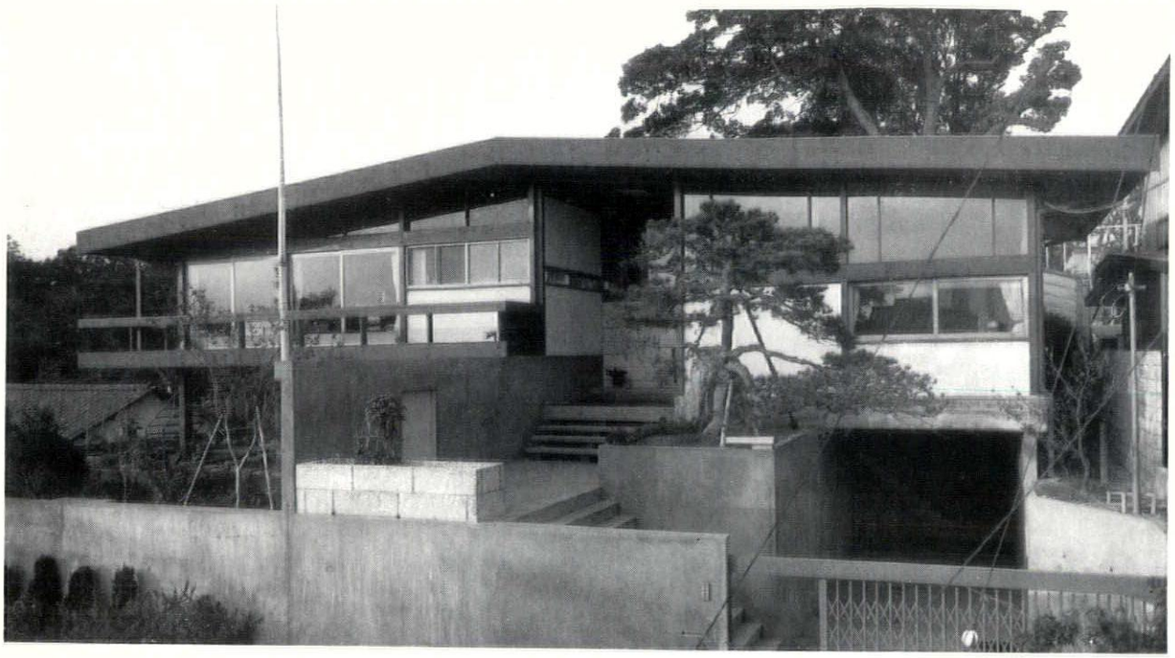
POST THIS COUPON
To: The Goodyear Tyre & Rubber Company (Gt. Britain) Ltd., Bushbury, Wolverhampton. Tel. 22321.
Please send me booklet CMF6 describing Goodyear vinyl Evergleam.

NAME _____

COMPANY _____

ADDRESS _____

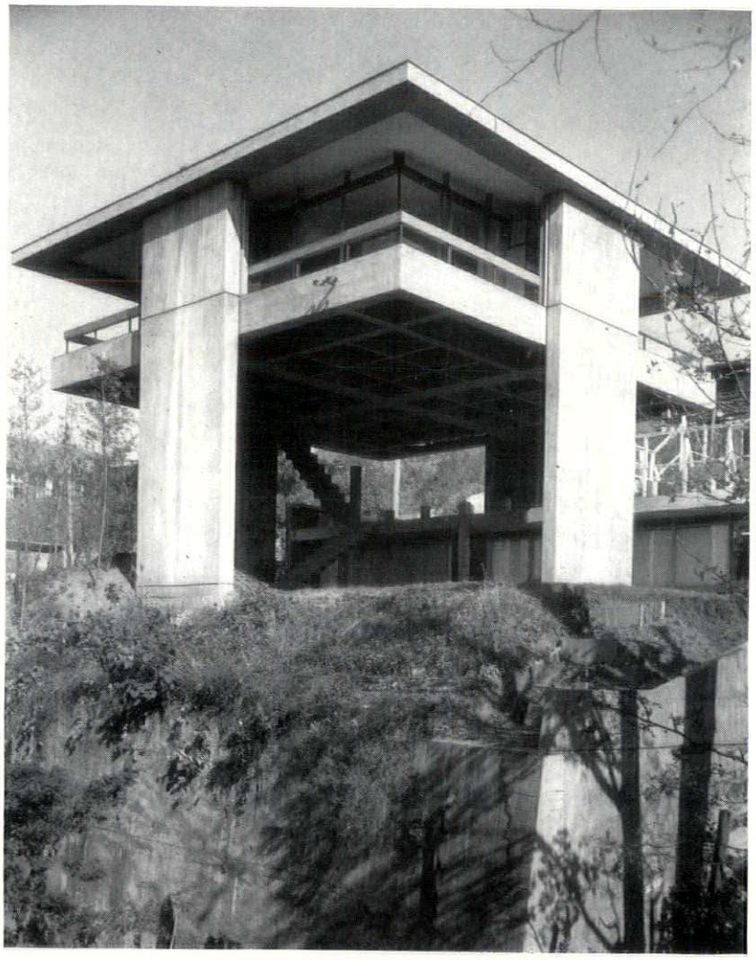
BLOCK LETTERS PLEASE



188, *house in Tokyo by Yoshinobu Ashihara.*

fessor Motowo Take (who brought Waseda during the 1950s to rival Tokyo University as the main nursery of advanced architectural ideas), undertook a number of research and town-planning projects, and published some of them under the collective imprint of the 'Metabolism' group—see pages 214–215. They constitute some of the most promising evidence of the younger Japanese architects' interest in social and town-planning ideas.

On leaving Waseda University Kikutake worked for a short time with the Takenaka contracting firm and with Murano and Mori in Osaka, but in 1953 he started on his own. He has built houses and flats (including a house for himself, 1958), a gymnasium for the Hitotsubashi secondary school in Tokyo (page 215), and the Shimane prefectural museum and art gallery at Matsue, 1959 (page 180)—see also page 178 for his treasury building now under construction at Izumo Grand Shrine.



189, *house in Tokyo (for his own occupation) by Kiyonori Kikutake, 1958.*

Fumihiko Maki, b.1928

Another of the group of young architects (see under Kikutake and Otaka) who have pioneered modern town-planning and similar research under Tange's tutelage, and a member of the 'Metabolism' group (see pages 214–215). Maki has the most international experience of the young Japanese architects. After graduating from Tokyo University, he took a Master's degree at Cranbrook Academy, USA, and went on from there to Harvard. He worked afterwards in the offices of Skidmore, Owings and Merrill, José Luis Sert and, back in Japan, Kenzo Tange. He has been responsible for one important building in Japan : the Toyoda auditorium at Nagoya University (page 115), the commission for which was first given to the Takenaka contracting firm and passed by them to Maki, who has a family connection with the firm. Maki is now in America, serving as an assistant professor at Washington University.

In 1961 he published (in conjunction with the Takenaka contracting company) an unusually far-sighted redevelopment plan for the Dojima area of Osaka, just across the river from the main business centre, in which he introduces the idea of the pedestrian precinct and the super-block containing communal services.

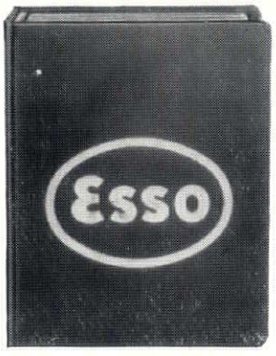


190 (*below*), *an example of modern Japanese industrial architecture: iron foundry at Saitama, Tokyo, by Naibu Akashi—see page 216.*



A complete guide to oil-fired heating

—IN ONE PRACTICAL VOLUME



There's never been *anything* like the Esso Guide to House Heating. At last, in a single volume, a comprehensive and exhaustive study of every aspect of the problem of domestic heating.

The Esso Guide to House Heating is written by Richard Eve, B.Arch. (McGill), ARIBA, with the technical assistance of the Esso Petroleum Co. Ltd., and is illustrated by Bernard Myers, ARCA. It contains over 500 pages divided into twelve self-contained sections. Together with an introduction and index, the sections are supplied in a stout 'loose leaf' binder, from which each can easily be removed. Thus several people can use the work at the same time.

SECTION HEADINGS INCLUDE: Oil and domestic heating · Heat and comfort · Domestic hot water supply · Space Heating by hot water · Heat loss calculations · Pipe and pump calculations · Embedded-coil panel heating · Space heating by warm air · Burners, boiler units and ancilliaries · Conversion to oil · Estimating the cost · Testing and servicing.

Price 4 gns from: Esso Petroleum Company Limited, 36 Queen Anne's Gate, London, S.W.1.

Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames. Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter

Reinforced Concrete for flexibility in design

BRC

Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

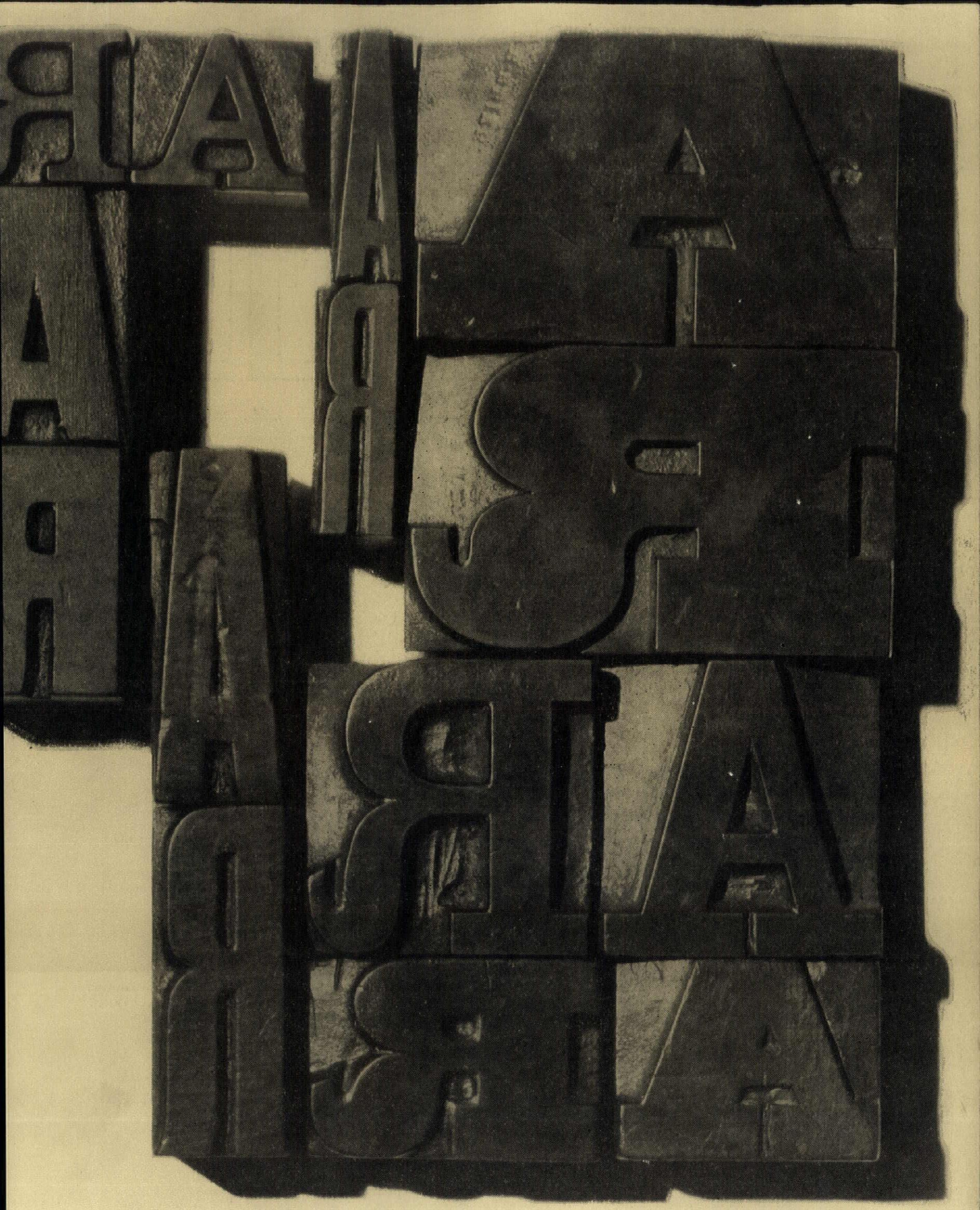


THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

London, Birmingham, Bristol, Chelmsford, Leeds, Leicester, Liverpool, Manchester, Newcastle, Cardiff, Glasgow, Dublin, Belfast, Bulawayo, Calcutta, Johannesburg, Lagos, Singapore, Vancouver.

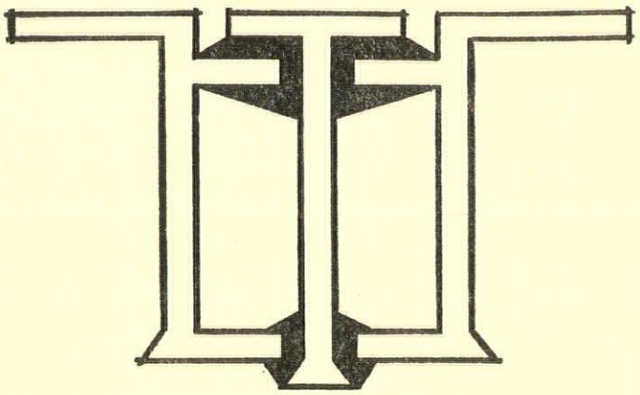
Export Sales: 54 Grosvenor Street, London, W.1

M-W.1077

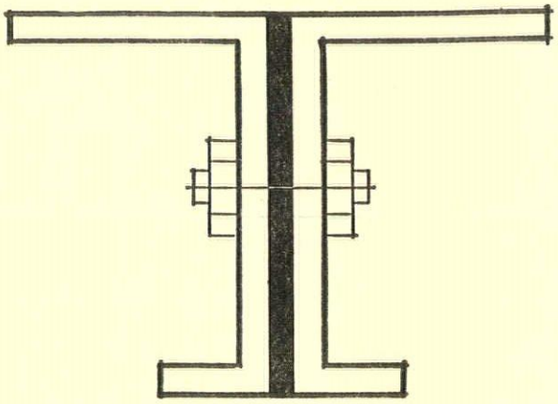


THE ARCHITECTURAL REVIEW VOLUME CXXXII NUMBER 788 OCTOBER 1962 FIVE SHILLINGS

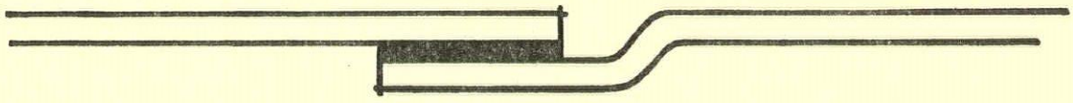
NUMBER 2 - METAL TO METAL JOINTS



Bostik Mastic No. 1560



Prestik



Prestik

Finding the right sealing compound

These days it's not easy for the architect or the builder to keep bang up-to-date with the latest improvements. This is especially the case with sealing compounds, where the already large number designed to do specialists' jobs is steadily increasing. That's why 'Bostik', who have just about every sealing compound you require, have prepared these notes on the **four main types** of sealing compound.

'Prestik' preformed sealing strips will maintain a flexible seal against years of weathering. They expand and contract with the joint that they're sealing, will not harden, get brittle or shrink. All grades exclude dust, rain and snow: the special grades resist petrol and oil.

'Bostik' butyl-based mastics are made from a butyl rubber base which gives permanent elasticity. They have very good ageing and weathering qualities, and strong adhesion to most building materials. Some form a dry tack-free surface in a few hours and a tough resilient seal in a few days, others remain tacky. They will not shrink, crack or slump.

'Bostik' gun mastic is based on oils and resins and provides a good general-purpose, easily applied sealant for joints which will not be subject to large movements.

'Bostikol' sealing compounds are based on polysulphide synthetic rubber. Applied in liquid form, they cure in position without shrinking and form a tough, permanent, weathertight seal to resist all arduous conditions met in curtain wall structures. A wide choice of grades provides different physical characteristics to suit different conditions.

One last word about 'Bostik' research: if you've any problems to do with sealing or bonding building materials, don't hesitate to get in touch with us. It's our job. We may have solved your problem already. And if we haven't, we'll get down to it right away.

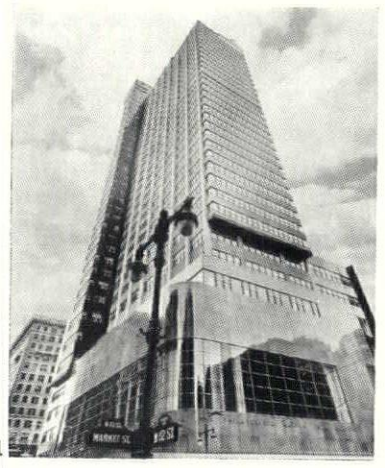
Write to: 'Bostik' Building Advisory Department, B.B. Chemical Co. Ltd, Leicester.

Bostik MAN FRIDAY TO THE BUILDING INDUSTRY

The words 'Bostik', 'Bostikol' and 'Prestik' are trademarks registered in the U.K. and many other countries. Manufactured by Bostik Ltd., Leicester, England.

PSFS

Historical studies are not a staple item of news for WORLD, but occasionally one comes along which bears directly on a building, or class of buildings that is current news. On these grounds, and on the score of absorbing architectural interest, the May 1962 issue of the *SAH Journal* certainly requires notice to be taken—it is virtually a special issue on Howe and Lescaze's famous Philadelphia Savings Fund Skyscraper, 1. In a long and well-studied article, Professor Jordy chronicles the conception of the design, the relationship between architects, client and constructor, even the part played by the real-estate manager, and sees the finished work against the background of the professional biographies of the parties



involved, and the then current state of international modern architecture; Robert Stern considers the building as a key point in the evolution from Beaux-Arts aesthetics to the Rationalism of the International Style; and there is an appendix of relevant correspondence from Howe to the clients.

Although it seems to be assumed throughout both studies that thirty years is long enough to reduce a building safely to the status of an historical monument, what emerges, particularly from Jordy's documentation of the design process and its problems, is that PSFS is still intensely relevant to-day, for all it was designed in 1929 and completed in 1932. Putting aside one or two purely period effects, such as Lescaze's favourite curved corner gimmick, what remains is a slab skyscraper with exposed structure (*à la* Inland Steel) standing on a podium (Lever House fashion) and backed by a tower for services and lifts (somewhat in the Crown-Zellerbach mode). Here, *pace* Giedion and Winston Weismann, is surely the first modern skyscraper, and it is Rockefeller Centre that is a mere historical monument; while James M. Wilcox, then President of PSFS, must with equal surety be regarded as the first modern business client, whose toughness, vision, shrewdness and practicality did almost as much as the skill of the architects to make the building the landmark it undoubtedly is. One can only regret that some other modern monuments, such as the Schocken store, were not similarly documented while they stood.

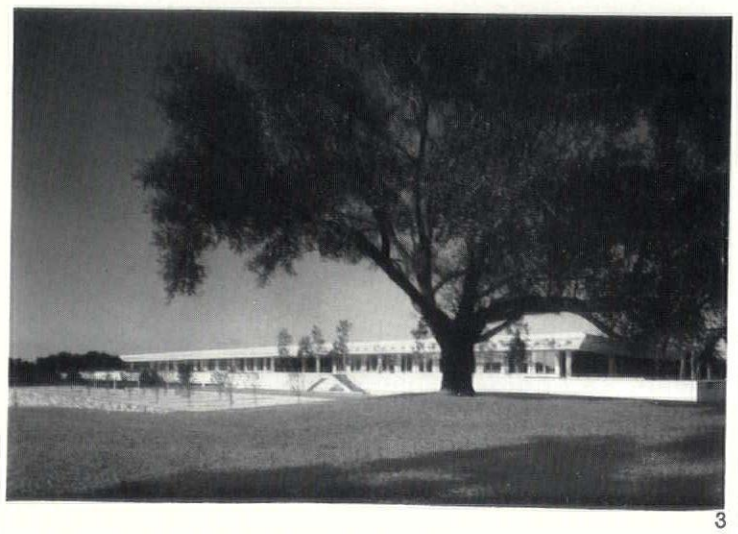


2

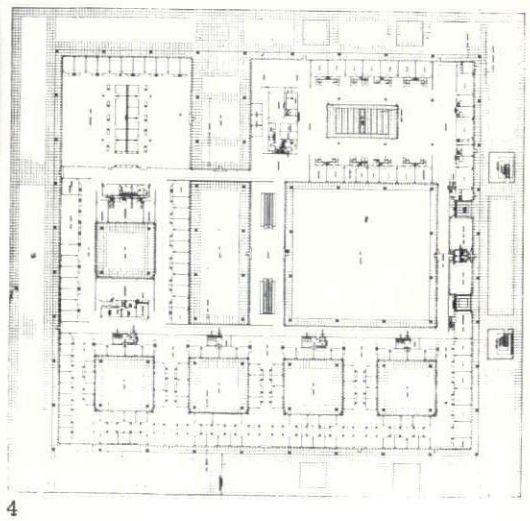
UPJOHN–SOM

Pharmaceutical Palace in Kalamazoo

Considering the superb quality of the architecture, 2, astoundingly little notice has been taken of the Upjohn Company office-block at Kalamazoo, Mich., by Skidmore, Owings and Merrill. Perhaps this is a measure of the extent to which Chicago Classicism is out nowadays, perhaps it is simply that it looks, superficially, like a sort of repeat of Connecticut General. In fact, this enormous square block, 432 ft. each way, and apparently single storey, 3, when viewed from outside, is a far more striking demonstration of the strength and vitality of the Beaux-Arts tradition than most of the more fashionable designs currently coming from the East Coast. The plan, 4, is an almost Guadetesque composition—and here, for once, this makes sense, for every great *Prix de Rome* plan of Guadet's era was, like this, effectively a single-storey affair in which the planning art lay in the juxtaposing of functional volumes on



3



4

ACKNOWLEDGMENTS

COVER: Toomey Arphot. WORLD, pages 231–234: 1, *Journal of the Society of Architectural Historians;* 2, 3, 5, 6, Ezra Stoller Associates; 7–9, *Werk;* 10–17, *l'Architecture Francaise;* 18, Mears Photography; 20-22, *Arkkitehti Arkitekten;* 23–25, *l'Architecture d'Aujourd'hui.* VIEWS AND REVIEWS, pages 235–237: 1, Derby Aerosurveys; 4, Galwey Arphot. FRONTISPIECE, page 238: National Gallery of Art, Washington D.C. ROYAL COLLEGE OF ART, SOUTH KENSINGTON, pages 242–249: 1, 4, 8, H. T. Cadbury-Brown; 2, 3, 7, 9, 11- 14, John R. Pantlin; 5, 6, 10, Banham Arphot. THE LANDSCAPE OF HYSTERIA, pages 250–260: 1, Port of New York Authority; 2, 3, 9–11, 13–18, 21–23, 25–28, Toomey Arphot; 3, 19, 20, 24, Raymond Spurrier; 6, Los Angeles Airport Photography; 7, Morley Baer; 8, K. Ashworth; 12, Norman Gold. STRAITJACKET OR ELASTIGIRDLE, pages 261–263: 6, 7, Aerofilms; 8–13, LCC. OFFICE BLOCK AT WALTON-ON-THAMES, pages 264–267: Galwey Arphot. CRITICISM, pages 268–274: 1, 6–9, Oscar Savio; 2, 5, 11, *L'architettura;* 3, 10, *Casabella*; 5, Publifoto Milano. INTERIOR DESIGN, pages 275–278; 1, 2, 6, H. T. Cadbury-Brown; 3, 5, 7, Banham Arphot; 4, John R. Pantlin. F. R. S. YORKE, 1906–1962, page 279: *Architect & Building News;* page 280, centre and bottom: Dell and Wainwright. LECTURE HALL BLOCK, COLLEGE OF SCIENCE & TECHNOLOGY, MANCHESTER, pages 281–283: Elsam, Mann and Cooper. EXTENSIONS TO ROYAL GRAMMAR SCHOOL, LANCASTER, pages 283–284: 1–3, Galwey Arphot; 4, George Robertson. MISCELLANY, pages 285–293: Exhibitions, 1–3, 6, 7, Giacomelli; Shrubs, 1, 2, 4, 6, 7, John Brookes; 3, J. E. Downward. Obituary, 1, 3–10, Nairn Arphot 2, John Mills; Applied Art, 3, 6, J. I. Heeres. Lampposts, 1, Toomey, Arphot; 2, 3, Galwey Arphot. SKILL, pages 294–302: 1, Gordon McLeish and Associates; 5, Gerald Fearnley; 6, Stanmore Studios; 10, 15, A. C. K. Ware.



The cover *shows, approximately to the size of life, the full set of A's and R's from alphabets of discarded wood letters found by Keith Ingham at Preston. Many printers have been disencumbering themselves of such Grotesques, Clarendons, Egyptians, etc., both in wood and metal, since the middle of the nineteen-thirties, only to find that they have come back into fashion again. The fact is that they are among the most naturally eloquent and harmonious display faces ever designed; their fall from grace in the Eric Gill period was a passing aberration based on an ill-placed regard for ghastly good taste.*

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

VOLUME 132 NUMBER 788
OCTOBER 1962

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents: Librerie Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

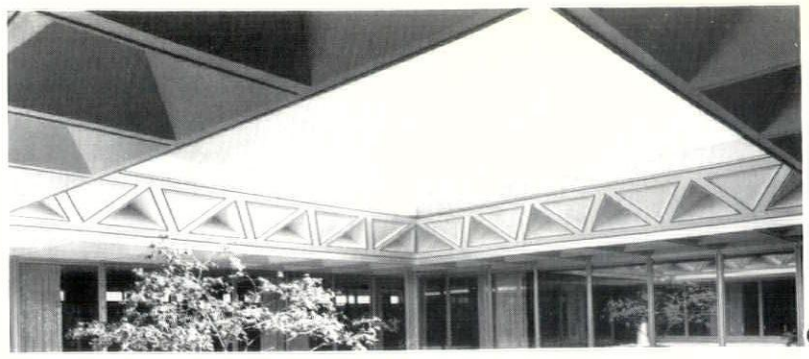
Directing Editors	*J. M. Richards* *Nikolaus Pevsner* *H. de C. Hastings* *Hugh Casson*
Executive Editor	*J. M. Richards*
Assistant Executive Editor	*Reyner Banham*
Assistant Editor (Production)	*William Slack*
Features Editor	*Kenneth Browne*
Technical Editor	*Lance Wright*
Assistant Editor (Counter-Attack)	*Ian Nairn*
Staff Photographers	*De Burgh Galwey* *W. J. Toomey*
Advertisement Manager	*F. G. Dunn*

CONTENTS

231 **World**
235 **Views and Reviews**
238 **Frontispiece**
239 **AJ/SfB:** *The Editors*
242 **Royal College of Art, South Kensington:** *Architect, H. T. Cadbury-Brown in association with Sir Hugh Casson and R. Y. Goodden*
250 **The Landscape of Hysteria**
1 The Obsolescent Airport: *Reyner Banham*
2 Towards a Clarified Aesthetic: *Raymond Spurrier*
261 **Townscape**
Straitjacket or ElastiGirdle
264 **Office Block at Walton-on-Thames:** *Architects, Sir John Burnet, Tait and Partners*
268 **Criticism**
La Rinascente Store, Rome: *Fello Atkinson*
275 **Interior Design**
Gulbenkian Halls, Royal College of Art: *Architect, H. T. Cadbury-Brown in association with Sir Hugh Casson and R. Y. Goodden*
279 **F. R. S. Yorke, 1906–1962:** *A memoir by E. Maxwell Fry*
281 **Lecture Hall Block, College of Science and Technology, Manchester:** *Architects, Cruikshank and Seward*
283 **Extensions to Royal Grammar School, Lancaster:** *Architects, C. B. Pearson and Son*
Miscellany
285 **Exhibitions**
287 **Shrubs**
288 **Obituary**
291 **Applied Art**
293 **Lamp-posts**
294 **Skill**
Ward Furniture:
3 Lighting and Communications: *Anthony Wylson*
302 **The Industry**
304 **Contractors, etc.**



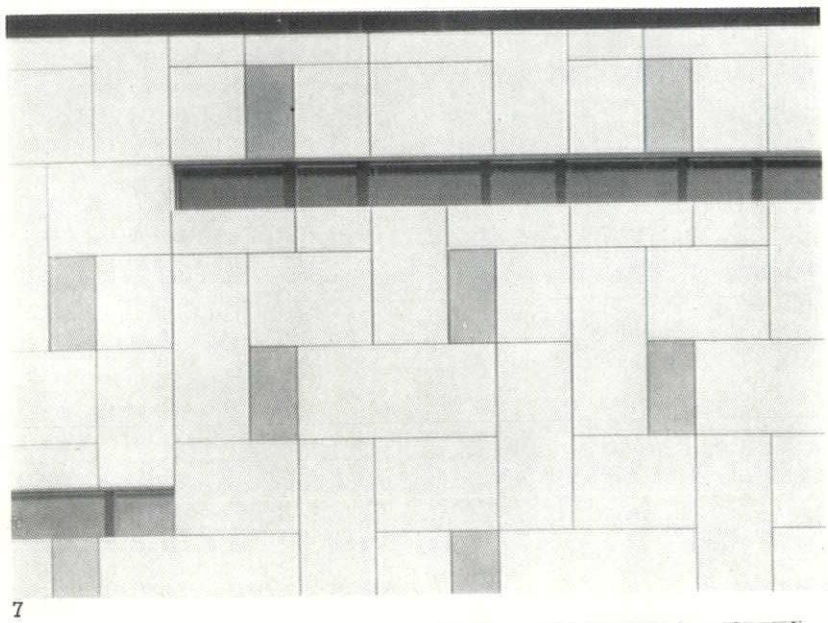
5



6

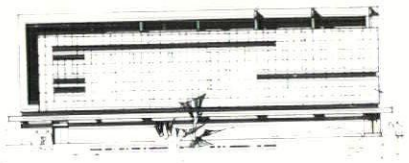
Upjohn

the same level, though at one point SOM have broken through into their basement to make a two-storey court, 5. The structure is relatively simple with the roof carried on a deep space frame, clad externally in porcelainized aluminium panels that produce a classically pure cornice, 6. Here, as in everything else about the building itself, the immense and craftsmanly professional competence of SOM is seen at its most reticently effective, but in the surrounding landscaping it becomes for once almost sensational—the big tree in 3 is itself part of the planting scheme, the long fall of the land part of the earth-moving, for this was originally a practically flat and featureless meadow.



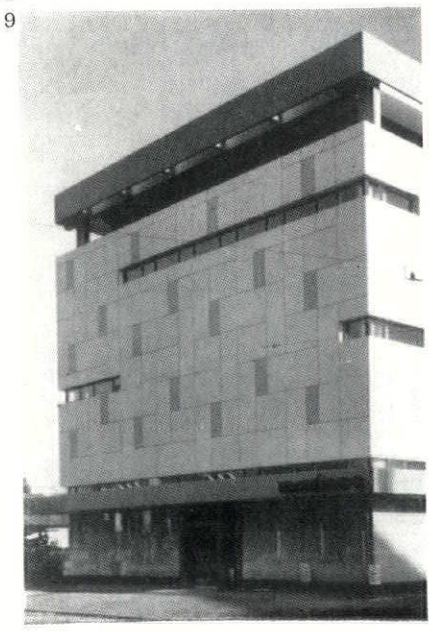
7

PATTERN



8

Much is heard of the debt of modern architecture to Mondriaan, but only rarely does anyone pay any of it back—this wall detail, 7, from *Werk* (August 1962), however, is a handsome repayment. Seen at its true scale, 9, in relation to the complete building, a shop in Heerbrugg, 8, by Hanspeter Nüesch, the effect is less strikingly Mondriaanesque and becomes simply a large repeat in blank wall *à la* Bijenkorf, a piece of pattern-making that probably has more to do with Le Corbusier's manipulation of facing slabs in his work of the 'thirties. For all the suavity of this exercise, however, the general problem of the treatment of the external walls of the artificially lit department store remains a long way from any solution sufficiently definitive to establish itself as a world norm, there is no master-example to act as either guide or tyrant, and every architect who comes up against this problem has the privilege, and burden, of solving it for himself from scratch.



9

ARCHITECTURE SOCIALE

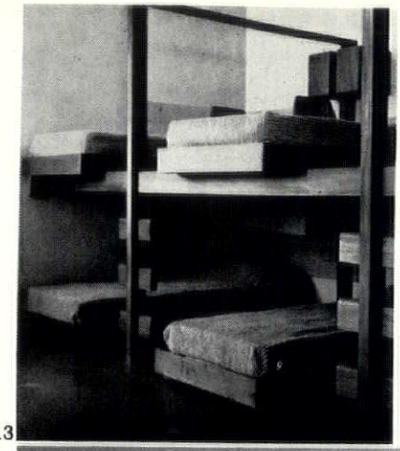
Medical and Public-Service Architecture in France

There can be no doubt that the editorial policy of *l'Architecture Française* in devoting each issue to a particular building type or related group of types tends to obscure the virtues of the good by burying them in large masses of the average. Thus no 237-238, devoted to social and health buildings contained much worthy work, in styles varying from Functionaries' Functional to Gimmick-Corbusian, but so uninspired that it took the shine off a sprinkling of much better buildings which, if no masterpieces, at least deserved further study, particularly in their details. Even among tougher competition, the sober virtues of the pediatric rehabilitation clinic at Antony, 10, by Debré, Balanda and Amanieux would stand out—indeed, in any French company their almost Scandinavian use of brick, 12, would be notable. By contrast, René Faublée's hostel at Morzine, 11,

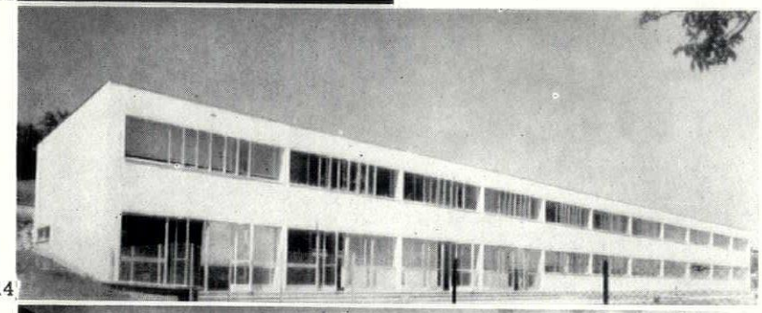








13



14



15



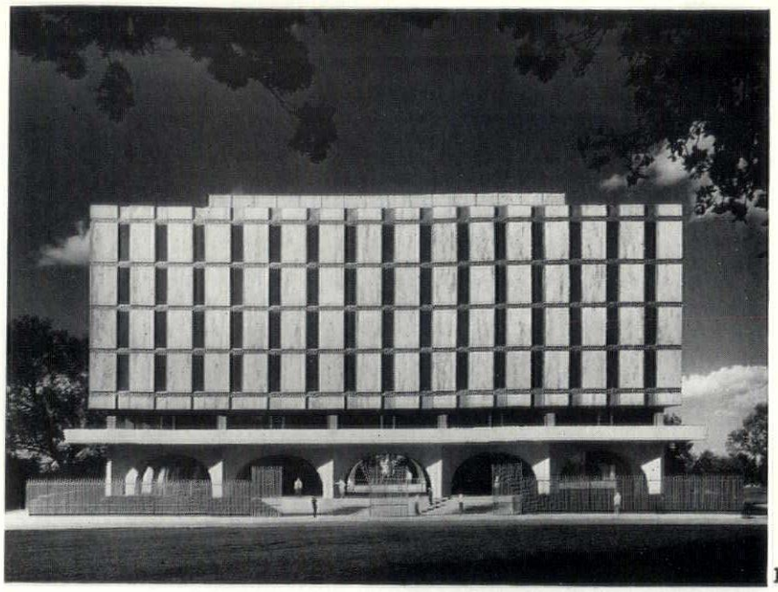
16



17

is apt to seem just another example of cliché-Alpinism—yet even here there is one extremely engaging detail to note: the manner of carrying the bunks in the dormitories, 13, and providing steps for access to the upper range.

There is also one general observation that is aroused by this issue of L'A.F. which concerns the exterior expression of cubicular interiors. Inevitably, a great deal of the architecture of health and social service will consist of small cells (consulting rooms, bedrooms, etc.) arranged in repetitive ranks. Although it is just possible to ignore this on the exterior, as in the alcoholics block at Nancy, 14 (an insidiously disturbing expression of the cold horrors of withdrawal symptoms, probably not intended by the architect, Paul la Mâche), a number of the schemes illustrated have elected to honour this expression by means of handed pairs of windows adjoining cross-walls—for instances, the Salvation Army Maternity hostel at the Porte des Lilas, by the two Verreys, 15, or the SCIC retirement home, 16, 17, by Fernand Leroy at Montreuil. It would be interesting to know the origins of this entirely sensible usage—its appearance in Denys Lasdun's work (Hallfield, Paddington) certainly anticipates these French examples, but does its use in AGIP motels?



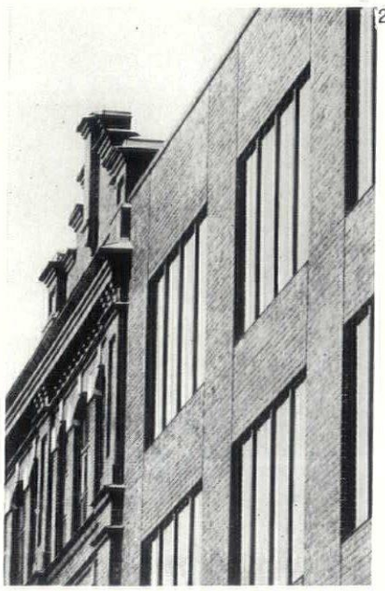
18



19

MEXICO EMBASSY

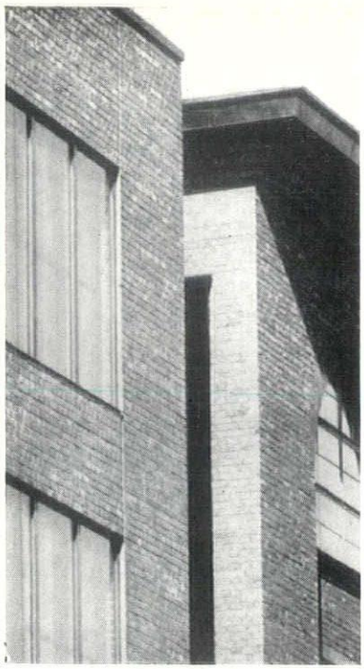
It appears possible that we may be on the threshold of a phase of US diplomatic architecture which, while unmistakably modern in bulk form, will be ornate in detail. Certain trends visible in the late Eero Saarinen's chancery in London can be seen in more outspoken form in the proposed embassy for Mexico City, 18, designed by Carlos Contreras (with Leonardo Zeevaert as engineer, and a Texan firm as consultants). Effectively, the main masses form a square arcaded block surrounding a central patio, 19, in which some parts have open galleries, but others repeat the fenestration pattern of alternating panels of white marble and tinted glass. Open or closed, however, the edge of each floor-slab will be marked by a decorative band, apparently in gold-anodized aluminium, and in patterns reminiscent of the decorative bands on, say, Ely Jacques Kahn's work of the late 'twenties. In these bands the sense of purely *appliqué* ornament is far stronger than in Saarinen's London Embassy, just as the broad forms of the arcading more consciously call to mind Mexican *portales*, than any of Saarinen's usages imitate local English forms. One hopes that the State Department knows what it is doing in encouraging this trend towards eclecticism and surface embroidery, but it is difficult not to feel that a more formidable impression of America's serious and constructive intentions might have resulted if the design had drawn more attention, say, to Zeevaert's ingenious overcoming of the difficulties of establishing adequate, earthquake-proof foundations in almost impossibly waterlogged soil.



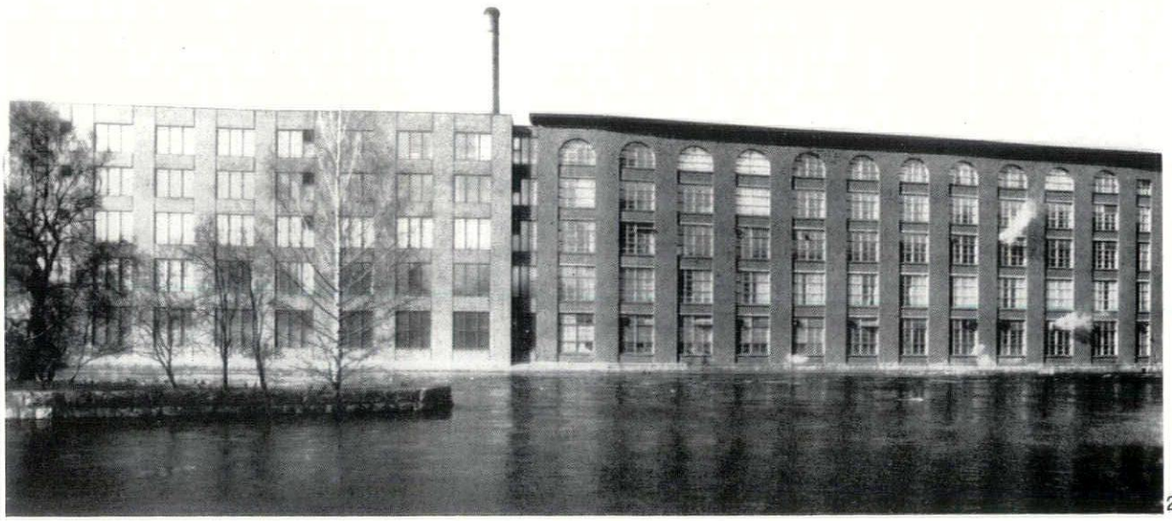
20

WARE-HOUSE MASTERS

Practitioners of the various so-called 'warehouse aesthetics' are rarely called upon to meet their masters on their own ground, and it is therefore heartening to see how well Kaija and Heikki Siren have managed to emerge from just such an encounter with the Finlayson-Forssa factory at Tampere. On the street side the meeting is inconclusive, 20, since the detailing of Sequin-Bronner's show-facade effec-



21



22

WAREHOUSE

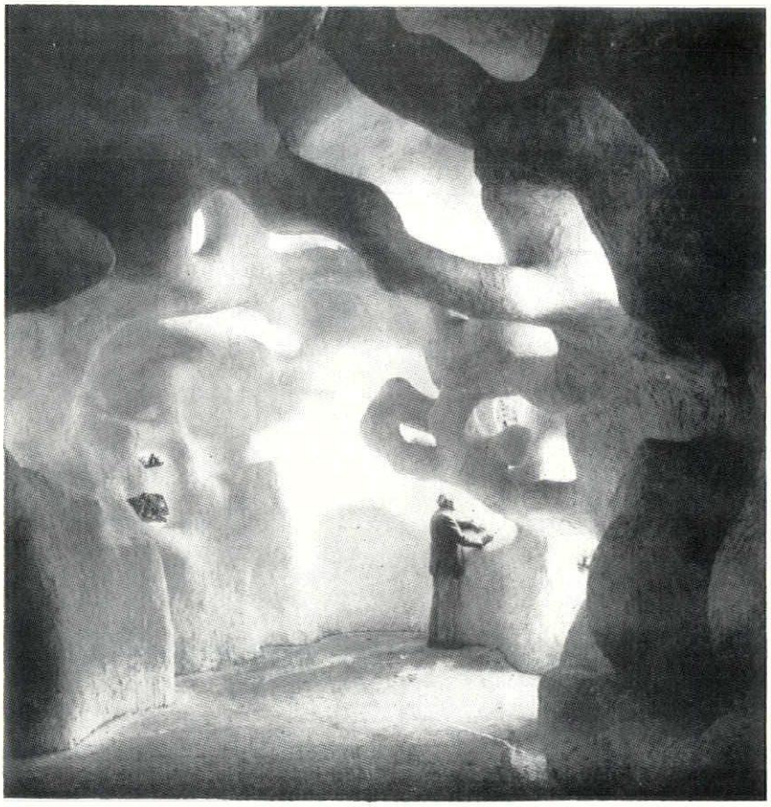
tively obscures any virtues it may possess in its massing. On the side towards the water, however, the Sirens were in faster company, for Jarl Eklund, who designed the dye-works block, 22, was clearly among the few people in the 'twenties who could genuinely design in the Functional Tradition without condescension yet without ceasing to be a true professional architect. The direct contrast between his work and the Sirens is extremely thought-provoking, for there are really only two points at issue (the bricks, bay-widths and floor-heights being identical)—what have the Sirens gained, or lost, by having their spandrels flush with the piers, instead of recessed like Eklund's; and what have they gained or lost by their treatment of the top floor as being effectively the equal of all others (give or take four courses of brickwork) instead of an unmistakable attic, 21, with lunettes and a cornice? Their work can stand up on its own by virtue of its ruthless simplicity and the shrewdness of its sparse detailing, but just one false touch, however minute, would have seemed a glaring error alongside Eklund's unmannered authority.

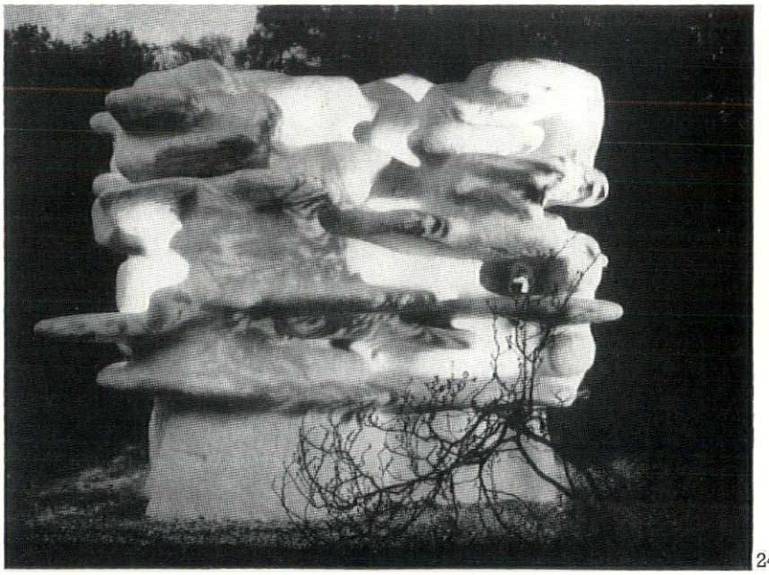
BLOC SCULPTÉ

Garden Architecture for an age of Fantasy

'Architecture is a hole in the ground,' Luigi Moretti is reported to have said once in despair, and the rational clarity of the progress of modern architecture has been interrupted, from time to time, by attempts (desperate or frivolous) at Neotroglodism, sometimes on a scale as vast as Paolo Soleri's *Mesa City*, more often on the more confidential scale of Sir Hugh Casson's hi-fi room at the Ideal Home Exhibition of 1958 (see AR for March of that year). And still they come . . . buried in the middle of a disappointingly routine special issue on fantastic architecture (Gaudi to Guedes and back in time for tea) *l'Architecture d'Aujourd'hui* (June-July 1962) recently produced a most engaging instant cave, 23, by no less a person than *le patron* himself, André Bloc.

23





24

In fact, this is the interior of a giant garden sculpture, 24, which Bloc launched during the summer with a major international party, so its place in the architecture of pleasure is thus established functionally, as well as typologically by its resemblance to those picturesque grottoes in which so many scions of noble lines were reputedly conceived in the eighteenth century. This same object appears, perfectly dead-pan, in advertisements for waterproof paints, 25, in the same issue, together with what appears to be the most creative misprint of the year, for the advertiser describes it as a 'sculpture habitacle' which latter word with its overtones of secret society (cénacle) and religious observance (tabernacle) gives a depth of unconscious reference that makes it a true 'den of imagination.'

25



views and reviews

MARGINALIA

GUTTON'S GREAT WORK

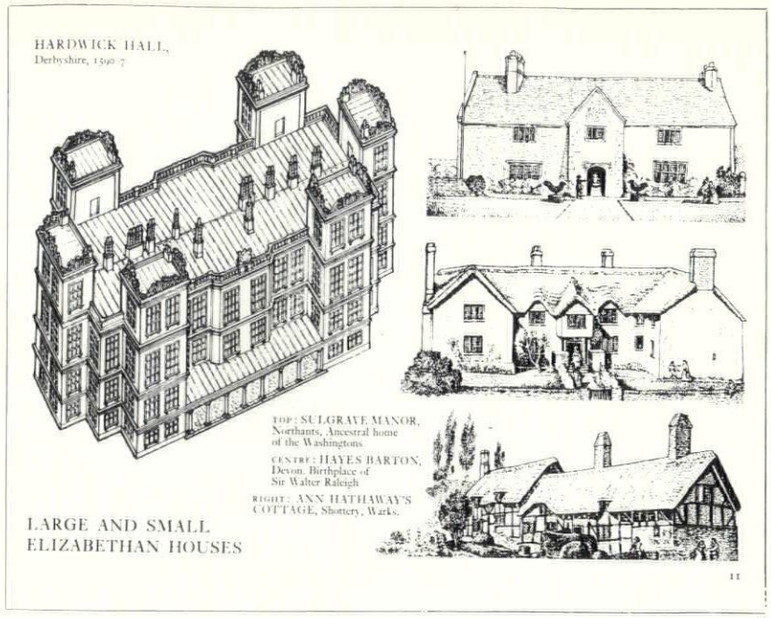
With *l'Urbanisme au Service de l'Homme*, André Gutton's great work, the *Conversations sur l'Architecture*, moves majestically into its sixth volume. No Professeur at the Ecole des Beaux-Arts has left behind so substantial a literary monument since Guadet's *Eléments et Théories*, none can have been quite so oecumenical in its scope, so little tempted to rely narrowly on the French tradition, however splendid. The mental structure of *Urbanisme au Service de l'Homme* is as French as Guadet's, the tone is professorial in the very grandest manner, and yet the substructure on which all rests, and the quotations with which its pinnacles are adorned, seem to be Anglo-Saxon as often as they are Gallic. Mumford and Geddes are heavily drawn upon, Wright is quoted, the New Towns are much in evidence, Bath confronts Nancy on a facing page, Ebenezer Howard gets almost more than his due, the pedestrian mall in Toledo (Ohio) makes its appearance, so does the MARS plan for London, and also that marginal exercise in Anglo-Saxon urban manipulation, the scheme for the Cinque Vie of Milan, by Tintori, Santi, Monti and Gnecchi-Ruscone which appeared in the AR for March, 1961. Most astonishing of all is the accolade to English town-planning, as such, 'Il y a "style" dans l'urbanisme anglais, car il y a accord entre le public et l'artiste.'

The blushes of gratified amour-propre would make it almost impossible for any English magazine to review this sixth volume coherently—but neither can one recommend the reader to dash out and buy one, for 650 pages of liberally composed Vincent Fréal book-production with pages even bigger than Guadet's do not constitute a casual purchase, nor the sort of book that will ever become a paper-back. Yet one hopes that, somehow, the *Conversations* will not become simply a library monument, as *Eléments et Théories* became, consulted but never read, because in every *tome* there is an argument, a proposition laid down, thrashed out and confirmed. For those who have the French, and the leisure, it might well be a rewarding alternative to Gibbon's *Decline and Fall*.

HISTORY FOR THE YOUNG

Penguin Books' junior brethren, the *Puffin Picture Books*, have not often invaded the field of architecture, for all there have now been some hundred and twenty titles published in the series. Number 118, however, is one of these rare excursions, is written by Helen and Richard Leacroft, deals with *Historic Houses of Great Britain*, and costs the usual five shillings. It also raises the usual questions about means of presenting architecture to the young. In this case, the method is that of minimal text supported by an extensive use of drawings in a style that is consistent throughout the practically three-quarters of the total page area that they occupy—a sort of Bannister Fletcher for the eleven-minus. One wonders how this will strike eyes that though tender in years are sophisticated in visual experience by way of TV, coloured magazine illustrations and other photographic techniques.

Where lithographic colour has been applied to these drawings, the result is often to muddle (not to say muddy) the image, though there are occasions where the use of the draughtsman's skill has helped to clarify what the camera may obscure—on page eleven, for instance, draughtsmanship adds little to what the camera might have said about three houses whose distinction is sentimental, rather than architectural, 2, but then justifies itself up to the cornice in a brilliant presentation of Hardwick that not even an air photograph could have made. But would it appear so brilliant in the eyes of a child who had not been to architecture school? The point remains moot, but what is not moot is that the authors have performed one valuable public service in putting an ambiguous monument in its place; their last two illustrations are of William Morris's Red House and this, surely is where it belongs—at the end of the tradition, not at the beginning of the Modern Movement.



2

GOTHIC CLASSIC

Hans Jantzen's *High Gothic*, the classic work on the classic Gothic cathedrals of Chartres, Amiens and Rheims, is now available in a plain-dealing English translation by J. C. Palmes (Constable, 25s.) and this helps to fill another gap—as did the Fontana paperback of Emile Mâle (AR, April, 1962)—in English readers' general acquaintance with the more authoritative Continental writing on Gothic art and architecture. Jantzen starts from scratch with the structural resources that made the great French cathedrals possible, but this is no Rationalist text of the Choisy persuasion, for his argument, having exhaustively investigated the constructive parts of the fabric, proceeds into such questions as Gothic lighting, Gothic space, the portals and the iconography of their sculpture, the glass, and finally the symbolic meaning of the complete structure 'seen as the City of Heaven.' Such an approach inevitably entails a degree of engagement that goes beyond the routines of mere architectural history, but does this justify the tactics of the introduction to the English Edition? To make the point that our attitude towards buildings has changed, the account of Chartres given in the twelfth century by Robert de Mont-Saint-Michel is contrasted with an account of the new *Daily Mirror* building culled



1

Few things could better illustrate the degree of improvement in the housing being produced by the more sophisticated British spec builders than this helicopter view, 1, of the Wates-built estate at Dulwich Wood Park, near the Crystal Palace site, designed by Austin Vernon and Partners, architects to the Alleyn's College Estate. The mixture of high-rise and terrace housing on a well-wooded but steeply sloping site is of a design quality that—for the first time—invites comparison with post-War LCC housing, even if the planning is a little cramped by comparison. Nevertheless, the improvement is to be heartily welcomed, and one can only hope that some of it will rub off on other speculative developers.

from the *Civil Engineer*. Even if this were not *intended* to be tendentious it still smacks too strongly of the unscrupulous dialectics of Pugin's *Contrasts*.

OBITUARY

EUGENE FREYSSINET

The noted French engineer, Eugene Freyssinet, died in May at the great age of eighty-three. During the long span of his working career, which was devoted almost exclusively to the techniques of reinforced concrete, he created at least one building which (thanks to Le Corbusier) has a permanent place in the imagery of the Modern Movement, the great airship hangar at Orly, though any close student of the railway yards of the Paris region will encounter a number of Freyssinet-vaulted goods sheds, and one of his last works of consequence was to act as structural consultant for the underground basilica at Lourdes (see *World*, March 1960). Nevertheless, it was for his work on prestressed concrete that he received the *Legion d'Honneur*, and justifiably, for it was in this field that he made his greatest and most progressive contributions—indeed, but for the slump which restricted building activity he might have been in business as a manufacturer of standardized prestressed concrete columns and beams in the early nineteen-thirties. As things turned out, it was not until the fifties that his ideas really triumphed, but, even so, he was not a prophet without honour in his own lifetime or among his own people, for he was always held in the highest regard by his fellow-engineers.

CORRESPONDENCE

HAMILTON'S GLASGOW CLUBHOUSE

To the Editors.

SIRS,—David Hamilton is the least-known and least-appreciated of the major architects who made the great period of Scottish urban design. It is true that his work as a whole is very unequal, and that some of his better-known buildings are marred by inconsistencies of treatment that can amount to wilful oddness. Moreover his most successful designs are examples of a late, but extremely original Mannerism, involving an attitude to architecture which has been until recently very much out of favour. Add to these disabilities that nearly all his buildings are (or were) in Glasgow, and the neglect he has suffered is explained—with the result that we now have few things of importance left.

Unquestionably the two best are Hutcheson's Hospital in Ingram Street and the Western Club in Buchanan Street, 3. They come from near the beginning and right at the end of Hamilton's career. But they share a love of Mannerist and often apparently illogical detail that is nonetheless supremely well-disciplined to make absolutely convincing wholes. Each represents a breakaway from the still prevailing classical forms in a direction which proved far more fruitful for the growth of architecture in their city than the fashionable Gothic experiments of the time (in which Hamilton also dabbled).



3, *David Hamilton's Western Club, Glasgow*

Now it seems likely that we are to lose the Western Club and with it not only a building of extreme interest on its own account, but one which is of outstanding historical importance in Glasgow and an essential part of the best continuous stretch of street architecture in the city. The Western Club shows a deliberate stretching of classical features to an anti-classical end, creating a rhythm in the linking of individual features that is quite fresh, and which, together with the variety of new motifs integrated into the design, laid the foundations of the Glasgow style in domestic and commercial buildings that lasted with such amazing vigour almost to the end of the nineteenth century and made the city the richest store of Victorian architecture in Britain. By the side of Hamilton's, Barry's contemporary club-designs look almost timid and certainly much more derivative. Yet, for all his resourcefulness and originality, Hamilton's building is carefully restrained, and his facade consummately balanced.

I don't know whether there is any hope of saving this superb piece of architecture. The site is very prominent and obviously tempting; and things tend to happen suddenly in Glasgow. So anyone interested should make his pilgrimage as soon as he can.

Yours, etc.,
ANDOR GOMME.

VITTONE

To the Editors.

SIRS,—Professor Millon begins his article on Vittone in your August number by saying he was born in the wrong place at the wrong time. If this is meant to be taken literally, it is surely absurd. Piedmont was the one place in Italy where Baroque architecture was still a passionate concern of prince and people, and the exact synthesis of Guarini and Juvarra, which Professor Millon expounds, could hardly have been attempted a moment earlier. The fact that Vittone would not have received much praise or notice in the contemporary architectural reviews of London, Paris and Rome has no bearing whatever on the quality of his architecture.

If Professor Millon means that Vittone was born at the wrong place and time to obtain Anglo-Saxon approbation to-day, I think he is still wrong. Personal experience may be misleading, but nowadays I hardly ever meet anyone who has not heard of Vittone. When I do, they do not remain long in that deplorable condition.

Yours, etc.,
J. H. V. DAVIES.
London, S.W.1.

BOOK REVIEWS

THE PARADOX OF PAXTON

THE WORKS OF SIR JOSEPH PAXTON 1803-1865. *By George F. Chadwick. The Architectural Press*, 36*s*.

Paxton was not a typical Victorian, but he was certainly a very great one. Yet in his self-training, in his remarkable energy, in his multifarious activities, even perhaps in the very character of those activities, as a gardener continuing a major line of interest of the eighteenth century, in his concern with novel types of structure and suburban development looking well forward, he was characteristic of many of the strongest and most worthy aspects of the Victorian Age. Too many Victorians, from Pugin to Morris, from Carlyle to Arnold, owe their fame to their criticisms of the world around them. Paxton went with, rather than against, the current, somewhat as did the engineers with whom he was closely associated. Yet there is a paradox even here. He operated against an eighteenth-century, almost a feudal, background, first of all the servant—and what was certainly a novelty—also the friend of a ducal magnate.

His granddaughter Dr. Markham, working primarily from family letters, elected to stress in her account of his life, published in 1935, the Chatsworth background, as her title *Paxton and the Bachelor Duke* made plain. Ever since, it has been evident that in her relative neglect of his works, omitting wholly from consideration large and important parts of his activities away from Chatsworth, posterity lacked many kinds of information about Paxton necessary both to a better understanding of his extraordinary career and a proper appreciation of the range and ingenuity of his contributions in fields other than horticulture and conservatory building. Even of these central aspects of his virtuosity her descriptions, we now know, were very incomplete. Dr. Chadwick has by no means answered all the questions, from Paxton's major ones as to character and the means by which he developed his remarkable prowess in various fields to innumerable minor ones as to the degree and kind of his responsibility for individual works, the steps by which he was able to build up his personal fortune, and his particular relationship to the many other notable Victorians who were his friends or, on occasion, his collaborators. But if there still remains much that we would like to know about Paxton, we can all the same be grateful for having available now the results of a long and assiduous campaign of research in the best tradition of the doctorial dissertation as an 'original contribution to knowledge.' Dr. Chadwick in his Introduction properly states that his book 'is concerned with the works of Sir Joseph Paxton, and not, except incidentally, with the story of his personal life, of his rise to fame and fortune, and of the unique relationships between Paxton and his employer the sixth Duke of Devonshire.' Indeed, the initial chapter on 'Paxton's Glass Buildings,' 'Paxton the Architect' and 'The Organiser and Businessman,' taken together with those on the first and on the second Crystal Palaces, effectively cover his major productive activities. Especially valuable, as hardly at all studied before, is the material in the chapter on 'Paxton and the Wider Landscape' concerning his activity as what would be called to-day a planner.

Inevitably in these very full accounts of his works, Chadwick has many additions and corrections to make to our knowledge of even Paxton's best known projects, such as the Great Conservatory and the final Crystal Palace. For example he stresses (perhaps overstresses), that Paxton was not particularly interested in iron construction as such, and that wood plays a more important part than iron in his improvement of glazed buildings, his personal and patented contributions dealing chiefly with co-ordinating machinery and in the production of standard sashes and gutters. The question of the proper credit to be given to his associates on major works, Decimus Burton on the Great Conservatory, Fox and Henderson on the Crystal Palace, will probably always remain open to varying interpretations. Since he was definitely not an architect, and in more conventional building production, as at Mentmore and Lismore, leaned heavily on G. H. Stokes, it is perhaps somewhat paradoxical to insist that he was the 'architect' of the Great Chatsworth and Hyde Park glass houses, utilizing as architects ever do the assistance of others as advisers where necessary or convenient and leaving in the case of the Crystal Palace, execution to the contractors with whom he continued none the less to work in honest concert. Thus the idea of the arched transept roof of the first Crystal Palace, an important addition to the original project, seems now to be established as definitely his,

including the use of laminated wood principals as earlier by himself in the Chatsworth Conservatory and immediately following upon the imitation of the construction of the Crystal Palace by the architect Lewis Cubitt at King's Cross Station.

The signed perspective project at Yale University, hitherto assumed to have been an alternative study for the reconstruction of the Crystal Palace at Sydenham, is now by Chadwick definitely identified as that of 1861 for Saint Cloud outside Paris, and thus takes its proper place as the continuation of his potential achievement as what *The Times* called him in their obituary 'The founder of a new style of architecture.' If there remains some obscurity as to the details of the designing of Edensor. Chadwick seems to establish that no one else had as much to do with it as Paxton himself. For large works of conventional architecture such as Mentmore, concepts of planning and above all the introduction of glass-roofed central halls seem to be his contribution, rather than Stokes's, and at Ferrieres perhaps also the silhouette, which is much less a derivative from medieval or Elizabethan models than in the big Irish and English mansions.

In reviewing a book as rich in newly recovered factual information, it is impractical to do more than suggest the interest and the value of what Chadwick has brought together, and here perhaps one may note, however, that the 232 illustrations include not only much that one would expect (although less on the Crystal Palace than can be found in other twentieth-century publications) but also material on Prince's Park, Liverpool; Upton Park, Slough; the Peoples Park, Halifax; also Queen's Park, Glasgow; as well as the already familiar Birkenhead Park development that add a new dimension to our knowledge of Victorian suburban planning. Other little-known material among the illustrations are portions of Burton Closes, cottages at Matlock and Baslow and Belle Vue, Halifax, and also his own house, Barbrook at Chatsworth, 4, now, alas, slated for demolition. Moreover the illustrated plans for the Great Victorian Way offer a metropolitan project balancing the executed conversions of planning in various suburbs.

The Appendices, notably the first, which lists all his works with their dates in compact and easily accessible form, and the extensive bibliography, preceded by a note on Original Sources, very much increase the usefulness of the book to other students of Paxton and his times.

After so much heartfelt commendation of a book for which all those interested in the achievements of the Victorian Age have been waiting for nearly twenty years, the reviewer may be pardoned one negative expression of opinion: the manner of writing is not up to the matter and the style will not beguile those not already infused in the subject. But the wealth of material and its intrinsic value is so great that the lack of literary graces may be readily forgiven.

H. R. Hitchock

MODERN MUSEUMS

MUSEI – ARCHITETTURA – TECNICA. *By Roberto Aloi. Ulrico Hoepli Editore, Milan. Lire* 12,500.

Carlo Bassi, one of the architects of the Gallery of Modern Art in Turin, suggests in his introduction to this book that the considerable architectural success of recent Italian museums is due to the current Italian interest in tradition and the attempt to reach an architectural maturity through an acceptance and understanding of the past; an interest in which Neo-Liberty is incidentally only one rather excessively publicized facet. The illustrations of the museums and museum reconstructions by Albini, Scarpa, BBPR, Gardella and others certainly establish the authoritative position of post-war Italian museum design and the known attitudes of these architects confirm the assumption.

The book, compiled by Roberto Aloi, is the latest in a series published by Hoepli, which ranges from fireplaces to theatres, and is a survey of museums built or reconstructed during the last ten years. Both the text and the captions are in Italian and a version of English peculiar to multi-lingual art books. One only hopes that the texts supplied by non-Italian speaking architects when translated into Italian do not read as curiously as those in English. (The Uffizi seemed particularly ingenious: 'The Library is arranged with wood metal-framed furniture, the consulting table board is lined with leather. From this room one goes up to a platform for surveying ladies and to a room destined to special consultations.')

The survey covers a large number of countries and illustrates a wide variety of museums by photographs, plans, sections and detailed drawings. Every museum of any architectural importance, and a good many of hardly any, has been recorded. It gives adequate space to those which have established a new level of judgment—the Palazzo Bianco in Genoa, the Castelvecchio in Verona, the Castello Sforzesco in Milan, the Palazzo Abatellis in Palermo—and thus convincingly shows once again the very great change which these have brought about in the methods of museum communication. The thoroughness of the documentation is extremely valuable even if the word 'technics' in the title is somewhat misleading; there is nothing on museum lighting, display cabinets or environmental control. The space devoted to working details of handrails or to steel-framed buildings under construction could well have made way for more relevant material.

Most architectural picture-books fall into two distinct categories: the first is a kind of enlarged news sheet, bringing together the recent in a factual, largely uncritical, record—a sort of visual thesaurus; the second establishes a point of view, goes beyond the recording of appearance and attempts a dialogue between text and illustrations. While it is extraordinarily interesting to have Roberto Aloi's compilation of museum synonyms, the idea of the museum is surely sufficiently fascinating, and recent museum architecture sufficiently important, to warrant the second alternative.

Michael Brawne

ADAM DISPLAYED

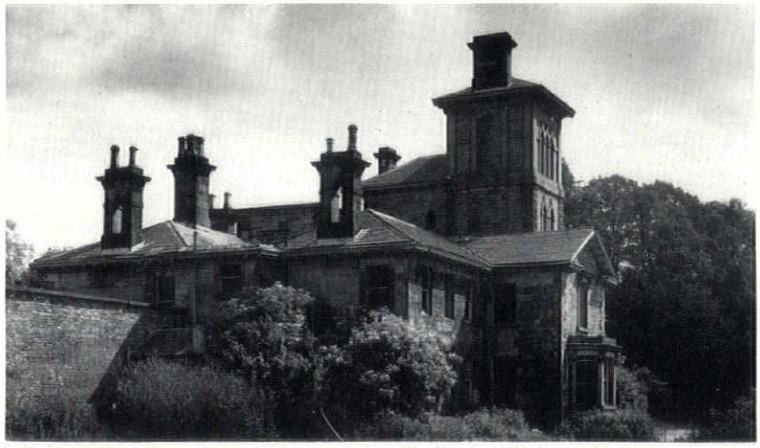
ROBERT ADAM AND HIS CIRCLE. *By John Fleming. John Murray.* 40*s.*

If one's library is not so large as to require a mechanical system of classification, the placing of a new book on the shelf is an exercise in establishing harmonious relationships—in bookscape, one might say—and the position that one assigns to it may be an indication of one's estimate of its worth and character at least as reliable as any written review. On my shelf John Fleming's *Robert Adam and his Circle* stands between R. W. Ketton-Cremer's *Horace Walpole* and Guy Chapman's *William Beckford.* These are distinguished neighbours; Mr. Fleming's book is worthy of their company. And how well the three complement one another in presenting different aspects of the multifarious culture of the Georgian age!

But does not Mr. Fleming's book belong more properly in the architectural section, say between Mr. Downes on Hawksmoor and Sir John Summerson on Nash? No, for it is not so much a book about architecture as a book about architects, about that 'wonderfully loving family' the Adams, Robert Adam in particular. True enough, in the first two chapters Mr. Fleming gives us the fullest account yet of the work of William Adam *père.* These, and the following chapter on the education and youth of the Adam brothers, form a necessary and useful part of the book. But it is with the opening of Chapter 4, when Robert Adam sets out on the Grand Tour, that the pages really come to life; and thanks to a wonderful find of letters written by him and James from Italy they retain their vitality to the end of the book. Sometimes they are hilariously funny. We have always known that when Robert Adam went to Italy he travelled as a gentleman rather than as a student; the lengths to which he was nearly persuaded to go in order to preserve the former character and yet gain a thorough first-hand knowledge of the antiquities of Rome have to be read about to be believed. *Nearly* persuaded, notice: Robert Adam (unlike James) had as Mr. Fleming says a 'natural level-headedness' which interposed to save him from the worst absurdities, and also (unlike James again) a real determination to improve himself. Certainly he was a colossal snob; on occasion his snobbery swelled to dimensions only to be compared with those of the self-conceit of a later great architect, Frank Lloyd Wright. One should recognize, though, that for Adam snobbery was a necessary item of equipment if he was to do justice to his genius in the age in which he lived—just as self-conceit was necessary for Wright if he was to protect and nurture his in the age into which he was born.

There can be no doubt as to the pre-eminence of Robert among the brothers. As Mr. Fleming points out, not only were the first masterpieces of the Adam style designed by Robert while James was still in Italy, but most of the ideas in James's unfinished essay on architecture of 1762, which contains so much of what was to be presented to the world in the preface to the *Works* ten years later, probably originated with Robert. Moreover, many of those ideas, including that of 'movement,' can be traced back to the period before either brother went to Italy. This somewhat lessens one's regret that Robert's letters from Italy, being mostly written to his immediate family, tell us less of his views on architecture than they might have done had they been written for other recipients. And though it is tantalizing to read of a visit paid him by Count Algarotti and be told nothing of their conversation, it is doubtful if we would be much the wiser about Adam's sources of inspiration had every word been recorded. Even Piranesi's influence was clearly not what has been sometimes supposed; Robert found him 'always brisk, always allegro' but also 'of such disposition as bars all instruction.' The major influence on Robert Adam in Italy seems to have been that of his drawing master, Charles-Louis Clérisseau. And the most important part of that was perhaps negative: Clérisseau had quarrelled with the French Academy and his antipathy towards it must have aided the 'picturesque hero' in Adam—it was Adam's own phrase—to defy, as Summerson puts it, 'the smooth, flattening influence of international Neo-classicism.' This is not to say that Adam was not perceptive of genius or talent in others, especially when they were potential rivals, as William Chambers and Robert Mylne were immediately seen by him to be. It is rather to underline the fact that his was an extremely personal style. In displaying the personality of its creator—a personality by no means averse to display as such—Mr. Fleming has shed upon it light which is no less bright for being indirect.

Marcus Whiffen



4, *Barbrook, Paxton's own house at Chatsworth, from* The Works of Sir Joseph Paxton.



In architecture, the eyes have it: a visual art demanding trained eyes, or far-seeing eyes, like that in the Albertian imprensa *which is the symbol for the periodic AR feature consciously entitled* The Exploring Eye. *Opposite*  *are seen the living eyes of Saint Lucy,*  *from a painting by Francesco del Cossa in the Kress Collection, seeing and growing on a single stem, apt symbols of that detached vision with which architecture should be scrutinized.* **Floreant oculi!**

The Editors

AJ/SfB

'One can no longer perform by ear, or intuitively, in any profession, any more than the pilot of a modern aircraft can fly by the seat of his pants. The technology is too complex, the pace is too rapid, the scale is too large, the purposes too diversified. Even the "practical man" of generalized pragmatic experience becomes less and less practical, more limited and, in an age of rapid obsolescence, himself obsolete.'

These words, from the *Scientific American*, might be any technologist reflecting on the problems of his profession, but they were written, in fact, by an architect, Serge Chermayeff, about the plight of his own speciality. Both the symptom and—in one sense—the cause of the distress in all fields, architectural and otherwise, is what has been termed the 'information explosion,' the uncontrollably-expanding mushroom-cloud of miscellaneous and undigested publications that overhangs every field of activity today. Whatever we set out to design, the information already available is dauntingly voluminous, and multiplies before our eyes. Much of this information is pointless or non-existent—duplicated research, bibliographical self-aggrandisement—but the bulk of it represents the real and growing mass of observed and quantifiable facts that the human race, corporately, has at its disposal.

Corporately . . . but one individual architect is not the human race; confronted by this mountain of information, he may decide it is too big for him to explore. Even if he is willing, life may not be long enough—research in various technologies has shown that there is a surprisingly low threshold of expenditure, beyond which it is cheaper and quicker to do everything again from scratch instead of hunting through the literature for previous research on the subject. But this threshold is low only by the standards of space-flight and

atomics, it is considerably bigger than the budget for most buildings. An architect who does not want to play it by ear needs, in the current cant, an 'information retrieval system.' Praise must therefore be given to the *Architects' Journal* which, over the past year, has provided him with the first really workable one in the world.

Since the manner in which these Functional Element Guides that comprise the system have been brought out, represents a major revolution in magazine publishing, the situation that produced them is worth examining. The best general-purpose information retriever is the human brain, but it has its shortcomings and imprecisions. An improvement is to write things down in a book, like Villard d'Honnecourt, and an improvement on that again is to provide the book with an index. Armed with an information store and an index to it, one has the ability to retrieve information. In practice, however, the average architect with an office in Newport Pagnell or New South Wales is (*a*) unlikely to receive every technical publication on architecture that appears even in his own language; (*b*) less likely to have the room to store these publications; and (*c*) less likely still to possess the special skills required to index them reliably and accessibly. However, building technology is neither a complex nor a fast-growing field of knowledge by the standards of the present time, and it has proven possible to develop at least a relatively simple and manageable index for building information —the SfB classifying system, named for the *Samarbetskommitten för Bygnaddsfrågor*, the Swedish Co-ordinating Committee for Building-matters, which developed it in 1946-50.

SfB is not magic; it is only an indexing system, it is not information. Nevertheless, being purpose-made for building technology it is a handier fit on the information from that field than are, for instance, the building sections of more generalized systems such as Universal Decimal Classification, which requires seven figures, five of them after the decimal point, to express the concept 'handrails and balustrades' which SfB can express in two integers. SfB too has its faults, admittedly—some are peculiar to SfB and seem to stem from its rather provincial origins in Scandinavia, others are the common property of all indexing systems, such as an inability to accommodate radically new types of information.

Still, there is little doubt that SfB has the edge over any other available system, though it appeared at one time that the entrenched British supporters of Universal Decimal Classification (which enjoyed the considerable prestige of being embodied in two British Standards) might try to make a fight of it. In the end, however, good sense and the big battalions prevailed, a suitable compromise was arranged and it was in double-harness with UDC that SfB was finally launched in Britain.

Launched? It might have foundered on the slips but for the *Architects' Journal*. It is one thing to institute a system, which is what the RIBA effectively did when it published its *SfB/UDC Building Filing Manual* in October 1961; it is something else again to make it work and live. The functional flesh and blood of SfB came into existence with the first of the AJ's Functional Element Guides which anticipated the *Filing Manual* by a fortnight. The nature of these Functional Element Guides has been much misunderstood, usually on purpose, and the AJ's action has been discussed as 'going over to SfB' or even 'cashing in on SfB.' A degree of commercial acumen in anticipating the RIBA's intention to put British building information on a SfB/UDC footing may be admitted, but the *Journal's* entanglement with both information services and SfB goes back well before 1961—much further in fact.

The *Architects' Journal* has been offering pre-classified information of some sort since the 'thirties, and its *Information Sheets* and *Working Details* have a respectable record in architectural publishing. But by the mid-'fifties it had become apparent in Britain that information-processing and retrieval was becoming an almost paralysing pressure on some offices, and in 1958 an *Architects' Journal* Research Fellow was set to work on the problem of 'Information and the Architect.' The Research Fellow was the late Michael Ventris, and after his tragic death in harness the mantle was assumed by Dargan Bullivant, who pursued the research to the point where he was convinced that SfB was the system best adapted to the profession's needs—and then went on to convince everyone else, even outside Britain.

But well before any official bodies were convinced, the *Architects' Journal* had taken its own medicine and its Research Fellow's advice—in October 1959, having published the necessary guides and indexes, the AJ introduced SfB/UDC classification of its technical articles, etc. This decision was made the more meaningful by the fact that, since April 1956, the *Journal* had been so paginated and bound that pages could be broken out in whole eights or sixteens for filing. In some ways this had been a more crucial decision than the adoption of SfB was to be. It revolutionized the organization of the editorial matter in the magazine, which had to be balanced out with advertisements to make every major article (or group of features) into a round eight or sixteen, and in the process the physical status of some parts of the magazine had been edged out of that flux of seven-day expendability that is the normal fate of weeklies, and had been given some promise of a longer life outside the original binding.

But not all the information an architect needs is in the AJ, nor in all the weeklies put together, though it is possible that all the technical publications that might be relevant do get mentioned, even quoted, in the magazines sooner or later. But even if such mentions could be relied upon, it would be dangerous to rely on even a skilled office-librarian (*a*) spotting them; (*b*) filing them; or (*c*) filing them in the right place if they were obscure or unexpected in content.

To make the file-able, SfB-classified AJ of real use, more radical measures would be needed; a more persuasive, less permissive approach, and more determined departures from the norms of weekly publishing would be required.

The idea of the Foundation Files (later, Functional Element Guides) was mooted first during 1960, and discussions between the *Journal's* editor, D. A. C. A. Boyne, its technical editor, Lance Wright, and the management of the Architectural Press took a decisive turn in memoranda drafted by Lance Wright during the autumn of that year. These proposed a concentrated series of fifty weekly supplements to the AJ, each dealing with a Functional Element identified from the SfB 'Elements File.' The main labour of finding, briefing and supervising authors would fall on Wright himself; on Boyne would fall the task of reorganizing the format of the paper once again to make all parts of it separately file-able—whole articles, single sheets, advertisements, anything with a classification label in its upper right-hand corner.

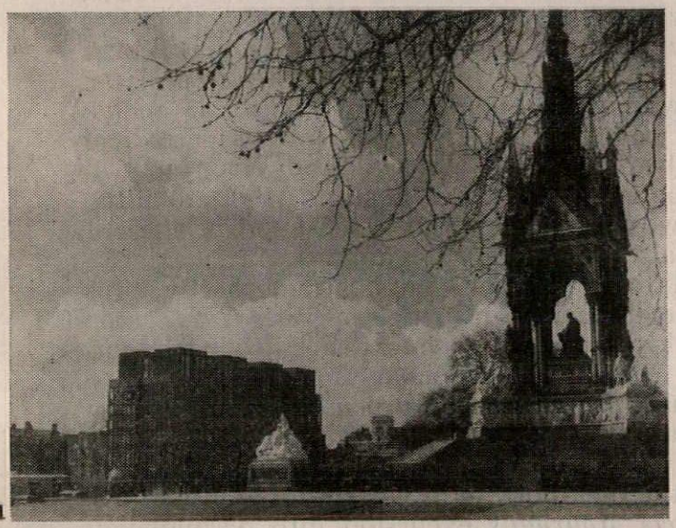
On the management fell the task of finding the means, men and floor-space approximately to double the weekly output of editorial material and deal with problems arising from a new orientation in advertising. To handle the organization and preparation of the enormous amount of information which would be involved, two new Research Fellows were appointed: Michael Rostron and Geoffrey Hutton, to whom is due the final form that the supplements took. Each is a procedural check list for the design of a particular functional element (be it a retaining wall or an air-conditioning system) accompanied by a critical bibliography of the literature available and relevant at each stage of the design process.

The word 'procedural' means what it says—the step-by-step process of design, in order, beginning as often as not with 'Examine environment' and finishing round about 'Carry out final inspection,' though there may be a sequence of appendices covering special cases. The bibliography is subdivided by a star-award system into works of general reference, specialist reference, and highly specialized reference (which rates three stars), and is interspersed with comments and timely reminders such as 'Discuss with heating engineer.' Thus, it will be observed, the actual content of each Supplement or Functional Element Guide consists of retrieved information, and pointers to further information, classified according to their point of relevance in the design process; the guides themselves are classifiable *via* SfB and can thus be retrieved by means of a SfB index, but as they are also classified *via* UDC they can, with somewhat greater difficulty, be retrieved from points outside the world of building and architecture.

And yet it may be felt, with justification, that their outstanding importance lies less in the possibility of retrieval than in something that might yet have had to happen had SfB never existed. The file-able, classified sections of the AJ before October 1961 were pieces of a periodical magazine that could be rendered more permanent if the reader so wished. The Foundation File of Functional Element Guides, however, were pieces of magazine that were pointless *unless* they were made permanent. They are almost impossible to read as weekly journalism—they are neither news nor comment—and their whole *raison d'être* is to be separated from the purely periodical parts of the *Architects' Journal* and enshrined in some permanency in correct standard-sized filing boxes or two-hole binders. In a sense, then, the AJ has gone back to the very beginnings of magazine—as opposed to newspaper—publication, to the days when some eighteenth-century *Carpenter's Guide* came out in weekly parts at a penny each, to be bound up, in due course, into a book. But times have so changed that, whereas the *Carpenter's Guide* was a huckster's attempt to get extra mileage out of some well-worn plates by flogging them off in penny packets to the rock-bottom proletariat of architecture, the *Architects' Journal's* excursion into permanency is, in some ways, a desperate measure to keep the pinnacles of the profession in touch with one another by containing the information explosion that threatens to blow all asunder.

It looks as if this intention may be, in large measure achieved, the Functional Element Guides may indeed become a *magazine* in the eighteenth-century sense of an armoury of information, a storehouse of knowledge. The credit for this achievement must go in varying measure to all those who have been named in this article, but—above all—to Colin Boyne for assuming and maintaining command of a situation that must have looked at times like perpetual crisis, but has proven to be magazine publishing in a new key. However good the team-members, editorial staffs are never better than their captain, the editor, and AJ/SfB is, above all, an editorial triumph.

WORKSHOP INTO MONUMENT



1

As the highest national institution for teaching in the arts and design, the Royal College of Art occupies an important position in the cultural life of the nation. It is also, by virtue of its location and standing, part of the 'concealed university' of South Kensington, which also includes Imperial College and may therefore shortly embrace the Architectural Association school as well. I addition, by virtue of its site on Kensington Gore, the workshop block of the new building was required to fulfil the difficult architectural role of forming one wing of a near-symmetrical composition whose axis is given by the Albert Hall and Albert Memorial, the other wing by the tall, dark, gabled silhouette of Norman Shaw's Albert Hall Mansions. In view of the importance of the College and the peculiarities of the site, it seems almost incredible that the Government should have restricted the budget to the levels of expenditure applying in ordinary technical colleges: but, in view of these financial restrictions, it seems equally incredible that the architects have succeeded so well in providing a building with sufficient monumental as well as functional qualities to make it worthy of the conspicuous site and of its educational purpose.

The new building on Kensington Gore represents the first instalment of a phased programme whereby the entire Royal College of Art should be re-housed in a little more than ten years, with the various departments (until recently scattered in a variety of buildings over quite a wide area) brought together in two main studio/workshop blocks, and sundry lower structures adjacent to them. The part completed to date comprises the first of the workshop blocks, housing the schools of fashion and textile design, interior design and furniture design, ceramics, silversmithing and jewellery, and industrial design, and the departments of stained glass and industrial glass. At its eastern end, facing the side of the Albert Hall, and also completed, is the Gulbenkian Hall, which provides assembly and exhibition-hall space, as well as forming the main entrance to the workshop block. The interior appointments of the Hall form the subject of a special Interior Design feature on pages 275-278.

The work remaining to be completed in this first phase comprises the common-room and library block, lying within the angle of the two completed blocks. Site work has begun for this structure, but the construction of the remaining studio block, to house the departments of fine art and graphic design, and the television and film department, awaits the termination of the leases on adjoining properties.

In detail, the organization of the buildings completed to date depends on a main line of horizontal communication, running from the main entrance porch, which faces the Albert Hall, through the Gulbenkian Hall's foyer, past the receptionist's station which is in a narrow linking unit, and into the hall of the workshop block, where it serves the stairs and lifts, a number of offices on the front and back of the block, and finally reaches the Principal's room and conference room at the extreme western end. This administrative level, nominally the ground floor, which is different in function from the rest of the block, is marked by a recessed, irregular and white-painted exterior wall, which is the part of the building most noticed by a pedestrian on the pavement outside.

Below this is a basement for services and heavy work, to which there is direct access for vehicles at the back of the block due to the fall of the ground (the main Gulbenkian Hall is also excavated to basement level, and there is underground access to it from the workshop block). Above the ground floor are the workshops, studios, research-rooms, and other spaces needed by the various schools and departments. Vertical access to these is by two passenger lifts and a staircase

[*continued on page* 245

ROYAL COLLEGE OF ART, SOUTH KENSINGTON

ARCHITECTS | ***H. T. CADBURY-BROWN in association with Sir Hugh Casson and R. Y. Goodden***

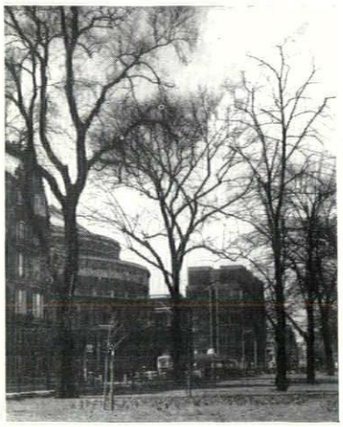
1 (opposite), the new Royal College of Art building seen beyond the Albert Memorial. 2, from Kensington Gore.

2

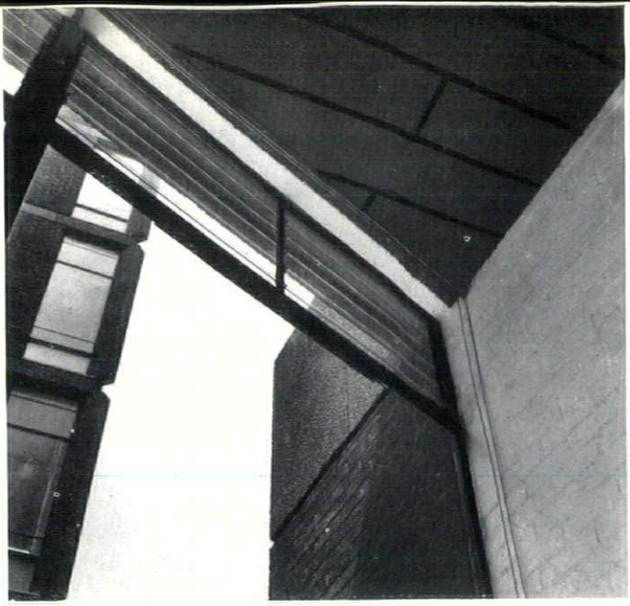




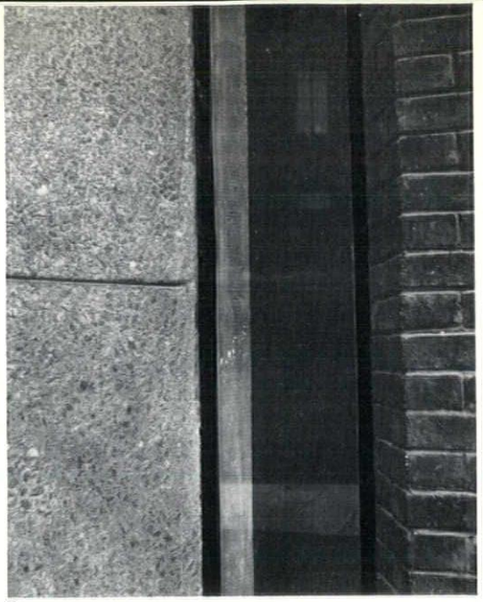
3



4

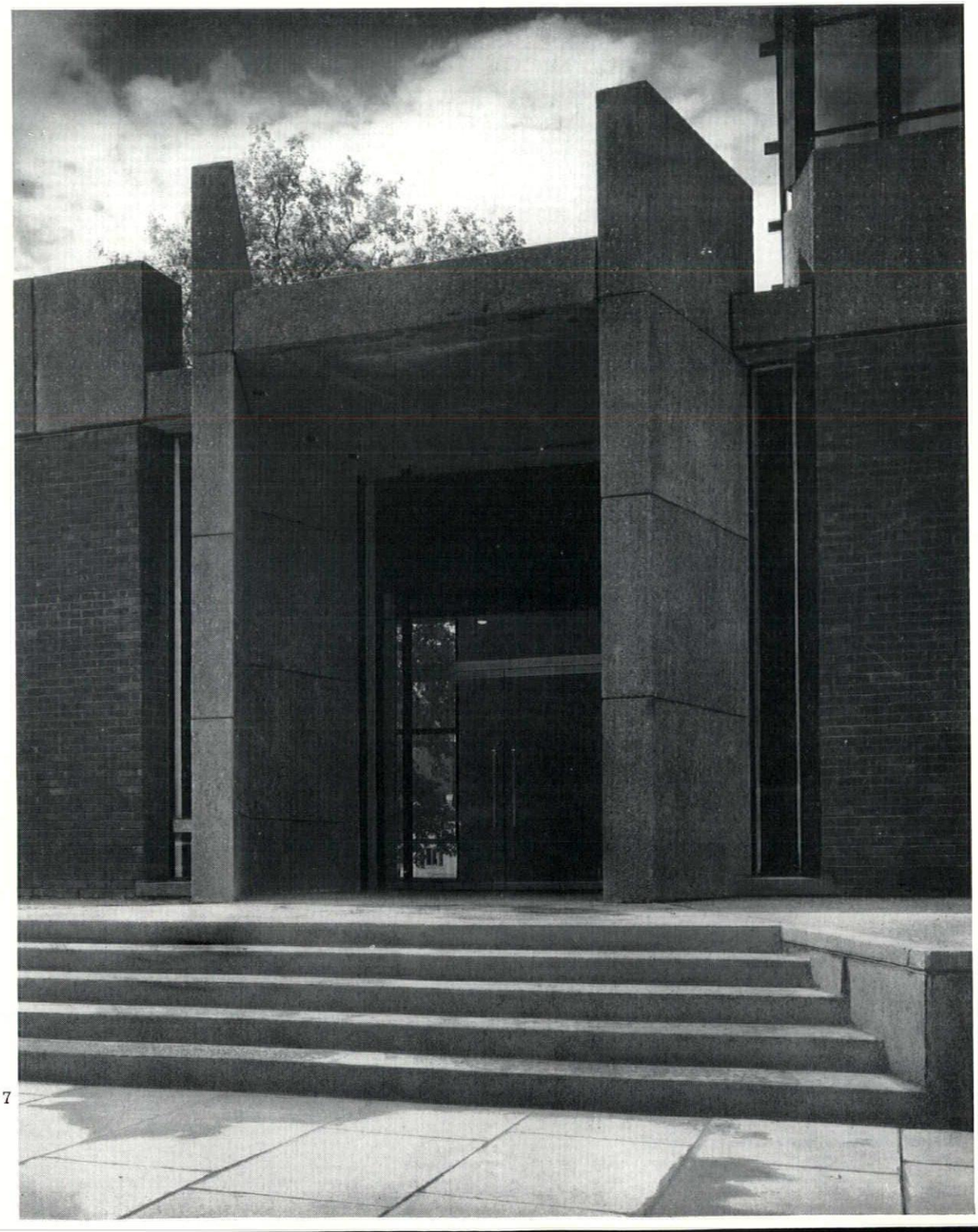


5



6

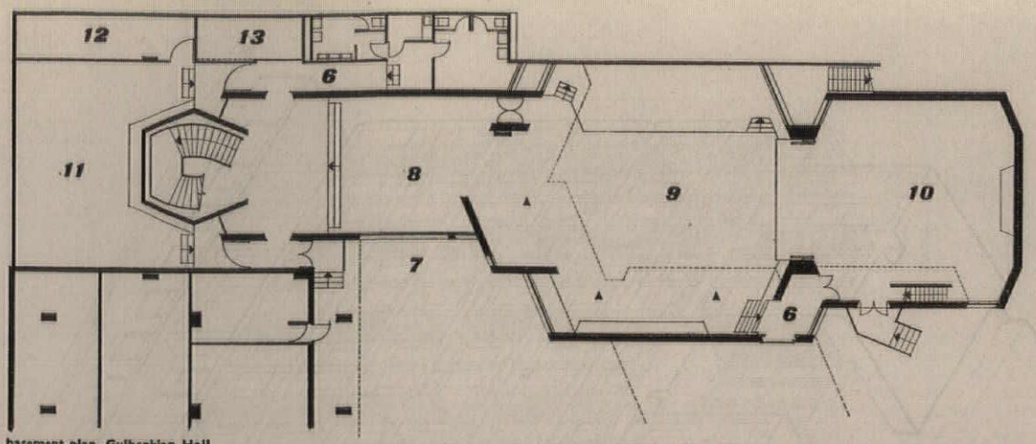
ROYAL COLLEGE OF ART, SOUTH KENSINGTON



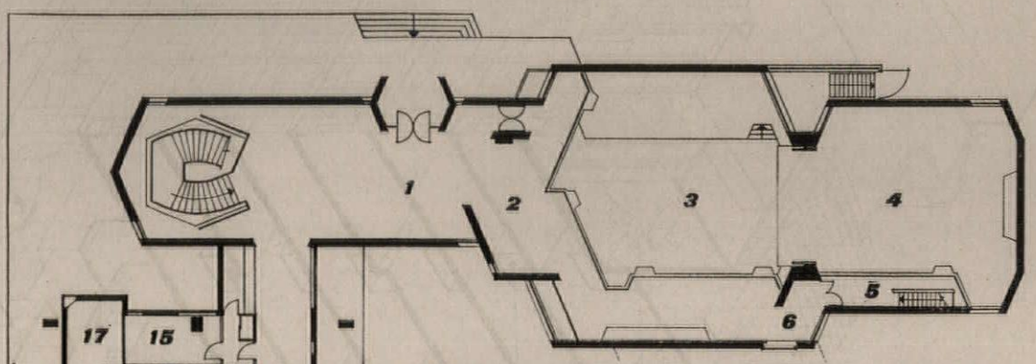
7

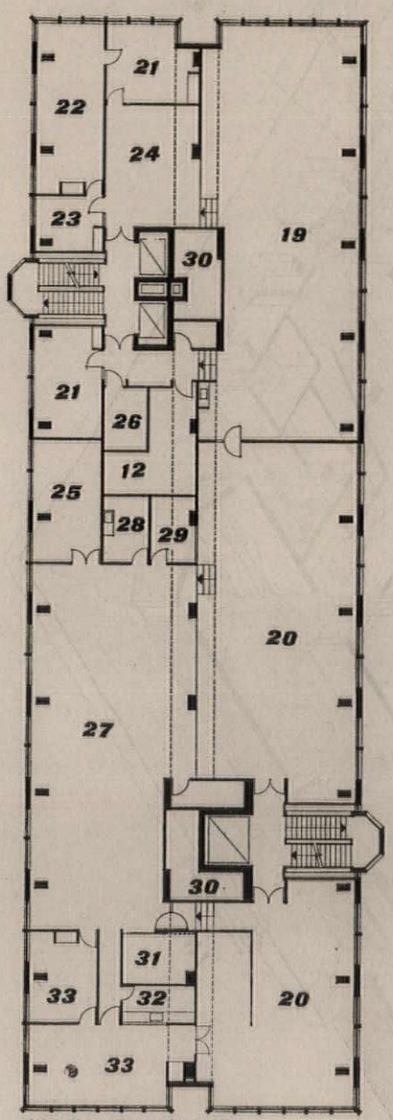
3, from the north-east; the main entrance and the Gulbenkian Hall are on the left. 4, from Hyde Park, with the new building beyond the Albert Hall. 5, ceiling detail and, 6, cladding detail of the main entrance. 7, the entrance from the street.

key
1, entrance hall.
2, auditorium balcony.
3, upper part of auditorium.
4, upper part of stage.
5, stage balcony.
6, lobby.
7, courtyard.
8, courtyard entrance hall.
9, auditorium.
10, stage.
11, gallery.
12, store.
13, cloakroom.
14, entrance foyer.
15, chief steward.
16, college shop.
17, medical room.
18, administration area.
19, drawing office.
20, machine shop.
21, tutors' room.
22, professor.
23, secretary.
24, exhibition space.
25, plaster shop.
26, dark room.
27, plastic experimental shop.
28, craftsmen's room.
29, superintendent.
30, services.
31, spray shop.
32, chemistry laboratory.
33, research rooms.

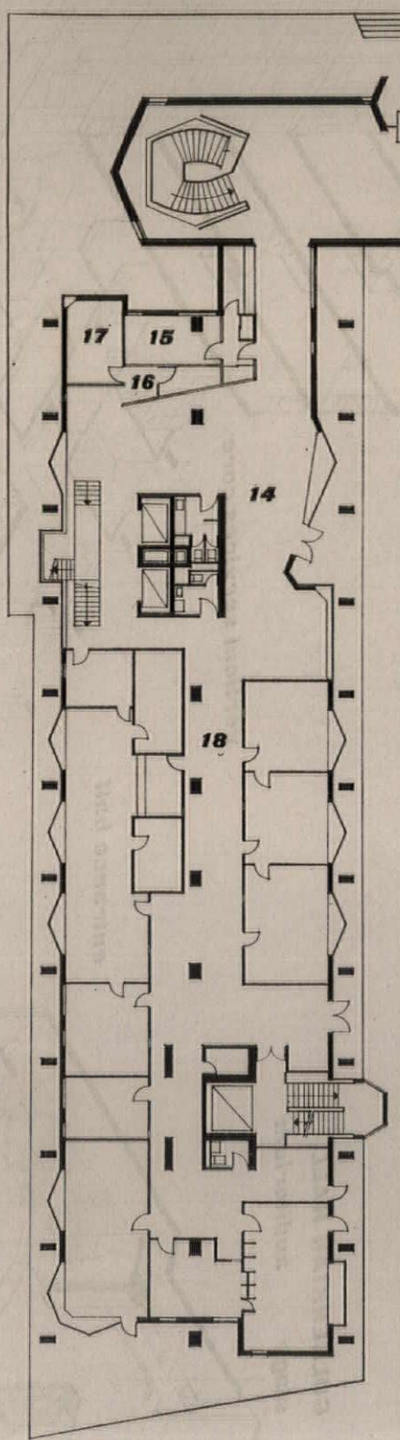


basement plan, Gulbenkian Hall

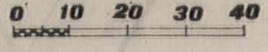




eighth floor plan, workshop block



ground floor plan

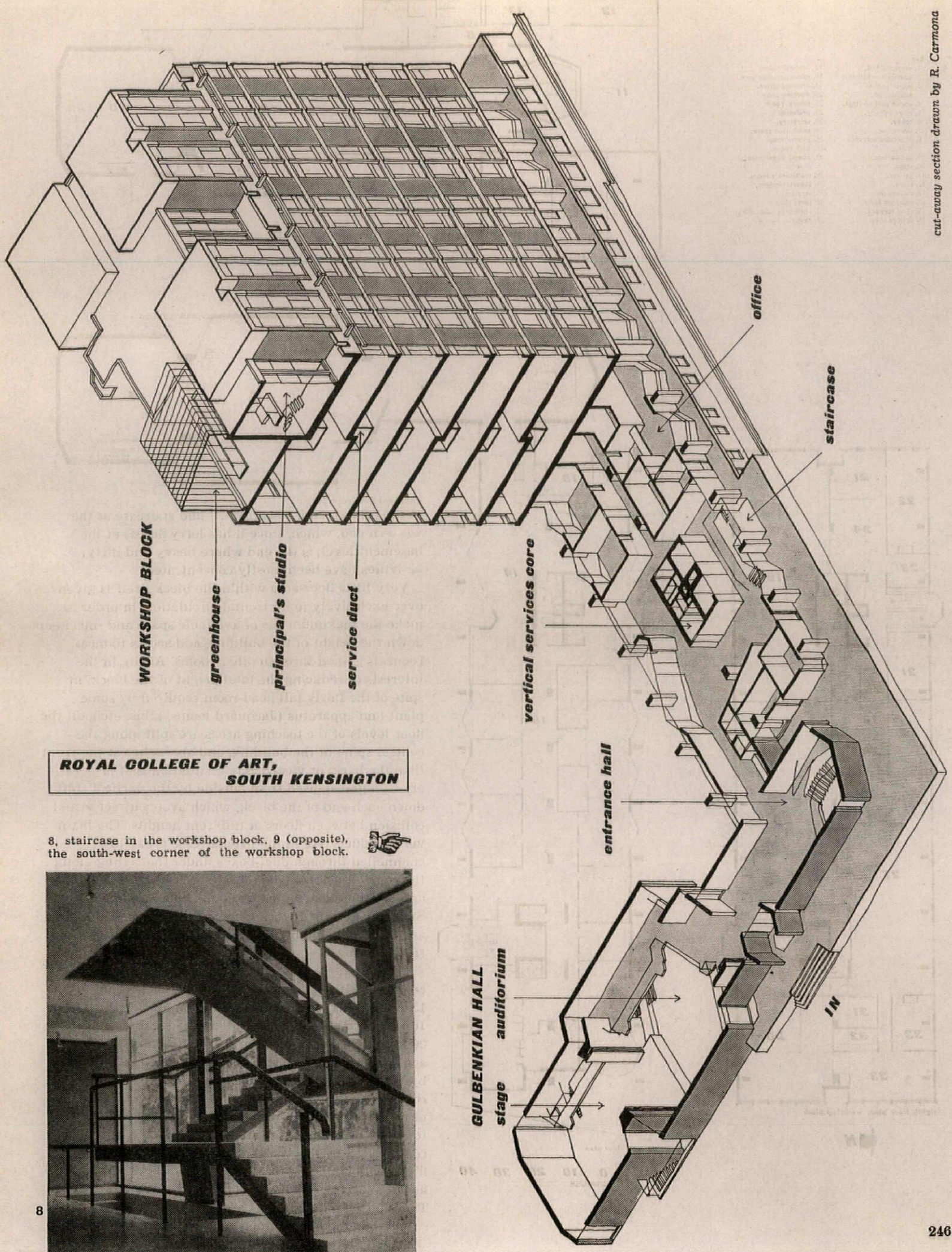




continued from page 242
at the eastern end, a service lift and staircase at the western end, which, since it has lorry access at the basement level, is the end where heavy and dirty activities have been mostly concentrated.

Very little floor-area within the block itself is given over exclusively to horizontal circulation, in order to make the maximum use of available space and thus keep down the height of the building, and access to most rooms is gained through other rooms. Again, in the interests of reducing the total height of the block, in spite of the fairly tall head-room required by some plant and apparatus (Jacquard looms, kilns, etc.), all the floor levels of the teaching areas are split along the central spine of the building, and are higher at the front than the back, or vice-versa—a situation that is effectively disguised from outside by the vertical split down each end of the block, which avoids direct visual collision between floors at different heights. The main vertical ducts rise in the lift-staircase areas, are channelled through duct-boxes under the ceiling along the centre-line of the building (see section on p. 246), and are then distributed through exposed ducts. Specially-designed work benches throughout the block are by Frank Height, of the School of Industrial Design (Engineering).

The structure of the workshop block is in reinforced concrete, with floors designed to take loads of up to 150 lb./sq. ft., and columns spaced on a grid which is 16 ft. 6 in. between centres along the façade, and 26 ft. clear, column to column, in two spans across the block. Externally, the bay rhythm is divided by three, with a blank brick panel in front of the column, and two windows occupying the centre of the bay. The lift-towers act as wind-braces for the whole block; the stair-structure is complicated by the fact that, at different levels, two flights and a landing may have to span between two tall floors, a tall floor and a low one, or two low storeys. The intermediate landings are hung from vertical suspending members, independent of the columns.



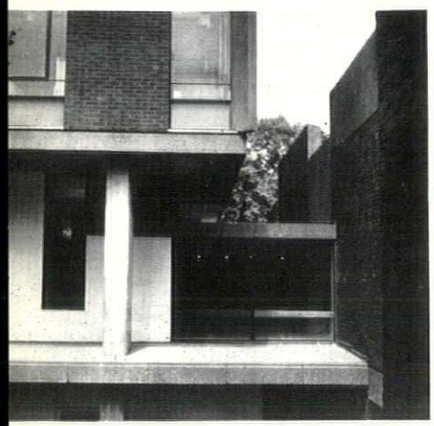
cut-away section drawn by R. Carmona

ROYAL COLLEGE OF ART, SOUTH KENSINGTON

8, staircase in the workshop block. 9 (opposite), the south-west corner of the workshop block.

8



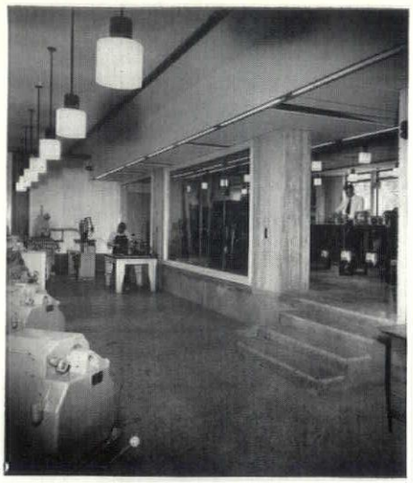


10

11



13



14

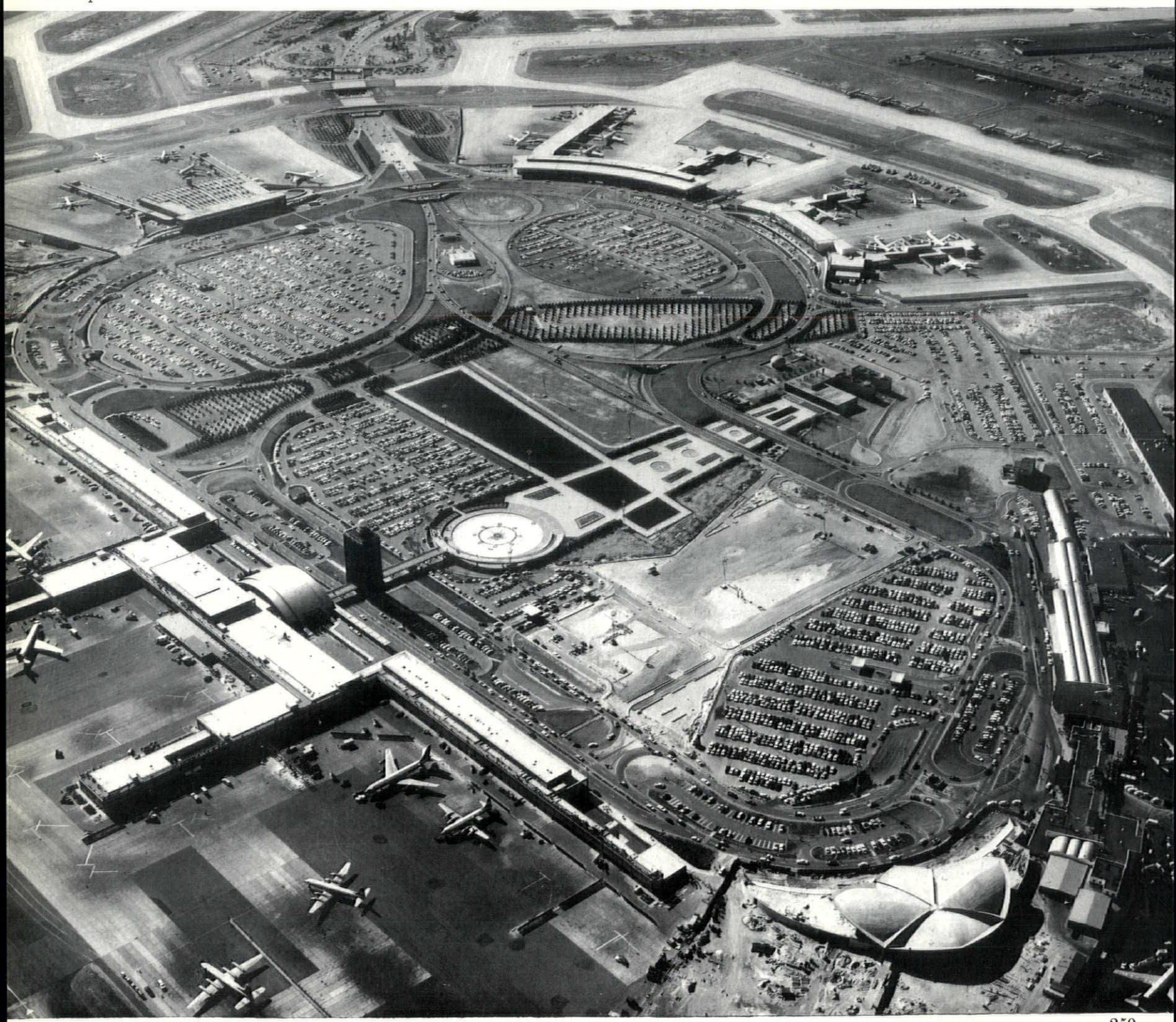
10, the link between the workshop block, left, and the Gulbenkian Hall, right. 11, detail of the workshop block from Kensington Gore showing the staircase tower and variations in heights of storeys. 12, windows of the administrative offices on the ground floor of the workshop block. 13, inside the main entrance, looking from the tall block to the Gulbenkian Hall. 14, one of the workshops in the tall block.

ROYAL COLLEGE OF ART, SOUTH KENSINGTON

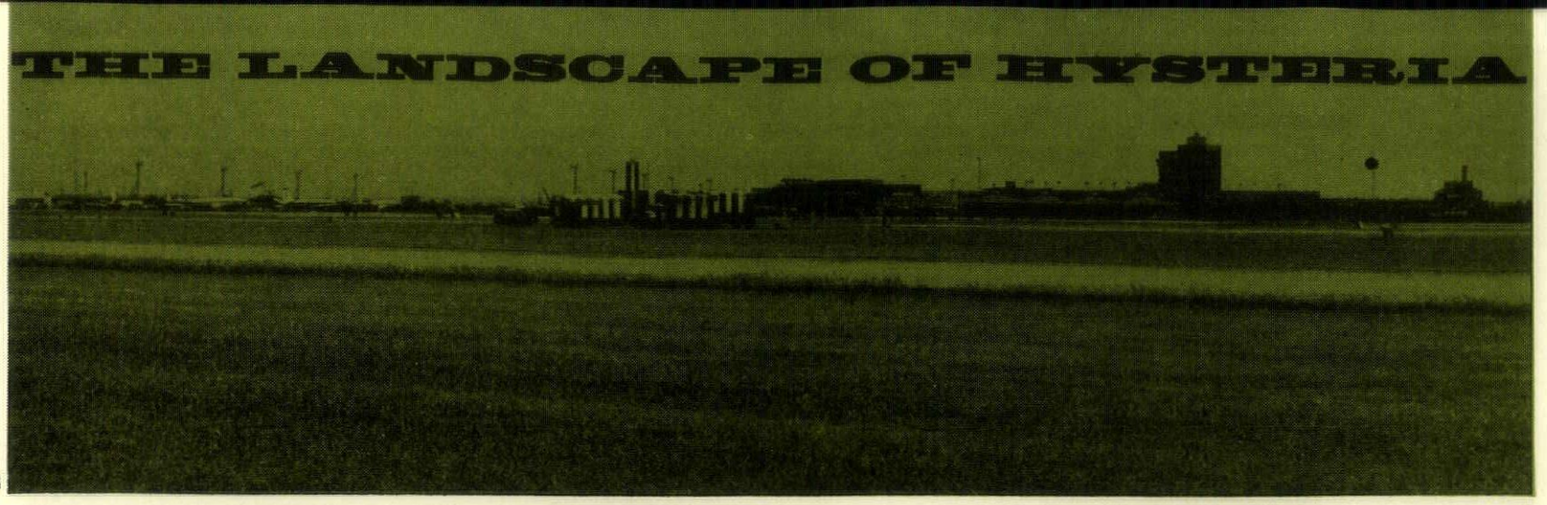


12

1



THE LANDSCAPE OF HYSTERIA



2



3



4

Airports have produced some of the finest architecture and some of the most squalidly subtopian landscapes and most intractable ground-transport problems of the century. How far are these conditions interconnected, how far these contradictions inherent in airline operation? In the two studies that follow, Reyner Banham traces the historical changes in air-transportation that have rendered most airports permanently obsolete, and Raymond Spurrier surveys the marginal mess that permanent obsolescence washes up on the fringes of air-fields, such as London Airport (Heathrow).

Next month, Michael Brawne will contribute a study of the one building that must stand clear and clean above all this confusion, the airport passenger terminal.

1 (facing page), New York International Airport at Idlewild. Chaos monumentalized—the terminal buildings of the various airlines ring a gigantic complex of car-parks and service roads whose swinging and interconnecting curves represent the true order of communications and vehicles in motion, but an arbitrary and irrelevant Beaux-Arts diagram of symmetry has been imposed on it, while the blast screens standing in front of the foreground buildings show how technological advance has made the whole conception obsolete. 2, 3, 4, marginal subtopia at London Airport, Heathrow. Equipment that is often handsome in itself because of its functional form and colour, made squalid by its surroundings.

1 The Obsolescent Airport

Reyner Banham

Air transportation began as an army-surplus operation and—in ways both subtle and obvious—has remained one ever since. With a few happy exceptions, airliners have been converted bombers, unsuccessful bombers, prototypes of bombers, or by-products of bomber-development programmes. While the aircraft have dragged along in the wake of military development, airports have dragged along behind the aircraft, never up to date, never completed, always inadequate, always sprawling slummily into their surroundings in a manner that reveals, only too clearly, the standards of hostilities-only expediency carried over into peace-time operations.

This historical development is as much responsible for the present functional and aesthetic inadequacies of airports today as are more immediate causes, such as inadequate finances or incompetent planning, and the history is worth the telling, if only because it has moulded the minds and prejudices of the traffic-managers and others operating, and commissioning, airports today. In the early, almost pastoral phase, aircraft were light and slow-moving on the ground. They had to take off and land into the eye of the wind, but they were capable of rolling comfortably over well-kept and well compacted grassland. They needed an omnidirectional airfield, and it was economically possible to provide them with one. The rule-of-thumb logic of immediate expediency dictated that the two permanent structures on the airfield—the hangar and the petrol pump—be located at the edge of the field; the 'yacht-basin' approach. The hangar, of course, was full of noise, bad language, pools of oil, smells and dangerous equipment, and separate buildings had to be created for passengers and office staff. Then the sky began to get a little crowded at rush-hours, and it became necessary to provide a control-tower tall enough, and well-windowed enough, to permit continuous supervision of the hemisphere of sky as well as the pool of grass. But the buildings remained together in a companionable cluster, and this yacht-basin approach monumentalized itself in the 'thirties, at Croydon, le Bourget, Tempelhof.

But, like all monuments in a technological culture, they were by definition dead, superseded before they were designed. Around 1934, air transport crossed the threshold into the first of a succession of bright new eras. A new generation of airliners—the Boeing 247D, the Lockheed Delta and the Douglas DC2—all close cousins and direct descendants of bomber projects, introduced in very short order new concepts of speed, comfort and reliability, and established what have proven to be the reliable norms of airline operation: even air-hostesses are a product of the 247D epoch. But the greatest product of this brief silver age, in which airliners were allowed to develop according to the logic and logistics of airline operation, was the Lockheed Constellation, which remains to this day, in the minds of airline people of all sorts and persuasions, a kind of absolute Platonic ideal of an airliner.

Barely two decades separate the 247D from the last models of the Constellation, but they were decades in which, war or no war, Constellation standards were imposed on every airline in the world, traffic increased by geometrical progression, aircraft were stretched to become heavier, bigger, faster, and there was drastically less air between them. The omnidirectional grass yacht-basin was utterly inadequate to all but the earliest of these fast, heavy monoplanes. But, because they were fast they could afford to be tolerant of wind direction, even if their weight made them intolerant of grass surfaces, and landing and take-off operations were soon concentrated on a few narrow concrete strips.

Abruptly, the marginal location of the buildings ceased to be logical or necessary. With flight-paths forcibly concentrated into a few narrow funnels, broad segments of the sky were no longer needed by the aircraft, and large buildings could be tolerated in many locations—even the very centre of the field—where they could not have been considered before. Like a demented amoeba, the airport turned itself inside out and the original compact cluster of buildings disintegrated. This disintegration is most clearly seen at St. Louis, with Yamasaki's elegant three-domed terminal building on one side of the field, and a slummy Wild-West street of sheds and hangars on the other. But such a clean split is unusual; the normal result has been amorphous disintegration, blurred boundaries.

And while landside operations have penetrated into the very heart of the landing and take-off zone, the electrical and electronic equipment (itself the by-product of war) of the airport has leap-frogged far beyond that imaginary line which is now the airport-boundary, and radar and approach control equipment stalks out into the surrounding country-

2 Towards a Clarified Aesthetic

Raymond Spurrier

side marking the lines of the runways with subtopian wirescape and things on poles. This total breakdown of the relationship between airport and environment is epitomized by Heathrow (London) which gives the point of departure for Raymond Spurrier's article which begins on the right.

The grandeurs and miseries of this moment of grotesque fulfilment, in which an airport explodes into a regional planning problem, have been monumentalized in London Airport, Orly, Leonardo da Vinci and, *par excellence*, at Idlewild with its pointless *Marienbad* Allée in the middle of a spaghetti of roadways and a fairground of competing terminal buildings. Monumentalized . . . it has happened again. Idlewild is the first airport fit for Constellations, and it is already being used by Comets, 707's, DC8's and practically every other jet in service. Already the airside faces of its buildings are being crusted over with giant louvres to deflect the jet-blasts—the first harbingers of a transportation revolution that may prove as drastic as that of the 'thirties.

In consequence, the status of practically every building on the airfield is being questioned. With the jets growing so big, it begins to look better sense to take shelter to the aircraft when they need servicing, rather than try to cram them into hangars. Whatever finally happens with super-buses or mobile lounges, there are very strong opinions in favour of shrinking the passenger-buildings to a minimum, so that the one-building type that belongs unmistakably to airline operation may be doomed even before architects have learned how to design it. Certainly, the emphasis lies increasingly on the continuity of the process of transportation, rather than the monumental halting places along the way.

But will anyone let it happen? Even in the teeth of ruthless accountancy it may still be good public relations, and therefore good business, to make some concessions to the spirit that built the Euston arch, to have some structure (even underground) where the traveller may look round and sense the excitement of being poised at the beginning of the fantastic adventure of being in New York faster than the sun can pace him, or in Sydney in twenty-four hours. The perennial drag of airport design behind airline operation may here have found its most massive and ultimately irreducible ball and chain—the unreformed human desire to create places for things to happen in.

The phrase *landscape of hysteria* was used by Stephen Spender in a poem on 'The Landscape near an Aerodrome' whereas, to be fair, this piece is more particularly about the landscape—if that is the right word—*of* an aerodrome, which is an altogether different affair, though unfortunately not nearly as different as it ought to be. For the landscape of hysteria, alias subtopia, is all about us now and aerodromes are outstanding examples of the subtopian spirit of 'things in fields,' a spirit that has gathered considerable momentum since the time when the things—a hangar, a windsock, and a Gypsy Moth—were (as Paul Nash would have described them) events in the landscape. But those leisurely, 1930ish days of the poem are past, those near romantic days when casually at intervals '. . . the air liner with shut-off engines/Glides over suburbs and the sleeves set trailing tall/To point the wind.' Nowadays a round-the-clock frenzy of aviational complexity generates tougher repercussions on the surroundings. Scale alone now makes a major airport an unlikely element to absorb into any normal landscape—in this country at any rate. Certainly Heathrow* for example, occupying nearly four-and-three-quarter square miles of land on the outer fringes of Middlesex, is an uncomfortable neighbour for the small-scale suburbia lapping at the perimeter. And there is more to it than jet-scale buildings and the insidious odour of kerosene when, every few minutes, an outward bound plane climbs heavily off the two-mile runways, piercing the eardrums and allegedly cracking the plaster of domestic ceilings.

For one thing the airport cannot keep itself to itself; it generates demands that constantly threaten the neighbouring green belt: a richly cultivated, highly productive area of some of the best market garden land in the country. This land is also flat, well drained, served by good road communications with better to come, and therefore eminently suitable for building. Developers eye it covetously in the hope of

* More often called London Airport until London acquired second one in the shape of Gatwick.



5, the oft-traduced ideal of airport design—visually exciting machinery, functional buildings, bold lettering imaginatively applied.

locating there all the airport ancillaries, both genuine and adventitious, that seem unable to find room within the perimeter fence. Most of this overspill demand must stem from the basic decision that placed the terminal area within a tightly circumscribing criss-cross pattern of runways, thus requiring expensive tunnelling for access and limiting expansion; facilities already outstrip car-parking provision and a projected multi-storey park is unlikely to catch up with increasing demand created by more air traffic, more buildings, and the no doubt heavier flow of cars that will soon be encouraged by a new direct motorway link from the South Wales radial road. So in real estate terms the expectation value in the green belt rises as the pressures build up—for industry, housing, offices, freight sheds, bonded warehouses, parking lots, petrol stations, showrooms, motels, hotels—only held in check by a tough planning policy administered against heavy odds. The only exceptions sanctioned by the Ministry of Housing and Local Government are hotels to cater for aircrews, stranded passengers, and travellers who, having crossed the world, feel unable to face the rigours of the journey into central London.

None the less, as village shops turn into air catering bases, while the windows of substandard cottages reveal clerks under fluorescent tubes bent over bills of lading, the ancillaries proliferate. And 'where industry shows a fraying edge' (to borrow from Spender again) the boundaries are blurred so that the neat geometry, the precise perspective of market gardening is unable to provide the clear setting that it might: a human scale palaeomorphic foil to the modern excitements of the flying field.

But if, visually and emotionally, Heathrow's contribution to its surroundings is not fully realized this, for the most part, is the fault of the installation itself whose own edges are blurred by unspeakable collections of peripheral clutter. This is partly due to the evolutionary nature of airports where temporary arrangements are, in the long run, probably more appropriate and at least allow for any lack of foresight in the overall planning. Even where the development is clearly built to last, serious work goes on in surroundings which portray a lack of planning; down in the south-east corner almost a new town has grown up with permanent office blocks and maintenance bays and the inevitable acres of car-park—an unco-ordinated assembly where confusion is sensed even though it may not in fact exist. Despite huge buildings and gaunt yawning sheds—those cavernous constructions that easily hold a jetplane in their jaws yet dramatically fail to digest the tail—many of the components are niggly, small-scale, mean objects, subtopian in spirit and design for which there is no excuse, not even the desire for conformity with the surroundings. Attached to this more familiar submetropolitan muddle is a kind of technical subtopiary composed of aeronautical ground apparatus whose unusual functionalism is debased by the illogical addition of sad huts and other non-technical oddments. Too often new techniques provide an excuse for this kind of excess, or lead to a brash commercialism instead of refinement. Confusion is mistaken for excitement and technology is encouraged to run riot. In an affluent age that seems to lack any affluence of the spirit, the problem is to display clearly the merits of the machine without attracting the Cola-culture trappings, the Lolita landscape that even Canaveral now exhibits.

Unlike Gatwick, which sits unobtrusively in the countryside and at its most intense co-ordinates naturally with normal life in a thoroughly twentieth-century manner, Heathrow lacks the precision that one expects to be underlying the scientific achievement. Clarity of purpose is dissipated so that confidence is undermined. Admittedly Heathrow is bigger, more complex, and handles more traffic—which only makes careful design the more important. The outrage along the Bath Road frontage is at last to be redeveloped, but that does not excuse the long-standing shambles of nissen huts and unrelated signs, poles, wire and lights that bring a frenzied metropolitan rash to a climax just where some contrast with the everyday world might be expected. Northolt, with similar fringe elements in a comparable position, manages to maintain a neat and planned orderliness.

There are some excuses, of course. Most airports have been inherited rather than designed *de novo* and the aviational world develops and changes faster than airports can be built; even Gatwick—a modern design for the days of 'sleeves set trailing tall'—had to be remodelled for the talk-you-down era. Moreover, the very loose system of Circular 100 procedure (which in the last resort gives Crown land immunity from planning control) does not give planning authorities much of a chance to save the developing authority from itself. There is finance to be considered, too, although when good design is such a visible asset unseemly advertising is a short-sighted way of attempting to balance the books. Emerging from the tunnel surrounded by exhortations in 3D to fly somewhere else at all possible speed the visitor may begin to wish he could, especially as he soon feels like a flea in a bed of nails beneath all those lamp standards. Perhaps the giant whisky bottles are an apt suggestion although these are soon to go because 'they have been criticized on several occasions on aesthetic grounds.' Yet far worse examples of commercial advertising add their unplanned contribution to the chaos of the public areas, examples that must make many a foreign visitor feel at home.

It is in this kind of setting where two worlds meet: on the one hand the travelling public and the sightseers dragging across windy spaces; on the other is the serious business of refuelling and checking stores, of the unseen signals that launch the queens of the air into their element. The muddle of the ground is contrasted with the laconic technology of the skies. This juxtaposition of the familiar and the unusual ought to be, and often is, exciting.



6

7



6, *Los Angeles International Airport. Supersprawl unrelieved even by the formal pretensions of Idlewild or Orly; gimmick buildings, such as the central restaurant, inorganically combined with advanced techniques of passenger-handling at satellite terminals (to be illustrated next month).*

7, 8, *United Airlines hangar at San Francisco International, by Skidmore, Owings and Merrill; interior of BOAC hangar at London-Heathrow. Major monuments of the structural engineer's art—Myron Goldsmith at San Francisco, Sir Owen Williams at Heathrow—but all too often buried in marginal subtopia.*



8

A detailed topography of the landscape of hysteria: London-Heathrow

9, *the basic elements—superannuated huts, dead-swan lamp-posts, wire, random notices, parked cars. In the background—and outside the airport—a reminder of how to do it better, the Ariel Hotel in a decent* transportation *style of architecture.*
10, *the town centre of Aeropolis—a roundabout in the south-eastern maintenance area, mocked by a municipal monument originally meant for some other place.*
11, *plain dull architecture, insensitive lettering (insensitive for this location, not for the jobs for which Christopher Nicholson originally designed it) and yet more parked cars.*
12, *a* cause célèbre, *the whisky bottles—but was it the right cause? The main source of public indignation stemmed from resentment of their blatant commercialism, and their site, not their inherent ugliness. Other, equally flashy and equally ill-sited advertising,* 13, 14, *has gone unprotested as long as the airport has been in operation. Could it be that the real objection to the whisky bottles was that the content, not the form, offended puritan abstemiousness?*
15, *an electrical sub-station with pretensions to architecture—but lost in a clutter of huts, boxes, lamp-posts and things up poles (bent, as is so often the case at Heathrow).*
16, *many of the poles, and the things up them, are well-designed, but they are devalued by the company they have to keep, and the promiscuous manner in which they keep it.*
17, *there are even a few Heathrow 'specials,' grounded navigation signs for ground-borne traffic, such as this* Keep Left *bollard, in which something of the clarified aesthetic of the air-navigation equipment, opposite, has rubbed off on more mundane objects.*

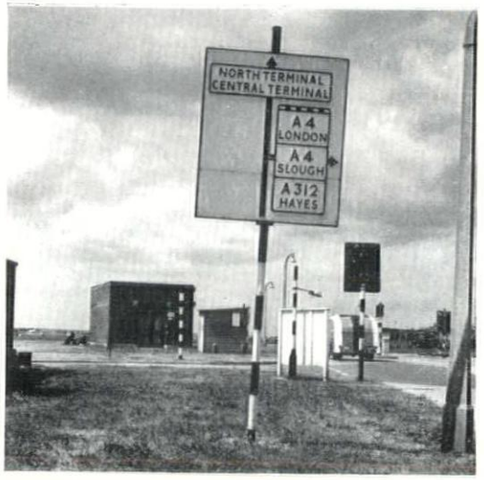
9, 10, 11



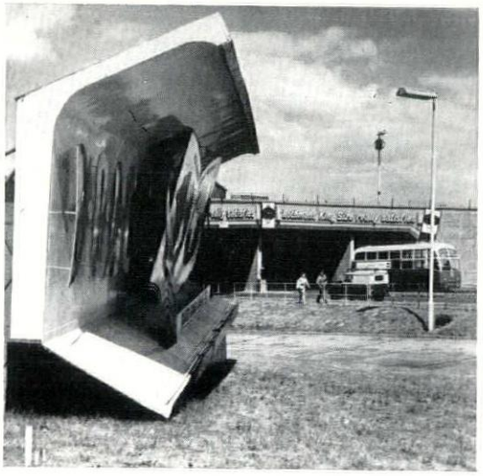
12, 13, 14



15, 16, 17

















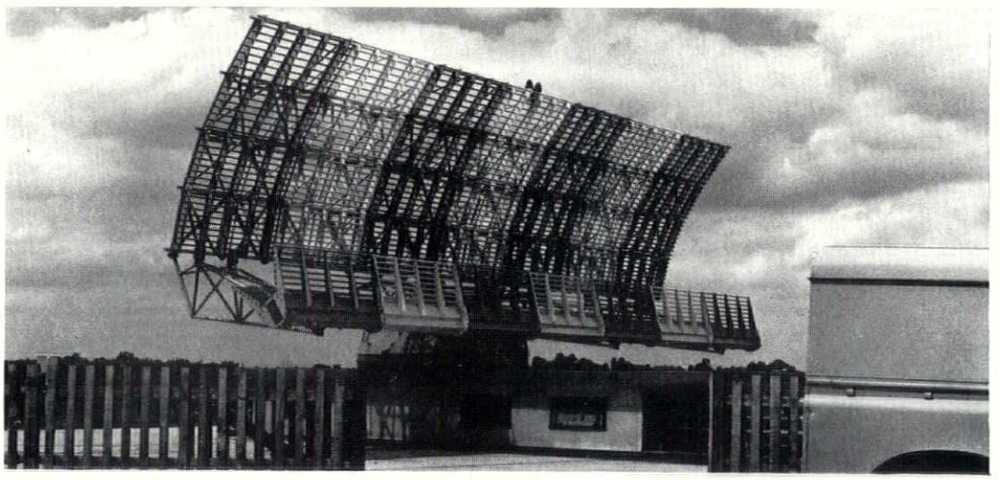
18

19



20

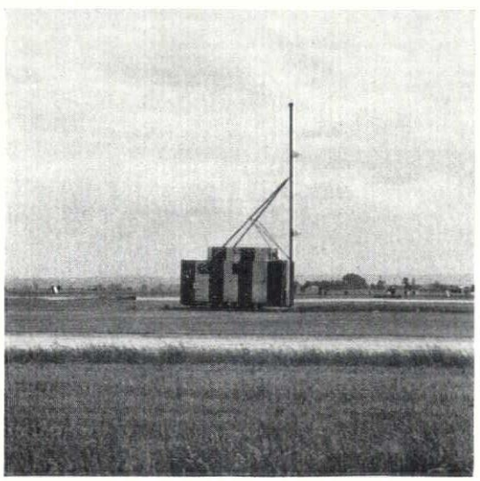




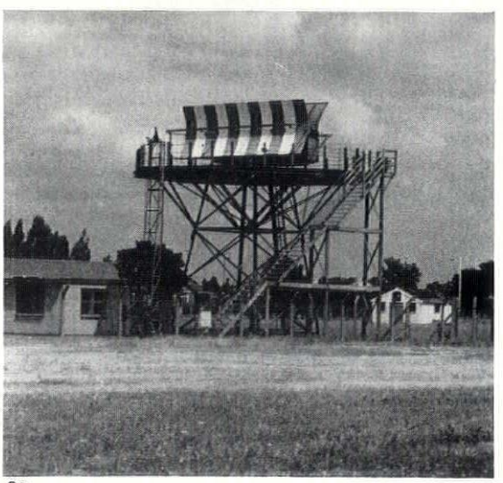
21

Functional elements of the airport scene

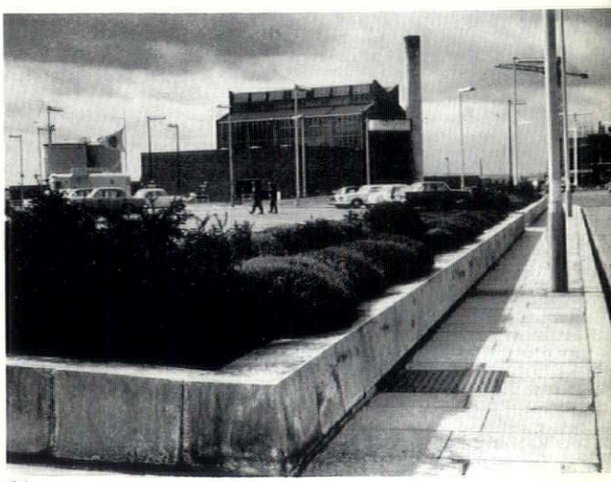
18, *approach lights at the end of a runway. A half-realized visual asset, located of necessity at the airport boundary and a perfect advertisement for the radio-visual aids with which 'BEA takes good care of you.'*
19, *fixed and mobile impedimenta, most of it impeccably functional, betrayed by ill-detailed landscaping.*
20, *storage tanks, airport bus, power-house, lamp-posts, landscaping—in descending order of aptness to a clarified airport style, but even the power-house is tolerable in these surroundings.*
21, 22, 23, *radar and allied installations at Heathrow. As convincing in themselves and as shipshape as the traditional black-and-white nautical style, these should be one of the proper inspirations of a clarified airport aesthetic—even the solitary hut in* 22 *is converted by its striped livery from a thing in a field to the equivalent of a marker-buoy. But note how each of these is spoiled by ancillary buildings apparently left behind by the War Department of an under-developed country.*
24, *to rub in the lesson of* 20. *Woefully ill-conceived planting in edge-trim that might have been tolerable if left severely alone; pseudo-gardenesque inserts that have nothing to do with any conceivable airport aesthetic.*



22



23

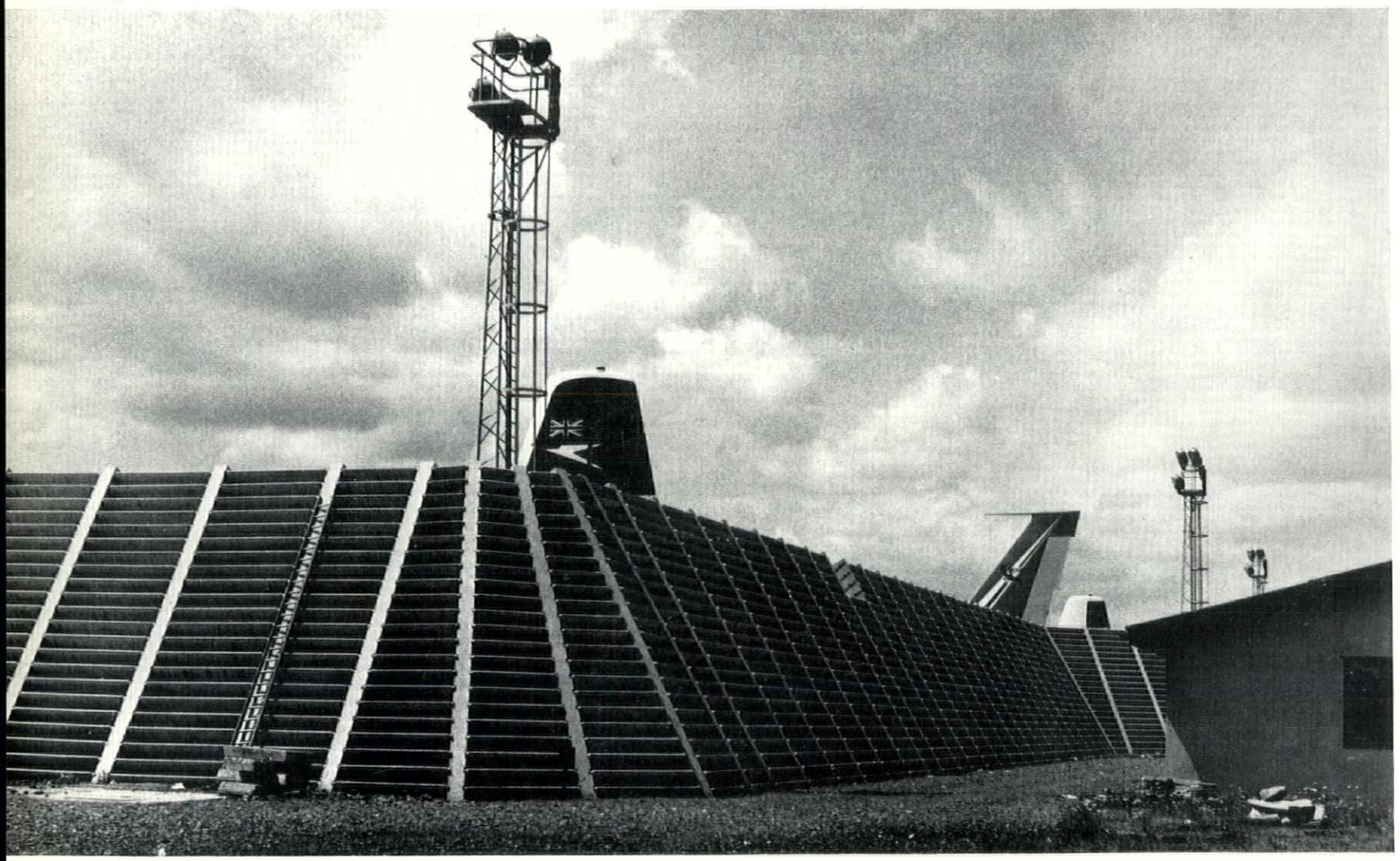


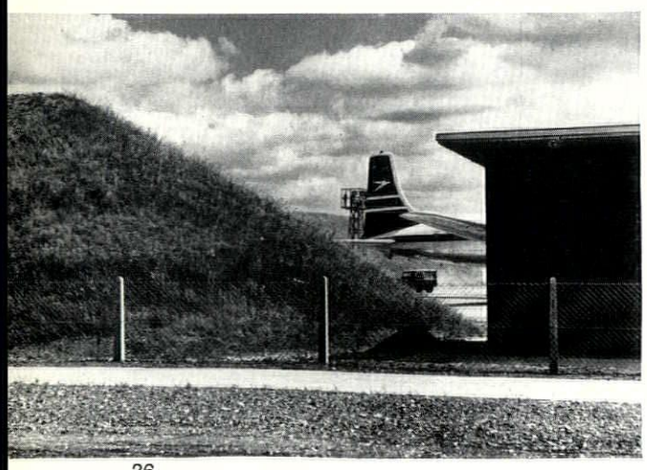
24

A clarified aesthetic—gratis

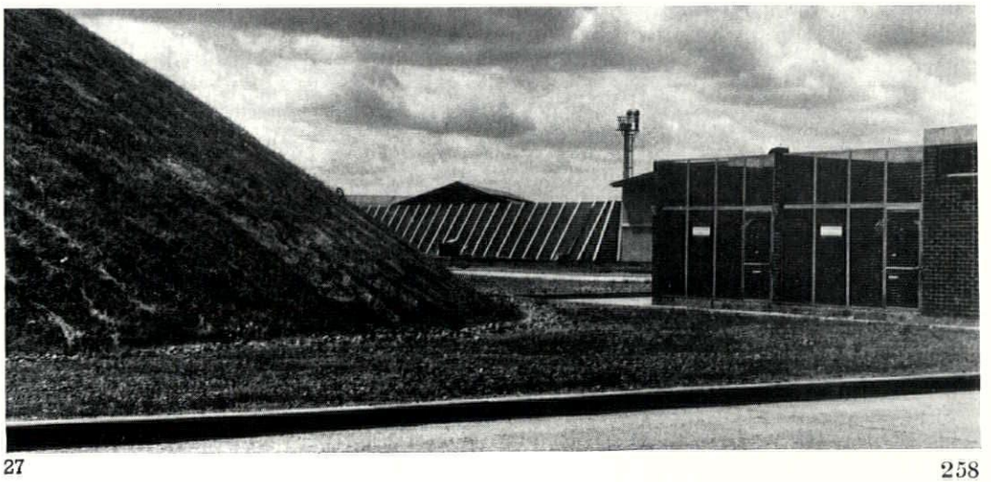
25, the acoustic baffle or blast screen, which has been the ruination of airport architecture all over the world, could yet be the salvation of airport landscapes, its clearly-defined forms putting a conclusive fence around work areas from which, mysteriously, project light-towers and tail-fins. Powerful suggestions of the excitement of air-travel, not the forewarning of impending disaster so often suggested by the sight of an aircraft's intestines spread out on open tarmac in the full public view.
26, 27, permanent earth-banks, originally built also as noise-deflectors, could work equally powerfully, but—as these two pictures show—their relation to other structures needs careful consideration.

25





26



27



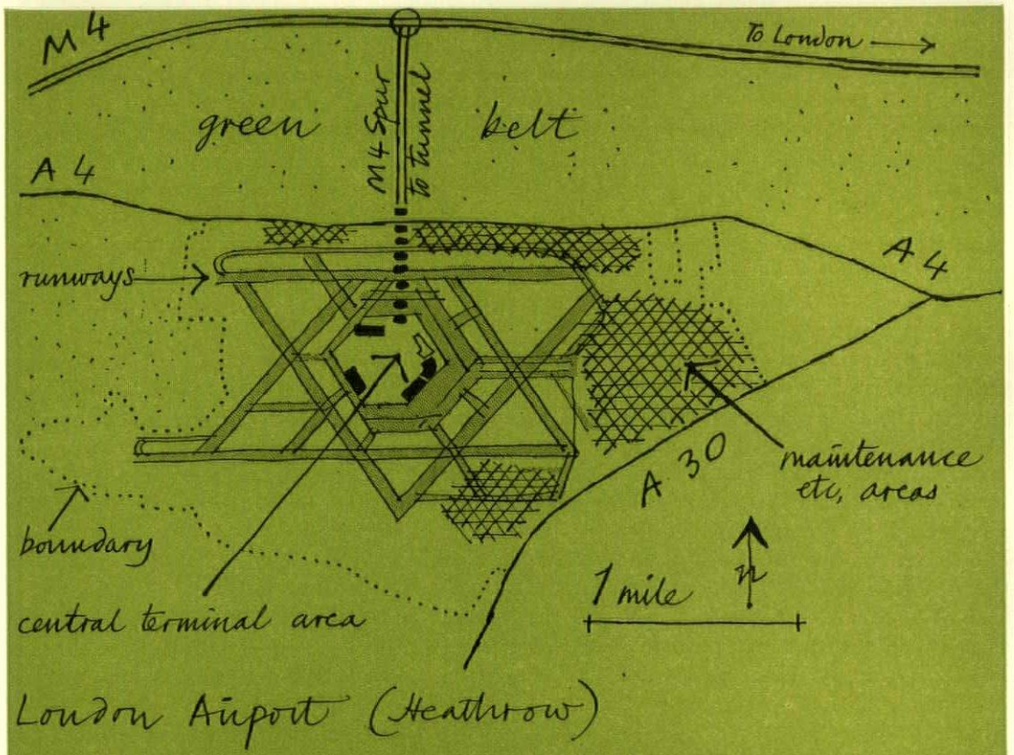
28, *the lesson of the airport bus. All vehicles on airports gain by being clothed in one or another of a limited range of company liveries, their presence in serried ranks or performing closely prescribed manœuvres around the aircraft gives a visual, space-defining order and sense of scale, and a dramatic corps-de-ballet attendant on the airliners themselves. Fixed structures should emulate.*

But it lacks focus. In the theatrical sense, it needs producing. It needs the master-hand of a designer who can do for sheds and car-parks and baffle-screens, lighting-towers and signs and signals, what the landscape architect can do for landform and plant material. It needs someone who can study the ecology of objects and create from their disposition an artificial landscape in keeping with its function.

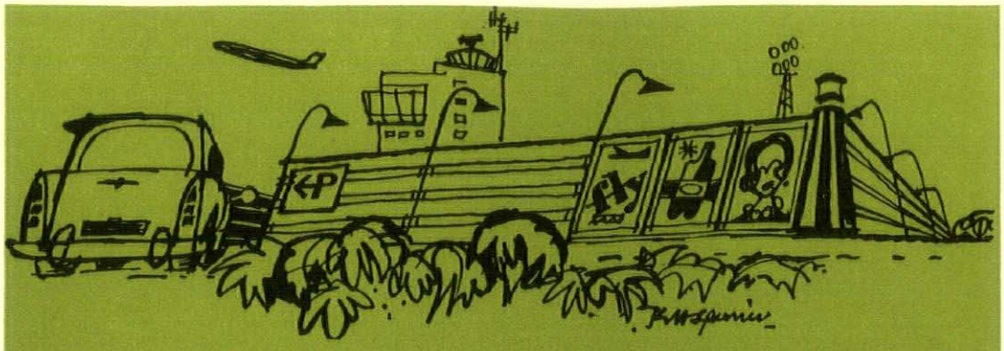
Whatever development occurs outside the airport is essentially the work of separate individuals. But inside, where landlord control ought to prevail, the confusion we call subtopia reaches a crescendo in the very place where comprehensive design is not only necessary but possible. For example: a determined designer could invent mobile screen walls, based perhaps on the acoustic baffle already in use for aircraft, and use it as a car-park camouflage and vehicle channellizer with built-in lighting, slot-in direction signs and commercial advertising panels too. Thus in one gesture variable layouts could be catered for in an idiom that would match the shifting airport nature and at the same time combine a number of untidy elements into architectural unity, creating spaces out of space, townscape out of necessity.

Each new method of transportation has thrown out its own aesthetic forces with the newer inventions relegating responsibility for the environment to old-fashioned limbo. Airports, however, provide an opportunity to show what can be done with our inventiveness, to demonstrate how the flying machine can succeed where the motor car has so dismally failed. Since you can't monkey about with the shapes of aircraft and navigational aids for any other than functional reasons, Detroit styling is *de trop*. The flying habit is, therefore, perhaps the last opportunity we shall get to rescue the environment not only from mechanical devices, but with them.

By far the most promising objects, and they surely stand about ready for emulation, are the standard pieces of airfield furniture—equipment that results from the cool mathematical logic of science



Author's sketch-plan of London-Heathrow. Five square miles in size, it handles already 6,500,000 *passengers per year, accompanied by* 11,000,000 *visitors and the* 300,000 *people who work daily within the airport area. It is a town-sized operation whose electronic tentacles are already reaching beyond its nominal boundaries, whose car-parking over-spill is only one of a number of urgent pressures towards development in the green-belt immediately to the north, a situation that is not likely to be improved by the direct spur from the M4 motorway. The runways and central area installations are already within sight of full capacity operation—by the end of the decade it will have been necessary to build a third London airport, in addition to Heathrow and Gatwick, and a new area of the green belt will come under the same pressures from parking, hotels, housing and ancillary services.*



29, the author's suggestion for exploiting acoustic baffles as the prime element of order and definition in the airport scene, by incorporating lights, signs and advertising within their sloping forms.

where no suburban precedents are allowed to confuse the design issue. Any superimposed visual treatment is of the functional kind found on railway signals and nautical apparatus; it makes no concessions to any extraneous aesthetic attitudes so an apt decoration results that is aesthetically robust—a visual impact that should be a stimulus to environment. And perhaps would be, cleared of clutter and so displayed to advantage; placed, as it were, on exhibition.

A big airport is not unlike a giant exhibition. In the case of Heathrow, in addition to the 6½ million passengers who at present use it annually for its basic purpose and the 10 million people who are there to see them off, another million come particularly in the summer months just to look, attracted by the comings and goings, the general air of excitement and bustle, and of course the aeroplanes. Moreover, some 30,000 people at present work at Heathrow, many doing highly skilled and responsible jobs. There are cogent reasons why all three groups of people would benefit from a clarified airport aesthetic. This applies also to the passer-by on the outside, the people who live and work round about and, not least, to the airport management who must make the place pay.

An airport is a complicated and confusing affair and whereas intellect may channel the confusion into a workable system, careful visual design could bring apparent simplicity to a restless scene without detracting from the very desirable air of bustle and expectancy; it might even heighten them.

Individual buildings can of course be given to a good architect; many of them have been. Most purely functional structures are interesting objects in themselves and architects are perhaps best kept away from them. But there is more to it than this. Despite some fine buildings and novel objects, Heathrow is still a hopeless jungle that is neither in keeping nor sufficiently itself to provide a landscape feature in its own right. The requirement now, as in so many other instances, is for some planning and a co-ordinating eye to distinguish permanent from temporary and to weld all the fragments into a coherent whole, to design it from within and without on the basis of a comprehensive visual policy, creating a style for the job in the key set by the already available aeronautical style.

And simply because it is hopeless to try to absorb such a disruptive complex into an existing landscape, particularly a flat one, there is a clear case for creating a fresh, self-contained environment—a special twentieth-century jet age landscape which could be as exhilarating as the idea of jet travel itself and a scenic element in its own right. With this to be looking at there would be no *earthly* reason why the man on the ground could not share vicariously in the achievements of the age.

The compilation of such a special purpose landscape would be a challenge to designers and a challenge to those in charge of airports to dig out the designers who could do the job, and to commission them. They will then be in a strong position to create not only something in tune with its purpose, something that will work and look efficient, too, but a prestige landscape to greet the foreign visitor.

STRAITJACKET or elasti GIRDLE

Trademark by courtesy of Triumph Foundations Ltd.

A reply by the Architects' Department of the LCC to Kenneth Browne's article 'Straitjacket: the LCC Daylighting Code v. The London Street' (published in the AR, May 1962).

Few would disagree with Kenneth Browne that the loss of our heritage of London streets through the application of a too-rigid daylighting code would be a matter of great concern, and the REVIEW has performed a valuable service in drawing attention to these dangers.

Nevertheless, it would be quite wrong to assume that no standards of daylighting or any control are necessary. In the second half of this the twentieth century we demand standards far higher than were acceptable in earlier days. For however picturesque our back lanes may be it must be admitted that it is often at the expense of satisfactory living conditions, particularly where children are concerned.

Here is a real conflict. It is a challenge to every progressively minded architect to resolve—for this day and age demands Urbanity AND Daylight!

HISTORY

The Great Fire of London in 1666 following closely upon the Great Plague of 1665, convinced the City Fathers of the necessity of controlling the height and spacing of buildings for the well-being of the citizens. This early Building Act controlled the height of houses according to the width of the streets, ***1.***

Prior to 1947 control was based on a system of 'angular' limits with relaxations only in relation to the return faces on smaller streets and where it was desirable to maintain street continuity. No regard was paid to the use of side light and, combined with a maximum height restriction, this prevented the use of high blocks essential to the conception of 'cities of towers' then advocated by forward-looking architects.

The present Daylighting Code, which is intended to give control with the maximum flexibility, was introduced in 1947 largely to meet the strong objections of architects that the earlier system was too rigid and permitted nothing but 'corridor streets'—then a dirty word in the avant-garde's vocabulary!

Now the pendulum swings back again.

THE AIM OF THE CODE

The primary purpose of the Daylighting Code is to safeguard the light of neighbouring buildings, present and future, though it *is* also concerned with the lighting of the new buildings.

During the war and the immediate post-war period, great interest centred on the problems of redevelopment and there was a general desire for better living conditions. Considerable study was carried out by the Building Research Station, and great advances were made in methods of calculating and measuring daylight, and in assessing the desirable levels of daylighting for different visual tasks. This enabled the town planning aspects of daylighting to be placed on a more scientific basis.

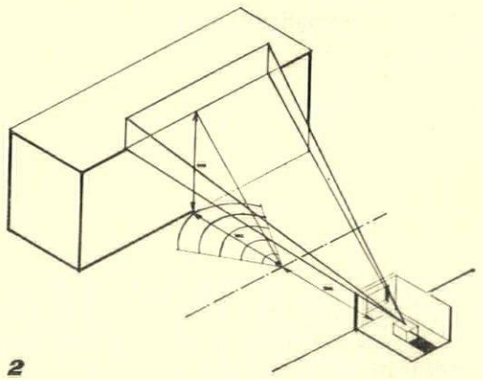
The principal work setting out these findings was the Post War Building Study No. 16—'The lighting of buildings.' The standards recommended are: a 2 per cent sky factor penetrating 7 ft. in kitchens; a 1 per cent sky factor penetrating 9 ft. in living rooms; a 0.5 per cent sky factor penetrating 10 ft. in bedrooms. This forms the basis of the Council's present Code.

The amount of light at any given point in a room is the sum of light received directly from the area of sky directly visible through the windows, light received by reflection from external surfaces and light received by reflection from the internal surfaces.

Though the luminance of the sky may be considered as reasonably constant, the reflective values of different external and internal surfaces vary considerably and can be changed from time to time. For town planning purposes, therefore, only the direct sky component—or 'sky factor'—is taken as a standard, for it has the added advantage that it can be arrived at by the application of simple geometric rules.

For a full description of methods of calculation reference must be made to any standard text-book—but the best known methods are the Building Research Station Daylight Protractor and Waldram diagrams.

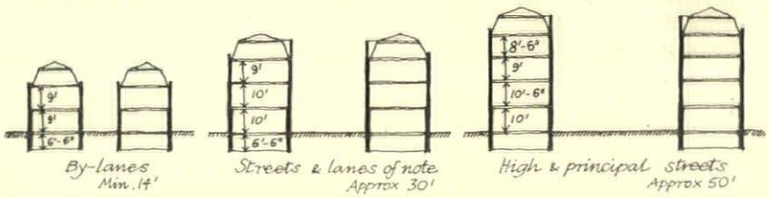
As these methods are somewhat laborious, the Ministry of Town and Country Planning introduced in 1947, through the medium of their handbook 'The Redevelopment of Central Areas' a series of 'permissible height indicators,' initially for non-residential areas and followed soon after by a residential series. These indicators convert the segments of sky necessary to give the required standard into a form which can be applied to a layout plan and the permissible height of any building read off from a height scale, ***2.*** This is based on an assumed 'average' window width and height reflecting normal design. Under present-day London building byelaws window head heights may be as low as 7 ft.



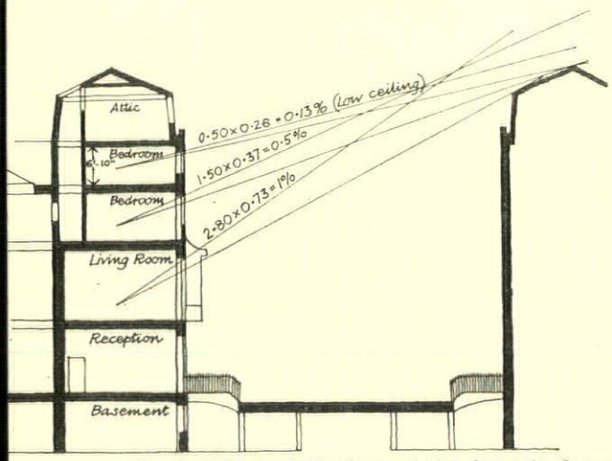
2

The Permissible Height Indicators are a good and quick method of analysing the daylighting aspects of new development, but it is not to be denied that where buildings differ from the 'average' that forms the basis of the Code—say by high windows—a more detailed analysis by one of the previously described methods would allow 'tighter' planning.

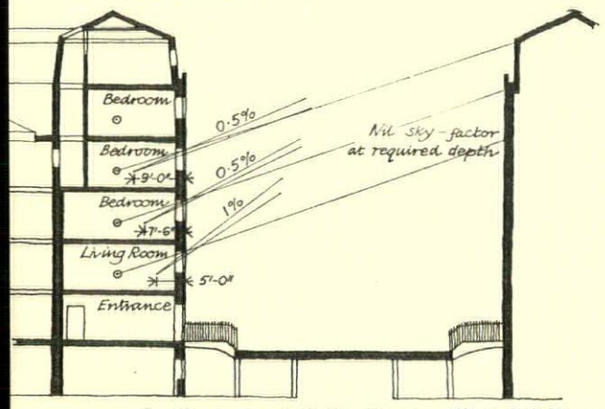
If architects are prepared to satisfy the Council, by use of these methods, that their schemes comply with the intentions of the



1, *the 1667 code.*



***3**, daylight analysis of an existing house in Queen Anne's Gate.*



***4**, the contrast if the floor-to-ceiling heights and window-head heights are the minimum permitted under the building bye-laws.*

Code, strict compliance with the Indicators is not required.

Relaxation is also usually permitted in the case of end walls in terraced development, and is not applied to non-habitable rooms such as entrance halls, bathrooms, staircases, lavatories, etc.

It is also normal practice to relax the Code where infilling takes place in important existing terraces and streets to maintain the architectural continuity.

Why then does the Council not adopt one of these more detailed methods for examining new proposals, but puts the onus on the applicants?

Because to do so would place an intolerable burden on the Council, who must deal as expeditiously as possible with many thousands of applications.

The amount of time required, if carried out by the architects as part of the normal design process of their schemes would not be excessive, relative to the overall time taken by the design and development of a scheme.

THE MANY FACETS OF URBANITY

It must be recognized that the 'corridor street' is an essential element in our townscape, yet it is not the only element. To suggest that Urbanity is only created by narrow streets would be fallacious. For true urbanity encompasses the whole gamut of good townscape. It *is* certainly a question of enclosure, but it is the creation of a carefully planned composition of urban space of varying character. It incorporates both a static element of the square and the dynamic linear element of the street.

It is the narrow street contrasting with the broad street—the 'square' contrasting with the 'circus' and the 'crescent'—and the whole welded together in spatial design, typified in former days by the townbuilding schemes of the eighteenth and early nineteenth centuries — and to-day pioneered again, for example, in the REVIEW by the 'casebook' series.

Who would challenge the urbanity of the London squares—of Bath, ***6***—of the Oxford, ***7***, and Cambridge colleges?

Is the urbanity of Chelsea's Royal Avenue, ***8***, Wellington or Paultons Square, ***9***, ***10***, or Brompton Square, or even two-storey Courtenay Square, Lambeth (all of which more than comply with the Daylighting Code) any less than that of Queen Anne's Gate or of Motcombe Street?

THE STREET

Nevertheless the street is also essential and must remain an integral part of good town design.

Now as it happens Georgian and Victorian streets such as Queen Anne's Gate or Montague Street (though not Justice Walk or Kinnerton Mews) in the days of their original occupation, could be said to comply, basements excepted, with the Council's standard, as analysis with BRS Protractors shows, ***3***.

This is because the rooms are very high and the windows very tall, and the principal living rooms were on the first floor and above. In fact our Georgian forebears knew a great deal about designing for good daylight and in both quantity and quality it is fair to say that most Georgian rooms were better lit than many modern ones—and the reasons for this repay study.

But we no longer can or want to build like this. Streets of similar proportion, if built with present-day minimum permitted floor to ceiling and window head heights would be quite unsatisfactory as ***4*** shows.

How then is the narrow street or pedestrian lane to be re-created in a modern idiom?

The experimental high density house scheme by the LCC Architects' Department now building at Angrave Street illustrates one way (***11*** and ***12***). Here all the habitable rooms are planned on the garden side of the buildings with only bathrooms and one bedroom (which being one floor up is able to comply) facing a 15 ft. pedestrian lane, a present-day equivalent of Justice Walk.

In many areas the three-storey terraced family house is returning to favour. As a rule this only has the garage and entrance hall on the ground floor on the street side which can then be ignored for daylighting. Thus a new street can be created of the proportion shown in ***5***.

It is possible to design four-storey blocks of two-bedroom maisonettes without habitable rooms on the street side, providing still another variant.

In Cumbernauld New Town, too, several new methods have been successfully applied in re-creating the narrow street in a contemporary form.

THE NEED FOR COMPREHENSIVE REDEVELOPEMENT

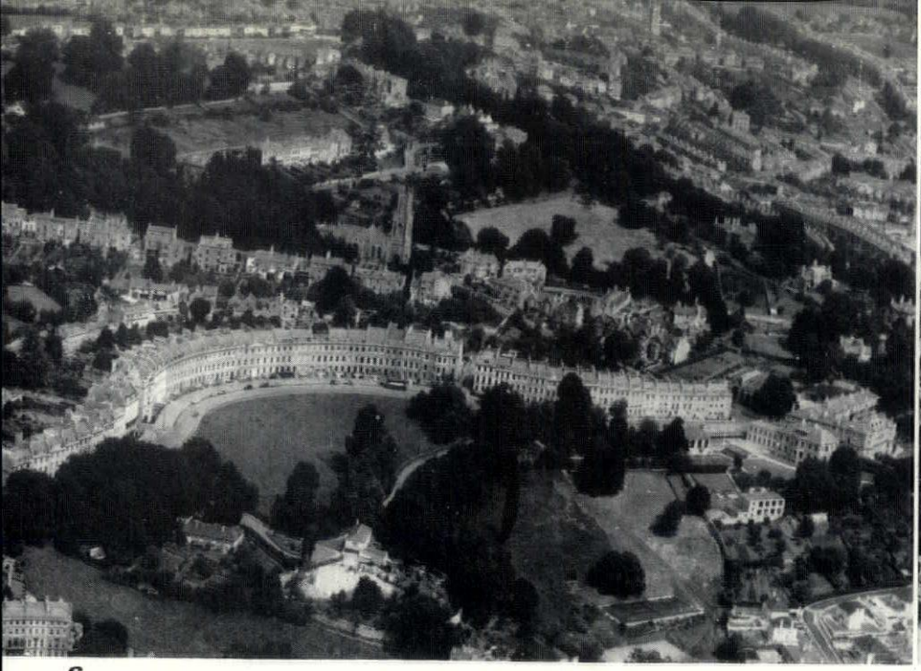
These are just some of the solutions. However, they are only possible where large sites are developed comprehensively—but after all this was how our best urban landscape came into being anyway.

In the piecemeal redevelopment of existing streets daylighting relaxations are usually permitted to maintain the existing street heights. If, however, new streets are to be created by a process of piecemeal redevelopment then a different and more diffuse street is likely to emerge. It was always so and is the price of freedom for the individual—it is not the fault of the Daylighting Code. Another aesthetic conception—that of the 'picturesque' or perhaps the 'Arcadian'—may be the answer here, of which Blackheath Park, for instance, is a good example.

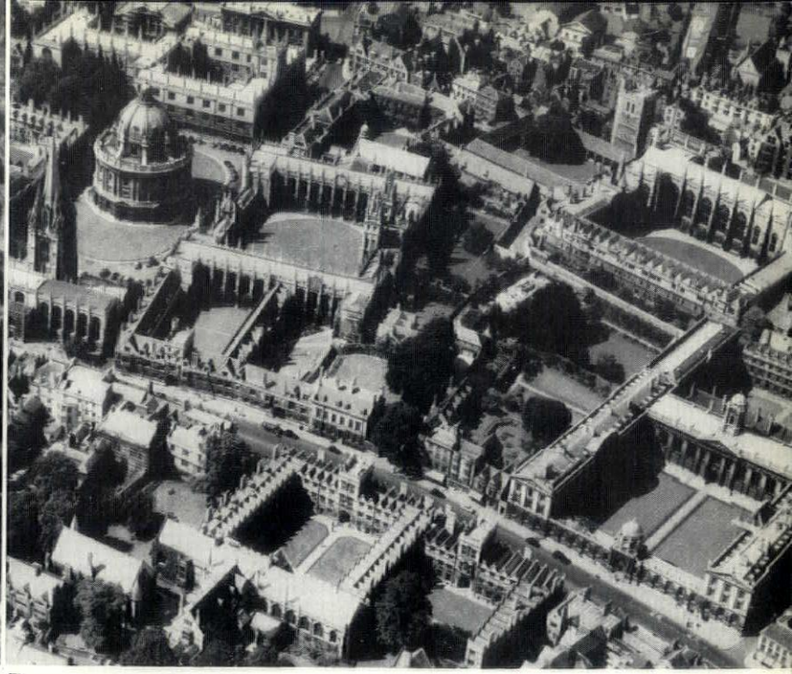
To conclude as we began: This day and age demands both URBANITY AND DAYLIGHT. It would be anti-social to build otherwise. The dichotomy can be resolved by imaginative design rather than by just scrapping daylighting standards. This is the challenge to architects.

***5**, the three-storey 'town house' is now returning to favour, particularly in the more central areas. With only the garage and entrance on the ground floor the Daylight Code may be applied at the first floor, giving a tighter street proportion.*





6



7



8

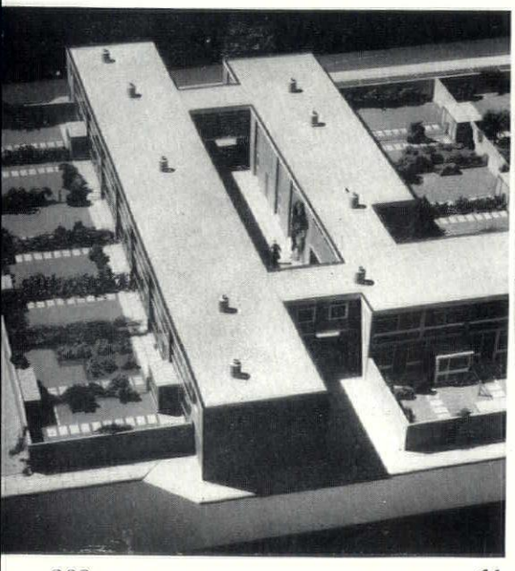


9

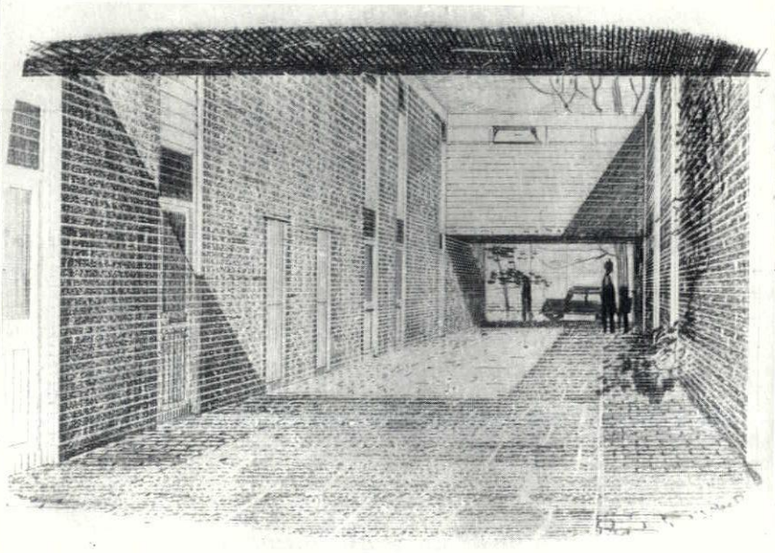


10

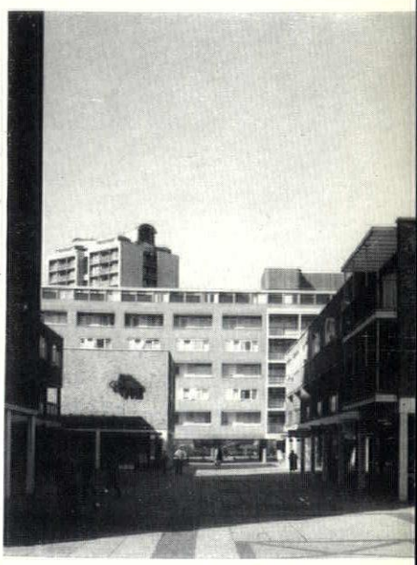
Urbanity and compliance with the Daylight Code are not incompatible as **6** *(Bath),* **7** *(Oxford),* **8** *(Royal Avenue)* **9** *(Wellington Square), and* **10** *(Paultons Square) show. Our future town building demands closure—but as a composition of varying spatial shapes. In this overall design the narrow street and the pedestrian lane have an essential place. By special planning these can still be built in compliance with the Code as shown by the scheme of experimental housing at Angrave Street, Shoreditch (***11** *and* **12***) and the shopping centre at the Brandon Estate, Southwark,* **13.**



11



12



13

OFFICE BLOCK AT WALTON-ON-THAMES

ARCHITECTS | **SIR JOHN BURNET, TAIT & PARTNERS**

1, pool under one of the staircases. 2 (opposite), inside one of the garden courts.

EX-URBAN HEAD OFFICE



One of the first British examples of a prestige head-office in a suburban location, this three-storey block on a site almost adjoining Walton-on-Thames railway station accommodates the centralised, non-manufacturing activities of the well-known *Birds Eye* frozen-food firm. The ground floor has covered parking under the block at either side of the main entrance, which is at the back, away from the road, with a directors' suite on the other side of the block; sales, personnel, commercial, advertising and similar activities occupy most of the rest of the block, except for the top floor, most of which is occupied by cafeterias and lounges for staff and management, and part of the first floor, which has special kitchens for quality testing and the development of new products.

In plan, the building is organised around three vertical service cores, occupied largely by cloakrooms, and two internal courtyards. All vertical ducting is within these cores, while horizontal trunking, piping and wiring is housed in the depth of the floor/ceiling structures which are three feet deep. Passenger lifts and stairs are located between the main entrance and the central service core. Offices and work-spaces are disposed so as to look either outwards, or into the two courtyards, with an access corridor separating the two banks of offices, or separating the offices from the service cores.

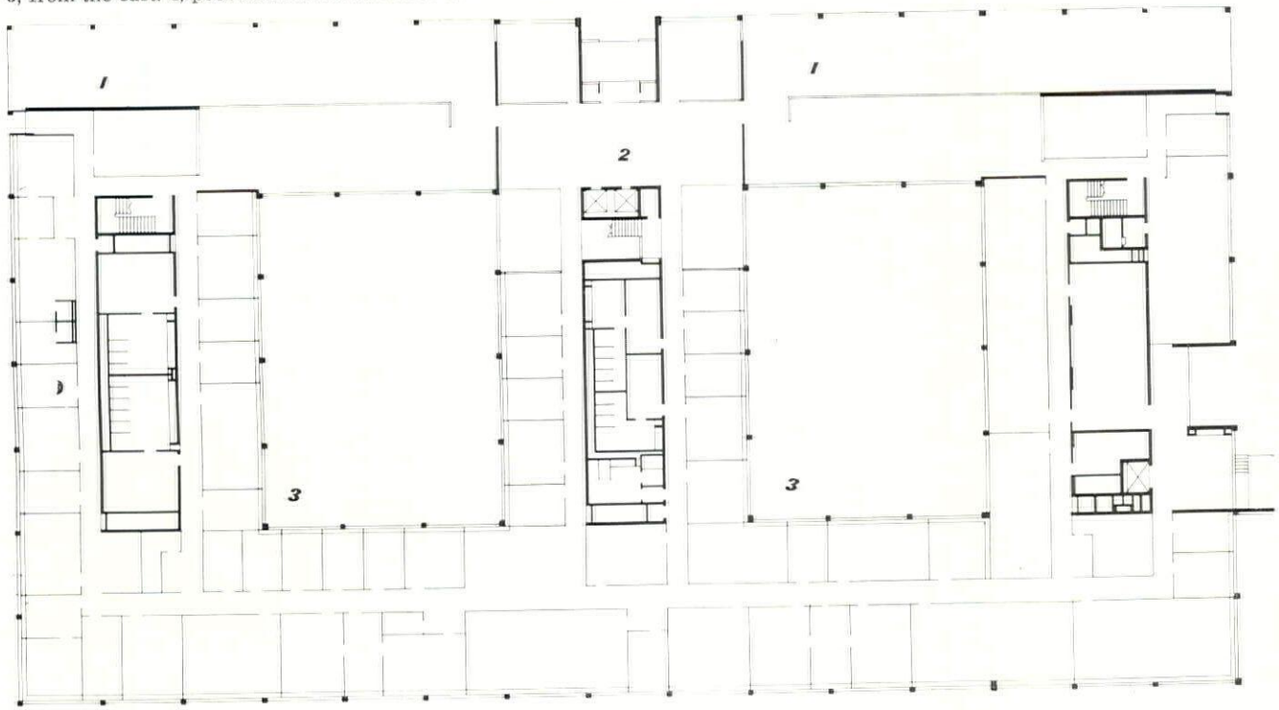
The structure, on a module of 63 in. consists of pre-cast, pre-stressed concrete beams spanning load-bearing pre-cast columns on opposite walls, or to the concrete structure of the service core. The external cladding is in natural colour anodised aluminium curtain





3

3, from the east. 4, pool outside the directors' suite on the north-west side.



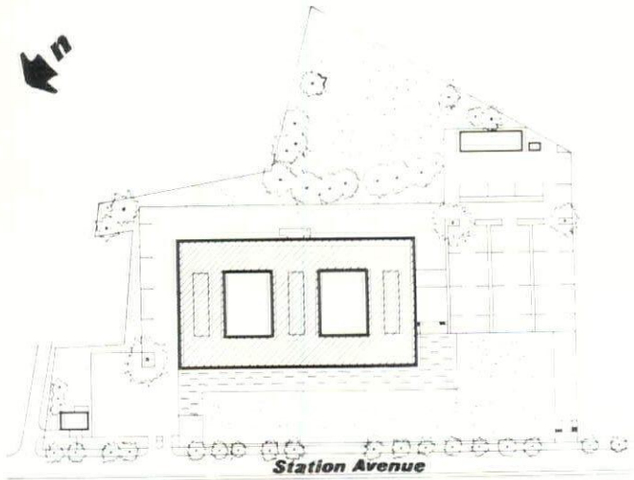
50 0 10

ground floor plan key, 1, covered parking. 2, entrance hall. 3, internal garden courts.

walling, with raised decorative motifs in the spandrels below the windows, two such motifs in adjoining panels forming a symmetrical unit.

Air conditioning is by a high-velocity induction system, drawing air in through inlets under the windows and exhausting through the ceiling, whose main surface is of acoustic tiles, with inset flush troughs for fluorescent lighting at sixty-three inch centres. The plant rooms are on the roof, on top of the service cores, and are surrounded by ceramic pierced screens.

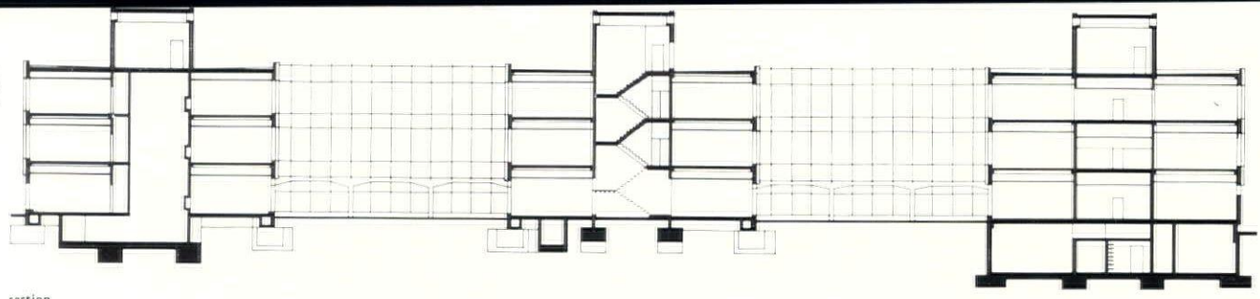
External works include comprehensive planting and landscaping, of the interior garden courts as well as the area outside the block, and a pool with fountains between the road and the directors' suite. Two subsidiary buildings in the grounds will serve as a gatekeeper's lodge, and a general services block with facilities for car-washing and maintenance, and the cooling plant for the air-conditioning, on its roof.



site plan



4



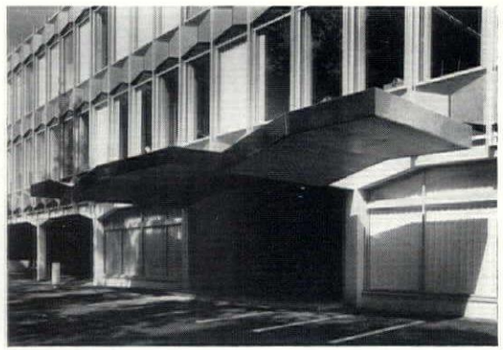
section

OFFICE BLOCK AT WALTON-ON-THAMES

5, one of the garden courts, 6, the main entrance from the east, 7, staff lounge and, 8, cafeteria, on the second floor. 9, details of corner at first and second floors showing aluminium curtain walling and decorative spandrels—see section on right.



5



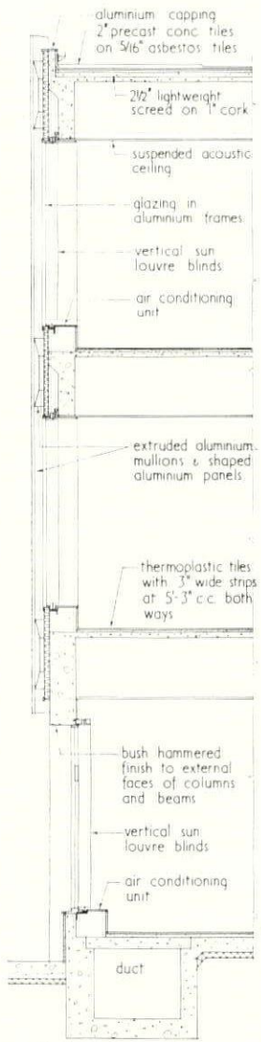
6



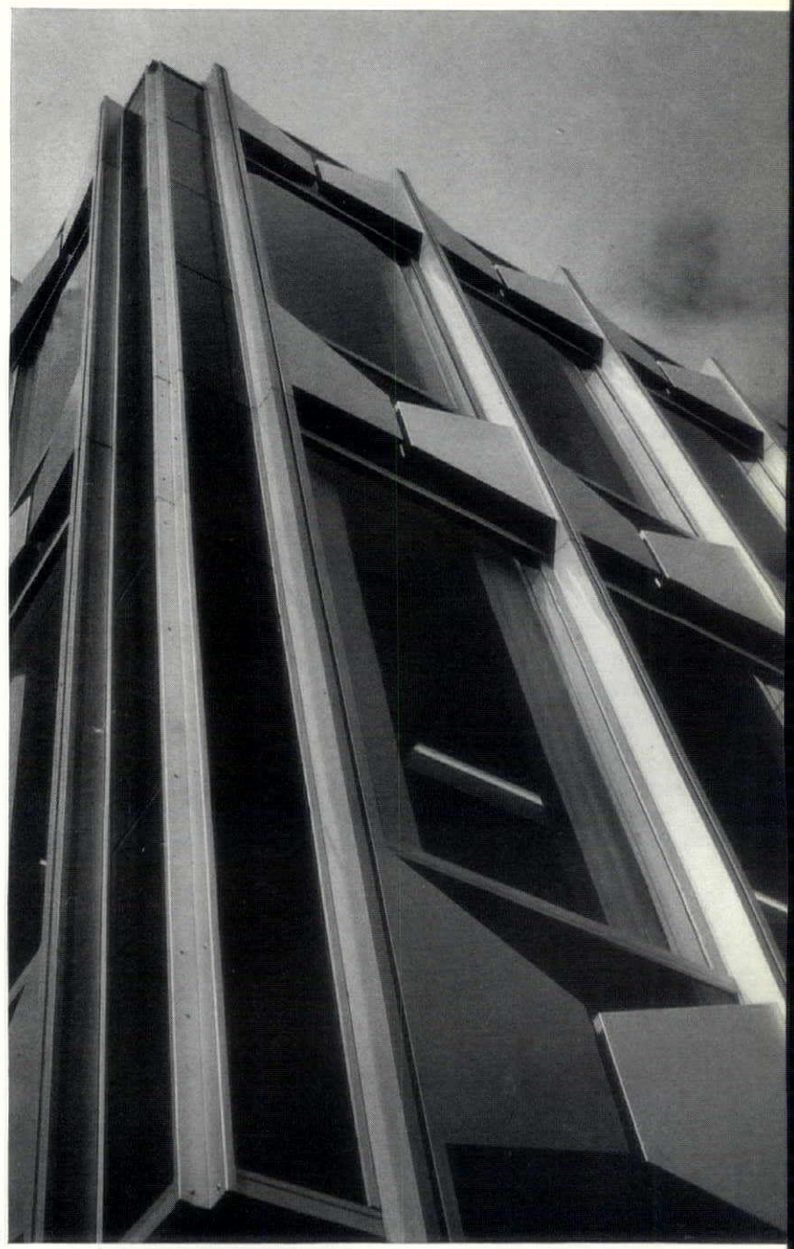
7



8

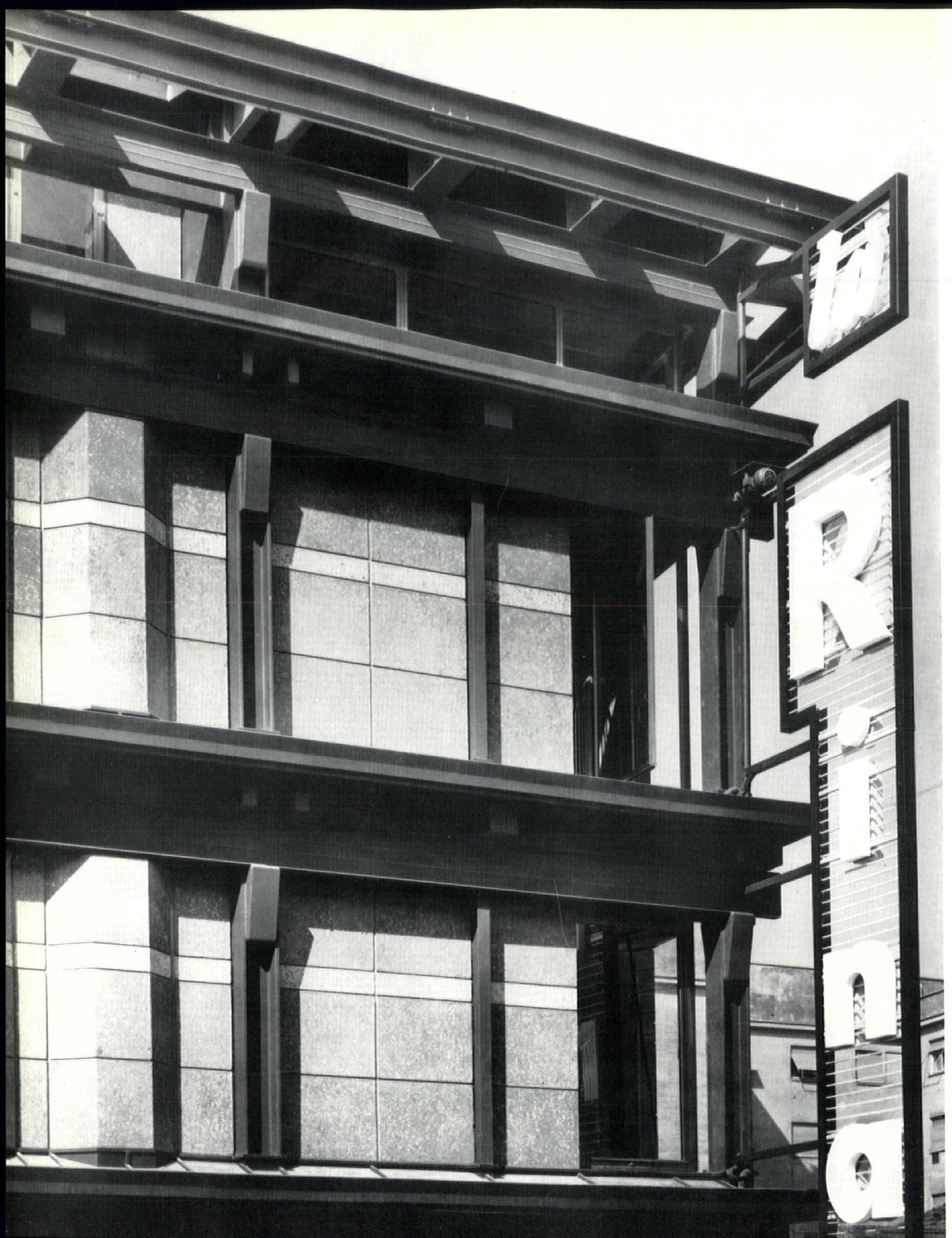


section through external wall



9

photographs by H. de Burgh Galwey


R

criticism

Fello Atkinson

Architects, Franco Albini and Franca Helg

La Rinascente Store, Rome

The interest which this important building has excited is hardly justified by either its nature, place or even its architect. Department stores are not new to Italy (Rinascente's first store was opened in Milan in 1919) and as they go this is both small and technically of no special interest. If (outside Paris) Rome is the most formidable city in which to build, new buildings, even good modern buildings, are no novelty, and at least two—the Stazione Terminale and the Parodi Delfino headquarters—are more involved in the old city than Rinascente which is outside, if only just outside, the walls. Finally, Franco Albini's eminence arises largely from the elegance and excellence of his interiors, furniture and exhibitions, and for reasons which are not clear, he has not produced a new building of any size or distinction since his INA Pavilion of 1935. It is therefore all the more ironic that in the Rinascente building Albini had little to do with the interior.

What I believe fascinates the cognoscenti of contemporary Italian architecture such as Ernesto Rogers and Bruno Zevi is that here Albini and Helg have successfully met the challenge of an old urban environment with a new commercial block, without recourse to the more wilful gimmicks of 'historicism.' In addition a certain regional pride creeps in. This is hinted at by Paolo Portoghese 'for once again a Lombardian architect takes up the challenge of this city . . . where in the golden age of the Baroque they were at home' (*L'Architettura*, January 1962).

Rome—the Rome of the Cæsars and the Popes—had had much the same impact on architects operating there (and they mostly came from the North) as on travellers: thrusting on their consciousness its craggy ruins instead of stimulating them as Florence and Paris, to the creation of new paradigms; forcing them to modify and adapt their ideas both to the reality and the myth of these antique incubi. The fact that so many of the sites of, for instance, churches are circumstantial—arising not from popular need but from the accidents of martyrdom—and have later been raised to pomp not always from the pressures of pilgrimage, as at Canterbury and Gloucester, but from the circumstance of patronage, only adds to Rome's urban complexity, producing grandeur cheek by jowl with squalor. Baroque Architecture could be said to be the product of these circumstances—a need to achieve unity almost by the separation of parts and of interior from exterior 'at the expense of cleanly defined elements' as Henry Millon writes.

The challenge to the architect in Rome from the 1550's was seldom that of a new building on a clear site, but the making over of existing buildings and the unification of unrelated elements. This was Michelangelo's problem on the Campodoglio, Bernini's in the Piazza S. Pietro and Specchi's with the Spanish Stairs—'townscape' on the monumental scale. It was taken up again in the 1880's by Koch and Guerrieri in the Piazza dell'Esedra and again by Montuori and his associates in the Stazione Terminale in the 1950's. With the startling exception of the 'Vittorio Emmanuele' individual buildings in Rome since the seventeenth century have largely been subordinated to their surroundings. The kind of unity one finds in the Piazza Navona, where the shape of the Circo Agonale is still preserved beneath a couple of palaces, three churches, restaurants and what have you, and the rivalled efforts of Borromini and Bernini among others, is the rule not the exception.

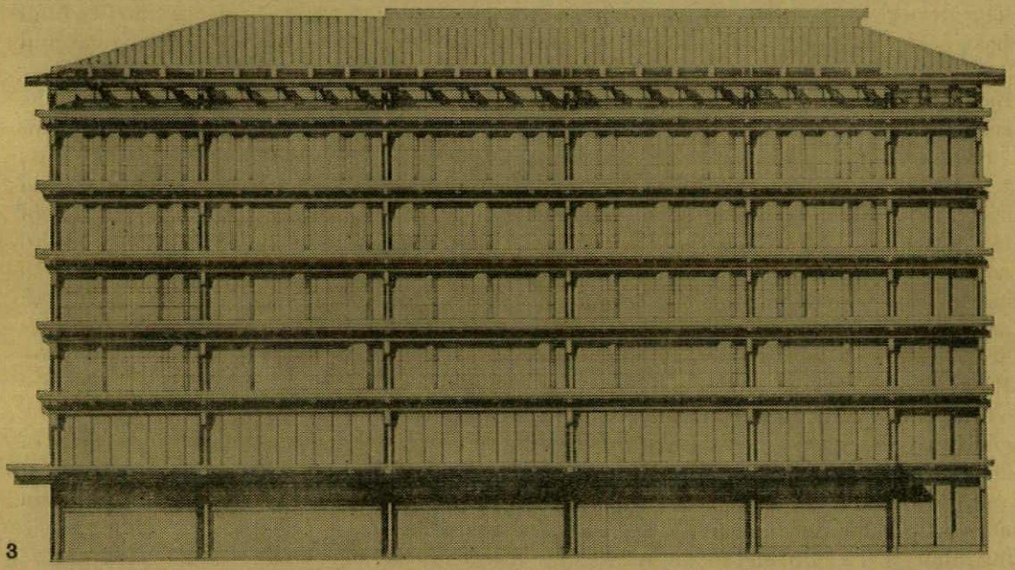
This sense of historical continuity is

1 (*opposite page*), *exposed steel-work on the exterior of the* Rinascente *department store on the Piazza Fiume, Rome. The originality of the detailing of this frame, by Franco Albini and Franca Helg, has been the subject of world-wide comment, but in the article which begins on this page, Fello Atkinson relates it also to the unprecedented problems of building in the Roman townscape.*

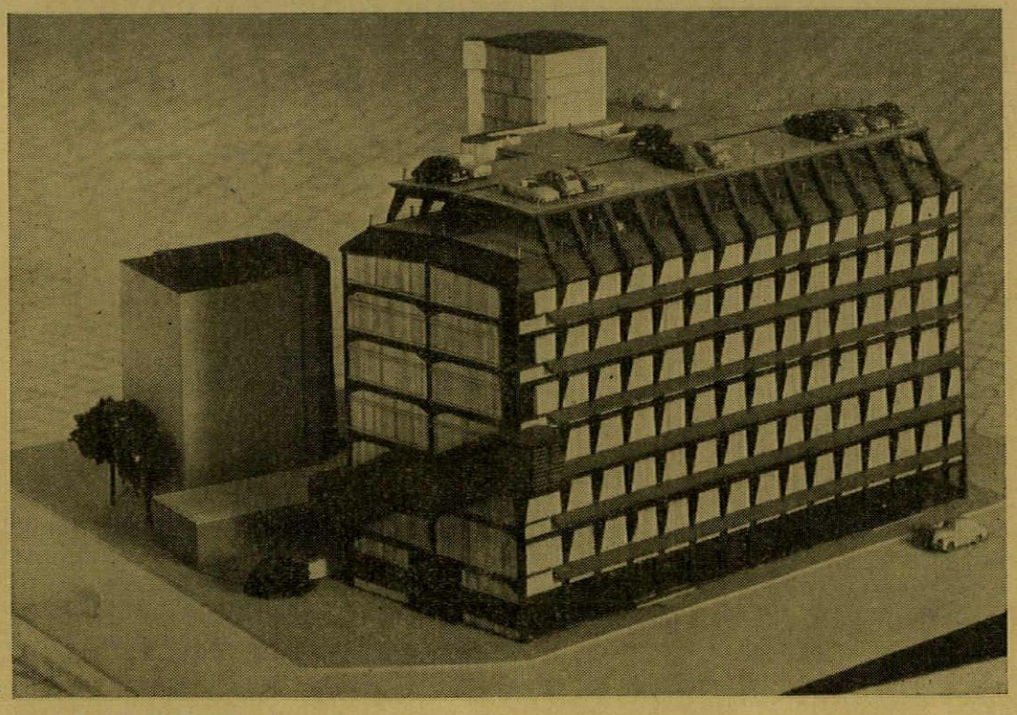


2

2, La Rinascente *as built, showing how the classicizing final version of the design gives a silhouette that harmonizes with adjoining cornices and roofs.* **3,** *the main side elevation, as built.* **4,** *a model of the first project for* **la Rinascente,** *Rome, showing the bracketed treatment of the exposed frame and the rooftop car parking carried on canted portal frames.*



3



4

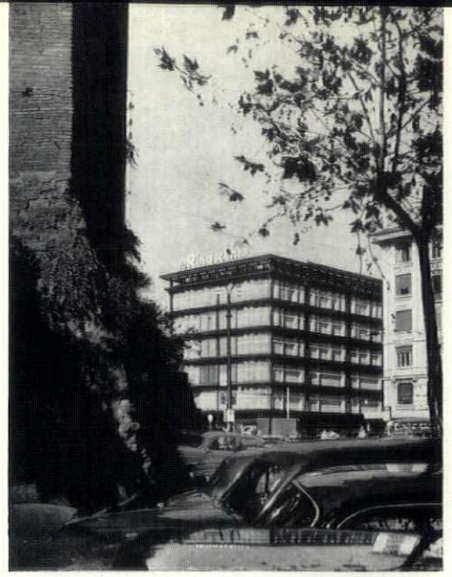
overwhelming, and Marinetti's desire to do violence to Rome, Venice and Florence and the English who preserved such cities in their seedy ways was as much a recognition of their magnetism and power to survive as it was a bitter lament at the failure of the industrial revolution (in 1914) to revitalize Italy. Elsewhere in Europe the destructiveness of twentieth-century commercialism was merely philistine; in Italy it became an ideal finding expression in the Futurist Manifesto. Whether Mussolini's Fascism, which owed so much intellectually to the Manifesto, had the will to modernize Rome, it had no power to do so and apart from the pompous Via della Conciliazione merely perpetuated the eternal Italian answer to plague or overcrowding by building *una citta nuova fuori i muri.* It is not surprising therefore to find a modern architect—even an heir to the Futurists—like Albini responding sensitively to such an historic situation.

The location of la Rinascente is neither distinguished nor really venerable. It is in one of those densely developed areas of six-storey apartment blocks by which the capital expanded beyond its walls after the Reunification of Italy. The sort of area whose ambience is as peculiar to the continental city as that of the garden suburb to ours; and which in the growing prosperity of our times is rapidly losing its former drabness. The site is, however, a key one, since it is on a corner of the Piazza Fiume where the tree-lined Corso d'Italia—separating the old city from these nineteenth-century inner suburbs—turns south along the Aurelian wall. It presented two challenging problems to an architect as conscious of the Roman tradition as Albini and his partner Franca Helg. It forms part of the Piazza which is a joint in the traffic-congested Corso d'Italia, and it is almost contiguous with the dusty red brick cliff of the Aurelian wall. Looking from the Porta Pia la Rinascente seems to form part of the wall and is more often seen diagonally than in elevation.

One is conscious at times that Italian architects have as great a nostalgia for the buildings of nineteenth-century America and England as the Futurists had for their technology, and although the six-storey apartment block (lying parallel to Rinascente on the Via Salaria) is hardly in this category, Albini has easily accepted it as a model and uncannily reproduced it, in scale, and even ornamental suggestion, in skeletal and novel terms. However, to achieve this he has had to submerge three floors below ground, concentrate service areas and staircases away from the front and reduce the office floor in the roof to a hideyhole behind a 'renaissance' cornice which serves duty as a rail for a suspended cleaning cradle.

[*continued on page 273*

La Rinascente Store, Rome

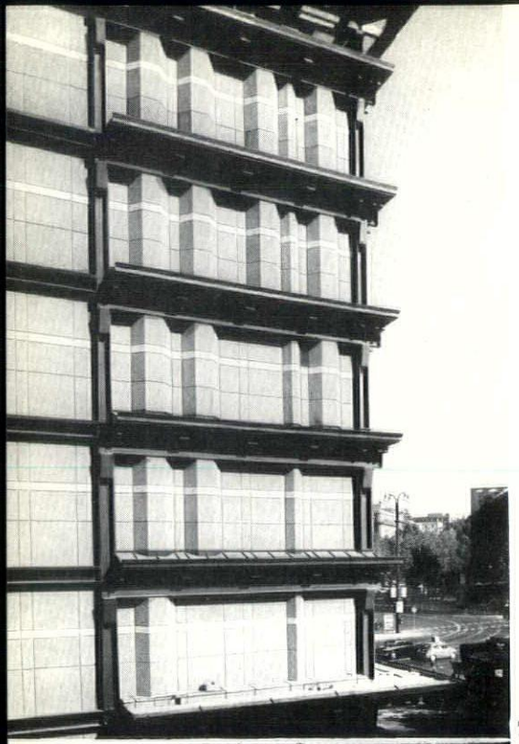


5

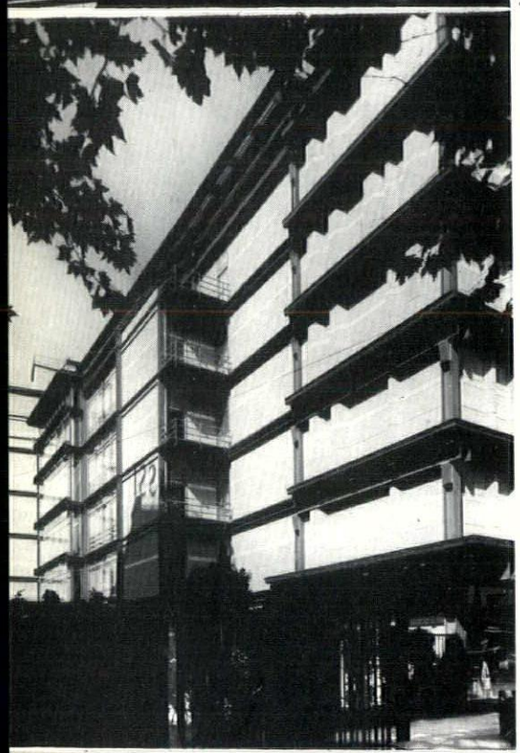
6



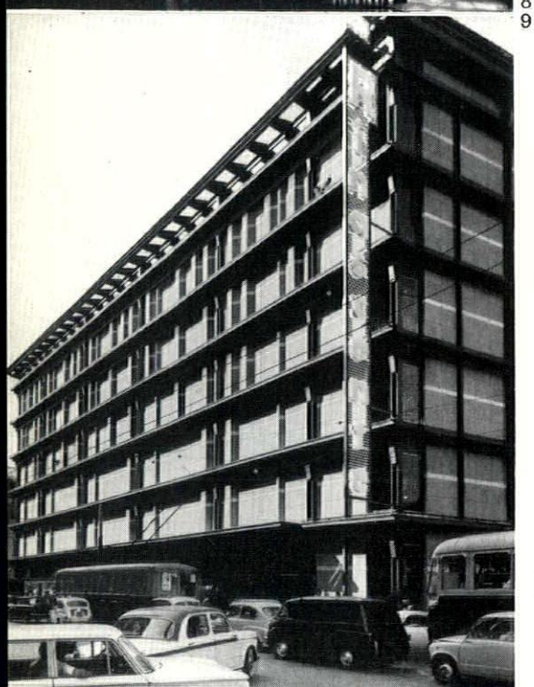
5, the building seen from the corner of the Aurelian Wall. 6, the facade to the Piazza Fiume, with its three-storey window and sky-sign.



7



8
9



10

Opposite page: 7, corner of the courtyard and Piazza Fiume elevations. 8, the courtyard face, showing the termination of the projecting cornices and window of the escalator tower beyond. 9, main elevation to the Via Salaria. 10, detailing of escalator tower and stock-room wing in courtyard. 11 (this page), architects' isometric drawing of corner at Via Salaria and Piazza Fiume, showing the arrangement of the service ducts in the wall.

continued from page 270]

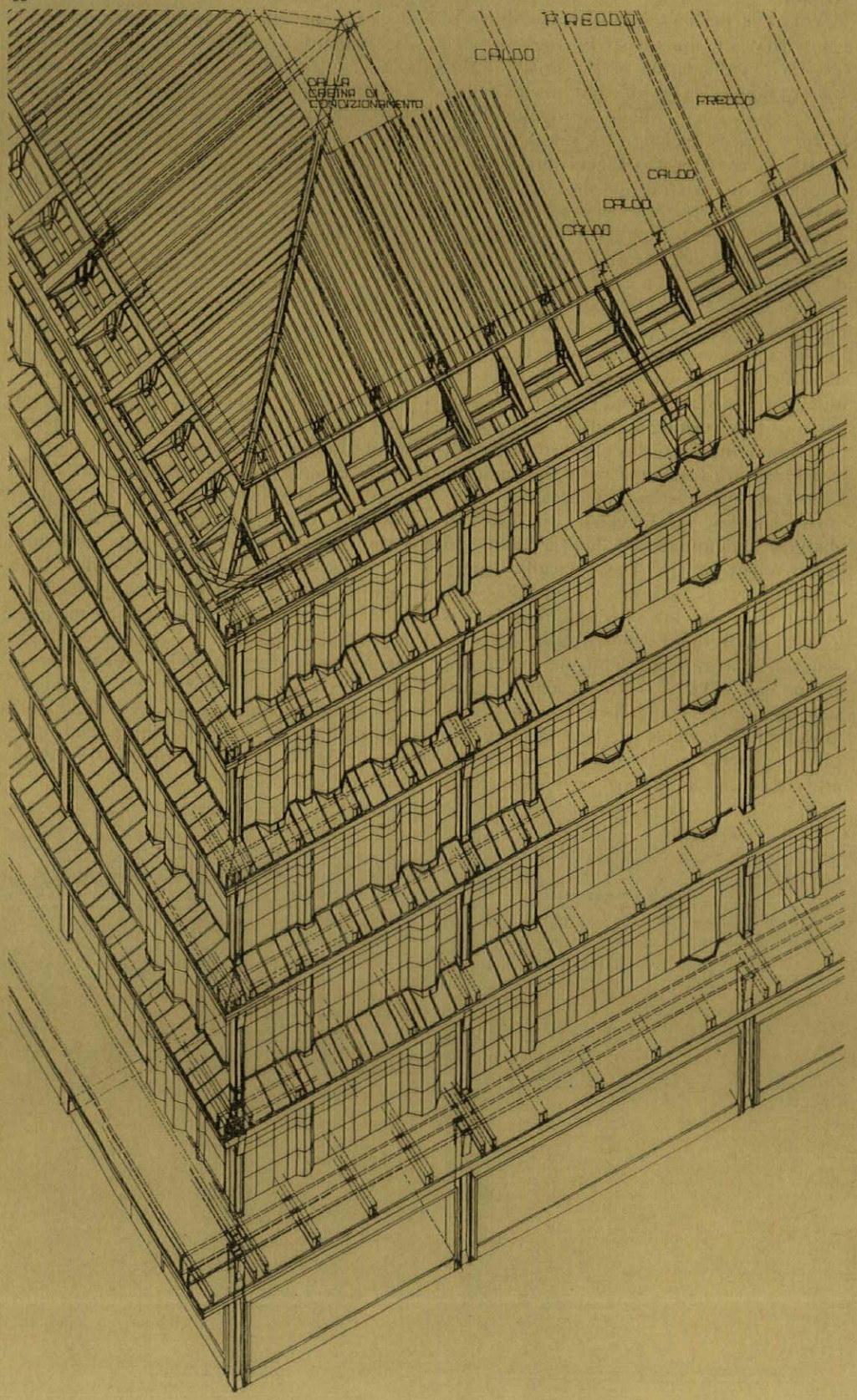
A glance at the original project, which was for a larger building on the same site, will show that this deference to history was certainly not part of the architect's original thinking. In that project the obtrusively structural expression of the portal frames (no internal columns) owed something to Sant' Elia, while the roof parking recalls the Turin Fiat factory.

This scheme was rejected, and the form of the present building is largely dictated by the presidential town planning decree of 1948 which determines volume, shape and dimensions of buildings in Rome. The exposed steel frame and the windowless walls have been kept, but transformed from a somewhat awkward constructionist affair into a severely classical building whose formalism can best be judged from the drawings. Clearly Albini enjoyed this transformation.

It is, however, in the use of these two not very promising elements, blank concrete walling and exposed steel (painted two shades of dark grey), that the distinction of this building lies. They achieve a vibrancy and life that is unexpected—the light catching the edges of the steel and rippling along the folded wall as it does along an arcade of fluted columns. Yet the building remains rational and objective. Blank walls are in the proper planning tradition of department stores where internal wall space is essential and windows a nuisance. Albini from humanist, and perhaps for formal reasons (to give an accent to the Piazza Fiume façade), has imposed a group of windows on three of the floors. Internally these have now been largely blocked and externally they seem to throw the scale.

It should, however, be noted that the courtyard side is fully glazed in front of the escalator, and this is both sufficient, interesting and functionally correct. Many of the folds in the walls contain air-conditioning trunking, though Albini and Helg have rightly made many more for visual reasons than are strictly required. Consequently one is unaware of the lack of windows or of that blankness which in many American stores obtrudes into the street pattern. The rhythm of these folds, which are of two or three kinds, is extremely subtle, and is modulated to give a kind of shimmer. They are made up of precast concrete panel units with a mottle surface of different reds which from a distance looks

11



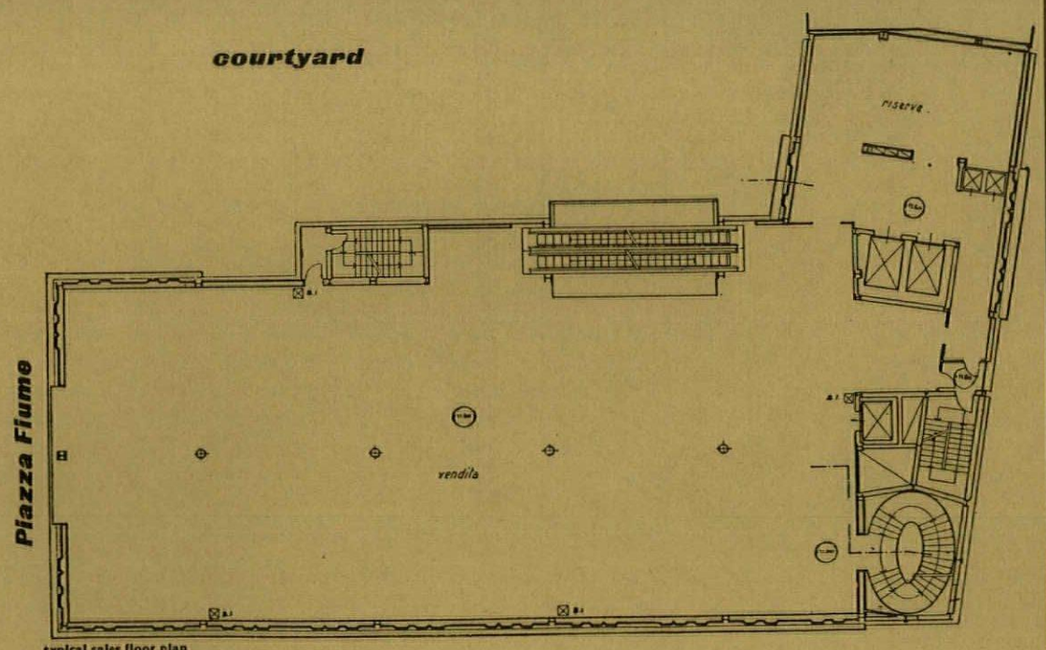
like terrazzo, but on close inspection is quite coarse—a pointilist technique. They match in colour the brick of the Aurelian wall (though made in Bergamo they were adjusted in tone for the more intense Roman light). The white band running through them accentuates the pleating and breaks up what little blankness might remain.

Yet it is perhaps in the exposed steel-frame that one finds what Portoghese calls 'positive confirmation of the crisis of the International Style'—if that means what I thinks it does, which is roughly that architecture is no longer tidy but mucked about or, as Ernesto Rogers put it more elegantly in writing of la Rinascente, 'loses some of its objective severity . . . some of its conceptual clarity but gaining greater wealth of vibrations.' (*Ha perduto di rigore oggettivo . . . della limpidezza concettuale ma acquistando maggior richezza di vibrazioni*). Closer to the early Rietveld neo-plastic constructions than the later neo-classic Miesian cages—mixtures of aesthetic sensibility and structural suggestion, the working structure being often cased and hidden—the exposed frame of la Rinascente (designed with the engineer Gino Covre) is restless, even casual, alive with cantilevers, brackets and section changes and apparently lighter than and independent of the 'heavy' walls. Every opportunity is taken to expose edges rather than flat faces by spanning beams longitudinally and thus heightening the general chiaroscurial richness. Yet as far as one can judge it is wholly logical and if superficially here and there it suggests an 'order' with cornice, cap and triglyphs, it gives a general impression of the casualness and freedom of ad hoc civil engineering steelwork, without losing any visual clarity.

This is no place to go into the difficulties of achieving multi-storey exposed steel structures; suffice it to say that Signor Albini, like anyone else who has tried to do so, had his troubles with the 'pompieri' and succeeded only by showing that the steel frame is protected by the walls (where windows adjoin, and internally, all steel is encased). A sound scientific case was made out for this some years back by German engineers, but is not generally accepted and the steel industry, busy here with more profitable lines, has shown little interest in promoting it.

I have said nothing of the interior of la Rinascente because it is largely irrelevant to the building's main interest and Albini had little to do with it, apart from service areas and some elegant and clever staircases, including a red marble helical stair at the rear, which can be seen at every level of the store through glass—a more effective exit indicator than the usual signs. These interiors are largely anonymous, flexible and well serviced spaces which is surely what is wanted in a department store as on a theatre stage.

'La Rinascente is a characteristic document of the evolutionary process now going on and in which many of us participate,' writes Ernesto Rogers, 'a landmark not a goal'; and indeed it may well be that this most refined and visually complex modern building is a one-off job merging chameleon-like into the Roman scene. Certainly whoever said, and I think it must have been Le Corbusier, 'every building is a prototype of the future city,' should have excepted Rome where buildings tend to be antetypes of the past, pragmatic rather than programmatic.



typical sales floor plan



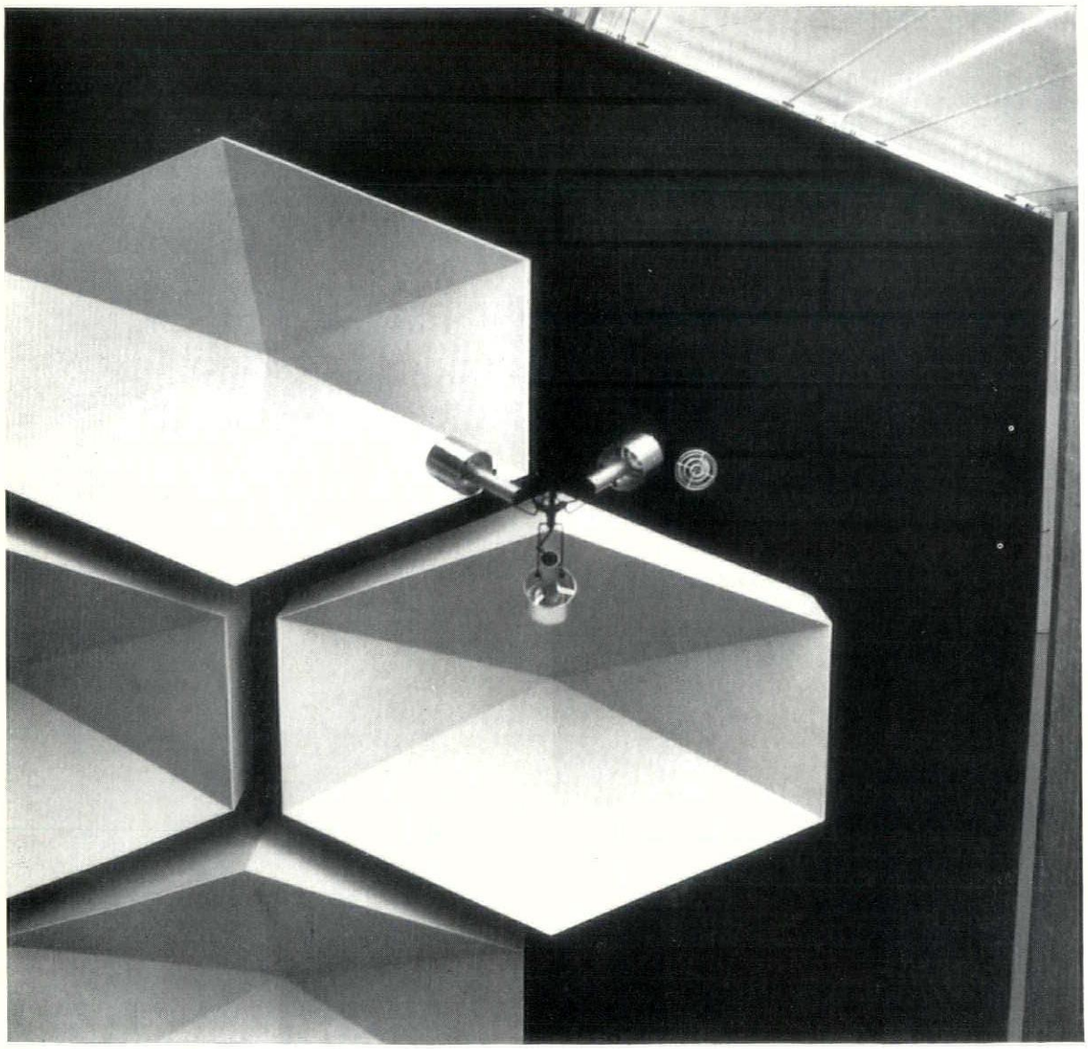
1, view through the combined halls from the stage, with all dividing doors slid back. Main entrance hall visible at upper level.

Gulbenkian Hall, Royal College of Art

architects : H. T. Cadbury-Brown
in association with
Sir Hugh Casson
and R. Y. Goodden
assistant for the halls
Elizabeth R. Cadbury-Brown



2



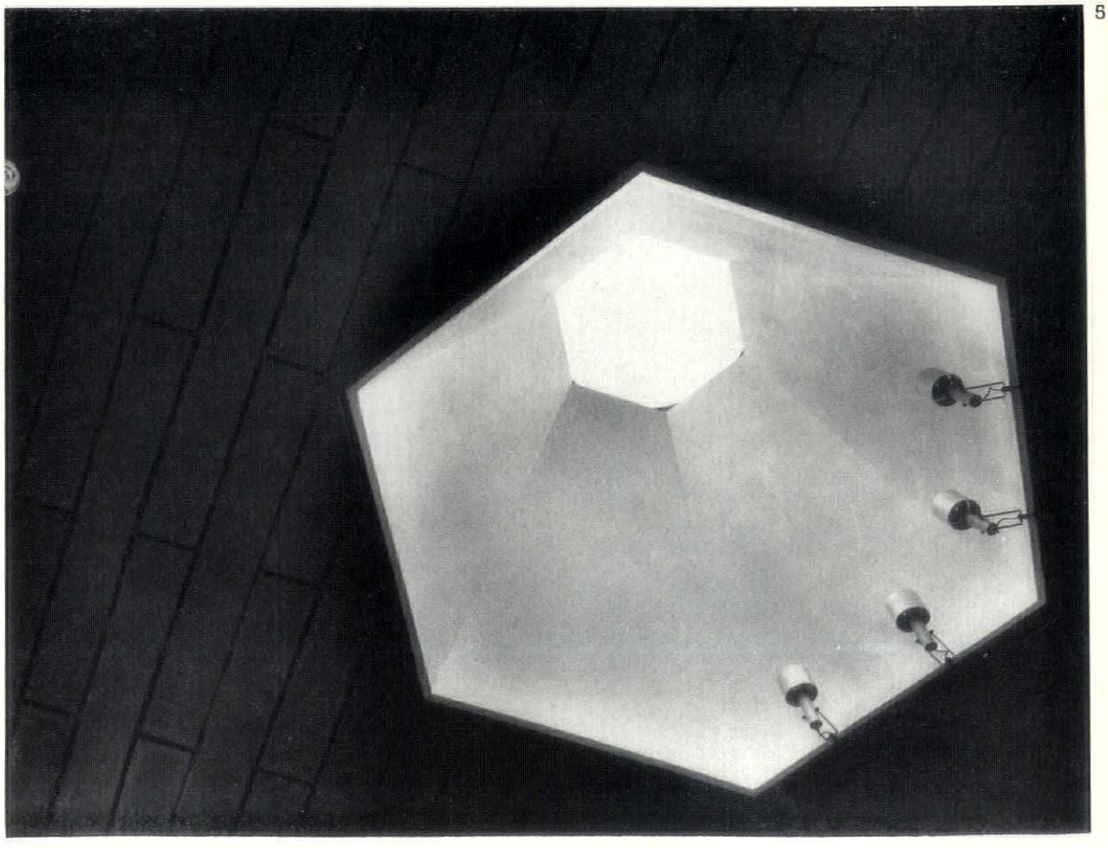
3

The Gulbenkian Hall block which forms part of the first phase of the new buildings for the Royal College of Art, South Kensington (described with plans on pages 242-251) provides necessary lecture-hall space, exhibition areas and a stage for fashion parades and other similar functions of the College and consists essentially of two halls which can be used separately or as a stage and auditorium by opening sliding doors in the proscenium. The basic construction, of brick walls meeting at angles that are out of square twenty-two degrees (approximately), or failing to meet because of the interposition of a strip of window, reveals itself with equal directness inside and out, and gives the basic character of the interior, in conjunction with hardwood flooring and a darkly panelled ceiling, below which are hung—where required—clusters of hexagonal acoustic cells and light fittings. In section, the block has an upper floor, level with the external podium, which comprises the entrance hall and the gallery to the two halls, and a lower floor which varies in level between the stage, the well of the auditorium, the lower foyer and the exhibition space under the podium. The upper entrance hall and the lower foyer make a natural complex of spaces for receptions and similar functions.

2, looking from the balcony of the auditorium towards the windows on Kensington Gore. The main entrance doors are visible at upper left, with part of the lower foyer visible below.
3, acoustic cells and lighting cluster in the auditorium—this near-vertical view also reveals the characteristic angle at which wall meets wall throughout the Gulbenkian block.



4



5

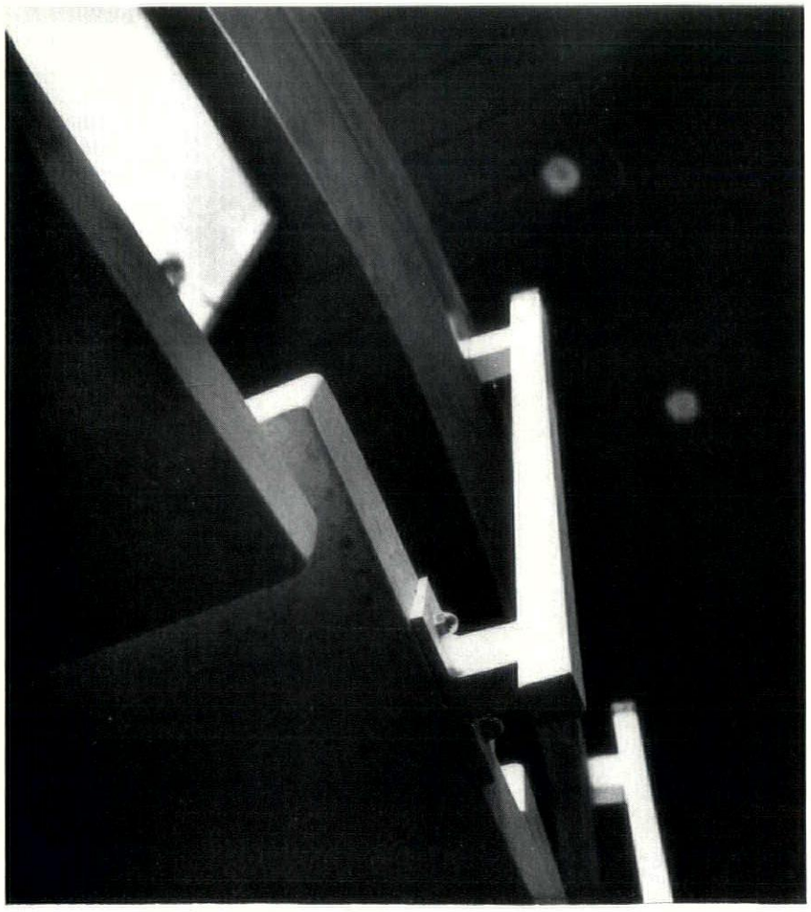
4, the upper foyer seen from the entrance to the halls ; at the right, the main doors on to Kensington Gore ; in the background, the head of the stair which descends to the lower foyer and a window giving on to the green of the park ; at the left, the receptionist's station in the link connecting to the workshop block.

5, the skylight over the stairs—the artificial lighting ensures that this will always be seen as a hexagonal pyramid of illumination even during the hours of darkness.



6

7



ID

Gulbenkian Hall, Royal College of Art

6. the lower foyer at the foot of the stairs—a comparatively shallow space in which the relative closeness of the floor and ceiling surfaces gives a characteristically milky light. Beyond the stair-well, steps descend to an exhibition space under the exposed part of the podium.
7. detail of the stair-slab ends and steel uprights carrying the hardwood hand-rail of the stair, which is an independent structure within the partial hexagon of the stairwell.

F.R.S. YORKE, 1906-1962

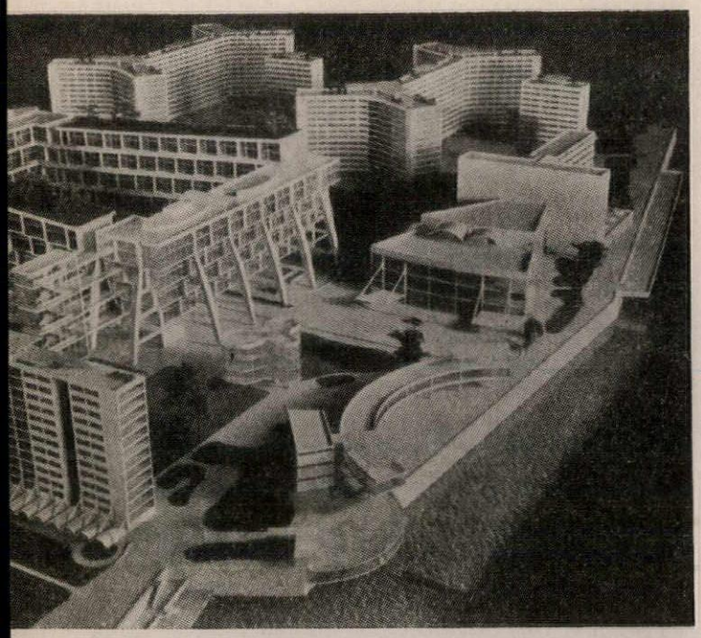
A MEMOIR BY E. MAXWELL FRY



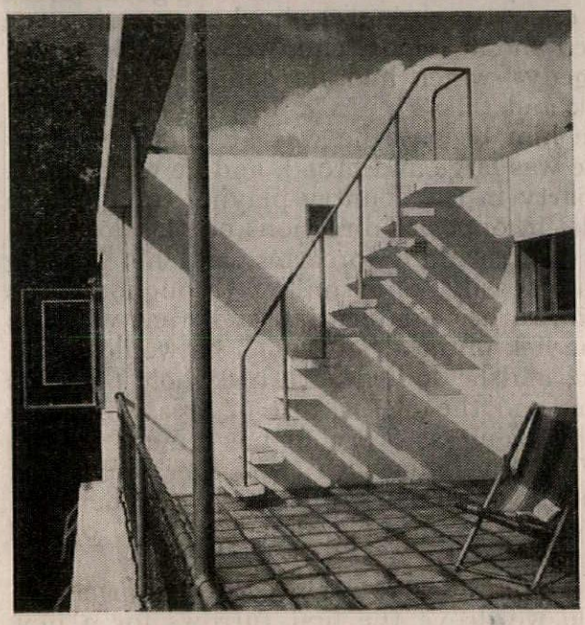
In the birth throes of a revolutionary movement all the comrades are blood brothers; but as success crowns the first efforts character reasserts itself and the protagonists go their several ways. So it was with the MARS group, and sad it is to remember. But what was good in those earliest days, and what survived for us in terms of brotherhood, was embodied in the sterling good nature of 'K' Yorke, and this came to me in a flash when, meeting one evening, both of us bored and at a loose end, we went off to see a revival of a Greek tragedy—which had its comic aspects, and afterwards to eat, drink and talk.

It cheered me to see him because he was at all times a reassuring man. His frame was large and broad, and he was strong. I remember him at a party in the country playing the game in which the contestants lie in opposite directions on the floor and try to bend back each other's right forearms, and his beating every stalwart there, and easily, and smiling throughout. His smile was a cheerful grin, rather confidential, and went with his large ruddy face and the lick of dark hair which he would brush aside from time to time; and he smiled with his whole face, his fine blue eyes narrowing and the pleasantest of creases adding to the general effect of his being, as everyone has remembered, a countryman. At dinner one evening, with two other architects, we found that they owned over a hundred head of cattle between them, which seemed to me remarkable; but that 'K' owned most of them, which seemed natural.

But when I first met him we were architectural journalists, making ends meet while we drove the first furrows for a new architecture in the columns of *The Architects' Journal*. That must have been the period when he shared an office off the Strand with Frederick Gibberd. He must by then have started his editorship of *Specification*, that remarkably concise compendium of practical information to which he remained faithful all his working life. Whatever any of us were before then, we became with the founding of the MARS group, in or about 1932, a revolutionary brotherhood of which he was the first Secretary. It was a period of manifestos and statements of faith, an infection of Continental outlook which lay uneasily on some







Three early designs by F. R. S. Yorke: above, project for 'A Garden City of the Future' (in collaboration with Marcel Breuer, 1936); below, house at Nast Hyde, Hatfield (1935); bottom, detail of the house at Iver, Bucks. (1936).

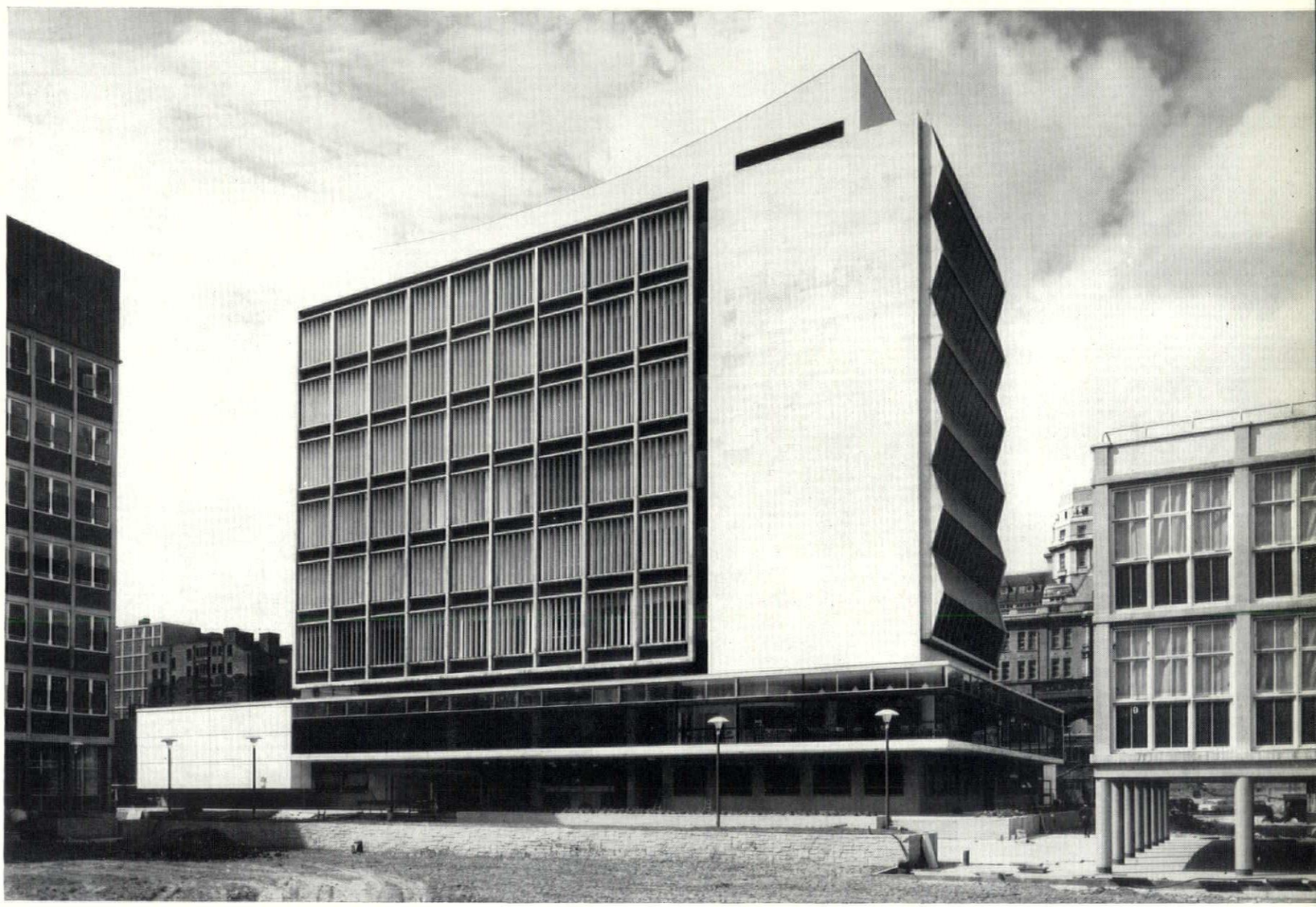
of us and for which we were glad to substitute the solid contribution of work achieved.

These came for 'K' Yorke in two ways. First, in the form of houses; one that I now identify as being built at Lee-on-Solent, a long ranging affair of concrete and brick; and another at Gidea Park in collaboration with William Holford and others in a competition in which I was one of the judges. And second, in the form of his book, *The Modern House*, filled with photographs and plans of the best modern houses in Europe. We were all building houses for the brave sponsors of the movement, our first clients, and this book showed us where we stood, introduced us to architects as yet unknown to us, acted as an open sesame for a new type of Continental tour, but, above all, set standards of excellence by which we could measure ourselves, and examples that drew our affections and acted as a ferment for whatever talents God had given us.

I find it hard to overestimate the value of that book, especially for someone like myself that had not the money to travel: it was a real eye-opener and, appearing as early as 1934, gave us a conspectus of the movement at the time we most needed it. He followed it in 1937 with another book, *The Modern Flat*, which kept pace with our ambitions and our growing practices, for by that time we had become an active member group of CIAM (Congrès Internationaux d'Architecture Moderne) and were at the same time welcoming the first refugees from Nazi Germany.

Yorke worked for two or three years with Marcel Breuer doing a series of small houses with a greater range of materials than was common at the time. And then came the war. By the time I had returned to the country he was already established with Eugene Rosenberg and Cyril Mardall in the practice that succeeded beyond the dreams of our earlier days but by the very nature of its success obscured some of the qualities by which we had known him. Yet through what must have been a crowded business life he preserved his own way. Above the firm's office in Hyde Park Terrace his large room with its plants and pictures, its books and its curiosities, reflected his love of the country and of art and companionship. It had a careless amplitude that spoke well of him.

I know little of this later life of his. We met from time to time at parties when it was a pleasure to see him among friends engrossed with conversation, but unaggressive, friendly and smiling. And then came the illness that struck him down suddenly and brought years of pain and privation, and it was in his little room at St. Thomas's Hospital that his character rose to its awful and final testing. Through whatever processes of suffering he passed, kept alive only by an apparatus of tubes, he turned to his friends the same smiling face and offered an equal enthusiasm for the life from which he had been cut off. So great was his courage that it gave him a final lease of months in the society he loved before the inevitable relapse and his death on June 10, delayed only for the last pleasure he enjoyed as congratulations on his award of the CBE poured into his room from far and wide.



1, *from the south-east.*

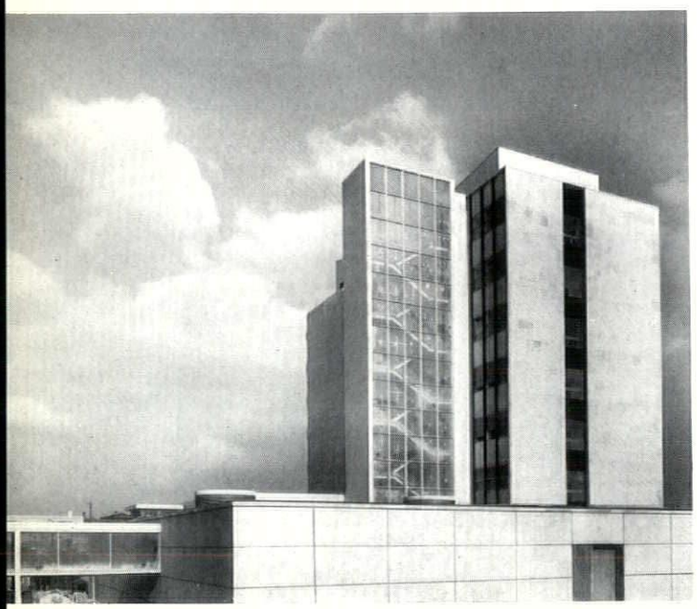
Lecture Hall Block, College of Science and Technology, Manchester

ARCHITECTS: CRUIKSHANK AND SEWARD

As far as is known, this is the first centralized lecture-room facility to be built for a British College of Technology and contains three large lecture halls (seating 500, 300 and and 300 students respectively) in the two-storey podium, with smaller halls and classrooms in the tower block above in six identically planned floors. In the podium there are also a buffet, reading and writing room and an exhibition hall, while the three large lecture theatres are reached by way of a large ante-hall at first floor level which can also be used for receptions. The concentration of teaching rooms in a single building, where they are used continuously (instead of occasional use at dispersed sites) makes for more effective and economical use of specialized and expensive equipment, including special lifts and loading bays making possible the presentation, in the lower halls, of lecture-exhibits such as machine tools and aero-engines. For theatrical performances, the black-board projection-screen unit in the 500-seat hall may be slid away to increase the size of the stage.

The structure, throughout, is of reinforced concrete, the

tower block being carried over the hall by prestressed beams supported on large columns cast in white concrete but left rough from the shuttering. Above beam-level, clerestory windows admit light to the hall, giving a high level of natural lighting. The small lecture halls in the tower block are back-lit (i.e. from behind the students' heads) by canted windows which give the characteristic silhouette to the eastern end of the block. The glazed stair-tower projects from the north side, leaving the entire south side of the tower clear for unobstrueted glazing (which is, however, protected by sun-screens to reduce heat loading) looking over the best view.



2

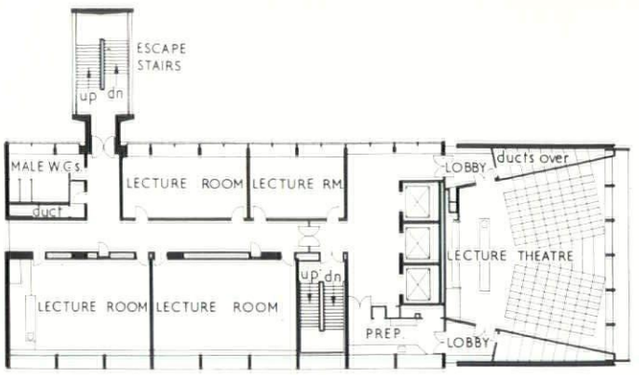
2, from the north-west. 3, a lecture theatre in the tall block. 4, one of the 300-seat lecture theatres on the first floor.



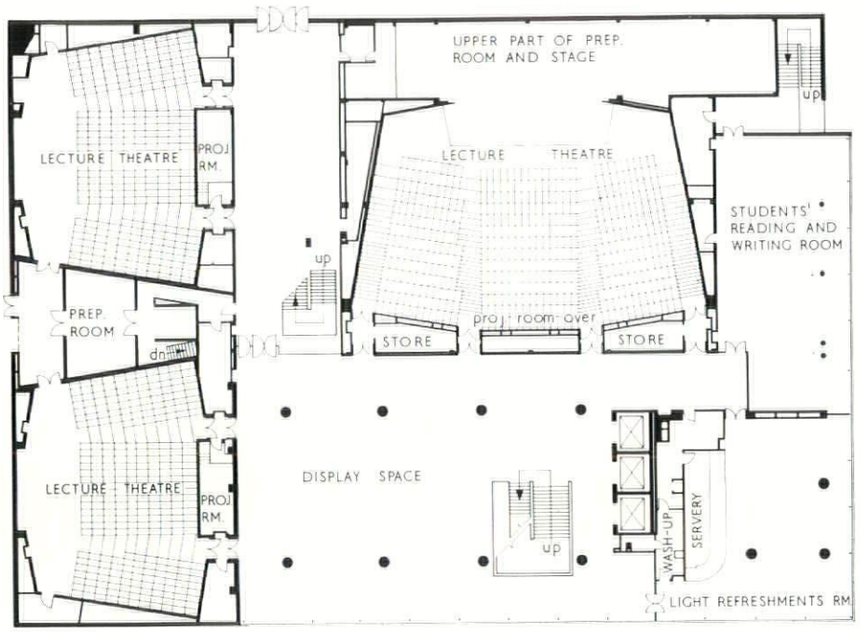
3



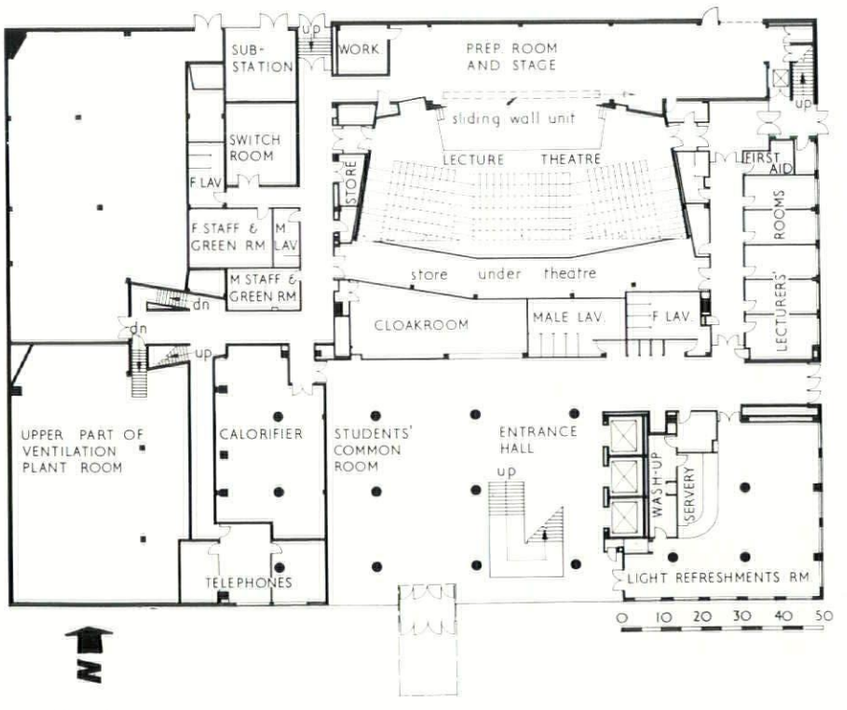
4



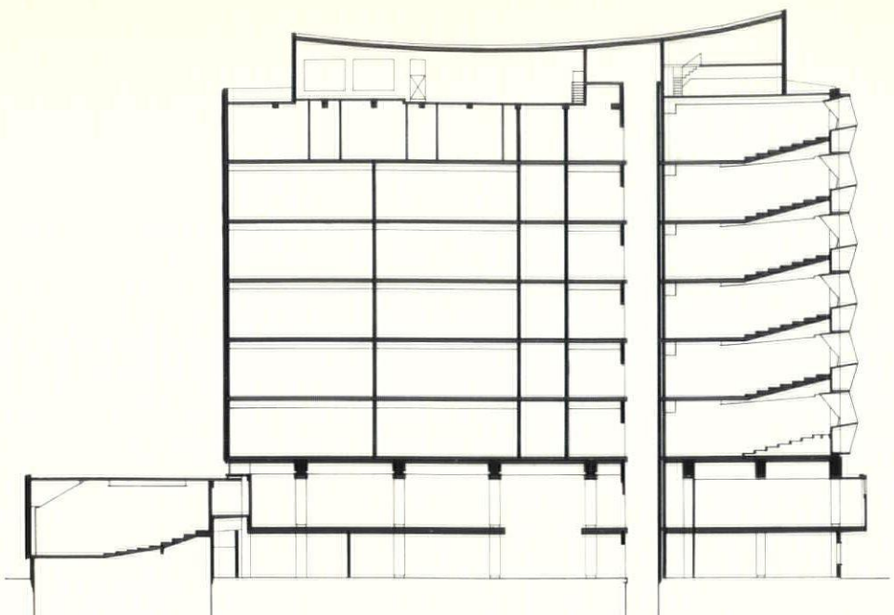
Second floor plan



first floor plan



ground floor plan



section



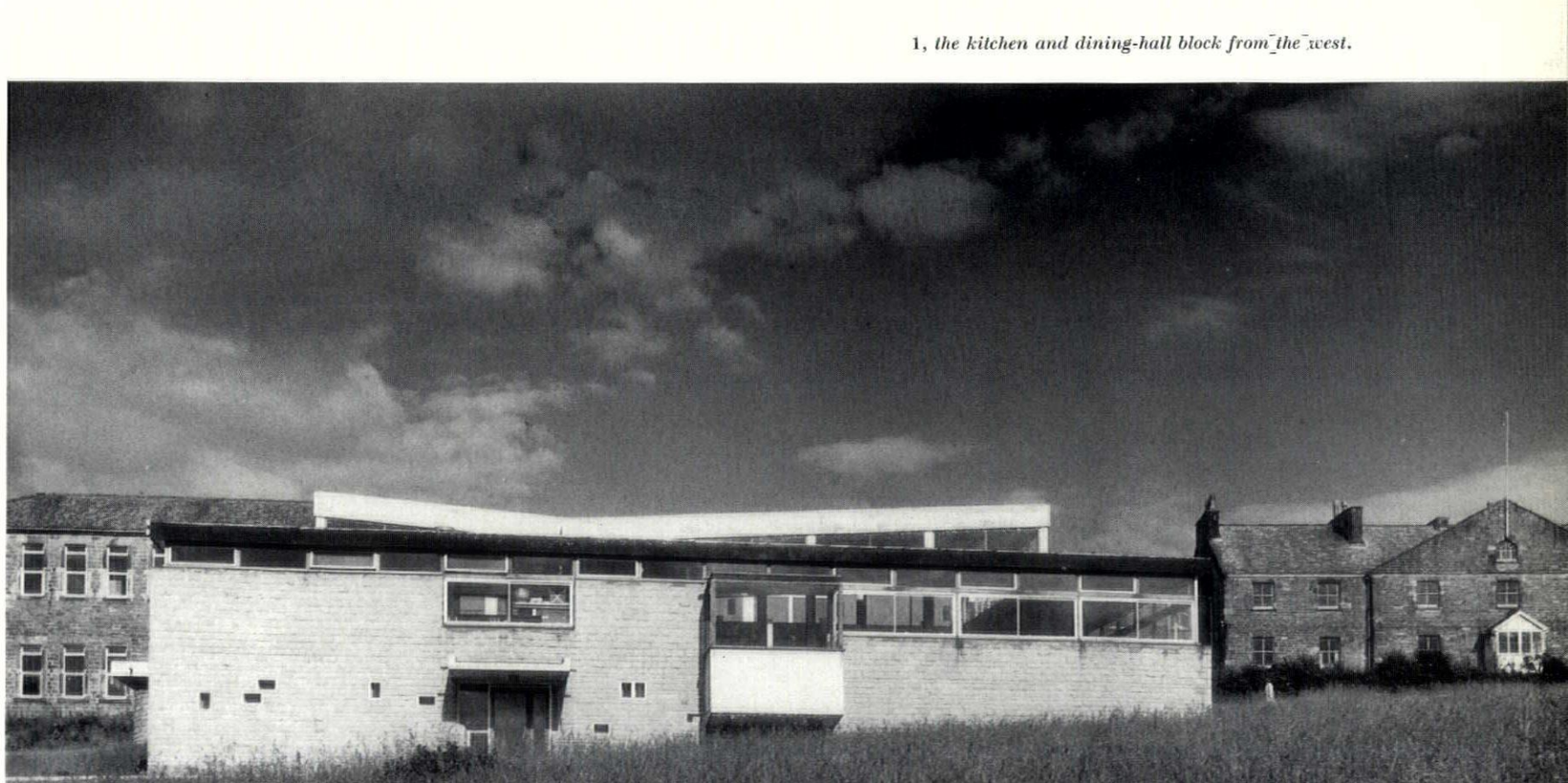
5, *the staircase from the first floor to the tall block.*

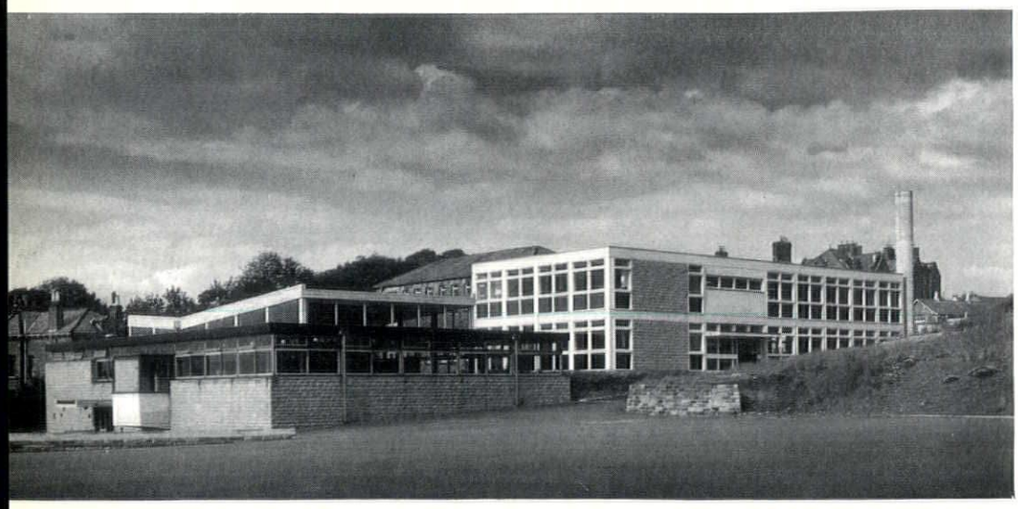
Lecture Hall Block, College of Science and Technology, Manchester

Extensions to Royal Grammar School, Lancaster

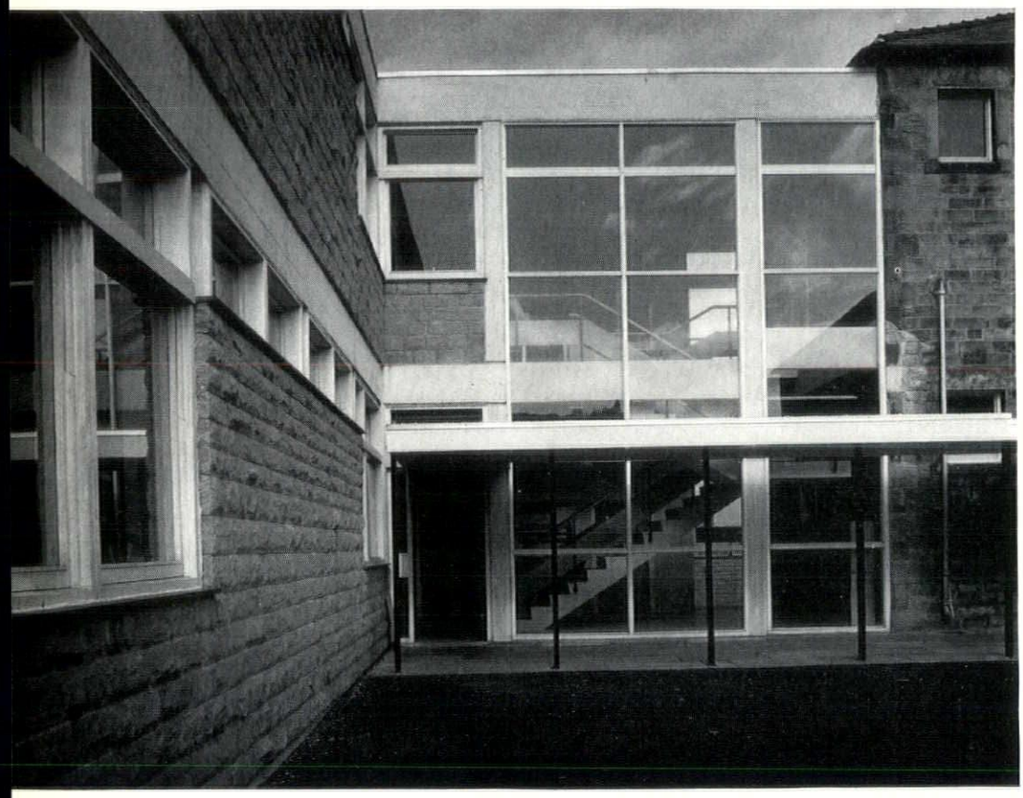
ARCHITECTS: C. B. PEARSON AND SON

1, *the kitchen and dining-hall block from the west.*



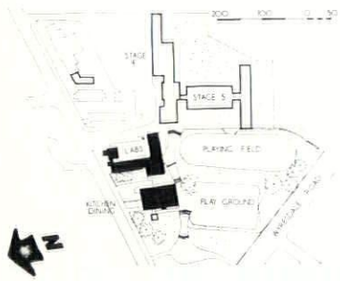


2

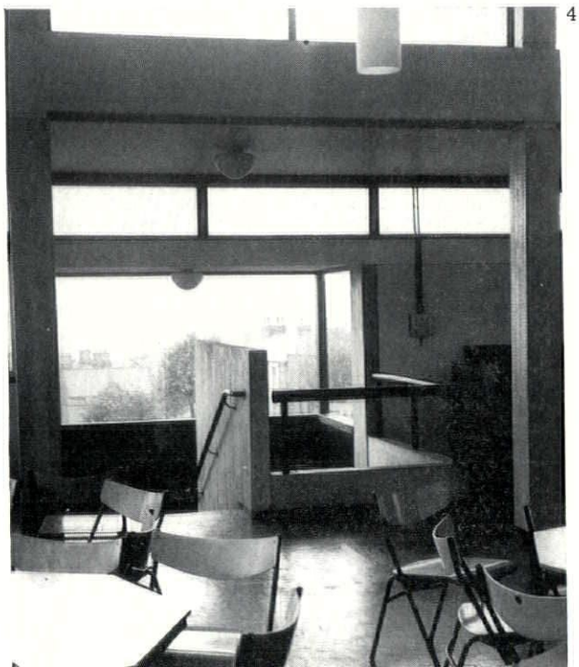


3

2, from the south-west, with the chemistry block behind the dining hall block. 3, the link between the new chemistry block and the existing laboratories. 4, the dining room.



site plan

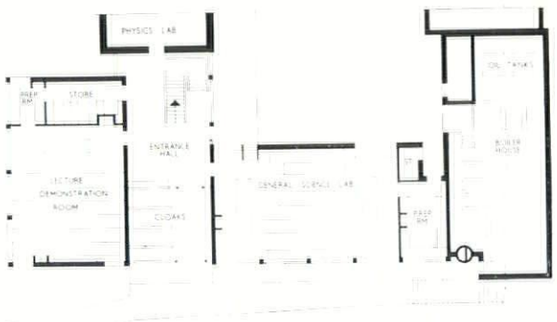


4

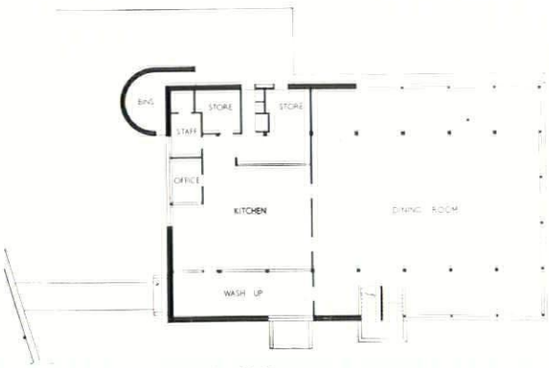
An ancient foundation, the Royal Grammar School, Lancaster, moved to the area of the present buildings about a century ago, and has developed piecemeal on sites on both sides of East Road, about a mile from the town centre. The new buildings are stages II and III of a five-stage development, of which stage I was the conversion of an existing building to physics laboratories, and stages IV and V will complete the rehousing of the entire school on the site now being developed to the south of East Road.

The new kitchen and dining-hall block constitutes stage II, and consists structurally of a central reinforced concrete cage and a peripheral York stone wall carrying a system of load-bearing varnished afrormosia window-frames which support the timber joist roof. The roof fascia is of painted plywood and the windows are aluminium framed, sliding and top-hung. Internally, flooring is of Rhodesian teak, except in the kitchen which is floored with quarries; walls are fairface concrete or painted plaster. Ceilings are painted plasterboard, and the roofing built up of wood-wool, screed and asphalte.

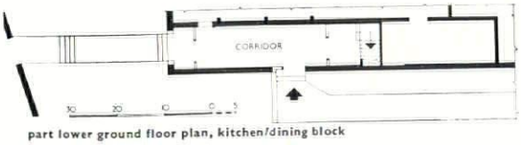
Stage III, the chemistry block (which is built on to the end of the stage I conversion) has a similar structure, except that the window-framing is painted white with black plyglass spandrel panels under the windows. These two stages form the first two steps of a terraced landscape scheme rising from the point of the triangular site; stages IV and V will continue this pattern but will also shift the centre of gravity of the school farther south, with the result that the paved and stepped path on the south side of the new buildings will become the central circulation spine for the completed scheme.



ground floor plan, chemistry block



ground floor plan, kitchen/dining block



part lower ground floor plan, kitchen/dining block

EXHIBITIONS

THE VENICE BIENNALE

I will always have very pleasant memories of the XXXIst Venice Biennale. I have pleasant memories of two others, but they don't involve the pictures. At the XXVIth, I arrived late for the official opening, and to get to my seat I had to vault a wooden barrier just as the President was arriving. The barrier—and anyone who knows me will find this difficult to believe—actually gave way under my weight, and several yards of it fell down. I felt as if I were making an attempt on the President's life and expected to be surrounded by the armed guards, but they remained stiffly to attention and only gave me a sad and puzzled stare.

The XXVIIth was even more memorable. I spent every night at a place just off the Merceria where a girl with a man's voice and a man with a girl's voice sang duets. The girl sat at my table between songs and introduced me to her friends, including several policemen. Her name was Rosita and she showed me photographs of her family. By the time the XXVIIIth Biennale came round, the 'place' had been transformed to attract a better class of people, and the duettists had gone. I went into some very queer places in the hope of finding Rosita, and once I thought I heard her voice coming from a place that spilt light across a dark alley, but the singer was a fat man. Afterwards the Biennales became rather boring.

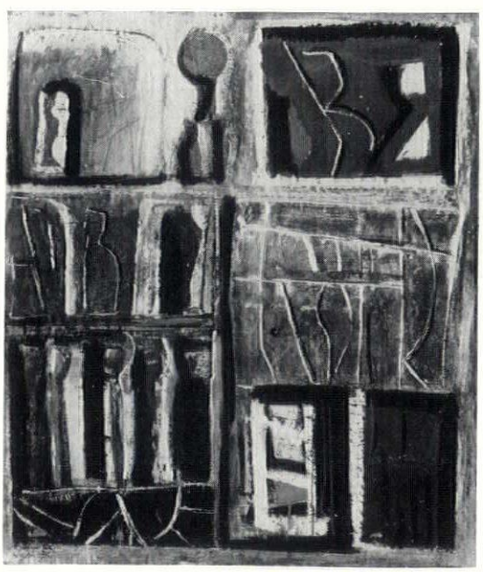
Many people said that the XXXIst (this year's) was the weakest since the war, and they even wondered if there was any point in going on with them. Others shared the more philosophical view of *The Times*. Its Art Critic pointed out that one couldn't expect something as exciting as the first wave of Abstract Expressionism or the emergence of the new Spanish School at every Biennale, and that a new wave of some sort would probably turn up soon. Apart from the people connected in one way or another with the prize-winners and the painters who were promised exhibitions or given commissions, I seem to be alone in finding it a very enjoyable Biennale.

It is in fact the only Biennale that has given me the impression that it takes place inside Venice. The Giardini, where it is held, is only three vaporetta stops away from San Marco, but although it's pleasant enough, it has no Venetian characteristics: it could be a thousand miles from Venice, and in the past I've always begrudged the time I've had to spend there.

It's not that I'm an expert on the glories of Venice. I'm under her spell, but not for lofty or subtle reasons. I like to be surrounded by her, to feel her intricacy all round me and to pretend that I might never find my way out but go round in circles for ever. Who wants to be 'enveloped' by a few square yards of Abstract Expressionism when a maze of Venetian alleys is waiting to receive one? Losing one's way in the alleys of Venice is a metaphysical experience; the sense of being lost there is unsullied by anxiety; it's the supreme compensation for a life spent without a sense of direction.

I did not realize straight away that the works which interested me in the XXXIst Biennale were keeping me in touch with Venice, for I found most of them in foreign pavilions. They were not by acknowledged masters, but certainly by artists with growing reputations. I think these artists can be described—without the faintest disparagement being intended—as lightweight obsessives, and they seem to me to make satisfying images of the same kind of psychic situation that for me turns Venice into a sanctuary.

The Palazzo Centrale, where there is always a vast concentration of contemporary Italian work, is also the place where the authorities pay their respects to a nineteenth-century master and to the recently dead. This year they devoted exhibitions to Redon, Sironi and Arshile Gorky. The Redon show could have been considerably better, but Redon is an artist for whom I have a kind of cult-feeling. His effect on me is rather like that of the Austrian artist Egon Schiele. Because they both seem to hold a special place in my private scheme of things I can read their unique qualities into anything they have done. Redon has a feeling for the dark that is so intense that even the most brilliantly coloured of his flowerpieces are night thoughts.



1

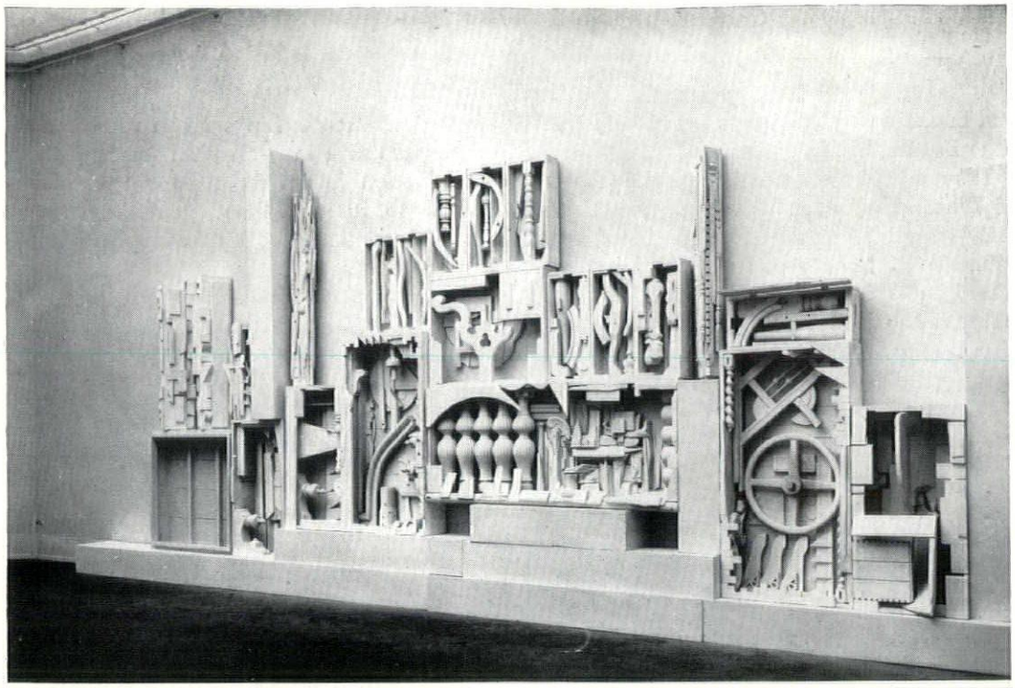
The tribute to Sironi was well-considered and should enlarge his international reputation. His 'moltiplicaziones,' 1, came out particularly well. This aspect of his painting has obvious affinities with the art of Torres-Garcia, and although it is less pure and imaginative—his signs are more ambitious but not so meaningful as Torres-Garcia's—his feeling for the archaic put a brake on his tendency to make dramatic gestures.

It was evident in the almost too carefully balanced retrospective accorded to Arshile Gorky, 2, that he owed a great debt to Miro, and it would have been possible to make a selection in which the debt was far less obvious. Nevertheless, even some of the most Miro-ish things project a totally different personality; his exquisitely spidery line and hazy washes of colour appear at first sight to propound a more gentle intention than Miro's, but the air of poetic melancholy is almost a blind for a Dionysiac savagery.



2

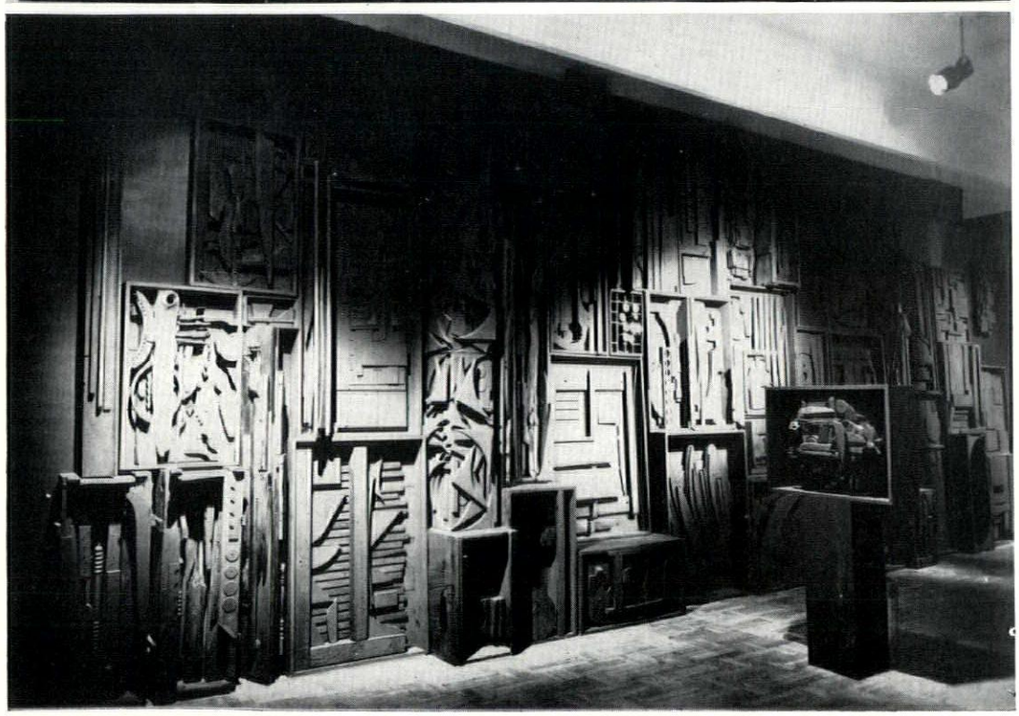
The work of another American of Russian origin, that of Louise Nevelson, transformed the three main rooms of the American pavilion and created one of the most remarkable spectacles that has ever been staged at a Biennale. A few typical examples of her work have already been seen in London at the Hanover Gallery, Gimpel fils and the Robert Fraser Gallery. They are composed of open boxes containing ready-made parts of dismembered furniture and other odds and ends of carpentry, and the boxes are brought together like unit book-cases to form wall sculptures. They are indefinitely extendable and can be considered as the sculptural counterpart of Jackson Pollock's drip-paintings in that there is no particular



3



4



5

reason why they should ever come to an end; and, like the Pollocks, the bigger they are the better. So far, London has seen only examples in black, but in the American pavilion there was a white room containing only white Nevelsons, a gold room containing only gold ones, and a black room where the more familiar black ones were stacked.

The white room, 3, would have looked splendid if enough boxes had been available to make a sculpture that ran the whole length of the room and climbed a bit higher up the wall. Instead, this room included some configurations which were not in box form and were intended as self-sufficient sculptures. Unfortunately, they totally lacked the obsessiveness which gives her wall-assemblages their force. They produced an effect of trivial avant-gardism and quite ruined the opposite effect of a white spinsterish hell lined with cases of stuffed thoughts that was building up along the wall.

The metal paint used in the gold room put a vulgar smear over a set of boxes which contained some of her most enterprising arrangements, 4. Before reading William C. Seitz's introduction to the show, I thought the air of tawdriness was intentional, but he claims that the things covered in gold paint are 'devotional or regal in mood, recalling St. Mark's, Burgos, or Versailles.' It's a dangerous claim to make with St. Mark's only three vaporetta stops away! If the light had been dimmed so that only odd bits of it shone in the gloom, it might have taken on a touch of splendour. As it was, it had a cheap and sleazy look. But I'm not criticizing the part it played in the three-room ensemble. It stood between the white room and the black, and by contrast probably contributed to the effect of diabolical sumptuousness created by the black room, 5, where the lighting was covered by black mesh and the wall-size accumulation of boxes was dyed a uniform matt black which absorbed what light there was and gave the oddments inside the boxes a marvellous air of mystery and intricacy. It's a monument to what I suppose to be Nevelson's loss of faith in everything except her own compulsive activity, and it's appropriate that an artist from the country that has the biggest dumps of discarded objects in the world should out-Schwitters Schwitters. But the mention of Schwitters doesn't lessen the peculiarity of her contribution. Her black room presents a sort of anti-mescalin vision of the charred remains of paradise.

Fritz Hundertwasser's paintings, shown in the Austrian pavilion, were, I think, the most distinguished in the whole exhibition. They are closely related to the exotic ornamentalism of Gustav Klimt,



«KERNOO»

BY VASARELY

A PRINT ON

HEAVY COTTON

EDINBURGH

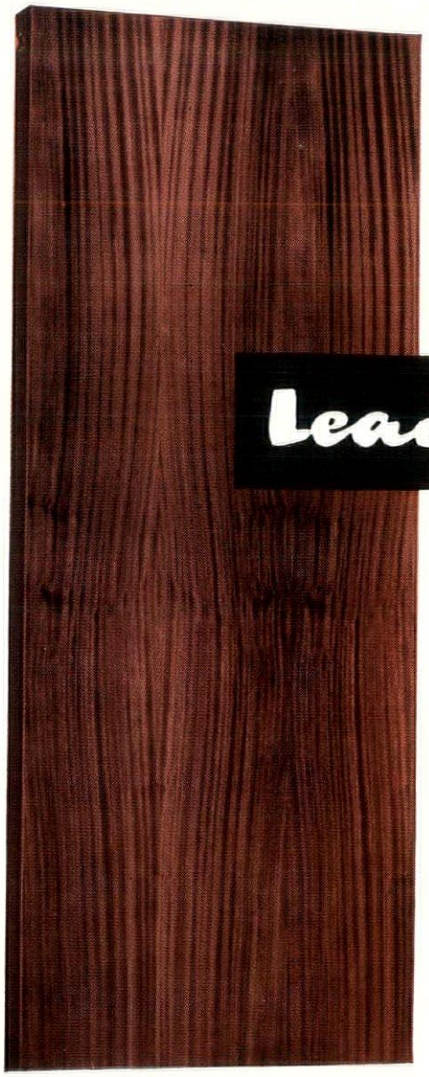
WEAVERS

102 MOUNT ST

LONDON W1

There's a Boffin behind...





Leaderflush **BRITAIN'S FINEST FLUSH DOOR**

That is why their construction is so well designed. Behind the excellent finish and handsome appearance is a timber core system arranged for strength and stability. Timber is meticulously kiln dried to the correct moisture content. Advanced electronic machinery controls quality and ensures a precise dimensional accuracy of all members. Each type of door is chosen and scientifically appraised for the purpose it is to serve.
In fact, a LEADERFLUSH Door is not just a necessary piece of joinery, it is a product resulting from many years of experience, patient development and scientific research. It is truly named BRITAIN'S FINEST FLUSH DOOR.

Let us send you full details, write

Leaderflush (Doors) LTD, TROWELL, NOTTINGHAM

Telephone: Ilkeston 4111 (6 lines)

LONDON OFFICE: BUSH HOUSE, ALDWYCH, LONDON W.C.2 Tel: COVent Garden 2243

Belfast Office: Leaderflush (Doors) Ltd., 143 Northumberland Street, Belfast 13. Tel: Belfast 22802-3

Barbour Index File No. 138

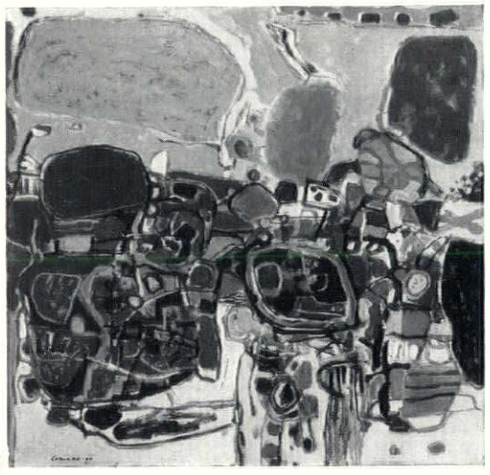
and perhaps even more closely to Schiele's desperate sinuosities. Schiele's line moved over the forms of a woman like an



6

anxious and very thin snake: Hundertwasser, 6, takes skeins of art nouveau's spaghetti on long circuitous walks which form aerial views of soft moist labyrinths in all his pictures, as if the alimentary canal were subject to a recurring dream of an appointment with minotaur.

Corneille, exhibiting in the Dutch pavilion, is of the same generation as Hundertwasser and makes a scarcely less powerful use of automatism. His imagery has a similarly interior-exterior range of references, 7. It suggests both an aerial view of



7

a township straggling away into fields and an auger's frantic and untidy search through entrails.

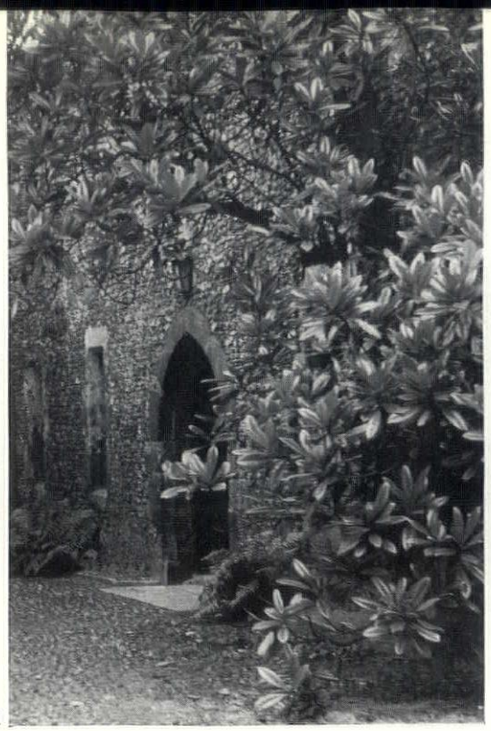
It's probably presumptuous of me to think that the artists I have been talking about have the same compulsive reasons for painting and making things that cause me to hope to be lost forever in Venice, but I thought it best not to pretend to pure aestheticism. Art appreciation isn't, on my part, a specialist activity. It's simply my way of putting up with life.

Robert Melville

SHRUBS

BOLD FOLIAGE

Shrubs with really bold foliage are unfortunately rather rare in this country, but there are several which



1

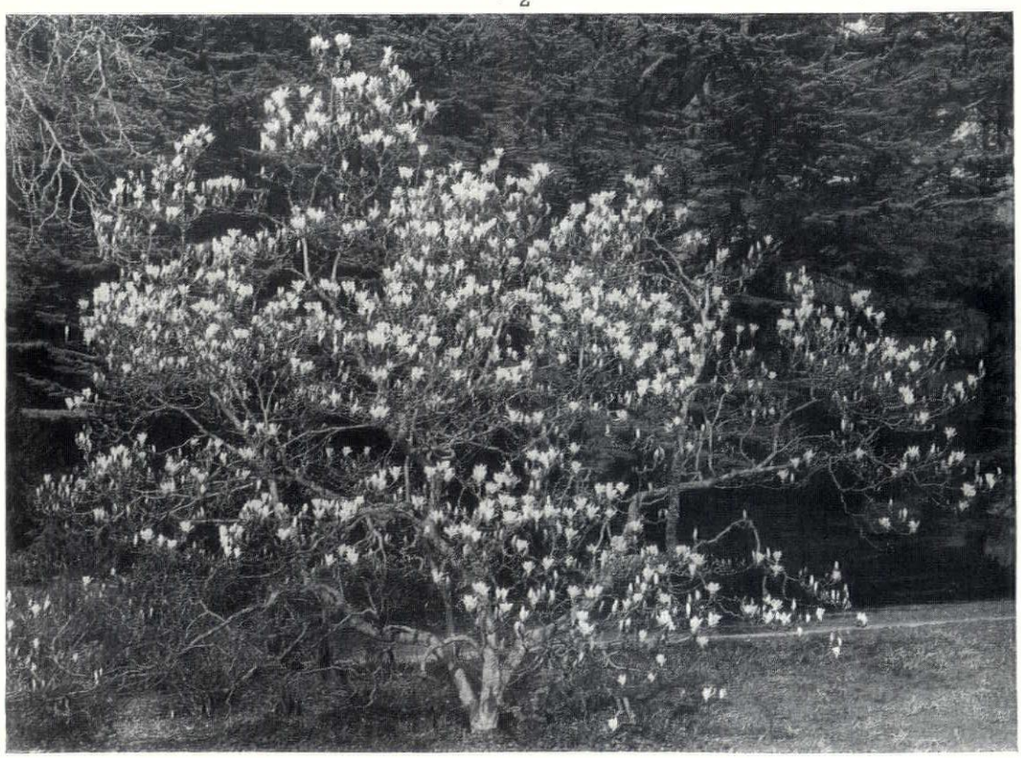
can be used with effect against a plain background or in severely simple surroundings.

The large evergreen *Magnolia grandiflora*, 1, from the southern United States of America, often seen trained across the fronts of old country houses, is an excellent choice for a sunny position where it can be given room to spread. There is no reason at all why it should be trained closely to a wall: frequently it is more effective grown as a free-standing shrub or small tree, and where the situation requires it may be held back at strategic points and otherwise allowed to show off its handsome, polished, laurel-green leaves thickly felted beneath with reddish brown. Although slow to flower, the variety Exemouth, whose leaves are slightly narrower and smaller, will produce magnificent cup-shaped ivory flowers after only a few years.

Another evergreen Magnolia, this time from China, is *Magnolia delavayi*, 2, with even larger blue-green leaves, slightly crinkled and less polished, and similar cup-shaped ivory flowers. In cold, exposed districts of the Midlands and North the popular *Magnolia soulangeana*, 3, so often miscalled tulip tree, makes a very satisfactory wall shrub. The light green deciduous leaves are attractive in summer, while the protection of the wall helps to preserve the handsome tulip-shaped flowers



2



3

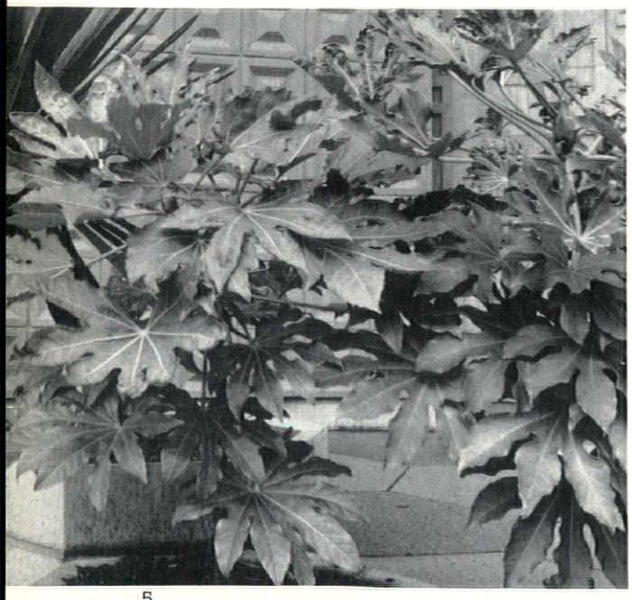


4

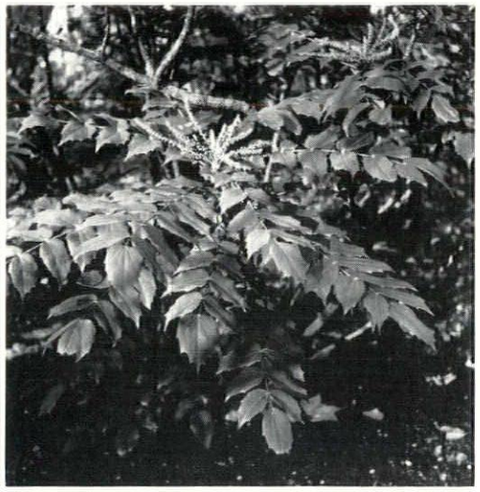
from spring winds and frosts. All these Magnolias require a deep, cool loam soil with a certain amount of peat added, and are more suitable for positions facing west, where they are not exposed to the full heat of the day.

A fine evergreen shrub, too rarely seen, is the loquat, *Eriobotria japonica*, 4. Perhaps its flat heads of flowers, like an outsize hawthorn, are not considered sufficiently exciting, but the wrinkled blue-green leaves are very striking, and well worth a warm place in the southern counties.

Another exotic-looking evergreen, quite content in the difficult north- and east-facing positions which are such a trouble to fill, is *Fatsia japonica*, 5, often misnamed the castor oil plant. Once stigmatized as



5



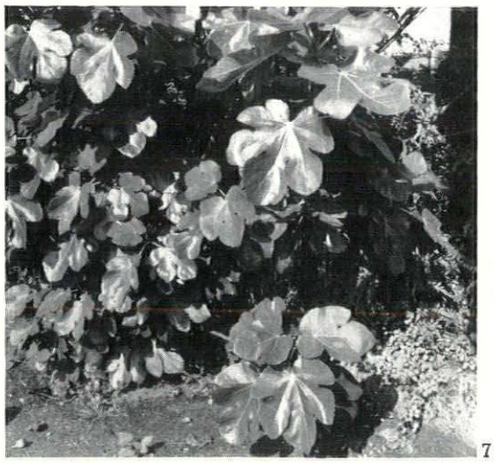
6

Victorian, its large shining leaves and spikes of November flowers have the appearance of a giant ivy. In a cool, semi-shaded position, it forms a bush 10 feet high and as much through, and at least in the southern counties it will stand quite a lot of neglect and grows bravely in all kinds of uncomfortable places where few other shrubs would flourish, demanding only a cool soil and a reasonable proportion of humus.

Mahonia japonica, 6, and its variety *bealii* are another pair of handsome plants for semi-shaded places, sheltered from excessive wind. The large, divided leaves of sea-green, and spikes of strongly scented primrose-coloured flowers in February, are extremely useful in courtyards and places where they can be appreciated at close quarters. As the pattern of the leaves, each group forming a symmetrical ruff at the top of the stem, is both regular and on a large scale, it is also an ideal shrub to look down on from above—an increasingly important point as buildings grow higher and their surroundings are more frequently seen from a bird's-eye viewpoint.

Fatshedera lizei, a cross between *Fatsia* and ivy, is another equally amenable evergreen with smaller, highly polished leaves and all the clean, elegant lines of an ivy enlarged and intensified. As a shrub it will not stand without support, but is ideal against a wall, or wherever it can be helped by an old tree trunk, or the main branches tied to some strong stakes. Once again it is an ideal subject for the dank and gloomy courts often associated with town buildings, and other places where little of interest would grow.

One is so used to thinking of the Fig tree, 7, as belonging to sun-baked Biblical



7

landscapes, that its use as a wall plant of sculptural quality tends to be forgotten. In winter the pattern of silver-grey branches makes a satisfying tracery, while the large, mid-green leaves, paler on the reverse side, give an air of great opulence in summer. Narrow sun-dried borders of poor stony soil suit it perfectly, although in such positions careful thought must be given to training and tying in the branches so that they do not extend too far from the wall. Where room permits and fruit is of no consequence, fig trees can be grown with good effect as standards and large bushes, like the magnificent examples in St. James's Park.

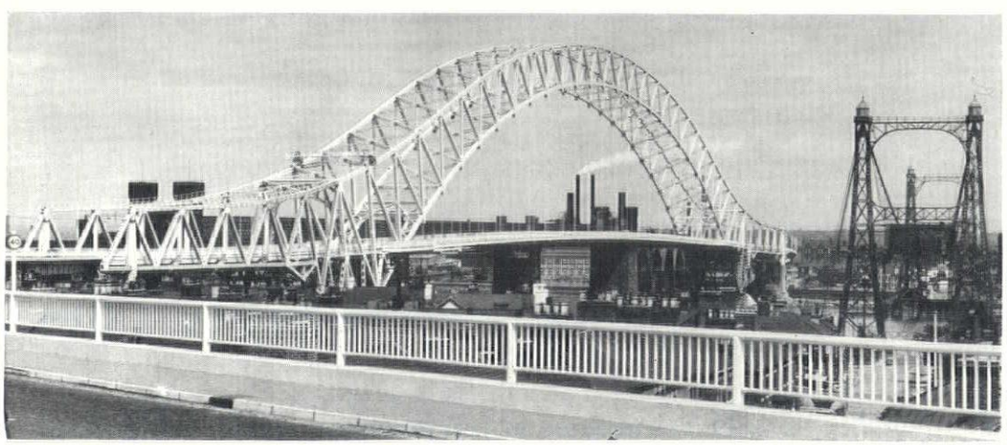
A. du Gard Pasley

OBITUARY

RUNCORN THEN AND NOW

By the time this note appears, the Widnes-Runcorn transporter bridge will be largely dismantled. It was replaced last year by a road bridge after being something between a joke, a serious

1



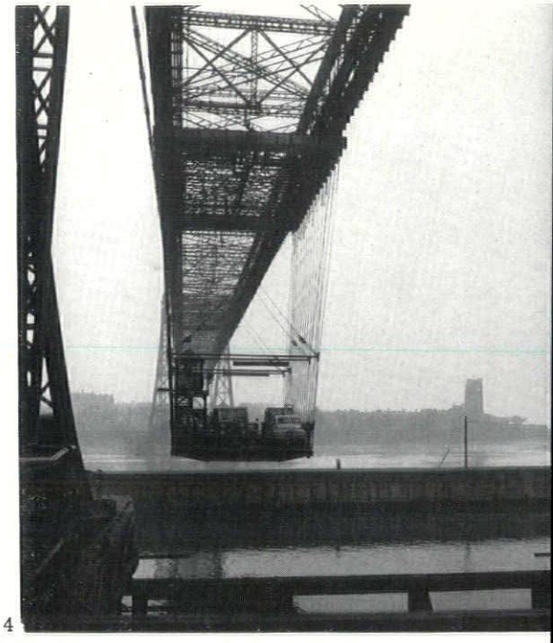
2

The Runcorn end of the transporter, 1, low level, and 2, up on the approach road to the new bridge.

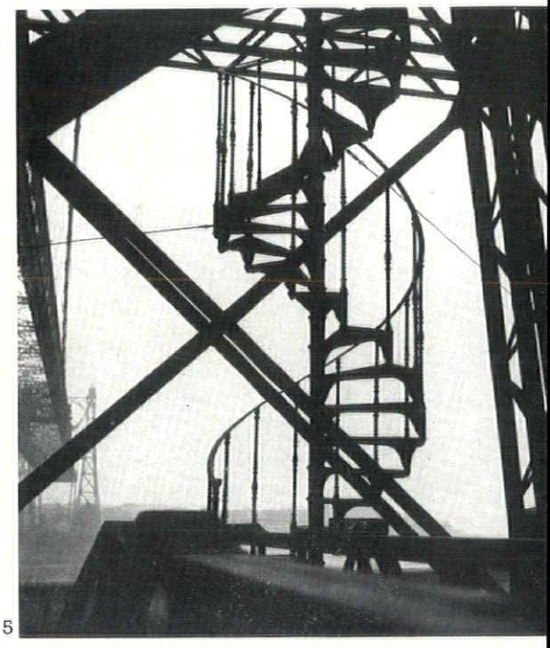
bottleneck and a filigree mirage, in that polluted bit of the Mersey where the fumes from the chemical works stick at the back of your throat. It is worth commemorating, and so is the pitiable inadequacy of its successor on any terms more discriminating than the brutish calculation of vehicles per hour (those who swear by this kind of calculation might be a bit surprised to have all their gastronomic sensations regarded as so many meals per year, and it is exactly the same thing).



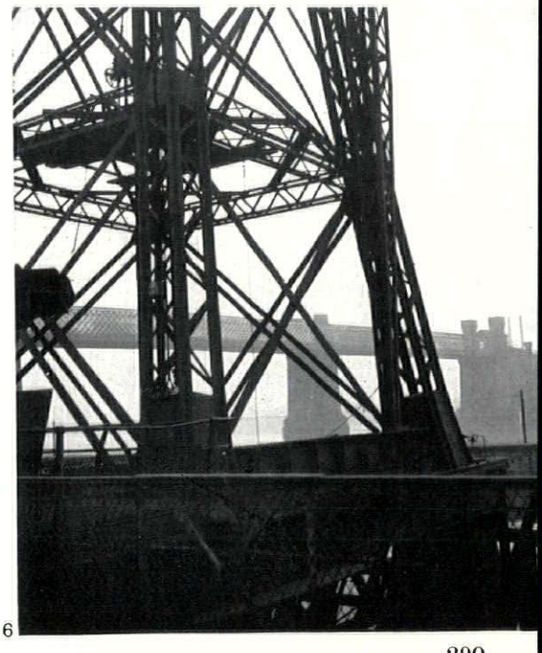
3



4



5

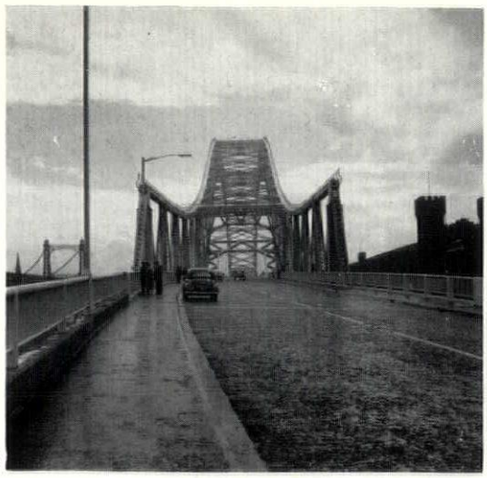


6

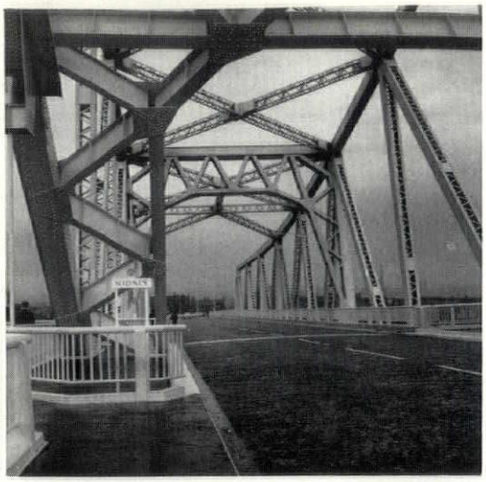
3-6, *close views of the Runcorn end, as most people saw it, waiting for the next ferry. Taken in* 1957, *when there was only the railway bridge for company (in the background of* 6), *male and female spanning the Mersey.*

There was already a bridge at Runcorn carrying the railway to Liverpool, a fine, direct design, as masculine as could be, taking a few stone battlements in its stride. And so the transporter became lace-like in contrast, daintily tough like a woman test pilot, something which was recognized at the time: 'to that stately master, they had provided a stately bride.' Heaven knows what relationship the new bridge would claim; I suspect the worst thing of all, that such an intangible thing was not even considered. It is the ruthlessly insensitive bore that breaks up a subtle balance of conversation without noticing a thing: 'Why, me? What have I done?'

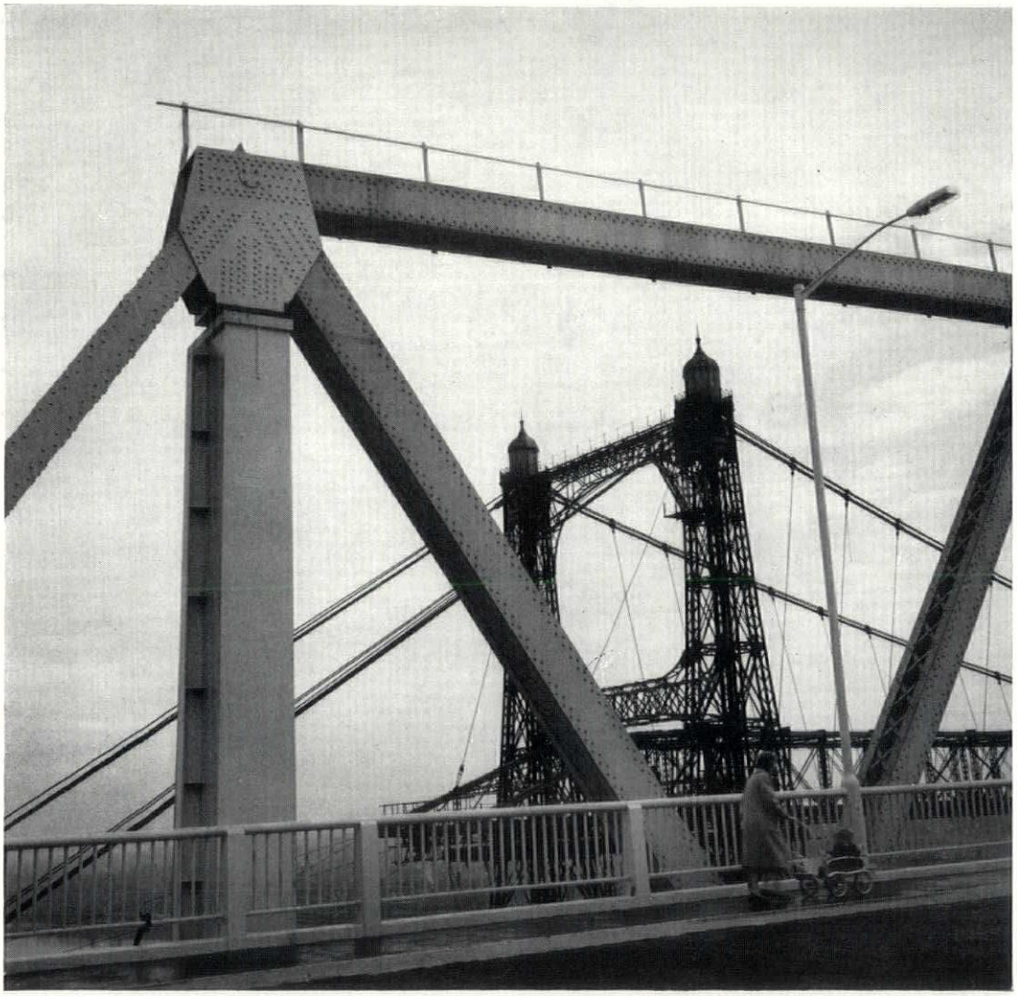
The very first transporter bridge of all was a temporary job to carry workmen building the Clifton suspension bridge in 1836. One was proposed for Middlesbrough in 1880 but not built until this century, and the first permanent example was built in Spain, near Bilbao, in 1892. There are three in Britain, the third at



7



8



9

Brute force versus elegance. The new bridge from Widnes, 7, with the railway bridge on the right. 8, halfway across, and 9, one of the graceless ends of the arch. 10, what might have been: a Dutch motorway bridge over the Rhine.

Newport, Mon., and of these the Runcorn-Widnes transporter was the first.

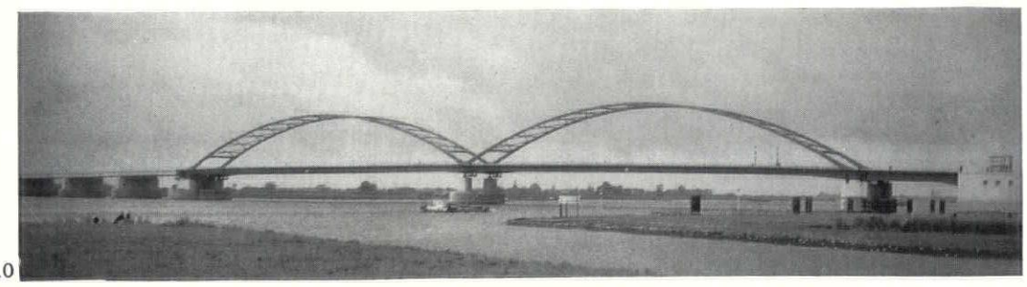
It was designed by J. J. Webster, of London, assisted by J. T. Wood, of Liverpool, and opened in 1905. The cost was £130,000, approximately one-third of the cost of a high level bridge, and was then—stretching the definition a bit—the largest road span in Great Britain. At the opening ceremony 'the Chairman read a telegram from Tokyo announcing the practical annihilation of the Russian fleet, an intimation which was greeted with loud and prolonged cheers and applause.' It seems like five hundred years ago.

The new bridge (the consulting engineers were Mott, Hay and Anderson) was going to be suspension also, but the possibility of freak side gusts from the railway bridge ruled this out. So it became a two-pin trussed arch, more or less on the pattern of the Sydney Harbour bridge and the Tyne bridge at Newcastle. It is in fact at the moment the longest arch span in Europe: 1,082 ft. Sydney Harbour spans 1,652 ft.

To what must inevitably be a graceless, hump-backed form has been added end-pieces of remarkable infelicity. It thumps and clanks its way from Cheshire to Lancs, but without any positive qualities—just sheer brute force. At least the crass expressionism of Sir Owen William's motorway bridges was a deliberate act; if one was intended here, it is not evident. Even the technical press could raise no higher praise (the *Engineer*, July 22, 1960) than 'could perhaps be described as following a classical pattern in its design and construction.'

Here, 10, is some hint of what might have been done: a Dutch motorway bridge over the Rhine at Gorinchem, completed last year.

Ian Nairn



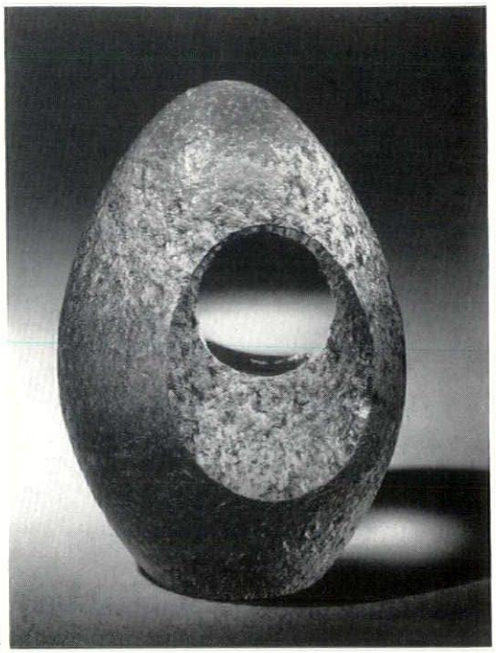
10

APPLIED ART

EXPERIMENTS IN GLASS

Wim Heesen is the principal designer of the Royal Netherlands Glass Works at Leerdam. He was trained as a painter at the Amsterdam and Hague Art Academies and seven years ago joined the Leerdam company. His role, however, is not directly concerned with creating the kind of commercial or domestic objects made at the factory, usually of a very high quality. Heesen is employed as artist-experimenter. Working in his studio-laboratory he creates objects in glass in order to extend the range of the medium.

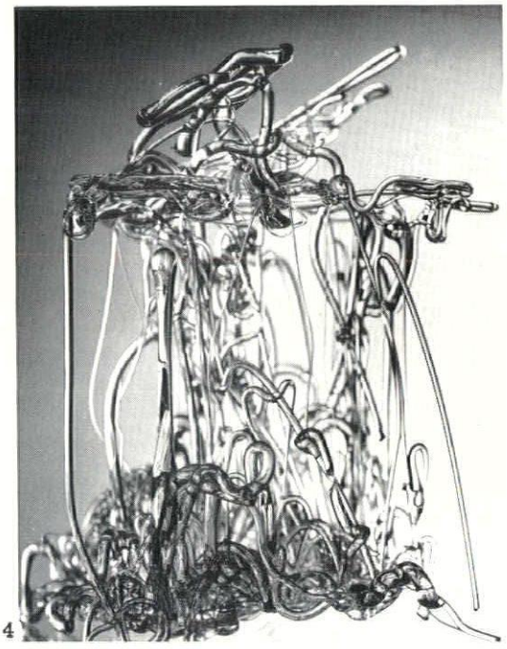
Being an artist, however, he is equally concerned with creation, whether it be a three-dimensional sculpture, or the effect of colour on glass, or the use of glass as an architectural medium. For the sculpture he works directly with the molten glass,



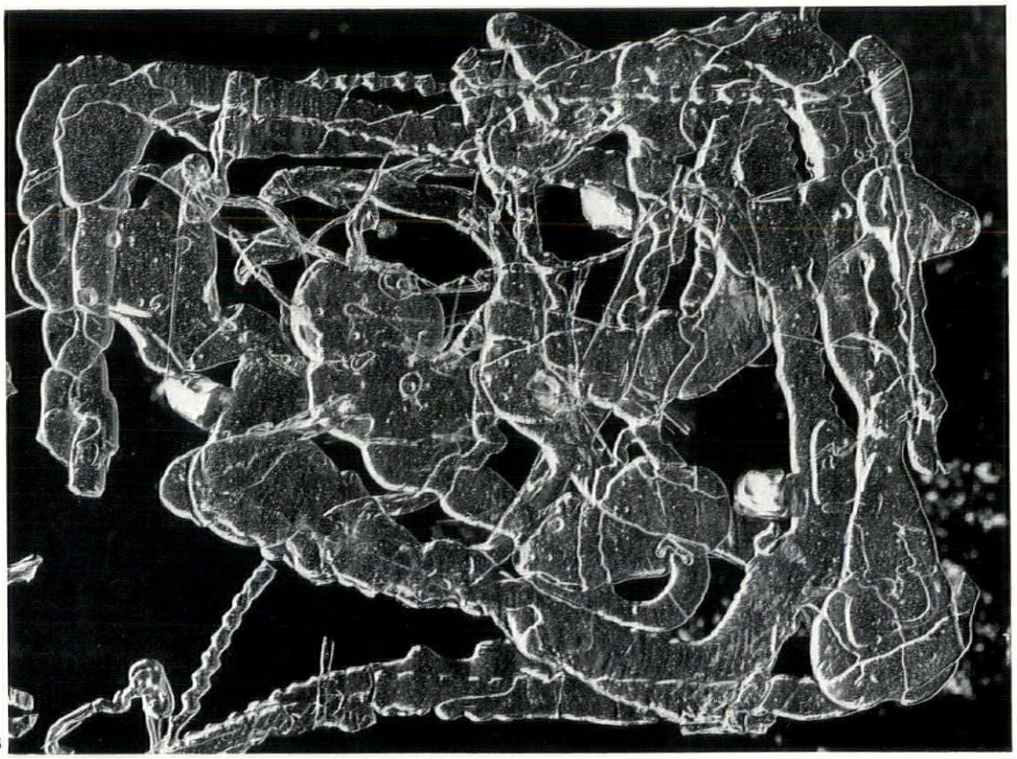
1



2



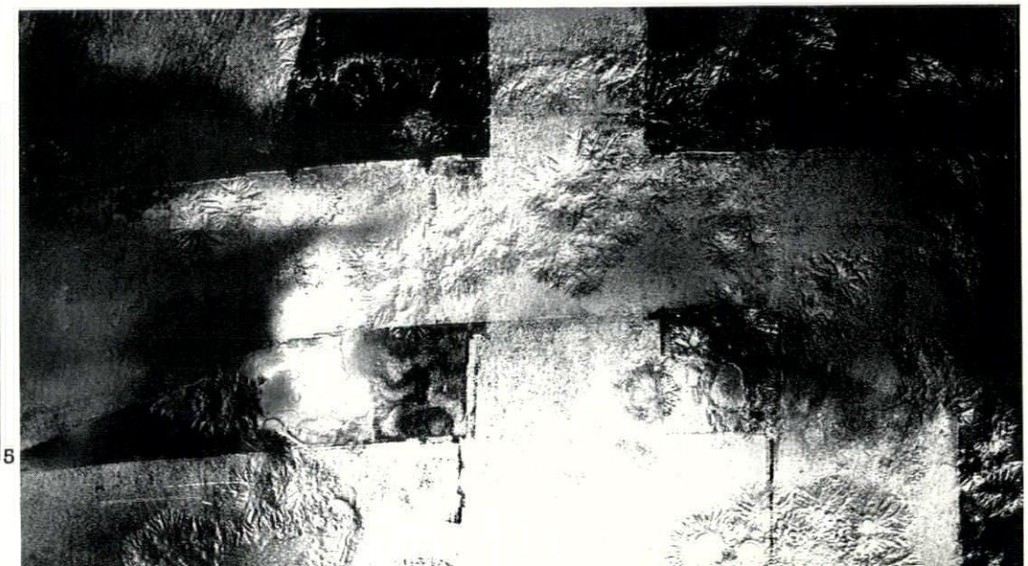
4



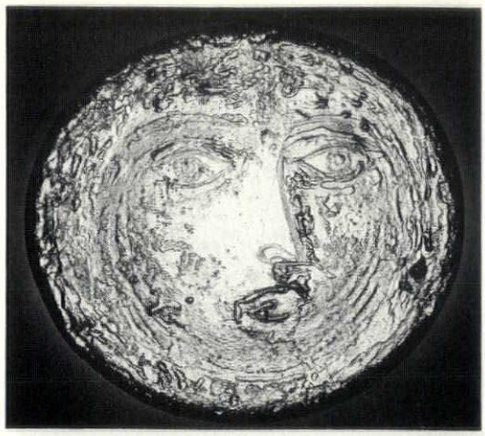
3

wearing asbestos gloves, twisting and shaping the hot, pliable material into abstract shapes. Some are free standing and others are in the form of reliefs based on flat sheets, made to hang on a wall. Textural experiments are carried out with acids. On other occasions the glass is cut when in a more solid form. The use of colour involves pigment, or enamels, laid between sheets of glass before baking. The result of these experiments are remarkable works of art in themselves.

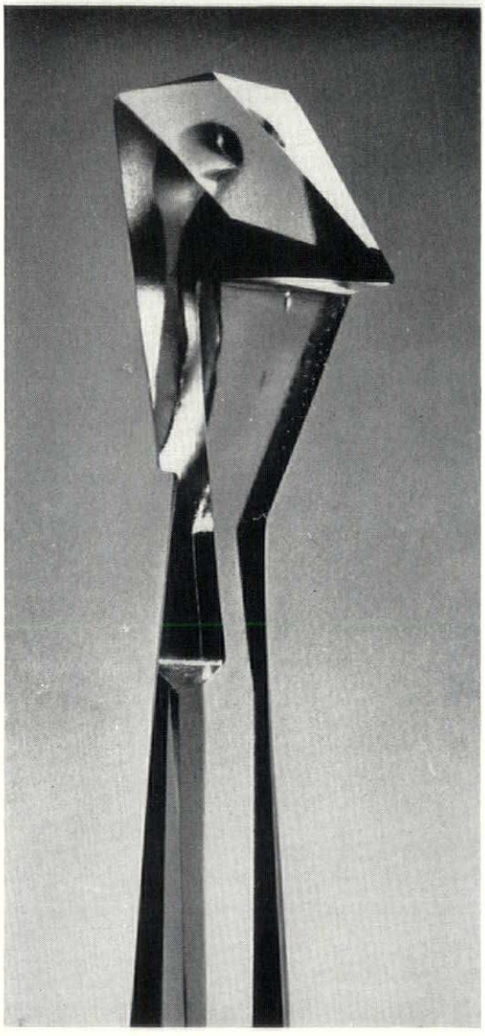
The accompanying illustrations show typical examples: 1, abstract sculpture in glass. The molten material is formed into the basic shape and surface texture achieved with acids. 2, an attempt to create texture in sheet-glass by the use of acids. The photograph suggests an effect like pigment, but in reality the glass has a pitted, brittle surface. 3, pattern created



5



6



7

by molten fluid glass being poured on to a plate. 4, three-dimensional glass sculpture, made while the glass is in a molten pliable state. The sculpture is brittle, but experiments are being made to strengthen glass moulded by this method. 5, colour design, made by using ordinary pigment between sheets of glass which are then baked. Acids have been used in addition to break up the textural surface. 6, medallion, 15 in. in diameter, entitled 'Luna,' made from molten glass treated with acids. Since this was made in 1959 Heesen has concentrated on abstract design. 7, 'Bird,' another of Heesen's comparatively rare figurative glass sculptures. It is cut, or carved, from crystal glass but the surfaces have not been polished, as they would be in commercial glass-making.

Heesen's art is represented in the collections of the Victoria and Albert Museum and the Museum of Modern Art in New York. I first saw it in a recent mixed exhibition of painting and sculpture in Rotterdam and I understand that a full-scale exhibition of Heesen's work will be held at the Stadelijke Museum, Amsterdam, in 1963.

Charles S. Spencer

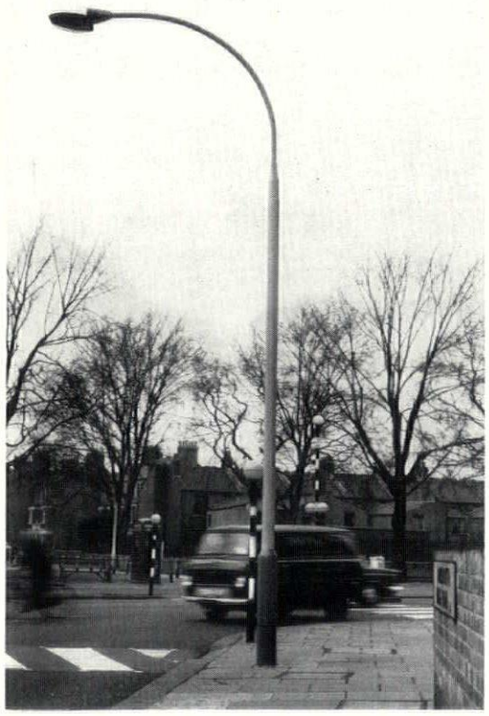
LAMP-POSTS

WEST LONDON LIGHTS

It is rare to be able to commend a street-lamp for being what it should be. But the motorist edging out of London along A3 finds a lone new lamp, 1, tactically sited by Fulham Borough Council to light him round the sharp right-left where King's Road corkscrews into New King's Road, and finds it of unusually good design. (It's the same lamp as those on Wandsworth Bridge noticed in the REVIEW last November.) It stands out, in fact, almost too well as the one decently designed object among the sad façades of this piece of twilight SW6. The other lamps along this stretch are, alas, the rather horrible 'dying swans' which coexist in Fulham with the new ones.

And now a postscript to the article (AR, June, 1960) on the sad record, as regards lamp-posts of the next borough to Fulham, Chelsea. After all the hard things that have been said about the new Chelsea lamps, you'd think the Borough Council would at least be on its toes as regards maintenance. Yet less than two years after their erection, some 35 drunken or broken or out-of-true lamps have been noted within quite a small area of the borough; some have been left as long as 18 months before being mended, and new casualties happen every day. 2 is in Royal Avenue, outside the Supermarket, and 3, tied with string, is in First Street. The photographs underline the unwisdom of setting a top-heavy lantern on a starveling standard in a borough that abounds in narrow streets and short cuts through for traffic.

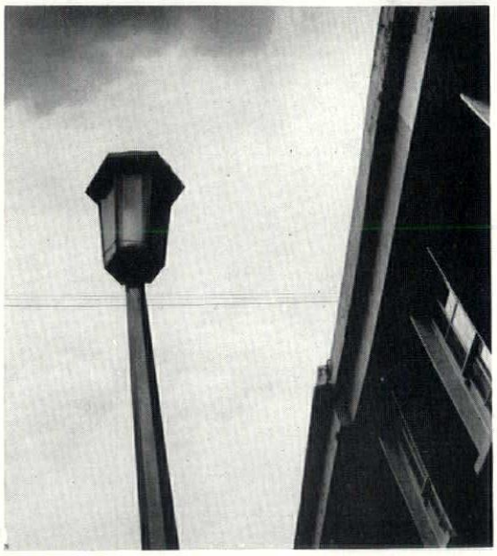
Derek Barton



1



2



3

SKILL

WARD FURNITURE
3, LIGHTING AND COMMUNICATIONS

The previous articles on ward furniture were concerned with beds, bedside lockers, overbed tables and screening—movable units, light in construction but sturdy and easily cleaned. Electric services in the ward, by nature of their installation, are more integrated with the fabric of the building. This requires careful consideration at the initial design stage. Nevertheless they combine to form part of the immediate environment of the patient and can stimulate a sense of well-being and assurance. In this article, ward lighting for the bed area and patients' communications are considered by Anthony Wylson.*

Ward lighting

The integration of artificial lighting with natural lighting and the overall interior design is particularly important in hospitals where the building is being used twenty-four hours each day. The principle of Permanent Supplementary Artificial Lighting is relevant to the modern deep plan. The contrast from a brightly lit nursing station to the dim lighting of a ward at night is a further problem peculiar to hospitals.

The lighting immediately round the patient also presents problems of glare irritation to other patients, control of illumination and reflection in relation to the texture and colour of adjacent surfaces.

The problems of ward lighting can be divided into four main aspects:

1. General illumination for the room.
2. An over-bed or reading lamp for each patient.
3. A night light to give low but adequate illumination to night staff.
4. Provision for doctor's examination (portable or as part of 2).

1. *General illumination.* If each patient is provided with an over-bed lamp which is available when he wants it, the overall strength of the main ward lighting can be reduced. Adequate illumination should be given to service areas, but the light source should not cause glare. It is also recommended that areas of light brightness should be avoided as this may disturb patients. This is particularly relevant to bracket wall fittings or ceiling fittings directed on to a high-gloss surface. The IES schedule of illumination recommends a standard of 10 lumens/sq. ft. for ward general lighting as opposed to the MOH Hospital Building Note No. 4 recommendation of 3 lumens/sq. ft. at floor level to 10 lumens/sq. ft. in the centre of the ward. It is recommended that with a bed-head light under the control of the patient, the contribution of the general illumination to the light available at the bed should not be expected to be more than 1 to 2 lumens/sq. ft.

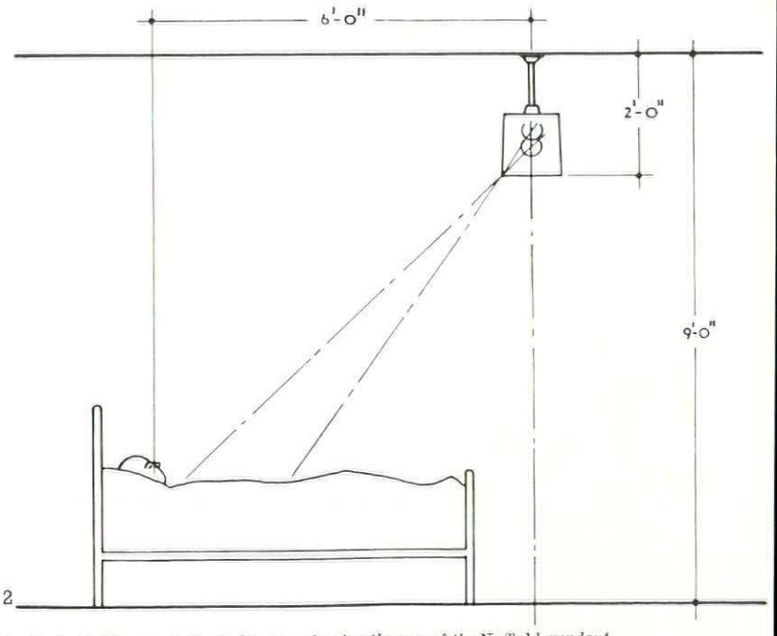
Solutions vary from a complex of light sources achieving the scale of a living room to a lighting system totally integrated with the wall, floor and ceiling surfaces—an extension of a PSALI system. It is suggested that a variety in the degree of illumination would be a good arrangement. This would aim to give a high level of general illumination at mealtimes, while during times of relaxation, between dinner and lights out—a low level of illumination would be more sympathetic. A variable system with a method of maintaining a level of overall illumination would also adapt the PSALI system to the various degrees of daylight illumination.

An American experiment uses a unit fitted to the wall or bed partition about 7 ft. from floor level giving two sources of light—direct bed lighting and general ceiling reflected lighting. Pendant lights with deep cut-off shades to avoid glare have been used successfully in this country. However, in the case of new hospitals a lighting scheme that is an integral part of the initial design will be more successful than a system that is added as an applied after-thought.

2. *Over-bed lighting:* The object of the over-bed light is to provide the patient with good illumination without causing glare to any other patient. An illumination level of 20 lumens/sq. ft. is recommended (*Design and Construction of General Hospitals*, United States Public Health Service, Washington). The two main forms consist of a flexible unit (such as an adjustable counterbalanced lamp) and a fixed wall bracket. The first arrangement has the lighting unit attached to either the side of the locker or on the wall over the patient with a control panel



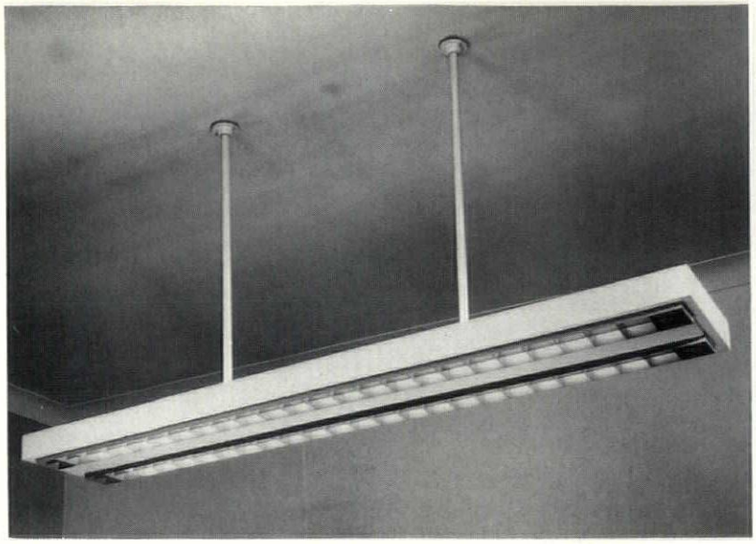
1



2

General illumination: 1, *the* Nuffield *pendant fitting by Frederick Thomas & Co.* 2, *diagram showing the use of the* Nuffield *pendant.*

*July and August, 1962.



3

in a convenient position. Lamps with adjustable arms are subject to cord failure and there is the complaint that patients use them to haul themselves up. The second arrangement of fixed lighting gives more uniformity of appearance but provides less flexibility. A concentrated source of light has limitations and in some cases must be seriously inconvenient to the patient. The ideal arrangement would be a diffused source of light which would provide an adequate level of relatively unobstructed illumination over the top half of the bed, regardless of the patient's position, but which would still be local to each patient and would not cause inconvenience to other patients. In these terms, the source of light should be of large dimensions. A fluorescent tube set in a canopy mounted above the patient, projecting 18 in. from the wall and set 6 ft. above floor level, could form part of a comprehensively designed bedhead. This canopy could include a doctor's examination lamp and indirect lighting for general illumination.

One American manufacturer has developed this idea of a 'canopy' unit. The design aims to include a combination of excellent reading illumination and general lighting; freedom from moving parts and simplicity of maintenance; where possible, to obviate need for examination lights; and not to interfere with orthopædic frames. The result consists of a wall cabinet 32½ in. long, 4 in. high and projecting 15 in. from the wall surface. This unit has an 'uplight' section with a 25-watt fluorescent tube to give general illumination and a 'downlight' section of two 75-watt incandescent lamps directed in a broad elliptical light pattern over the bed.

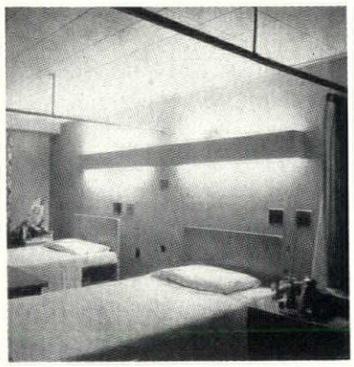
There is also a need for variation in the bedhead illumination. Patients, until they feel well enough to read, probably want low level lighting consistent with the 'crawl-into-a-dark-hole-to-suffer-alone' frame of mind. There is a new move in America to have all lights controlled by dimmers to give maximum flexibility. 'Just as a patient's temperature varies during the day, so do his moods and emotions.' The nature of the pool of light provided by the over-bed unit represents so much to the patient—variety of lighting, privacy (an apparent isolation from the rest of the ward), adequate lighting for tasks, etc., and at the same time the light unit must be able to withstand heavy use and regular cleaning.

3. *Night lighting:* Sufficient illumination must be provided in the wards during sleeping hours to enable nurse and medical staff to move freely but without disturbing patients. Floor lighting has proved a successful and satisfactory method for this purpose. This consists of a flush fitting in the wall behind the beds, 12 in. to 18 in. from floor level. The fittings can be fitted with either a frosted glass or louvred front and equipped with a 15 watt lamp. Alternatively, it is possible to provide a low wattage (blue) lamp in the main ward lighting fittings or rheostat control to give dimming effect.

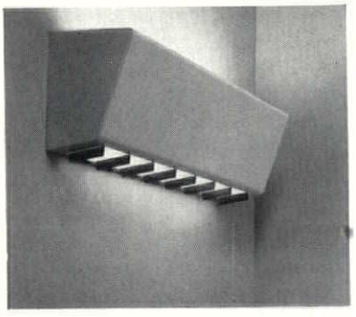
At the same time, ward night lighting must be considered in relation to adjacent rooms and corridors. A small ante-room fitted with a light concentrated to the red end of the spectrum will permit a rapid light to darkness adaptation when staff move from brightly lit areas to a dimly lit ward.

4. *Doctor's examination:* With the development of light manœuvrable

General illumination: 3, *fluorescent pendant fitting by Atlas Lighting.* 4, *American wall fitting.* 5, *non-direct lighting by Atlas Lighting. Over-bed lighting*: 6, *bedhead fitting by SLR Electric.* 7, *adjustable fluorescent bedhead fitting by M. J. Glover & Co. (London).* 8, *adjustable bedhead fitting by Hume Atkins & Co.* 9, *adjustable bedhead light designed by C. F. Timothy for Frederick Thomas & Co.*



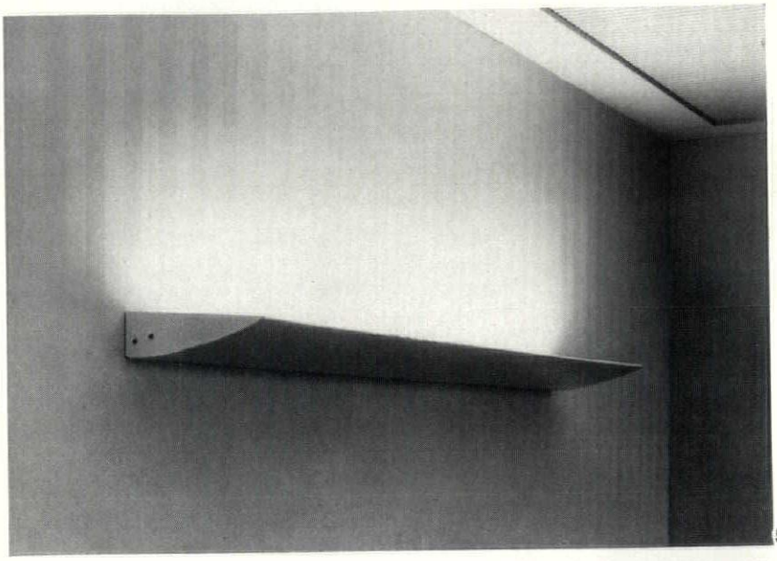
4



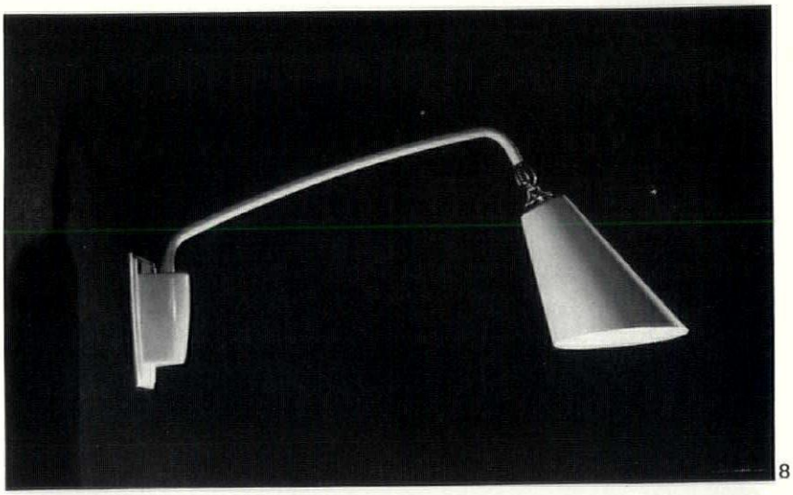
6



7



5



8



9

beds, most detailed examinations can take place outside the ward unit. Thus a doctor's mobile examination lamp need be brought into the ward for emergency cases only. Under these conditions it is necessary to allow an extra power point on the bedside electric control panel. In the case of Recovery rooms and rooms for intensive care, a fixed inspection lamp is more suitable. A doctor's examination lamp should provide an illumination level of 75–100 lumens/sq. ft.

The Schedules aim to show some of the units available. It is possible that general illumination and night-lighting could consist of fixed units that are part of the fabric of the ward. It is mainly the overbed lighting that requires careful development and selection. This unit must be seen as part of the small complex of components of particular importance to the individual patient—bed, locker, cubicle, table, services control panel.

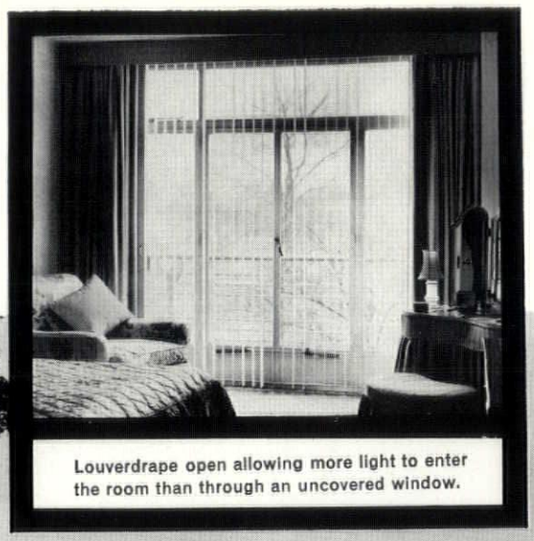
The IES order of preferences on ward lighting state the problem clearly. The first consideration is to promote satisfactory conditions for work or other activities. This is achieved by gaining sufficient illumination and avoiding both glare and visual discomfort. The second consideration is concerned with promoting safety. This is achieved in the system of ducting, panel outlet and the design of the control panel. The third consideration is to achieve a pleasing environment conducive to interest and a sense of well-being. This can be achieved by the early consideration of artificial lighting in relation to the total design of the ward.

[continued on page 298

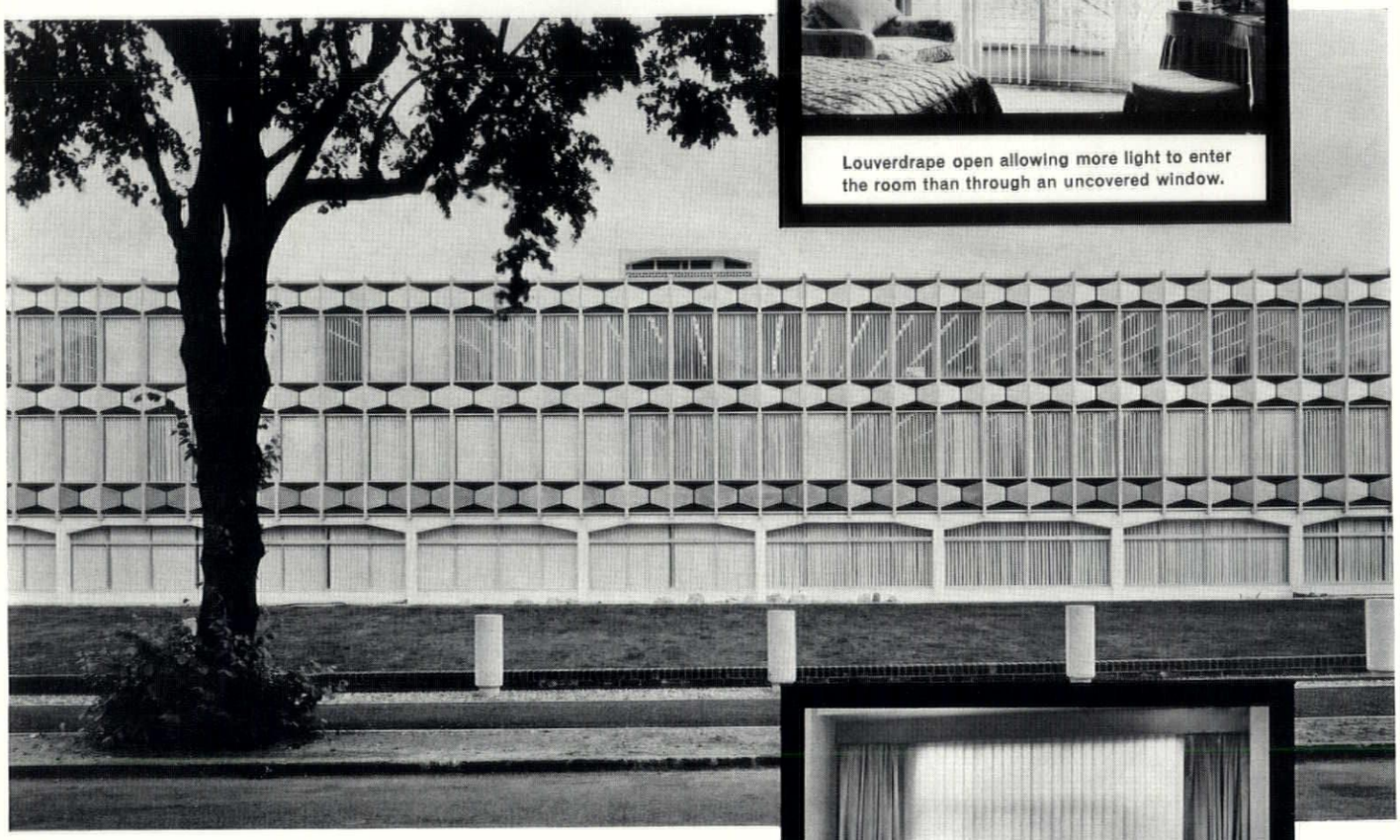
TABLE 1: PATIENTS' LIGHTING

Manufacturer	*Features*	*Price*
Overbed lamps		
Campion Products (Hampton) Ltd., 378, Malden Road, Worcester Park, Surrey.	Clip on Bed Lamp. Model M.8. For 40, 60 or 100 watt lamps with light alloy reflectors—with universal swivel head for light adjustment. 10 in. arm connects lamp to clip base. Dual Purpose Fixed Wall Bracket. Model M.9. Bracket lamp with projecting arm and adjustable shade. Bracket with underslung miniature night lamp.	£5 2s. 6d. £5 2s. 6d.
Hume Atkins & Co. Ltd., 30-38, Hammersmith Broadway, London, W.6.	Model H.A.737. Bedhead fitting for fixing to bedside locker—steel arm gives 110° movement. Two fixing brackets, aluminium reflector for 60 watt lamp and S.B.C. holder for 15 watt pygmy lamp. Finish in white enamel. Models H.A. 733 and H.A. 734. Bedhead fittings with cast aluminium wall brackets, steel swivel arm giving 25¼ in. (overall) projection. 60 watt lamp. Nylon pull cord switch and S.B.C. holder for 15 watt night lamp. Model H.A.738. Bedhead lamp. 22 in. projection from wall bracket. Model H.A.736. Bedhead lamp. 19¼ in. projection from wall bracket. Hood type Overbed lights. 8¾ in. × 5¾ in. × 3¾ in. deep. Model H.A.714 in die cast aluminium available for sunk or surface conduit box or direct wall mounting. Standard finish in white enamel. Model H.A.716. 10 in. × 5½ in. × 4¼ in. deep. Hood type fitting with fluted 'Perspex' diffuser. Standard finish in white enamel. Special recessed light fittings. Model H.A.477 12 in. × 8 in. × 6¾ in. deep. Of 18g steel box and ¼ in. armour plate glass backed with opal glass. Special purpose bedhead fitting. Model H.A. 715. Cast iron adaptable box with cast iron hood and Georgian wired glass panel sandblast finish inside.	£6 2s. 8d. £5 0s. 0d. and £5 19s. 0d. £4 4s. 0d. £3 17s. 0d. to £4 2s. 4d. £2 10s. 8d. to £2 16s. 10d. £4 2s. 10d. to £4 11s. 2d. £7 19s. 4d. £4 18s. 4d.
M. J. Glover & Co. (London) Ltd., 8, Evelyn Grove, Ealing, London, W.5.	Cebe 1. Angle poise lamp with wall bracket or bedside locker fixing. Springs and mechanism enclosed for cleanliness. Maximum reach is 40 in. Porcelain base can be installed to lampholder to reduce reflector heat. Tungsten lamp or with two 15 watt fluorescent tubes (Cebe II).	£5 19s. 6d. with wall bracket £6 3s. 9d. with clamp.
Atlas Lighting Ltd., Thorn House, Upper St. Martins Lane, London, W.C.2.	Bedhead lamp for 60 or 100 watt lamps, operated by a pull switch and incorporating a 15 watt pygmy lamp as a night light. Combined Bedhead lighting unit with fluorescent fitting to provide both general lighting of the ward and local light on the bedhead.	
Falks, 91, Farringdon Road, London, E.C.1.	Bedhead bracket lights giving 12 in. to 24½ in. projection. (L.3618, L.88179 adjustable, L.3667 and L.3619). Bedhead light designed for attachment to upright rail of hospital bed or other similar position. Arm with radius of 20 in. (L.88300 and L.88301). Hood type units 9 in. and 10 in. wide and 4 in. to 4½ in. projection. (L.3616, L.3617 and L.88170). Bedhead Bracket Inspection Handlamp. (L.3620).	L.3667 £2 17s. 8d. L.3616 £2 2s. 0d. L.3619 £3 9s. 8d. L.3617 £3 13s. 4d. L.3618 £3 19s. 4d. L.88179 £3 19s. 8d. L.88300 £7 15s. 0d. L.3620 £5 10s. 0d.
Frederick Thomas, Everton Buildings, Stanhope Street, London, N.W.1.	Adjustable Bedlight for fixing to locker (No. S.F. 16905). Stands 2 ft. 3 in. high from bracket to spring of 18 in. flexible tube with lamp attachment. Bedhead Light (No. S.F. 15760) Lamp on flexible tube extending from wall bracket. Wall fixing also includes 'phone, radio and 13 amp. outlets. Panel 8¼ in. × 5¼ in. Lamp includes night light. Spun aluminium reflector. Bedhead Light (No. S.F. 17034). Lamp on wall mounting. Wall fixing 3 in. × 3 in. Clear perspex diffuser shade. Also R. 3132, R. 1990 and R. 1491. Bedhead Lamps with Dimmer Switches. Wall bracket units consisting of wall mounted control box, swivel arm (giving 15 in., 22½ in. and 10½ in. projection respectively) with Spun aluminium reflectors, allowance for 40/60 watt lamps, Dimmer switch and pull switch control. Control boxes 4 in. × 6 in., 2 in. × 9⅜ in., 4 in. × 6½ in. and 4 in. × 6 in. Model Nos. S.F. 16161/16124, S.F. 16800, S.F. 15480 and S.F. 15459. Drum type Bedhead Lights with 16g aluminium cylinder 8 in. diameter and 8 in. deep on bracket wall mounting. Design No. S.F. 16995 for 40/100 watt lamp, with nylon cord control and louvre cut off on underside. No. R.3034/ adjustable with self sustaining knuckle joint with vertical movement of 70°—designed for 40/100 watt lamps. No. R.3034/40W and 15W arranged for 1-40 watt and 1-15 watt pygmy night light. Projecting overbed lights with 20½ in. projection swivel joint gives 160° horizontal movement. No. R.1485 suitable for 40/60 watt lamp, satin chromium plated arm and black wall plate. Anodised or enamelled shade. Natural wood control handle and push-button switch. R. 1484 similar without handle. Bedhead with adjustable hood R.2601 with 60 watt lamp, glazed with obscured bent glass. Overall size 10½ in. × 5 in. × 3¾ in. Also R. 2560 60 watt wall fitting for Mental Hospitals, made in heavy gauge L.C.S. steel and glazed with cast wired glass. Overall size 9 in. × 7½ in. × 3¾ in. R. 1491 wall fitting with bow 60 watt and 15 watt pigmy night light. Overall projection 10½ in. Combined Ward Light and bed light. (No. S.F. 16168). Wall bracket unit set over bedhead. Bowl form with clear perspex dome over. Dual reflector, one directed to ceiling with 2—75 watt lamps and 1—15 watt pygmy lamp, and one reflector directed to patient with 1—60 watt lamp for bedlight. Pull switch for bedlight. (No. S.F. 17093) Wall bracket unit in cylindrical form. Top section 150 watt lamp directed on to ceiling. Lower section 60 watt lamp on to patient. Sections divided by reflector partition. Control by two pull switches, one for each light.	S.F. 16905. S.F. 15760. S.F. 17034. S.F. 16161/16124. S.F. 16800. S.F. 15480. S.F. 15459. S.F. 16995. R. 3034 £2 10s. 0d. R. 1485 £8 2s. 0d. R. 2601 £9 9s. 7d. R. 2560 £12 5s. 5d. R. 1491 £6 16s. 6d.
Trilux, Selco Lighting Ltd., 378 Upper Richmond Road, London, S.W.14.	Bed Light—acrylic diffuser for reflector tubes, projection 5 3/64 in. depth 6 49/64 in. length 26 21/32 in. with either 2 lamps (upward for indirect and downward for direct) independent switching, or 3 lamps (1 extra on indirect lighting).	56662/20 £20 17s. 9d. 5663/20 £22 8s. 9d.
Troughton & Young Ltd., Wansdown Place, Fulham Road, London, S.W.6.	Wide range of wall bracket lights. Ultralux Model F.V. 4/R. Bracket light with 6 in., 9 in. or 1 ft. projection arm. Mode. F.V. 15/R with P.V.C. covered flexible tube arm. Wall bracket 13/63/W. (also 12/52/W, 13/52/B and 13/71/W).	£2 13s. 0d. to £2 15s. 0d. £5 4s. 6d. £4 1s. 6d.
General lighting		
Frederick Thomas, Everton Buildings, Stanhope Street, London, N.W.1.	Centre Ward Pendant (No. S.F. 16203) 12⅜″ deep, 12″ diameter at underside, top 16″ diameter with 45° cut off. 16″ Cylindrical, 9″ drain, opal perspex shade arranged with 1-150 watt lamp and 1-25 watt emergency lamp. R. 1489 with 150 watt lamp directed to ceiling 14¼″ drain covered by perspex diffuser and underslung 15 watt pygmy night light. Overall projection 19¼″.	S.F. 16203. R. 1489.
Atlas Lighting Ltd., Thorn House, Upper St. Martins Lane, London, W.C.2.	The Amenity Pendant in 4 ft. or 5 ft. versions designed to give adequate illumination to the upper walls and ceilings of wards having a ceiling height of 10 ft. or more. Wall mounted unit—for general light in wards, 2 ft., 4 ft. or 5 ft. sizes, either with remote control gear or with control gear inside the chassis. Flat glass top cover.	
Troughton & Young Ltd., Wansdown Place, Fulham Road, London, S.W.6.	Modolite Range with louvred cut off but not easily cleaned in present form.	
Horsell Electrics Ltd., 1a, 3a and 5a, Charlwood Street, Westminster, S.W.1.	Metal cornice fitting for indirect lighting, wall mounted. 64 in. or 50 in. long.	£5 10s. 0d. to £5 17s. 0d.

this is 13 miles of Louverdrape!



Louverdrape open allowing more light to enter the room than through an uncovered window.





Louverdrape in position showing the diffusion of light through the translucent louver.

The new Birdseye Foods Limited Head Office is fitted throughout with Louverdrape: a total of 13 miles of bright, modern window-covering.

Louverdrape is a new and revolutionary window-covering. Clean, vertical lines that enhance the most modern design. Smooth traversing to leave the window completely free. Positive opening and closing action to give *more* light than an uncovered window and to ensure privacy. Heat is *reflected* not absorbed, cutting bills for both heating and cooling.

Louverdrape is available in a wide range of fabrics and colours: rough and smooth finish, translucent or opaque. Three louver widths (3 in., 4⅛ in. and 6 in.). Standard units up to heights of 30 ft. and spans of 16 ft.

All enquiries to:

venetian blinds ltd

179 Tottenham Court Road, London, W.1.

Telephone: LANgham 0647

TABLE 1: PATIENTS' LIGHTING continued

Manufacturer	*Features*	*Price*
Night Lighting		
Frederick Thomas, Everton Buildings, Stanhope Street, London, N.W.1.	Low Level Ward Light (S.F. 16198). Metel unit set into wall containing 15 watt lamp, with small glass panel in front. Overall size 9 in. × 4¼ in. × 3 in. into wall. Low level Ward Light (S.F. 13947). Metal unit set into wall with 15 watt lamp and horizontal hooded lighting, slit. Switch on unit. Overall size. 9 in. × 3½ in. × 3 in. in to wall, also R. 1487.	S.F. 16198. S.F. 13947
Hume Atkins & Co. Ltd., 30-38 Hammersmith Broadway, London, W.6.	Model H.A. 740. Low Level recessed fitting fabricated from sheet steel and glass panel. Standard finish in white enamel. Model H.A. 741. Low Level recessed fitting with louvres.	£4 5s. 0d. £4 6s. 0d.
Atlas Lighting Ltd., Thorn House, Upper St. Martins Lane, London, W.C.2.	Low Level night light, fitted with small 15 watt lamp for mounting between or under beds. Louvred front to direct light. Unit measures 7½ in. × 3 in. × 5¾ in. Recessed version is also available.	
Walsall Conduits Ltd., Excelsior Works, West Bromwich.	Low level lighting unit consisting of Porcelain B.C. lampholder, cast iron box with black-enamelled exterior and white enamelled interior. Overlapping cover with louvres to deflect light downwards.	

continued from page 296]

Nurse call systems

There are still divided views on the desirability of patient/nurse call systems. However it is a factor to be considered in new projects, especially in the case of a ward unit subdivided into small units. The two main methods consist of:

(*a*) Buzzer and/or light system.

(*b*) One-way or two-way auditory systems.

In the first case, each patient has a push-button installation at the bedside. This causes either a buzzer or a light to register to indicate to the nurse on duty that the patient requires attention. A combination of buzzer and light provides the best form of indication, with indicating lights positioned near the patient concerned to give a quick indication as to who is calling.

The buzzer/light indicator can be a board in the nurses' station. This call is cancelled in the ward when the nurse attends the patient. The recording board can take the form of a ward plan to show immediately where the call is coming from. A more complex system, first registers the call at a central control and it is relayed through a pocket transistor receiver to the person (nurse, doctor, etc.) concerned. He will then 'phone through to the control point for instructions.

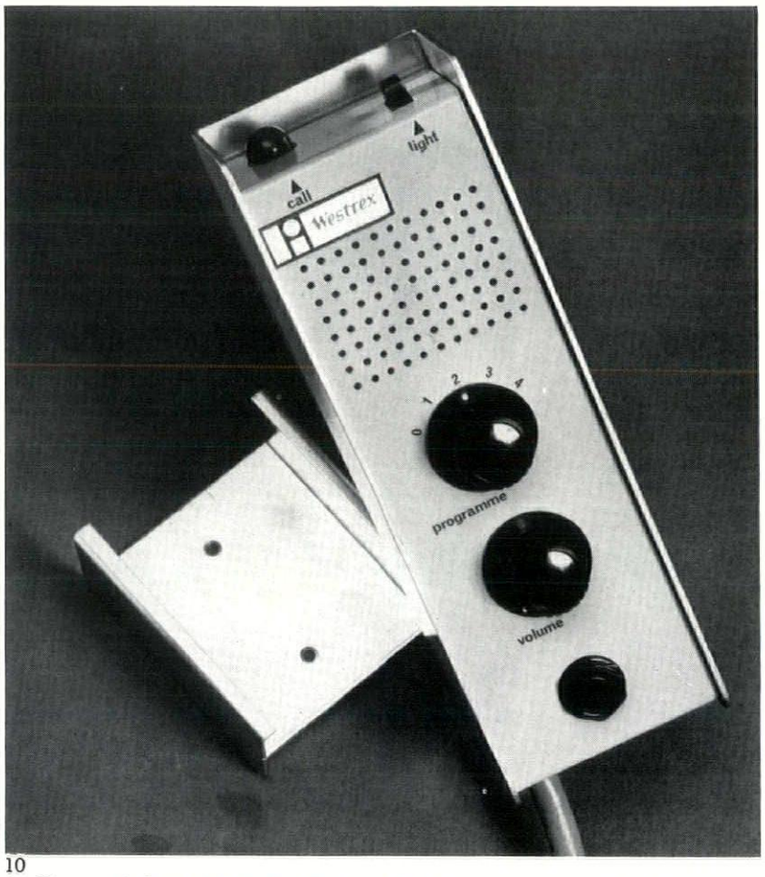
The one-way or two-way auditory system gives the nurse an indication of the problem before going to the patient. A one-way system consists of a microphone installed beside the patient. The message is received at the nurses' station. A two-way system requires the patient to use microphone and earphones in order to have a conversation with the nurse at the nurses' station. A more complex adaptation of these systems incorporates transistor receivers so that the message can be received by the nurse, wherever she may be, without it going through a central control point.

With most auditory systems any patient can be listened to at any time at the control unit. This continuous listening has proved particularly valuable in caring for seriously ill or restless patients in single rooms.

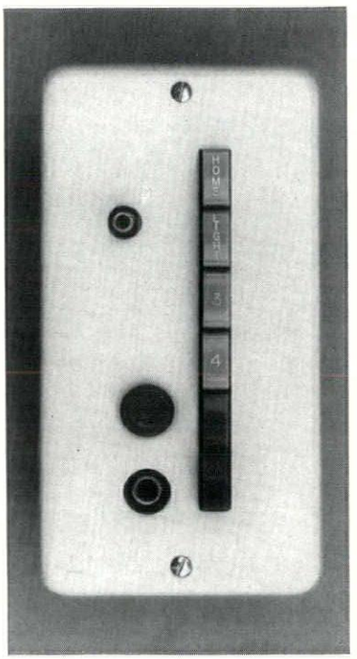
Staff location systems

Two systems of Staff Location which can be integrated with nurse call systems are outlined in a summary published by the King Edward Fund. These are the 'Magnetic induc-

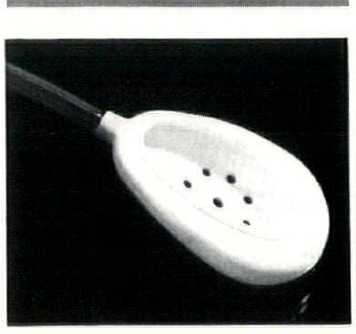
[continued on page 300



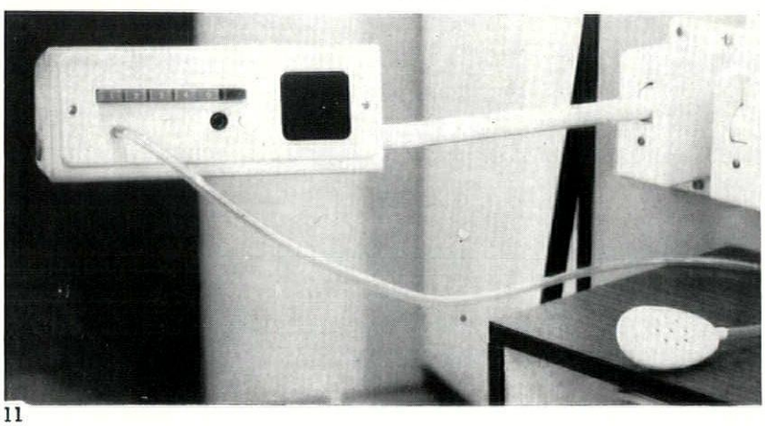
10



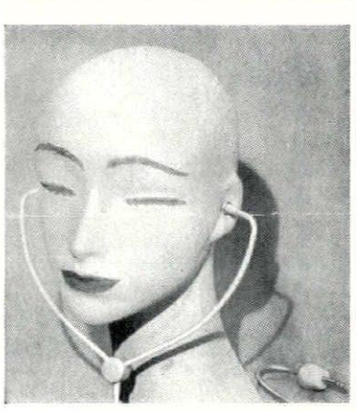
12



13

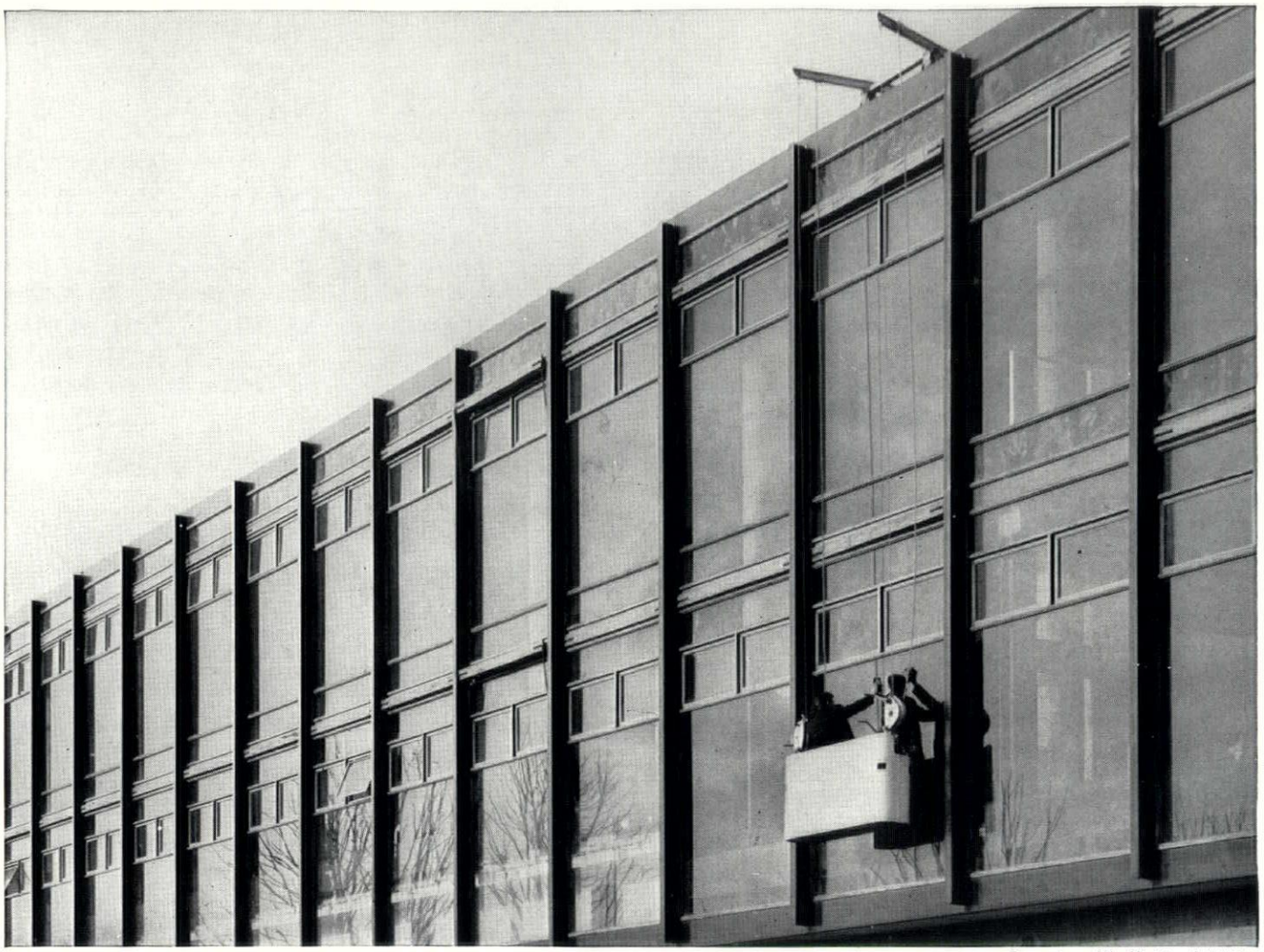


11



14

10, *Westrex unit for programme selection and control with nurse-call and patient/nurse talk-back.* 11, 12, *wall-mounted bedhead unit for programme selection with nurse-call button, speaker outlet, socket for remote call button and call indicating lamp by Cass Electronics;* 11, *has bedside swivel arm and intercom speaker/microphone.* 13, *acoustic pillow phone which can also be used as ear-cup by sitting patient. Cass Electronics.* 14, *'Voxette' stethophone by Amplivox.*



By courtesy of the Ministry of Aviation

a bright future for modern buildings

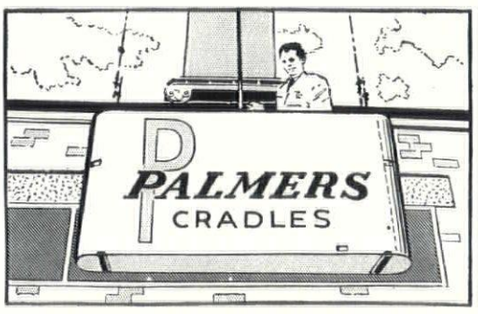
If fine modern buildings are to be kept in their original condition it is important that the problem of cleaning and maintenance should be considered in the early stages of design. Palmer's are specialists in modern maintenance systems for buildings. Some examples of their equipment are described below.

Permanent Runways
are incorporated into the structure of the building. From them, travelling cradles can be suspended to give easy access to any part of the elevation.

Portable Runways
are available in units which can be coupled together to cover the whole elevation. They can be attached to flat roofs, flat roofs with parapet and to balconies and offsets.

The Manual Trolley
has been designed for modern buildings of moderate height and length, where the emphasis is on curtain walling and new materials.

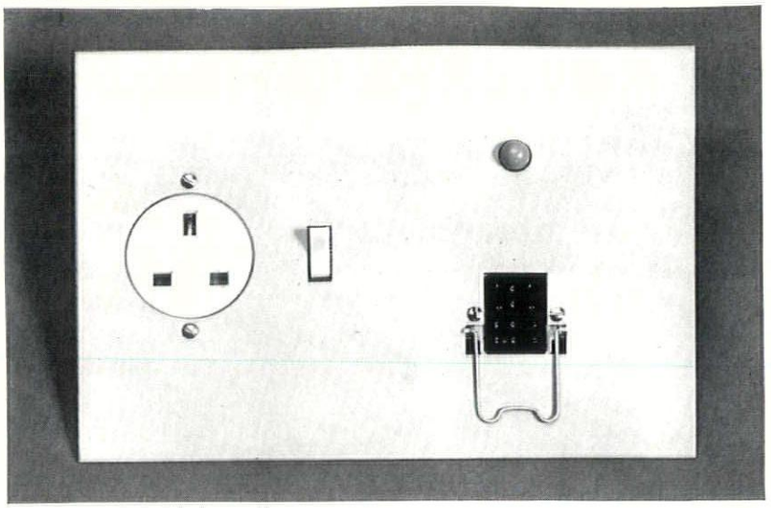
The Palmatic
is an electrically operated travelling cradle which can be moved horizontally, vertically or diagonally either from the cradle or from the roof. It is the first of its kind in the country.



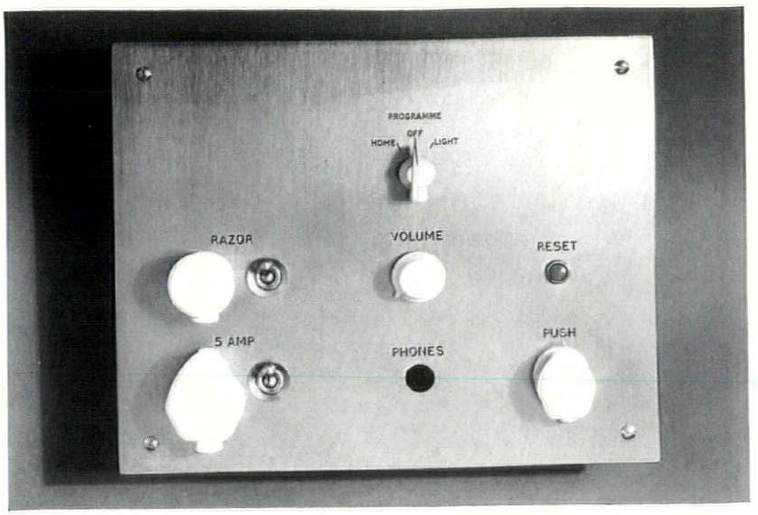
PALMER'S TRAVELLING CRADLE & SCAFFOLD CO. LTD.

3 WOODSIDE GREEN, LONDON, S.E.25 TEL: ADDiscombe 7721

BRANCHES: Bristol, Tel: 292133, Leeds, Tel: 21394 Middlesbrough, Tel: 3051
Newcastle, Tel: Gateshead 71931
Manchester Subsidiary, Stones Scaffolding Ltd., Tel: Urmston 6151



15, *bedhead inter-connection unit by Westrex Co.*



16, *overbed control panel by Gents & Co.*

continued from page 298]
tion system' and the 'wireless systems.' It states that most hospitals prefer the method whereby the pocket receivers emit an intermittent 'beep' when the person concerned is wanted (though units can be adapted to transmit verbal messages). The call is then answered by the person telephoning the control panel operator from the nearest telephone. However, when considering any system it is advisable to make sure whether or not the receivers can be safely and satisfactorily used in operating theatres, X-ray departments and similar places.

The magnetic induction system requires the signal-receiving area to be looped with wire. Examples of this system are the Multitone Personal Call System (Multitone Electric Co. Ltd., 12 Underwood Street, London, N.1), the Nira Tele-Tracer (Cass Electronics) and the Westrex Personal Call System (see Nurse Call systems) and the system manufactured by Hasler of Berne and marketed in this country through Telenova Ltd. (Autophone House, 73 Great Peter Street, London, S.W.1).

The wireless systems have been made more suitable with the development of transistors. In the case of an installation developed by Multitone Electric Co. Ltd., no loop aerial is required, the signals being sent out from 5 W. transmitters—a system particularly suitable to a hospital with widely scattered buildings. Wireless systems have also been developed by the Page Bay Co. Ltd. (Henrietta House, Henrietta Place, London, W.1) and E. Shipton & Co. Ltd. (181/7 Queen Victoria Street, London, E.C.4).

TABLE 2: NURSE/PATIENT COMMUNICATIONS

Manufacturer	*System*
Cass Electronics Ltd., White Hart Yard, Guildford Street, Chertsey, Surrey.	*Staff location.* Cass Tele-Tracer individual staff contact systems consisting of a wireless paging system with up to 360 individual channels. Pocket receivers weigh 3¼ oz. NIRA Nurse Call System in which call buttons are incorporated in bedhead units. A central light indicator in addition to dome light outside wards is provided. Nurse Call and Patient/Nurse intercommunication systems which consist of a central control unit with facilities to receive calls from each bed, room, toilet or bathroom and to follow this up with a two-way conversation with the patient by the pillow-phone.
EMI Electronics Ltd.,	System of automatically transmitting to a central point information regarding the general condition of up to 900 patients in various wards. A nurse seated at the central receiver console can read off dials the temperature, blood pressure, pulse rate, respiratory rate and other information of each patient. If the characteristics of a particular patient should at any time go outside the individually set limits for that patient, an alarm is immediately given. A simple attachment is made to each patient—each attachment is connected to a small box fitted to the headrail of the bed.
G.E.C., Magnet House, Kingsway, London, W.C.2.	G.E.C. Luminous Call System of the single service character. Calls cancelled from inside ward.
Gent & Co. Ltd., Faraday Works, Temple Road, Leicester.	Two bedhead units, 1 with radio, razor, 5 amp. plug, earphones, nurse call. Gent's Luminous Indicating and Signalling arms to enable any individual in a hospital ward to call for the services of the staff. When the patient presses a button, a light signal illuminates in an indicator situated in the duty room. At the same time a light signals adjacent to the initiating point.
Hadley Telephone & Sound Systems Ltd., Cape Hill, Smethwick, Staffs.	Nurse call system—All calls register on a plan indicator (usually situated in the Duty Room). The patient has a bed-side speaker panel for two-way speech communication and monitoring. Bedhead panel for multi-bed wards incorporates Reassurance Lamp and Cancel Button, for use with rubber moulded micro-speaker and call button for two-way speech. Also: Hadley Patients programme selector with volume control—stethoscope headphone and pillow-phone. Also: Hadley Radio Intercom unit which provides patients with a personal radio and two-way communication with the nurse.
Multitone Electric Co. Ltd., 12 Underwood Street, London, N.1.	Multitone Personal Call System using magnetic induction system and pocket receiver and wireless system and transistor receiver.
Page Bay Co. Ltd., Henrietta House, Henrietta Place, London, W.1.	Staff location system with wireless transmitter and pocket transistors.
Shipton Automation (Sales) Ltd.	'Transistacall' for contacting staff with central transmitter and pocket receivers. Shipton 'Inter-Call' staff location—installation consists of transmitter and pocket receivers.
Tele-nova Ltd., Autophone House, 73 Great Peter Street, London, S.W.1.	Magnetic induction staff location system manufactured by Hasler of Berne.
Westrex Co. Ltd., Coles Green Road, London, N.W.2.	*Personal call system.* System consists of an audio-frequency indication system transmitting calls from one or more control units to individual pocket receivers. *Patient control* for radio and nurse call which can be used in conjunction with pillow-phone or head-phone.

Accessories

In addition to the accessories mentioned in relation to specific nurse call systems, some manufacturers specialize in bedside 'control panels' and equipment for patients.

The control panel could include outlets for power points (13 amp. and 5 amp.) oxygen (for emergency wards), patients' communications and radio, reassurance light and cancellation in conjunction with nurse/call systems, electric shaving point, overbed light switch, radio programme selectors and volume control. In the case of less mobile patients, it is difficult to reach an 'overbed' wall control panel, especially if elaborate propping up is used to bring the patient into a sitting position. Thus there are several units that bring some of these facilities to a bedside position.

Most detachable control units carry a low voltage, are heavily insulated and are designed for easy cleaning. They range from a simple light switch and nurse/call bell push to the elaborate hand unit incorporating microphone, headphone connections, programme selectors, volume control, nurse/call push button, etc., all in a unit that can be grasped in the patient's hand and left lying on the bed.

In addition to control panels the range of hearing units include moving coil headphones, stethoscope type stethophones with an acoustic transmission tube instead of a cable and various forms of pillow phone which can be placed in or on the pillow so that the patient can rest his head comfortably while listening.

S. G. Brown, Shakespeare Street, Watford, Herts, apart from a range of earphones, provide a handphone

[continued on page 302

AGAIN **GOSLETTS**
LEAD WITH

GOSLETT
OF CHARING CROSS ROAD

PRACTICAL *Swanlyne* DESIGN

DESIGNED BY
WALLIS GOSLETT

PATENT AND
REGISTRATION APPLIED FOR



PLUMBING
HIDDEN

FLOORS CLEAR

Swanlyne
MASQUE
ON 24″ x 20″ BASIN

FOR FULL DETAILS PLEASE ASK FOR LEAFLET AR/1062

BARBOUR INDEX FILE 336

GOSLETT
OF CHARING CROSS ROAD

SHOWROOMS
127-131 CHARING CROSS ROAD
LONDON W.C.2
TELEPHONE: GERRARD 7890 (12 LINES)

continued from page 300]
designed specially for use in deaf aid systems and volume controls both of the 'box type' and the 'lead type'. The latter is housed in a plastic case and is situated on the lead to the headphones, to be in easy reach of the wearer.

S. G. Brown also manufacture the 'Brown' Pillowphone comprising a moving coil element and associated matching transformer mounted in a linen bag (this instrument can lie between pillow and pillow-case) and an Immersible Pillowphone of particular interest. This is moulded in polystyrene loaded plastic, fitted with plastic covered multistrand cord and is waterproof to facilitate disinfection. It can be placed on or near the pillow.

Cass Electronics also produce an Acoustic Pillowphone which can be used either as an ear-cup when the patient is sitting up or as a pillow phone when the patient is lying down. A new trend in hearing equipment is the lightweight stethoscope type stethophone which uses an acoustic transmission tube instead of a cable. The plastic tube is 4 ft. long and can be attached to a wide-frequency-range reproducer housed in the control box beside the patient. The other end of the tube is attached to a lightweight aluminium stethophone unit complete with ear-tips, obviating electrical connections.

The Voxette Stethophones are manufactured by Amplivox, Beresford Avenue, Wembley, Middlesex, and distributed by Hadley Telephone and Sound Systems, Cape Hill, Smethwick, Staffs.

Walsall Conduits produce a Control panel or 'hospital bed electrical service unit.' This range includes a bed-head assembly with 5 amp. and 13 amp. outlet, 4 programme selectors, headphone connections and socket outlet for nurse/call push. The wall or Locker Assembly consists of a low voltage transportable unit which can be hung on wall or locker. It allows for a four-programme selector switch, volume control, switch for bed-light, switch for nurse/call system and connection for headphones. Another unit similar in scope to this is fitted with a 'Hadley' drive unit for stethoscopic headphones. Walsall also manufacture a 'hand assembly with nurse/patient intercom.' This incorporates a four-programme selector, volume control, switch for bed-lamp, nurse/call push button, headphone connection and a 2-way microphone for speaking to and receiving from the nurse. In addition, Walsall manufacture a 'Weak Patients Assembly' comprising 2-pin plug, bed-light switch for nurse's use and moulded rubber bell-push for patient.

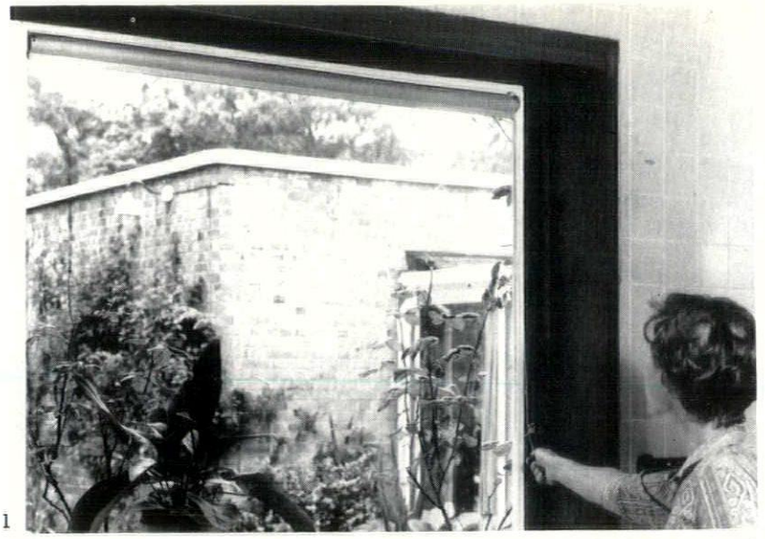
Westrex Co. also manufacture a programme selection unit for surface or wall mounting. This contains programme selection and volume control, facilities for headphone, pillowphone or stethoscope earphones. GEC manufacture a range of surface mounted and flush mounted bedhead units. Gent & Co. produce both wall mounting control panels and a bed unit including a bed switch, a nurse/call push button, radio control, volume control and headphone connection.

Cass Electronics produce a swivel arm bedside unit equipped with four-programme selector, an off button, nurse/call, dynamic speaker outlet acoustic pillow-phone, remote call button, call light indicator and intercom speaker microphone. The whole unit projects out from the wall on a swivel arm, to be more accessible to the patient. This company also produces wall mounted bedhead control panels.

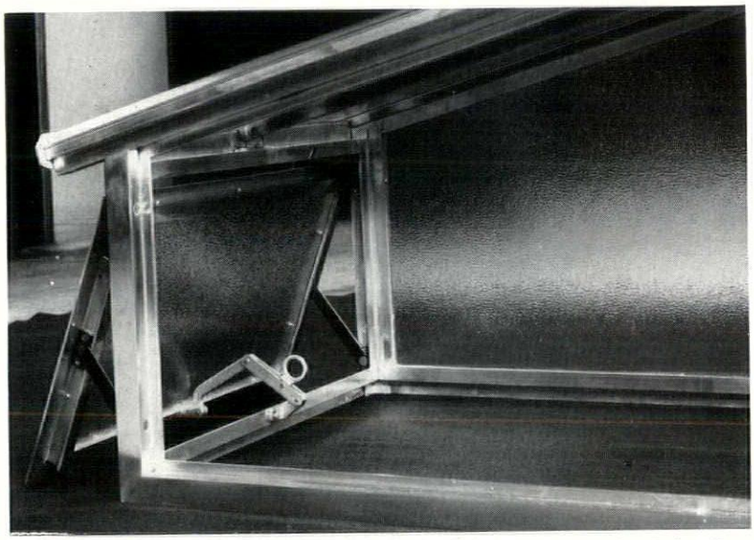
The Wandsworth 'Wanderer' portable bedside unit manufactured by Wandsworth Electrical Manufacturing Co., Albert Drive, Sheerwater, Woking, Surrey, brings the controls away from the wall. It is a low voltage unit in a nylon case incorporating a call button, volume control, bedlight switch, radio selector and earphone outlet. A stethoscope type driver can be supplied.

Both bedside lighting and communications will depend upon a floor or wall duct. It is therefore important that the wall outlet panel should be carefully considered. The facilities that should be provided and the accessibility of the controls (on the wall, on the locker or a portable unit) is relative to the type and condition of the patient. It is also related to the type of bed selected (a folding frame that moves the patient away from the wall makes wall control inconvenient) to the type of locker (whether control units and lighting can be attached) and overbed table (a patient permanently prone and using a book stand or a table at a high degree of tilt, could find a wall bracket overbed light of little use).

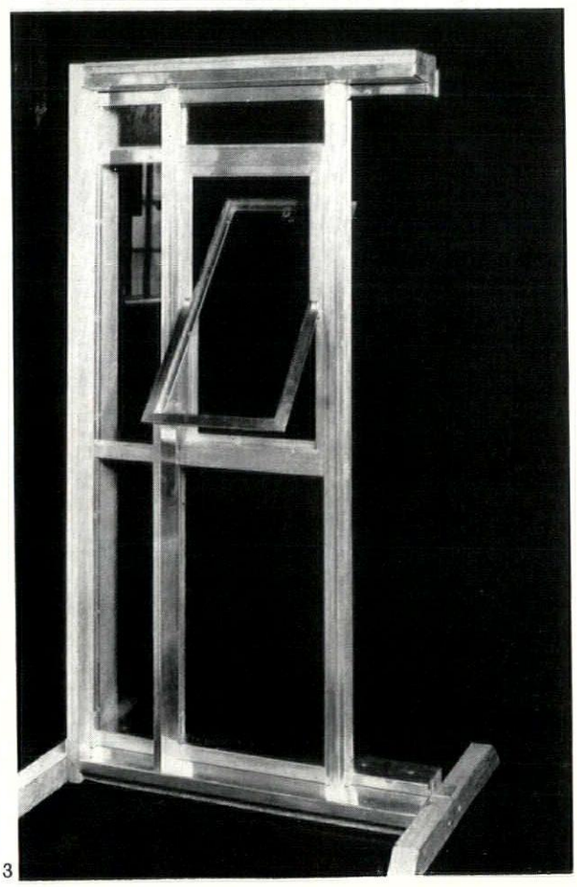
The approach that rationalizes the needs of patients that are already categorized through the hospital organization, should lead to a more cohesive appearance to the ward interior instead of the prevailing kaleidoscope of components that are finding their way into the new buildings.



1



2



3

1, 'Bonaire' ventilator. 2, single-frame top-hung window with pivoted side guides incorporated as upstand in lantern light mock-up. 3, mock-up of Hinchliffe aluminium curtain wall.

THE INDUSTRY

Aluminium in building

E. D. Hinchliffe and Sons have recently introduced several building components which they have developed. The firm are already well known as manufacturers of aluminium windows and the new products are logical developments in this field.

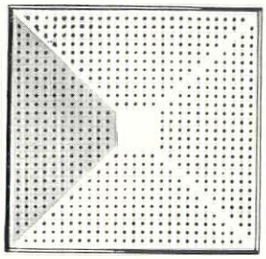
The first of these is the 'Bonaire' ventilator. This is a silver anodized aluminium rotary mechanism. The cylinder is 1½ in. diameter with twin rotating louvres operated by nylon pull cord and stainless steel return coil spring. Available up to a maximum length of 5 ft. 4 in., it can be operated by remote control system. The illustration, 1, shows it fitted at the top of a fixed window to provide controlled natural ventilation. The unit can be used in windows, rooflights or domelights.

In the window field three types of single frame windows are available, top hung window with an unbroken hinge, a projecting top hung window with the opening and closing operations controlled by pivoted aluminium side guides and stainless steel tension springs, 2, and a horizontally pivoted reversible window capable of turning through 145 deg. The first two types can be obtained with a maximum perimeter dimension of 20 ft. and the third with a maximum of 16 ft.

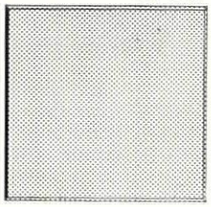
The company has also developed an aluminium curtain wall system. This employs an overlap seating for transome members, the seating unit being carried in a mullion rebate, resulting in a mastic free cross joint.

[continued on page 304

ESSE ACOUSTIC FIRE-RESISTANT CEILING TILES

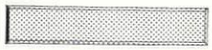


24″ x 24″

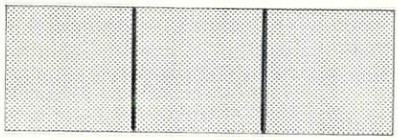


Made from steel panels in the form of flanged trays with infill of insulating material, ESSE Tiles are available perforated (acoustic) or unperforated (non-acoustic) and supplied enamelled in a wide range of colours.

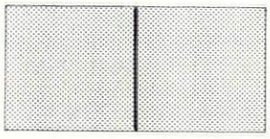
18″ x 18″ and 24″ x 24″



18″ x 3″



36″ x 12″
(also without grooves)



24″ x 12″
(also without groove)

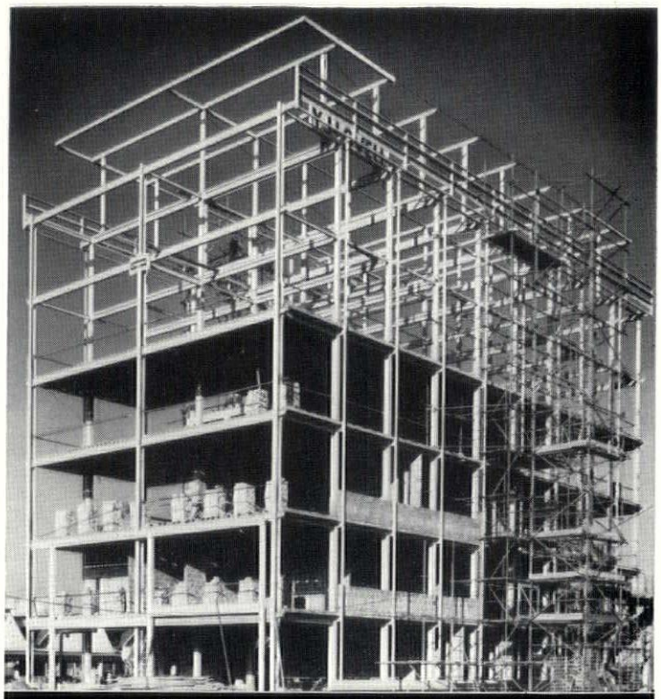
ESSE Ceiling Tiles offer, as well as interesting aesthetic possibilities to the designer, these functional advantages—
(1) **Excellent acoustic properties,** especially in the sound range which includes office machine and restaurant clatter.
(2) **Strong fire-resistance characteristics.** Official tests show that after 2 hr 10 min at up to 1000°F the load-bearing strength of steel beams above an ESSE Ceiling was not significantly weakened.

EASY TO ERECT: ESSE Ceiling Tiles and ESSE Recessed Light fittings are designed for simple 'snap-in' fitting into galvanised steel supports.

Ask also about the new ARTPLAX metal panels for walls, partitions, etc. Silk screen printed in standard or 'to order' motifs, or in self colours.

ESSE SUSPENDED CEILINGS

SMITH & WELLSTOOD LTD
Acoustics Division
Scott's Road Paisley
London: 63 Conduit Street W1
Manchester: 26 Cross Street 2



OVER 600 TONS OF STEEL FRAMEWORK BY

Croggon



FOR THE SLOUGH COLLEGE OF FURTHER EDUCATION

GENERAL CONTRACTOR *Y. J. Lovell & Son Ltd.*
BUCKS COUNTY ARCHITECT *F. B. Pooley*, F.R.I.B.A., F.R.I.C.S., A.M.T.P.I.

CROGGON & CO. LTD. · ESTABLISHED 1835
POYLE STEELWORKS · COLNBROOK · Nr. SLOUGH · COLNBROOK 2501
230 Upper Thames Street, London, E.C.4. CENtral 4381
also at Liverpool & Glasgow

continued from page 302]
The illustration, 3, shows a small mock-up of the system incorporating one of the new horizontally pivoted reversible windows. The sections used for the curtain wall members are developed from the standard patent glazing sections.

Any or all of these products can be anodized to specification.

E. D. Hinchliffe and Sons Limited, Hall Street South, West Bromwich, Staffs.

Curtain wall cladding units

Recently introduced into this country are the Reventa windows and cladding units. Of Swedish design, these are now being manufactured under licence in this country by Sandall Group Sales Limited.

The windows, horizontally or vertically pivoted, are available in all timber construction, 4, or with the external sash in aluminium combined with aluminium facing to all timber frame external surfaces, 5. They are made with coupled sashes for multiple glazing and venetian blinds may be fitted between the panes.

The cladding units are also timber framed with facings of bronze, brass or aluminium and are available with window sections fixed, pivoted or side-hung. A wide range of infill panels are available and the whole system allows a surprisingly large number of variables within an economic margin. The system should prove simple and speedy to erect and lends itself to the repetitive curtain wall façade or, as in 6, to the panel infilling of the frankly expressed structure.

Robert Sandall (Group Sales) Limited, Barry House, Worple Road, London, S.W.19.

Aspect translucent sheeting

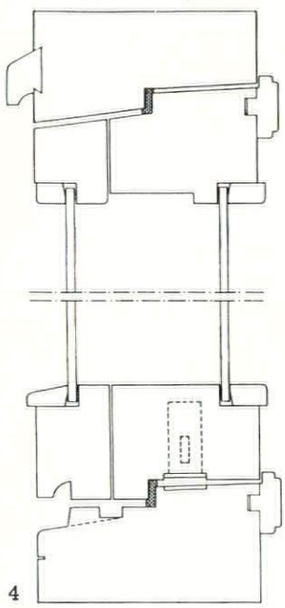
Allied Structural Plastics, a member of the UAM Group, announce the production of translucent pvc sheeting in several forms. The material is 'natural translucent' in colour and can be had in flat sheets or corrugated in three different profiles. These match Standard 3 in. corrugated asbestos sheeting, Standard Six, Major Six and Big Six corrugations and Canada Tile, Atlas Tile or Trafford Tile profiles. Sheets are available from 4 ft. to 10 ft. long in 6 in. increments with the width varying according to the corrugation pattern. The Standard 3 in. and Standard Six forms are also available in 4 ft. 6 in. wide rolls, transversely corrugated and 30 ft. long. The corrugated forms are $\frac{1}{16}$ in. thick and weigh 7 oz. per sq. ft. The flat sheets can be had in three thicknesses, $\frac{1}{16}$ in., $\frac{1}{8}$ in. and $\frac{3}{16}$ in., being 4 ft. 6 in. wide and 4 ft. to 10 ft. long in 1 ft. increments.

The pvc is claimed to have good resistance to the spread of flame and to be self-extinguishing. It is also said not to form flaming globules when burning.

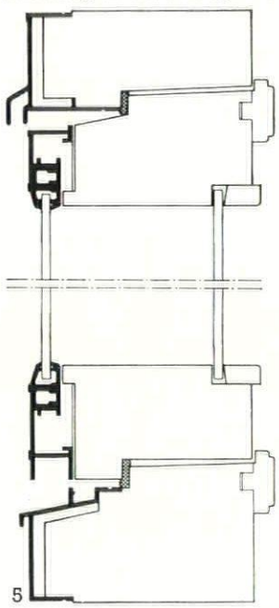
Such material, of course, is probably the cheapest form available for introducing light via translucent panels in corrugated sheeting structures. No special purlins, seating angles or even special fixings are required. This clear pvc is said to have a transmission value of 82 per cent and the cost is roughly 2s. 9d. per sq. ft. for plain and 3s. per sq. ft. for corrugated. It is understood that coloured material will eventually be available, but at the moment only clear is being produced.

Fully detailed information is available in a booklet obtainable from the manufacturers and, in common with other UAM technical information, is a model of clarity and sensible presentation. The Group have now completed, with the publication of two other new catalogues, the full series of their technical information. They have now covered all forms of roof and wall sheeting manufactured by them. All the catalogues are A4 and SfB classified, uniform throughout the range with each product's data presented in the same way. It is a thoroughly commendable effort and could well serve as an example to others in presenting the information that the architect needs in a clear, comprehensive, yet still attractive form.

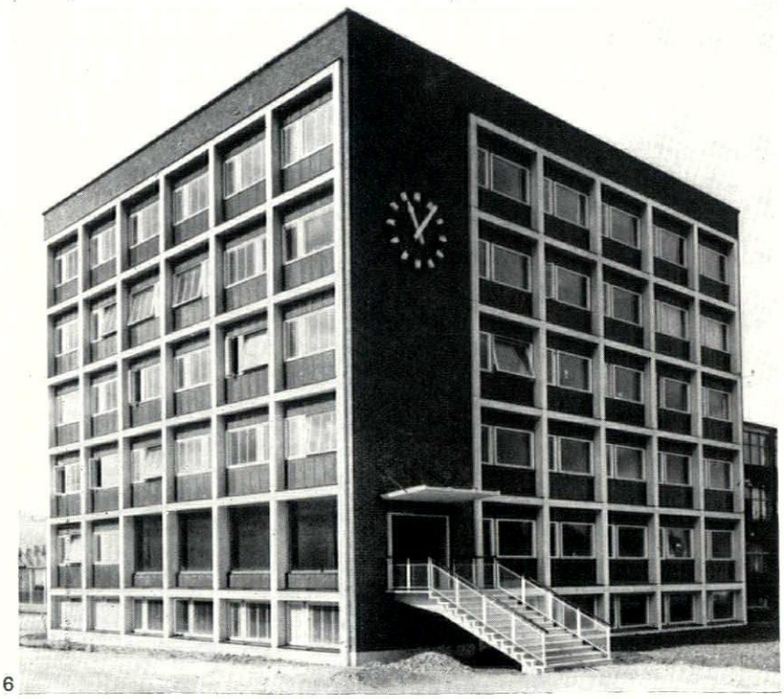
UAM Group Advisory and Information Service, Tolpits, Watford, Hertfordshire.



4



5



6

CONTRACTORS etc

Royal College of Art, South Kensington. *Architect:* H. T. Cadbury-Brown in association with Sir Hugh Casson and R. Y. Goodden. *General contractor:* Leslie & Co. *Sub-contractors: Windows:* Crittall Manufacturing Co. *Precast stone facing:* Croft Granite Brick and Concrete Co. *Terrazzo:* W. B. Simpson & Sons. *Greenhouse:* British Challenge Glazing Co. *Light fittings:* Rotaflex Ltd. *Mechanical services:* J. Jeffreys & Co.; Shelley Electric Furnaces Ltd. *Telephones:* Reliance Telephone Co. *Mechanical and electrical services:* Matthew Hall Ltd.; The Express Lift Co.; Electrical Installations Ltd. *Built-in furniture:* Elington Industries Ltd. *Dreadnought roller towel rails:* Douglas Kenn Ltd. *Electrical switches:* M.K. Electric Ltd. *Paints:* Hadfields (Merton) Ltd. *'Canotex' wall covering:* Arthur Sanderson & Son Ltd. *Electric light fittings:* Revo Electric Ltd. *Sanitary fittings:* Adamsez Ltd.

Office Block at Walton-on-Thames. *Architects:* Sir John Burnet, Tait and Partners. *General contractor:* Higgs and Hill Ltd. *Sub-contractors: Glazed curtain walling:* The Crittall Manufacturing Co. *Roof finishers:* Rock Asphalte Co. *Floor finishes:* National Flooring Co. *Terrazzo:* Diespeker & Co. *Curtain wall cleaning installation:* Mills Scaffold Co. *Heating and hot water, air-conditioning, plumbing, ventilating and electrical installations:* Matthew Hall & Co. *Suspended ceilings:* Stilsound Acoustics Ltd. *Balustrades:* H. & C. Davis & Co. *Facing bricks:* R. Y. Ames Ltd. *Louvre drape blinds:* Venetian Blinds Ltd. *Fire resisting doors and shutters:* Dennison, Kett & Co. *Ceramic screens:* Ceramic Consultants Ltd. *Cement glaze finishes:* Collins Contractors Ltd. *Sanitary fittings:* Wiggins-Sankey Ltd. *Strong room doors:* Chubb & Sons Ltd. *Kitchen installation and equipment:* Gardiner & Gulland Ltd. *Dishwashing equipment:* Helimatic Ltd. *Partitioning:* Tenon Contracts Ltd. *Ironmongery:* Dennis Waring & Co. *Architectural metalwork:* G. Johnson Bros. Ltd. *Special glazing:* Shepherd Tobias & Co. *Entrance hall marble:* Fenning & Co. *Prestressed concrete work:* The Fram Reinforced Concrete Co. *Lifts:* Otis Elevators Ltd. *Furniture:* Conran Ltd.; Heals Contracts Ltd.; Interiors International Ltd.; Hille Ltd.; Westnofa; Fretrade Ltd. *Curtains:* George Milligan Ltd. *Carpets:* Potts & Ward Ltd. *Ornamental fountains:* Guthrie Allsebrook & Co. *Waterproofing:* Sika Ltd. *Vitreous enamel panels to curtain walling:* Stewart & Gray Ltd.

Lecture Rooms, College of Science and Technology, Manchester. *Architects:* Cruikshank & Seward. *General contractors:* J. Jarvis & Sons Ltd. *Sub-contractors: Pile foundations:* Pressure Piling Co. *Precast reconstructed stone:* Empire Stone Co. *Portland stone:* South Western Stone Co. *Terrazzo floors, stair treads, etc., external mosaic finishings:* J. & H. Patteson Ltd. *Structural steelwork:* R. Smith (Horley) Ltd. *Steel windows:* Henry Hope & Sons Ltd. *Aluminium windows:* James Gibbons Ltd. *Aluminium patent glazing:* Mellowes & Co. *Glazed curtain walling, balustrades, stainless steel armourplate doors:* James Gibbons Ltd. *Metal roller shutters:* G. Brady & Co. *Passenger lifts:* Express Lift Co. *Goods and service lifts:* J. & E. Hall Ltd.; George Johnson Ltd. *Fire alarm system:* Associated Fire Alarms Ltd. *Lightning conductors:* John Faulkner & Sons Ltd. *Louvre blade gearing:* Teleflex Products Ltd. *Glass domelights:* R. Seddon & Sons Ltd. *Heating, hot and cold water, ventilation and gas installations:* Young, Austen & Young Ltd. *Electrical installation:* A. E. Sudlow & Co. *Blackboards, screens, projection room equipment, fixed seating and carpets:* Rank Kalee Ltd. *Timber strip flooring:* J. Gerrard & Sons Ltd. *Hardwood windows:* Tomo Trading Co. *Dry riser fittings:* John Morris & Sons Ltd. *Louvre blades:* Turners Asbestos Cement Co. *Travelling cradle and portable maintenance equipment:* Palmers Travelling Cradle & Scaffold Co. *External balustrades:* Lain Engineering Co. *Linoleum tiles, asphalt roofing:* Limmer & Trinidad Lake Asphalt Co.

Extensions to Royal Grammar School, Lancaster. *Architects:* C. B. Pearson & Son. CHEMISTRY LABORATORIES: *General contractor:* John Liddle Ltd. *Sub-contractors: Reinforced concrete:* Truscon Ltd. *Composition block flooring:* Granwood Flooring Co. *Metal handrails and balustrades:* Archibell Greenwood Ltd. *Heating and hot water supply installation:* Mercer Ltd. *Ventillation installation:* Turner & Brown Ltd. *Lecture room seating:* Race Contracts Ltd. *Slate cills:* Burlington Slate Co. DINING HALL: *General contractor:* R. L. Dilworth Ltd. *Sub-contractors: Heating, water and gas:* The Whitlock Heating Co. *Aluminium windows:* Quicktho Engineering Ltd. *Window gearing:* Teleflex Ltd. *Concrete beams and reinforcement:* Truscon Ltd. *Stair covering:* Granwood Flooring Co.

A NEW MATERIAL FOR ARCHITECTS FROM SCANDINAVIA

On a recent trip to Scandinavia we noticed the extensive use of a superbly decorative natural material, Alta Quartzite.

Quarried in Norway inside the Arctic Circle, its exceptional density, beautiful colour and sparkling riven surface combine to make it the most attractive and practical of all quartzites.

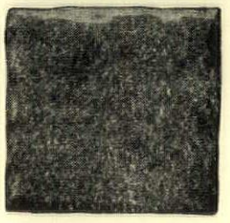
Although Alta Quartzite has not been advertised until now, it seems word has got around that stocks are available because we have already received enquiries from architects.

On the Continent Alta Quartzite is used for pedestrian concourses, schools, laboratories, swimming pools. Water-impervious, unaffected by hard abrasive wear, it is a magnificently durable flooring material, especially suitable when underfloor heating is to be used.



We have prepared an information sheet giving all necessary information and will be pleased to send you this, together with an actual sample of Alta Quartzite, on request.





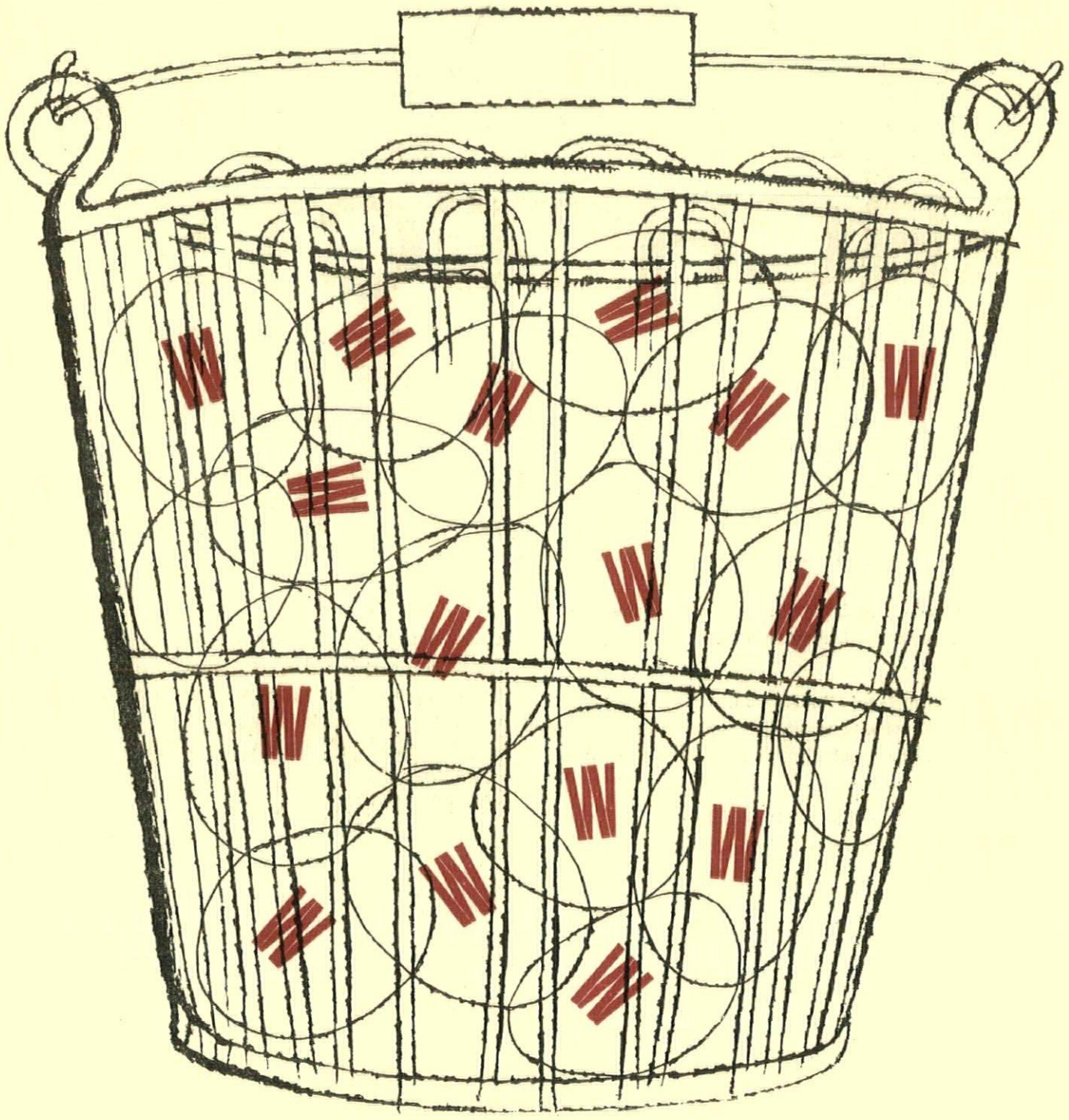
The Stone Firms Limited

Thessaly Road, London, S.W.8. Telephone: MACaulay 6644

A MEMBER OF THE BATH AND PORTLAND GROUP LIMITED

Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames. Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter

ALL THE EGGS ARE FOUND IN OUR BASKET

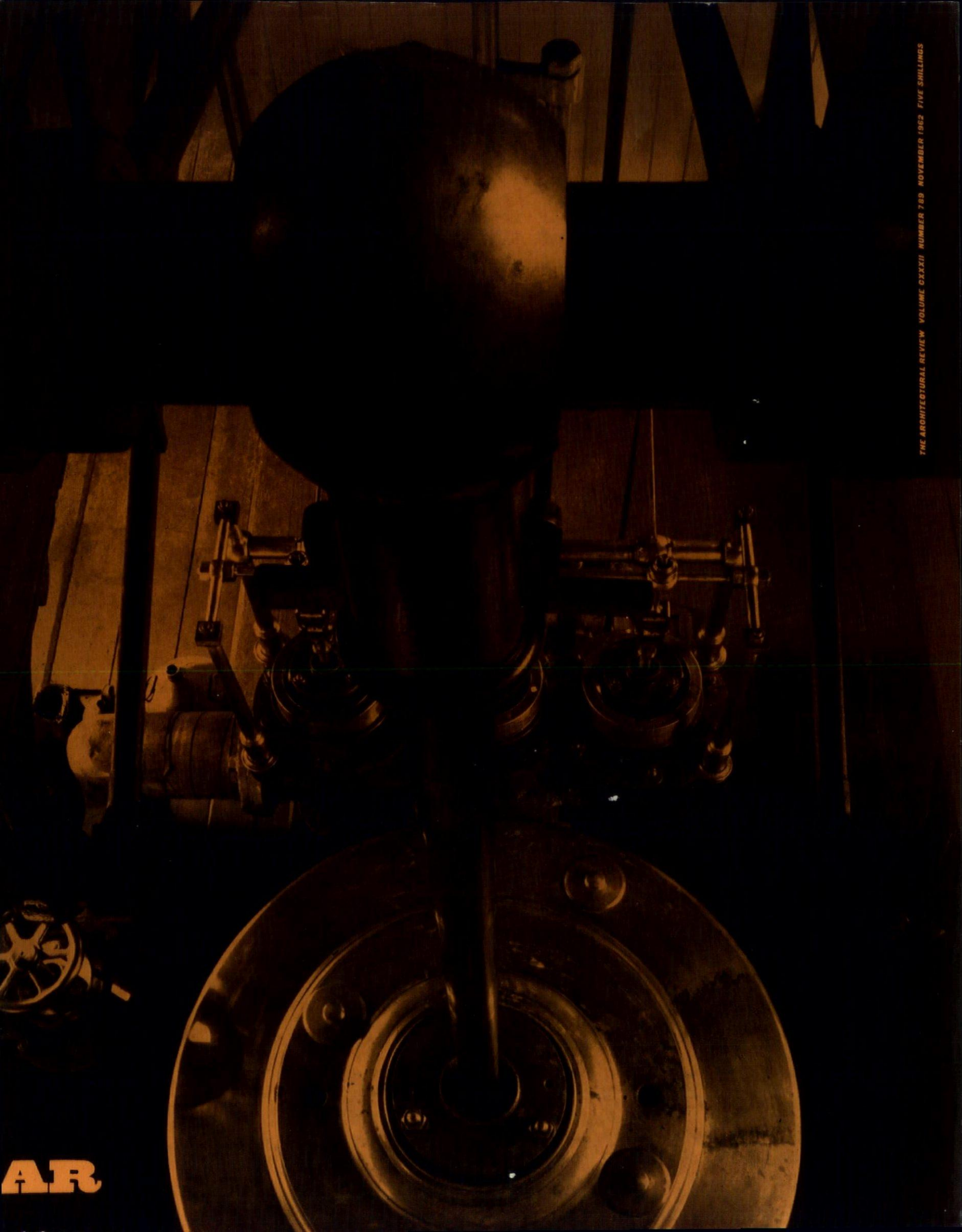


THE WINCILATE GROUP SERVICE—Finest slate quarried and selected. Architects' requirements discussed and drawing prepared. Wincilate slate cills, surrounds, copings, cladding and flooring precision finished, delivered, and fixed. For further details and information sheets, contact the Wincilate Group*, The Town Hall, Bow Rd, London E3

To get the best service in slate specify WINCILATE by name

ADV 2203

* The Wincilate Group: The Bow Slate and Enamel Company Limited, Aberllefeni Slate Quarries Limited, The Slate Fixing Company, Lloyd Quarries Limited, Goddard and Son, Manorian Limited



THE ARCHITECTURAL REVIEW VOLUME CXXXII NUMBER 789 NOVEMBER 1962 FIVE SHILLINGS

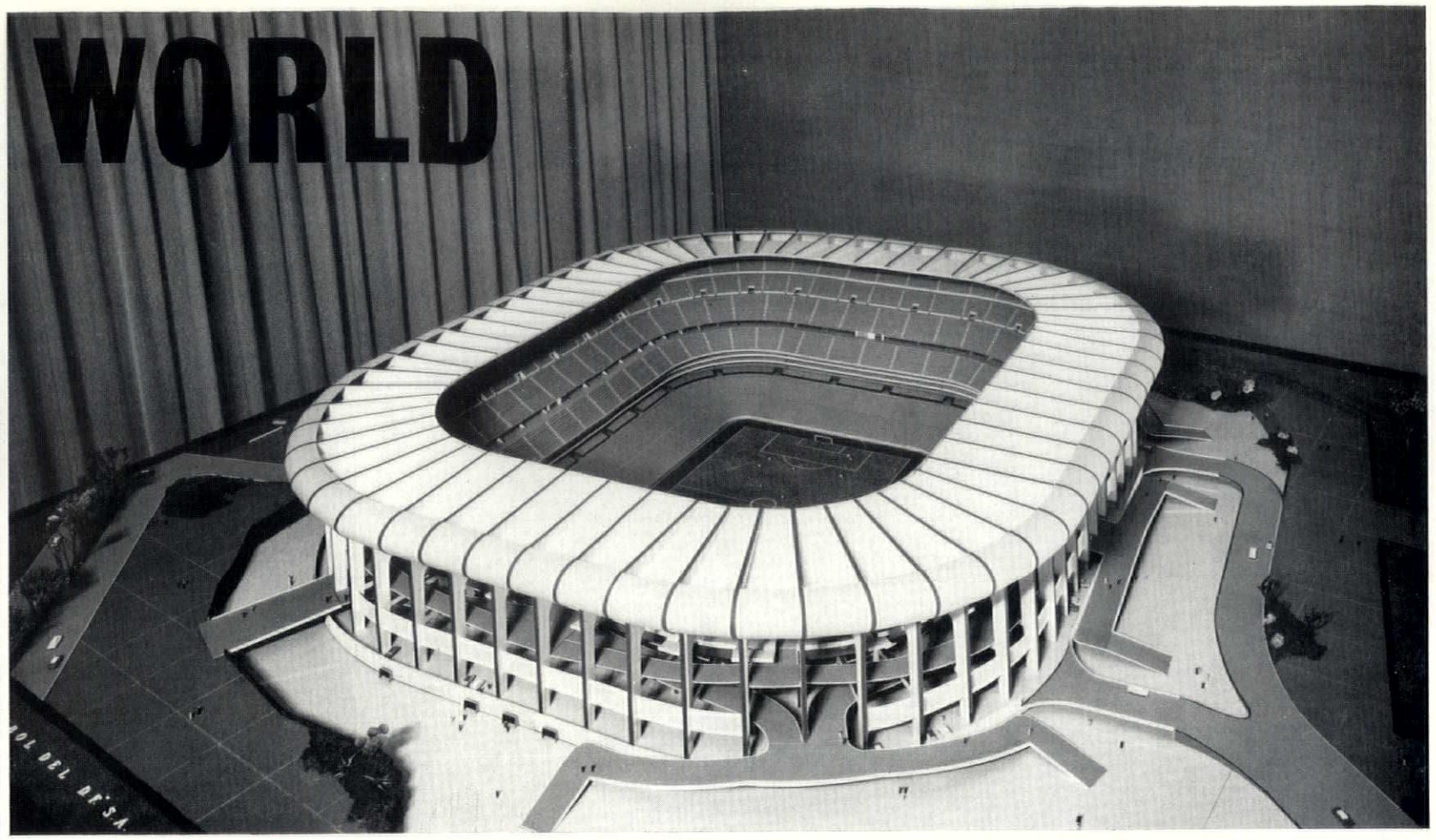
AR

SfB (82)



one of a thirty piece range from the
Ryman International Showroom
under the direction of
Elizabeth Henderson DA(Edin) ARIBA
39 Dover Street London W1

FORMATION
FURNITURE



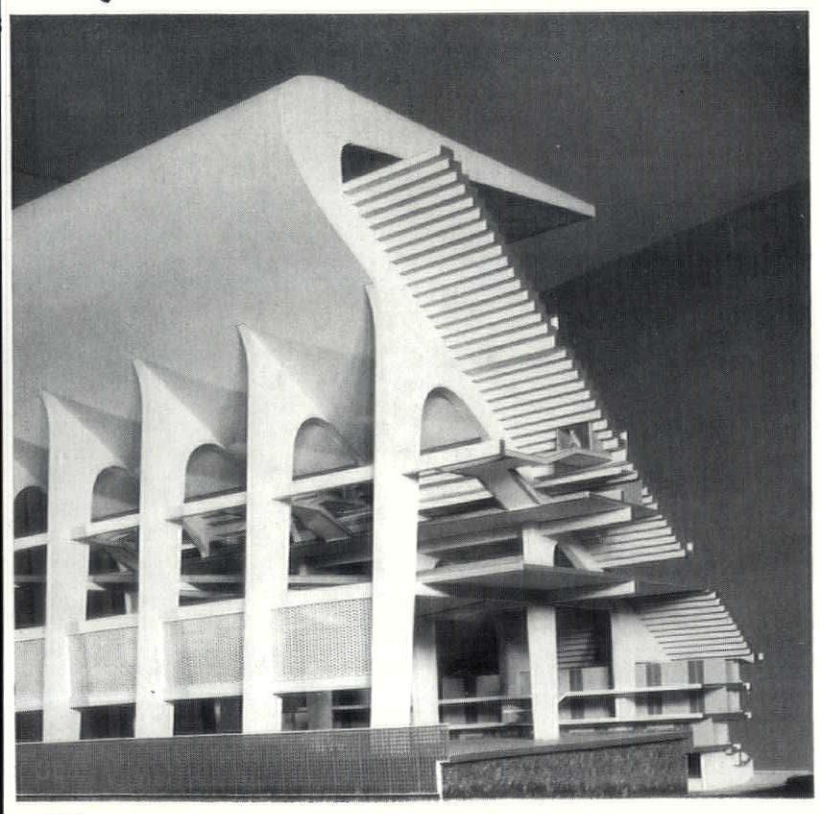
MEXICAN STADIUM

two competition projects

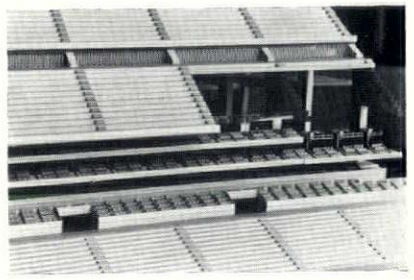
The limited competition for a new soccer stadium for Mexico City—possibly the last of the Latin-American giant stadia—produced at least two designs of note. The winning scheme, 1, by Pedro Ramirez Vasquez (who will be remembered for the brilliant pre-fab school at the last Triennale, AR Nov. 1960) and Rafael Mijares, may be described as structurally conventional, with a section, 2, whose ancestry goes back, albeit deviously, to Solano and Gaitan's baseball park in Cartagena, Colombia of 1947. But this view also reveals something highly original within this section—a road-system in addition to the customary steps and ramps for pedestrians. This does not simply derive from the size of the undertaking (inevitably, the seating capacity is given at 100,000) but from a very specific requirement in the brief that there should be private boxes, visible in the middle tiers in 3, each with seats for ten persons, and its own lounge-bar, toilet facilities and—if readers will pardon the italics—*a two-car lock-up garage with direct vehicle access.*

Similar access-roads appear in the other entry of note, by Felix Candela and Luis La Guette, and may be seen in the beautifully drawn section, 4,

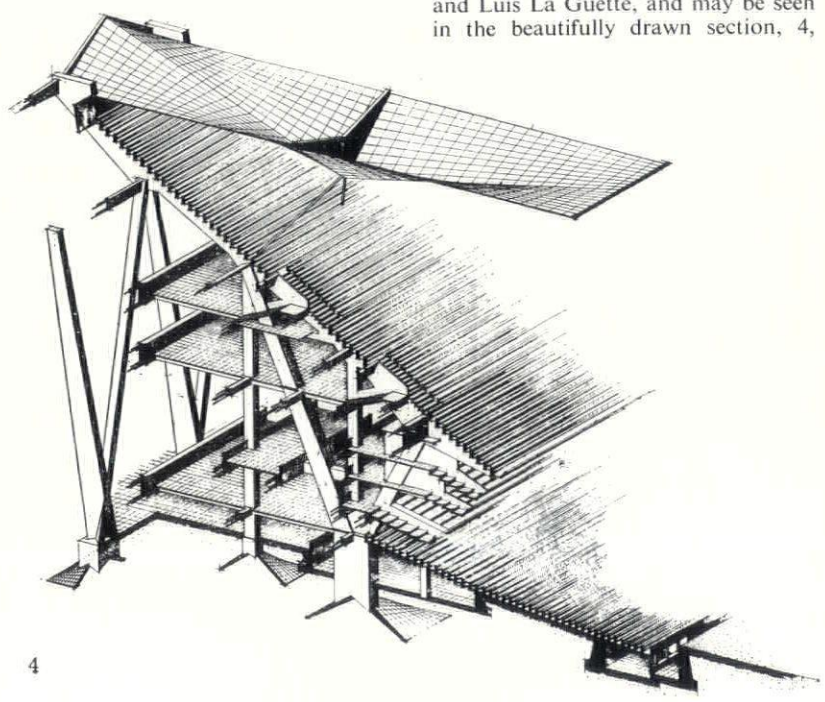
VASQUEZ:



CANDELA:



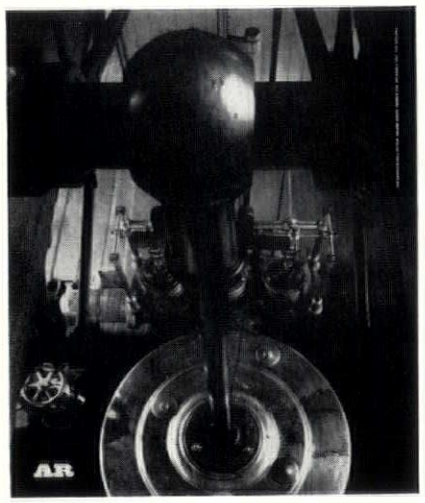
3



4

ACKNOWLEDGMENTS

COVER: Eric de Maré. WORLD, pages 305–308: 4–6. *Progressive Architecture*; 7–11, *Deutsche Architektur*; 12–16, *Interiors*; 17–22, *Modulo*; 23–26, *Arquitectura*; 27–31, *Domus*. VIEWS AND REVIEWS, pages 309–311: 1, 2, Sam Lambert; 3, *The Times*; 4, Eric de Maré. FRONTISPIECE, page 312: Stanland. RESIDENTIAL BUILDING FOR CAIUS COLLEGE, pages 315–319: John Donat. RESIDENTIAL BUILDING FOR KING'S COLLEGE, pages 320–322, Galwey Arphot. LIBRARIES FOR THE ARTS FACULTIES, pages 323–328: 2, Pantlin Arphot; 3, Nairn Arphot; 4–12, Colin Westwood. FELLOWS' FLATS, CHURCHILL COLLEGE, pages 329–331: 1, 2, 4–6, Colin Westwood. NEW LOOK AT BASILDON TOWN CENTRE, pages 332–335: Browne Arphot. TOWER BLOCK AT BASILDON NEW TOWN, pages 336–340: 1, 3–7, Galwey Arphot; 2, Judy Nairn; 8, 9, Stanland. AIRPORT PASSENGER BUILDINGS, pages 341–348: 1, 22, Toomey Arphot; 5–7, *Strüwing*; 8, Gherardi-Fiorelli; 9, Oscar Savio; 10, Neil Hutchison; 11, Aeroport de Paris; 13, 14, 16, 17, Cervin Robinson; 19, Ralph Crane, *Life*; 20, Panda Photography; 23, 24, Ben Newby. INTERIOR DESIGN, pages 349–352: 1–7, Thomas-Photos; 8–11, John Garner. FINSTERLIN, pages 353–357: 5, National Film Archive. TWO TEACHERS' TRAINING COLLEGES, pages 358–362: Eric de Maré. MISCELLANY, pages 363–369: Exhibitions, 6, Mandello; Topography, Eric de Maré; Planning, 1–4, Nairn Arphot; 5, Sydney W. Newbery. SKILL, pages 370–374: 6, Brunel Photography.



The cover *is from a photograph by Eric de Maré which brings out the romance and robustness of early machinery. It was taken inside the pumping-station at Crofton on the Kennet-Avon canal. Built by Boulton and Watt about* 1811, *the machinery is still beautifully kept, though no longer working. See Wiltshire Surprises, page* 365.

THE
ARCHITECTURAL
REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

VOLUME 132 NUMBER 789
NOVEMBER 1962

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents: Libreria Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

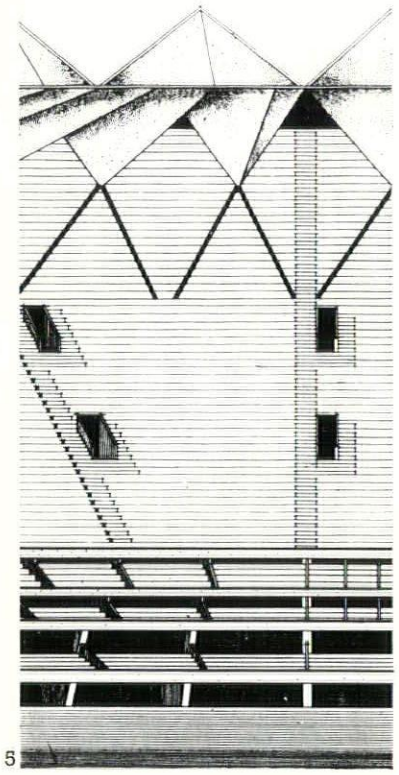
Directing Editors	*J. M. Richards, Nikolaus Pevsner, H. de C. Hastings, Hugh Casson*
Executive Editor	*J. M. Richards*
Assistant Executive Editor	*Reyner Banham*
Assistant Editor (Production)	*William Slack*
Features Editor	*Kenneth Browne*
Technical Editor	*Lance Wright*
Assistant Editor (Counter Attack)	*Ian Nairn*
Staff Photographers	*De Burgh Galwey, W. J. Toomey*
Advertisement Manager	*F. G. Dunn*

CONTENTS

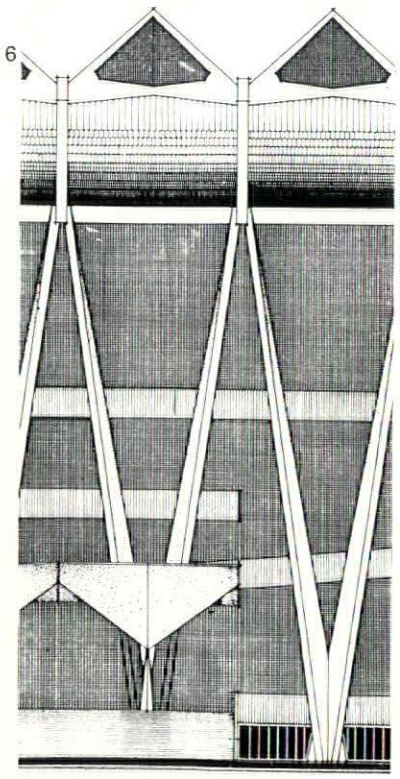
305 **World**
309 **Views and Reviews**
312 **Frontispiece**
313 **Do it Yourself:** *Ian Nairn*
Four Buildings at Cambridge
315 **Residential Building for Caius College:** *Architect, J. Leslie Martin (in association with Colin St. John Wilson)*
320 **Residential Building for King's College, Market Hill:** *Architects, Architects' Co-Partnership*
323 **Libraries for the Arts Faculties:** *Architects, Sir Hugh Casson, Neville Conder & Partners*
329 **Fellows' Flats, Churchill College:** *Architects, Richard Sheppard, Robson & Partners*
332 **Townscape**
New Look at Basildon Town Centre: *Kenneth Browne*
336 **Tower Block at Basildon New Town:** *Architect, A. B. Davies (Chief Architect/Planner, Basildon Development Corporation)*
341 **Airport Passenger Buildings:** *Michael Brawne*
349 **Interior Design: College Common-room, Oxford:** *Architects, Myles and Deirdre Dove*
Showrooms in Sloane Street, S.W.1: *Architect, Peter Wood*
353 **Finsterlin and Some Others:** *Nikolaus Pevsner*
358 **Two Teachers' Training Colleges:** *Architects, Bridgwater, Shepheard and Epstein*
Miscellany
363 **Exhibitions**
365 **Topography**
367 **Planning**
368 **Skill**
Active Fire Defence of Buildings
1, Detection and Alarm Devices: *Clement Shepherd*
374 **The Industry**
378 **Contractors, etc.**

Candela

reproduced from *Progressive Architecture* (July 1962), where the boxes occur in the break-back of the ramping system, rather than as a variation within a regularly raked stand. The structure here is considerably more complex than in the winning scheme and calls for double-warped slabs carried on vee'd struts inside, 5, with the whole structure resting on much larger V-legs, 6, externally. At ground level both projects have to contend with a difficult foundation problem—Pedregal lava-flow over compacted soil, and water barely five feet below grade. Vasquez and Mijares propose to put the latter to work in a defensive ditch separating the playing field from the lowest ranks of fans in the stands.



5



6

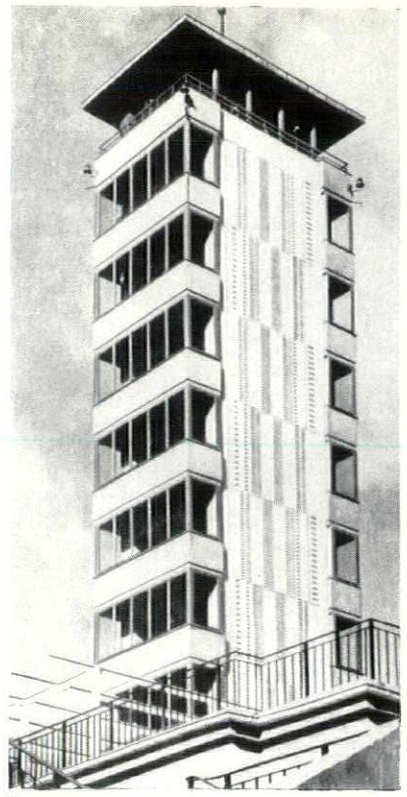
MUGGELTURM



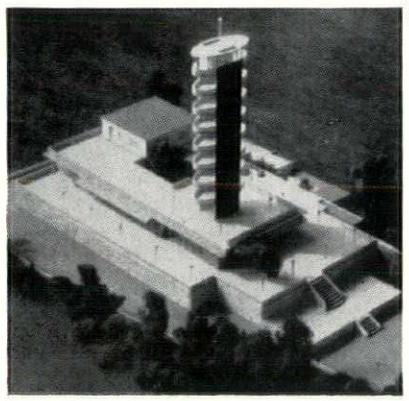
7

Berlin pleasure tower rebuilt

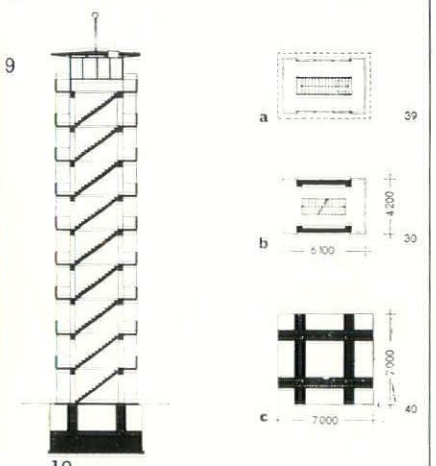
The rebuilding of the Müggelturm is one of those warm human stories that makes good reading anywhere. The old tower—a belvedere-cum-restaurant, 7,—overlooking the Müggelsee, was a favoured place of resort for Berliners until it was burned down in 1958. It was rebuilt by public subscription to a design which earned three young architects (who were then still students) the first prize in a competition which produced thirty-two other projects. The form of the new tower, 8, though less radical than the original competition project, which had oval floor plans, 9, offers a good stack of viewing floors, which are in fact landings on a staircase rising right through the section, 10, of the tower, while the new restaurants, 11, stand on or in the podium which forms the tower's base. A model exercise in modern popular architecture, which would be unremarkable in style were it not in the DDR as opposed to the *Bundesrepublik*. The appearance of such work in Eastern Germany, the design of architects now safely and respectably installed in the East Berlin *Stadtbauamt*, will strike most readers of the AR as remarkable, as indeed it is, but one wonders how it appeared to those who saw it when it was first published in *Deutsche Architektur* (April/May 1962). For, although *DA* is published 'over the wall' it is utterly unlike even the Polish examples of East European and Soviet architectural periodicals, and maintains a doggedly *Berliner* atmosphere in which most West-German buildings, if not too extreme, could appear quite at home. Architects outside Germany should be careful how they visualize its divisions.



8



9



10



11

FORGET THE BIRD

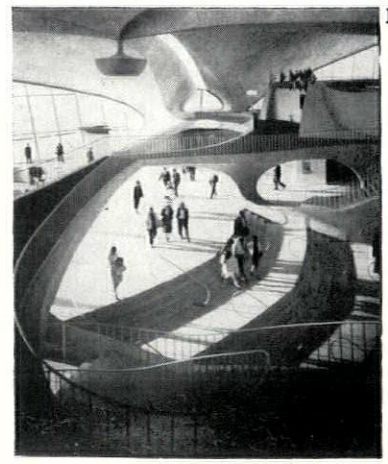
TWA appraised

Elsewhere in this issue, Eero Saarinen's TWA terminal at Idlewild receives its due as a passenger handling installation; its most extended evaluation as architecture appeared in *Interiors* for July 1962, where Edgar Kaufmann, Jr. gave it the full treatment. It is, he says, 'one of the few major works of American architecture in recent years that reaches its full stature *as an interior*. However memorable the outside shape, it is but a carapace for the channels of life within. In order to understand this work, therefore, the first need is to forget the bird; whatever suggestions of lifted wings and grasping claws may have been aroused by the concrete structure alone, it no longer registers now that the essential window-walls have been added, making whole the strongly central composition.'

Point taken, the assessment of the interior proceeds, space is defined, light permeates; there is the 'principal four-lobed space, which is shielded from the full view of those entering by the surprising sculpture of the information desk, 12. There, centrally, the full artistry of the space-modelling is revealed in the broadly flowing steps in the wide over-arching bridges and balconies, in the integral seating, in the promise of continuing adventures in space and form, 13, all richly echoed and accented in a magisterial clarity of composition. And, this composition is based on the simple convenience of the passengers: the architect succeeded in



12



13

TWA

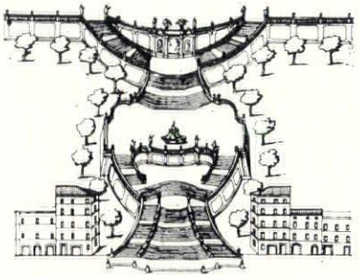
transmuting the ordinary complex of travel facilities into a festival of ordered movements and exhilarating vistas.'

There then follows an account of how the design was shepherded by Saarinen through a number of executive changes at TWA, but before launching on this necessary piece of history, Mr. Kaufmann should have taken his courage in hand and said something about the visual scale of TWA. Many people would not agree with him that the detailing is either vigorous or inevitable (particularly the glazing bars) but at least he has given a pronouncement on the subject. Yet returning voyagers from Idlewild have described the scale of the TWA interiors as mean, minute, toylike, sub-human or even 'a rat-maze,' but it appears to be either beneath, beyond or above comment to Mr. Kaufmann who presses on instead to a model American Neo-Academic exercise in suggesting the sources of Saarinen's inspiration—and a splendid list it is, covering Deir el Bahari, 14,



14

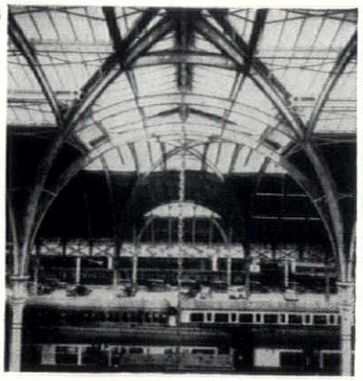
Praeneste, the Belvedere, the Laurentian library, Bolognese *quadratura*, the Piazza di Spagna, 15, Wurzburg,



15

Soane's Bank of England, Brunel's Paddington Station, 16, the Grand Palais and—wait for it—Gaudi and

16



Mendelsohn. This is meta-Scully, ultra-Yale. 'If this be eclecticism,' says our author, momentarily gassed by his own erudition, 'long may it reign!' European readers, with their copies of *Phantastische Architektur* at the ready will wonder how Kaufmann could have overlooked Finsterlin, whose drawings, such as those on pages 355-356 of this issue of the AR, seem to cut closer than any of his suggestions.

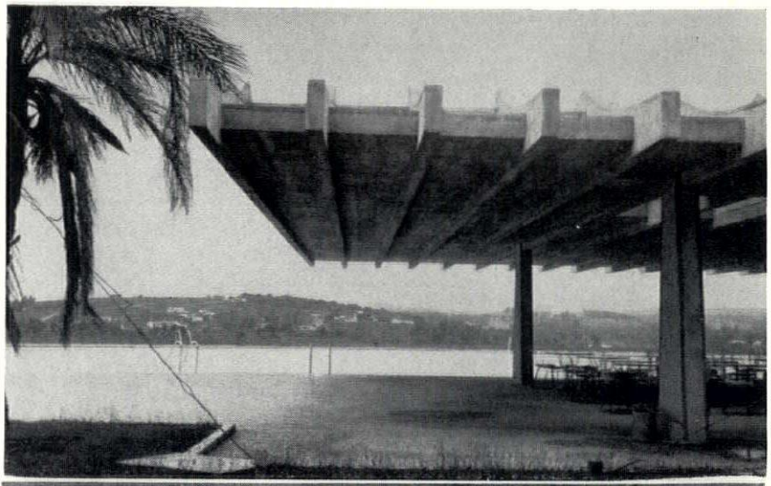


17

PAMPULHA YACHT CLUB

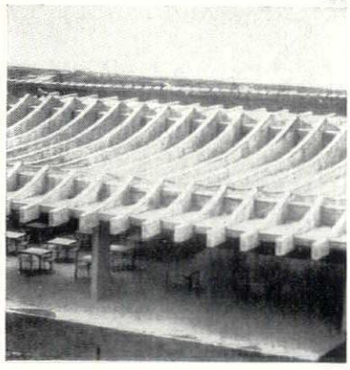
Structuralism in recent Brazilian architecture

The changing face of Brazilian architecture, now slowly emerging from its cocoon of Corbusian *idées recues* is well illustrated by coverage in *Modulo* (27, 1962) of the new Pampulha Yacht Club by Oscar Niemeyer. Building and architect together will sound familiar, the form of the structure, 17, is not. The massive umbrella roof consists of concrete beams of classic 'suspension bridge' profile, slotted at one-metre centres over two longitudinal beams carried on two rows of square tapering columns. The effect, 18 and 19, is

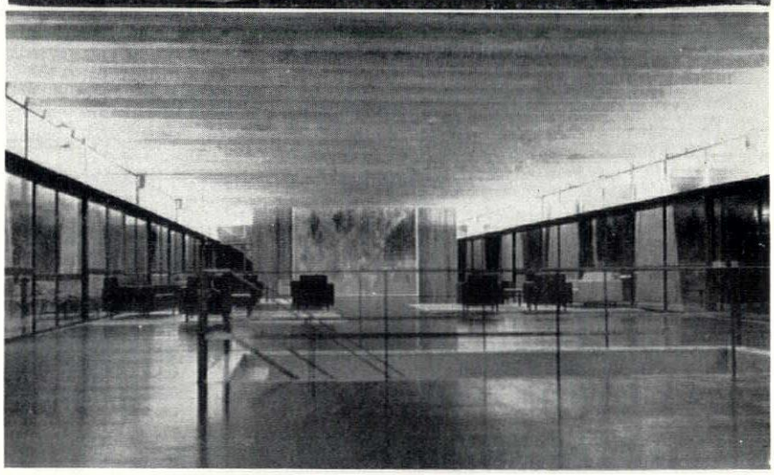


18

19

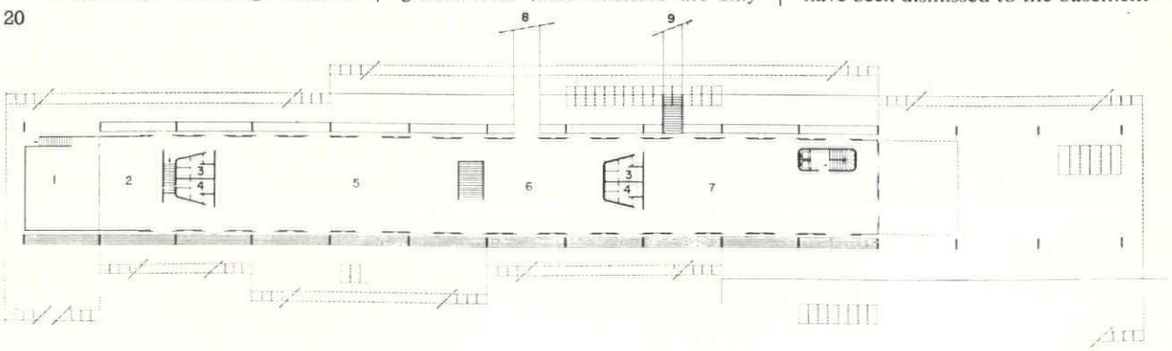


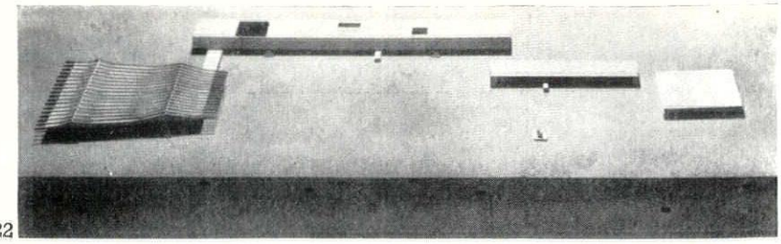
utterly unlike anything previously seen in Brazilian work, though the planning under the irregular overhangs, 20, is quite regular and rectangular—what does happen, however, is that the longer overhangs make it possible to bring the outdoor areas they protect within the same space as the interiors that the roof covers. At ground-level these interiors are only the most public, 21, of public rooms (restaurant, etc.) and all smaller accommodation and private rooms have been dismissed to the basement—



21

20





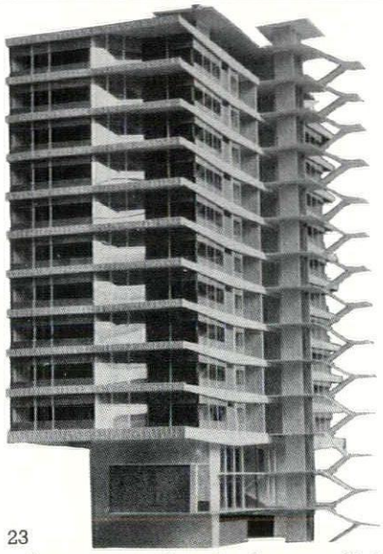
22

Brazil

a Miesian solution (cf. Crown Hall, at IIT) in section, even if the plan, structure and silhouette are far from the Chicagoan aesthetic. Strikingly enough, the next issue of *Modulo* (28, 1962), contained a project by Lucio Costa for the University of Brasilia in which an almost identical structure, 22, is used to roof the familiar wedge-plan that signifies an auditorium.

el SALVADOR

Arquitectura, now in its third number, edited by Ricardo Carbonell and Enrique Salaverria, is the organ of a body of architects of whom the world hears little, could do well to hear more—the *Asociacion de Arquitectos de el Salvador*. For all that it comes from a Central American republic that is unknown territory to most Europeans, *Arquitectura* is a world-oriented magazine; if, like its Brazilian contemporaries, it tends to spill over into the plastic arts and, more particularly, the dance, it still presents a character and a face that is its own. Apart from a block of flats designed by the editor, 23 and 24, the architecture it has to offer is not remarkable, though it is all workmanlike, e.g. the service station, 25, 26, by Dagoberto Gavidia, but it is the general tone and format of *Arquitectura* that will recommend it. An opening article by Leonardo Ricci, and constant evidence of awareness of what is being thought and done in the rest of the world, assure it a content that is far from provincial; its preoccupation with problems of town planning ('pedestrian circulation is no longer a happy affair but a tremendous burden to suffer') its consciousness of inheriting two cultures, Hispanic and Mexican, and of the unsatisfactory position of the architect ('the unknown in our midst') reflect a distinct editorial personality. But one thing in particular brings a gleam to the eye; by exploiting the possibilities of offset photolitho printing and capitalizing some of its limitations, the editors have been able to present a more attractive and more sophisticated magazine than can certain more affluent architectural bodies in the British Commonwealth employing letterpress and better quality paper at greater expense.



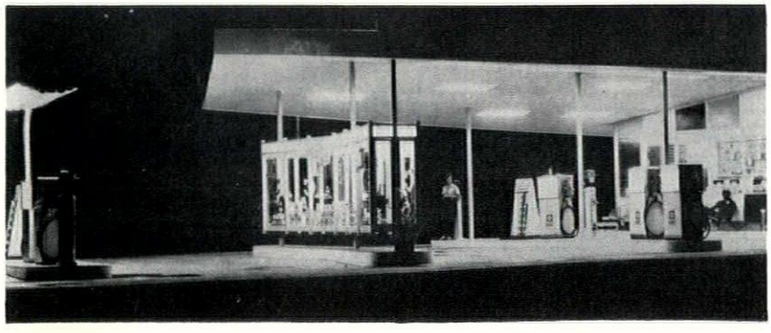
23



24



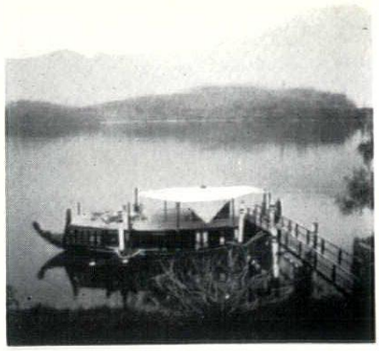
26



25

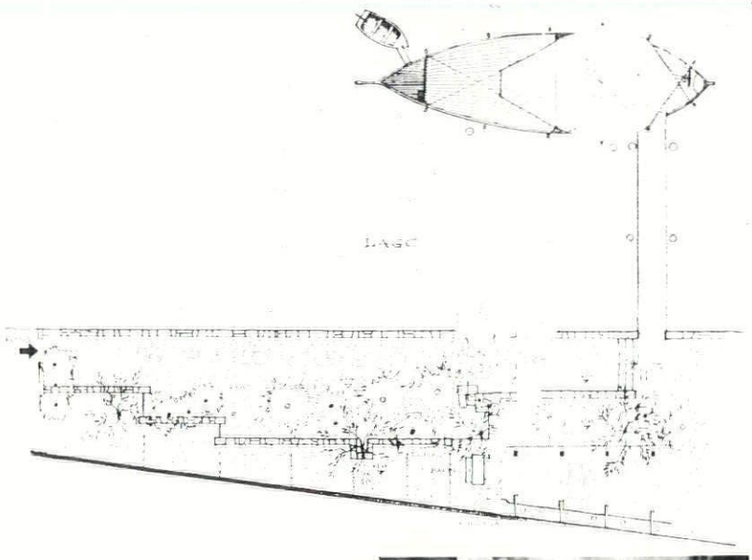
on board the VELARCA

A moment of fulfilment for the masters of *gusto milanese*—*Domus* devoting twelve colour pages to illustrations of a work by BBPR in which the current preoccupations with teak and brass knobs are beyond cavil or accusations of neo-historicism, because the building is a boat, 27. To be precise, it is a boat-plus-garden-quay; the *Velarca* (a former Lake Como workboat), her gangway and the terraced garden at the waterside are to be taken together as a single composition, as the plan suggests, 28. The *Velarca* is, in fact, at permanent mooring, and the nominal navigational equipment, 29, serves only to maintain control when she is under tow. She is not a small boat—about thirty feet overall—which gives her a pretty commodious plan, and a sizable clear deck forward of the deck-house, serving as a living terrace with characteristic riparian panoramas of Ossuccio, 30, her home port. Internally, typical Milanese detailing of the new, very-dark-wood trend, which appears pretty otiose in domestic work ashore, suddenly begins to look sensible and shipshape, 31, and mates up with the inevitable leather and brass to create interiors in which Cunarders of the Jules Vernes epoch convincingly live again. British architects, in spite of their passion for boats, have done nothing comparable.



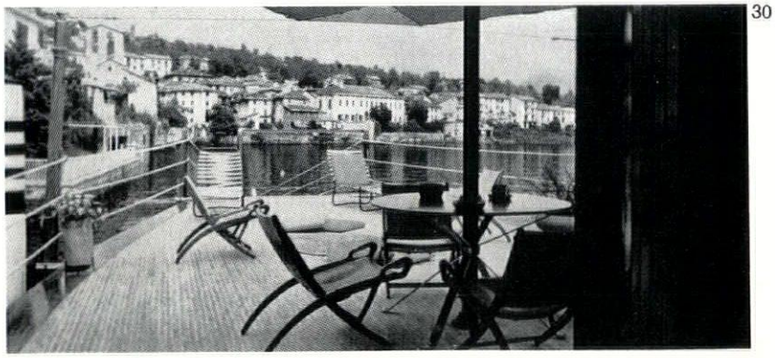
27

28

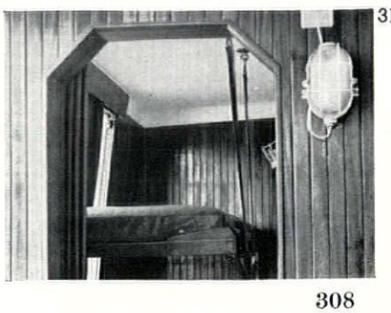




29



30



31

views and reviews

MARGINALIA

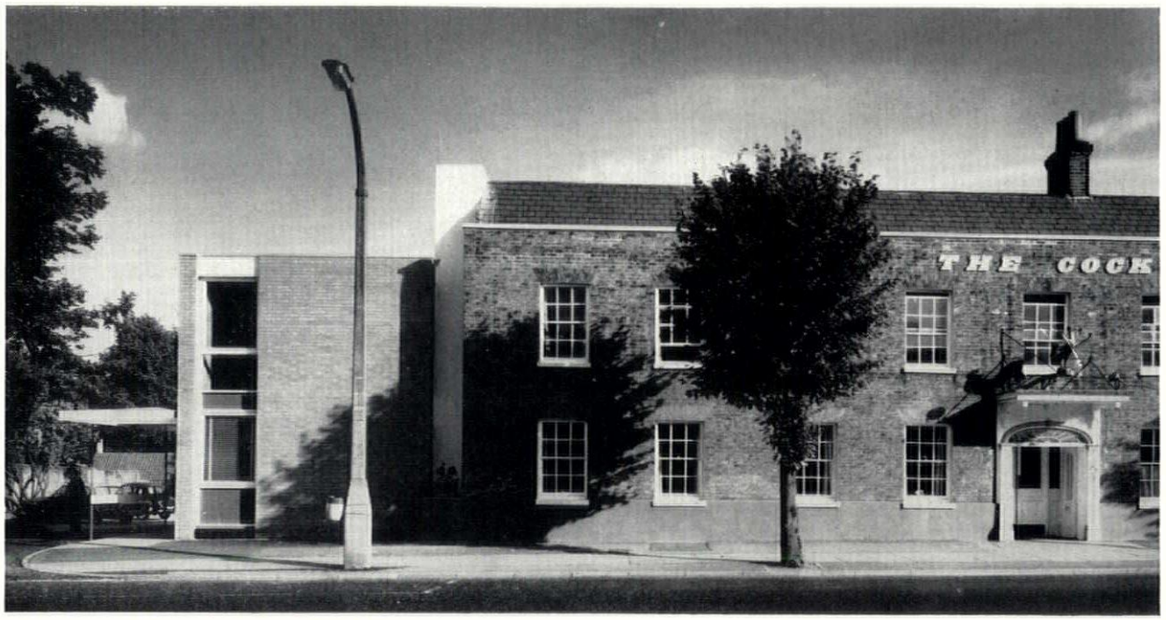
SOCIETIES

Bloody but not bowed at the end of a battling year, the Victorian Society has published its annual report for 1961–62, the year of the demolition of the Euston arch and the long-drawn-out battle for the Coal Exchange in which the gloom of apparent defeat was suddenly illuminated by rays of hope from the Antipodes, though the final fate of Bunning's masterpiece is still not settled. These two *causes célèbres* should not be allowed to obscure the fact that the Victorian Society has had many other irons in the fire, and can report some notable successes, including the removal of the immediate threats to the Oxford Museum, Tower Bridge and Barry's Bridgewater House. Nevertheless, the Society is clearly faced with a continuing uphill battle, and will need every assistance if it is to achieve its objectives.

Different in all save format is the quarterly bulletin of the Irish Georgian Society, of which the current double-number for April-September, 1962, carries an ingenious and learned study of three quasi-Palladian houses—Newberry Hall, Lodge Park and Colganstown—built as late as the seventeen-sixties, which the author, the Knight of Glin, finally attributes to Thomas Ivory. The houses were well worth the study, if only for their demonstration of how to be provincial without being second-rate, and make one share the author's regret that Irish country houses have so long been 'a neglected and bebrambled vista in the field of architectural history.'

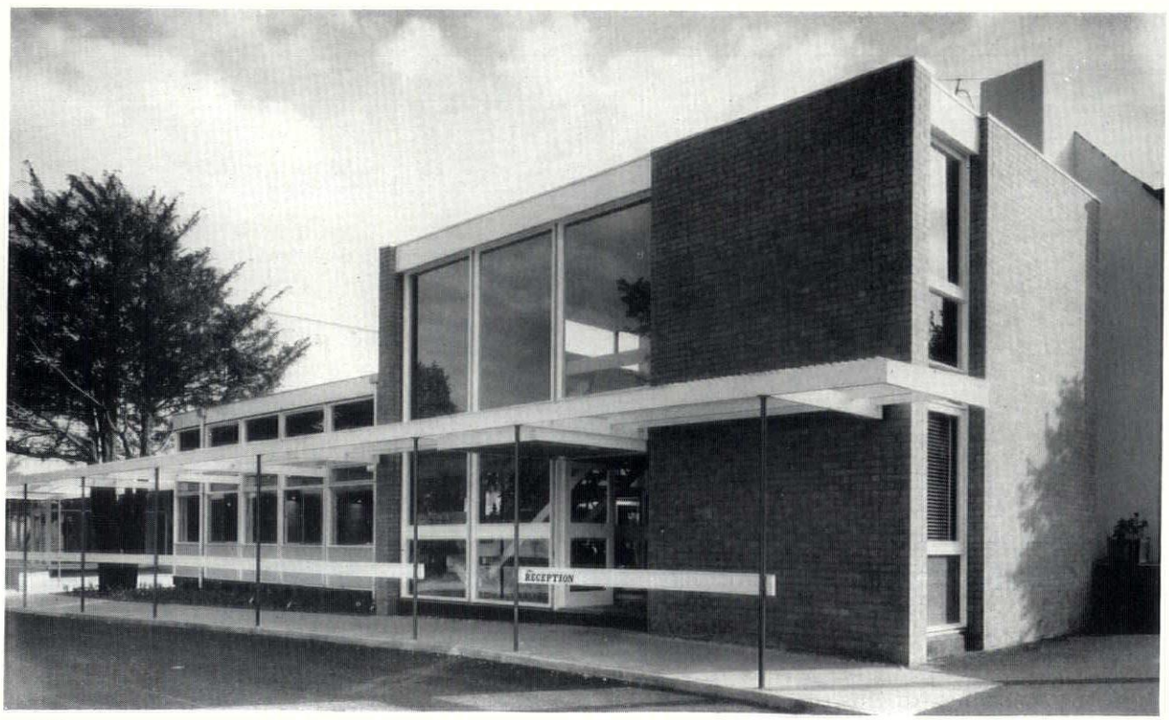
IUA 1963

The organizing committee of the 7th congress of the International Union of Architects has now issued the regulations for its 7th congress which is to be held in Havana, Cuba, from September 29 to October 3, 1963 (with follow-up meetings in Mexico a few days later). The theme is confirmed as 'Architecture in the Development Countries,' and will be supported by an exhibition of architectural achievements in those countries, and from more developed areas which 'we believe should serve as examples and guides.' Britain's position in the Commonwealth should entitle her to contribute to both sections. Enquiries from British architects about participation in both congress and exhibition should be sent to the RIBA.



1

The idea of an urban motel may appear self-contradictory, but Louis Erdi has just designed one at Epping, Essex, on a site at the back of The Cock a handsomely plain Georgian pub in the High Street. The motel reaches the street only as a vehicle entrance and a small brick-built reception-office alongside the pub, 1, *a straightforward and urbane solution ruined by an uncommonly inept lamp-post which is not the architect's responsibility. The main part of the motel is set among trees,* 2, *at the back of this reception unit to which it is linked by a covered way.*



2

CORRESPONDENCE

TIMBER-BUILT CHURCHES

To the Editors.

SIRS,—The illustration of St. Alban's Church, Tokyo, on page 219 of your September number, strongly resembles the design and construction of the new Church of the Ascension at Maravel, near Port-of-Spain, Trinidad. I enclose a photograph of this church



3

that you may care to publish. The six ash-grey columns of the porch are untrimmed trunks of greenheart, imported from British Guiana, and they give this simple structure an impressive dignity. Many of the churches, mosques and temples, built for the Christian, Moslem and Hindu communities in the island have a tranquil beauty of form that owes something to tradition but far more to the gifts of local architects.

Yours, etc.
JOHN GLOAG

London, S.W.14.

BOOK REVIEWS

GOOD OFFICES

OFFICE BUILDINGS. *By Leonard Manasseh and Roger Cnnliffe. B. T. Batsford. 63s.*

The office building is a quite new architectural form, barely one hundred years old. Operations carried out in offices at present have reached the stage of the processing industries in the seventeenth to nineteenth centuries; i.e. the 'manufactures' or 'mills' of the pre-steam age. These structures are mills which provide for the processing of data by clerks, bookkeepers, typists, accountants, executives, etc., equipped at best with the most rudimentary machines, such as typewriters, calculating machines, telephones, etc. Hardly any electronic machinery is used even within the large organizations, although it is evident that at a not too distant future it will replace most of the drudgery of office work. So at present multi-deck structures are erected in which a multitude of human beings perform

operations which would much better be carried out by machinery. Human labour being cheaper than machinery, this will go on for some time, and as there is more and more data to be processed and more and more information to be communicated, the need for office buildings will increase; on the other hand, as the Government does not seem to be willing or able to provide the necessary roads, alleys, streets, etc., to get at this increasing number of office buildings, the land on which they are built becomes more and more expensive. Office buildings have also got to be near each other, to enable personal contact not only on the highest executive level but also lower down the scale.

This book consists of three parts; the two first deal with theory, the third gives twenty-one examples of office buildings of various sizes and shapes, from the small works-office to the large skyscraper. This last part is far the most interesting. Although the buildings are mostly known, they are brought together, carefully analysed and classified, and thus form an invaluable documentation.

The first two parts also contain a lot of interesting information addressed to the lay public as well as to the professional practitioner. Subjects are not completely exhausted but clearly stated so that the other disciplines can understand them. Thus the chapter on Economics does not tell the story from the point of view of the would-be developer or teach him his business, but is sufficiently informative to others involved in the adventure. The book does not however deal with the burning questions of town-planning, the location of office buildings and their relation to the rest of the community, transportation and communications.

I have one major quarrel with the authors, and that is when they perpetuate misconceptions about the economics of 'envelope planning,' as against free standing tower blocks, in New York. It is not public spiritedness, nor simple 'prestige crowning' which makes *all* new skyscrapers into simple slab blocks as against cluster pyramids, but the simplest of simple economics. They are cheaper to build, more economic to rent and show a higher return for investment on a long term. The essence of the economics of building—any building—is the ratio of usable space to enclosing volume; this applies to such prestige structures as churches and concert halls, down to the multicellular structures like royal palaces, working-class housing, or factory buildings, as well as to office buildings. Early developers, advised by their incompetent architects, seem to have desired to combine the most cube with the least usable area.

Ernö Goldfinger

HISTORY OF MODERN FURNITURE

NEUE MÖBEL VOM JUGENDSTIL BIS HEUTE. *By Adolf G. Schneck. F. Bruckmann, Munich* 1962. 24 DM.

They must have the secret of eternal youth at Stuttgart. Here is Professor Schneck in his eightieth year presenting a book on the history of furniture from Art Nouveau to the present day, appearing in it himself as one of the pioneers in the twenties, and now equally eloquent in defence of Art Nouveau as a factor of value for our situation at the present moment.

Professor Schneck was responsible for a famous exhibition *Die Form* in 1923, for one of the houses of the equally famous Weissenhof Exhibition of 1927, for the even more famous exhibition *Der Stuhl* in 1928 and for some of the best quantity-produced furniture of the Deutsche Werkstätten in the mid-twenties. Now he is looking back at those years and earlier ones, and he is of course at his best when he speaks from personal memory. He must have known more of the protagonists than anyone alive. His turn to Art Nouveau has two reasons. First, he is sensitive to current events, not at all with a view to climbing on any band-waggon, but out of honest curiosity and a serious tolerance for a number of approaches to furniture. He now accepts the exclusively functional form with no more conviction than form which is in itself decorative as well, and even functional form which is made decorative by means of applied carving, inlay, etc.

But Professor Schneck is also ready to talk of Art Nouveau, because his master, Bernhard Pankok was one of its most interesting exponents in Germany and has remained all but unrecorded in the standard books. So Pankok is one of the discoveries English readers will make in Professor Schneck's book. Another is Patriz Huber. They are both sufficiently illustrated. Altogether the book will not only be read—the introduction is a mere twenty pages and rather briefer on technique than one would have expected its author to be—but also used as a source-book for illustrations. There are nearly three hundred and they are never hackneyed. In fact a large number of them have never been presented since the time when they were new, sixty, fifty, forty years ago.

N.P.

HARDY THE ARCHITECT

THE LIFE OF THOMAS HARDY. *By Florence Emily Hardy. Macmillan,* 30*s.*

What makes the re-issue of this book so important is that we now know it is virtually Hardy's autobiography.* In the light of the fresh information made available by research since his death in 1928, we can see that Hardy chose to omit certain facts, some of which are of architectural interest. For example, he joined the Society for the Protection of Ancient Buildings in 1881 and remained a member till the end of his life; but he makes no mention of the Society until he refers to his 1906 paper, 'Memories of Church Restoration.' His first communication with the Society concerned Wimborne Minster in October, 1881; yet this biography contains no allusion to his professional interest in that church. In September, 1888, Hardy informs us:

> Visited the old White Horse Inn, Maiden Newton. Mullioned windows, queer old bedrooms. Fireplace in the late Perpendicular style. . . . [This fine old Tudor inn is now pulled down.]

—yet not a hint is there that he himself was sent by the SPAB in 1897 to report on the inn in the hope of saving it.

Hardy's unwillingness to put on record any account of his active work for the SPAB can perhaps be explained by the following words from the book under review:

> Much beautiful ancient Gothic, as well as Jacobean and Georgian work, he was passively instrumental in destroying or in altering beyond identification; a matter for his deep regret in later years.

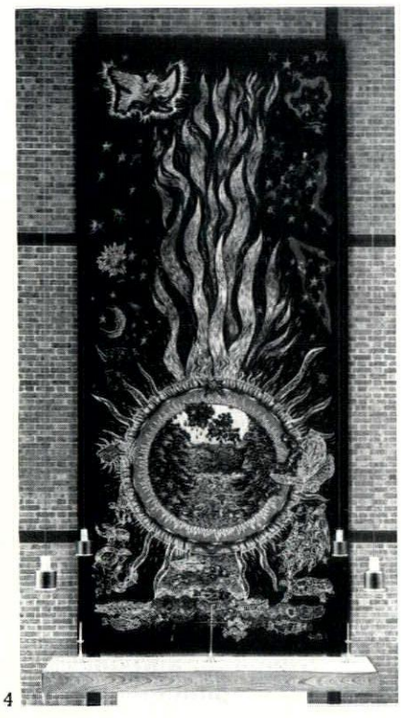
The proof that his part in such 'restorations,' however passive, deeply troubled him, can be seen in his own writings. Revulsion against such vandalism came early, for in his first novel, *The Poor Man and the Lady*, which was written in 1867 but never published, he satirized church-restoration among other things. Indeed, only in his last novel, *Jude the Obscure*, did Hardy settle the problem to his own satisfaction by turning the lie of restoration into something creative. We now realize that Hardy, like Jude, never lost his ideal but could always see in the broken walls of Christminster 'the original idea,' namely, to quote again from the *Life*,

> the Gothic art-principle in which he had been trained—the principle of spontaneity.

This explains why Hardy 'was disappointed by the machine-made Gothic' of the nineteenth-century parts of Cologne Cathedral. Moreover, after

* See *Thomas Hardy, A Bibliographical Study*. By R. L. Purdy, p. 265 and foll. (O U P, 1954).

Two specially-commissioned works of art for the new Bishop Otter teachers' training college at Chichester (architects, Bridgwater, Shepheard and Epstein): 4, *a tapestry, designed by Jean Lurçat and woven at Aubusson, which hangs behind the altar; in the chapel* 5, *aluminium sculpture by Geoffrey Clarke on the chapel gable. The building itself is illustrated on pages* 358-360.



4



5

reading his description of the Cliff without a Name in *A Pair of Blue Eyes* as forming 'the inner face of the segment of a huge cylinder,' we are not surprised when he condemns St. Mark's, Venice, for 'its weak, flexuous, constructional lines.'

Largely compiled from Hardy's diaries, notes and letters, this book contains anecdotes illustrating the quirks of human behaviour, penetrating reflections on the arts generally and on-the-spot impressions of men and affairs. The opening chapters are particularly vivid and include a unique account of London life as seen from an architect's office in the 1860's. It is only to be regretted that not all the illustrations of the original edition, including some drawings by Hardy himself, have been retained.

C.J.P. Beatty

SURVEY OF MILLS

THE LEAD SMELTING MILLS OF THE YORKSHIRE DALES. *By Robert T. Clough, A.R.I.B.A. Published by the Author* 1962, *Printed by Jowett and Sowry Ltd., Leeds.* £4.

The wilder country of the Highland Zone in Britain is often dotted with the ruins of industrial buildings. The tin mines of Cornwall, the lime kilns of the Welsh coast, the lead mines of west Shropshire, now disused, add eye-catchers to remote scenery already well provided with romantic associations. Nowhere are such buildings seen to better effect than in the Yorkshire dales, where often they are the only man-made feature in sight. They have such picturesque names as Fearnought Mine, Bobscar Mill, Prosperous Mill, Virgin Mill and Providence Mill.

Mr. Clough has made a study of the lead smelting mills of the Yorkshire dales. His book contains some fine measured drawings of the remains of these industrial buildings, most of which seem to have gone out of use in the last half of the nineteenth century when foreign competition made the winning of English lead uneconomic. His drawings consist of plans, elevations and sections of these buildings reconstructed as they must have been in their heyday. He has recorded nearly a score of such sites and supplemented his drawings with photographs of many of the actual buildings, ruinous though most of them are.

A remarkable feature of these mills is the flue which often runs some hundreds of yards up the side of a valley to terminate in a stone-built chimney on the skyline 200 ft. or more above the mill. Some of these flues reach a fantastic length. That at Heathfield Mill is nearly a mile and a quarter long, while that at Keld Heads Mill attains the incredible cross-country distance of nearly two miles. There was a commercial reason for these amazingly long flues: their purpose was not only to carry off the noxious fumes but more especially to collect, in the soot, deposits from which lead could be smelted. At Heathfield Mill 'as many as 900 pigs of lead worth about £800 resulted from the lead scraped from the walls of the flue after the annual cleaning.'

Mr. Clough's book also contains extracts from Agricola's 'De Re Metallica' (published at Basle in 1556) and a short account of Agricola's life in an appendix. These give a good picture of Continental lead mining and smelting practice in the first half of the sixteenth century. This part of the book is illustrated by reproductions of some fifteen of the woodcuts that make Agricola's work so valuable to scholars.

While Mr. Clough's measured drawings of mill buildings deserve praise as a record of structures that are fast disappearing, and it is useful to have Agricola's text and illustrations, the rest of the book is less satisfactory. Much of it is a scissors and paste job, based on the research of others. If this were all it would not matter, but Mr. Clough's extracts are often used in the wrong context, are wrongly interpreted and reveal in most telling fashion his ignorance of mining. His use of mining terms is often wrong and his attempt at description of furnaces is not reliable. Considering the numerous technical terms used, a glossary would have been an advantage. But in spite of its weaknesses Mr. Clough's book, as a survey of a type of industrial building that is fast disappearing, makes a valuable contribution to industrial archaeology.

Michael Rix

TRAVELOGUE

THE NEW ARCHITECTURE IN EUROPE. *By G. E. Kidder Smith. Pelican Books.* 10s.6d.

A guide like this has long been needed, and this volume should henceforward be in every architecturally minded tourist's pocket. No one was better equipped to provide it than Mr. Kidder Smith; he is so widely travelled that all the information is first-hand and it is illustrated by his own inimitable photographs. The outstanding problem is now the publishers': how to organize an annual—or perhaps biennial or triennial would be sufficient—reissue or supplement so that the guide is always up to date.

The book covers the whole of Western Europe, country by country, and describes and illustrates (with one photograph of each example) what the author considers the best modern buildings. The number of buildings varies from three in Belgium to 32 each in Germany and Italy (Britain has 24). 225 buildings are illustrated altogether, so they result from a strict weeding out. Some people will of course quarrel with some of Mr. Kidder Smith's choices, but they are sound and reasonable and it is good that they should remain sufficiently personal to give the guide a consistent character. His explanatory notes are informative and refreshingly critical.

There is a good bibliography, a classified index and a sketch-map of each country giving the location of the buildings mentioned, but no plans of buildings. It is a pity that he does not give the dates of buildings.'

J.M.R.

VENETIAN HEIGHTS

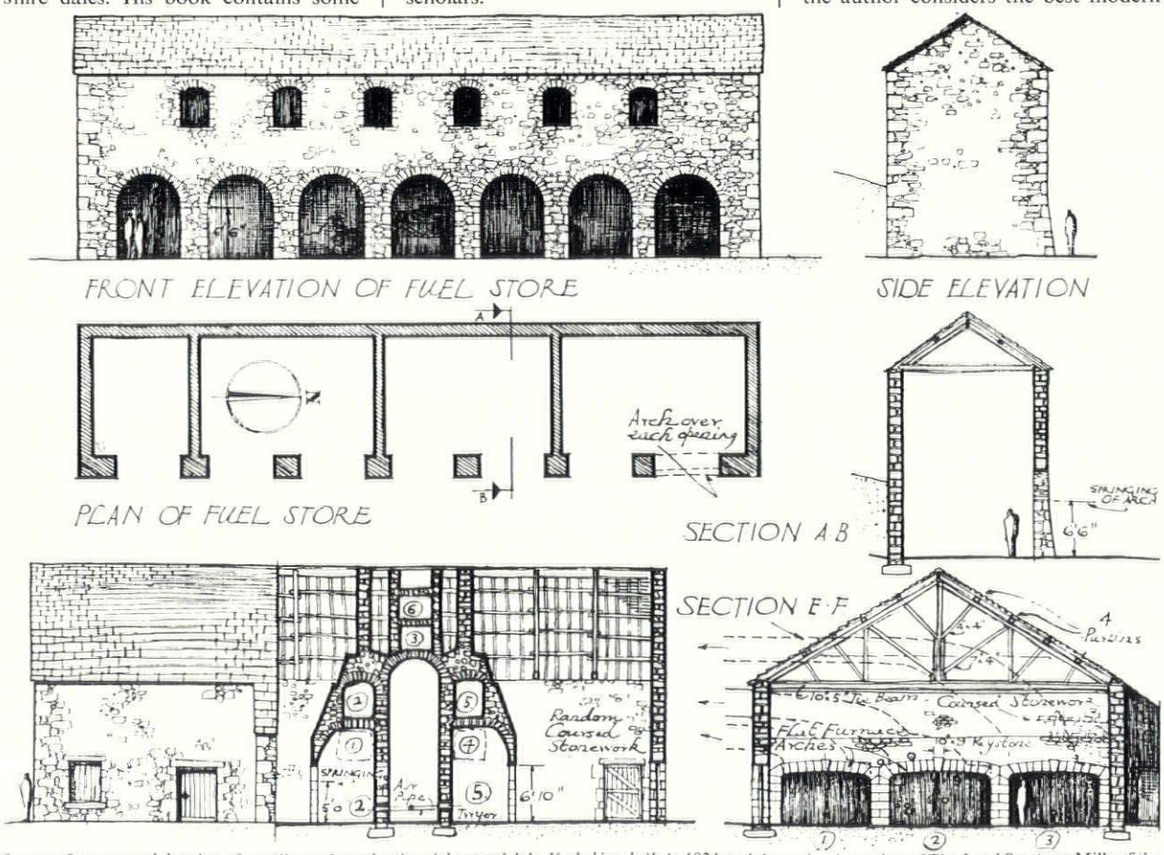
ARCHITETTURA DEL SEICENTO E SETTECENTO A VENEZIA. *By Elena Bassi. Collana di Storia dell'Architettura, diretta da Roberto Pane. Edizioni Scientifiche Italiane, Naples,* 1962. L.7,500.

A new volume in an excellent series, the series in which Professor Pane's own monograph on Fuga, a book on Art Nouveau in Naples, Mario Praz's brilliant *Gusto neoclassico* and a book on neo-classical architecture in Naples have already come out. This new volume was badly needed. There is no comprehensive book on Venetian Baroque, Rococo and neo-Palladian architecture. The climax lies of course near the beginning, in the work of Longhena, and it is curious that Signorina Bassi nowhere makes use of Professor Wittkower's chapter in his volume of the *Pelican History of Art*. As this does not appear in the detailed general bibliography either, one can only assume that she has not come across it. It is a pity; for Professor Wittkower's power of analysing closely and yet never pedantically is a lesson for many architectural historians.

Longhena's synthesis of Baroque and Palladio motifs contained a challenge to which those following immediately after him did not respond. On the contrary, Venetian architecture and funerary monuments developed a habit of applying thick all-over decoration to surfaces not themselves in motion. The beginning were monuments, but the climax are the facades of S. Moisé (1668 by Tremignon) and S. Maria del Giglio (1680 by Sardi). Then, however, equally little known or realized, Venice turned her back on the Baroque earlier than Rome and indeed any other Italian centre and reverted to Palladio. The reform took place, almost to the year, when it took place in England. Antonio Tirali's Tolentini with its undisturbed giant portico was built in 1706–14, his Scuola dell'Archangelo with its smooth front and nicely spaced pedimented windows in 1713, Dominico Rossi's S. Stae in 1709 etc., and Scalfarotto's S. Simeon Piccolo with portico and plain dome in 1718 etc. There is thus no Rococo in Venetian architecture, even if there is some in interior decoration. One would look in vain for an equivalent to Guardi.

That is the story Signorina Bassi has to tell. She tells it straightforwardly, in a sensible style and without stylistic speculations. Each chapter has ample notes and a list of dates, and there are over 250 illustrations.

N.P.



6, *part of a measured drawing of a mill near Langthwaite, Arkengarthdale, Yorkshire, built in* 1824 *and drawn by the author of* The Lead Smelting Mills of the Yorkshire Dales, *reviewed above.*



Exceptionally large-scale planning in an English New Town; the central pedestrian piazza of Basildon, dominated by the fourteen-storey tower of Brooke House on its tall pilotis. An appraisal of this new dimension in New Town urbanity appears on pages 332-335 followed by description and illustration of the building.

Ian Nairn

DO IT YOURSELF

'The sum spent during the first year—including the purchase of plant and a considerable amount of work under the second year's programme—is well below estimate.'

'The second year's programme began on April 1, but of this, 3½ miles of dredging has already been completed and five lock gates have been installed. . . .'

The quotations above do not somehow have the content of an official report or the work of an industrial mammoth. Ahead of schedule with cash in hand is not exactly the motto of Britain in the 1960's. They are in fact from a progress report on the Stratford on Avon Canal which, under the National Trust, is being restored by volunteer labour. The canal manager, David Hutchings, is an architect.

A closer look at the workings of this canal repair enterprise reads like a fantasy in these days of supposed apathy and non-co-operation (if the cause is drab or unworthy, then apathy can become almost a virtue). The initial grant of money was £20,000, but the balance had to be made up by public subscription. £26,000 was raised in six months, the best appeal that the National Trust has ever conducted. The cost of opening the canal will be half the official estimate and one-third of the cost of closure. The work has been carried out almost entirely by volunteers and it has included fitting lock gates in bad weather, which is hardly the easiest way to spend a weekend.

CANAL CLEARWAYS

Sir—It is interesting to note that Mr. A. G. Allan admits that the choice of Stourbridge for a rally of boats had the deliberate aim of enforcing the retention of a canal whose future is now under consideration by the Government.

We do not accept the view that pleasure craft can navigate the canals as of right nor that we are bound to maintain the canals for that purpose—and certainly the rally committee has no right whatever to attempt clearance work without our consent.

As far as the so-called obligation of the British Transport Commission to maintain canals is concerned, Parliament has recently enacted provisions in the Transport Act which have the effect of suspending the liability (if any) of the Commission and of the British Waterways Board which is to be set up to succeed the Commission.

Yours faithfully,
W. L. IVES,
Deputy Gen. Manager, British
London, N.W.1. Waterways.

A letter which appeared in the Daily Telegraph *on August* 11, 1962.

But as well as this, several service units have co-operated, combining their own training with a public service: Army units from Long Marston, the Western Command Plant Troop, a Port Handling Regiment from Southampton, Territorials from Birmingham, and the RAF Airfield Construction Regiment, which luckily is based a few miles away. This is the social contract really beginning to work, the opposite of the Whitehall mentality ('Not my department, old boy') or that of the bigoted trade unionist ('Sorry, mate, you can't undo that screw. You need a paid-up screw-turner').

At the end of a year's work, two miles of canal, formerly useless, are open for business or pleasure, and this with an average volunteer force of fifteen. The whole job will be finished by 1964, and the volunteers will have some memories which sound more like canal-building than canal-repairing: 'Last Sunday, this excavator—weighing about 8 tons—was passed across Yorningdale aqueduct on a bridge erected by the Royal Engineers TA Unit from Tennal Lane, Harborne. The operation, which was a difficult and perhaps dangerous one, went extremely well. The machine was passed over the aqueduct in three stages . . . no damage of any sort was caused.'

The same pattern is repeating itself in other ways. Privately run branch railway lines are working at a profit—the fantasy of the Titfield Thunderbolt come true—although the deficit of British Railways mounts every year. One of these branch lines, in Leeds, handles goods traffic and is run by schoolboys. Even in the field of transatlantic air travel, private charter can halve the cost of a journey to America—although most of the world's big airlines are having a job to break even.

But most of do-it-yourself is an act of love; the profit is incidental. It is also a very English occupation. If one symbol of English life is the patient queuer, another is the folly builder, or fanatical enthusiast, or free-thinker. Together they form a polarity, sometimes present in the same person, like those who stay up all night for a seat at Covent Garden. The Covent Garden queue, in fact, unlike the number eleven bus queue, is a kind of collective do-it-yourself. So is CLASP, which in other countries might have been the result of a massive governmental programme, instead of being an almost impromptu affair of local officials pulling themselves up by their own bootstraps. The oustanding architectural example is Eric Lyons and his partner who, when they found themselves frustrated by finance, turned half of themselves into a business concern: be-your-own-client. Thank goodness they did.

The English jet engine came about because a

Cranwell officer did-it-himself in his spare time; the hovercraft because Mr. Cockerell began experimenting with holes in tins. Gordon Cullen's development of Townscape has been just as direct, just as unofficial, just as unprofessional. So was Payne Knight's development of Picturesque Theory. So, to an extreme degree, was William Blake both in his writing and his painting. Art history all but breaks down in England because of the persistence of the man who does not depend on X or Y but sits down and thinks or feels it out for himself. The only thing that you can do with Vanbrugh is to begin a new chapter in the book. And you don't even know which book it is—architectural history or theatrical history.

It is very odd that where individual enterprise has been made into the cornerstone of Tory political theory, its near neighbour—do-it-yourself—has not been and is not catered for. (The rough distinction I am making is that enterprise is for profit, do-it-yourself is for joy.) In fact both left and right seem to be committed all the time to more official do-it-for-you. Everything is slowly becoming more and more professional. Degrees and qualifications are becoming *sine qua non* with the best of intentions but often the worst of results. The amateur can always buy his way in, but we used to have a better tradition than that. At the very time when working conditions are making it possible to have one job for existence and another for joy, the ranks are being closed.

There is here a political force, neither left nor right, of some importance. If the affluent society remains affluent, it may grow to be one of the most important of political factors, using 'political' simply in the sense of a like-minded body of men. Such men are not likely to be attracted to a world of power-enterprise where ICI tries to swallow Courtaulds and Ind Coope succeeds in swallowing Taylor Walker. They are equally unlikely to respond to a falsely egalitarian society where everything is nationalized, everything is bureaucratic and done by the books, and nothing has any joy in it at all.

Yet this is precisely the time when do-it-yourself could take over large sections of the economy, and precisely those sections of the economy which have become unprofitable. Even more precisely, it is just because labour rates have risen that railways, canals and even bus companies can now only make a profit out of their big routes. And in other terms, it is partly because the borough engineer is understaffed—there's better money elsewhere—that he can no longer show a townscape 'profit'; that is, take the care over details that his nineteenth-century predecessors did.

Theoretically, these two should dovetail perfectly: large-scale services run commercially by large-scale concerns, small-scale services run for the fun of it by enthusiastic amateurs. But for this to happen there needs to be goodwill: and this seems to be lacking among the big bodies whose attitude could sometimes be summed up as: if I can't run this (canal, branch line) at a profit, then nobody else is going to have the chance to either. At Stourbridge, for example, volunteers wanted to clean out a British Railways basin at their own expense; but, instead of being grateful, officialdom sent along two officials who said that 'the surface of the canal must not be broken.' They estimated that the cost of cleaning would be £20,000. It cost the volunteers £74. That's no way to live; but it could be paralleled by similar gestures by councils and council officials all over the country—gestures of a blindness which in its way is worse than downright evil.

If each of the big organizations who had things running at a loss would set up a small clearing-house to aid private taking-over instead of giving it what is at best grudging acceptance, the eventual saving would be enormous. Abandonment of a canal, for example, costs £10,000 per mile; abandonment of a railway must cost something comparable. If concerted action were started now, then many of the unprofitable lines need never close at all. All they would lose would be their bureaucratic chains. The converse, of course, is that trunk services need to be run by a highly centralized and highly organized authority—which could also profit by losing its bureaucratic chains.

All that has been said about railways and canals could apply to town planning, which has been a favourite hunting-ground of do-it-yourself ever since the folly and the improver; but nowadays in England it is sewn up so rigidly that the consultant town planner is out of a job.

So, suppose that the trunk town planning services—integrating roads and towns, given a push to the north to balance the drift to the south—were run by a central body, the missing Ministry of Planning; then, at the other end of the scale, as the organic counterpart of this, do-it-yourself could come into its own. There is no real reason why the residents of a particular street should not have the lampstandards of their choice, if they are prepared to pay the extra cost. There are plenty of specious reasons, and the numbers and variety of these that I have met personally would astonish a Stalinist commissar; we make such a fearful botch of trying to live together. Footpaths, walls, hedges, signs and planting could all be decided by local option, a street or an urban unit at a time. It would not be anarchy, but the principle of freedom of parts within a guiding pattern which makes up the only worthwhile discipline that has ever been invented.

Government bodies and systems propose; human nature disposes. If freedom of parts is not given willingly then sooner or later, by biological laws, *homo sapiens* will take it. The contemptuous kick that Albert Finney gave towards the new council house at the end of *Saturday Night and Sunday Morning* represents an immense sum of energy, coiled up and stored. Give it some freedom, freedom to really concern itself with the environment, and it will not be abused, because in this respect the English are deeply civilized, though every year bureaucratic obstruction whittles down the inherited store of good nature and fair play. Bottle it up, lard every worthwhile thing round with regulations and restrictive practices, make the qualification system watertight, insist on the union card and the rate for the job, adhere rigidly to the bye-laws, and forbid all deviations; then the whole thing will explode in our silly faces.

The recent improvement in the standard of university architecture in Britain has been somewhat slow to reach the older universities, perhaps because of conservative habits of thought, perhaps because patronage is made more confused by the autonomous position of the colleges. But things are becoming more lively—a fact attested by the Review being able to publish at the same time four significant new buildings from Cambridge. One was commissioned by the university and the other three by different colleges.

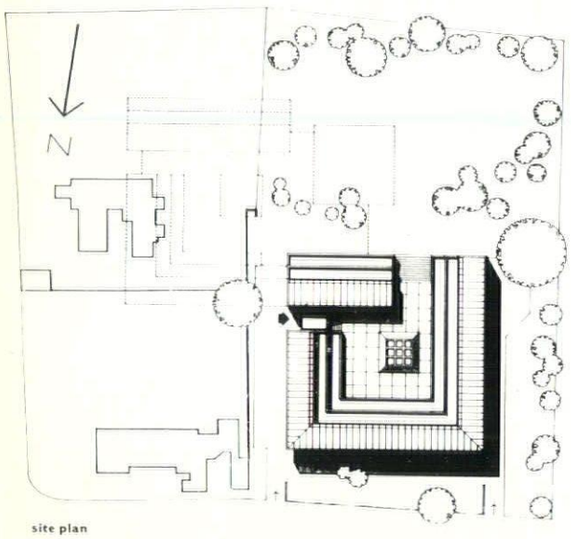
4 BUILDINGS AT CAMBRIDGE



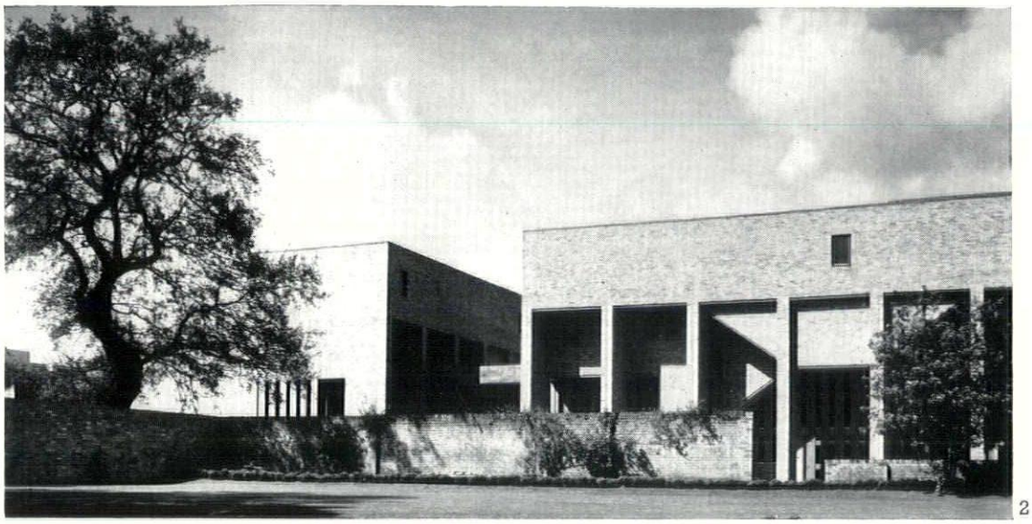
1, looking under the staircase on the east side of Sir Leslie Martin's residential building for Caius College.

RESIDENTIAL BUILDING FOR CAIUS COLLEGE

ARCHITECT | **J. LESLIE MARTIN (in association with Colin St. John Wilson)**



site plan



2



3

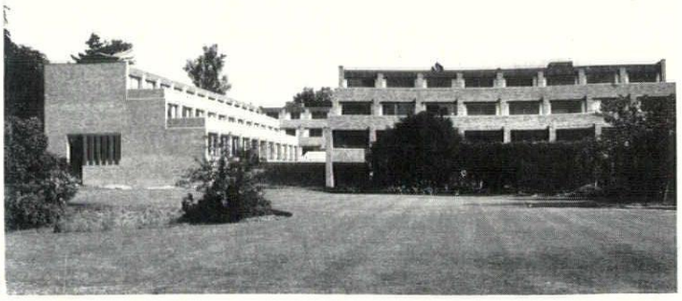
Facing page: 2, from the east; the entrance is on the right. 3, close-up of the entrance showing the canopy over the steps leading to the inner court. 4, the steps to the inner court on the south side. 5, the inner court seen from the south-east corner; the raised area gives top lighting to the breakfast room.



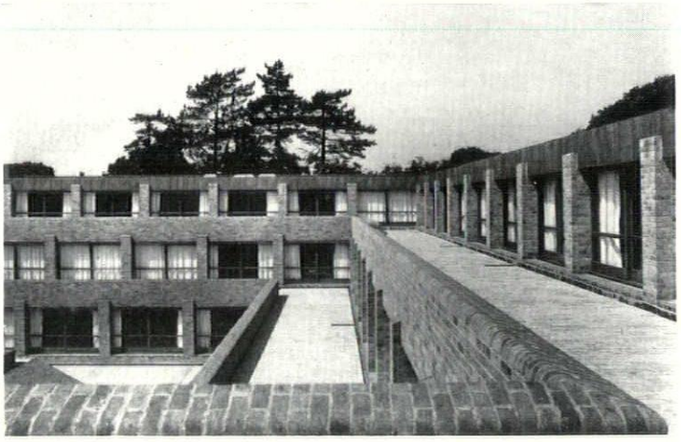
4



5



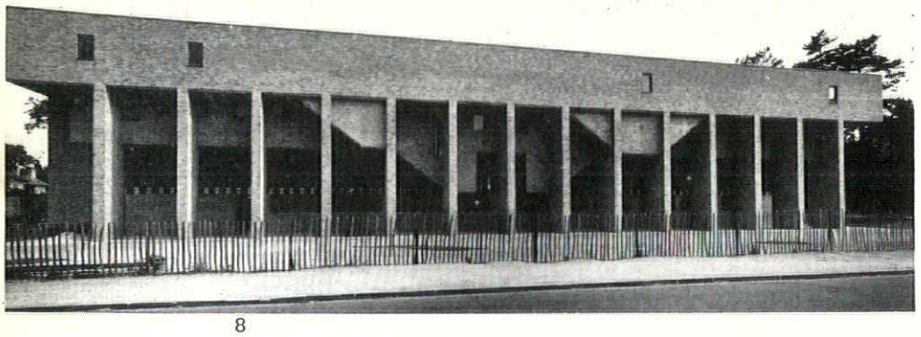
6



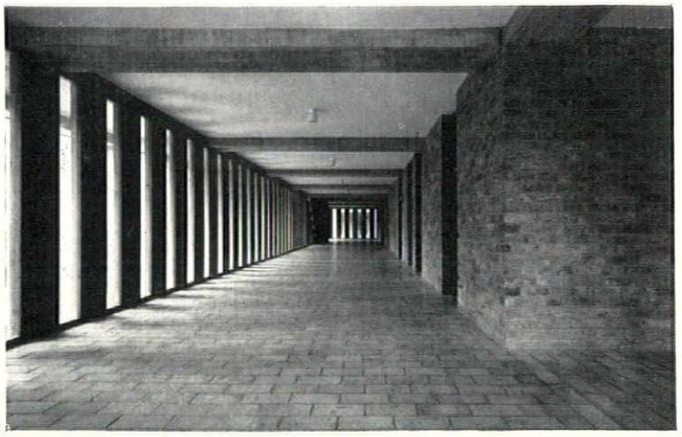
7

6, distant view from the south. 7, the terraces seen from the east. 8, the north elevation. 9, looking along the first floor gallery.

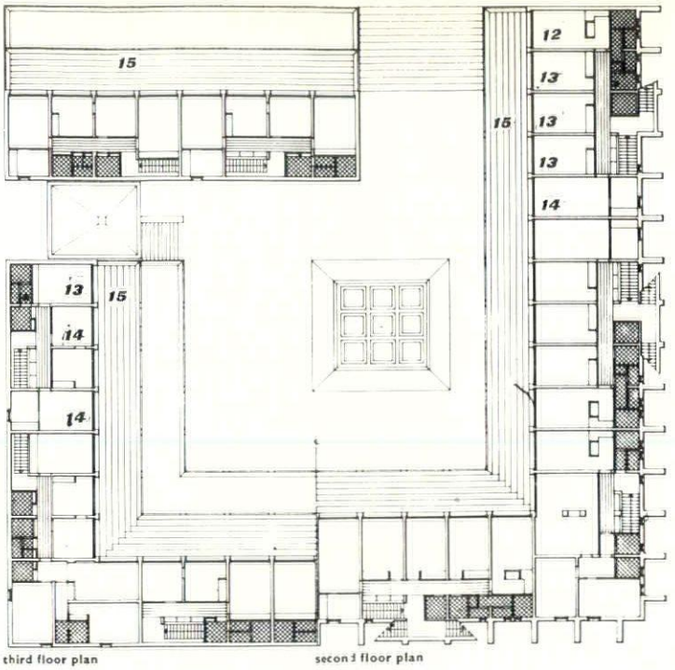
photographs by John Donat



8

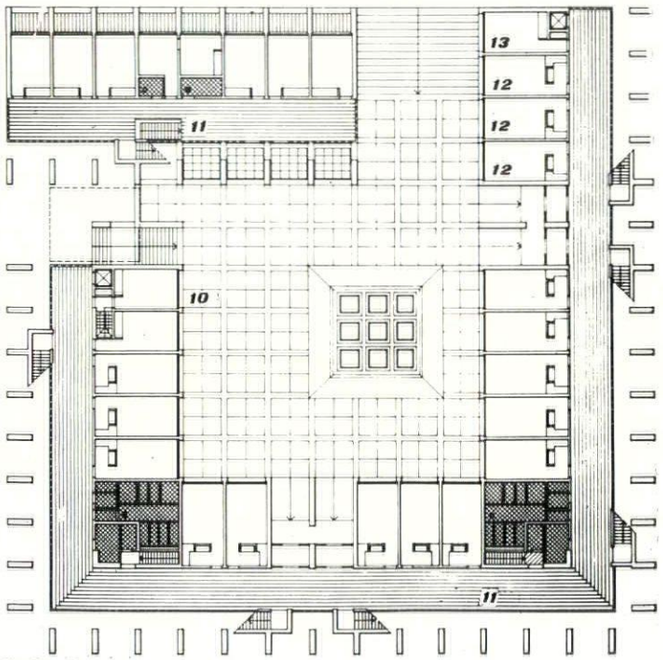


9

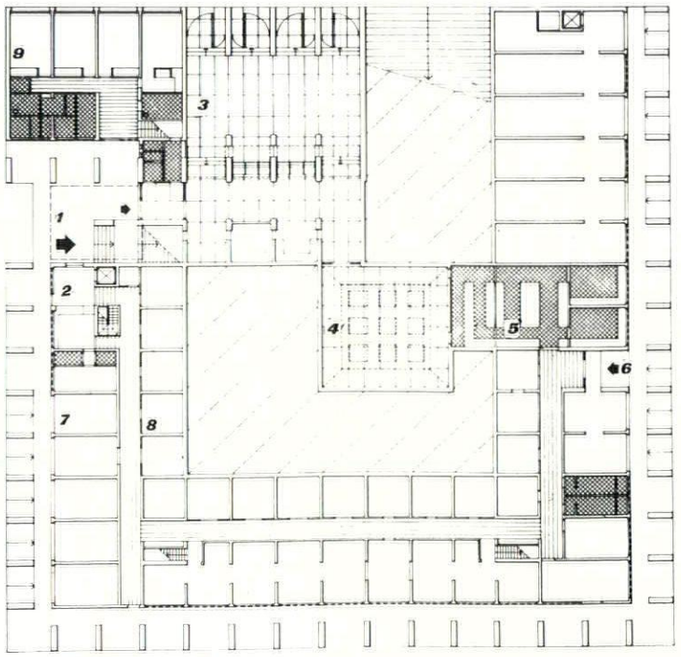


third floor plan

second floor plan



first floor plan



lower ground floor plan (scale 1/48 in. = 1 ft.)

RESIDENTIAL BUILDING FOR CAIUS COLLEGE

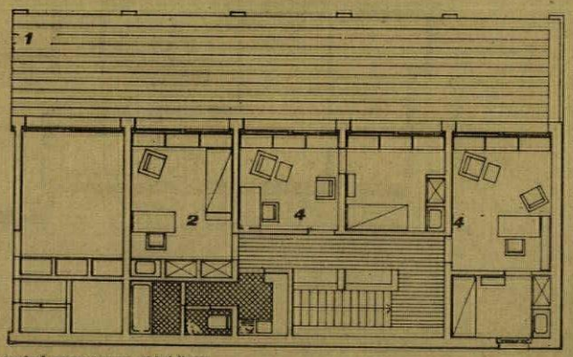


key
1, main entrance
2, porter's lodge
3, common room
4, breakfast room
5, kitchen and servery
6, service entrance
7, garages
8, trunk storage
9, guest rooms
10, court
11, gallery
12, study-bedroom with dressing annexe
13, study-bedroom
14, set (study and bedroom)

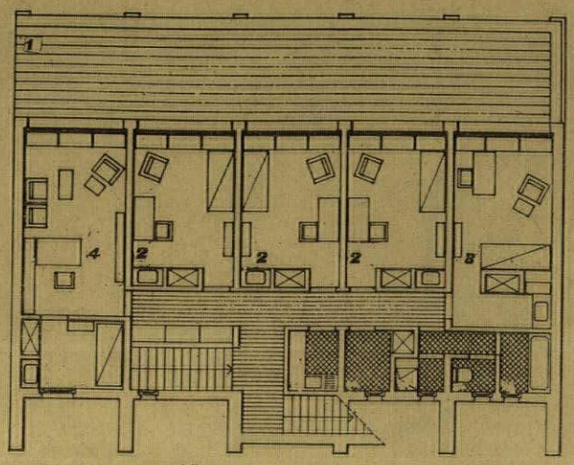
There is no further room for expansion on the existing Gonville and Caius College site adjoining the Senate House, and this new residential building is in West Road, about half a mile across the river. It provides rooms for approximately 100 members of the College, but these members will dine in the hall of the parent College buildings. The new building, in addition to rooms, provides only a breakfast-room, kitchen and undergraduates' common-room. In addition, the College required some general storage, garage space and room for its maintenance work.

The building is placed at the northern end of the site adjoining West Road in order to take the maximum advantage of the existing garden to the south. The site is adjacent to other properties owned by the College so that future expansion is possible. The isolation of the site and its lack of prospect to north, east and west suggested a form as self contained as possible but capable of opening out to the south. The rooms are therefore arranged in stepped terraces round a central court. All rooms on three sides of this court (in the east, west and north wings) face inwards and receive east, west and south light. The southern side of the court is partially closed by a block of rooms facing south and outward towards the garden. This form of planning and the siting of the building makes possible a future extension of consistent character by the addition of a second or third related court. The approach by a main drive on the east of the building places the entrance at a central point in any future scheme. The service access to the kitchen, etc., is on the west side.

key
1, terrace
2, study-bedroom
3, study-bedroom with dressing annexe
4, set (study and bedroom)



typical room groups, third floor



typical room groups, second floor

The main communal rooms, the breakfast-room (seating one hundred), kitchen, service rooms, storage, etc., are at ground floor level, the common-room facing the garden. This accommodation forms a kind of ground floor plinth so that the courtyard itself is elevated. From the entrance canopy a few steps lead down to the common-room and breakfast-room, and a flight of steps leads up to the courtyard with its main doors leading to the internal access gallery. This gallery or ambulatory runs round the perimeter of the building at courtyard level and gives covered access to the staircases leading to the upper floors. These staircases are disposed at five points around the ambulatory and their outward stepping form (reciprocating the setback of each terrace) leads to short lengths of landing, each with its group of rooms, bath and service rooms. This arrangement maintains the traditional grouping of rooms by staircase and is developed freely within the geometry of the whole building to create interlocking room-groups of various sizes. The staircase arrangement and the stepped or terraced form of the building itself lead to a greater variety in the size and form of individual rooms although this is developed within a system of load-bearing brick cross-walls.

Types of room are as follows:

Study-Bedroom I	(173 sq. ft.). Cupboards and wash-hand basin in combined unit ranged along the back wall.
Study-Bedroom II	(228 sq. ft.). Wash-hand basin and dressing area screened from the main part of the room by the cupboard unit.
Set I Study	(160 sq. ft.) and bedroom (66 sq. ft.) ranged en suite parallel to the terrace.
Set II Study	(168 sq. ft.) and bedroom (72 sq. ft.) ranged en suite at right-angles to the terrace, extending through to the perimeter of the building.
Set III Study	(228 sq. ft.) and bedroom (72 sq. ft.) arranged as above.
Divisible Sets	(average total 680 sq. ft.), containing two to three rooms with private lavatory and bathroom; may be occupied either by a Fellow or by two undergraduates.

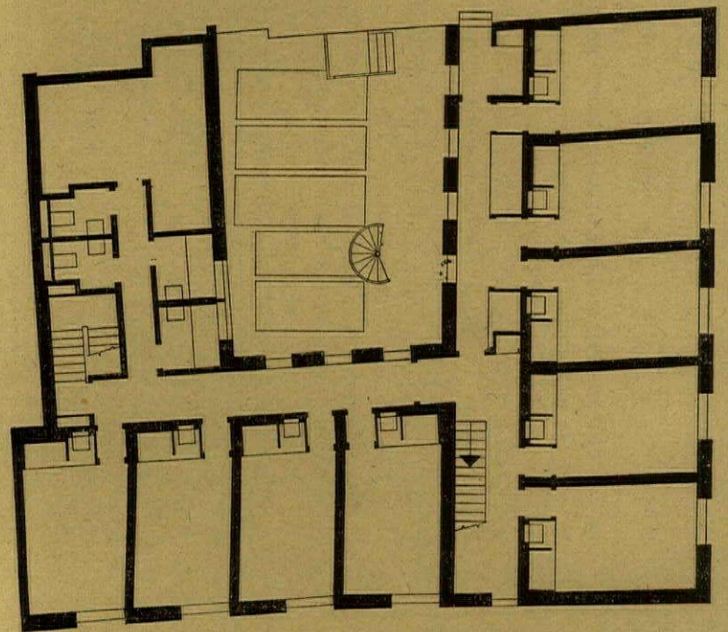
Internally, landings at each floor level serve from three to five rooms. Each lobby has its own requisite proportion of bathroom, shower, w.c. accommodation and a cleaner's room containing gas-rings for the room owners. 'Drip-dry' washing rooms are provided at ground floor level.

Materials have been limited in number to maintain homogeneity and consistency. The main structure is brick and this is used throughout on parapets and as paving to the court. The window frames and internal joinery are in varnished Douglas Fir. The roof covering is copper and all metal flashings are in lead coated copper to avoid staining.

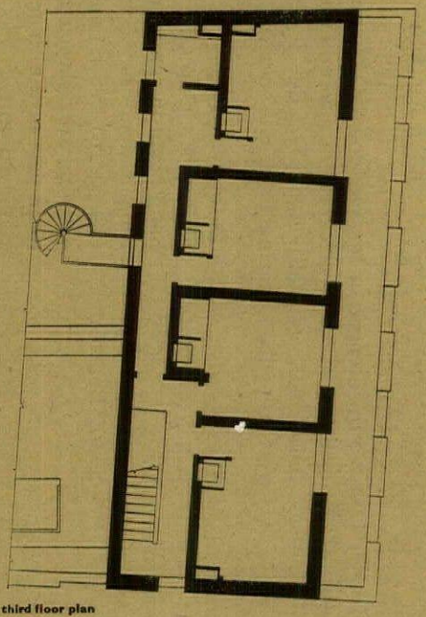
Assistant architect, Patrick Hodgkinson. Structural engineers, Felix Samuely and Partners. Quantity surveyors, Monk and Dunstone. Heating consultants, Messrs. Weatherfoil.

RESIDENTIAL BUILDING FOR KING'S COLLEGE, MARKET HILL

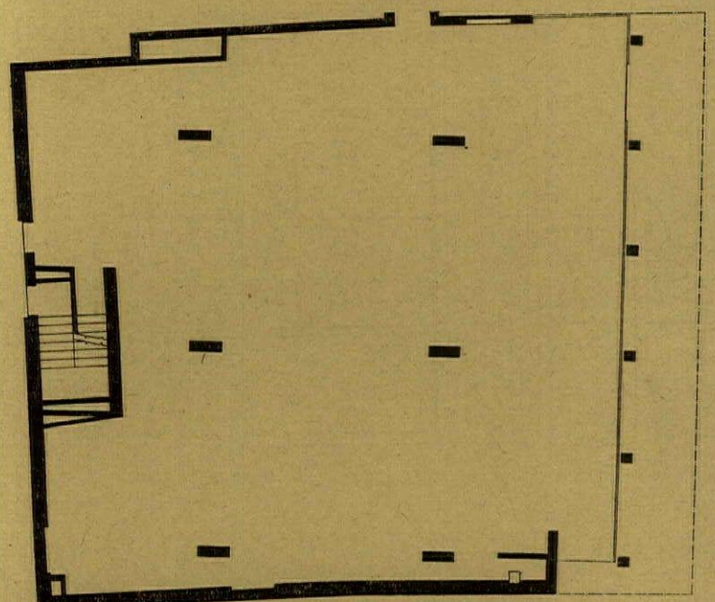
ARCHITECTS | **ARCHITECTS' CO-PARTNERSHIP**



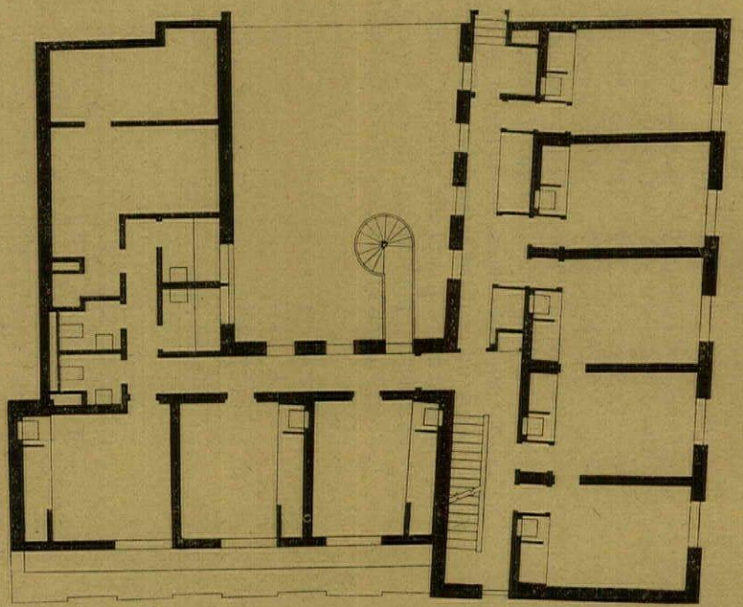
first floor plan



third floor plan



ground floor plan



second floor plan

The site is at the corner of St. Edward's Passage and Market Hill and is part of a larger site, including the existing St. Mary's Chambers, for which Sir Leslie Martin had prepared an outline scheme when the College was considering redeveloping it as a whole. The smaller scheme illustrated here was prepared by the architects (at Sir Leslie Martin's suggestion) when the College decided to retain St. Mary's Chambers for the time being.

Its site was previously occupied by the Central Hotel, an old structure (already in use for College rooms, with a tea shop and a bank on the ground floor) which the College decided to replace only after their specialist consultants and the planning authority had agreed that, because of its dilapidated condition, its retention was neither justifiable nor practicable.

The basement and ground floor of the new building are let to the Midland Bank, the previous tenants, who now, however, have three times as much space as previously. Their need to continue in occupation during the process of rebuilding necessitated a contract completed in three stages. The bank's interior has been designed by their own architects, Whinney, Son and Austen Hall.

On the three upper floors of the building are twenty-one undergraduate study-bedrooms, with kitchens and bathrooms. The frontage to Market Hill has been designed to restore something of the original scale of the Market Place, with elevations formal and urban in character. The elevation to St. Edward's Passage is one storey less and more domestic in scale, related to the cottages round the church opposite.

The building is faced with 2½in. cream-white bricks of a very high density and regularity of colour, imported from Venlo, Holland. String-courses and window-spandrels are faced with blue-grey Welsh slate. The roof is covered in copper. Internally, the joinery and furniture (which has been specially designed by the architects) is in beech.

Structural engineers, Ove Arup & Partners. Heating, lighting and ventilating consultant, A. J. Smith. Quantity surveyors, Monk & Dunstone.

1

1, close-up of the building from St. Edwards Passage. 2, 3, views from Market Hill.



2

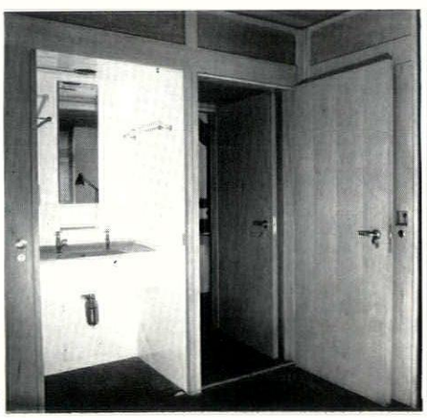


3

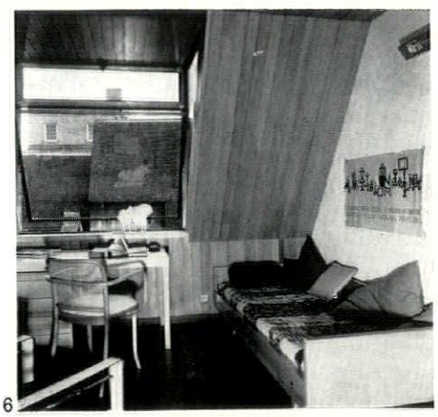
4

4, the fire escape stair in the centre well of the building. 5, 6, interiors of typical study-bedrooms. The rooms are finished in rough white-painted plaster and beech.

photographs by H. de Burgh Galwey



5



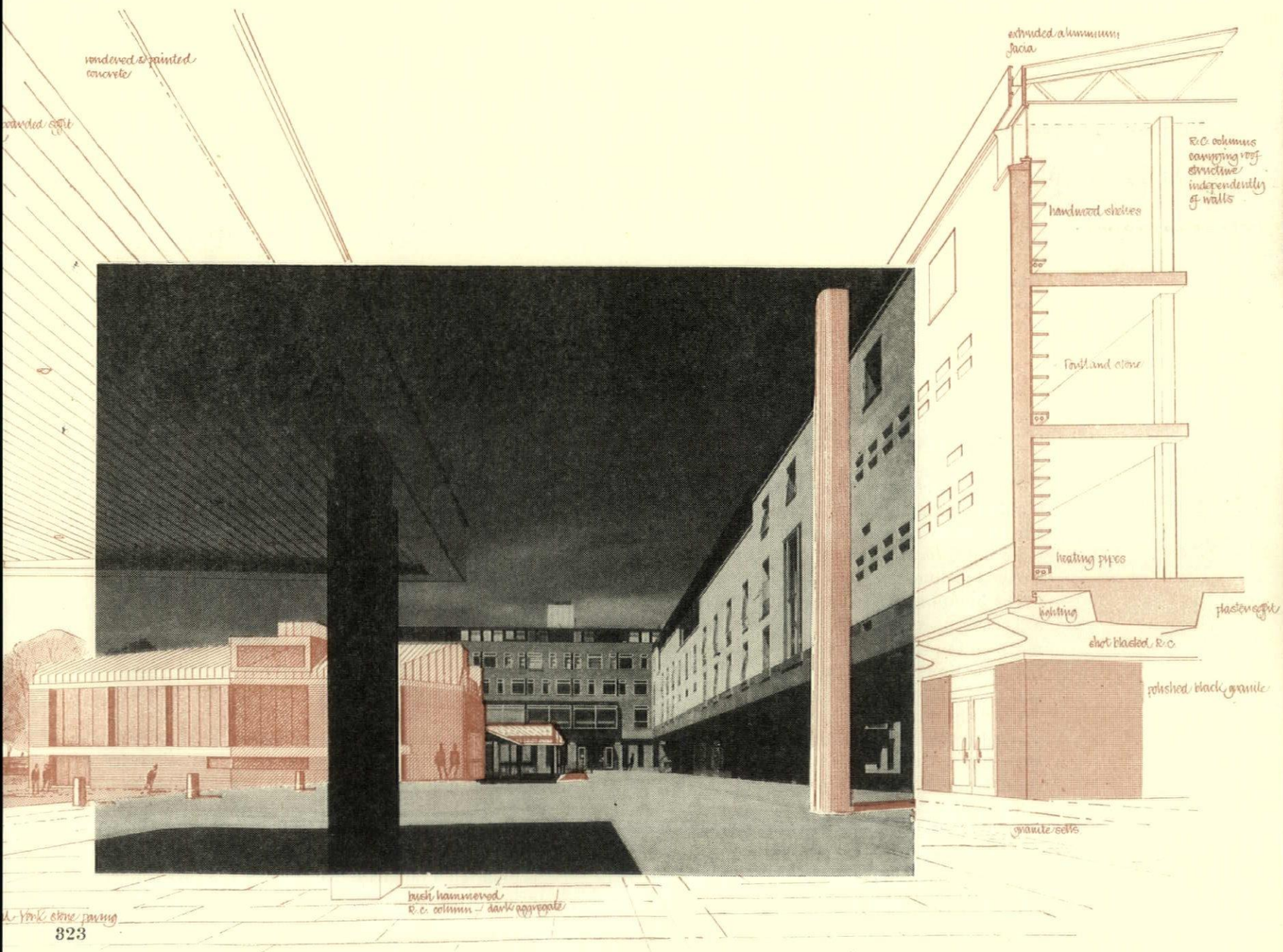
6

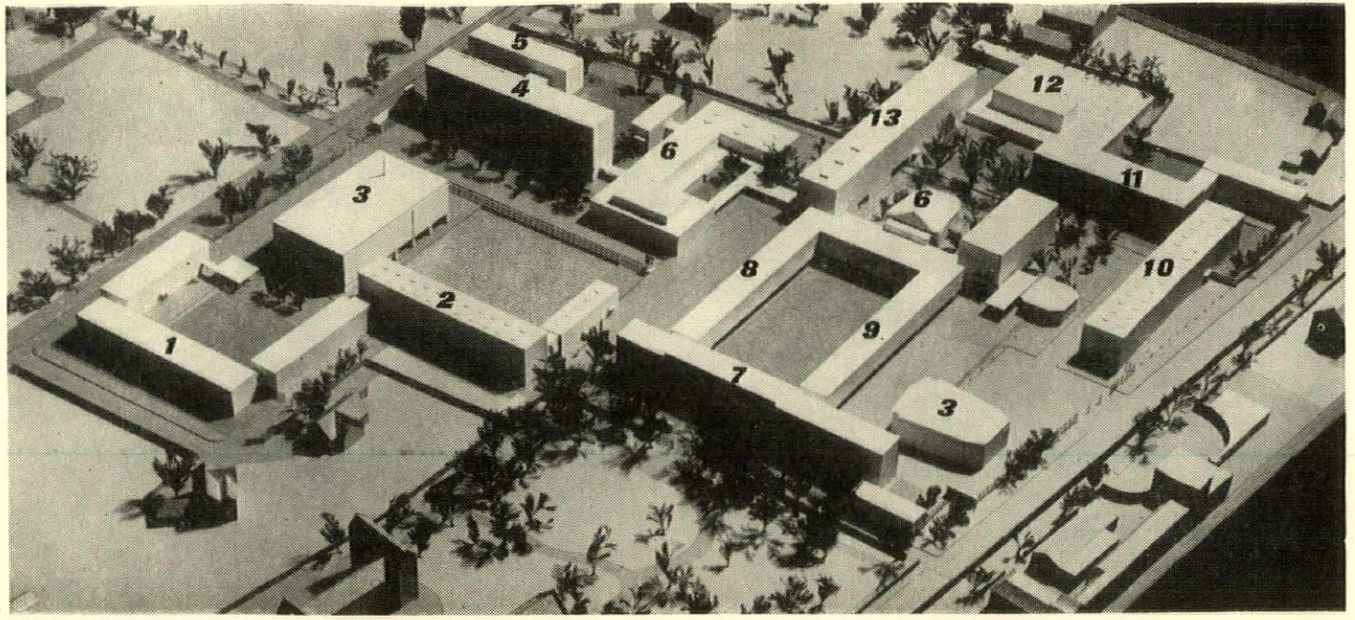
RESIDENTIAL BUILDING FOR KING'S COLLEGE, MARKET HILL

LIBRARIES FOR THE ARTS FACULTIES

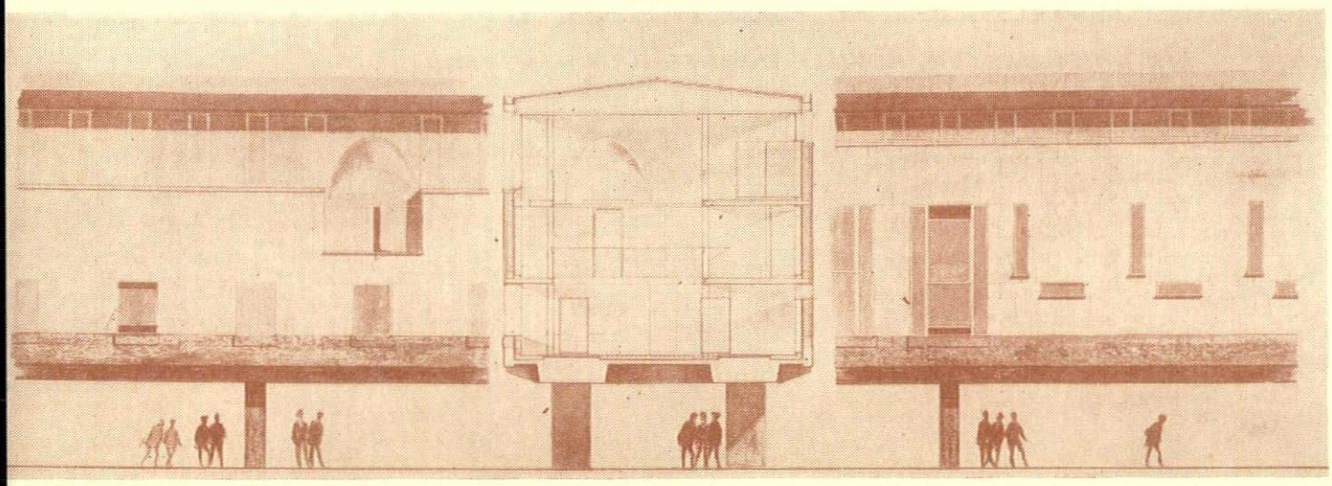
ARCHITECTS | **SIR HUGH CASSON, NEVILLE CONDER AND PARTNERS**

1, from the east, with the south elevation of the libraries on the right. Superimposed on the photograph is a drawing of the proposed lecture hall block (see model on page 324).





2



NORTH WING: part north elevation section part south elevation

2, model of the whole Sidgwick Avenue development from the south-west as originally planned. The northern area (on the left) is now being re-studied and the east boundary has been altered. The libraries illustrated here are the buildings numbered 8 and 9.

key
1, music school
2, architecture
3, lecture theatre
4, history
5, classics
6, lecture rooms
7, economics and politics
8, modern and medieval languages
§9, English and moral science
10, classical archaeology
11, archaeology and anthropology
12, museum of archaeology and ethnology
13, oriental studies

The building houses the libraries for the Faculties of Modern and Mediæval Languages, of English and of Moral Science together with a number of seminar rooms and study offices for the use of all three Faculties. It is the second of a group of buildings forming the first stage of the Sidgwick Avenue development plan prepared by the same architects in 1952. Principles of design established in that plan were:

The group of libraries was to be the central building and architectural focus of this part of the site, around which other buildings clustered, and was to be given formal expression by being placed upon a paved podium and sheathed in Portland stone.

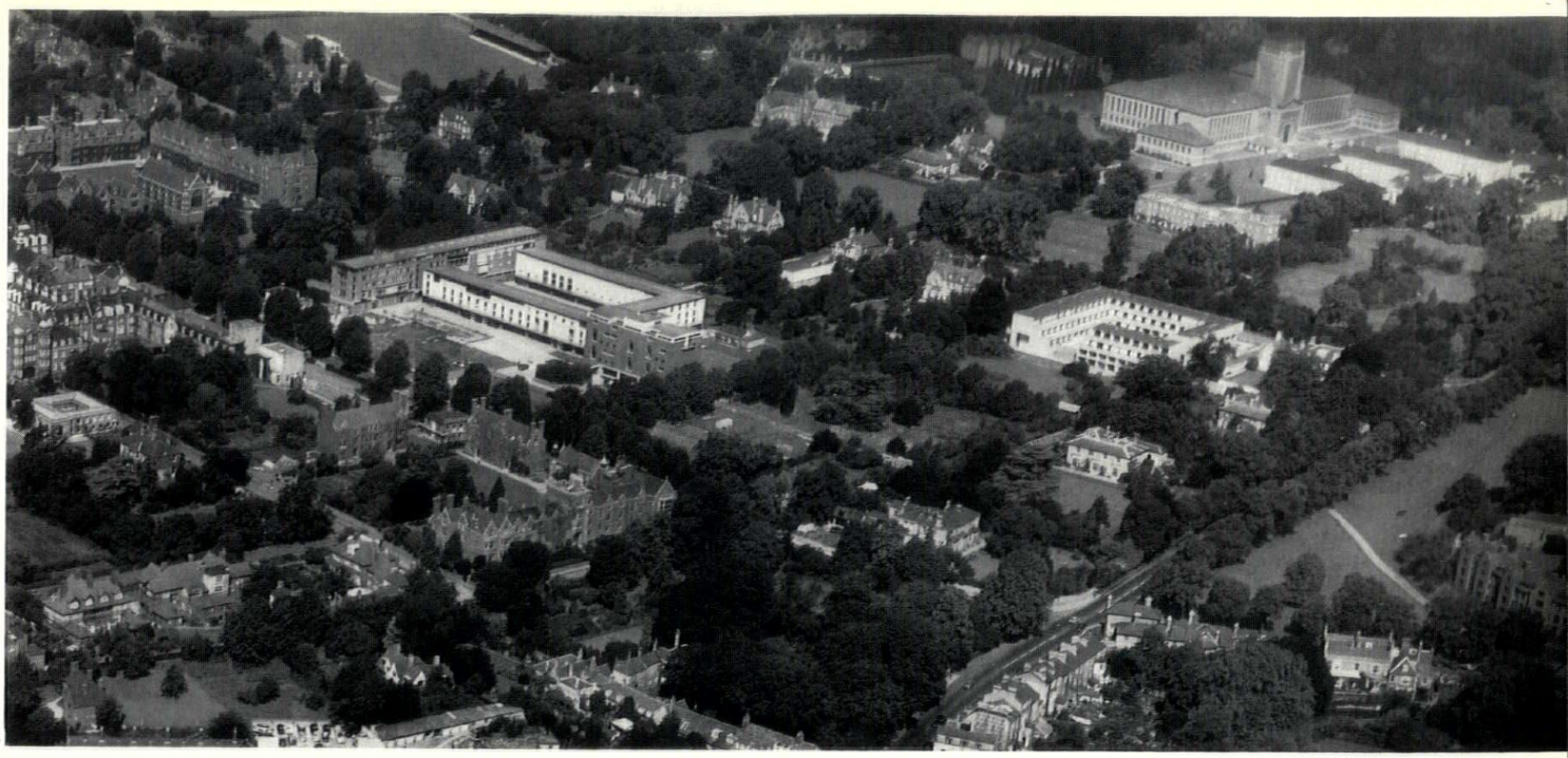
The building was to be raised on columns to allow a sense of penetration through the site from south to north and provide covered access across the site, at the same time keeping the library windows above and undisturbed by a busy pedestrian area.

From the outside it was to be designed to be viewed between the buildings that will eventually surround it. Only from within the enclosure of the courtyard was it to be comprehended as one building.

The building was to make allowance for the expansion of any of the libraries by the provision of spaces in or alongside them in the form of studies or seminar rooms which can be moved out of the building and accommodated elsewhere on the site.

The libraries are primarily 'working' libraries for undergraduates and, unlike a central library, have no large stock rooms to house rare or infrequently used books. The planning therefore favours the principle of open shelving readily accessible from the reading areas. The north wing houses the Library of Modern and Mediæval Languages and the south wing the Libraries of English and of Moral Science. The main area of expansion is in the east or connecting wing of the building which, until converted to its final use, houses seminar rooms and studies. Each library has its own ground-floor entrance-hall.

The strongly modelled first floor slab is of exposed shot-blasted reinforced concrete supported by columns at 36ft. centres. The structure above this level is an internal double row of exposed reinforced concrete columns, with a carborundum finish, at 12ft. centres supporting an aluminium clad steel truss roof. The reinforced concrete flat-slab floors span between the columns and the load-bearing stone outer walls. Floor levels are constant throughout the building. The fascia to the roof, concealing an external gutter, is of extruded aluminium. The building is heated by convector units situated below windows and supplied with hot water from a central boiler house elsewhere on the site. The lighting in the libraries is a combination of tungsten and fluorescent. Flooring is cork. Joinery, including all bookcases, is Japanese oak.

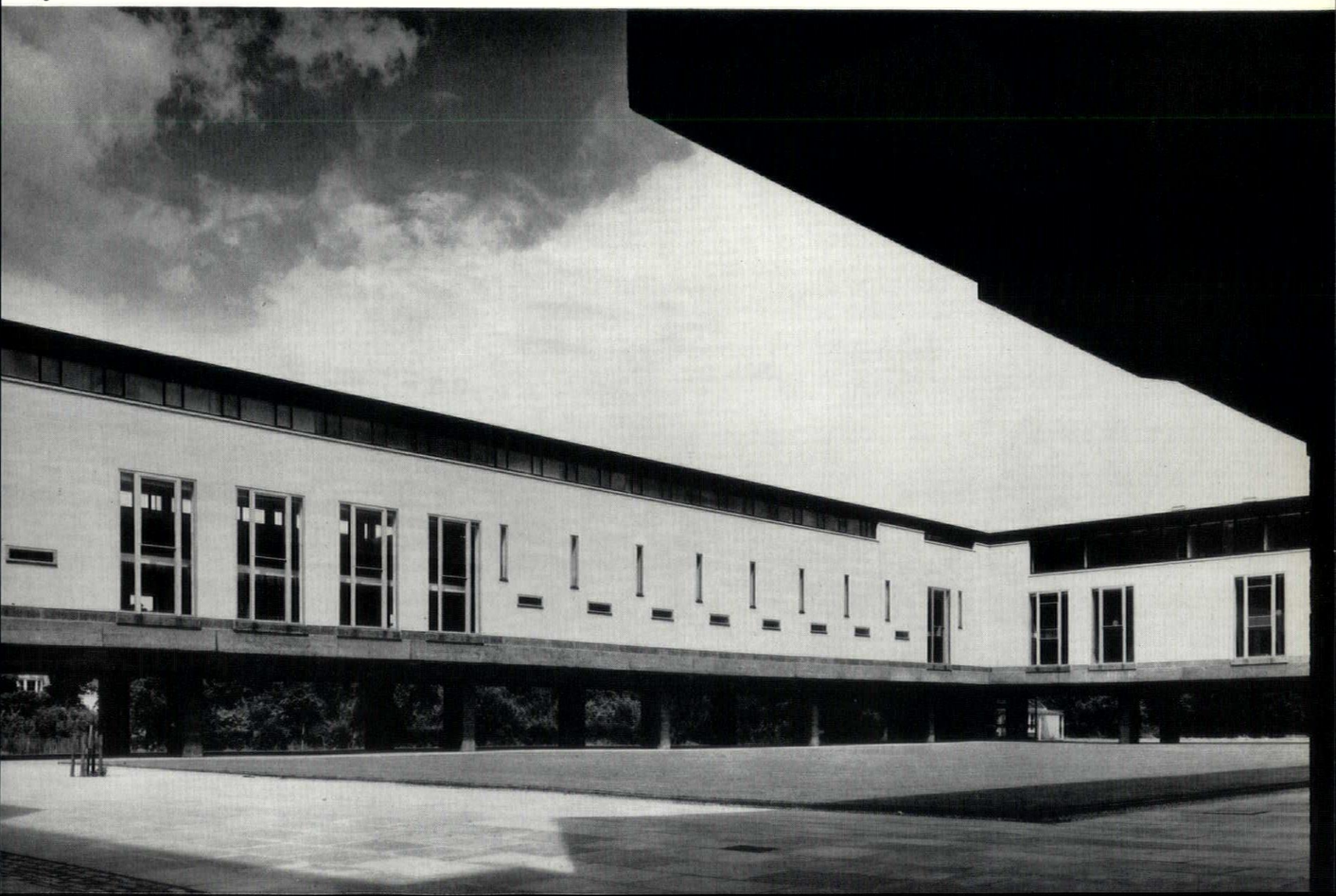


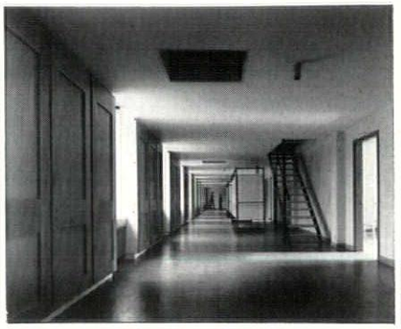
3

3, aerial view from the south-east. The libraries are in the left centre of the picture. Next to them on the left is the Economics and Politics building—see the model of the eventual layout on the facing page. On the right are the residential buildings for Caius College, illustrated on pages 315-319 of this issue, with, beyond, the University Library. 4, inside the libraries courtyard, looking north-east.

LIBRARIES FOR THE ARTS FACULTIES

4

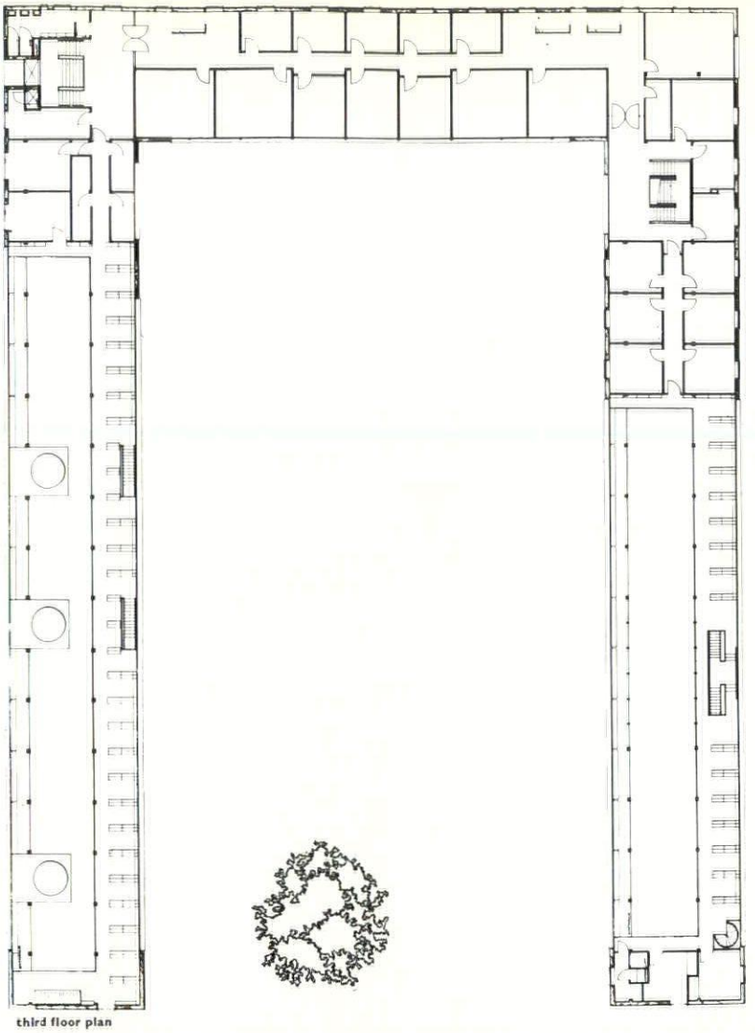




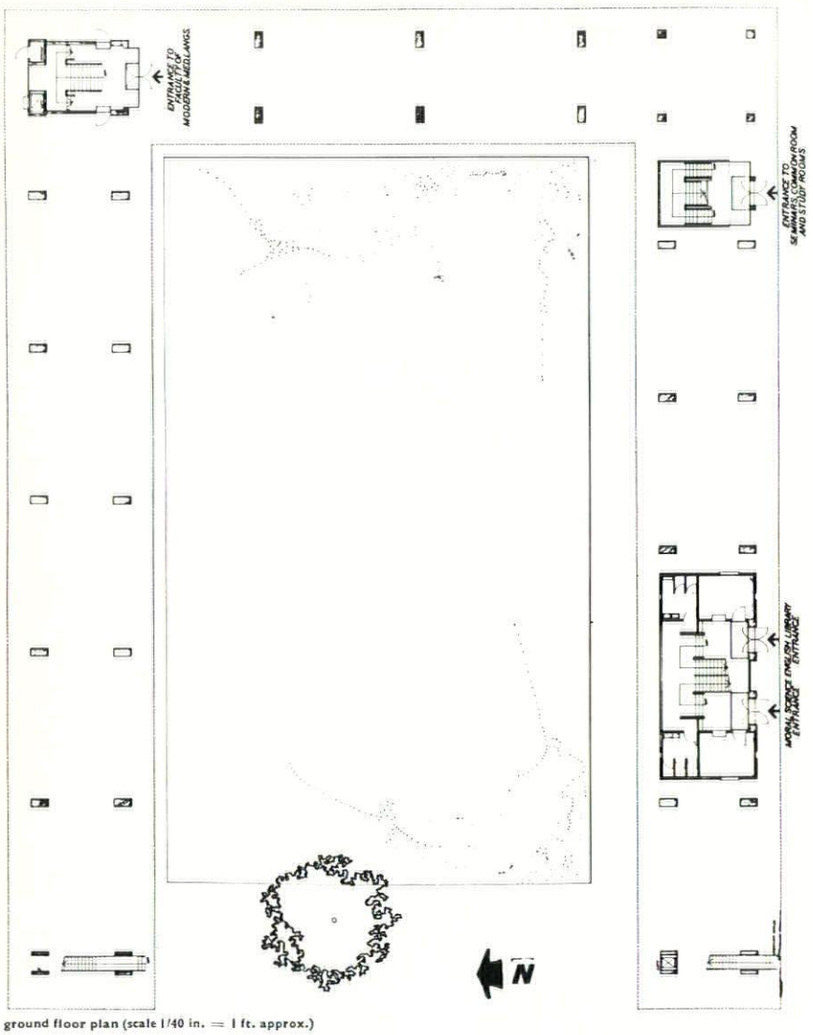
5

5, the first-floor corridor in the east wing. Facing page: 6, looking under the north wing into the courtyard. 7, from the north.

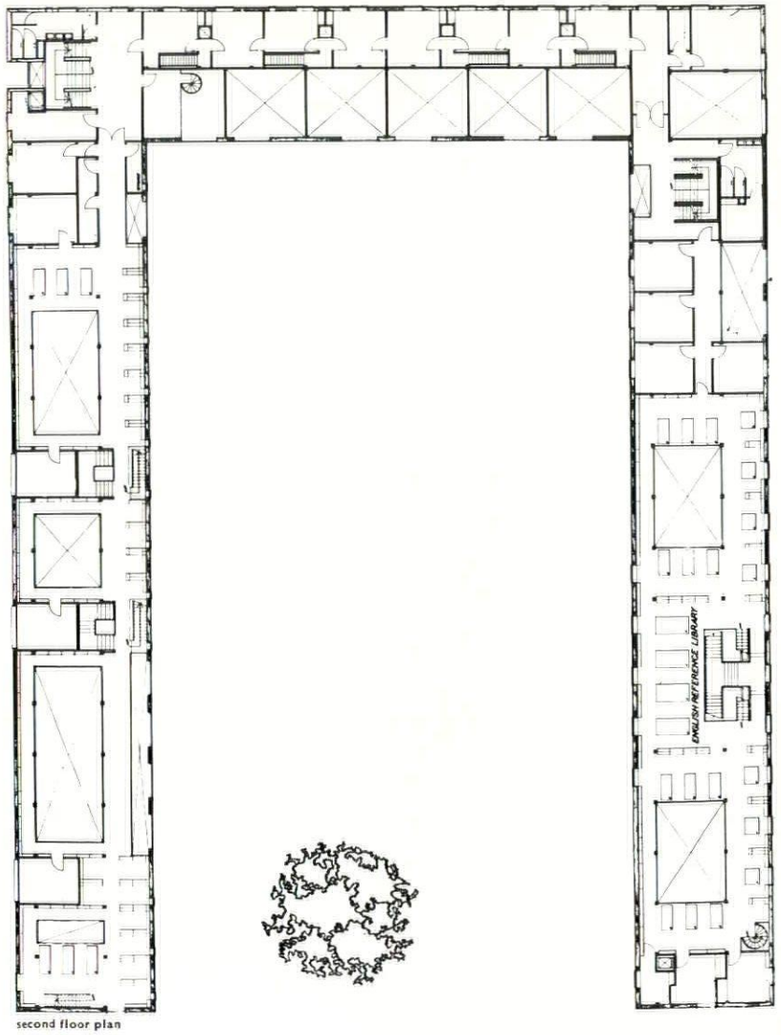
first floor plan



third floor plan



ground floor plan (scale 1/40 in. = 1 ft. approx.)



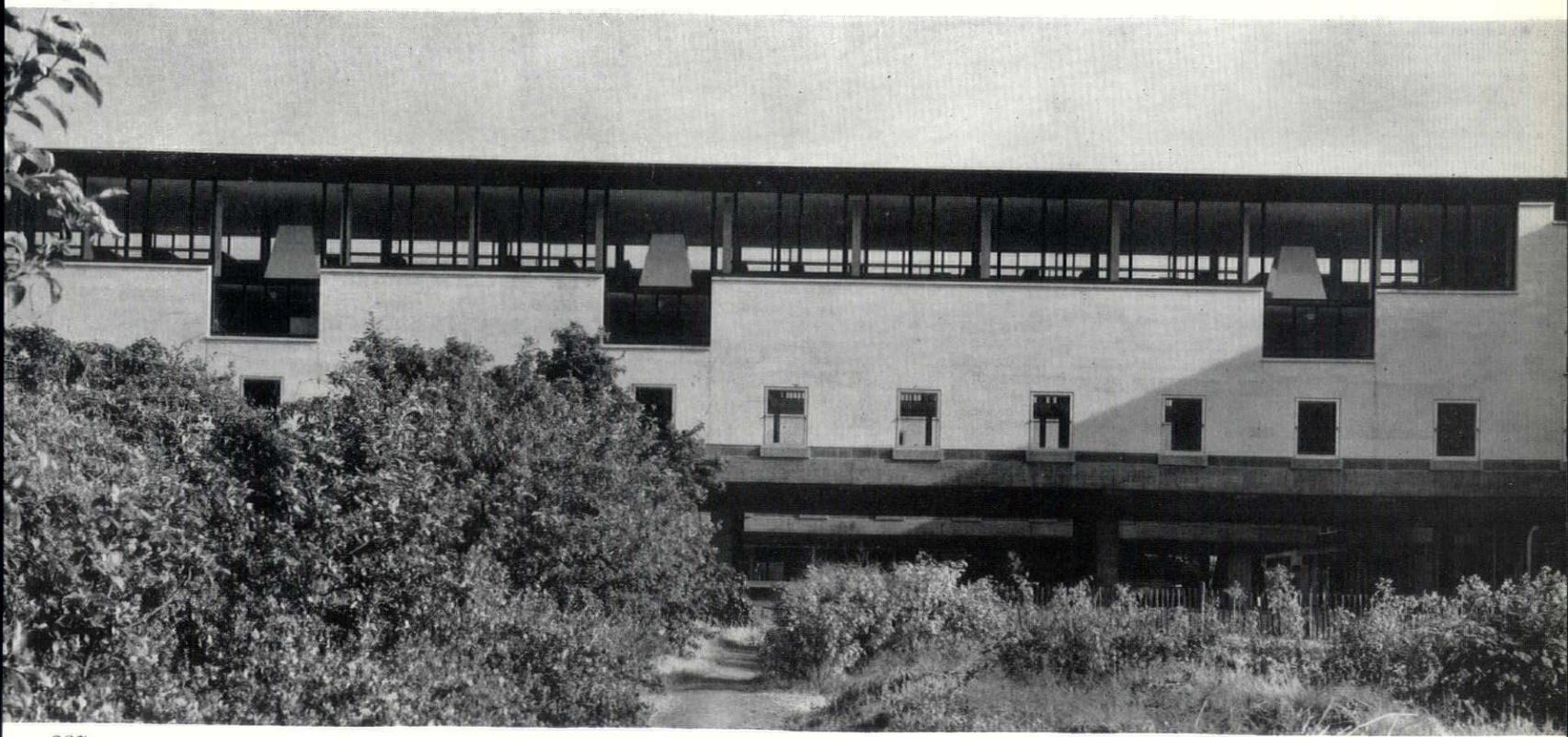
second floor plan

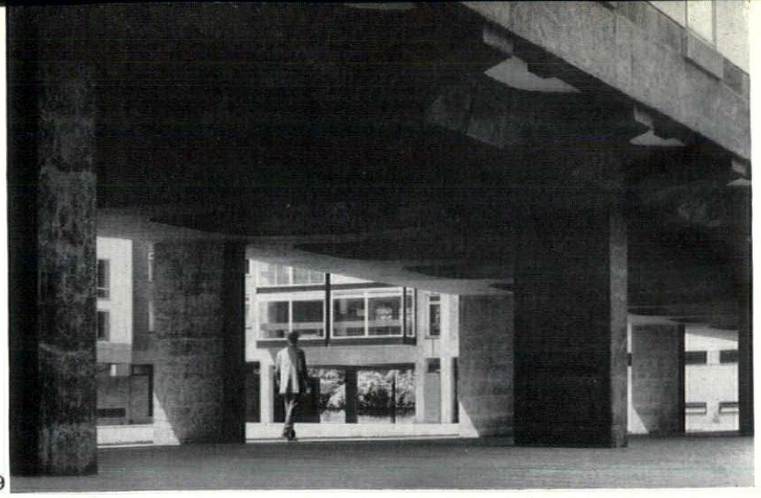


6

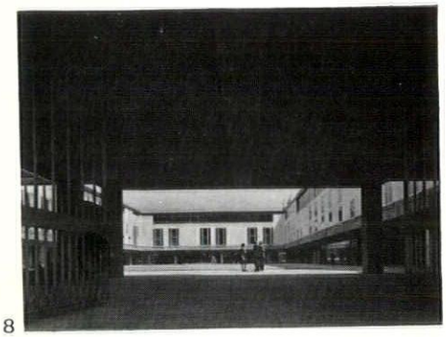
7

LIBRARIES FOR THE ARTS FACULTIES

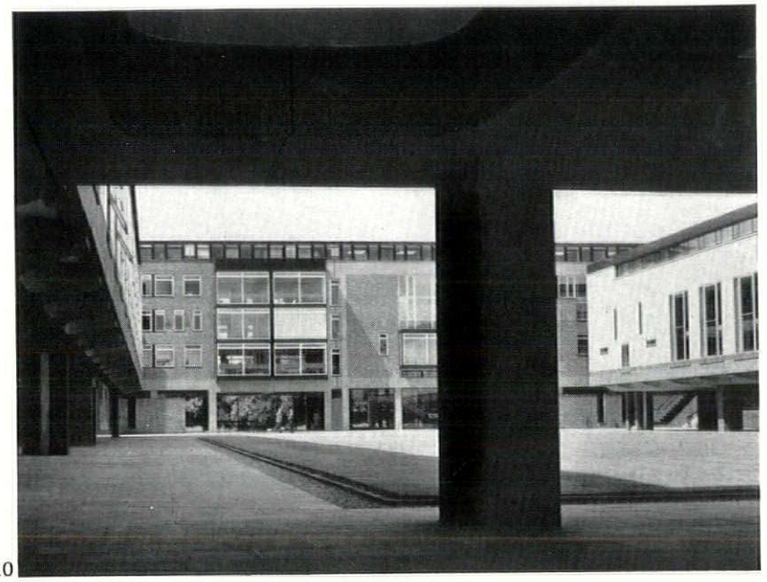




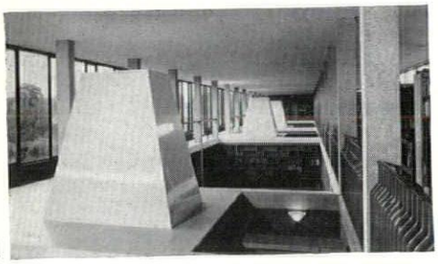
9



8



10



11

8, looking east from under the Economics building. 9, 10, two views of the Economics building seen from under the libraries. 11, 12, the library of modern and medieval languages in the north wing.

LIBRARIES FOR THE ARTS FACULTIES



12



1

FELLOWS' FLATS, CHURCHILL COLLEGE

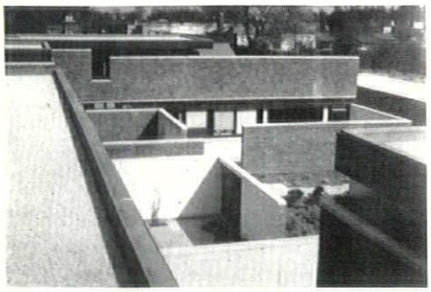
ARCHITECTS | **RICHARD SHEPPARD, ROBSON AND PARTNERS**

1 (above), from the east. 2, view inside the group.

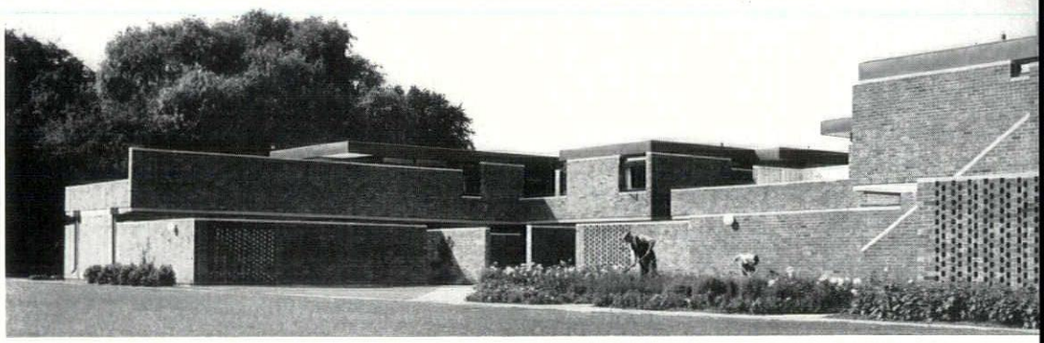
2



FELLOWS' FLATS, CHURCHILL COLLEGE



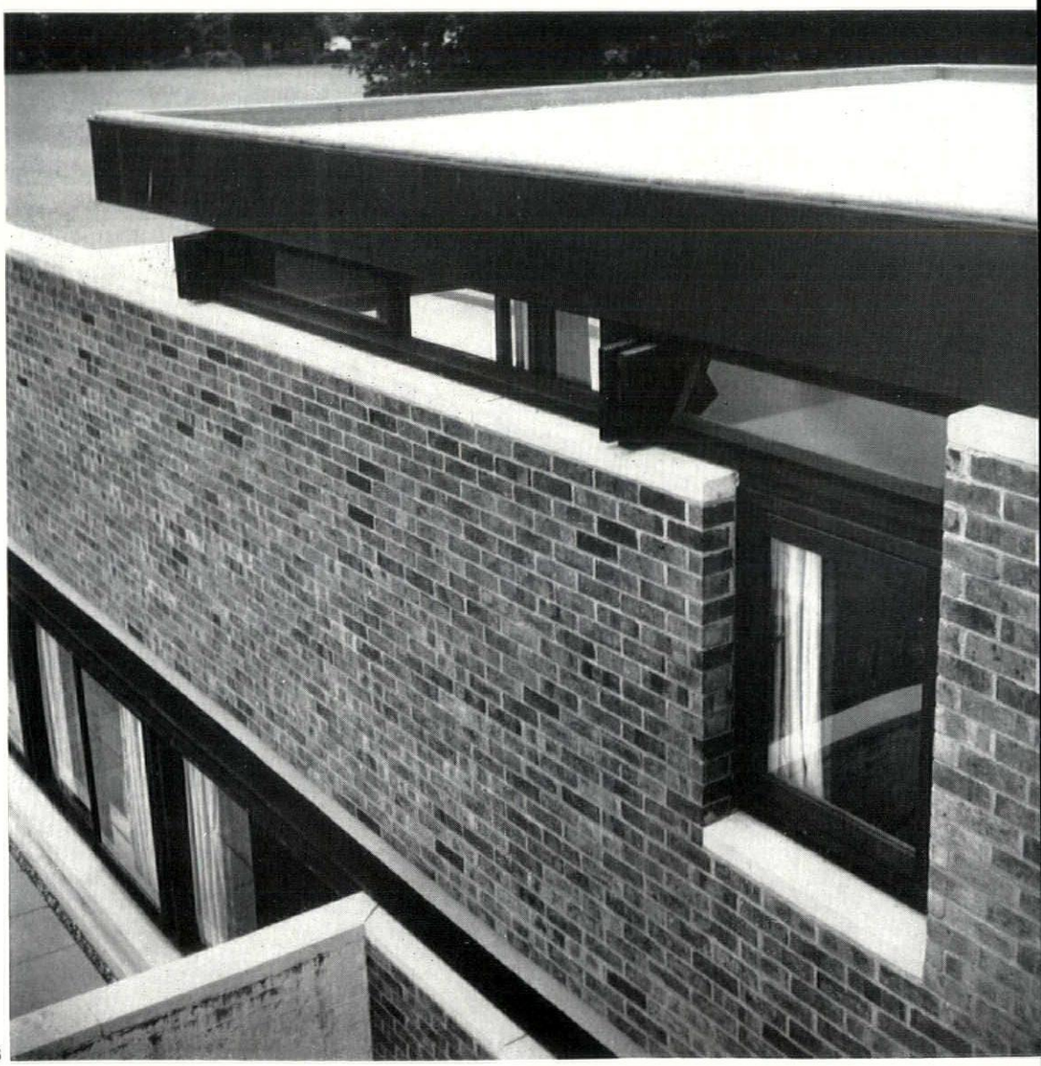
3



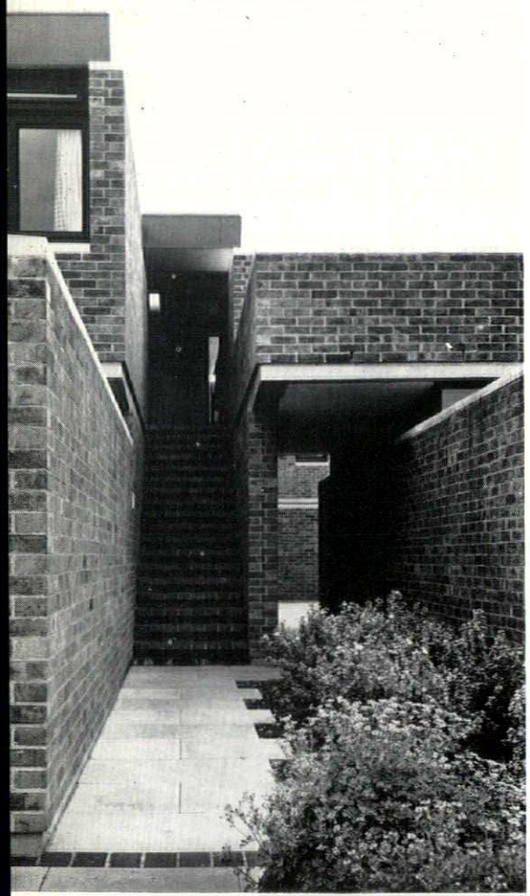
5

3, looking over the enclosed gardens from the roof. 4, entrance to first-floor flat and central courtyard. 5, from the north-east. 6, detail of first-floor window and roof.

photographs by Colin Westwood



6



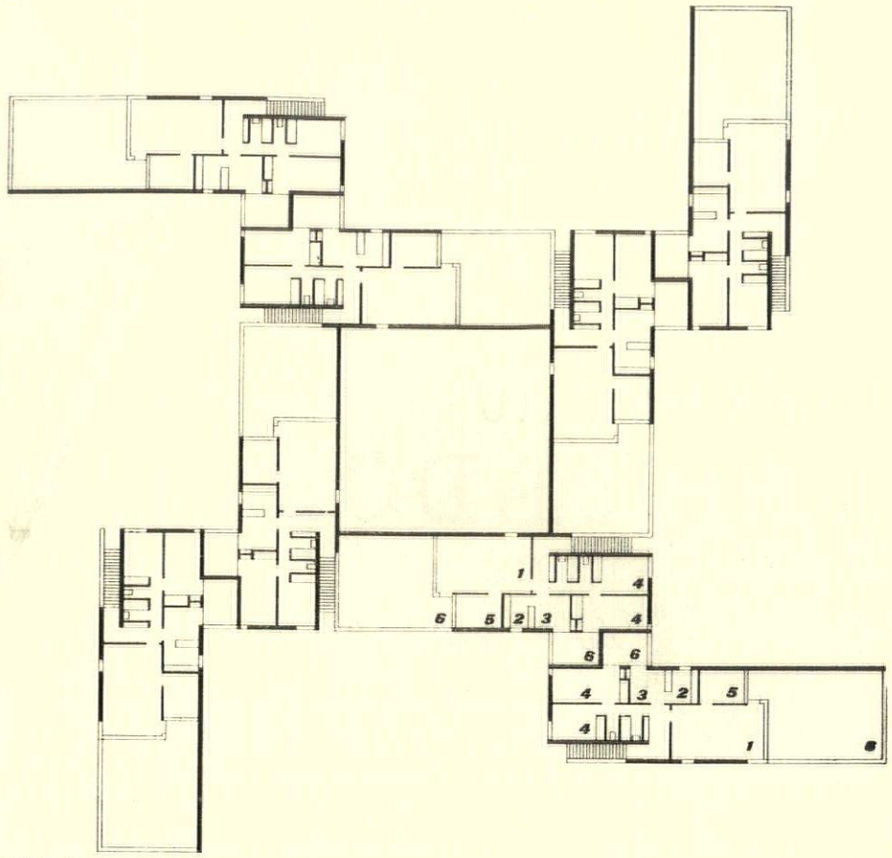
4

This group of twenty Fellows' flats (twelve on the ground floor and eight on the first floor) is the first stage of the new Churchill College and occupies the north-west corner of the site, being separated by playing fields from the main College buildings.

The flats are planned so that each has separate access (in the case of the ground floor flats through a walled forecourt; in the case of the upper flats by an outside stair) and so that each has privacy of outlook into a small enclosed garden (or, in the case of the upper flats, roof-terrace). All flats have living-room and two bedrooms and some have a study in addition.

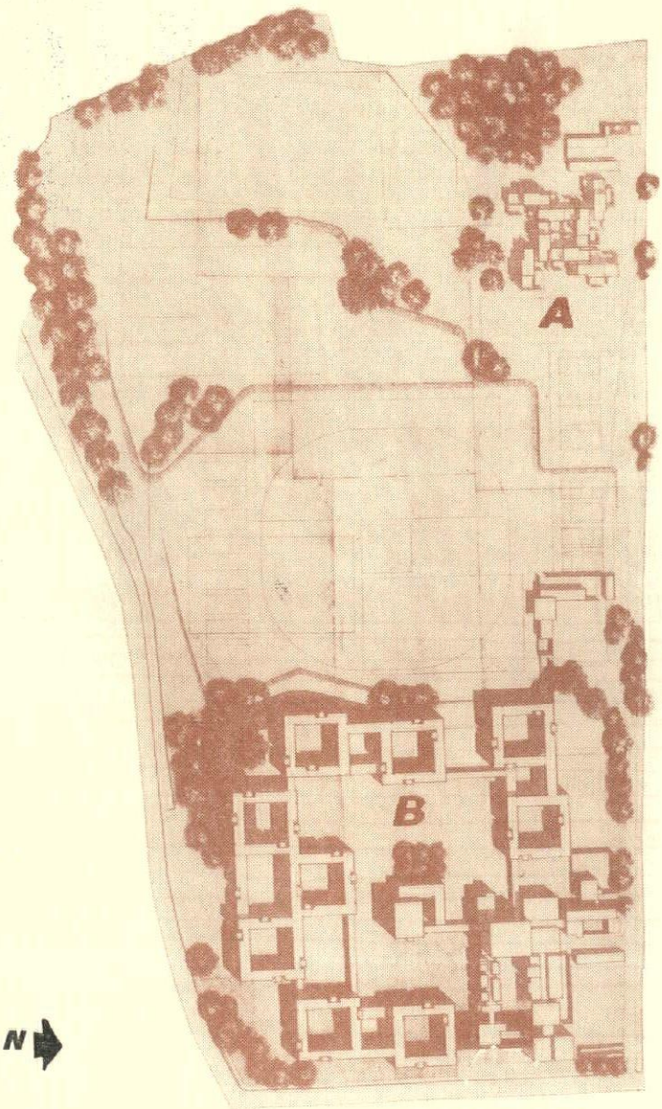
Construction is load-bearing brickwork with brown facings. Fascias are copper. Timber windows are Iroko, stained dark brown.

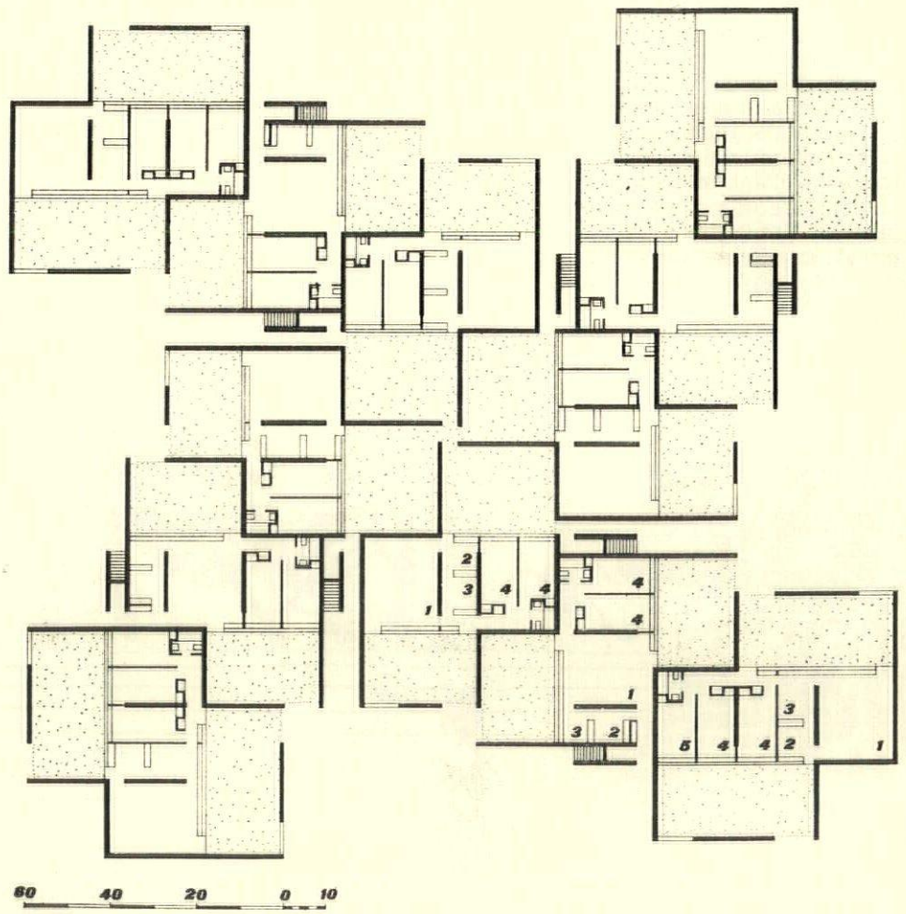
Structural engineers, Hajnal & Myers. Electrical consultants, Brown & Hooker. Heating consultant, L. J. Fowler. Quantity surveyors, E. C. Harris & Partners. Landscape architect, Mrs. S. Haywood.



first floor plan

site plan: A, Fellows' flats. B, main college buildings





ground floor plan

key
1, living room
2, kitchen
3, dining-space
4, bedrooms
5, study or bedroom
6, roof terrace

New Look at BASILDON Town Centre

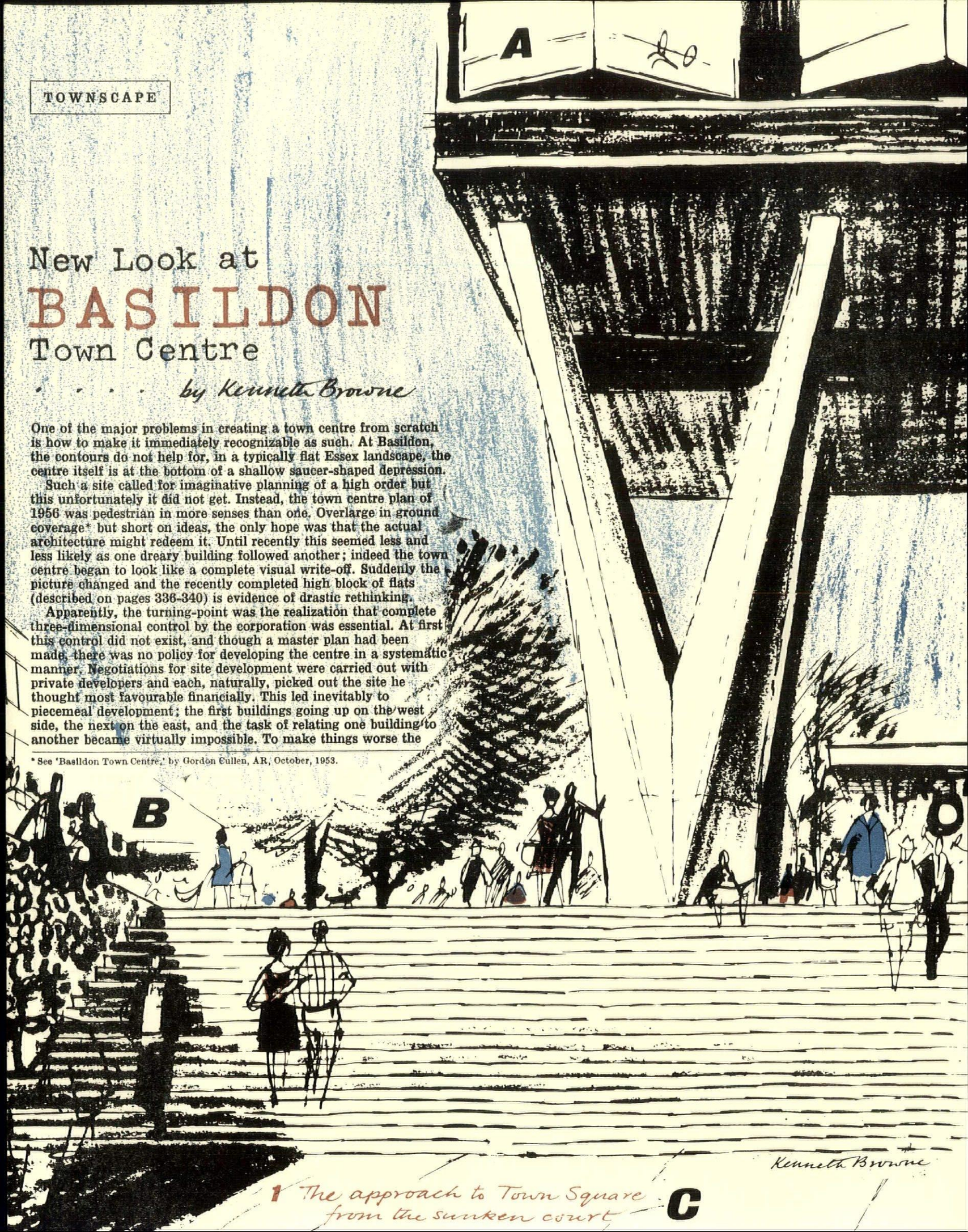
by Kenneth Browne

One of the major problems in creating a town centre from scratch is how to make it immediately recognizable as such. At Basildon, the contours do not help for, in a typically flat Essex landscape, the centre itself is at the bottom of a shallow saucer-shaped depression.

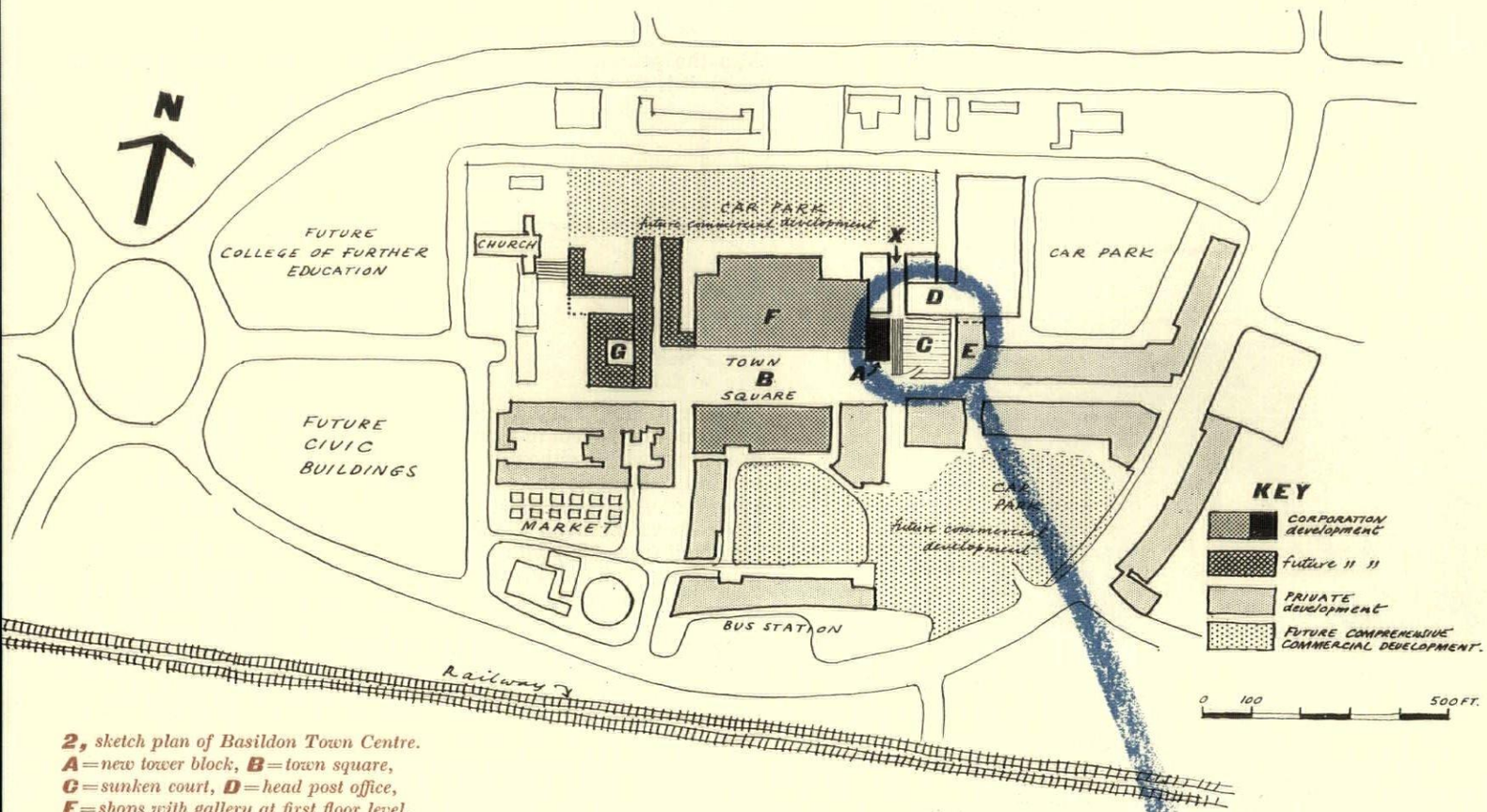
Such a site called for imaginative planning of a high order but this unfortunately it did not get. Instead, the town centre plan of 1956 was pedestrian in more senses than one. Overlarge in ground coverage* but short on ideas, the only hope was that the actual architecture might redeem it. Until recently this seemed less and less likely as one dreary building followed another; indeed the town centre began to look like a complete visual write-off. Suddenly the picture changed and the recently completed high block of flats (described on pages 336-340) is evidence of drastic rethinking.

Apparently, the turning-point was the realization that complete three-dimensional control by the corporation was essential. At first this control did not exist, and though a master plan had been made, there was no policy for developing the centre in a systematic manner. Negotiations for site development were carried out with private developers and each, naturally, picked out the site he thought most favourable financially. This led inevitably to piecemeal development; the first buildings going up on the west side, the next on the east, and the task of relating one building to another became virtually impossible. To make things worse the

* See 'Basildon Town Centre,' by Gordon Cullen, AR, October, 1953.



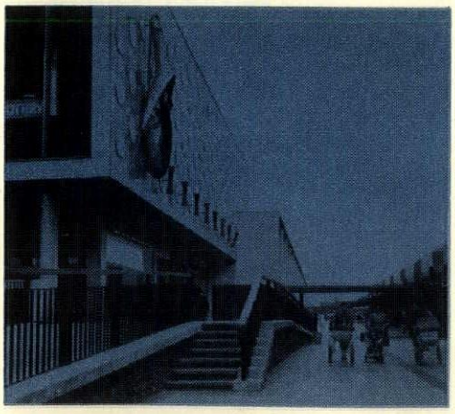
1 The approach to Town Square from the sunken court



2, sketch plan of Basildon Town Centre. A=new tower block, B=town square, C=sunken court, D=head post office, E=shops with gallery at first floor level, F=shops with colonnade, G=proposed department store with office block over.

designs were meretricious; full of gimmicks, jazzy facades, and exhibition-type art work, *3*.

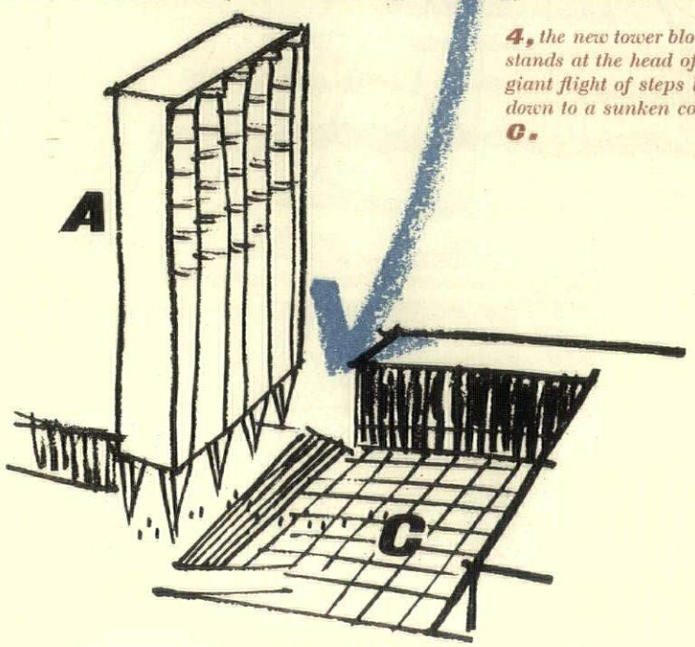
The results were so disastrous that the corporation eventually decided it would carry out all future development itself. The immediate problem then became one of pulling the disconnected pieces together by building up the key points in Town Square, *B* (see plan *2* above). At the same time, learning from experience, it was agreed that all further decoration (sculpture, murals, etc.) would be left until the final massing could be seen; even street lamps would be omitted, the square being lit by strip lighting along the canopies.



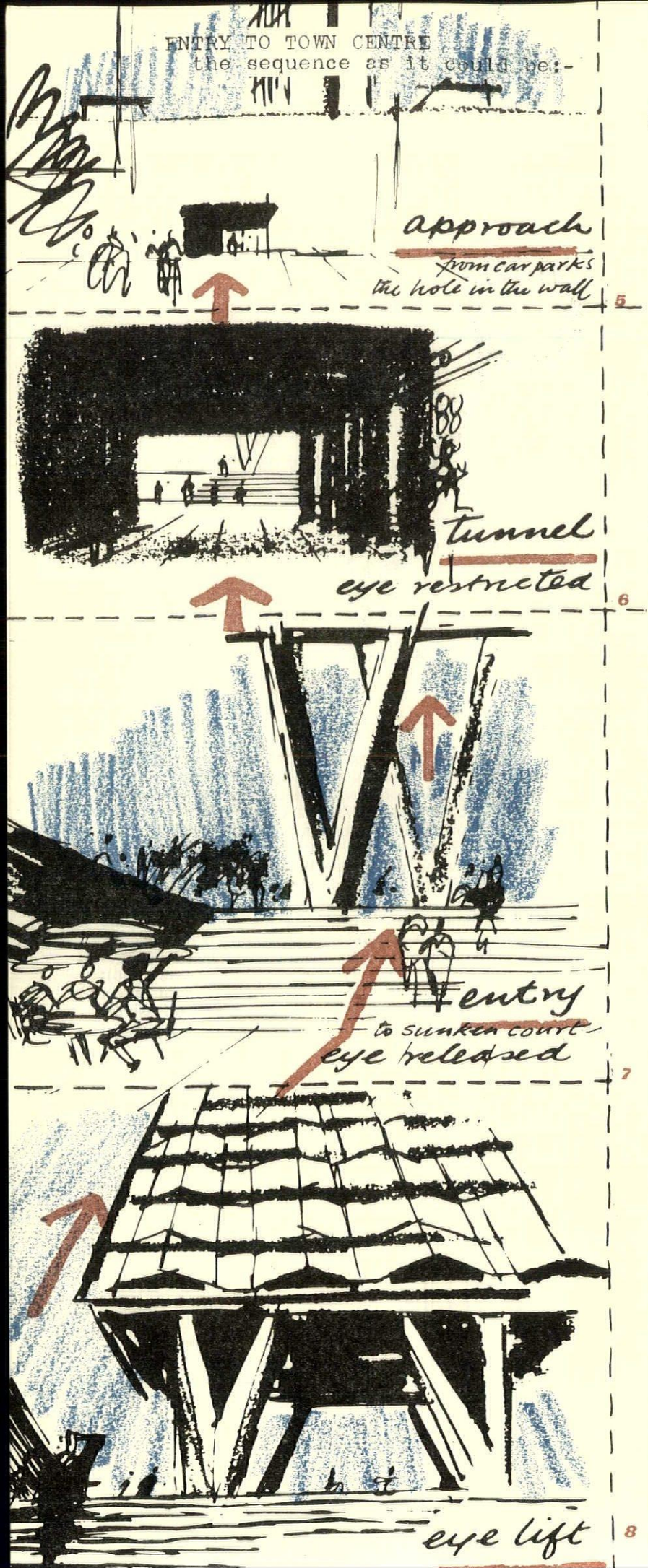
3, typical private development in the town centre.

From the outset it had been evident that on this flat site some tall building would be necessary to act as a marker for the town centre, and since town halls no longer have towers this meant either high offices or flats. The latter were chosen in order to bring residential accommodation right into the centre.

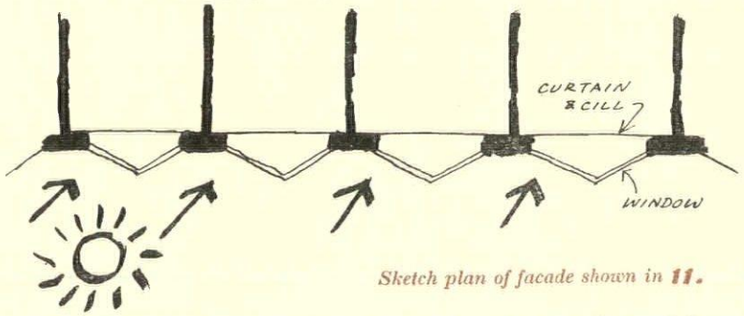
By present standards this block, recently completed (marked *A* on plan) is not high, only 161 feet, but by contrast with the surrounding buildings, of four storeys or less, it effectively dominates the centre (page 337). Near to, this dominance is further increased by an ingenious stroke of siting. Early on in the development of the plan a sunken court, *C*, had been designed at the east end of the main town square, *B*, cutting into the slight south-north ground fall. On its own it would have been just a hole in the ground, but by placing the new high block on the edge of it, approached by a giant flight of steps 100 feet wide, the effect obtained is tremendous *10, 14*. Suddenly the drama and scale so conspicuously absent in other New Towns is achieved. The building itself rises from the ground on eight huge concrete piloti 27 feet high (high enough for any of Basildon's houses to fit underneath) giving a scale that is really civic, No cheeseparing utility here, but a real gesture and incidentally one which borrows a leaf from classical precedent; the stepped podium to the temple. As with all good ideas, one thing leads to another, and from this juxtaposition of building and steps other townscape qualities follow. As you cross the sunken court the secrets of the square beyond are withheld *1*, until you have mounted the steps, when the fountain, trees, shops and people are seen framed between the piloti, *10, 15*. Had there been more steps the effect would have been better still. Indeed, these V-shaped columns would not work visually without the underlining provided by the steps. Though the junction of columns to superstructure is not entirely convincing, especially at the ends of the building, the 14-storey facade itself is completely unified and extremely distinguished (page 336); a simple pattern of bands of identical windows, faceted to reflect the light and also to give extra space and view without the fussiness of balconies. It will also overcome the disruptive effect of individual curtaining. This zig-zag window wall is a highly successful departure from the usual monotony of high block facades and in addition the scale is maintained (this looks a large building) but remains human.



4, the new tower block, A, stands at the head of a giant flight of steps leading down to a sunken court, C.



Also the pattern of the facade varies according to the angle from which it is seen (see page 338).



Sketch plan of facade shown in ***11.***

Town square, ***B,*** is perhaps over-large (and too divorced from traffic movement) but to a surprising extent this tall building holds the open space which without it would be a desert. To the west, in answer to the tall block to the east, the square is to be partly closed by a large store, ***G,*** penetrated by arcades and with a six-storey office block above. Between it and the high block is a run of shops, ***F,*** now built (page 336) with a dummy second floor screen which, while temporarily building up the wall of the square, will eventually be replaced by accommodation. This block is cleanly detailed with a rhythm of columns supporting a canopy which in turn houses the lighting for the square on its forward edge.

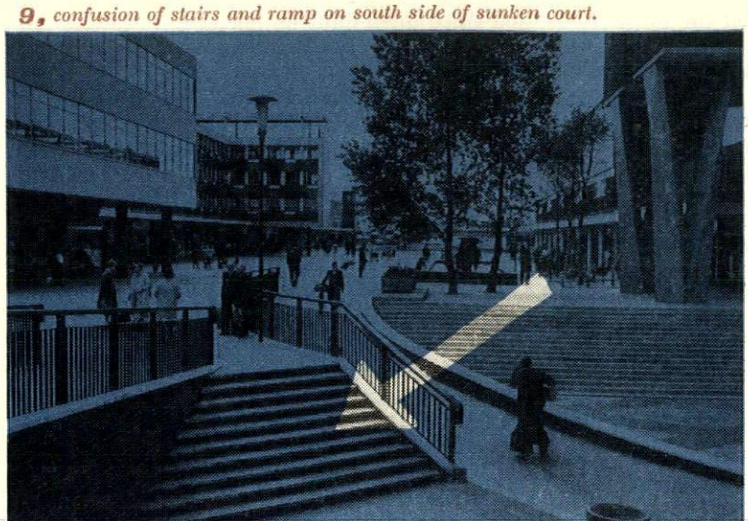
The walls of the sunken court, ***C,*** already mentioned, are faced with large pebbles, ***12,*** which give a strong, knobbly texture in contrast to the smooth paving; while the ramp leading down from Town Square is clearly stated for once ***13*** (ramps are generally a mess) with no balustrading to confuse the issue. Less fortunate is the awkward relationship of ramp and stair at the south side of the court, ***9;*** surely this additional stair was unnecessary ? Apparently left over from the original plan, it detracts from the simplicity of the idea.

As a townscape sequence, the progression of sunken court—monumental steps—soaring piloti—high building, is excellent, but what is lacking at the moment is the impact of surprise, that most valuable gambit to the moving eye. This is because the first stages of the sequence are missing and is largely a question of how the low-level court is entered from the car-parks on the perimeter. Here the buildings are incomplete so it is perhaps unfair to judge, but it seems that entry is intended by an alley (***X*** on plan) in line with the tall block, and this should give an interesting profile view of the flight of steps and the piloti. However, to get the full impact it would be necessary to enter the square by a low, burrowing tunnel, ***5, 6,*** with large views (sky, etc.) withheld (this could be done by penetrating blocks ***D*** or ***E***) the eye restricted until the very end, then released, ***7,*** to soar up the steps, piloti and the face of the high block, ***8.*** What an introduction that would be to the town centre.

10	11
12	13
14	15

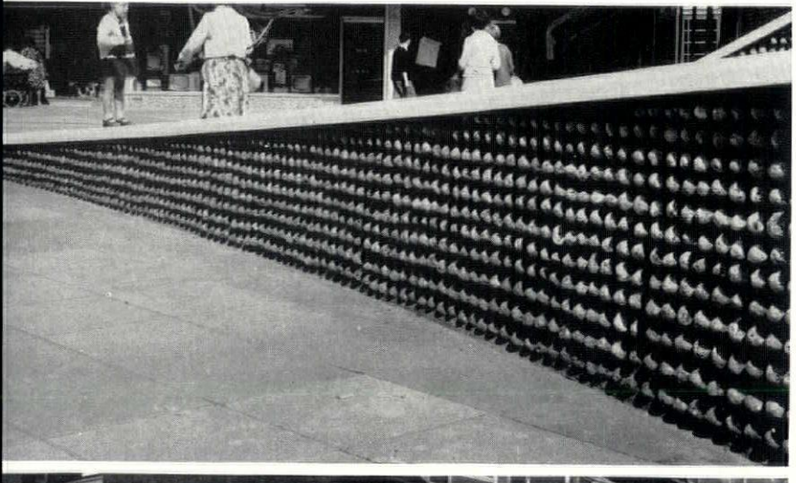
10, *view of sunken court from gallery of shops* ***E.***
11, *the zig-zag facade of the tower block showing the identical window units.*
12, 13, *ramp leading down to sunken court from town square.*
14, *base of tower block as seen from first-floor cafe on opposite side of town square.*
15, *piloti of tower block.*

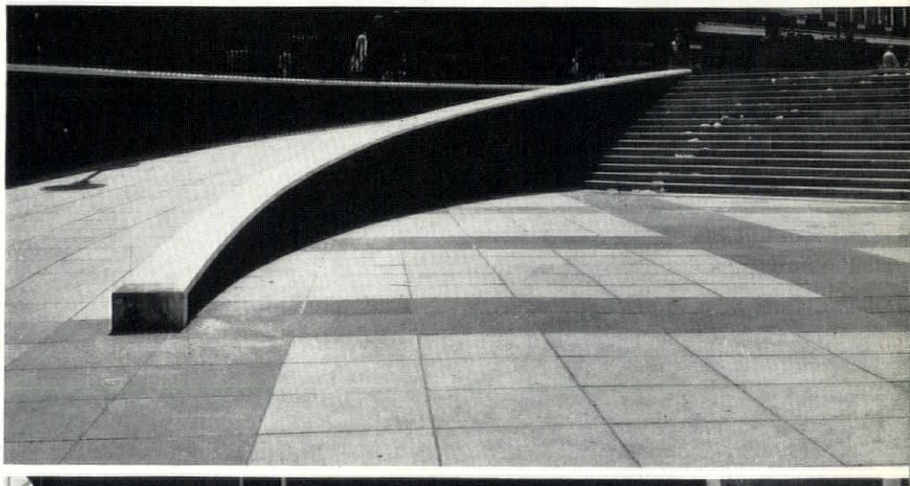
9, *confusion of stairs and ramp on south side of sunken court.*















TOWER BLOCK AT BASILDON NEW TOWN

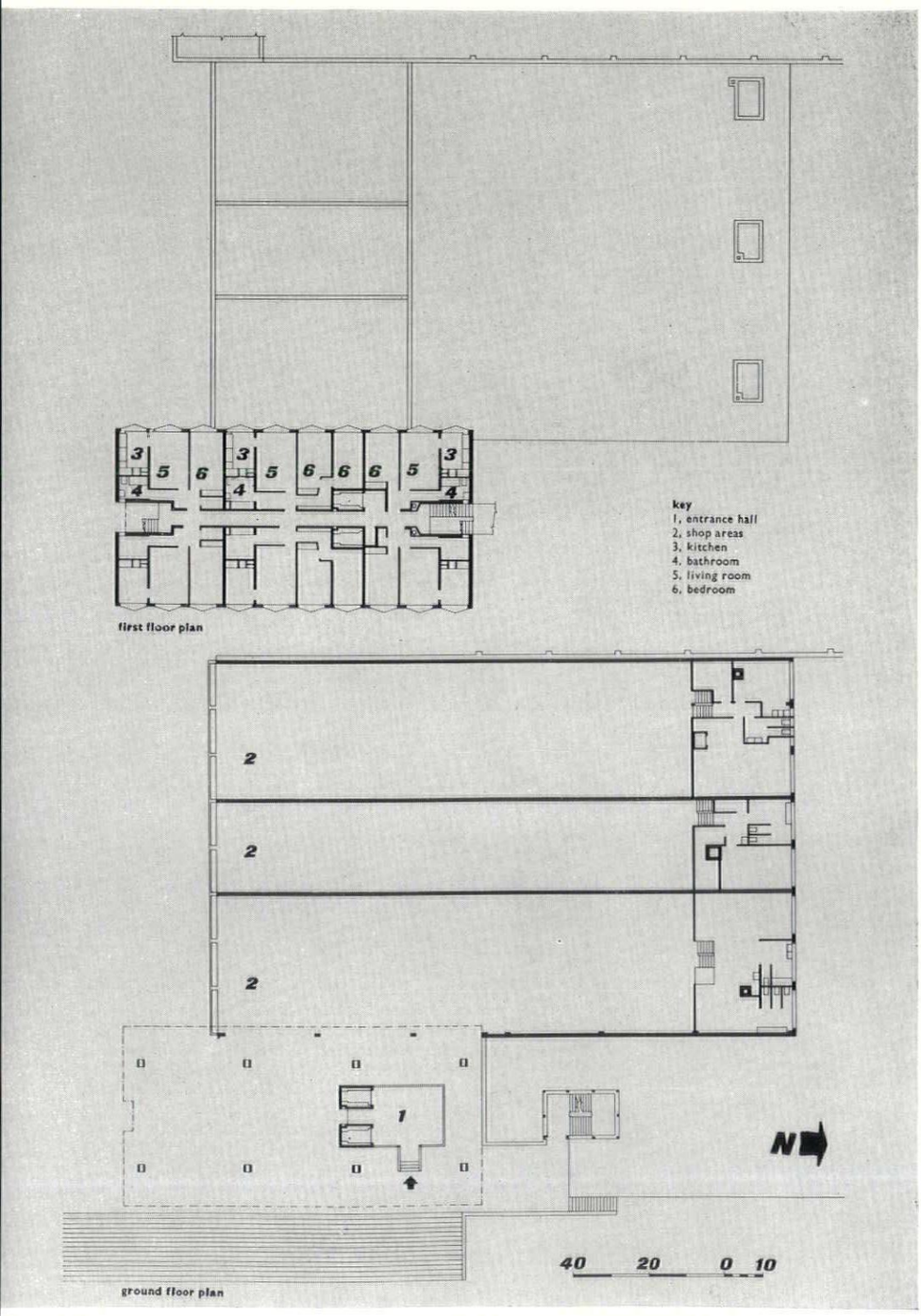
ARCHITECT | **A. B. DAVIES (Chief Architect-Planner, Basildon Development Corporation)**

1





1 (opposite), the west elevation from Town Square. 2, aerial view from the south-east.



Brooke House is a fourteen-storey tower containing 84 flats supported on eight piloti 27ft. high, and stands over a basement garage accommodating 53 cars. The tower is 94ft. long, 48ft. wide and has the overall height of 161ft. from pavement level. The flats are arranged six to a floor in fourteen floors, each of which comprises four single-bedroom and two double-bedroom flats, entered from a central corridor. Access is by two high-speed lifts travelling at 300 feet per minute and is either direct from the ground floor entrance hall or from the basement garage. Each flat contains an entrance hall, living room, kitchen, bathroom and one or two bedrooms, with approximate floor areas of 510 sq. ft. for one bedroomed flats and 680 sq. ft. for two-bedroomed flats.

The building is constructed in in-situ reinforced concrete and stands on a piled foundation having 4ft. 6in. diameter bored holes 45ft. deep. The reinforced concrete piloti are arranged so that each supports a pair of parallel reinforced concrete cross-walls which are 6in. thick rising through the full height of the building. Floor slabs are generally 7in. thick of hollow tiled construction, while the lowest floor slab is of solid construction.

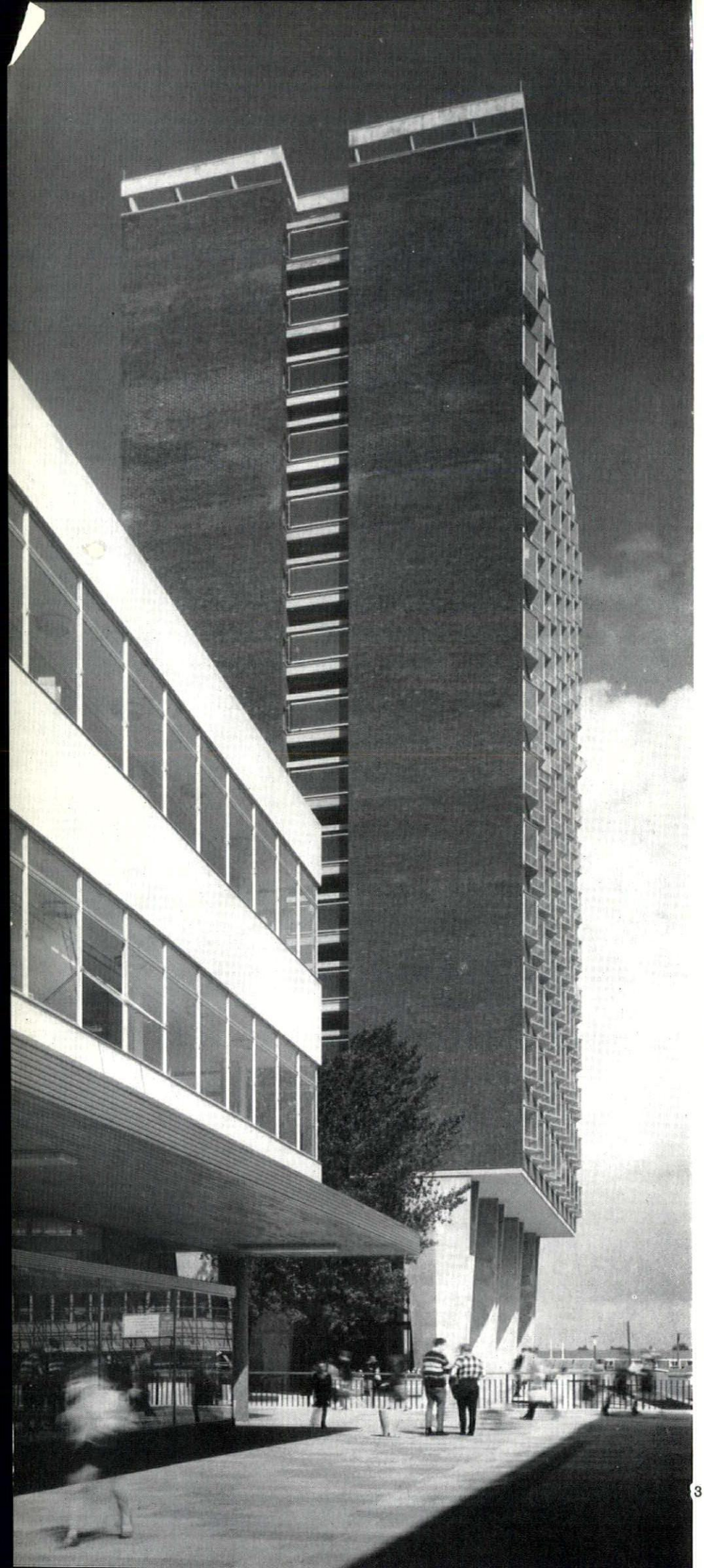
Generally the building is faced externally with black facing bricks, double-glazed aluminium windows and glass infill panels. All exposed structural concrete members are finished fair-faced. The flats are insulated from one another with woodwool linings to the cross-walls, and a 1in. sandwich of mineral wool incorporated in the floor construction.

Internal finishes include hardwood and thermoplastic floor surfaces, plaster and Makore-panelled walls and doors. Built-in cupboards and fittings in the kitchen have been finished with laminated plastic working surfaces and have hardwood-faced drawers and stainless steel sinks. Permanent artificial ventilation is provided in the internal bathrooms of the two-bedroomed flats and controllable mechanical ventilation is provided for the drying cabinets in all flats.

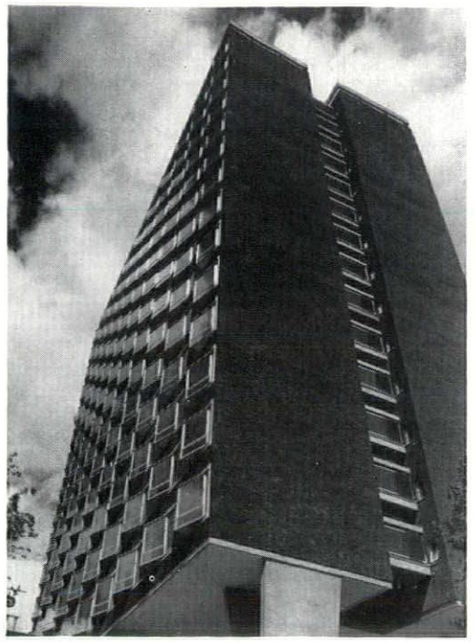
All electric, gas and water mains, together with other services, enter the building below Town Square level, and are carried up through the piloti to vertical ducts which extend the full height of the building and serve all flats. Heating and hot water services are electrically operated, each flat being provided with an

[continued on page 339

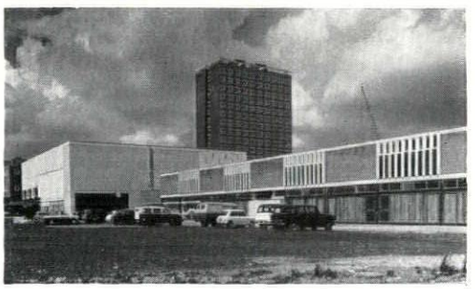
TOWER BLOCK AT BASILDON NEW TOWN



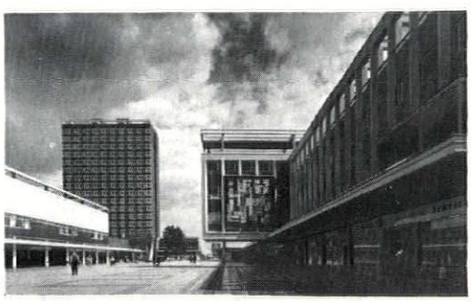
3



4



5



6

3, from the south ; finished in brick, fair-faced concrete and aluminium, the building needs no external maintenance. 4, the diagonal pattern of the façade which is apparent from certain viewpoints. 5, from the south-east. 6, from the west end of Town Square. 7 opposite page, looking up at the east side of the building from the sunken pedestrian area. The windows project to give tenants a feeling of space without the clutter of balconies, and also allow the curtains to hang away from the façade. See also the frontispiece to this issue.



7

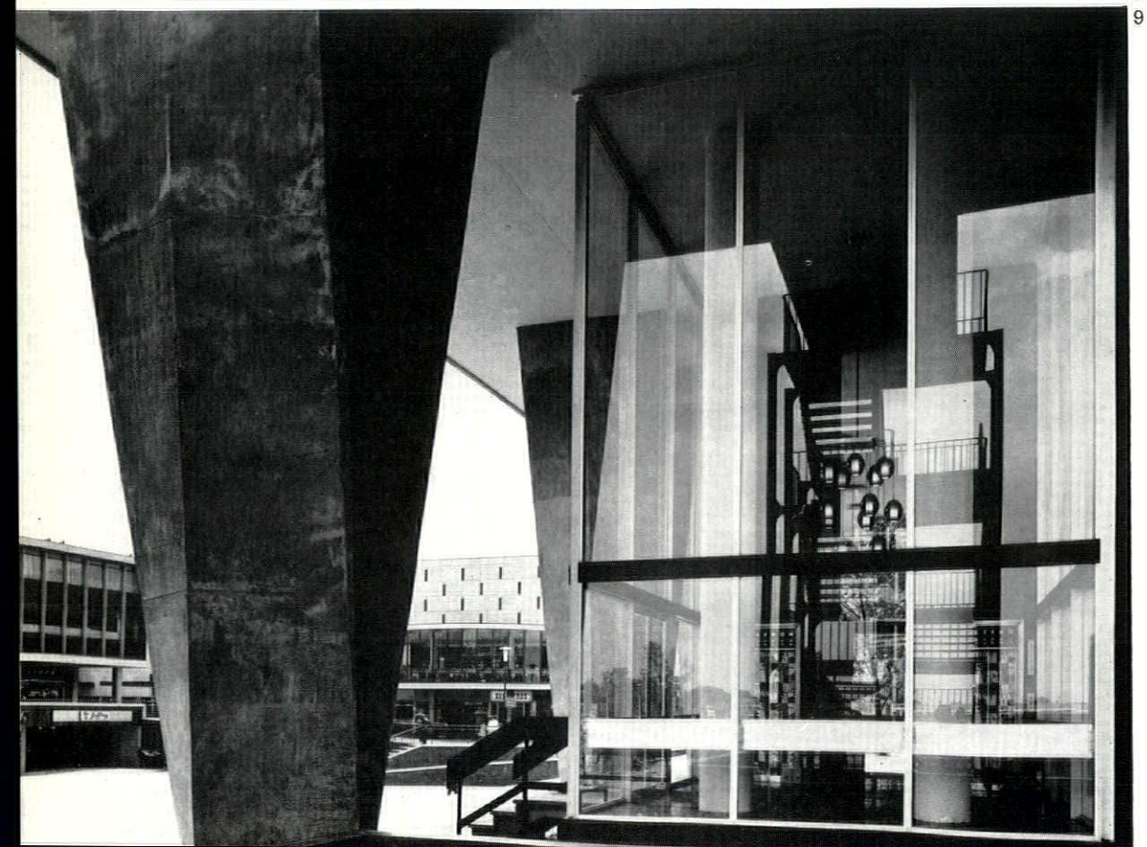
continued from page 337

underfloor heating installation controlled separately in each room and operating on off-peak tariffs. In addition, the living room is fitted with an electric convector heater to provide further warmth if required. Television aerial and telephone sockets are provided in each flat and refuse disposal is by chute to the basement.

Adviser on the town centre development, Sir Basil Spence. Structural engineers, Ove Arup and Partners. Quantity surveyors, E. C. Harris and Partners.



8



9

8, 9, two views of the glazed entrance hall on the ground floor. The reinforced concrete piloti carry the weight of the block on to the tops of the pile foundations.

MICHAEL BRAWNE

AIRPORT PASSENGER BUILDINGS

Last month, Reyner Banham and Raymond Spurrier discussed some of the generalized problems of airport design for the jet age. In the article below, Michael Brawne examines one specific but crucial problem of airport design—passenger handling—and the buildings that are concerned with it. For a pre-jet estimate of the same subject, readers should consult Lionel Brett's article in AR July 1955, and reflect upon the manner as well as the speed with which the problem has changed.

The last forty years have seen the emergence of three new building types: the airport, the parking terminal and the regional shopping centre. All three are made possible and necessary by the enormously increased personal mobility within industrialized societies. The parking structure and the airport are the points of interchange, the termini, of the new forms of transport, the shopping centre the commercial focus of a society based upon one of them. The architectural development of these new forms has barely kept pace with that of the means of transport which they serve, and the gap is probably widest and felt most acutely in the case of airports. The most sophisticated method of travel in use—space capsules excluded—places heavy demands upon architectural ingenuity both in terms of organization and visual content.

Every transportation network viewed as a whole consists of two elements: routes and points of interchange. The routes are particular to each system and can be either highly channelled as in the case of the railway or relatively free as in the case of shipping. The stops, the points of interchange, are the meeting places between the various systems or between the system and the pedestrian who still uses the most ubiquitous means available, two legs. Within the air-travel network it is the airport which is the point of interchange and within it, as far as the traveller is concerned, the passenger-handling building, which represents the image if not always the reality of the point of transfer.

The airport is, of course, not a single structure but a complex of runways, hangars, control towers, cargo buildings, workshops, fuel bases, flight kitchens, parking areas and the paraphernalia of servicing and maintenance which grow around these. The functioning of this complex and its implications on the surrounding area, not least in its extraordinary land hunger, were discussed in the REVIEW last month. The passenger-handling building poses within this complex, however, the greatest architectural problem not only because of its inherent planning difficulties but because it most concerns itself with people. As in almost every instance it can be taken as axiomatic that the amount of architectural involvement is proportional to the intensity of human use; an underground tunnel is not an architectural problem, an underground station is.

Last year something like 120 million people travelled on the world's scheduled airlines, 98 million outside Russia and China and an estimated 20 million inside, and on each flight they passed through a passenger building at least twice. This new building type must thus, during 1961, have been used on over 250 million occasions. A very large proportion of these passengers will have been bewildered and confused by the building, will have had to be shepherded through it at great expense, will have been bored waiting and annoyed by petty inconveniences and, in all cases, been treated less royally than in the air.

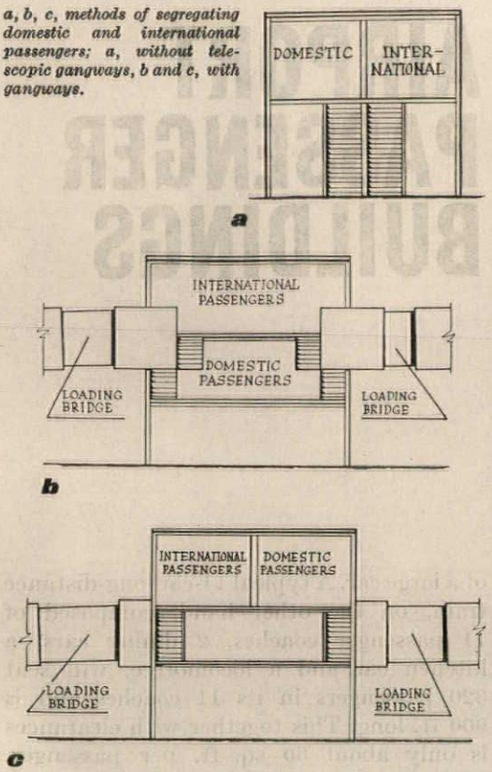
It is true, of course, that in all methods of transportation there is the greatest confusion and inconvenience at the points of transfer, for it is there that the established flow is interrupted. This appears to be particularly true, however, of air travel and is largely due to the size and power of aircraft. Remedial action must thus also be more drastic.

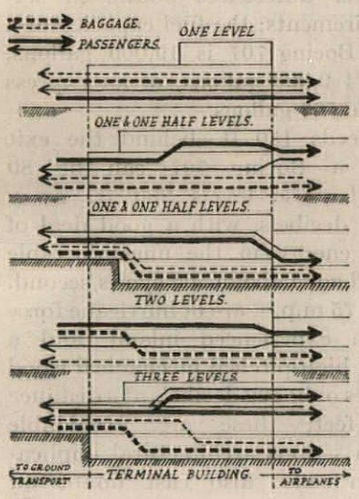
A large long-range aircraft occupies roughly a 150 ft. square—length and span are almost equal in current design—40 ft. high; together with clearances this produces a 200 ft. diameter parking circle. Yet the number of passengers carried even in the largest aircraft is still relatively small: 200 in a Tupolev 114, 140 in a Boeing 707. 200 sq. ft. per passenger in terms of parking space alone is thus a minimum. This is equal to the parking bay of a large car. A typical 14-car long-distance train, on the other hand, composed of 11 passenger coaches, 2 dining cars, a kitchen car and a locomotive, will seat 320 passengers in its 11 coaches and is 900 ft. long. This together with clearances is only about 30 sq. ft. per passenger. Even greater differences obtain in servicing requirements: the fuel capacity of a long range Boeing 707 is 19,000 gallons, of a Comet 4 9,000 gallons, of an express diesel engine 500 gallons.

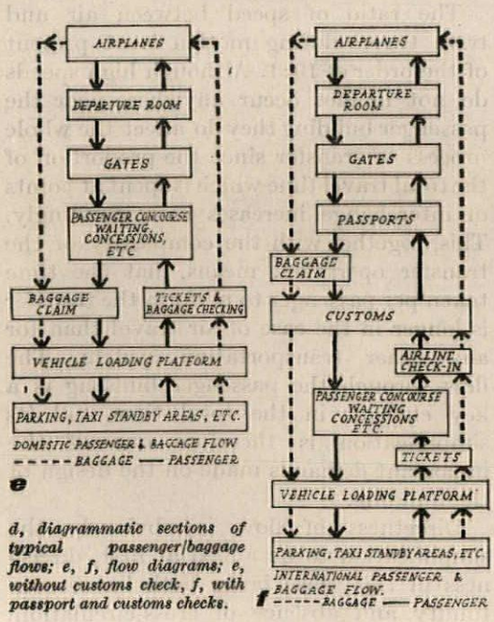
Wind speeds 150 ft. behind the exit nozzles of a Boeing 707 can be 80 m.p.h., and noise levels 200 ft. away around 120 decibels, with a good deal of this sound energy in the uncomfortable high pitched zone above 500 cycles/second. Winds over 75 m.p.h. are of hurricane force and seldom experienced inland, and a comparably high-pitched mechanical wood saw produces only 100 decibels at a distance of three feet; these are formidable figures with serious architectural implications which must also cast doubt on current solutions.

The ratio of speed between air and train travel during motion is at present of the order of 10:1. Although high speeds do not in fact occur anywhere near the passenger building they do affect the whole process of transfer since the proportion of the total travel time which is spent at points of interchange increases correspondingly. This, together with the complexity of the transfer operation, means that the time taken per passenger to perform the transfer is longer in the case of air travel than for any other transportation system. The flow through the passenger building is a key element in the total time and its simplification is therefore one of the important demands made on the design of the building.

Directness of flow is obviously the simplification to be aimed at first, directness in this sense being both linear continuity and absence of cross-circulation.







d, diagrammatic sections of typical passenger/baggage flows; e, f, flow diagrams; e, without customs check, f, with passport and customs checks.

These criteria apply equally to passengers and to baggage. The first step is, therefore, to separate flows and to maintain a continuity within each, and to do this, moreover, without complex signposting or hustling hostesses. Signs must be direct and their message comprehensible without a knowledge of the language of the country. Departure time, destination and gate number should be the only information required, and these are sufficiently international in meaning and similar enough to the railway indicator not to need further explanation. The simplest and most telling guide to the general direction of movement is, of course, to be able to see the aircraft. As in all problems of this kind, the design of the section becomes as crucial as that of the plan, and recent airport design has in fact been greatly concerned with the resolution of the section.

The separation of flow applies to types of passengers—incoming, outgoing, domestic, international—and to passengers from baggage, and not, as in London's short-haul building as originally designed, to groups of passengers within the same category. Such differentiation hinders flow since the group is shepherded through at the pace of the slowest member. The method does not take into account the benefits of random use which allow dispersal of passengers across all available control points rather than the overloading of one point at a time. The same problems of flow and random use occur at car parking terminals and the checking points of supermarkets, and as in the case of these two building forms, it is the rate of movement through the control points—the potential bottlenecks—which will determine the size of the reservoir space required.

In the case of airports, the rate of movement can be further confused by two unpredictable elements, the weather and mechanical trouble of the aircraft, which will increase the reservoir space—lounges, restaurants—beyond that otherwise needed. From the point of view of maximum space use this reservoir area should be common to as many passenger types as possible so that the probability of it becoming overcrowded at any one time is least. A waiting area shared by outgoing domestic and international passengers, for example, which is on the land side of passport control, is less likely to reach its capacity than the same area divided and apportioned between domestic and international traffic. The relative position of flow and reservoir spaces on plan and section is thus crucial in the design of the passenger-handling building. This presupposes, of course, that there is in fact a compelling need for such a building.

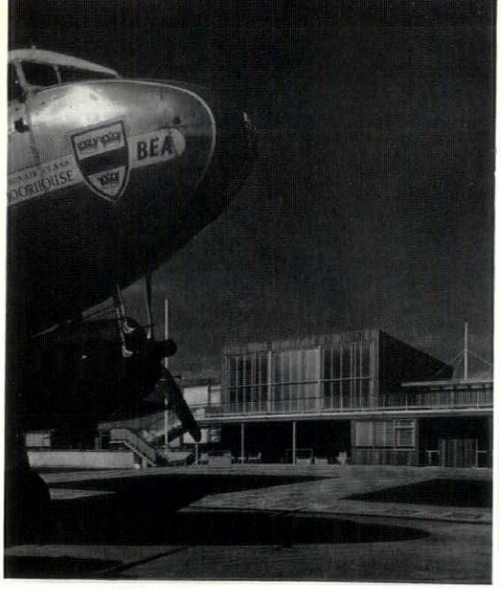
Ignoring for the moment subsidiary elements like offices and concessions, the building must allow for three distinct functions. The first concerns control, which consists partly of checking—tickets, luggage, passports—and partly of sorting—into flights, on to buses. This is the flow element. The second concerns storage—people, baggage, mail—for periods which are normally quite short and predictable in relation to known time-tables but which may on occasion become protracted and difficult to estimate. This is the reservoir portion. The third concerns the provision of shelter from the weather during the transfer process and also, especially with the use of turbine-powered aircraft, from blast, noise, heat and fumes. This element is the building envelope and its mechanical extensions. Other uses are ancillary to these primary functions: airline offices to control, concessions to storage.

In its simplest form the sequence of use and the relation of flow and reservoir spaces is shown in two diagrams, *e, f*. An analysis of these will at once show that in the two end zones—vehicle loading and airplane embarkation—there will be a conflict with any attempt to design a building of short economic circulation since it is in these zones that extensive perimeter is needed. In view of the very great size of aircraft in relation to passenger numbers, this will be particularly acute in the embarkation zone. Until aircraft became large and passenger buildings had to cope with ten, twenty or more planes at a time it was possible to present a long face to the apron and attempt to reach each aircraft direct from the building. This is no longer feasible except where numbers are still small as for example in Pan American's Unit Terminal at Idlewild, *n*, where six of the jets to be parked can be brought under an elliptical canopy and entered from a central concourse.

Perimeter can, of course, be gained by the design of linear extensions to the building. These can then have aircraft on both sides and have further branches to become T or Y shaped. This is the pier system and currently the most common design. Alternatively the passenger building can to some extent be decentralized into a series of satellite buildings reached from the main terminal building by piers or tunnels. Aircraft movement around such satellites is greatly simplified but the distance between vehicle loading and embarkation becomes unacceptable, often several thousand feet. By way of comparison the walk down the length of a standard long distance train and through a concourse is about one thousand feet.

There is now also a practical compromise solution in which the main building deals with flow and has only a single reservoir space and there are small waiting areas

[*continued on page 347*



1

AIRPORT PASSENGER BUILDINGS

1, *Turnhouse Airport, Edinburgh, passenger buildings by Robert Matthew and Partners; open-apron parking, possible nowadays only under light traffic conditions.*
2, *United Airlines Terminal, Idlewild, by Skidmore, Owings and Merrill; 'Jetway' telescopic gangways serve both entrances to the aircraft, but enforce a rigid pattern of parking.*
3, *United Airlines Terminal at San Francisco, a bridge-access satellite of the sort increasingly required for economical access, given rigid parking patterns.*
4, *American Airlines Terminal, Los Angeles International Airport, one of five tunnel-access satellites (by Charles Luckman and Associates). The short-gangway access to aircraft parked nose-in, permits the use of the forward door only.*

2





3



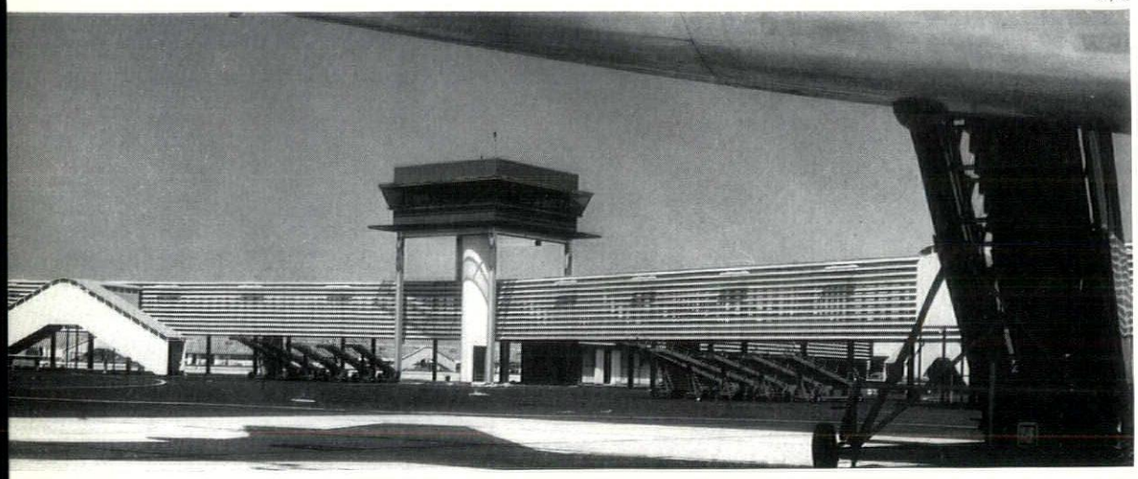
4



5

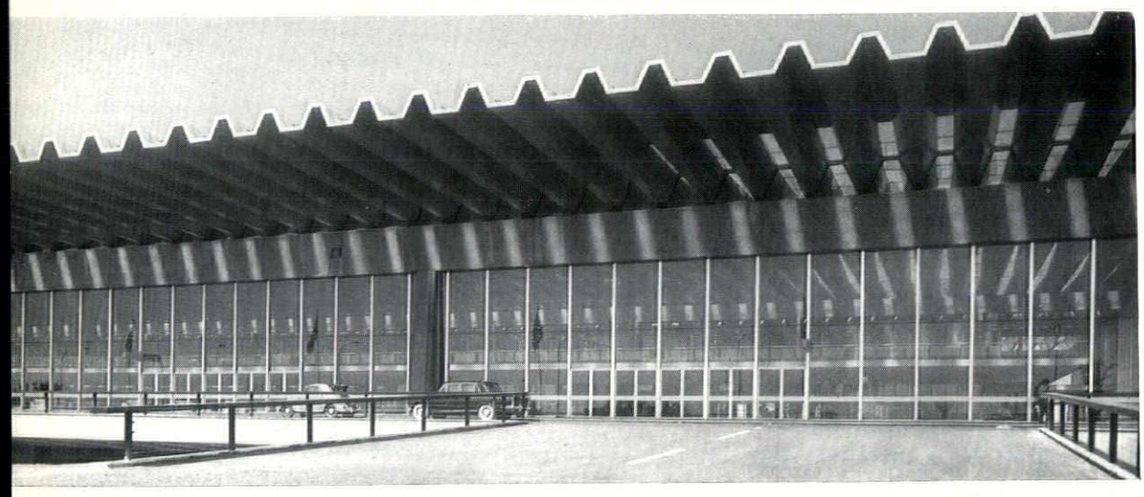
5, 6, 7, Copenhagen International Airport by Vilhelm Lauritzen; finger-access, one of the most distinguished of recent European airports—5 is the courtyard of the staff canteen.
8, 9, Leonardo da Vinci Airport, Rome (Fiumicino), by Luccichenti and Monaco, vast, repetitive and monumental two-fingered layout with unusually lavish interiors, 9.
10, 11, Orly International Airport, Paris, designed by the architectural staff of the Aeroport de Paris. A plain passenger-processing factory with over-long fingers, but humanely-planned in some parts—10 is the rooftop viewing deck with canopy by Jean Prouvé and Neill Hutchison.
12, Pan-American Terminal, Idlewild, by Tippets, Abbott, McCarthy and Stratton; canopy provides nose-in parking under cover for six aircraft (see diagram n, p. 347).
13, 14, TWA Terminal, Idlewild, by Eero Saarinen and Associates; external, 13, and internal architecture, 14, designed to emphasize

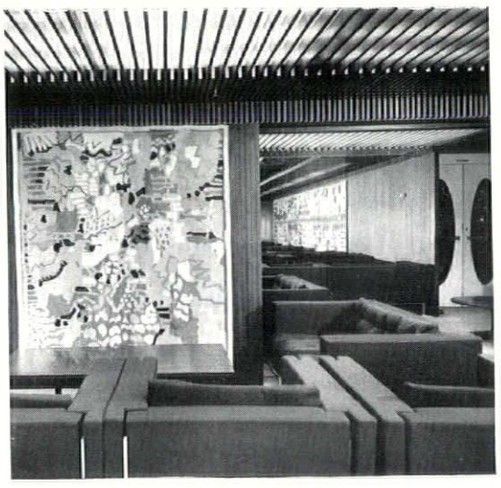
6, 8

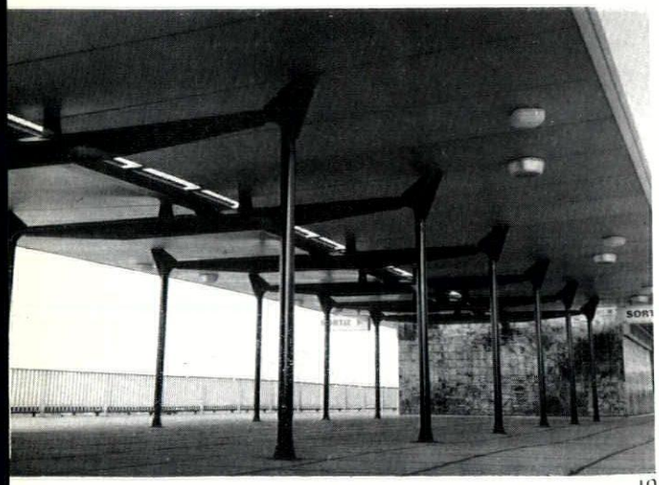


7, 9

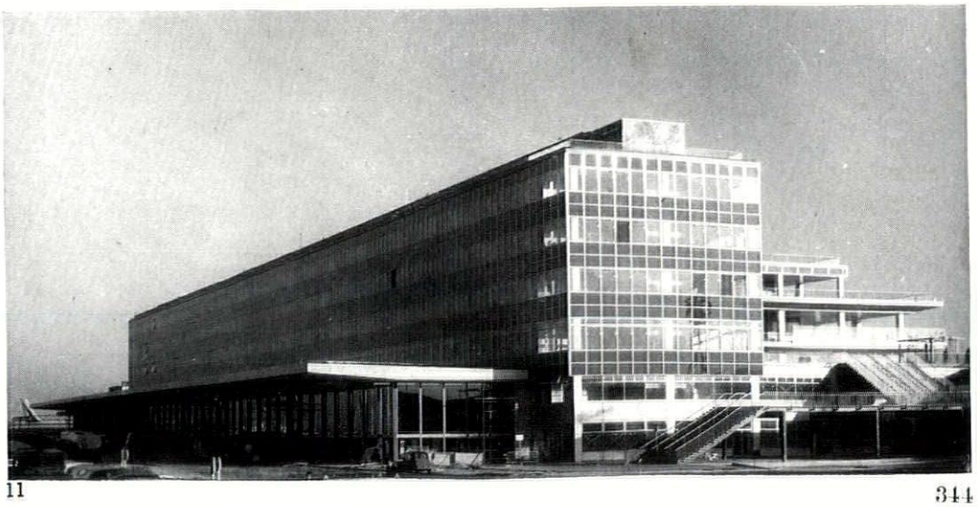








10



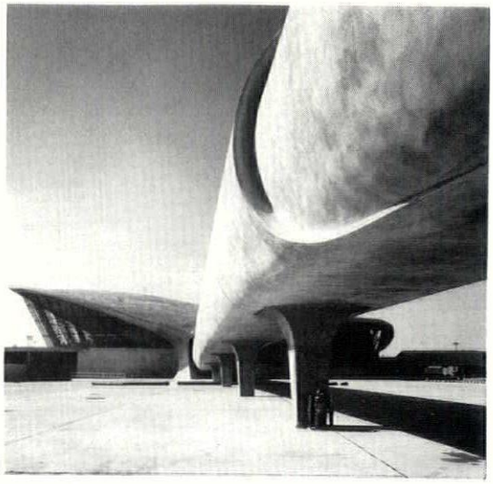
11

and facilitate passenger flow.
15, *bus underpass at O'Hare International Airport, Chicago, by Skidmore, Owings and Merrill—a distinguished and beautifully detailed design, but marred by excessive walking distances.*
16, 17, *mobile lounges and main buildings at Dulles International Airport, Washington D.C. (Chantilly) by Eero Saarinen and Associates. The mobile lounges eliminate all fingers and gangways, permitting open-apron parking.*

12

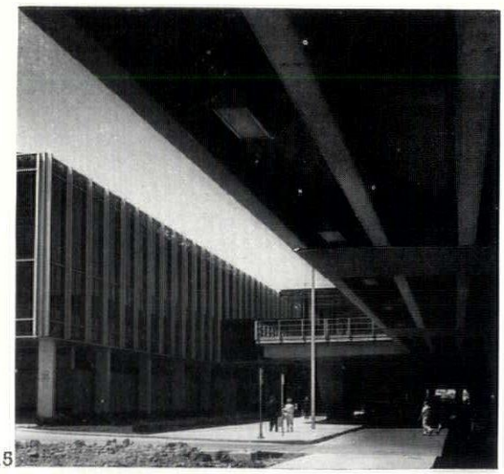


13, 14





15





16

17





18

18, 19, *control building and 'theme restaurant' at Los Angeles International Airport, by Charles Luckman and Associates.*
20, *project for Toronto International Airport by John B. Parkin Associates; tunnel access terminal with a ring-gallery and piers.*
21, *interior of the long-haul building, London Airport, by Frederick Gibberd and Partners; best recent Heathrow interior.*
22, *Ringway Airport, Manchester, by the City Architect's Department; finger-plan layout, opened last month.*
23, 24, *Tulsa Airport, Oklahoma, by Murray-Jones-Murray; prize-winning two-level scheme.*



20

AIRPORT PASSENGER BUILDINGS

19, 22



21, 23, 24









continued from page 342]

related to each gate in the pier. Passengers find their own way at their own pace through the main building. This is analogous to the railway station concourse and its subsidiary platform waiting rooms. In any of these plan arrangements it is still essential to separate the various flows and some of the possible design variants are shown in diagrammatic form, *a*, *b*, *c*, and *d*.

The airport passenger building is not, of course, the only place in which the airlines check and assemble passengers. In London at present about half the number of travellers book in at the town terminal and are taken out by bus to the airport. This is a fairly usual percentage. They arrive as a neatly ticketed, weighed and sorted package to be disgorged into the free-for-all of the terminal building and to emerge, with luck, half an hour later as the same ticketed, weighed and sorted package ready to board the aircraft.

The remaining half will arrive by car and a large proportion of these will attempt to park near the building. Yet several thousand others will want to do the same and to leave their cars there until they return in the evening or even a few days later. The amount of space needed is thus very great and the distance to the building becomes as critical as in the design of regional shopping centres amid their acres of asphalt.

There are thus serious difficulties at both the land and air side of the point of transfer, and the building which is attempting to connect the two becomes an excessively long and cumbersome bridge. The question then arises whether the three functions of control, storage and protection can perhaps be carried out some other way.

There is no doubt that departing domestic flight passengers coming from the town terminal could be taken in their bus direct to the aircraft. This could also happen to international flights if passport and customs control—for outgoing passengers in any case a mere formality—took place in the bus within a control zone at the apron. Such inspection is carried out perfectly happily on trains and there seems no reason not to do it on a bus. The reverse procedure is equally workable for incoming flights.

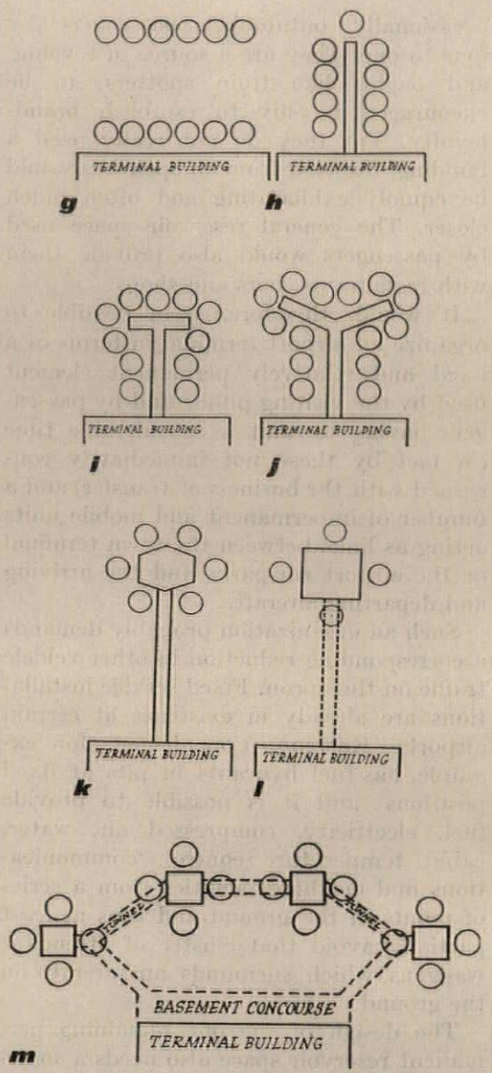
A very similar method could be adopted for those coming by car. Areas of car park could be allocated to particular airlines and easily identifiable buses parked in these areas perhaps half an hour before flight time. Such buses could be equipped with weighing machines and the information relayed to a central position by telephone, radio or pneumatic tube so that flight manifests could be completed on time. These buses, like the town buses, could go direct to the aircraft door. Such a method would greatly reduce the walk now necessary from the car to the terminal building and allow a considerable dispersal of the parking areas. Incoming passengers would follow the same procedure in reverse.

Both the town bus and the car-park bus fulfil two of the necessary functions leaving only the third—storage—still to be dealt with. Even this could be greatly reduced since predictable short-term waiting would in fact be done in the bus itself. Only in case of bad weather or aircraft trouble would there be a need for some waiting space. Though it may be heresy to say so in these pages, it seems highly questionable to base the need for a complex and expensive building on the relatively few occasions when it has a proved usefulness, particularly when the absence of buildings provides considerably simpler and more flexible operation. There is then no fixed relation between gate positions and aircraft size, between telescopic connections from the pier and the aircraft door, no necessity to manoeuvre aircraft in confined spaces on the apron or to protect buildings from their blast. The present adaptation of the railway concept of a concourse and the shipping solution of piers, and the combination of the two, does not seem appropriate to the technology of flight and a largely unchannelled transportation system; the air-ocean liner is perhaps best served by mobile launches.

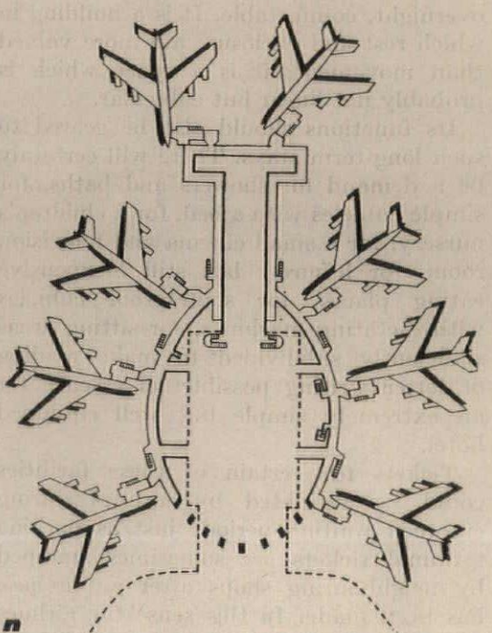
Some of these points were, of course, recognized when Saarinen and his team suggested the mobile lounge for Dulles International outside Washington, D.C., and are splendidly championed by Charles Eames in his film commercial. The mobile lounge is, however, only a substitute for the pier; the two buses are intended to supplant the building itself.

Such a proposal would undoubtedly meet strong oppo-ition from customs and immigration authorities. There is no physical difficulty in carrying out either control under a mobile system; only an increase in staff requirement. As there would be a very considerable reduction in airline staff, however, and only a slight increase in the number of customs officers who themselves would be mobile (like harbour pilots or river police) and as both are really servants of nationally financed or subsidized institutions, this is a matter of bureaucratic adjustment; no doubt difficult but hardly insuperable. It would, on the other hand, certainly be wrong to justify the financing of considerable structures on the claims of a waning formality.

It is, of course, also true that airports are not only for passengers but have now become a spectacle, a kind of mechanical aviary. At some terminals spectators



g, open apron parking of aircraft; h, simple pier or finger scheme; i, j, T and Y-shaped fingers to serve more aircraft from one pier; k, satellite terminal served by pier; l, served by tunnel; m, complete system of satellite terminals. Diagrams adapted from IATA handbook Airport Buildings and Aprons, *and U.S. Federal Aviation Agency Guide* Airport Terminal Buildings.



n, parking with direct access to concourse, Pan-Am terminal at Idlewild.

occasionally outnumber passengers by four to one. They are a source of revenue and ought, like train spotters, to be encouraged if only to establish brand-loyalty. Yet they do not really need a building; the view from an open bus would be equally exhilarating and often much closer. The general reservoir space used by passengers would also provide them with restaurants, bars and shops.

It would, therefore, seem possible to organize an airport terminal in terms of a fixed and relatively permanent element used by the visiting public and by passengers having to wait a considerable time (in fact by those not immediately concerned with the business of transfer) and a number of impermanent and mobile units acting as links between the town terminal or the airport car-parks and the arriving and departing aircraft.

Such an organization probably demands a corresponding reduction in other vehicle traffic on the apron. Fixed service installations are already in existence at certain airports—Kastrup, Copenhagen, for example, has fuel hydrants in pits at fixed positions—and it is possible to provide fuel, electricity, compressed air, water, cabin temperature control, communications and earthing facilities from a series of points in the ground and thus at least partially avoid that cluster of attendant waggons which surrounds an aircraft on the ground.

The design of the one remaining permanent reservoir space also needs a somewhat different approach, for while this building may well allow rooftop views of the apron or have some restaurant windows face the runway, its main business must be to make people waiting for several hours, possibly even stranded overnight, comfortable. It is a building in which rest and enclosure are more valued than movement; it is a space which is probably not linear but cubicular.

Its functions should also be geared to such long-term stays. There will certainly be a demand for showers and baths, for simple cubicles with a bed, for a children's nursery, for a small cinema and television room, for leisurely but still inexpensive eating places, for soundproof cubicles with dictating machines, for sitting areas sufficiently subdivided to make reading or letter writing possible: in essence for an extremely simple but well equipped hotel.

Tickets for certain of these facilities could be validated by airlines during enforced waiting periods just as parking terminal tickets are sometimes stamped by neighbouring shops after a purchase has been made. In this sense the airlines would have a stake in the building, though probably (as in the case of passenger-handling buildings, except where airlines have their own unit terminals) the erection of the building would be the responsibility of the airport authority.

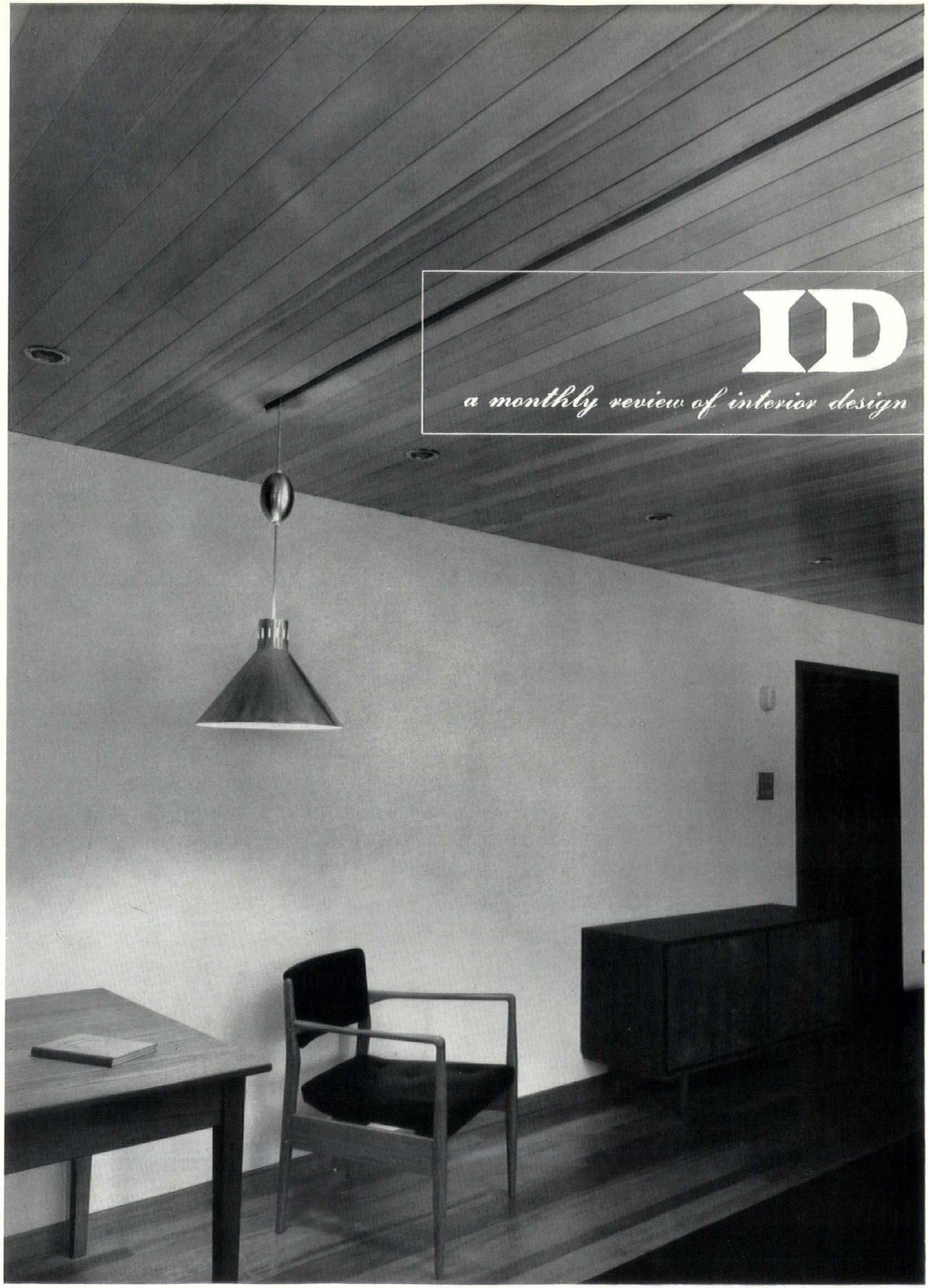
If built anywhere near the apron its construction would have to be such as to exclude the noise and fumes of the taxi-ing aircraft. The currently recommended standards for passenger-handling buildings suggest ½ in. thick glass or two layers of glass and the air-conditioning of at least those spaces facing the apron. These criteria apply to the present generation of sub-sonic aircraft and are unlikely to be adequate in the future. As the airport hotel has, however, only a peripheral connection with the transfer of passengers and the transfer operation is mobile, such a building could be sited some distance away from the areas of aircraft movement. It would thus avoid the need for uneconomic methods of construction and its growth would not conflict with any of the permanent aircraft service installations or the runway layout.

Airport terminal buildings are, of course, now designed for quite other reasons than mere convenience; they are meant to satisfy an emotional need. Airport architecture is in terms of railway building at the Pennsylvania Station-St. Pancras stage. It is intended to create a tangible symbol, secure and dramatic and, not least, in scale with the cash paid for the ticket. Hence the exuberance of St. Louis, of parts of Idlewild, of Dulles and of a number of projects still unbuilt.

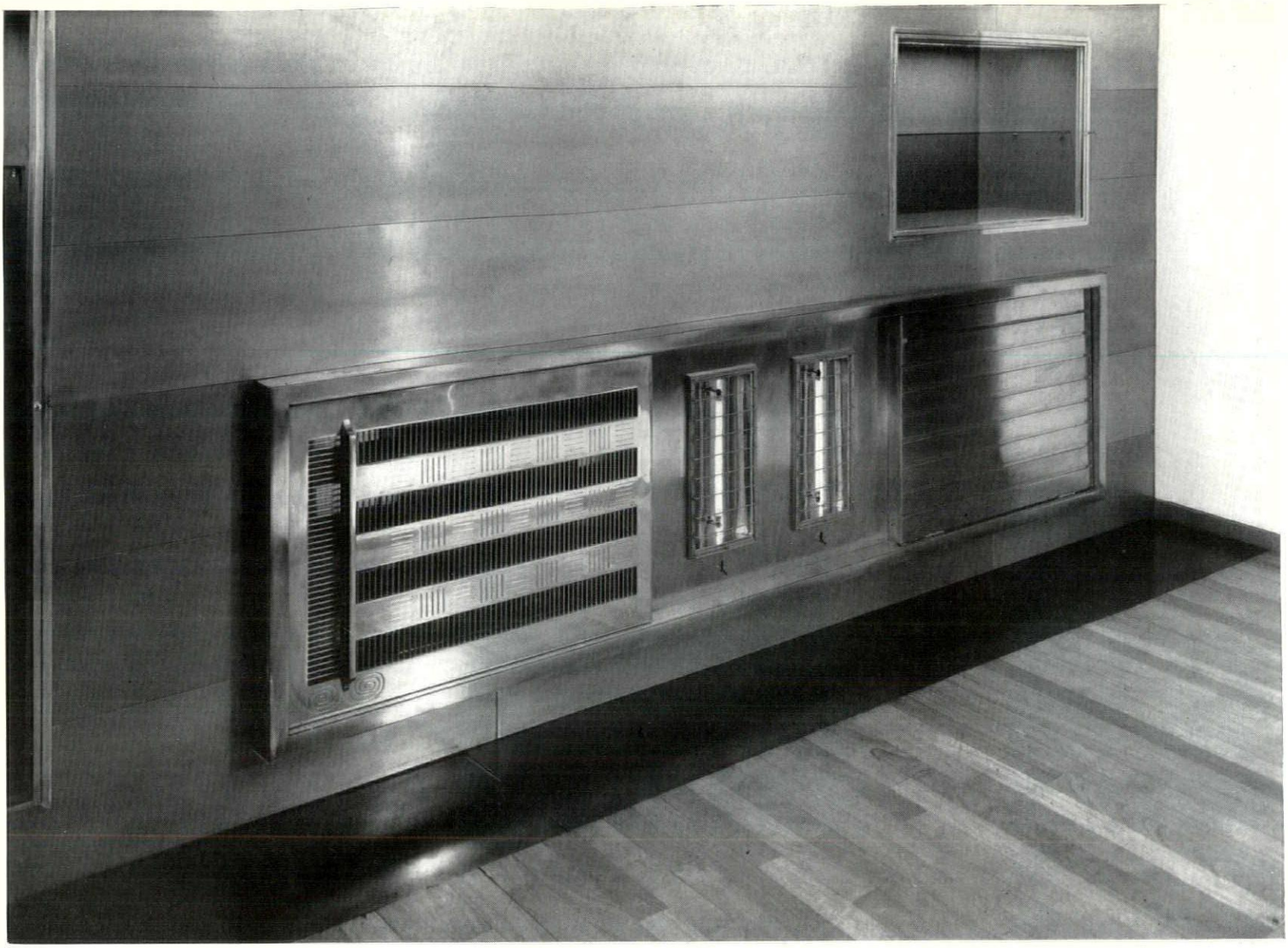
A good deal of this exuberance is rationalized by claiming that it is in harmony with the 'drama of flight,' a fitting prelude to the supposed excitement of jet travel. It is only a short step from this argument to an architecture of bird and wing-like forms, yet the pitiful examples of a nautical style based on porthole windows and the rope motif should have been sufficient warning. The passenger-handling building is in any case not only concerned with departure but equally with arrival; in fact it is far more likely to be seen for the first time and to make its greatest impression on one's first arrival by air. It is thus as much welcome as preparation. It could, therefore, be argued that it should appropriately be a building firmly and obviously rooted to the ground; the delight of a harbour quay both on leaving and homecoming is in its solidity, that it is unmistakably of the earth. The protection now necessary from the noise and blast of turbine-powered aircraft, and likely to be required to an even greater extent when supersonic aircraft are in operation, runs parallel and reinforces these visual demands. One of the successes of Gatwick lies perhaps in its ability to provide such a feeling of solidity without recourse to either fake monumentality or hotel opulence. That, like the roofs of the great nineteenth-century train sheds, it manages to do so using a technology within hailing distance of that of the transport it serves, is an added triumph; for robustness does not perhaps come to that technology naturally. Yet robustness is essential to any building which has to cope with crowds on the move.

As yet, however, with insufficient crowds; so that the current airline preoccupation is not with architecture but with economics, and architecture, if at all considered, is seen, as at the unit terminals at Idlewild, as an advertisement for each company. Airlines do, of course, make money not for themselves, but for others; they are, like all means of transport, economic generators as Robert Heilbroner remarked when summarizing the Connecticut General Life Insurance symposium on 'The Issues and Challenges of Air Transportation.' Their financial difficulties are not only due to the fact that they operate very expensive machines, a Vanguard costs £1,000,000, a Boeing 707 £2,000,000, but that they are organizationally also in the Pennsylvania Station-St. Pancras stage. The competition is between a large number of companies each selling an undifferentiated product and only cumbersome international agreements attempt to create artificial separations. The best and most up-to-date aircraft are, apart from occasional and usually temporary problems of national pride or currency, equally available to all. The difference is then narrowed down to the skill of the flight kitchen and the charm of the air hostesses which are, no doubt, important but hardly overwhelming considerations in the choice of an airline. The soaring architecture of the TWA terminal becomes, like the flamboyance of St. Pancras, part of the sales technique to attempt to create differences.

Economic pressures and political forces like the Common Market will no doubt cause changes among airlines which will be at least as drastic as the recent enforced amalgamations within the British aircraft industry. Nor will the arrival of supersonic Mach 2 or 3 aircraft in any way ease the situation. On the contrary the design of these is part of the international competition among manufacturers bolstered by governmental chauvinism, and in no way reflects any of the specified demands of the users. When these innovations occur there will certainly be comparable changes in airport terminals. It may well be that the architecture of passenger-handling buildings will then become more rational, perhaps less memorable or possibly, except for a vestigial space, disappear altogether.



1, the
aterials of
he Stocker
Room at
Brasenose
College,
Oxford,
illustrated
erleaf, are
unctionally
ple: hard-
wood floor,
painted
bric walls,
planked
eiling with
rass lamp-
shades.



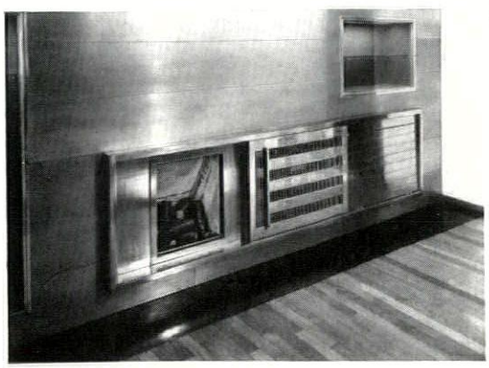
2

College Common-room Oxford

architects: Myles and Deirdre Dove

The Stocker Room is a supplementary senior common room for Brasenose College, and can be adapted for dining, seminars and other special functions. It was formed out of two smaller rooms, previously used by the Bursary staff, but is a regular rectangle in plan, with splayed window embrasures in walls up to thirty inches thick. Display cases occupying original recesses in the fireplace wall are provided to accommodate College plate.

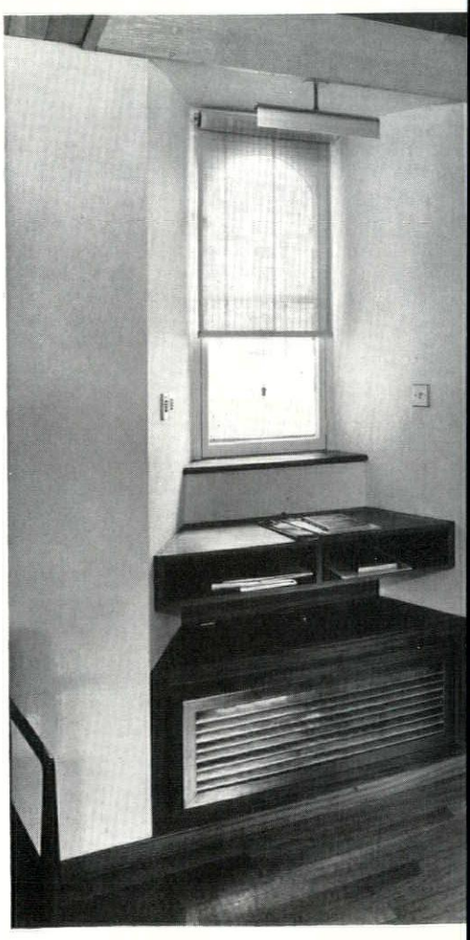
2, the fireplace wall, panelled in satin finish aluminium ; the metal-work of the fireplace is in satin chrome steel, except for the sliding grille with its incised ' brazen-nose ' motif which is—appropriately enough—in brass.



3

3, fireplace grille slid to cover electric heating elements and reveal the open grate. The third division, at the far end of the fireplace unit, contains a log-store, built into the same recess as the display cupboard above.

4, removable magazine shelf in afrormosia in the opening for the small window in the east wall, with grille for electric heating unit below.



4

5, window seat, upholstered in black leather, in the bay window of the west wall (also visible in background in 6, at left of fireplace). The curtains are of tan corduroy, and can be drawn to cover the entire wall.

6, the room with furniture arranged for a seminar or meeting.

7, the room arranged for dining: the lamps travel in tracks across the ceiling (see also 1, page 349) and have here been centred and pulled down fairly low over the tables. The carpet, which has electrical underfelt heating, is in a slight well in order to bring its surface flush with that of the surrounding hardwood floor.



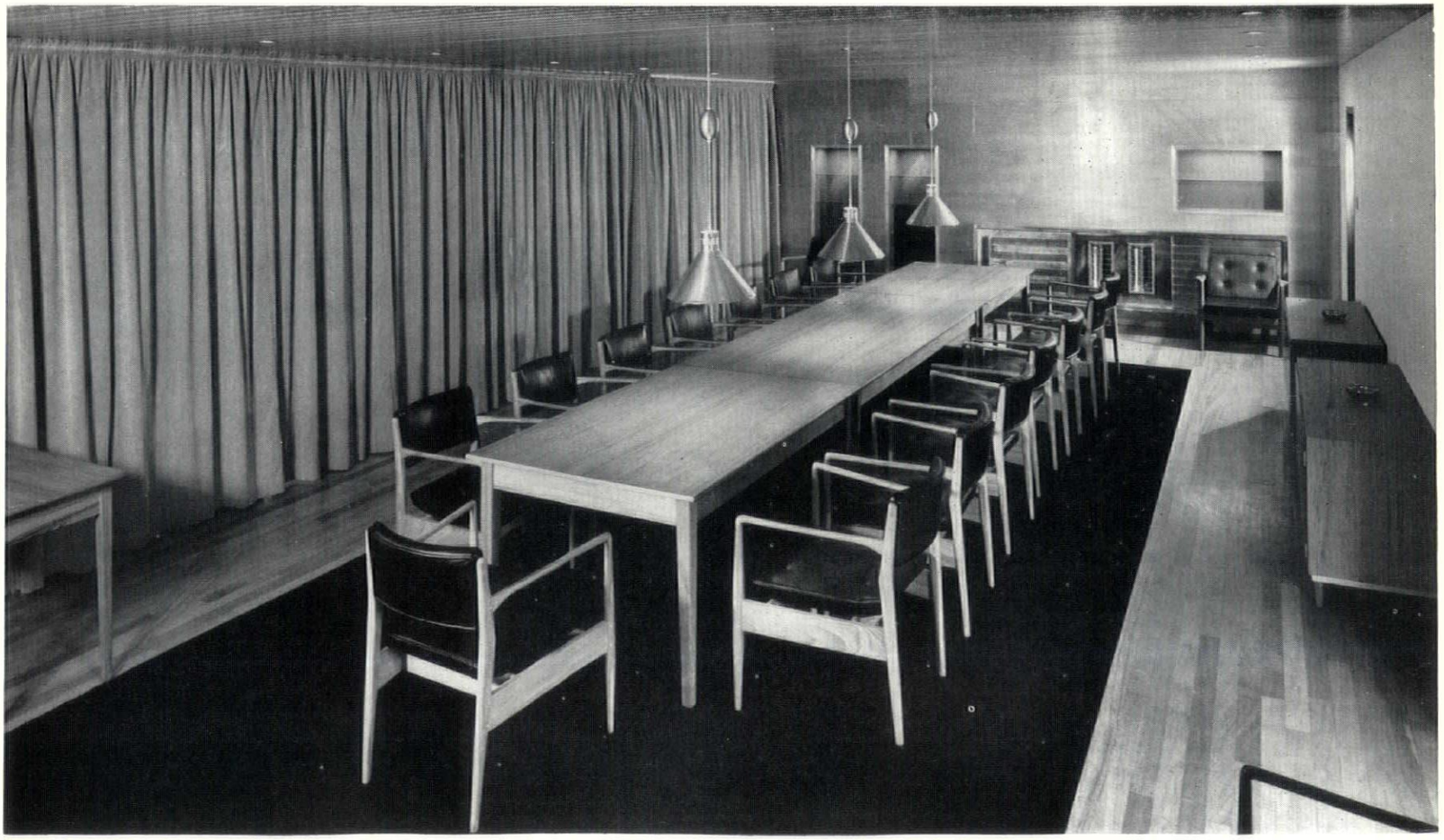
6



5

ID

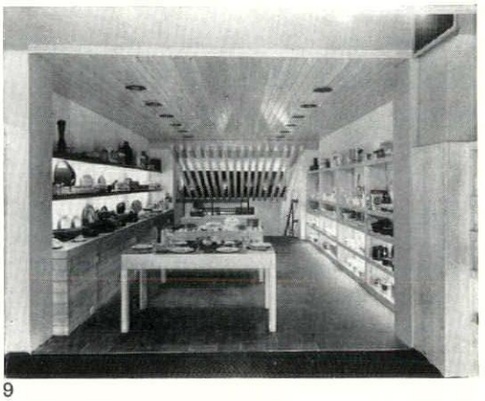
7





8

To accommodate the gift-and-furniture shop of The General Trading Company when it moved from Mayfair, two early Victorian terrace-houses in Sloane Street, plus their outbuildings in the mews behind, were converted into a new shop and showrooms, with offices above. The main showroom area is at street level at the front, but rises, by means of a specially-built linking block, to first floor in the mews with packing department below.



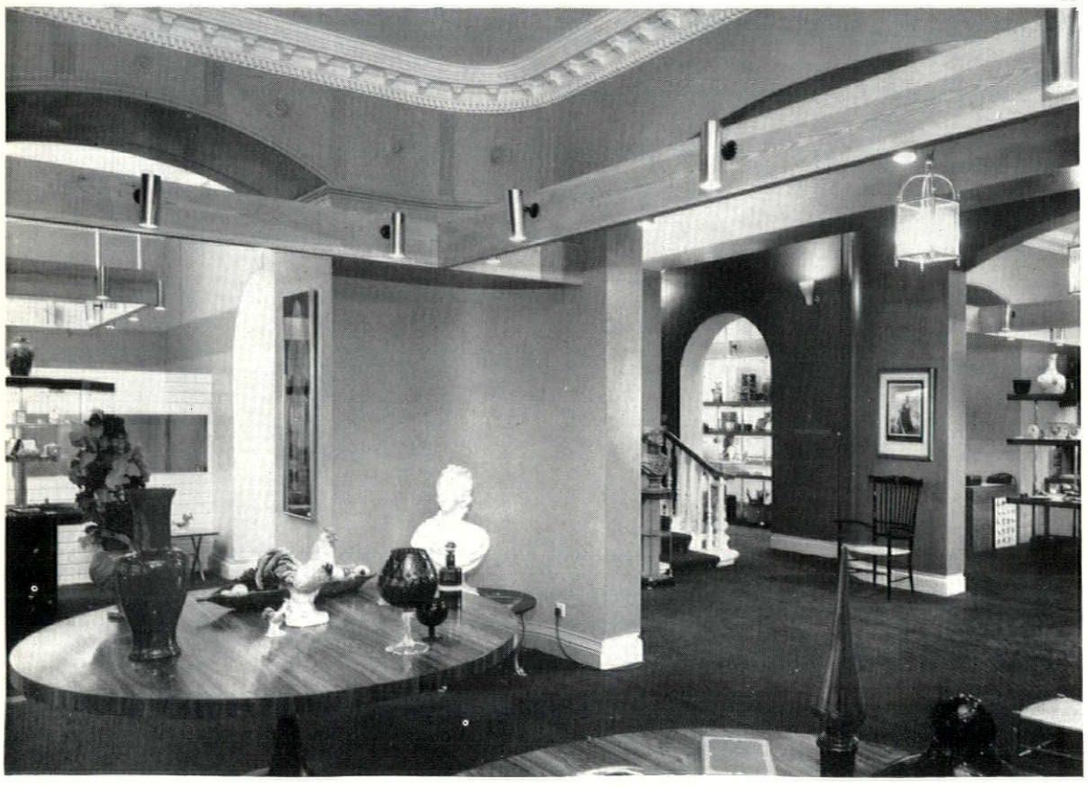
9

Showrooms in Sloane Street, S.W.1

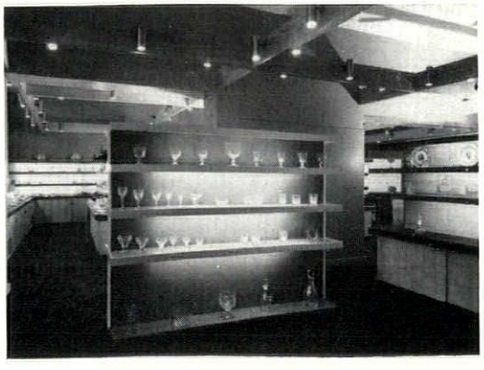
architect: Peter Wood

8, steps up to the linking block, with pine-planked ceiling and quarry-tile floor, which is occupied by the kitchen department.
9, view from the other end of the kitchen department, showing slatted ceiling over stairs and display shelves on either side.
10, looking into the central hall from one half of the main front shop: the separate halls of the two houses were combined—the original stairs can be seen, centre—and the whole of their ground floors opened out into one large, symmetrical complex of spaces with broad arched openings between one room and the next. Display shelves and small office cubicles were fitted in, but the lighting is largely carried on free-flying pine beams leaving the original ceilings and cornices undisturbed.
11, display of glass in the rear (mews) showroom.

10

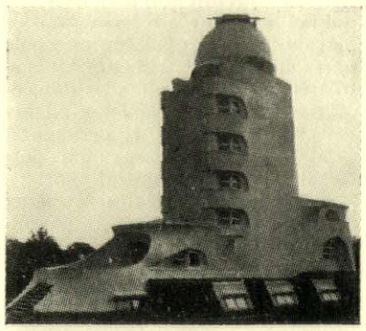


11

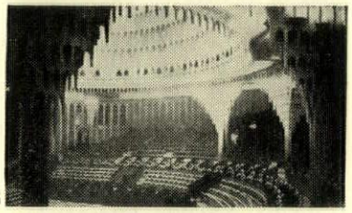


FINSTERLIN

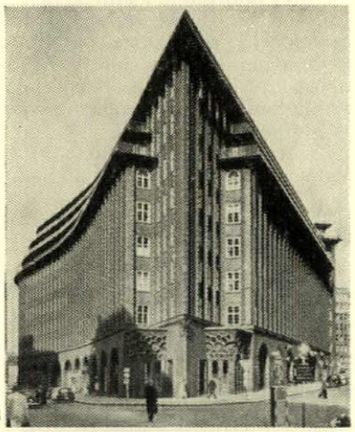
AND SOME OTHERS ■ NIKOLAUS PEVSNER



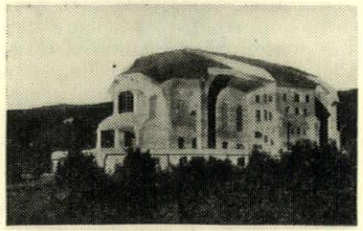
1



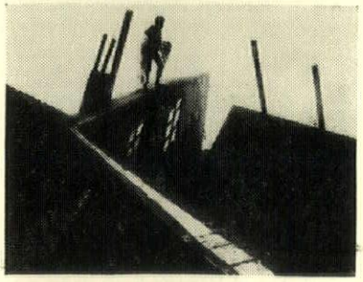
2



3



4



5

The Expressionism of German architecture at the end of the First World War is a known phenomenon. The most familiar examples are Mendelsohn's Einstein Tower, 1, projected in 1918 and built in 1919–21, Hans Poelzig's Grosses Schauspielhaus, 2, that stalactic remodelling of a big, bare circus, carried out in 1919, Fritz Hoeger's Chilehaus, 3, of 1922 with its remorseless verticals of jagged cut brick, Rudolf Steiner's second Goetheanum, 4, of 1923, and of course *The Cabinet of Dr. Caligari*, 5, Robert Wiene's film of 1920–21. The characteristics common to all these and the paintings of the Expressionists are forced forms, excessive forms, forms overloaded with emotional connotations. To explain historically how they came about is easy enough: a lost war, a revolution, and an inflation on an unprecedented scale: $1 = M. 2,000 September 12, 1922 = M. 9,000 November 8, 1922 = M. 10,300,000 August 31, 1923 = M. 100,000,000 September 12, 1923. The mark was stabilized in 1924. In the same year Moholy Nagy joined the Bauhaus, and Expressionism was over.

For, that the Bauhaus too has had its Expressionist phase is now established. Dr. Banham's *Theory and Design* contains half a chapter on it, more had already come out in the memoirs of Lothar Schreyer,* a book which was unknown to Dr. Banham, and Mr. G. Lindahl has since published a valuable paper on this and allied German material of 1918 etc. in *Figura*, the journal of the University of Upsala (New Series I, 1960). Schreyer emphasizes that Gropius got most of his staff from the circle of *Der Sturm* in Berlin, the most radical Expressionist group. Dr. Banham illustrates the first Bauhaus manifesto with Feininger's woodcut of a Gothic church and lightning flashing from stars above and around it. And Schreyer tells us of the teachers addressed as Master Kandinsky, Master Schreyer, of Feininger talking about Blake, of Klee's studio called the witches' kitchen, of mysticism and Mazdaznan, and of Gropius's house for Sommerfeld, the timber manufacturer, of which Mr. Lindahl illustrates a very Expressionist and at the same time Wrightian detail, and which Schreyer calls 'the first great witness of a *Gesamtwerk*' and a work 'in which not industry but craft dominated.' In the end Gropius looked out for a constructivist and found Moholy Nagy, who said of Schreyer's ballet: 'Can't you leave out man?' and pleaded for automata, who called the soul a function of the body, and so Schreyer said that 'we artists would soon be outsiders' and left.

It might be just as well to remember the generational position. Of the Bauhaus group Kandinsky alone was born before 1870, Feininger and Klee in the seventies, Gropius in 1883, Schreyer, Schlemmer, Albers, etc. between 1885 and 1890, but Moholy in 1895. Quite a number of the principal actors in this drama of the immediate post-war years in Germany are still alive. I was personally just too young to take part or indeed know about it while it was played, but those who were in it should now be encouraged to put on paper what they remember. What H.R. has put down in *Werk und Zeit* IX, 1960 (Nov.), and X, 1961 (Nov.-Dec.), is proof of how fascinating such memories can be, and THE ARCHITECTURAL REVIEW hopes to publish some very soon. Meanwhile, the following pages are a first instalment.*

Hermann Finsterlin was born in 1887. The date ought to be compared with those of the Bauhaus masters and also with the dates of those evoked at the beginning of this article—Poelzig 1869, Hoeger 1877, Mendelsohn 1887—and of others who will make an appearance presently: Bruno Taut 1880, Hugo Haering 1882, the Brothers Luckhardt 1889 and 1890, and Hans Scharoun 1893. Finsterlin studied biology, chemistry, physics, but also philosophy and the history of religion, tried to learn Sanskrit and finally, one moon-lit night in 1910, on top of a Bavarian mountain, saw in a flash that art was his vocation. He then studied for some years, and seems to have found his style during the war, though he appeared on the stage only after it. He appeared as a painter, a sculptor and an architectural designer at the same time. As an architect one can hardly say; for it is doubtful whether his spatial and voluminous fantasies could have been carried out. Anyway, these were years of no commissions.

We come across Finsterlin's name for the first time in the green leaflet of November,



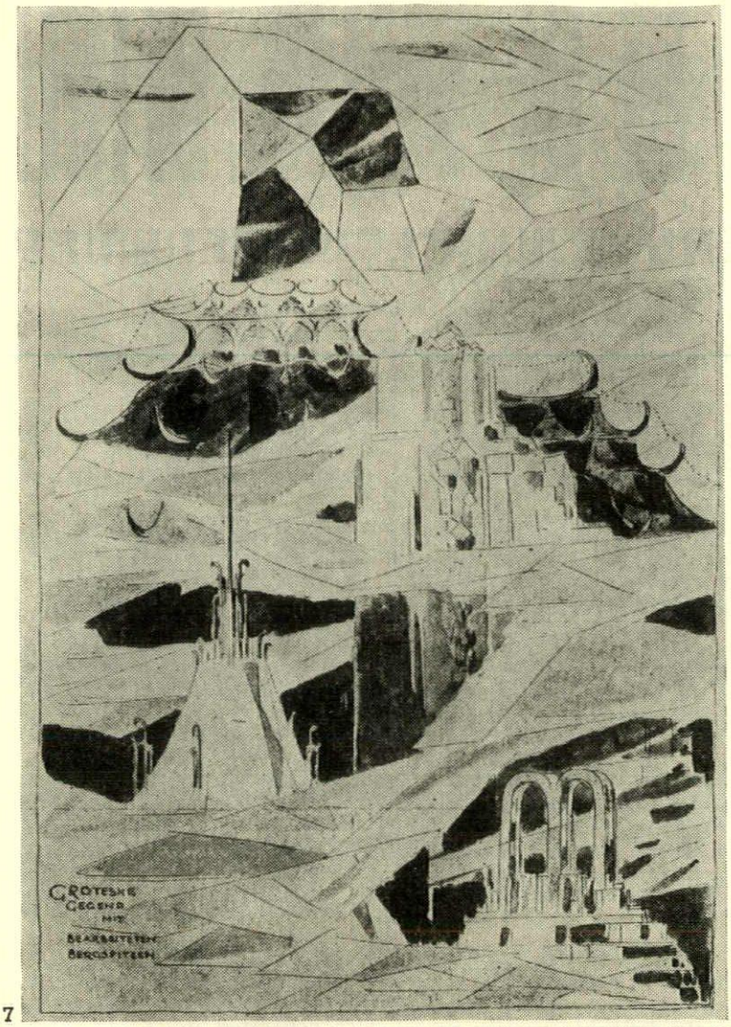
6

1918, with which the *Arbeitsrat für Kunst* presented itself to the public, the working committee of the artists and architects, as in fairness it must be translated, although the word *Arbeitsrat* comes very close to *Arbeiterrat* which in the Germany of 1918 would clearly mean Soviet. It has a woodcut, 6, on its first page, as Expressionist as that of the Bauhaus manifesto of one year later. The presidency were Gropius (a fact not listed in Dr. Giedion's book), Cesar Klein, an Expressionist painter, and Adolf Behne, architectural journalist who turned rationalist, socialist, and International Modern, when Gropius had returned to his Fagus past. Among the committee members were Bartning, the future church builder, Bruno Taut and Max Taut of the architects, Heckel, Pechstein, Schmidt-Rottluff of the *Brücke* painters, Meidner, another explosive Expressionist, and Kolbe and Marcks the sculptors. One art historian also appears: W. R. Valentiner, specialist in Rembrandt and the Dutch and later director of a museum in America. Then there is the inner working committee with Feininger, Nolde and a number of others, including more art historians, and finally a list of names of those who had expressed agreement. The list has some of the affluent collectors (Frau von Friedländer-Fuld), the Prussian Minister of Finance, Hugo Simon, the wife of the former German ambassador in London, Princess Lichnowsky, some art dealers (Paul Cassirer, Flechtheim), yet more art historians, more artists and among architects Mendelsohn, the sculptor-architect Hoetger, and Finsterlin.*

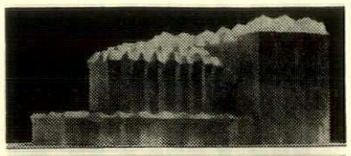
* *Erinnerungen an Sturm und Bauhaus*, Munich, 1956.

* I am extremely grateful to Professor Finsterlin for sending me the material on which this account is based, especially photocopies of the two articles in *Frühlicht*, and of the feature in *Wendingen*, but also typed copies of reviews including recent ones and a typed copy of the introduction by Dr. O. Conzelmann to the catalogue of a recent exhibition. Other recent publications on the twenties are the special semi-centenary number of *Die Bauwelt*, vol. 50, 1959, especially pages 281, etc.; also, entertaining but much less useful, *Magnum*, No. 35, 1961 (*Die tollen zwanziger Jahre*). Both these issues were shown me by Mr. Arthur Korn. In addition work by Finsterlin and the others illustrated here appears in U. Conrads and H. G. Sperlich: *Phantastische Architektur*, Stuttgart, 1960, a book of which an English edition is in preparation. The title lettering of this article is taken from the feature in *Wendingen*.

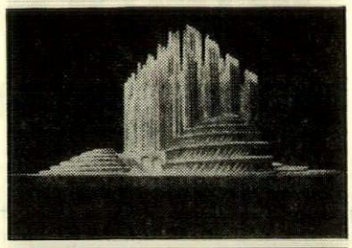
* On December 26, 1918, the *Bauwelt* published a summary of the programme, and among the signatories there are some names not in the original document. They include among architects Max Berg, Elsaesser, Paul Mebes, Salvisberg, both Schmitthenner and Tessenow (which is interesting) and also



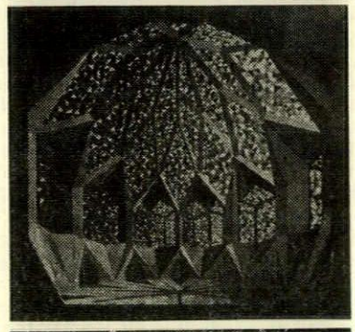
7



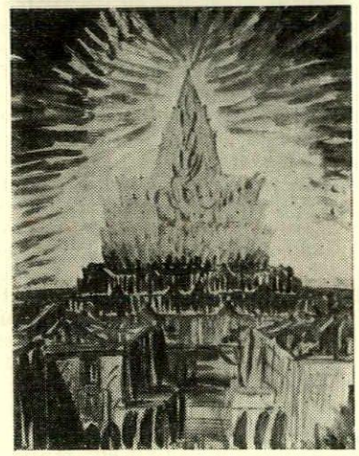
8



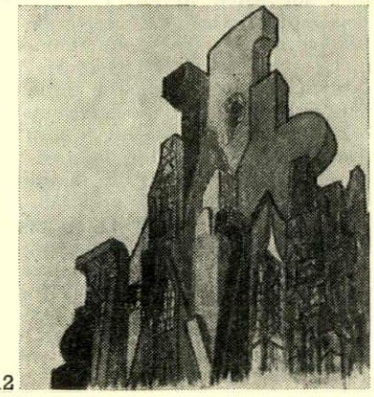
9



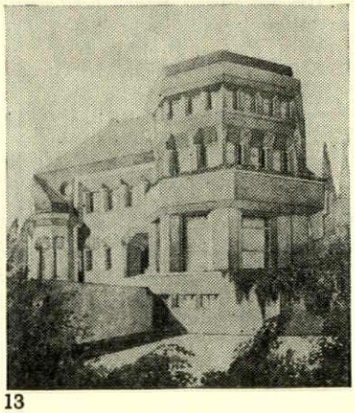
10



11

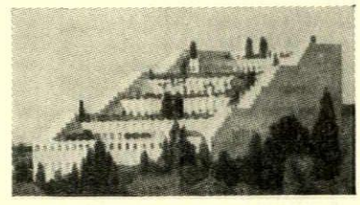


12

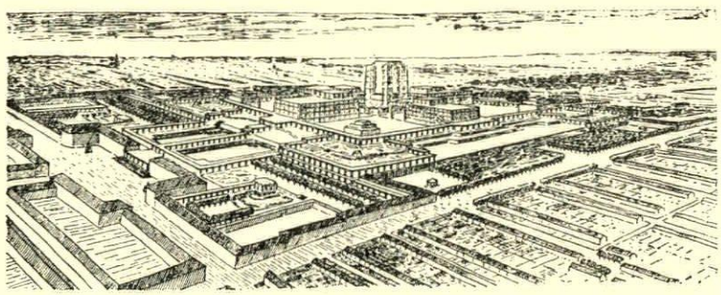


13

From Ruf zum Bauen: 7, *Bruno Taut;* 8, 9, *Hans Luckhardt;* 10, *Wassili Luckhardt;* 11, *Hans Scharoun;* 12, *Krayl;* 13, *Kahlenbach.*



14





16

14, *Poelzig, model of project for the House of Friendship, Istanbul;* 15, *town centre project from Bruno Taut,* Die Stadtkrone; 16, Sternkirche, *or Star-plan church, one of a number of radially planned churches by Otto Bartning, reproduced from his* Vom Neuen Kirchenbau.

The programme, as stated on page two, is 'to liberate art from decades of tutelage.' 'At the top we place as our motto: art and people must be united. Art must no longer be for the enjoyment of a few, but for the happiness and life of the masses. Unification of the arts under the wings of a great architecture is the aim.' The position of this passage exactly between Morris and the Bauhaus is most illuminating. Then in more detail:

'1. All architectural activity is public, whether governmental or private. Unified planning of whole parts of towns, without damage to freedom in the details. Palaces of the People to minister all art to the people. Experimental estates for trying out and perfecting new architectural efforts.

2. Dissolution of the Academy of Arts, the Academy of Architecture, and the Prussian Fine Art Commission. Their replacement to be created by the artists themselves without governmental interference. Official art exhibitions to be free.

3. No governmental guardianship over the training of architects, sculptors, painters and craftsmen. Root and branch reform of art education. Government grants for this and for teaching workshops.*

4. Vitalization of the museums for the benefit of the people. Establishment of exhibitions with lectures and guide lectures. Scientific exhibits to be separated and housed in utilitarian buildings. Separation of study collections for artist-craftsmen. Just allocation of public means for the acquisition of old and new art.†

5. Removal of artistically valueless monuments and all buildings whose artistic value is out of proportion to the value of their materials. Abandonment of the rash plans for war memorials and stoppage of work on war museums for Berlin and other cities.

6. Creation of a State organization to secure promotion of the arts within future legislation.'

At the end of the manifesto it is stated that 'the first plan for the working committee' is to work on 'a comprehensive utopian building programme including pictorial and sculptural designs'—i.e., let it be said at once, not on emergency housing or altogether the housing of the people. There was here a deep rift between two schools of thought which was exposed in Adolf Behne's introduction to the *Second Book Publication* of the Arbeitsrat, published by Was-

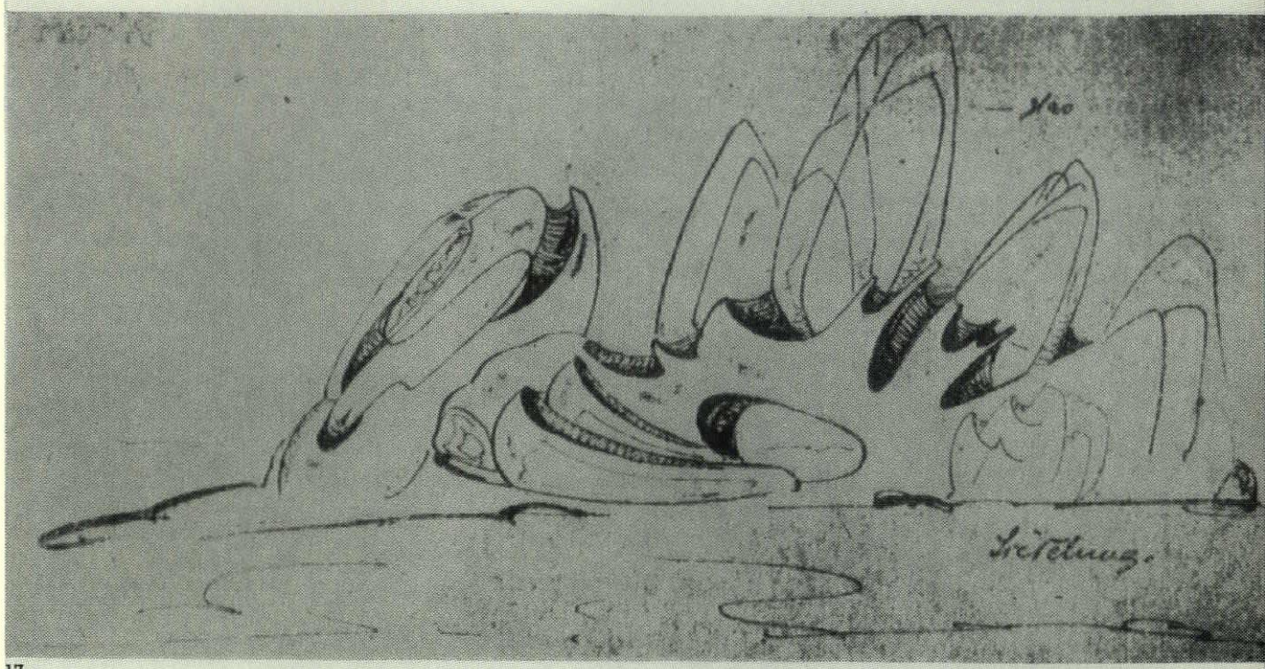
Paul Zucker; amongst artists Heckendorff, Jaeckel, Käte Kollwitz, Leo von König, Hans Meid, Nauen, Rohlfs, Milly Steger; among art historians A. E. Brinckmann, Grautoff, Heise, Herzfeld, Niemeyer, Oldenbourg, Schubring, Swarzenski, Voss, Worringer; among collectors Osthaus. *Phantastische Architektur* (see above) moreover prints an enquiry of the *Arbeitsrat,* called *Ja* (page 138), and there the signatories include Obrist, famous for his Art Nouveau days.

* The Lethaby-Central-School principle.

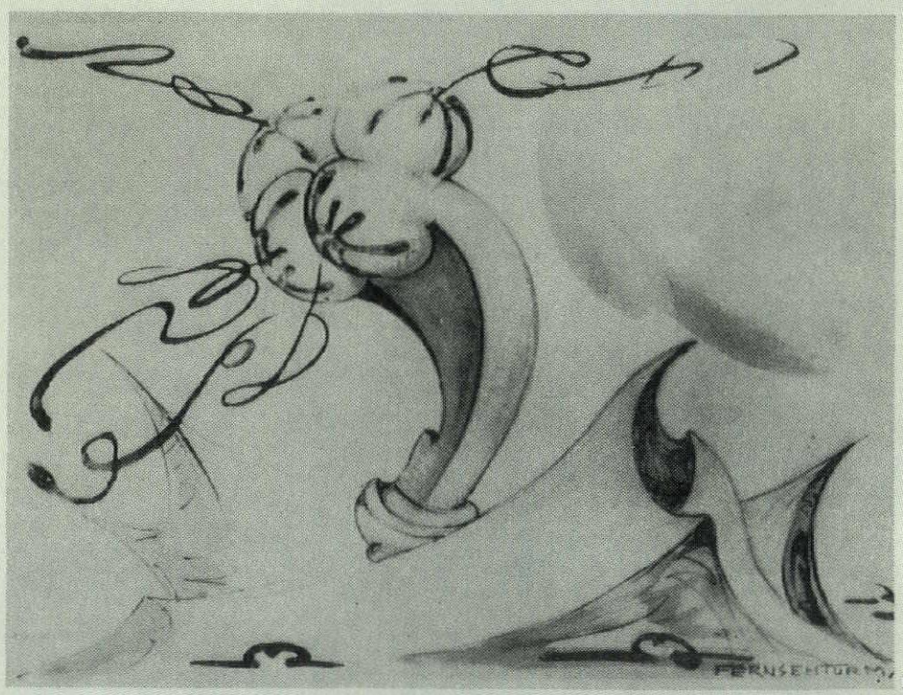
† This paragraph is clearly Valentiner's work. Mr. Lindahl, page 236, has pointed to Valentiner's book of 1919 on the *Reorganization of Museums in the Spirit of the New Age,* without quoting the above passage.

muth's in 1920. It was called *Ruf zum Bauen*, Call to Building, and consisted largely of illustrations of work of a frankly utopian character. The illustrations here reproduced bring that home. They are by Bruno Taut, 7, Hans Luckhardt, 8 and 9, Wassili Luckhardt, 10, Scharoun, 11, Krayl, 12, Kahlenbach, 13, and—at last—our Finsterlin. They differ in expression, from Kaldenbach's quite feasible and rather Steinerian concrete-shapes, curiously up-to-date just now, and Wassili Luckhardt's Building for Worship (*Kultbau*) which stands so strangely between Bartning and Nervi to the equally up-to-date concrete masses of Hans Luckhardt's People's Palace and the stone stockade of his Festival Hall, Scharoun's flame-like architectures and Finsterlin's organic growths, of which more will be said later. According to Behne these illustrations show 'a good deal of what there is of faith in the future.' 'Nobody among us,' Behne says, 'is likely to see the realization of even one of them. Are they thus castles in the air . . . superfluous playthings? Time and again one can hear and read: Only work for cottages, for estates, only the self-effacing activity for the smallest, simplest can be of value today. Leave your clouds, your phantasy. . . . But these critics are wrong. No one scorns the small and the simple. No one under-estimates the cottage and the rabbit-hutch. . . . Nor is there a lack of serious and honest attempts at alleviating the needs of today. Bruno Möhring, Peter Behrens, Hugo de Fries* have made propsals for new and better small flats. But these balcony-access and double-storey houses of Behrens's estate frighten us and prove that only a miserable *Ersatz* is possible as long as the living standard remains a minimum. No, we cannot take part in building caves and cells for our fellow-men, mass dwellings and mass coops. When the task will be to build houses for human beings, we shall be present. Until then . . . we guard the pure flame, . . . we work for the future. We must jettison the present. . . . He who gets bogged down in the small, is incapable of doing even the smallest thing really well. Only fed by the great, the small can live. We cannot reach the whole from the single parts, only the single parts from the whole . . . Building is different from mere masonry. Building is to create a shape for our civilization. Until now building was a handmaid; it must again become leading and determining.'

Then Behne quotes Paul Scheerbart, that eccentric prophet of a



17



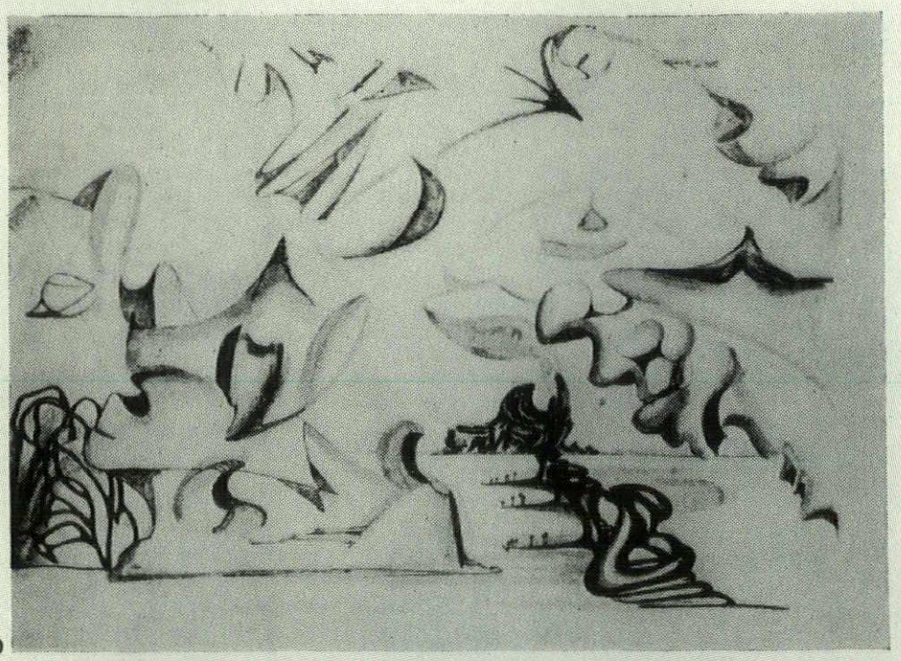
18

17, *housing estate by Finsterlin, dated* 1917. 18, *television tower—sketch dated* 1919. 19, *title-illustration for* Casa Nova (*Architecture of the future*), *Finsterlin's article in* Wendingen.



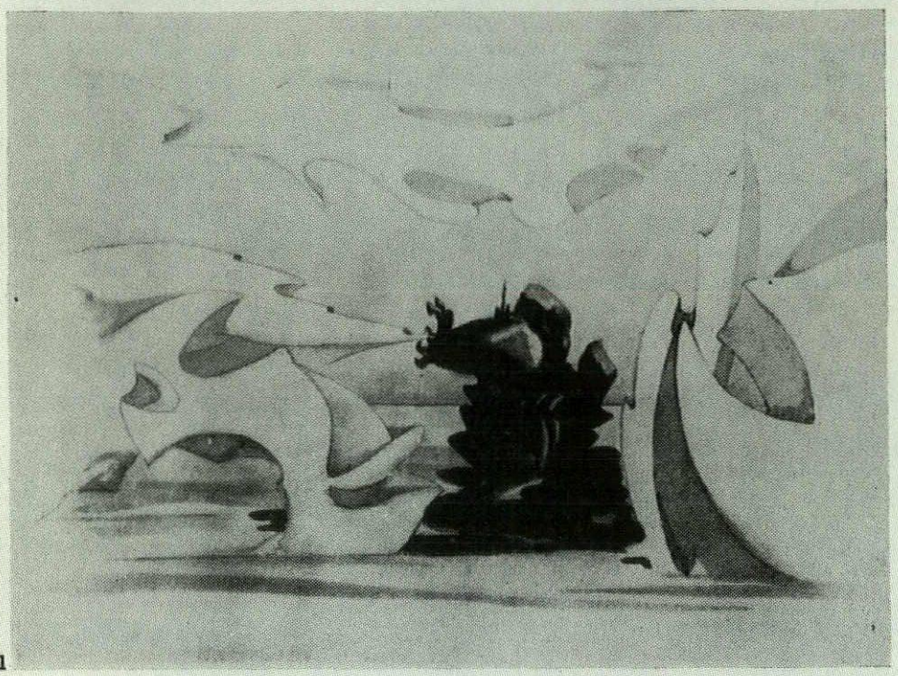
19

* Möhring did good work in planning and designing estates of blocks of flats in Berlin, e.g. the Schöneberg-Süd area, pre-modern, of course; but does Hugo de Fries mean Heinrich de Fries who later as Editor of *Die Baugilde* turned a passionate supporter of Expressionism, published a book on Frank Lloyd Wright, clearly seeing him as a romantic and indeed as 'organic architecture' (as Zevi does) and attacked the Bauhaus in 1924–25 when it (and Behne) had turned exactly the opposite way, i.e. towards the fulfilment of immediate needs?



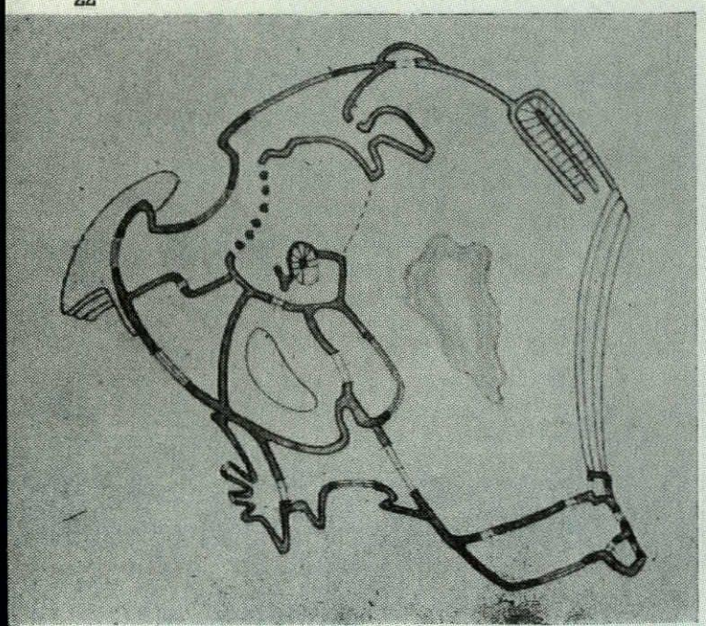
20

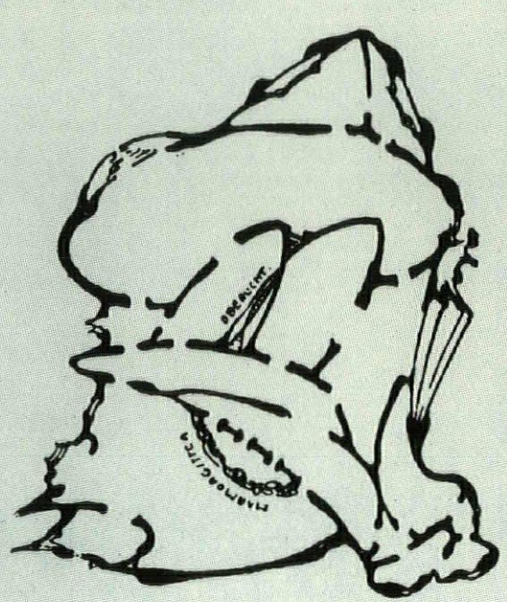
20, a bedroom in majolica work, with glass floor and black marble sculptured furnishings. 21, *a dining room in white majolica, with ebony sideboard in centre. These two drawings are also from* Wendingen. 22, 23, *two plans by Finsterlin; in* 23, *'oberlicht' is a skylight and 'marmorgitter' a marble grille.*



21

22





23

fairy world and of glass in architecture whom Dr. Banham has introduced to the English public and whose books Behne here calls 'our primer.'* And so it goes on to the end: 'All architecture is phantastic. And if the time clamours a hundred times for new patents, patents do not help much, without imagination. Speculators can build walls, we call for building.'†

By the time this call was heard, other publications had been brought out by those belonging to the same circle and indeed by one who did not belong to it: Poelzig. Poelzig, as we have seen, was older than any of the others (except Kandinsky), and can be called the father of the fantasts. His Grosses Schauspielhaus was the Expressionist sensation of 1919, but the same stalactite effects had already been introduced by him before the end of the war in his designs for the abortive House of Friendship for Constantinople, 14. Then, still in 1918, followed a *Programme for Architecture* for the Arbeitsrat, written by Bruno Taut, reprinted in *Phantastische Architektur* (page 135), and summarized by Lindahl, and in 1919 two highly significant books, Taut's *Stadtkrone* and Otto Bartning's *Vom Neuen Kirchenbau*, 15. The former, a plea for gigantic civic centres, has been discussed by Dr. Banham; the latter led in 1921 to the Gothico-Caligaresque *Radial Church* (*Radiant Church* ?) or Strahlenkirche, 16. In 1919 also an exhibition was held in Berlin, on the initiative of the architects of the Arbeitsrat and called *Unknown Architects.*‡ The foreword was by Gropius: 'All our works are no more than splinters; objects shaped by need and utility cannot fulfil the longing for a fundamentally new world of beauty, for a rebirth of that spiritual unity which rose to the miracle of the Gothic cathedral. We shall not live to see it. But there is one consolation: the idea, the building-up of a white-hot, bold, far advancing idea which a happier time, bound to come, will realize.'§ In the same spring in which this exhibition took place, Gropius's Bauhaus Manifesto appeared.

Again in the same spring Paul Cassirer exhibited in his gallery Mendelsohn's fabulous drawings, and also in 1919 an apparently short-lived architects' club or group got together and called itself *The Glass Chain*. Among the members were Taut, Gropius, Mendelsohn and Finsterlin. Finally, it was owing to the fact that Taut in 1920 secured for himself a platform for architectural propaganda that Finster-

* In *Phantastische Architektur* a piece by Scheerbart written in 1904 is reprinted.

† Further on the pamphlet also has an evocative page by Scharoun on the theatre.

‡ The date is Lindahl's, Finsterlin has annotated all his typed copies of the reviews of the exhibition as 1920. But he may of course not remember absolutely exactly. A leaflet of the exhibition is reprinted in *Phantastische Architektur*, page 137.

§ I am quoting from Lindahl, page 236, who is quoting from an article by Behne on Gropius: *Zentralblatt der Bauverwaltung* (IV, 1922).

lin could at last make his full impact. In the exhibition he had already been given a room to himself, and the reviewers had reacted strongly, *pro* as well *con*. The architectural phantasmagorias I am here illustrating, 17–23, are partly from that exhibition (18 is dated 1919), partly from the following five years. Behne, writing in the *Sozialistische Monatshefte für Kultur und Kunstgewerbe*, calls them 'utopian in the highest degree' and blames the seriousness of the time for not allowing one to delight in them. One should, he says, not nag and leave it at saying that these buildings could not be carried out—while, being in concrete, they can—but enjoy their originality and freshness. Behne singles out the 'charming ground-plans' particularly. Taut wrote in *Die Freiheit* that the workmen and the schoolboys liked Finsterlin's work and were not interested in skyscrapers, the *Norddeutsche Allgemeine Zeitung* thinks of Scheerbart, the *Reichsanzeiger* quotes from Gropius's foreword that 'imagination is more important than technique,' *Vorwärts* compares Finsterlin with Jefim Golyscheff, another architect member of the *Arbeitsrat*, and *Freiheit*, ill-disposed towards him, calls him 'a disciple of Art Nouveau,' and his designs, 'villas like fancy chocolate boxes' and altogether 'a Voluptarium.'

It must indeed be admitted that even today, when we have digested Gaudí and got used to the Sydney Opera, Idlewild and their progeny in the architectural schools, Finsterlin takes some acclimatization. There is for instance the one drawing called *Housing Estate* where the highest loops are marked 'glass' or the mysterious *Bedroom* and *Dining Room* or the exceedingly puzzling *Television Tower*, or indeed every one of the ground plans.

One looks for explanations, and in a certain way not in vain, if one begins to read Finsterlin. I have just referred to the fact that Taut had found a place where he could publish what seemed important to him. This was *Frühlicht* (Morning Light? Early Light?), a supplement to the journal *Stadtbaukunst*. Here in part one, 1920–21, Finsterlin wrote a dithyrambic piece called *The eighth day*, because 'Building means carrying the seventh day of creation forward by one more wave in the chain of surf which lovingly dallies with infinity.' What is the source of this literary style? It must be German *Sturm und Drang*, young Herder, young Goethe, young Fuseli, and it is really, as they are, untranslatable. However, the attempt must be made.

'Building is everything, love, procreation, struggle, movement, suffering, parents and child, and the holiest symbol of all that is holy. I tell you such a built shape must sing like Memnon's granite body, when the sun's wide-awake glance caresses it. . . . And where the air is thinnest and shame melts before the purifying glance of the sun, a spectral building diamonds itself, the stuff against which the senses refine themselves, but stuff only to them who touch it, not to the pure eye, and to the soul which homes in all spheres its very own garment and death of all resistance.'

'All is in a flux. We ephemeral beings who were gliding along in quieter undulation a bare life-mile, are today turned round in rapids which had long been sensed by finer membranes. . . . If anything maintains itself in the melting heat of these dangerous temperatures, it is the microbes of the human urge to form, the cyclopean utterances which make intensive homogenous group-work possible instead of gigantic individual force. . . . It is in such a great period of mutation that without doubt we are finding ourselves. . . . Architecture is a bio-genetic phaenomenon of the human essence which lies beyond the foetal.'

'I know that in the eyes of my critics I commit a sacrilège if I call the Gothic and the Baroque caricature. But what is caricature? Mutation is our direction, hybridization of the typical, and the "to-him-that-hath-shall-be given-in-abundance." In this single-minded hybris lies the fascination of these styles.'

'The last judgment of the architect-god is going to lay down the tremendous frontier between old and new building, is going to divide those who add up with rationed, rational spirit as servants and bondsmen of mere matter from those who billow out into ether the breathing force of the soul so that matter may learn to obey it.'

'Hardened force, the will made stoic, that sort of thing ought to be architecture, even if its formal stirrings do not place themselves obediently perpendicularly to the navel of the earth.'

Perpendicularly refers to the cubes of the other, the rational, architecture of the moment, and in another place cubism appears as a 'parasitic changeling to do damage to the beautiful body of the muse.' In the same paragraph 'the marked cube-mnemonics—built by the "new Croesuses"' are set against the glorious organisms that could be shaped now 'with the new industrial possibilities of maiolica, ceramics, cast stone and monolithic sculpture,' the latter two terms probably both referring to concrete.

One year later, in another instalment of *Frühlicht*, Finsterlin wrote in the same vein about interior architecture: 'If today the majority of people is pleased to be housed in the schematized bowels of their cubic Trojan houses. . . , a small group, in spite of all the fine equality and fraternity of a future thus inaugurated, is going to breathe the protean, amoebian talent of its liberated human spirit into the dead stone of its irredenta paradise—a new race of flowing crystal souls.' And so, as force, as breath, as a flowing crystal, his interiors are intended to be felt, even if they appear under the innocuous titles of dining-room and bedroom. 'A wardrobe can out of its root billow forward from the wall.' 'Imagine majolica beds whose feet luxuriate out of their substrata, carrying in their calyx eiderdown, as fungi carry the mould of the next generation,' and in the end you will feel 'not only the inmate of a fairy crystal druse, but the inhabitant of an organism, perambulating from organ to organ giving and taking, a symbiot of a fossil giant womb (Riesenmutterleib).'*

Enough of this text; it will, I hope, have fulfilled its purpose to make descriptions of the illustrations unnecessary. If more writing is desired, it can be found in *Wendingen*, Wydeveld's Dutch journal which devoted a whole issue in 1924 to Finsterlin† and which (for other reasons) gets six or seven pages in Dr. Banham's book. There was in connection with the Finsterlin issue an exhibition in Holland. Then there was an exhibition at the Stuttgart Landesgewerbemuseum in 1927. But 1927 is also the date of the Weissenhof-Exhibition Estate at Stuttgart, and that set the seal on the victory of the cubic, rational, international style, and silence descended on Finsterlin. He taught, we are told, at the Bauhaus for one week just before it closed down at Weimar. He never seems to have been given a chance of building, though the nearest thing of his there is to real architecture is tantalizing in the extreme: a toy called the Style-Game which is building blocks making up elementarily a number of basic historic building types, a pyramid, a Doric temple, a stupa, a pagoda, a mosque, a Gothic church, etc., but also suitable for any number of permutations to be combined out of these elements. It is not clear whether this ever went into the shops, though the prospectus appeared with the blessings of the Reichscommissar for the Arts, the director of a museum, a university art historian and the director of an art school.

On the victory of the cube over the sharp angle and the curve two or three quotations to conclude with. First Behne as an example of the transition from the Finsterlin to the Moholy moment. On September 13, 1923, in *Die Bauwelt*, he reviewed the Bauhaus exhibition of International Architecture. He wrote:

'The Exhibition . . . represents an architecture which develops the shape of the building exclusively out of the factual data refuting all decorative elements. . . . We find accordingly by Poelzig the factory at Luban but not the Salzburg Festival Theatre. The wish of the assembled architects is conscious and severe work towards a style of our time. They desire a discipline which every co-operator bows to. It goes without saying that such a discipline can only be demanded for principles whose logic is universally valid, simple and coercive. The Salzburg Festival Theatre . . . is interesting and forceful, but it cannot help to form a valid style. A continuation can hardly be conceived, since the whole fascination of the building is emphatically personal, indeed unique. . . . The resolute denial of everything arbitrary and capricious . . . leads to a stress on straight lines and right angles. The time for picturesque curves and romantic serpentine paths is over. . . . And it is true: the straight line is the sound base. But we must be careful not to make of the straight line and the right angle, i.e. of geometrization, a formal principle and thus a means of superficial stylization. Stylization is the most certain method of preventing the development of a style. . . . In the selection of the German section (Gropius and Meyer, Bruno Taut, Max Taut, Mendelsohn, Döcker, Mies van der Rohe) there are injustices against those who work on the problem of a true dynamic architecture as seriously as some of those who are exhibited, but cannot yet make themselves accept a decision on certain important basic questions (Scharoun, Rading, Häring).'

Secondly, H.R. in his delightful reminiscences tells of discussions about 1924 or 1925 on triangles and one participant's opinion that in a triangular lavatory one would not be able to relax enough to be successful. Schlemmer rhymed happily:

'Begone all personal self-sufficiency
None but the right angle harbours felicity.'*

And finally a story Professor Wagenfeld, the distinguished industrial designer, told me in a letter in 1951. He had been a student at the Bauhaus in 1923–25, he taught at Bartning's school at Weimar, the successor-school to the Bauhaus, when the latter had left for Dessau, and he then worked for Jena Glass from 1930 onwards. Working for glass he came—for functional, not emotional reasons—more and more to the use of the curve. Moholy Nagy saw what was happening and said to him: 'Wagenfeld, how can you betray the Bauhaus like this? We have fought for simple, basic shapes, cylinder, cube, cone, and there you are making soft forms—which is dead against everything we have always been after.'

Which shows—what? That curves may mean different things, that organic architecture may mean different things, and that Finsterlin, equidistant from Guell and Guedes, is uncomfortably topical today.

* A part of the article in *Frühlicht II* is reprinted in *Phantastische Architektur*, page 149.

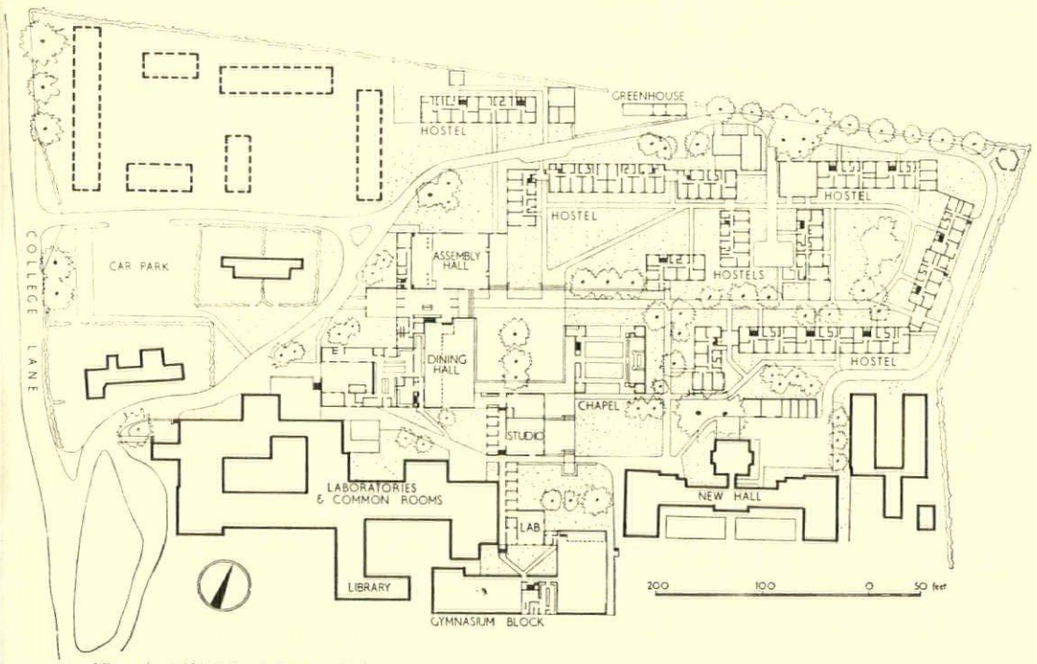
† And more than one shortly after to Frank Lloyd Wright. Some illustrations of designs by Finsterlin were also included in J. Ponten's book *Architektur, die nicht gebaut wurde*, Stuttgart, 1925, figures 404 and 406.

* The pun of the second line in German: 'Glück ist nur im rechten Winkel' cannot be translated. There is a German play which everybody knew and which was called *Glück im Winkel* (by Sudermann), i.e. Happiness in a little corner. Whereupon de Fries wanted 'the right angle stood against the wall and shot dead.'

TWO TEACHERS' TRAINING COLLEGES

ARCHITECTS: BRIDGWATER, SHEPHEARD AND EPSTEIN

1, at Chichester



ground floor plan (old buildings in heavy outline)

This is an extension to an old college, originally built in Gothic Revival style in 1840, and subsequently added to. The site lies to the north-east of the city and has a gentle slope to the south. The old buildings housed approximately 200 students, all women. With the extension there are now places for 400 students, approximately 250 women and 150 men.

Some inter-war additions to the older buildings provided a considerable obstacle to the orderly extension of the college to the new size, but the aim has been to form old and new buildings into a complete and unified group.

The extensions consist of two-storey hostel blocks, providing accommodation for 194 students, new teaching accommodation (assembly-hall, dining-hall, students' common-room and gymnasium—this block forms the core of the college and lies between the hostels and the old buildings), and a new chapel to replace the existing chapel which has been converted into a library. In addition some of the existing buildings, which formerly housed a considerable number of students, have been converted to teaching accommodation.

Some early twentieth-century additions, together with some war-time building by the RAF, had left the north and east sides of the college with a fairly ragged appearance, while the south and west sides presented a dignified Victorian front to a garden with mature trees. The extension groups the new dining, assembly and teaching accommodation closely round the north and east sides, and beyond these, and further to the north and east, the hostels form a series of quadrangles. Between the assembly-hall and the dining-hall and the hostel quadrangles lies a central brick paved court on which stands the chapel, which is linked to the main block by a covered way.

The hostels are two-storey buildings with units of six students' rooms on each floor making groups of twelve, each having their own kitchen and utility room, lavatories, etc. Each room has a wash-basin and built-in cupboards. Most of the teaching accommodation is now in the converted earlier buildings. These are linked to the central dining and assembly block with a group of tutorial rooms and laboratory. The dining- and assembly-halls lie together, separated by a large foyer entrance which can be used as a separate access to this part of the building. The gynmasium fills the gap between the existing hostel block and the old buildings. It is planned in connection with the old gymnasium, so that the college now has one small and one large new gymnasium, separated by new changing-rooms.

The chapel seats 430 and consists of a steel tent, square on plan, with four gables raised on four concrete corner buildings which form the vestries, etc. Two of the gables are filled with pale coloured stained glass, and the other two are solid brickwork. One of the solid ends forms the chancel with an altar planned free of the east wall, and over it a tapestry by Jean Lurcat will later hang on the plain brickwork of the wall. On the other gable, at the rear of the chapel, is a balcony for the choir, and above it the reconstructed organ. On the outside gable over the covered way stands a sculpture in aluminium by Geoffrey Clarke.

The hostels have load-bearing brick cavity walls with Crowborough stock facing bricks, timber floors and timber pitched roofs covered with red clay pantiles. The assembly-hall and dining block have 16½ in. load-bearing brick walls with 2 in. cavity and steel roofs with boarding and corrugated aluminium covering. Windows are timber, painted. Heating is by low pressure hot water, with radiators and convectors.

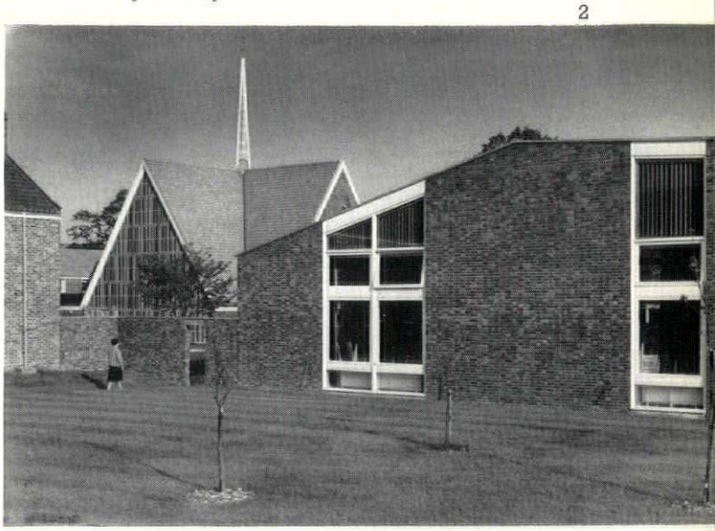
Assistant architects, George West and Eric Le Fevre. Structural consultants, F. J. Samuely and Partners. Quantity surveyor, J. A. Burrell.

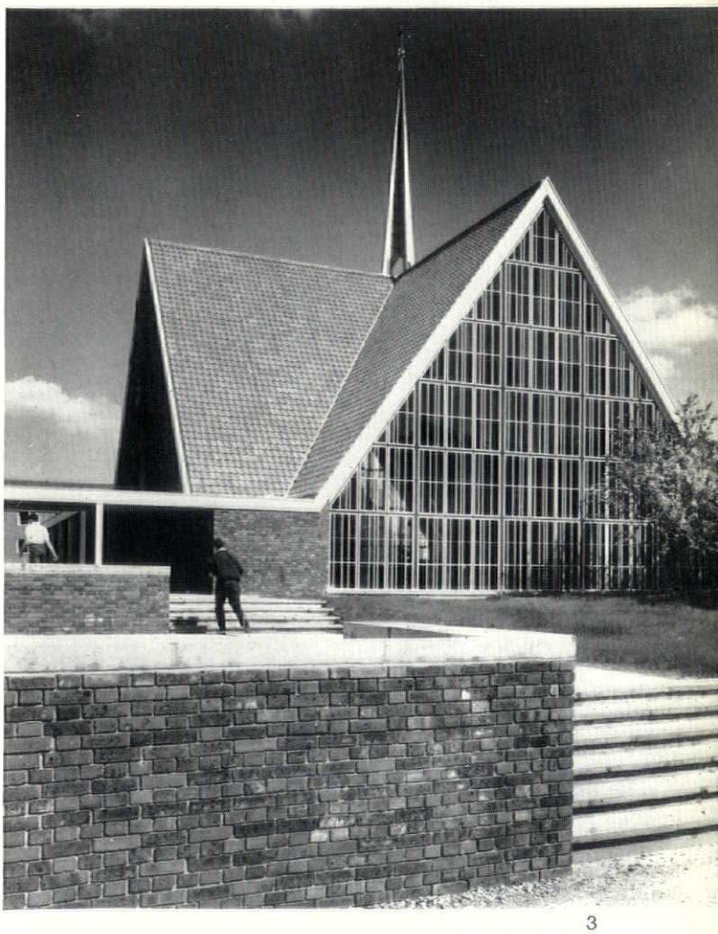
1, *interior of the chapel with the pulpit on the left.*
2, *the north side of the assembly hall with the chapel beyond.*
3, *south side of the chapel.*

1



2





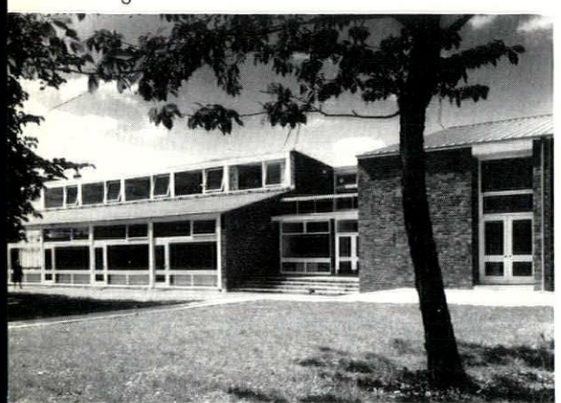
3



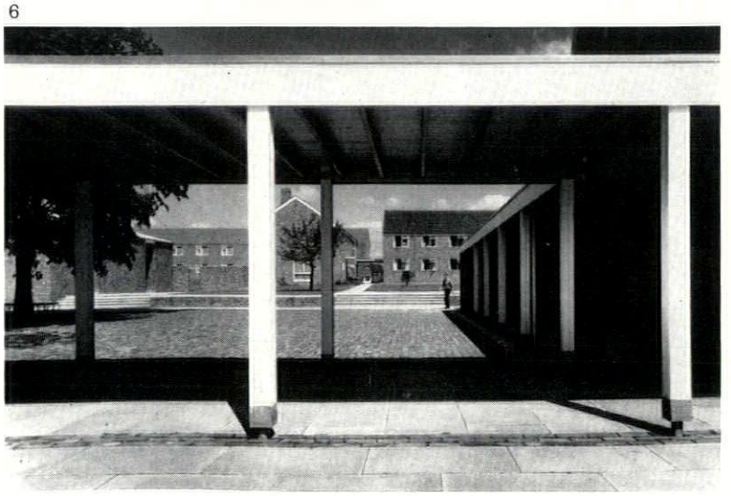
4

Teachers' Training College at Chichester

5



6

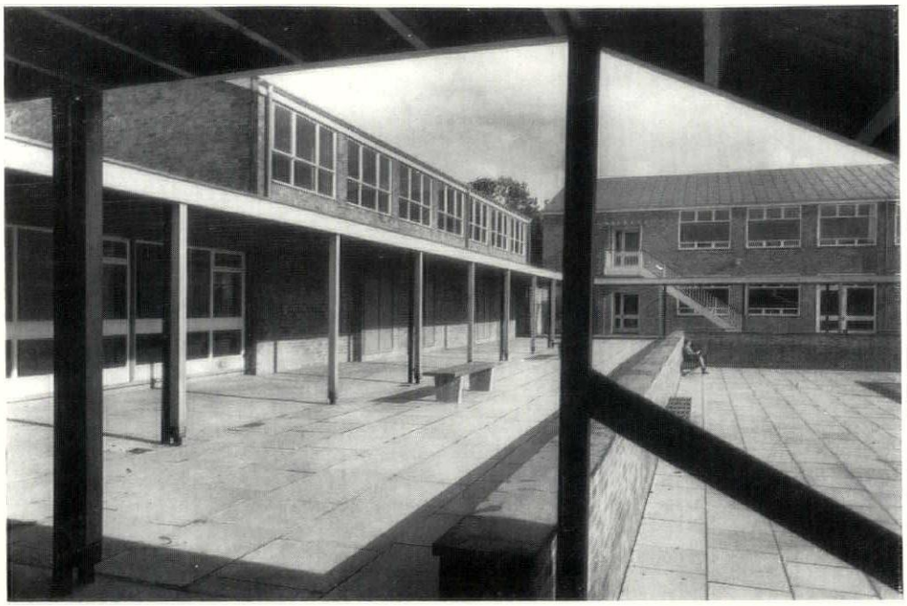


4, the dining hall. 5, from the north-east; the dining hall is on the left and the assembly hall on the right. 6, covered way in the central court.

2, at Leicester

On a wooded site of 42 acres four miles east of the city centre. Existing on the site was a three-storey Queen Anne House, Scraptoft Hall, with outhouses and ornamental gardens, etc., which forms part of the College. The new buildings house 420 men and women students. They have been laid out to preserve a belt of woodland around them, partly as a break against the strong prevailing winds. Buildings were kept generally low for ease of communication and so as to preserve the dominance of Scraptoft Hall. Hostels and the teaching buildings form courtyards, either totally or partially enclosed.

The hostels are for 40 students each, planned on two storeys with two bedroom wings connected by a central block containing common room, etc., and sometimes staff flats on a second floor. This results in ten students sharing one floor. The teaching accommodation is mostly on two floors with the library as a focal point above the entrance hall; its large north window overlooking the entrance drive. The entrance hall leads directly to the assembly-hall, administration wing, main teaching block and dining-hall.



1

1, *inside the courtyard.* 2, *terrace at the south end of the main teaching block.*

2





3

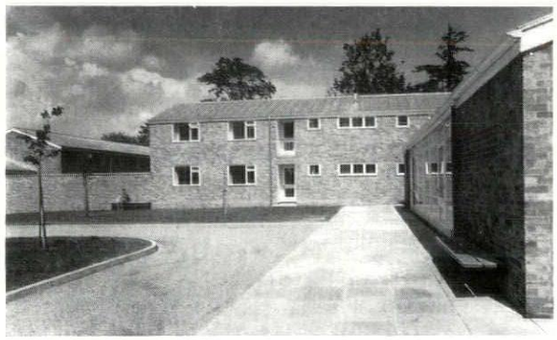
The arts and crafts blocks are single-storey and are grouped near an existing pond which they overlook.

Construction is load-bearing brickwork, with Leicestershire facing bricks. Floors are prestressed concrete. Timber pitched roofs are covered with sheet aluminium; there are exposed hardwood roof-trusses in the dining-hall, assembly-hall, gymnasium and arts and crafts block. Windows are timber. Heating is by low pressure hot water with radiators and fan-assisted convectors.

Assistant architect, W. P. Smith. Structural consultants, F. J. Samuely and Partners. Services consultants, A. E. Mohring & Son. Quantity surveyor, J. A. Burrell.



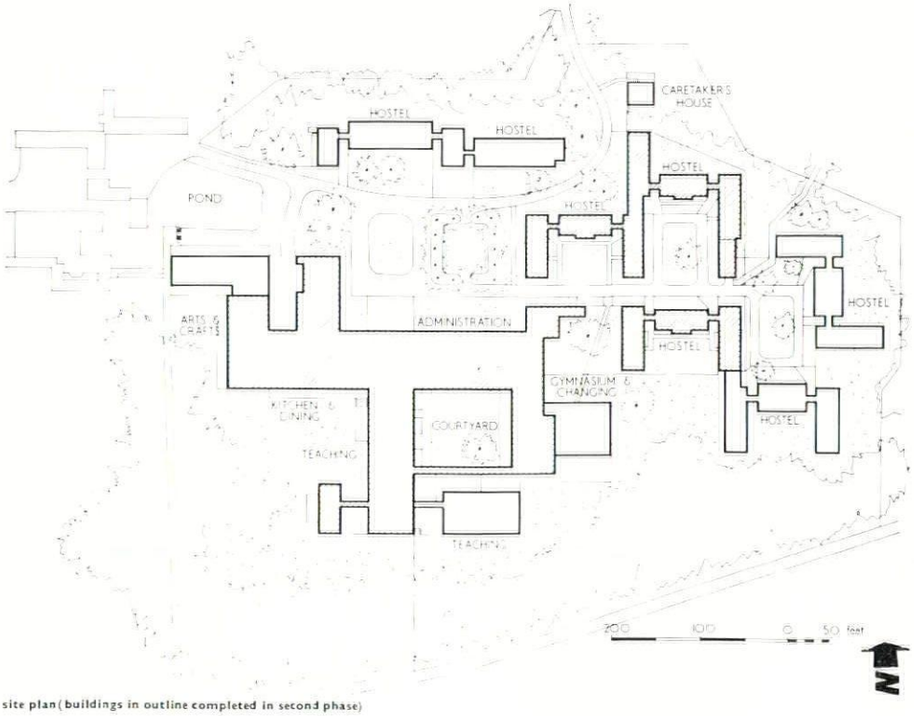
4



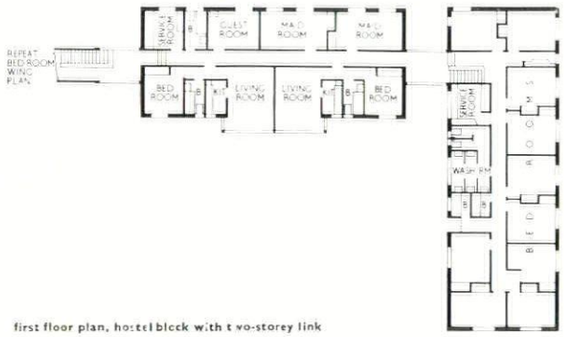
5

Teachers' Training College at Leicester

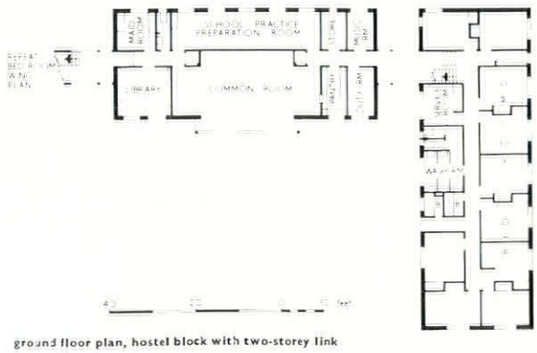
3, one of the hostel courtyards. 4, the teaching block and courtyard from the south. 5, one of the hostel blocks with common room on the right.



site plan (buildings in outline completed in second phase)



first floor plan, hostel block with two-storey link



ground floor plan, hostel block with two-storey link

EXHIBITIONS

PAINTING AND SCULPTURE

The Robert Fraser Gallery in Duke Street, whose large, well-planned interior was praised in the ID section of the August AR, has a recherché international programme which includes the New Yorkers Lindner, Nevelson and Stankiewicz and the Parisians Dubuffet and Michaux—and another named Requichot whose pictures resemble Victorian floral panels, 1, so they are probably the result of some avant-garde technical feat. The presence of two very handsome new paintings by Harold Cohen in the gallery's summer group exhibition are his best things to date, well painted and delightfully decorative, and if Mr. Fraser is planning to flatter London by adding some local names to his Franco-American list he has made a nice fastidious start.

The surprise in this advanced yet rather smart and socially acceptable list is Richard Lindner. It's an off-beat and courageous choice. Lindner's work is a cross between Max Beckmann's erotic expressionism and Léger's mechanistic figuration of the 'twenties, but the German half of the mixture comes out on top; the stylization is of a kind which the English are inclined to attribute to German brutality, and it's not surprising that London dealers haven't exactly come to blows for the privilege of showing him here.

Now that his first London exhibition has come and gone, I remain interested in his images, but I'm rather disappointed by his execution. The quality of the painting is more variable than I expected. Everything in his pictures should have the sharp edges and hard-gloss finish of the strip of metal bolted across the girl's middle in the picture he calls 'Target,' 2. Nothing should look as if it had been painted by human hand.

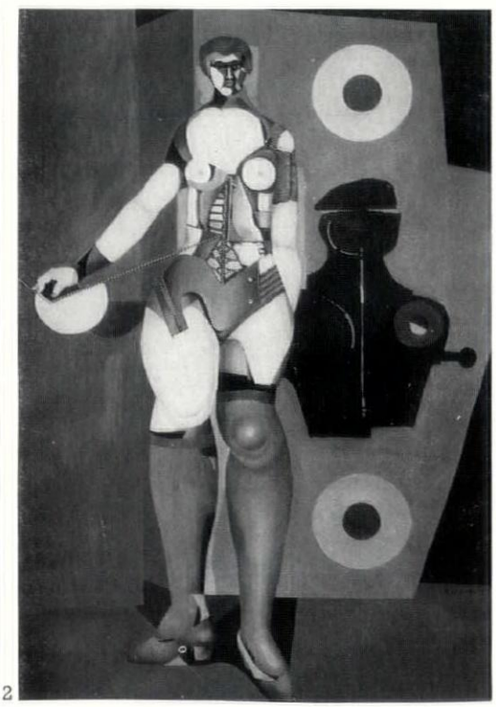
Lindner was born in Hamburg sixty-one years ago and didn't settle in America until he was forty, but his treatment of woman as a cold, bright, erotic machine with detachable parts is a brilliant emblem of America's industrialization of sex appeal. The manufacture of 'girlie' prototypes in Hollywood and the subsequent production of millions of living copies with the aid of such equipment as padded bras and panties gives the undergarment trade a bigger part in creating what American film directors call 'flesh impact' than the flesh itself, and Lindner makes a fascinating engineering job of the female torso by treating bits of clothing as parts of the body.



1

His images are not, of course, pure satire. He is projecting his own sexual fantasies and they gain their force from a harsh, adult systematization of the desperate curiosity of a schoolboy poring over an anatomical chart. The ostensible theme of this particular picture is probably intended as a Freudian comment on the plethora of targets in American abstract painting. The smallness of the woman's head may be intended as an indication of the unimportance of human personality when flesh impact is the chief consideration.

There were two drawings in The New London Gallery's exhibition of Picasso and Moore in which, in drastically different ways, the treatment of the head was clearly determined by the artist's involvement in the 'flesh impact' of the model.



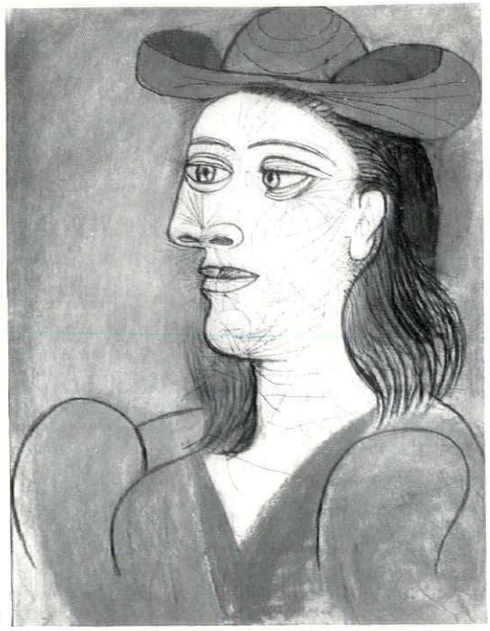
2

In a fine early drawing from the life by Henry Moore, 3, the semi-foreshortened view of the figure leaves the head curiously isolated. There is no anatomical incongruity, but the upright formality of the head and neck and the firmness of their structure are in sharp contrast to the relaxed position of the body and the deliquescence of the breasts. And what seems to me to be an unconscious recording in the drawing of a kind of disagreement between the model as a person and as a living creature is perhaps confirmed by the expression on the model's face, which can fairly be described as one of disapproval.



3

The other drawing is a pastel portrait of Dora Maar by Picasso, 4. It's one of the countless drawings he made of her in 1938: a good example but not among the finest. Here, the idea of 'flesh impact' is given extremely refined expression through the face alone, which is so frequently devalued, de-personalized, deformed or destroyed in twentieth-century figuration. The spidery facial markings are a lyrical response to the contours, a dazzling little flourish of praise, and leave one with the sense of a face that has been gazed at with admiration and caressed with love.

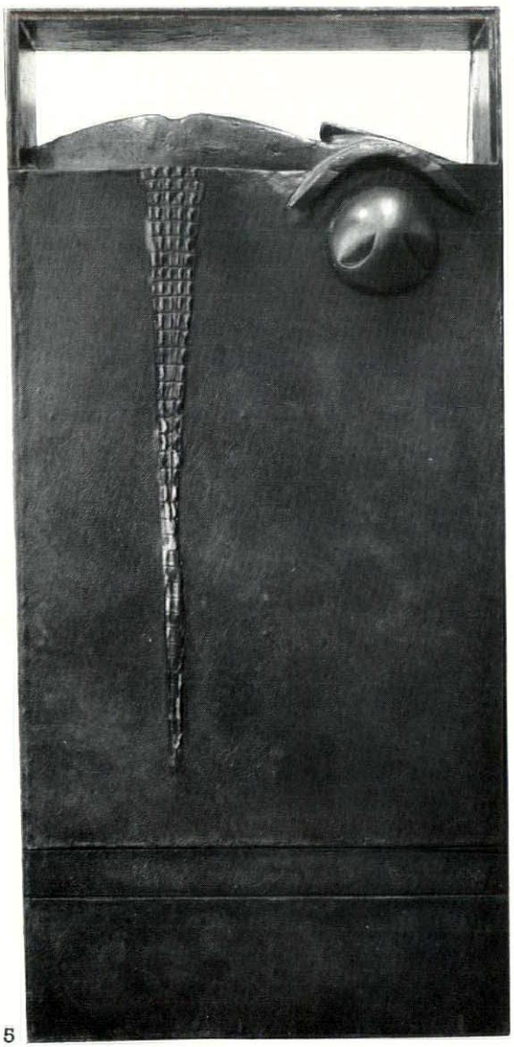


4

But the exhibition as a whole was oddly unstirring. It was a good idea to bring these two modern masters together and it should have been a notable event. But there was a cold, unfeeling look about the show; it somehow remained a collection of disparate items, and even when there were several people present the gallery had a strangely deserted and even forlorn look.

There was little sign of interest in 'flesh impact' in the large mixed show of sculpture recently held at the Hanover Gallery, but many signs of ingenuity and inventiveness. Kalinowski's large, elegant bronze tablet is called 'Torso,' 5, and the torso is presumably the small mound towards the left of the cut-out at the top. I may be quite wrong, but I take the half-sphere on the right to be a lolling head and the strip of bronze arched over it to be an arm. The nice long dangle of embossing could be a braid of hair or even a belly-band. Anyway, there is just enough suggestion of a languorous female to pull the forms together and give a slight fin-de-siécle zip to a pleasant decorative panel. On second thoughts, however, I think Kalinowski is depicting the murdered Judy in a Punch and Judy show—which means that the braid of hair is a stream of blood.

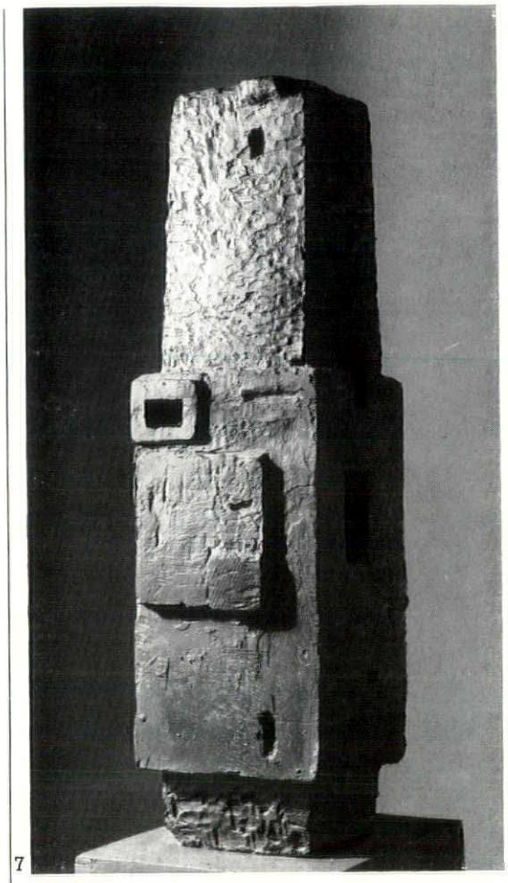
Cesar's cleverly textured half body, 6, has been on view before. It is brilliant and absurd, and brings to mind Giacometti's large bronze leg which was included in his show at the Venice Biennale. The leg was exhibited among smaller works and the disruption of scale produced the magical effect of an invisible god stepping lightly down from on high and beginning to materialize. There was no sorcery in the air to help Cesar's piece, but perhaps the fact that one is not in the least curious about the half that isn't there means that Cesar has succeeded in turning the fragment into a sculptural entity.



5



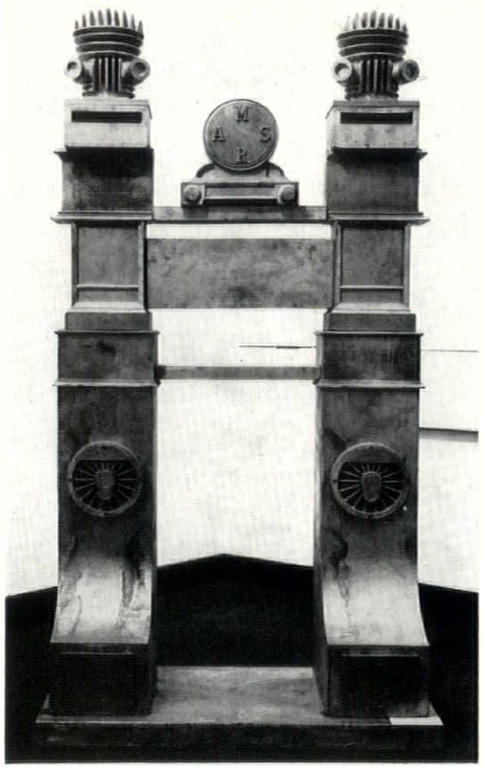
6



7

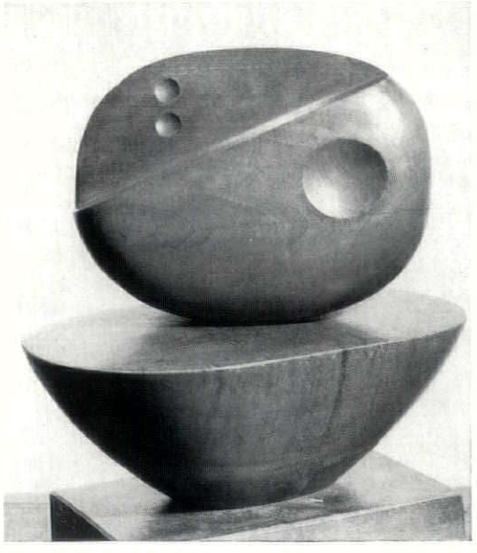
The Hanover Gallery show also included the first two casts of some variations on a monolithic theme which has been preoccupying Reg Butler for well over a year. It is an extension of the theme of the iron box, and both of these variations succeed much more impressively than the famous maquette for the Unknown Political Prisoner in conveying the impression that they have been conceived as collossal monuments. They have formidable presence, but their air of watchfulness, secrecy and impregnability suggest that Butler's ruminations on the theme of the Unknown Political Prisoner have left him with more to say about tyranny than freedom. These towers, 7, seem inadvertently to praise dictatorship.

A new work by Eduardo Paolozzi, executed in aluminium, has been on view at Marlborough Fine Arts. It's much larger than either of the Butler bronzes, but if it seems even larger than its actual size it is not because it's a monumental conception. It's too big—in the same sense that any piece of furniture that has lost



8

its function is too big. It's called 'Mars,' 8, and I suppose the idea is that it's a Martian disguised as a joke mantelpiece. It's the last thing in deadpan, but the straight face hides only an inconsequential titter. It may be the logical conclusion of

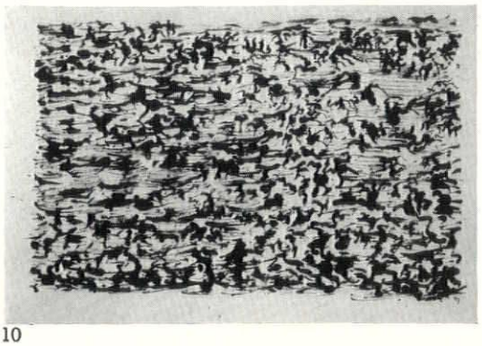


9

Paolozzi's attitude to the sculptural object, but it is not a development.

In the same exhibition there was a notable example of Barbara Hepworth's carving, 9. It was made in 1938, before any sculptor had thought of bowing and scraping to the corpse of Dada.

A word about Henri Michaux. Some of the large pen drawings, 10, that have given him an international reputation, can be seen at the Robert Fraser Gallery. Michaux is something of an embarrassment to any critic who has ever praised the 'vital flick' in drawings by Van Gogh or Picasso, for Michaux's drawings are composed entirely of 'vital flicks.' They appear to be done under stimulants and might be described as unscientific graphic



10

records of the electrical impulses of the brain in a monotonous state of excitement. It's a display of automatic uniqueness, an embellishment of the fact that no one's thumb print is the same as anyone else's. In a depressingly brilliant and superior way it points out the direction in which 'poetry can be made by all.' I hope I have made my own embarrassment clear.

Robert Melville

TOPOGRAPHY

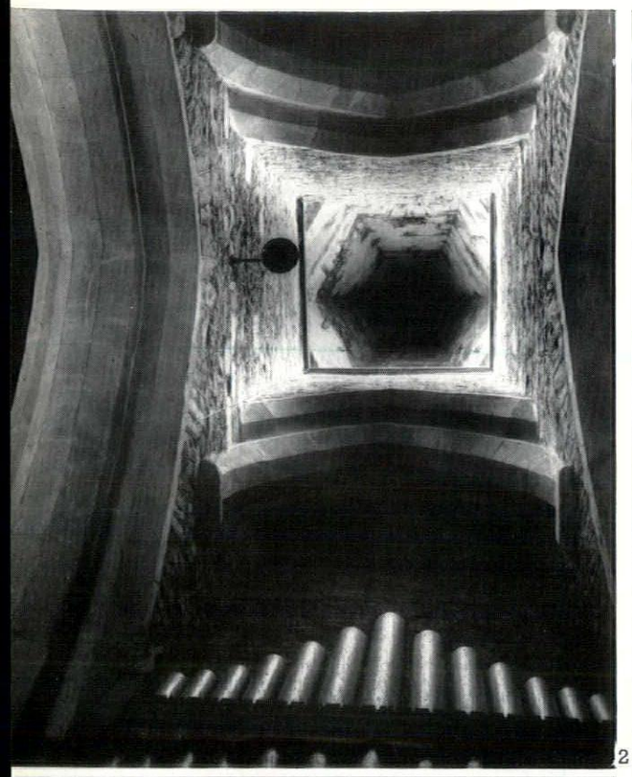
WILTSHIRE SURPRISES

The following photographs which Eric de Maré took for me are meant to show that even in the thirty by thirty miles of one county there are plenty of visual surprises, some acting as directly as any in distant parts, others, it must be admitted, requiring at least some knowledge of what the standards are against which they ought to be seen.

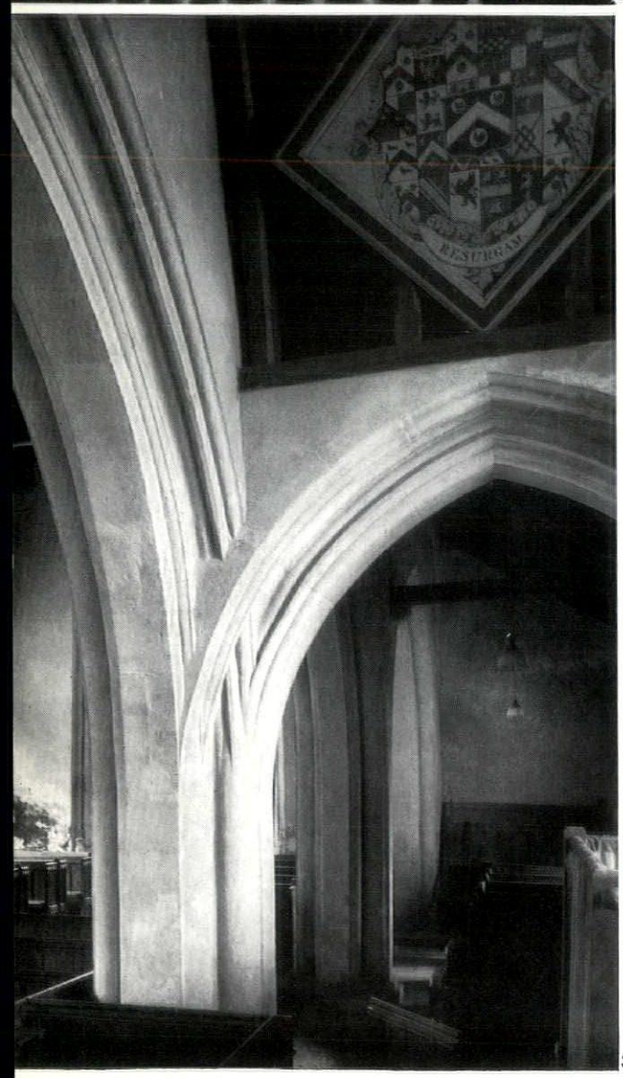
The west view of South Wraxall church, 1, is a direct case, a calculated play of elementary geometrical shapes one against the other. The staircase turret cannot have demanded that size or that projection. The mason about the end of the thirteenth century must have done it for the sake of juxtaposition. Saddleback roofs are not all that frequent anyway. To have placed them at right angles to one another in this way confirms the aesthetic self-consciousness of the composition, even if the top of the tower is a seventeenth-century remodelling.



1



2



3

The equally direct surprise of the crossing tower of Wanborough church, 2, may also be the result of a remodelling. We can't be certain whether what we see was meant to be seen. Anyway, it is there, the shaft-like opening in which the eye loses itself as one stands in the centre of the crossing. The date is the early fourteenth century, and the idea of such a thin octagonal erection over the crossing may be inspired by the usual towers in a corresponding position in English friars' churches.

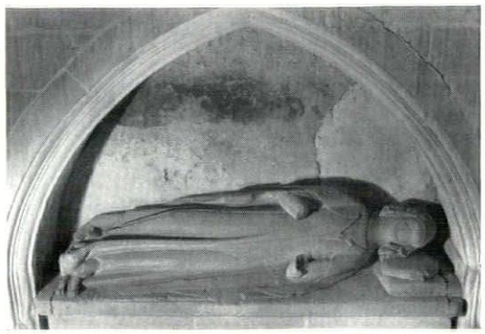
Of the same date is the crossing at Winterbourne Bassett, 3. The English have always had a liking for the linear intricacy which results from intersecting arches. The Normans did it, and in the thirteenth century in such cases as the splendid piscinas at St. John's College, Cambridge, and Histon, near Cambridge, it is no longer the arches, but the individual mouldings of the arches that intersect. Still—it was left to this remarkable Wiltshire mason to do it on such a major scale and combine it with the growth of mouldings direct out of verticals without any capital or any other horizontal dividing line between. One expects to find this sort of thing in Prague or in Saxony, but there it would be nearly two hundred years later. The English can never have been firm believers in the logic of French Gothic structure.

4 belongs to the same date and again displays a conflict with logic. This lady at Stockton—the date is confirmed by her clothes—ought, of course, to lie on her back. That is what such effigies do. But then—and students as well as photographers know that to their despair—you can never see her properly, because of the arch of the recess in which she is placed. So she is turned over, but as a stone effigy, not as a body. The soles of the feet which should have pressed gently against the pet dog don't quite do so, and the skirt and the mantle, of course, fall as if she were still lying on her back. In Herefordshire, a little later, in two monuments, they were more consistent, and though the effigies are recumbent, the mantles hang down, with an illusion of reality, over the edge of the tomb-chest (Much Marcle, Ledbury).

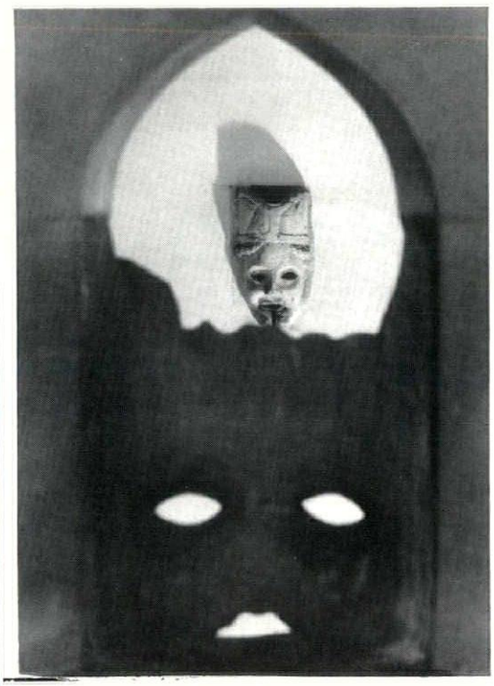
One of the most curious cases of illusionism in the English Middle Ages is the Masks of Great Chalfield, 5, a manor house of about 1480. The masks are really spy-windows enabling people to look down from the upper floor into the hall. But they are given the shape of heads, one a bishop, one a devil. One would like to think that on occasions they placed tapers behind them. One certainly should not put such an idea past them. We know from the mystery plays to what lengths this kind of startling or frightening went.

The surprise of the monument to Col. Glanville at Broad Hinton, 6, is of a different order. It is simply that so few people expect to find in English seventeenth-century sculpture—Col. Glanville was killed at Bridgwater in 1645—an aesthetic quality to compete with Italy. Col. Glanville stands in uniform in a niche with straight sides but segmental top and bottom. Along sides, top and bottom are small allegorical figures carved in alabaster. This chained woman is among them, her agonised features—oddly mask-like after Great Chalfield—not easily forgotten.

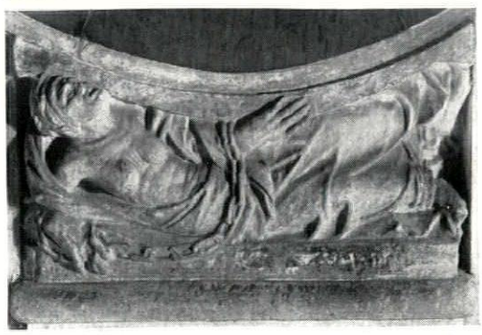
The rest is nineteenth-century. First (cover of this issue) the Boulton & Watt pumping station in its simple brick house at Crofton—beautifully kept up, even if no longer doing its job—date about 1811, when this part of the Kennet-Avon Canal



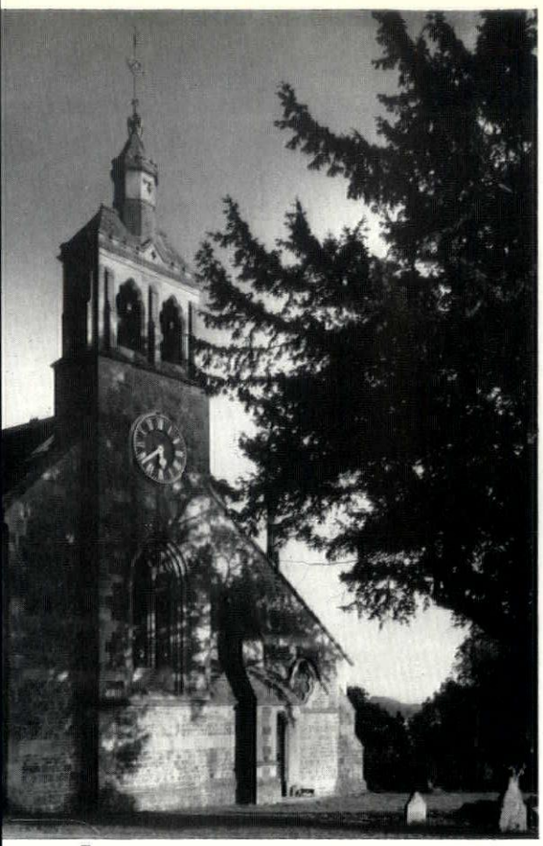
4



5



6



7



8



9

was opened. Second—a never illustrated, super-Butterfield façade—Blunsdon St. Andrew, of 1868, 7. What a recklessness to break the symmetry of the front by pulling the roof down low on one side, putting a sexfoiled window in like a label: don't overlook this, and then, round the corner, to let a tall utilitarian stone chimney compete with the conventional turret of the bellcote.

Where Alfred Gilbert is concerned, one can always be sure of surprises. The lady in the thicket in 8 is apparently Faith, even if the gloriously Arts-and-Crafts branches are not strictly a cross. Or is she at the same time an image of the Marchionness of Aylesbury whom the monument at St. Katharine, Savernake Forest, commemorates? She died in 1892. The Hon. J. B. Thynne died in 1887 and his memorial at Longbridge Deverell was intended to be a font, 9. But the top figure, no doubt a St. John the Baptist, was at once stolen, and the monument was never used as a font. Gilbert's gristly, lavish forms are unmistakable—English Art Nouveau, before it got going on the Continent.

N. Pevsner

PLANNING

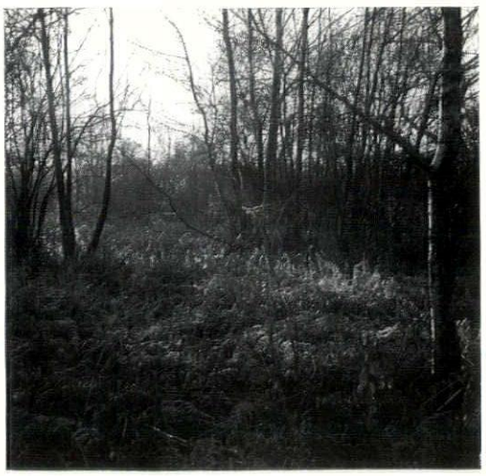
THE BUSINESS AT TROSLEY TOWERS

Planning must always be a balance between conflicting wishes, but there must be few cases since the war where the scales have been weighted so evenly as at Vigo or Trosley Towers in Kent, where Minister has recently given his decision. This is a very complicated situation in which everyone has tried to do the best they can.

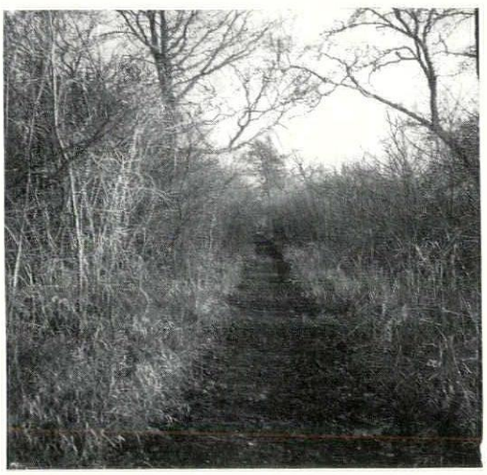
The site is near the crest of the North Downs between Wrotham and Rochester, and is covered in dense scrub which has a few bigger trees embedded in it. During the war a big camp was built there: it became a squatters' settlement and outline planning permission for housing was granted in 1952 by the Kent County Council, at a time when it was still covered with huts. Now all that is visible is a water tower and a few concrete bases, rapidly breaking up and reverting to bracken and moss. The rest is an idyll, quiet and sequestered, with paths meandering through the undergrowth, 1 and 2, and beyond it and the crest line there is a lovely view south at the edge of the woods, which go some way down the scarp slope of the downs. It is not at all a claustrophobic place: happy and friendly in December, and a leafy delight in summer.



site plan of the proposed Vigo village



1



2

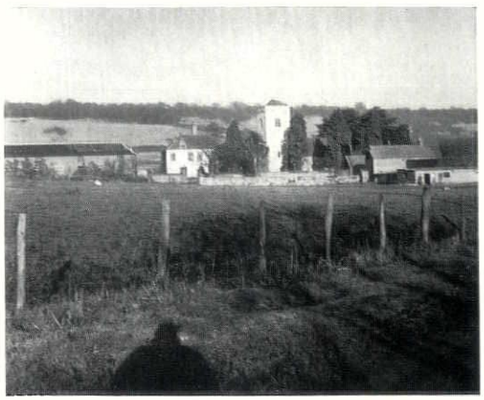
The outline planning permission was the cause of all the trouble. The County Council had opposed several detailed applications to develop the site since 1952 —some had gone as far as a public enquiry —and the Minister held another enquiry last spring into whether the permission should be revoked. A new scheme had then been put forward by Croudace Ltd., of Caterham, designed by their chief architect, Andrew Cunnison, and called Vigo village after the name of the nearest pub. The County Council supported this scheme, which they regarded as the first really good proposal that had come to them. Very naturally they did not want to revoke the permission because they would be liable for compensation. Equally, it was probably a mistake to grant the outline permission in the first place. It is not simple.

The Vigo scheme itself occupies 165 acres out of a total of 365. The remainder runs along the crest-line of the downs, and what the Minister has done is to revoke the permission for this part and confirm it on the Vigo site. So although this proposal was not legally part of the enquiry it has in effect got the green light.

In vacuo, the case against building at Vigo is very simple. The area, on the top of the hills, is a part of a wedge of countryside between London and the Medway



3



4

towns. It is not in the Green Belt but would certainly be part of the Green Belt extension. Back from the crest are innumerable narrow lanes, already too much built on, except to the north-east where there is a vital, unspoilt four-mile stretch of countryside before the municipal deserts of outer Strood. At its crudest, the Vigo proposal is one more piece of exurban sprawl in an area not so far affected by it in a wholesale way. It will be effectively restricted to those who own a car, and it will overload the surrounding lanes, 3, with people who don't live where they work.

That is the case against Vigo. What can be said for it? To take the negative view first, nobody is going to be able to see it. Most of the site is thick scrub and most of this will be kept. The County Council is insistent that nothing will appear above the tree-line on the escarpment as it appears to travellers along the main A20 road which slides down diagonally in front of it. This means that nothing is likely to be visible from the hills on the reverse slopes, and certainly not from close views under the scarp, such as that including Trottiscliffe church, 4.

Originally the scheme included eleven-storey blocks which would have been visible, and the architect stuck to these in his evidence, comparing the effect with that of windmills or church towers on the skyline. This I doubt, partly because of the urbanized appearance of such existing towers-above-foliage effects as the centre of Harlow or the older parts of Roehampton, and partly because any unbroken rural skyline is a very precious thing in this bit of what is really outer London and outer Rochester. Vigo village will only appear intermittently along the by-road leading off north-east from the A228, and in a landscape where several man-made things pop up amongst the oaks and beeches anyway.

But the real reason for building Vigo—the only reason for building anything on this site at all—is the quality of the plan itself. It is eloquent and elegant, and has the chance to become a real neighbourhood. The site is long and narrow, with the by-road running along its north side. There are only three points of contact—at either end, and halfway along, where a road runs straight to the village centre, and then curls west and east into the housing areas in two long culs-de-sac. At times the service roads are only a few yards from the outside world (see plan). These green strips must never be breached, because the organic logic of the idea goes if it is. At the moment, it is as coherent as a palm-and-fingers. It may mean a mile's drive to get fifty yards: but that is, quite rightly, one of the responsibilities of sophistication and technological advance. And as a teasing reminder of man's equivocal condition it will remain fifty yards on foot. In other words, through vehicles are not prohibited, only discouraged.

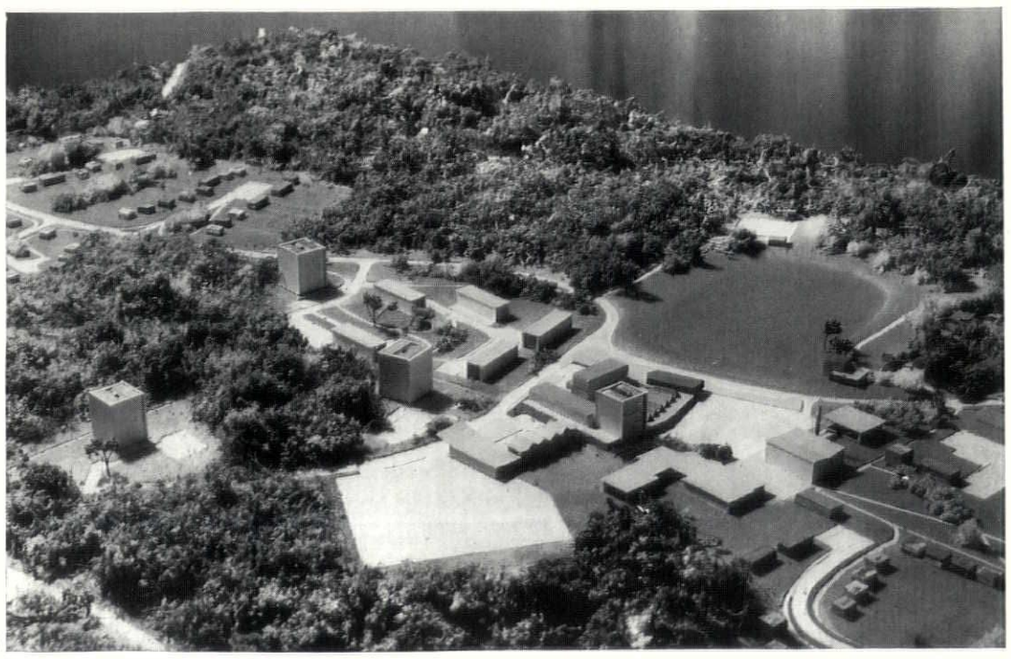
The spine of the village is in fact a footpath. Because it is common sense and convenient it is likely to work where most such systems do not. Nobody will need to take short cuts because it is itself the most direct route from the housing to the village centre, and there are only two underpasses along the whole length. The distance from the centre to the middle of the houses is five hundred yards in one direction, four hundred in the other. The whole site is approximately 1,600 yards long and only 500 yards deep.

The centre, 5, through which all the lines of force of the village will pass (unlike Harlow, where the centres of activity are roundabouts and T-junctions) will have shops, church and church hall and a pub, facing across a small green which is cut into the slope so that the south end will make a tree-lined amphitheatre about fifteen feet deep. Beyond this will be a belvedere and viewpoint.

At a time when most plans—whether low-density and informal or high-density and formal—are in fact unnatural and inorganic, this design develops easily and naturally. All the time, it makes common sense as well as visual sense. And on top of this, about half of the site will remain thick scrub, tying the building units together—something which may be needed around the slabs of flats and at the splay corners. There is still plenty of opportunity for the design to go horribly wrong in the details; but there is also in the plan the potential for something marvellous. Most plans scupper things from the beginning.

The idea of spreading in nucleated units of this size has a much wider application than this particular site, especially in the Midlands and North where there is more space to play with. If a dozen big speculative builders would suggest up schemes as good as this for the surroundings of Leicester or Ipswich or Leeds, in consultation with the planning authorities, the whole pattern of provincial spec building might be transformed. It certainly needs transforming.

Ian Nairn



5

SKILL

ACTIVE FIRE DEFENCE OF BUILDINGS
1, DETECTION AND ALARM DEVICES

Fire protection is a service required in a building and understood by every architect. This understanding, however, is too often a vague knowledge that some sort of fire fighting equipment will be necessary and possibly at some later stage he had better do something about sprinklers or something like that. In actual fact much development has taken place recently in fire protection and the service it offers is so basic as to need careful consideration at a very early stage. This article, the first of two by Clement Shepherd, reviews detection systems and devices which can be carefully integrated into the servicing plan of a project.

From the moment when man first put the phenomenon of fire to his own uses, the question of fire control became of major importance. Fire within the limits of some special purpose opened an era of new possibilities, but with these possibilities came new danger. The growth of society and the drawing together of large numbers of people into one community accentuated these dangers.

In AD 6 after a disastrous fire in the city of Rome, the Emperor Augustus instituted the Corps of Vigiles, a body of some 7,000 men whose responsibility (among others) was one of fire control. As in other spheres of activity, however, this early example of intelligence in the organization of the Roman civilization was to have little influence. In this country fire control methods were of a primitive nature until, in the year 1666, a great fire in the city of London awakened the authorities to the reality of uncontrolled fire spread. Even after this experience no fire brigade was established but 'an Act for the preventing and suppressing of fires within the City of London and the liberties thereof 1667' was passed by the government. As a result of this Act the City was divided into four quarters, each quarter being provided with 50 ladders (10 to be 42 ft. long), 800 leather buckets, 40 shod shovels, 24 pick-axes and as many hand squirts of brass as would furnish two for every parish in the quarter! In addition to this, the 12 principal Livery Companies were obliged to give certain fire control facilities. A bellman was appointed to patrol the streets from 10 p.m. until 5 a.m. to warn the populace of outbreaks of fire.

Here were the beginnings of organized fire defences on a scale fitted to the needs of urban development in this country, though, for many years, mobile brigades remained in the hands of private insurance companies.

Today, the fire fighting services are a large, complex and efficient organization. As any outbreak of fire[1] (with the occasional exception of forest fires, etc.) must inevitably affect surrounding buildings, the architect has an important part to play in the assistance of this organization.

Definitions

In the Post War Building Study 'Fire grading of buildings' the following division is made in fire control methods for buildings: 'We considered that growth and spread of fire should be minimized and the risk to occupants reduced by a rational combination of two distinct methods, balanced and adjusted according to the risk involved; viz. by suitably *constructing and planning* a building have due regard to both internal fire and fire in adjacent buildings, i.e. 'passive defence,' and by providing *means of extinguishing fires*, i.e. 'active defence.' It is the purpose of this article to study the second of these methods, 'active defence' and in particular:

'1. Alarm systems to warn the occupants of buildings and to summon assistance.

'2. Equipping buildings with fire extinguishing appliances which operate automatically or are capable of immediate use by any active person on the spot.'[2]

GENERAL CONSIDERATIONS

When designing for fire prevention and protection in any particular building the architect has to consider the opinions of two 'interested parties.'

1. The local authority and fire brigade representing the requirements of society as a whole.

2. The owner (perhaps the client), concerned with the inner workings of the building.

In terms of 'active defence' the necessary provisions will vary with factors of location, size, construction and class of occupancy of the building. The following course of action is, however, advisable in all cases:

1. The local authority and fire brigade

Although the fire brigade has very little direct control over the provision of fire fighting equipment (except in factories[3]) their advice should be obtained at the inception of any design (also for their interpretations of 'passive defence' requirements—see above). The London Building Acts (similar powers have now been obtained by certain other local authorities), sections 20 and 21,[4] give certain precise requirements as do certain other local authority byelaws. In particular circumstances the Home Office 'Manual of Safety Requirements in theatres' and 'Fire precautions in schools'; together with the recommendations of the Electricity Commissioners on 'Fire risks at generating stations' may be referred to.[5]

2. The building owner

The person or group of persons or their advisers responsible for any projected building will be concerned with the protection of any future occupants of the building, of the material contents, and the building itself. They will almost certainly take out insurance policies to cover these eventualities and in this case the architect must refer to the requirements of the Fire Offices' Committee.[6] Among other relevant publications will be *Rules for Automatic Sprinkler Installations* and *Rules for Automatic Fire Alarm Installations*. There are also lists of approved sprinkler heads and valves, fire alarm detectors, and portable fire extinguishing appliances. In some types of occupancy, depending on the extent of the precautions taken against fire risk, so the insurance premium will be adjusted (a Scale of Allowances is published giving these adjustments).

THE NECESSITY FOR AUTOMATIC FIRE PROTECTION

It is perhaps self-evident that any fire-fighting operation will be more successful and less troublesome in direct ratio to the time which has elapsed between the inception of the fire and the alerting of those responsible for 'active defence' measures.

One cannot rely solely on human observation to provide the 'alert' largely for two reasons: (1) the majority of buildings (other than residential) are unoccupied for a greater length of time than occupied. It has been reported that out of 24 fires in 1958 which caused damage exceeding £100,000, 19 broke out between 5.30 in the evening and 8 the following morning. (2) Even among buildings which are occupied 'round the clock' there are plan areas which are only entered occasionally (particularly storage areas). These 'blind spots' have resulted in fires reaching major proportions before any alarm has been sounded. Even assuming a regular patrol (which would be expensive and, perhaps, inconvenient)—a fire may grow from a smouldering source in well under 30 minutes (depending on the combustibility of the surrounding materials).

[continued on page 372

[1] Fire loss figures (estimates prepared by *The Times* of London): 1957, £25,849,000; 1958, £24,145,000; 1959, £44,179,000; 1960, £43,769,000; 1961, £39,142,000.

[2] Post War Building Study No. 29, page 7, para. 2.

[3] Factories Act, 1961.

[4] Buildings over 100 ft. high, or over 80 ft. high if the area of the building exceeds 10,000 sq. ft., or over 250,000 cu. ft. require additional approvals under Section 20.

[5] For general information on methods of fire fighting the *Manual of firemanship*, part 4, 'Buildings—their construction and internal protection." (Home Office.)

[6] The Fire Offices' Committee is an organization whose aim is to set uniform standards in fire insurance.

If the contract calls for high grade carpeting, ideally suited to contract work — Special design facilities (we have designers in London as well as Kidderminster) Special dyeing facilities inside the factory — Range of Contract Patterns **ring Tomkinsons Contract Service MONarch 3371**
Recent successes in a variety of hotel, railway and shipping contracts prove that Tomkinsons Contract Service is fully competitive in value and delivery.
Tomkinsons Carpets for Contracts TOMKINSONS LTD, ST. MARTINS LE GRAND, LONDON EC1



 continued from page 370]

For these two reasons it is advisable to consider some system of *automatic* detection and extinction, particularly in the case of bad fire risk buildings (see below). Although the alerting machine is susceptible to malfunction and giving false alarm as the human being, it has the advantage of being on the spot continuously. In considering the necessity for such automatic protection[7] the Fire Protection Association[8] recommend automatic protection in the following conditions:

Large and undivided buildings: Where a building or buildings are large, and where premises are not sub-divided into reasonably small compartments by fire-resisting construction, a fire can be large too. Automatic protection should be considered necessary if any space that can be damaged by a single fire exceeds 250,000 cu. ft.

Life danger: There are many buildings where, taking into account the processes carried on, the material stored or the age of the premises, automatic protection would materially increase the chances of people escaping in the event of a fire.

Readily combustible contents: In buildings such as flour mills and department stores fire spreads so rapidly that unless attacked immediately by water from an automatic sprinkler installation there may be little chance of saving the building.

Valuable stocks and equipment: Automatic protection should be given to machines, materials, processes or records if they are of great monetary value or difficult to replace. It is also advisable to consider special protection for any stage in production which is not duplicated and which, if involved in a fire, would cause prolonged break in manufacture.

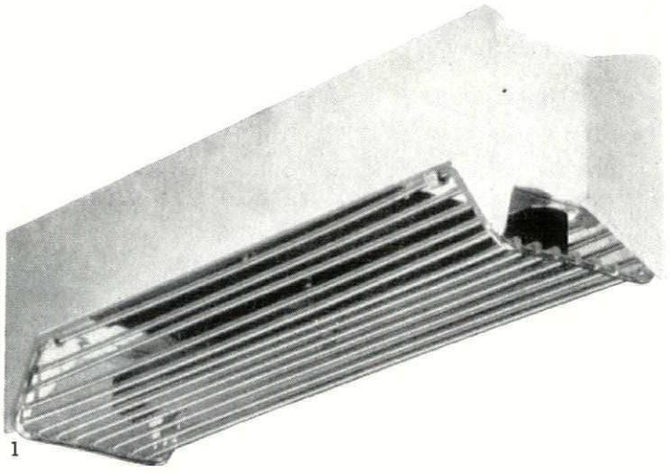
Unattended processes: With automation and the development of modern techniques large processing areas of factories are unattended. Occasionally whole departments or buildings may be void of people. Storage compartments are also unoccupied for long periods. Automatic protection has obvious advantages in these circumstances.

Hazardous processes: There are some processes which involve particularly hazardous plant and materials, e.g. fabric coating processes, the grinding of combustible materials, paint drying and operations involving tanks containing flammable solvents or oils, etc. Individual automatic protection should be provided for these, particularly where hazardous processes and storage areas are not isolated from other parts of the factory.

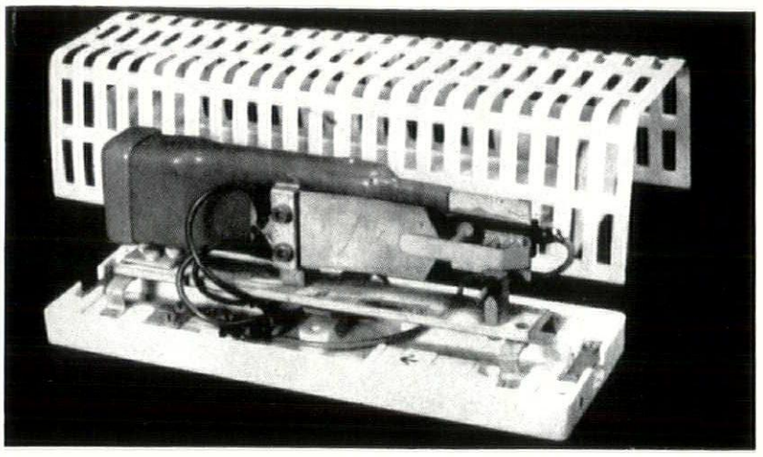
Automatic systems may be in the form of alarms only, or alarms combined with a method of extinguishment (such as sprinkler systems) and these are described within the appropriate sections below.

[7] In certain cases it may be essential for installations to comply with the Factories Acts, etc., or insurance requirements.

[8] The Fire Protection Association provides technical and general advice on all aspects of fire protection.



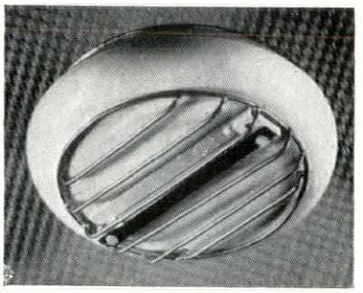
1



2

Table 1: Heat actuated systems

Manufacturer	*Type of Detector*
Associated Fire Alarms Ltd., Claremont Works, Claremont Road, London, E.17.	'Pearson': Two curved metal strips of similar shape but equal thickness supporting twin contacts. Unequal expansion causes one contact to overtake the other and close circuit. 'May-Oatway': Single copper wire coupled to a steel channel guard. When heated wire expands and sags lowering a metal cone on to a pair of contacts. 'National Tubular': Copper tube containing a liquid expands and stretches a diaphragm at each end on to a contact. 'Fidela': Pre-stressed steel strip supporting contact pin with insulated tip mounted on low expansion metal base. Unequal expansion raises contact pin which closes contacts.
Gent & Co. Ltd., Faraday Works, Leicester.	Metal strip supporting tube of mercury. Action: Metal expands releasing a latch which tilts mercury tube making contact.
Graviner Manufacturing Co., Poyle Mill Works, Colnbrook, Bucks.	'Spot-a-Fire': Point detector comprising two insulated contacts mounted apart on bow mechanism of low coefficient expansion inside tubular shell of high expansion. When temperature reaches pre-set rating outer shell expands pulling on bow mechanism and closing contacts. 'Gravinette': Low expansion alloy strip and stainless steel strip welded in bridge form to base of steel case. Different expansion of bridge mechanism moves steel spring contact to make or break circuit with adjustable contact. This is a very small size detector.
Madwell Products Ltd., 1, Marsland Road, Sale, Manchester.	'Tocsin': Twin elements one insulated. When the temperature rises the element resistance is lowered causing deflection of balance of indicator/relay causing contact.
Merryweather & Sons Ltd., Greenwich High Road, London, S.E.10.	Thermostatic element reacts to close circuit.
John Morris & Sons Ltd., Salford Fire Engine Works, Cross Lane, Manchester 5.	'Sirrom': Twin spiral nickel conductors one of which is shielded. Also a fusible link set to predetermined temperature.
The Pyrene Co. Ltd., Brentford, Middlesex.	Twin windings of tungsten wire one shielded. Heating unbalances polarized relay actuating alarm. Pre-set fusible link also incorporated.
Sound Diffusion (Autothermatic) Ltd., Portslade, Sussex.	'Autothermatic': (*a*) 'Bicom': Twin metal strips of unequal thickness. Unequal expansion causes contact. (*b*) 'Dimac': Fusible alloy link holds two phosphor bronze strips in tension. When link melts springs snap forward on to two contacts closing circuit. 'Break Link Cable': p.v.c. cable in 10 ft. lengths soldered together with fusible alloy. Monitored relay current flowing through is broken when alloy melts.
The Walter Kidde Co. Ltd., Belvue Road, Northolt, Middlesex.	Hollow copper tube containing air. Absorbed heat expands air stretching diaphragms at each end thus making contact.



3

1, 'Fidela' automatic fire detector manufactured by Associated Fire Alarms. Overall length of the unit is approximately 8 in. Variations are available for flush mounting. These are heat detectors. 2, 'Bicom' fixed temperature detector head by Sound Diffusion. This unit is 7 in. long, 2¼ in. wide and 2½ in. deep. 3, 'Meridian' heat detector head manufactured by Merryweather and Sons. This unit has a diameter of 6¼ in. and is 2 in. deep.

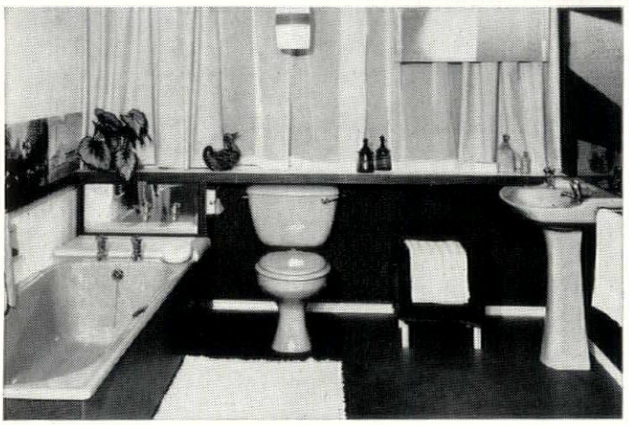
THE SYSTEMS OF FIRE PROTECTION

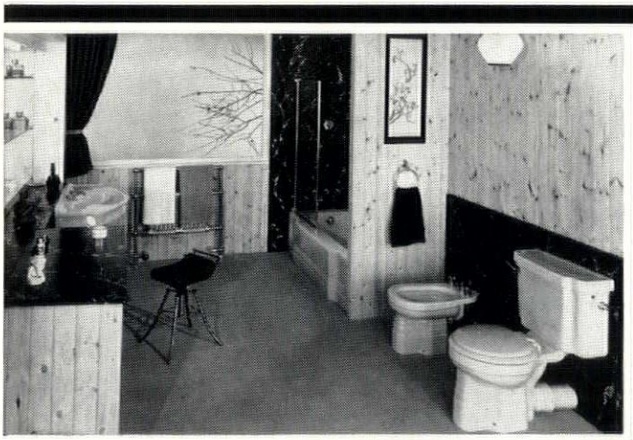
The fire alarm

In order that a fire may be successfully contained the occupants of the building and local fire brigade must be alerted at the earliest possible moment. Section 36 (7) of the Factories Acts, 1937, requires that: 'When in any factory more than 20 persons are employed in the same building, or explosive or highly flammable material are stored or used in any building in which persons are employed, effective provision shall be made for giving warning in case of fire which shall be clearly audible throughout the building.' Even where the installation of a fire alarm system is not required by law, however, the necessity for such a system should be seriously considered by the architect. Alarm systems may be divided into automatic or manually operated categories.

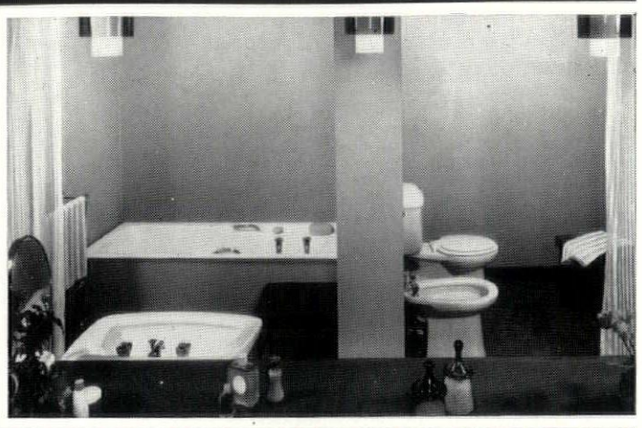
[continued on page 374



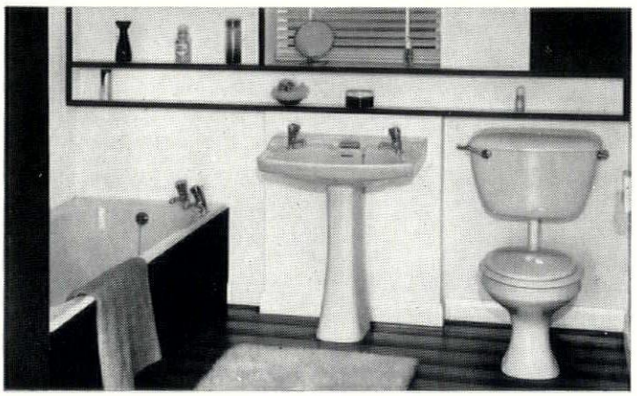








SIX BATHROOMS WITH FLAIR . . .



Commissioned and advertised by "Ideal-Standard" to show house-conscious people the desirability of professionally designed bathrooms.

Four good reasons for recommending "Ideal-Standard":-

Flair for—

* DESIGN
* CRAFTSMANSHIP
* QUALITY
* COLOUR

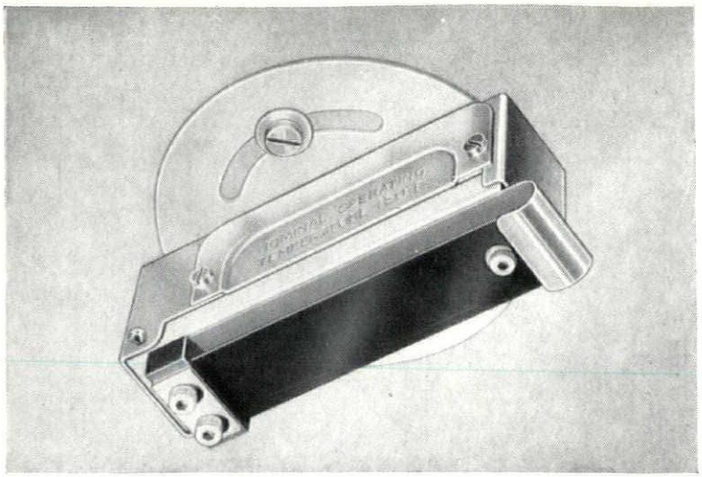
"Standard"

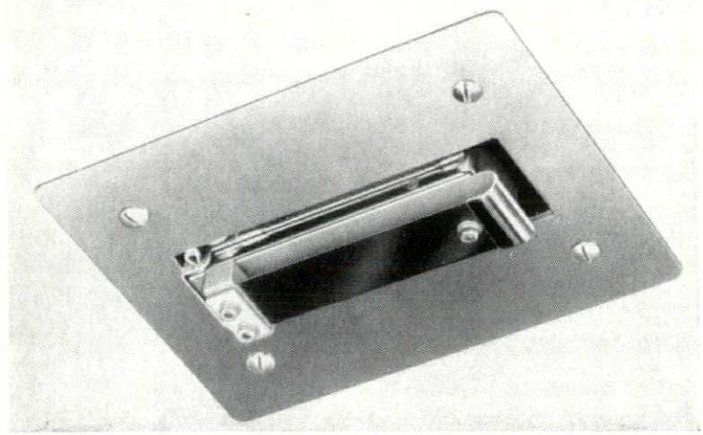
BATHROOM EQUIPMENT

IDEAL-STANDARD LIMITED, Ideal Works, Hull

"Ideal-Standard" and "Standard" are Trade Marks of Ideal-Standard Limited.

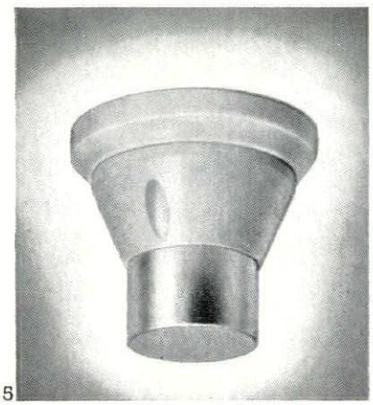
S15





4

4, *detector heads by Gent and Company. The surface fixing model is* 4 *in. long mounted on a circular plate of* 3½ *in. diameter. The fixing plate of the flush fixing model is* 5¾ *in. long by* 4½ *in. wide.* 5, *combined rate-of-rise and fixed temperature detector head by Pyrene Company. The unit in this case has a diameter of* 2 5/16 *in. and a depth of* 2 5/16 *in.*



5

continued from page 372]

Automatic fire alarms: Generally speaking there are two classes of automatic fire alarm installation: those with detectors which respond to heat and those with detectors responsive to smoke. They are almost invariably electrically operated, the alarm being given when the detector operates to complete the circuit or, in the reverse process, a small current flows continuously and the alarm is given when the circuit is *broken* by the operation of the detector. The detectors themselves are usually individual units sited at intervals or may be 'line detectors'—cables or thin tubes which are sensitive for their whole length.

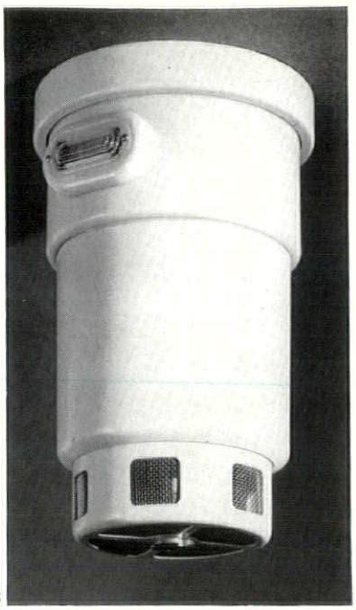
The necessary electricity supply should be battery stored so that operation is ensured even in the event of a mains failure.

In addition to the need for a general protection, detectors and alarms may be situated so as to give warning of fires in localized plant or processes (perhaps of a high fire risk nature). An indicator board is essential to give visual indication of the location of the fire and should be placed in a central position under constant observation.

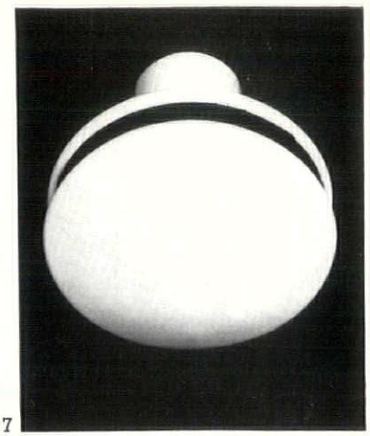
Heat detectors: Heat detectors are usually designed to operate at about 150°F. Technically there is a great variety in the system of operation but nearly all rely on the fact that liquids and metals expand when subjected to heat to ensure the mechanics of the operation. A variety of these systems is listed in Table I.

Smoke detectors: Smoke detectors fall into two categories: (1) the alarm is given when smoke interrupts a beam of light focused on a photo-electric cell; (2) this category utilizes the ability of smoke to absorb certain products of radio activity. The emission of particles from a radium source in an ionization chamber renders the atmosphere in the chamber electrically conducting, and a voltage applied across the chamber thus results in a flow of current. When smoke enters the chamber, it absorbs the particles, lowers the conductivity and reduces the flow of current. A relay is operated by the reduction in current and the alarm is set off.

The advantage of smoke detectors lies in the fact that they operate more quickly—smoke reaching ceiling level to operate a smoke detector well before sufficient heat is emitted to operate the equivalent heat detector. This sensitivity also results, however, in a liability to give false alarm where smoke is present for other reasons than that resulting from an accidental fire.



6



7

6, *smoke detector head by Minerva Detector Company. This unit is* 6 *in. long and* 3½ *in. in diameter.* 7, *heat detector head by the Walter Kidde Company. This unit has a projection of* 3 *in. and a diameter of* 4 *in.*

Manual fire alarms: These may take the primitive form of hand bells, gongs or iron triangles, which are strictly limited in their usefulness.

A manually operated electric fire alarm system is more useful, push buttons for the operation of the alarm being so positioned that no one is more than 100 ft. away from an alarm push. It is important that such push buttons be clearly marked and preferably covered with glass to prevent accidental or malicious operation. Internal telephone systems may also, of course, be used as part of the warning system.

Whether the system be automatic or manual, alarm sounders should be audible in every part of the building and adjacent thoroughfares. It is preferable if the alarm can also alert the local fire brigade.

Maintenance of electric fire alarms: Systems operated by an electric circuit should be tested daily to ensure working order and thoroughly examined every three months by the installing engineers.

More detailed information is contained in the British Standards Code of Practice CP 327,404,402,501 (1951) *Electric Fire Alarms.*

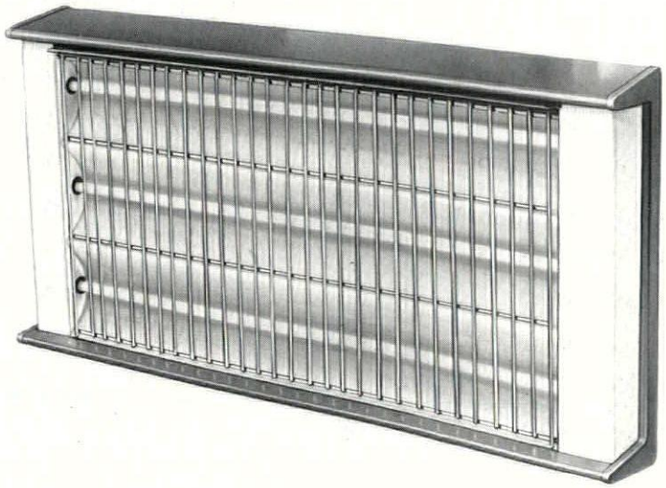
The BS Code is not limited to maintenance.

THE INDUSTRY

Electric fires

An extended range of electric fires has been announced by Falks for the 1962–63 season. The first point which impresses one on viewing the selection is the integration achieved in design over the range. The reason, of course, is not hard to find. In common with many manufacturers of consumer goods, Falks have realized the value of employing a good in-

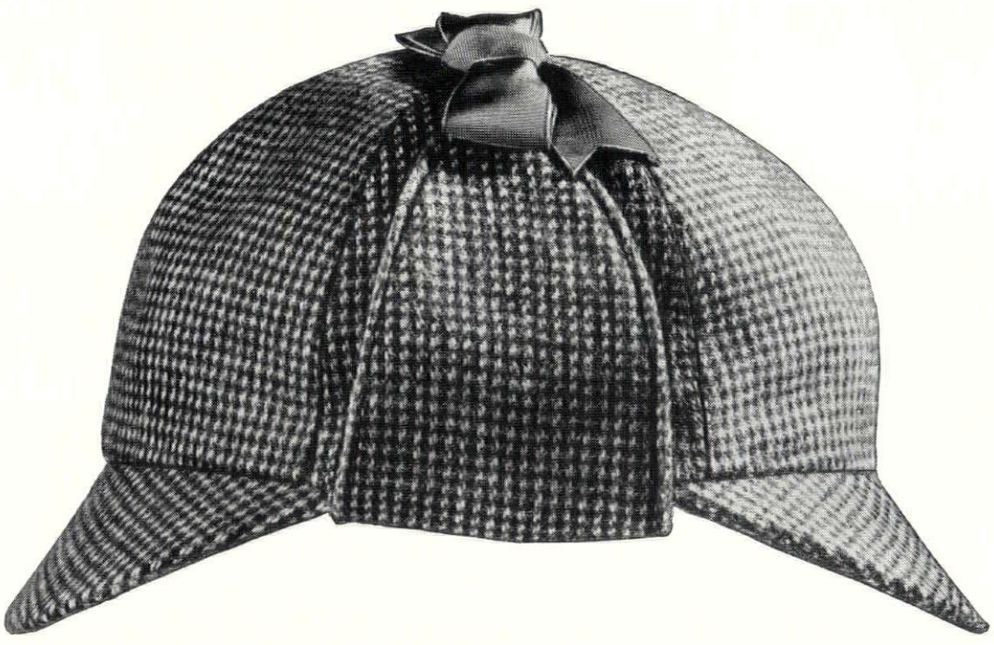
[continued on page 376



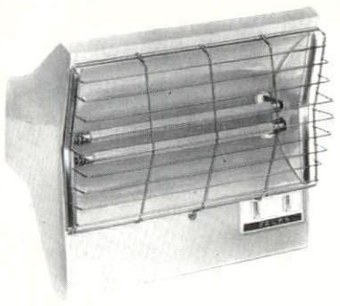
1

We've been hot on the trail of noise. Did it the easy way, by calling on the free services of British Plaster and Boards' acoustic experts. They advised **Paramount Acoustic Tiles.** Such a quick, straightforward job . . . now we've got handsome ceilings and blessed peace. Come round and hear yourself speak sometime!

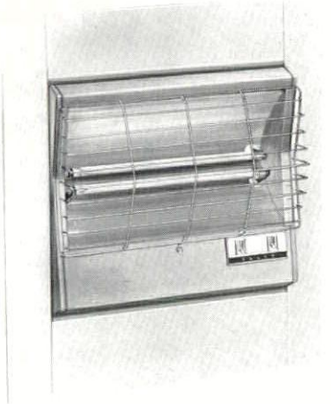
'Phone or write for full details and a sample **Acoustic Tile**



British Plaster and Boards Limited
Ferguson House 15/17 Marylebone Road London NW1 Telephone: HUNter 4021



2



3

continued from page 374]

dustrial designer to translate the technician's specification into a sensible, clean and functional design.

The 'Cardinal infra-red heater, 1, is an excellent example of this. It has three silica tube elements each of 750 watts rating and controlled to give heat from one, two or three elements as required. This costs £15 2s. 8d. including tax.

Also notable in the range are the 'Cavalier' outset heater, 2, and its inset counterpart, the 'Concord,' 3. These cost £6 10s. 2d. and £6 17s. 6d., respectively, both inclusive of tax. Here thought has been given to the problem of throwing forward, away from the wall surface, the rising convection stream of warm air, to attempt to eliminate those unsightly grimy areas one finds over heating appliances.

All in all, Falks and their designer, J. M. Barnicott, M.S.I.A., are to be congratulated on a series of neat and trim designs.

Falk, Stadelmann and Company Limited, 91 Farringdon Road, London, E.C.1.

Modular theatre system

The Honeywell Modular Theatre is the outcome of co-operation between Honeywell Controls Ltd. (and their associated company, New Electronic Products Ltd.) and the Hammersmith Hospital. A unit is in operation at Hammersmith and a section is on display at the Building Centre.

The main objective of the design is to achieve a completely controlled sterile environment (aseptic with control of air movement, humidity, temperature, etc.) with the minimum amount of equipment actually brought into the operating theatre (ancillary apparatus to be part of the surrounding wall panels).

The problem is stated 'With recent advances in surgical techniques, deficiencies in the operating environment become more apparent. Perhaps the most pressing is the risk of infection due to air-borne bacteria, probably from the hospital, with contamination of the patient by the theatre staff also a serious risk. With advances in surgical techniques, larger wound areas are often exposed for longer periods than ever before, and the development of resistant strains further adds to the hazards of surgery.

'The increasing amount of equipment and instruments used within the theatre often makes essential movements and co-operation of personnel difficult. Elaboration and development of new techniques and equipment demands greater flexibility in the design and indicates the use of lower temperatures than previously accepted and requires accurate control.

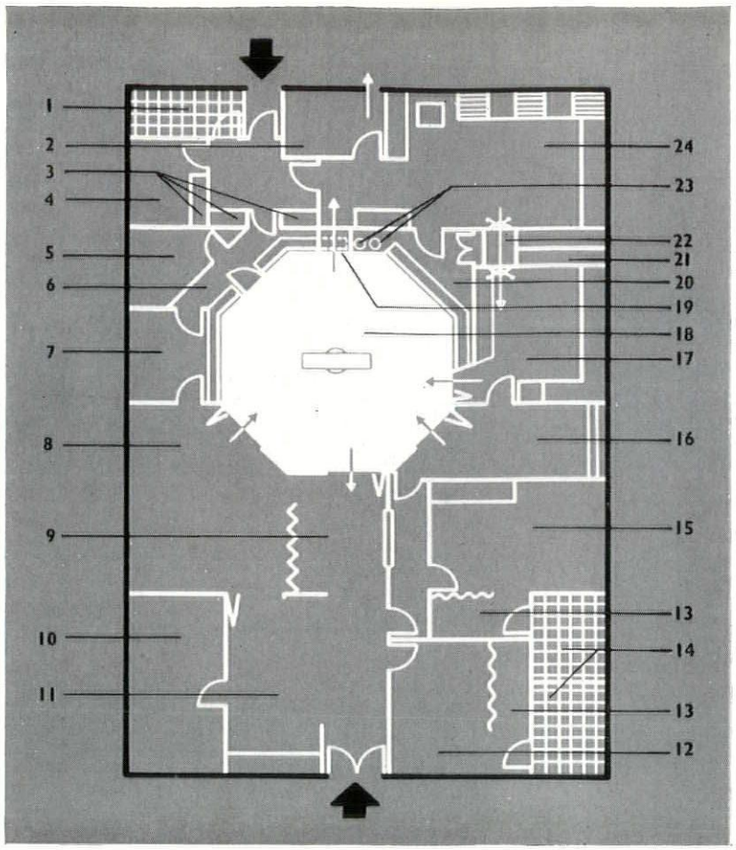
'The efficient execution of increasingly complex and skilled work demands an equally progressive improvement in the working environment of theatre staff.'

Thus the operating theatre is seen as a piece of technical equipment in which the environment can be controlled and maintained highly sterile, easily serviced, and in which redundant equipment can be replaced without excessive building work. This unit forms part of the complete surgical suite which is also planned for flexibility to allow for adaptation in step with medical practice. In the overall plan, air movement within the complex (locating and grading down from areas of positive pressure) is considered with particular care. The staff and patients enter the sterile zone of the theatre through appropriate cleaning, dressing and preparation rooms whereas the maintenance staff are kept to an isolated service area: used instruments from the theatre pass into a sterilizer room and pass through a double entry sterilizer into the sterile preparation room to re-enter the theatre through a sterile instrument cupboard.

The actual construction of the theatre consists of a metal frame (in particular to support the central lighting fixtures) and lightweight interchangeable panels forming a hexagonal unit (although the shape can be modified to suit particular requirements). The wall and ceiling panels consist of a metal faced plastic core, with a synthetic plastic finish. The panel modules are sealed together for cleaning and each panel can provide either access doors, viewing panels, supply hatches, storage units for instruments, history panels, X-ray viewing screens or control panels associated with equipment used in the theatre. Pendant connectors on projecting arms hinged from corner positions at cornice level can be provided to carry services to instruments used at the operating table. This liberates the floor area from obstructions and thus reduces the overall size of the theatre compared to the conventional arrangement.

The thermal properties of the panelling and the shape of the theatre have been developed to maintain stable conditions necessary for accurate control of air-distribution, temperature, humidity. The conditioned air enters the theatre through diffusers to provide an air change pattern which can be adjusted to give either a piston effect or deflected at an angle downwards across the operating area to project constantly filtered air at the patient's level. Outlet takes place at a low level. The system maintains a positive pressure from the sterile area, through the doors and hatches

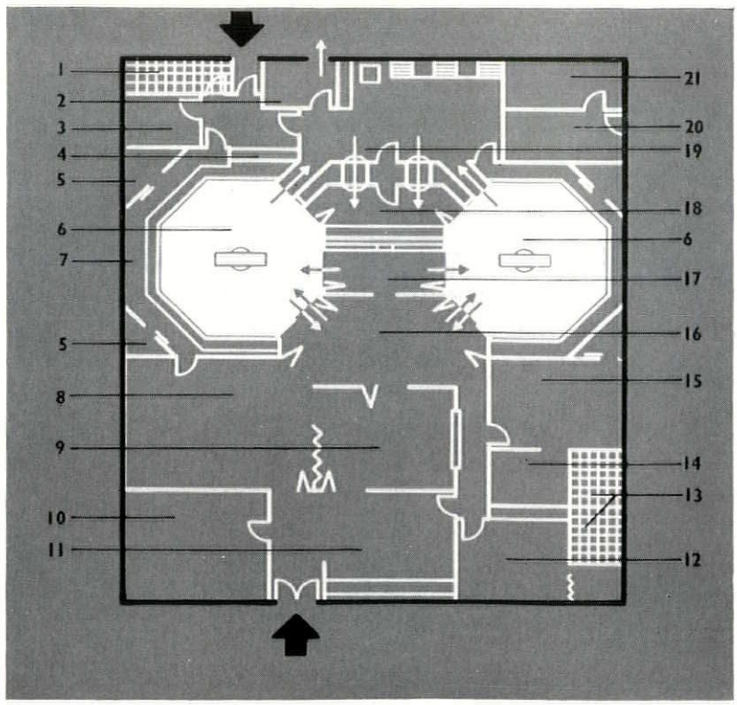
[continued on page 378



4, layout of single unit with ancillary accommodation grouped round.

key

1, toilet
2, dirty linen
3, instrument cupboard
4, linen and drum storage
5, a.c. plant
6, service corridor
7, storage
8, anaesthetic room
9, recovery room
10, medical office
11, entrance lobby
12, nurses' duty room
13, changing room
14, toilets and showers
15, surgeon's room
16, surgeon's scrub-up
17, preparation room
18, operating theatre
19, hatch
20, servicing area
21, hot cupboard
22, sterilizer
23, suction bottles
24, sink room



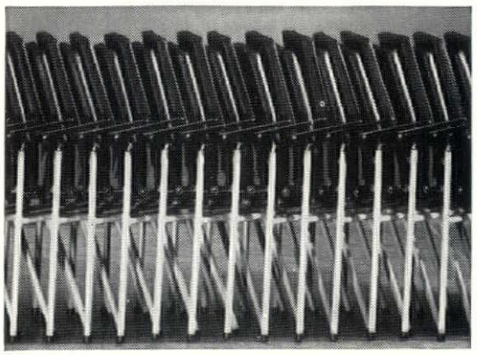
5, layout of a double theatre unit with shared ancillary accommodation permitting one theatre to be in use while the other is being cleaned and prepared.

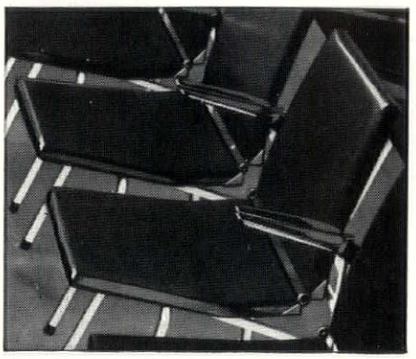
key

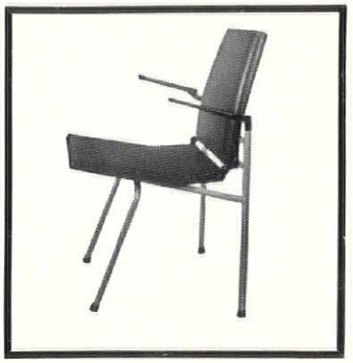
1, toilet
2, dirty linen storage
3, linen and drum storage
4, instrument cupboard
5, storage
6, operating theatre
7, service corridor
8, anaesthetic room
9, recovery room
10, medical office
11, entrance lobby
12, nurses' duty room
13, surgeon's/nurses' toilets
14, surgeon's changing room
15, surgeon's room
16, theatre lobby
17, surgeon's scrub-up
18, preparations
19, sink room
20, a.c. plant
21, battery room

INTRODUCING

HEAL'S NESTING LINKING CHAIR







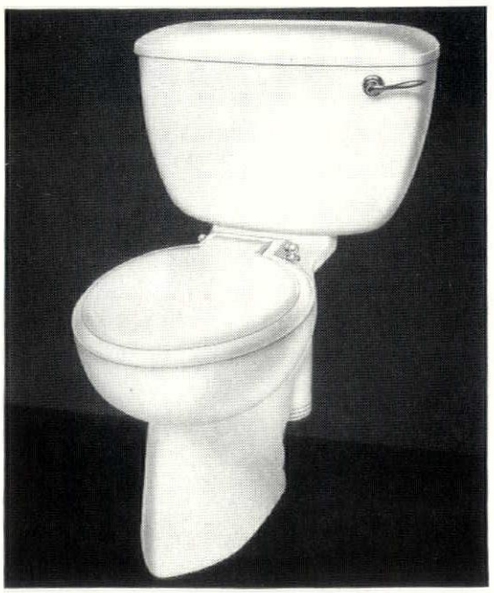
Designed by Henry Long, M.S.I.A., and made for Heal's by Esavian Limited, this Nesting Linking Chair brings good design to stacking chairs. They link securely by the simple interlocking arm, to give an overall width per chair of 20 in. Nesting depth approximately 36 in. per 10 chairs. Other features: noiseless friction-hinged seat; sheathed feet; foam upholstered with black PVC covering. Price for less than 25 chairs, £7.16.0. each. For more than 25 chairs, £7.6.0. each. For fine design and comfort, specify Heal's Nesting Linking Chair. For further details, and leaflet write to: Department AR.

HEAL'S CONTRACTS LTD
196 TOTTENHAM COURT ROAD, LONDON, W.1. MUSEUM 1666
or Shell House, Calthorpe Road, Birmingham 15. Edgbaston 5251

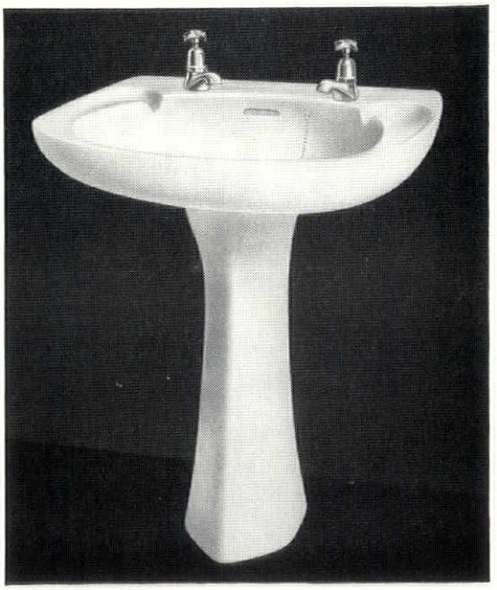
SANITARY FITTINGS

— *by* —

EASTWOODS



Illustrated is Eastwoods EAGLE Suite, in White and Coloured Vitreous China. Elegant yet practical, the Suite comprises close coupled double trap Syphonic W.C. Suite and anti-splash Pedestal Basin.



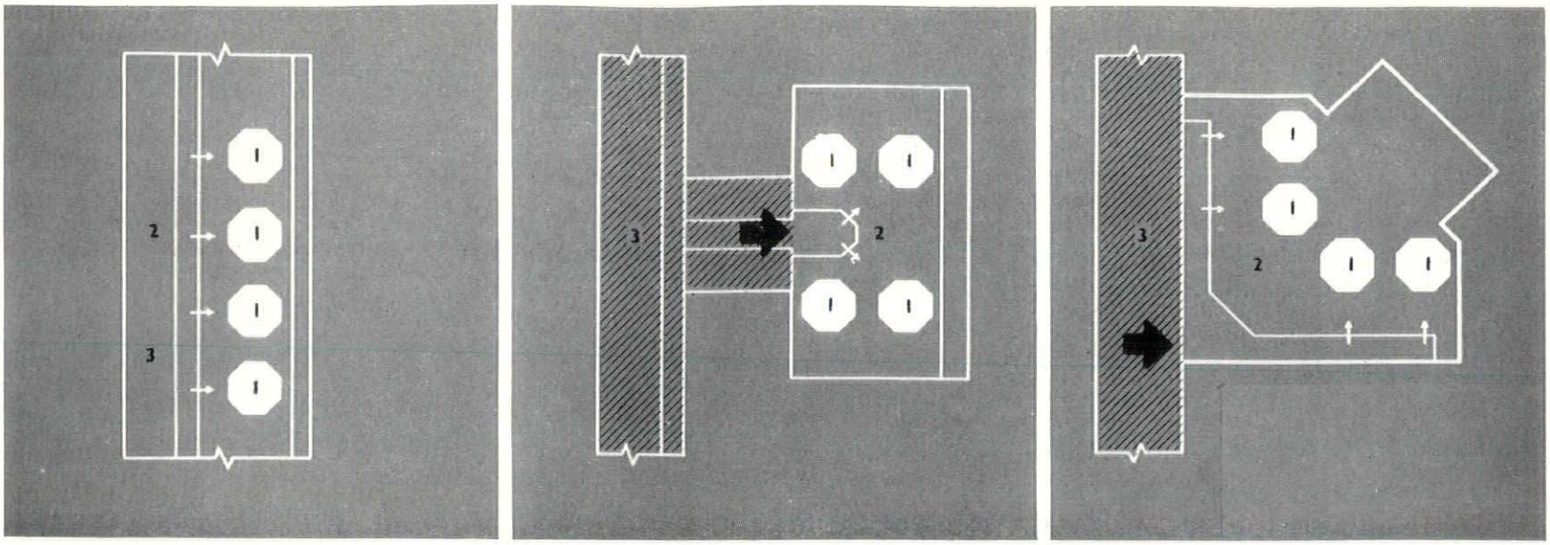
Eastwoods are happy to have been associated with the Architects, Messrs. Richard Sheppard, Robson & Partners, and the Contractors, Messrs. Bernard Sunley Ltd., in the supply of SANITARY FITTINGS to CHURCHILL COLLEGE — see feature pages 329–331.

EASTWOODS SALES LIMITED

HEAD OFFICE: EASTWOOD HOUSE
158–160, CITY ROAD, LONDON, E.C.1
Tel: CLErkenwell 2040

NORTHERN SALES OFFICE:
39–41, THORNE ROAD, DONCASTER
Tel: Doncaster 49256/9

BARBOUR INDEX
File No. 184



6. *alternative grouping arrangements for a suite of four theatres.*

key
1. operating theatre
2. ancillary rooms
3. existing building

continued from page 376]

towards the areas of potential infection.

At a time when medical practice is developing rapidly there is the likelihood that any conventional and permanent building solution for theatres will be out of date before it is even occupied. The flexibility of the Honeywell unit faces this problem and makes it a solution both to new projects and for up-grading existing hospitals. The design, which is a rationalized extension of the complex services that constitute an operating theatre, aims to provide an item of technical equipment to be accommodated in the surgical unit. A Honeywell unit is being installed at a Dundee hospital (under the direction of the Regional Architect for the Eastern Region Scottish Department of Health) and one is being negotiated for the Royal Infirmary, Edinburgh (under the direction of Sir Robert Matthew and Johnson-Marshall). Enquiries have been received from the Metropolitan Hospital Boards and hospitals in Egypt, Belgium, Canada and America.
Honeywell Controls Ltd., Ruislip Road East, Greenford, Middlesex.

CONTRACTORS etc

Cambridge: Residential Building for Caius College. *Architect:* Sir Leslie Martin (in association with Colin St. John Wilson). *General contractor:* William Sindall Ltd. *Sub-contractors: Foundation bricks:* Pratt (Watford) Ltd. *Facing bricks:* Williamson Cliff Ltd. *Pavement lights, Perspex dome lights:* Lensecrete Ltd. *Cork tile flooring:* Stevens & Adams Ltd. *Precast concrete copings:* John Ellis & Sons Ltd. *Hardwood block flooring:* Hollis Bros. Ltd. *Pivoting and slatted windows:* East & Son Ltd. *Sliding windows:* D. Burkle & Son Ltd. *Glazed screens:* John Sadd & Son Ltd. *W.c. partitions:* Venesta Ltd. *Bedroom cupboards:* Wreake Valley Craftsmen Ltd. *Drying room and changing room fittings:* George Lister & Sons Ltd., Alfred G. Roberts Ltd. *Metal window inserts, rooflights:* The Crittall Manufacturing Co. *Ventilator control gear:* Teleflex Products Ltd. *Lightning conductor:* W. J. Furse & Co. *Copper roofing:* Frederick Braby & Co. *Prefabricated wastes and rainwater pipes:* Econa Modern Products Ltd. *Heating installation:* Weatherfoil Ltd. *Kitchen fittings:* Gardiner & Gulland Ltd.

Residential Building for Kings College, Market Hill. *Architects:* The Architects' Co-Partnership. *General contractor:* Kerridge (Cambridge) Ltd. *Sub-contractors: Facing bricks:* Canoy-Herfkens Steenfabrieken N.V. *Insitu terrazzo, stairs, landings:* Diespeker & Co. *Precast terrazzo stairtreads:* Saunders (Ipswich) Ltd. *Spiral staircase:* R. Smith (Horley) Ltd. *Slate facings:* Bow Slate & Enamel Co. *Light fittings:* Fredk. Thomas & Co., Anne Storm Ltd., Heals Contracts Ltd. *Heating, ventilation, plumbing:* Kershaw (Heating) Ltd. *Sanitary fittings:* J. S. & F. Folkard (London) Ltd. *Balustrading:* Kershaw Heating Ltd. *Copper roofing:* Kershaw Heating Ltd. *Wood block flooring:* Horsley Smith & Co. (Haynes) *W.c. partitions:* Venesta Plywood Ltd. *Rooflights:* Henry Hope & Sons Ltd. *Windows:* Ajax Aluminium Ltd. *Double glazing:* Isothermglass Ltd. *Rubber matting:* Redferns Rubber Works Ltd. *Fire fighting equipment:* Read & Campbell Ltd., The Pyrene Co. *Bicycle holders:* Le Bas Tube Co. *Furniture:* Kerridge (Joinery) Ltd. *Soft furnishings:* Primavera (Contracts) Ltd.

Libraries for the Arts Faculties. *Architects:* Sir Hugh Casson, Neville Conder & Partners. *General contractor:* Johnson & Bailey Ltd. *Piling:* Soil Mechanics Ltd. *Flooring:* G. C. Flooring Co. *Terrazzo:* Alan Milne (Flooring) Ltd. *Aluminium roof covering:* Builders Iron & Zincwork Ltd. *Venetian blinds:* E. Hilburn (Blinds) Ltd. *Lightweight concrete screeds:* Isocrete Co. *Structural steelwork:* Mackey Bowley & Co. *Metal balustrading, steel staircases, etc.:* D. Mackay. *Aluminium windows:* Crittall Manufacturing Co. *Lifts:* Hammond & Champness Ltd. *Granite facing slabs:* Walter W. Jenkins & Co. *Aluminium fascia:* Deltafast Ltd. *Heating installation:* Richard Crittall & Co. *Electrical installation:* Troughton & Young Ltd. *Acoustic ceilings:* Hermaseal Acoustics Ltd. *Door furniture:* W. N. Froy & Sons Ltd. *Library tables:* George M. Hammer & Co.

Fellows' Flats, Churchill College. *Architects:* Richard Sheppard, Robson & Partners. *General contractor:* Bernard Sunley & Sons Ltd. *Sub-contractors: Joinery fittings:* F. G. Minter Ltd. *Stone:* Kendell's Stone & Paving Co. *Bricks:* Williamson, Cliff Ltd. *Sanitary fittings:* Eastwoods Sales Ltd. *Cell concrete for heating duct:* Celcon Ltd. *Doors:* Leaderflush (Doors) Ltd. *Ironmongery:* Alfred C. Roberts Ltd. *Garage door gear:* Ellard Sliding Door Gears Ltd. *Furnishings:* W. Eaden Lilley & Co. *Doormats:* United Workshop for the Blind. *Carpets and rugs:* Primavera (Contracts) Ltd. *Fabrics:* Finmar Ltd., Stevenson & Sons Ltd. *Light fittings:* Anne Storm Ltd. *Kitchen equipment:* Benham & Sons Ltd.

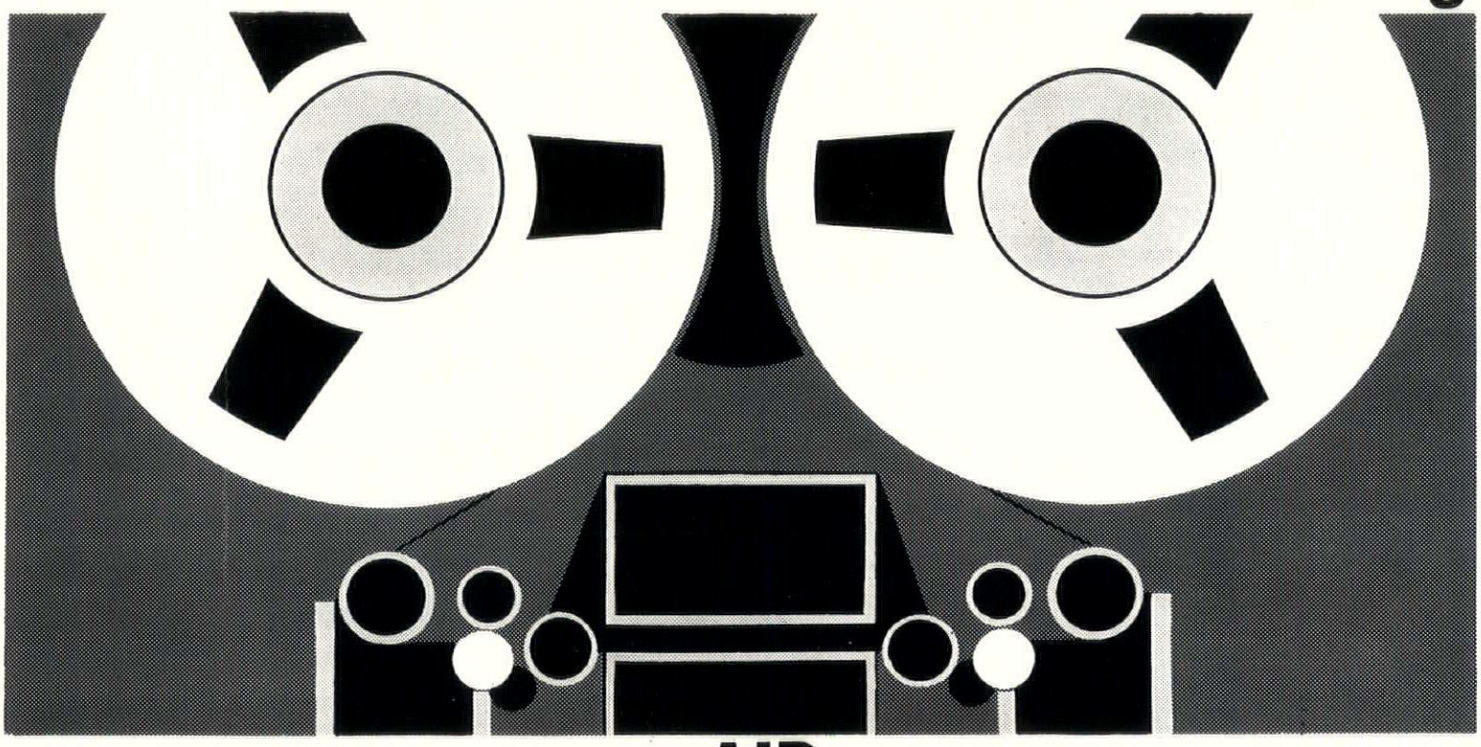
Tower Block at Basildon New Town. *Architect:* A. B. Davies (Chief Architect/Planner, Basildon Development Corporation. *General contractor:* Holland & Hannen and Cubitts (Gt. Britain) Ltd. *Sub-contractors: Purpose-made aluminium windows:* Crittall Manufacturing Co. *High-speed lifts:* Marryat & Scott Ltd. *Ventilating equipment:* Norris Warming Co. *Metal staircases and balustrades:* Clark, Hunt & Co. *Paropa roof:* Frazzi Ltd. *Sprinkler system:* Atlas Sprinkler Co. *Wood-block floors:* Hollis Bros. Ltd. *Plastic tile flooring:* Marley Tile Co. *Mosaic surfaces:* E. Hawkes & Co. *Marble pavings:* J. Joslin & Co. *Facing bricks:* Sussex & Dorking United Brick Cos. *Flooring insulation:* Stillite Products Ltd. *Doors and veneered panels:* F. Hills & Sons Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Ironmongery:* A. G. Roberts Ltd. *Entrance hall light fitting:* Fredk. Thomas & Co.

College Common Room, Oxford. *Architects:* Myles and Deirdre Dove. *General contractors:* Knowles & Son (Oxford) Ltd. *Sub-contractors: Electrical installation:* Lowe & Oliver Ltd. *Fireplace wall:* H. H. Martyn Ltd. *Curtains:* Elliston & Cavell Ltd., Morton Sundour Ltd. *Carpet:* Elliston & Cavell Ltd., Stockwell Carpets Ltd. *Dining tables, dining chairs, occasional tables, sideboards:* Heal's Contracts Ltd. *Easy chairs:* Hille of London Ltd. *Brass lighting fittings and sliding track:* F. H. Pride Ltd. *Pinoleum blind:* Dean's Blinds (Putney) Ltd. *Fan heater unit and grille:* Fenton Byrn Ltd. *Window seat cushions:* Excel Upholstery Ltd. *Hot cupboards:* Jackson Electric Stove Co. *Paints:* Screeton Paintmaker Ltd. *Varnish:* Cellon Ltd. *Canotex wallcloth:* Sanderson Ltd. *Slate hearth:* Bow Slate & Enamel Ltd. *Curtain track:* Silent-Gliss Ltd. *Door fittings:* James Gibbons Ltd.

Teachers' Training College, Chichester. *Architects:* Bridgwater, Shepheard & Epstein. *General contractor:* Robert Marriott Ltd. *Sub-contractors: Heating and ventilating:* Rosser & Russell Ltd. *Steelwork:* Boulton & Paul Ltd. *Electrical installation:* Troughton & Young Ltd. *Chapel windows:* Henry Hope & Sons Ltd. *Landscape:* Hilliers. *Kitchen equipment:* Benham & Sons. *Roofing tiles and aluminium:* Roberts Adlard Ltd. *Dining room chairs and tables:* L.M. Furniture Ltd. *Laboratory fittings:* Griffin & George Ltd. *Ironmongery:* Comyn Ching Ltd. *Wood string floor:* Hollis Bros. Ltd. *Linoleum and cork floor:* Korkoid Ltd. *Felt roofs:* Permanite Ltd. *Paint:* ICI. *Sanitary fittings:* John Bolding & Co. *Blinds:* Tidmarsh & Sons. *Chapel window glass:* James Hetley. *Chapel organ:* J. W. Walker & Son.

Teachers' Training College, Leicester. *Architects:* Bridgwater, Shepheard & Epstein. *General contractor* (*Phase* 1): Robert Marriott Ltd. *General contractor* (*Phase* 2): A. A. Stuart (Contractors) Ltd. *Sub-contractors: Heating and hot and cold water services* (*Phase* 1): Young Austin & Young Ltd. *Flooring:* Hollis Brothers Ltd., Coventry Tile Co. *Roofing:* Norman & Underwood. *Gymnasium equipment:* H. Hunt & Sons. *Blackout blinds:* Northampton Sun Blind Co. *Window gear:* Teleflex Products Ltd. *Cement glaze:* Cement Glaze Ltd. *Insulation:* F.A. (Membrane) Ltd. *Internal telephones:* Siemens Edison Swan. *Stage equipment:* Hall Stage Equipment Ltd. *Acoustic insulation:* L. Whittaker (London) Ltd. *Landscape and woodland:* J. Gilbert. *Ironmongery:* Comyn Ching & Co., James Gibbons & Co. *Sanitary fittings:* Adamsez Ltd. *Incinerators:* Hygienette Ltd. *Wall paper:* Arthur Sanderson & Son. *Kitchen equipment:* Benham & Sons. *Curtain tracking:* Silent Gliss Ltd. *Blackboards:* Wilson & Garden Ltd. *Acoustic tiles:* William Kenyon & Sons Ltd. *Cold room:* Frigidaire Division of General Motors. *Roof lights:* Henry Hope & Sons. *Sliding door:* Bolton Gate Co. *Light fittings:* GEC, Fredk. Thomas & Co., Merchant Adventurers, Rotaflex. *Lettering:* Drakard & Humble Ltd. *Facing bricks:* Richard Parton Ltd. *Opening roof lights:* Velux Co. Ltd. *Internal doors:* Gliksten Doors Ltd. *Heating and hot and cold water services* (*Phase* 2): Mellor Bromley (Air Conditioning) Ltd. *Joinery* (*Phase* 2): William Moss & Son. *Flooring* (*Alu-floor*): Calders Ltd., (*linoleum*): James Williamson. *Perspex roof lights:* Williaam J. Cox Ltd. *Cooling sinks:* Prestcold. *Sliding doors:* Home Fittings (Modernfold) Ltd.

COMPUTERS are exacting



precision air by

HADEN

Heating,
Air Conditioning,
Piping and
Sanitary Engineers.

ABOUT AIR

Whether it's being told what to think or remembering what it's told, a modern computer is often a complex and delicate installation that needs clean air of specific temperature and humidity if it is to do its work efficiently. Many of the components are temperature sensitive or change their physical characteristics with variation in relative humidity. The computer itself gives off quite a lot of heat, adding to the problem of air conditioning.

This is where Haden come in with 'precision air'. Installations are air conditioned to precise limits of Temperature, Humidity and Filtrati n. It is one of the many examples of specialist installations that Haden are tackling in many varied Industries.

Just how precise is 'Precision Air'? It depends on what you need, and the Haden technical people can give you advice on this too. But if you need, say, Temperature maintained to an accuracy of 0.1°C, Humidity varying only 5%, and Filtration at better than 98% of particles 5 microns in diameter, if you need air with this order of precision, Haden have supplied it, and can do it for you.

G. N. HADEN & SONS LIMITED, 7/12 TAVISTOCK SQUARE, LONDON, W.C.1. *Branches throughout the United Kingdom and Overseas* TW8

Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames. Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter

Reinforced Concrete for flexibility in design



BRC

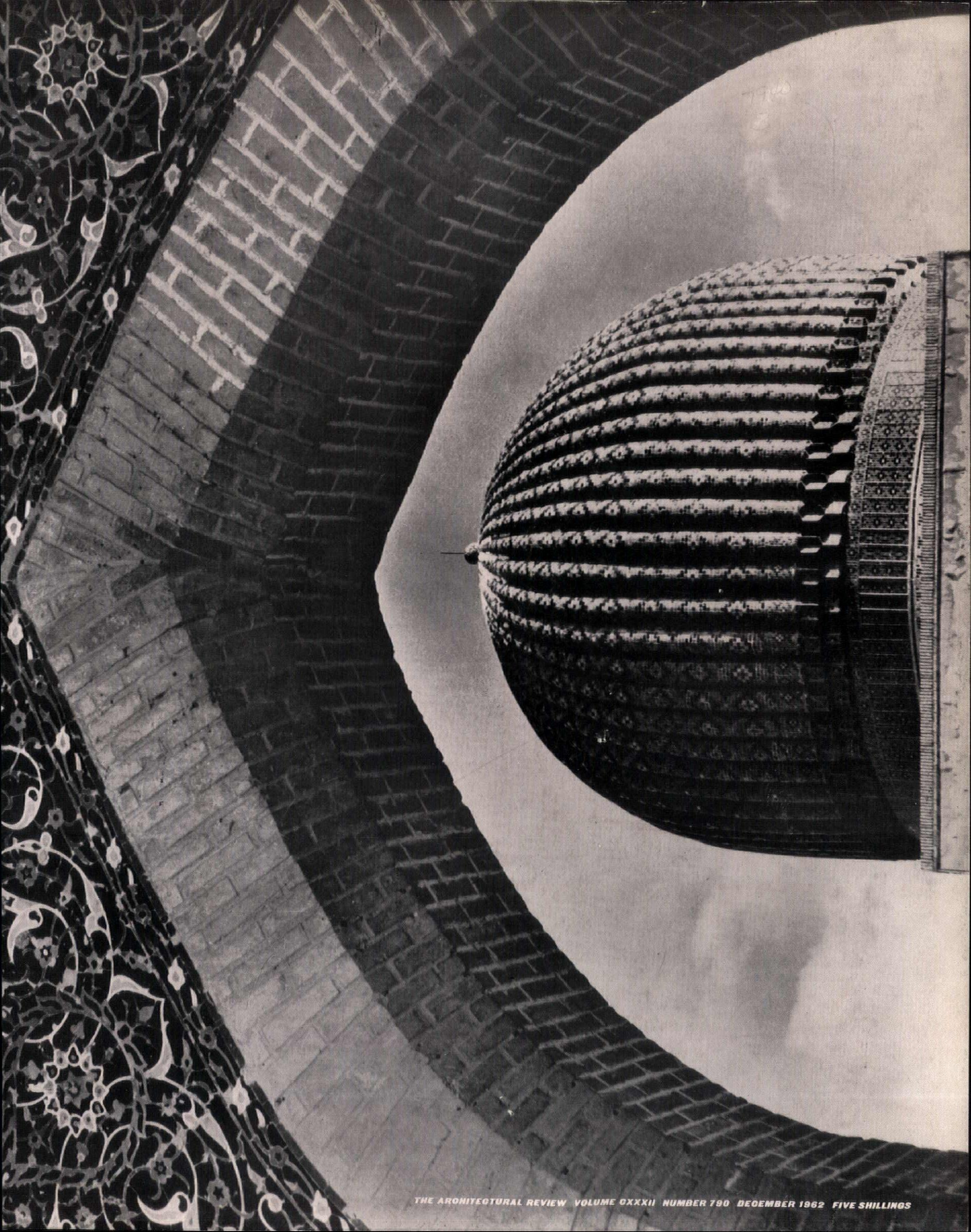
Specialists in Reinforced Concrete Design and Suppliers of Reinforcement

THE BRITISH REINFORCED CONCRETE ENGINEERING CO. LTD., STAFFORD

London, Birmingham, Bristol, Chelmsford, Leeds, Leicester, Liverpool, Manchester, Newcastle, Cardiff, Glasgow, Dublin, Belfast, Bulawayo, Calcutta, Johannesburg, Lagos, Singapore, Vancouver.

Export Sales: 54 Grosvenor Street, London, W.1

M-W.1078



THE ARCHITECTURAL REVIEW VOLUME CXXXII NUMBER 790 DECEMBER 1962 FIVE SHILLINGS

I don't have to guess what kind of plaster you're using!

No, all these **Carlite** bags give the game away! I must say, Carlite really is superb plaster. Being pre-mixed it gives consistent results and saves no end of bother on the site. Of course, it's made by British Plaster and Boards now, and the service is really first-rate. Their technical chap is coming along tomorrow to talk over an important new specification we're preparing . . .

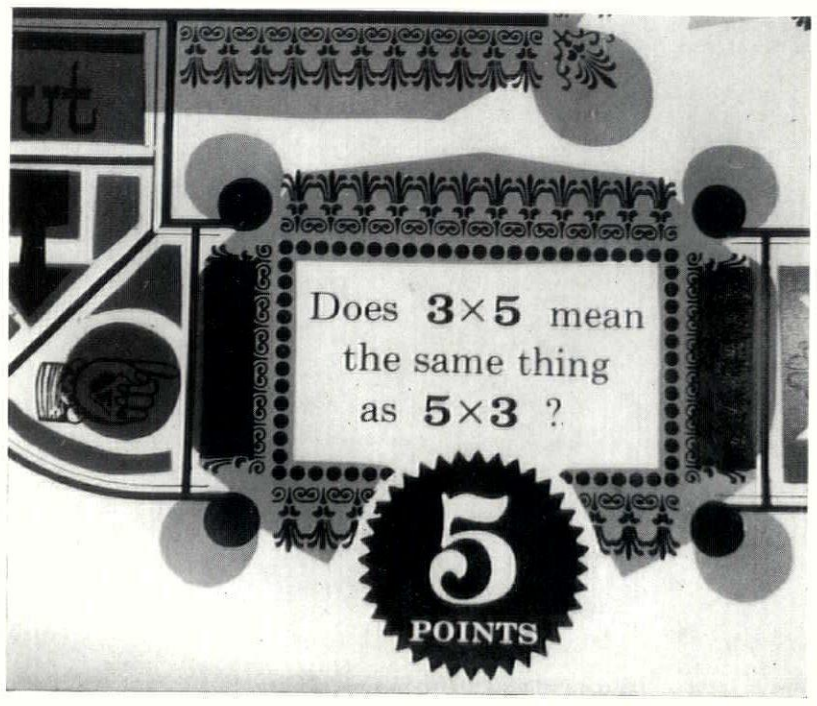




Phone or write for the **Carlite** brochure.
Carlite Technical Service will be pleased to help you from pre-specification stage onwards.

British Plaster and Boards Limited
Ferguson House 15/17 Marylebone Road London NW1 Telephone: HUNter 4021

WORLD



1

MATHEMATICA

Numeracy through design

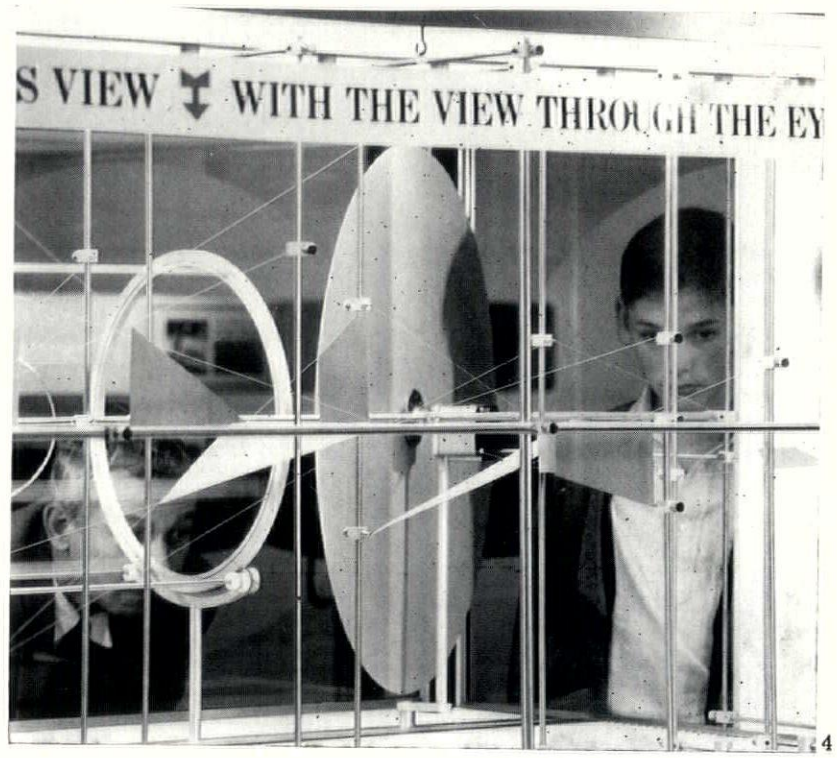
A legend long before its completion, the Eames/IBM mathematics exhibit at the California Museum of Science, Los Angeles, has been an almost perfect exercise for the distinctive talents of Charles Eames and his studio, beginning with their delight in fancy typography, 1, and ending (if that is the word) with their ability to give elegant three-dimensional form to abstract concepts, such as the single-sidedness of the Moebius strip, 2. Within a fenced compound, 3, the exhibit contains not only the usual models of mathematical functions, but also a projective geometry machine, 4, and other working devices to demonstrate minimum surfaces by the soap-bubble method, a probability pin-board on a grand scale (30,000 plastic balls), a cube of lights to give visible expression to such functions as multiplication and cubing, a penny arcade, 5, of peepshows giving animated demonstrations, a wall of mathematical images (including such old friends as the nautilus shell and the snowflake) and another wall of mathematical history. The mathematical consultant was Dr. Raymond Redheffer, of UCLA, who already had some experience of popularizing mathematics, and many people must be wondering if he and the Eames team could not be persuaded to collaborate again on a transistorized (so to speak) and portable small-scale version of the exhibit for use in schools. Eames's ability to talk adult sense to children (via constructional toys, etc.) has already become a household word in nursery circles: mathematics seems a perfect subject to extend the impact deeper.



2



3

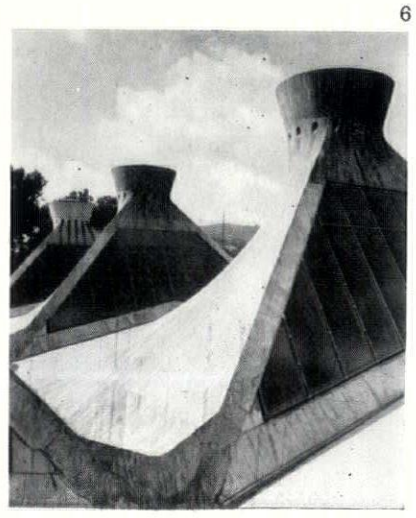


4


5

REXROTH VAULTS

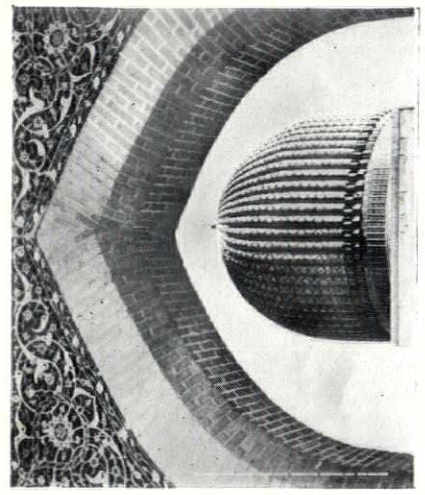
Shell structure in Germany


6

Schalenbau, the second volume in Jurgen Joedicke's 'Documents of Modern Architecture' series, has now appeared in Germany. Written by Joedicke himself, it will be the subject of a review which will appear in the AR in due course, but it contains one building of such remarkable interest that it is worth picking out for separate treatment. The vaults, 6, of the Rexroth foundry at Lohr, in Germany, exhibit—as Joedicke rightly says—*ungewohnten Schalenformen*, and these unaccustomed vault-forms are not easy to define: some such description as warped, asymmetrical near-pyramid north-light monitors might be reason-

ACKNOWLEDGMENTS

COVER and EXPLORING EYE, pages 405-407: British Soviet Friendship Society. WORLD, pages 379-382: 11-15, *Kindai-Kentiku*; 16-21, *Domus*; 22, *l'Architettura*; 23-25, *Byggekunst*; 26-31, *Bauwelt*. VIEWS AND REVIEWS, pages 383-385: 1, Banham Arphot; 2, 3, Toomey Arphot; 4, Aerofilms. FRONTISPIECE, page 386: 1, James Mortimer. HOUSING, GOSWELL ROAD, LONDON, pages 391-397, and HOUSING AT PETERLEE, pages 398-400: Galwey Arphot. THE OXFORD MUSEUM, pages 408-416: Eric de Maré. INTERIOR DESIGN, pages 417-420: John Donat. GORDON RUSSELL AND TWENTIETH CENTURY FURNITURE, pages 421-428: 12, 20, W. Dennis Moss; 16, Nurnberg Studio; 19, 30, 33, Eric D. Cheshire; 24, Philip Harben; 27, Dell and Wainwright. DESIGN REVIEW, pages 429-430: 1, 2, Banham Arphot; 3, Casali. BANBURY PLANS A NEW CENTRE, page 431 (top): Aerofilms. HOSPITAL, CRAWLEY, pages 433-434: 1-3, 5, Sam Lambert; 4, Toomey Arphot. CIVIC CENTRE, PLYMOUTH, pages 435-437: 1, Modern Portraits; 2-7, Tom Molland. MISCELLANY, pages 438-443: Exhibitions, 2, 3, James Mortimer. SKILL, pages 444-450: 1, Fox Photos. THE INDUSTRY, pages 450-452: 1, Victory Studios; 3, 4, Clareville Studios.



The cover *shows the entrance archway and dome of the fourteenth-century mausoleum of Gur-Emir at Samarkand. This and other photographs on pages* 405-407 *illustrate the recent restoration work undertaken by the government of Soviet Uzbekistan on the Islamic monuments at Samarkand. Similar work has been done in the other Uzbek cities with notable architectural remains: Tashkent, Bokhara and Khiva.*

THE ARCHITECTURAL REVIEW

9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

VOLUME 132 NUMBER 790
DECEMBER 1962

SUBSCRIPTION RATE: *—The annual post free subscription rate, payable in advance, is £3 3s. 0d. sterling, in USA and Canada $10.50, in Italy Lira 6940, elsewhere abroad £3 10s. 0d. Italian subscription agents: Librerie Salto, via V. di Modrone 18, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

Directing Editors	*J. M. Richards* *Nikolaus Pevsner* *H. de C. Hastings* *Hugh Casson*
Executive Editor	*J. M. Richards*
Assistant Executive Editor	*Reyner Banham*
Assistant Editor (Production)	*William Slack*
Features Editor	*Kenneth Browne*
Technical Editor	*Lance Wright*
Assistant Editor (Counter Attack)	*Ian Nairn*
Staff Photographers	*De Burgh Galwey* *W. J. Toomey*
Advertisement Manager	*F. G. Dunn*

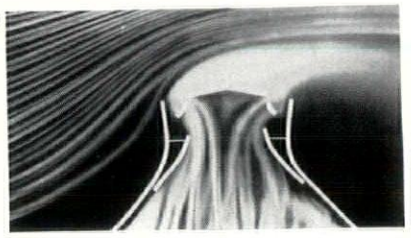
CONTENTS

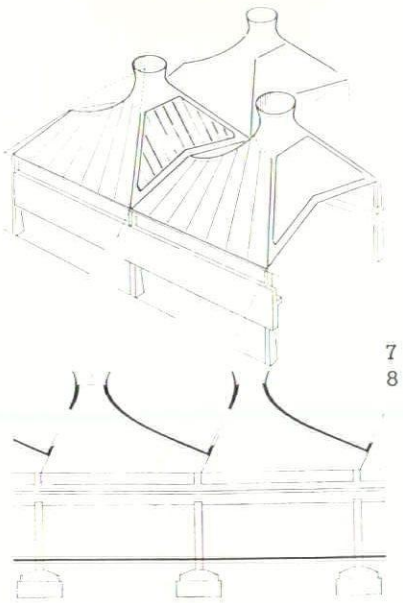
379 **World**
383 **Views and Reviews**
386 **Frontispiece**
387 **Parallax:** *Peter Collins*
391 **Housing, Goswell Road, London:** *Architects, Chamberlin, Powell & Bon*
398 **Housing at Peterlee:** *Architect, H. Durrell (Chief Architect to the Development Corporation in succession to R. J. A. Gazzard)*
401 **Pub in Focus:** *Ian Nairn and Kenneth Browne*
405 **Exploring Eye:** *Samarkand*
408 **The Oxford Museum:** *Peter Ferriday*
417 **Interior Design: Showrooms in Hanover Street, W.1:** *Architect, Dennis Lennon*
421 **Gordon Russell and Twentieth Century Furniture:** *Nikolaus Pevsner*
429 **Design Review**
431 **Banbury Plans a New Centre**
433 **Hospital, Crawley:** *Architects, Yorke, Rosenberg & Mardall*
435 **Civic Centre, Plymouth:** *Architects, Jellicoe, Ballantyne & Coleridge*
Miscellany
438 **Exhibitions**
440 **Townscape**
443 **History**
444 **Skill**
Fire Protection: 2, Fire Extinguishing Equipment: *Clement Shepherd*
450 **The Industry**
452 **Contractors, etc.**

REXROTH

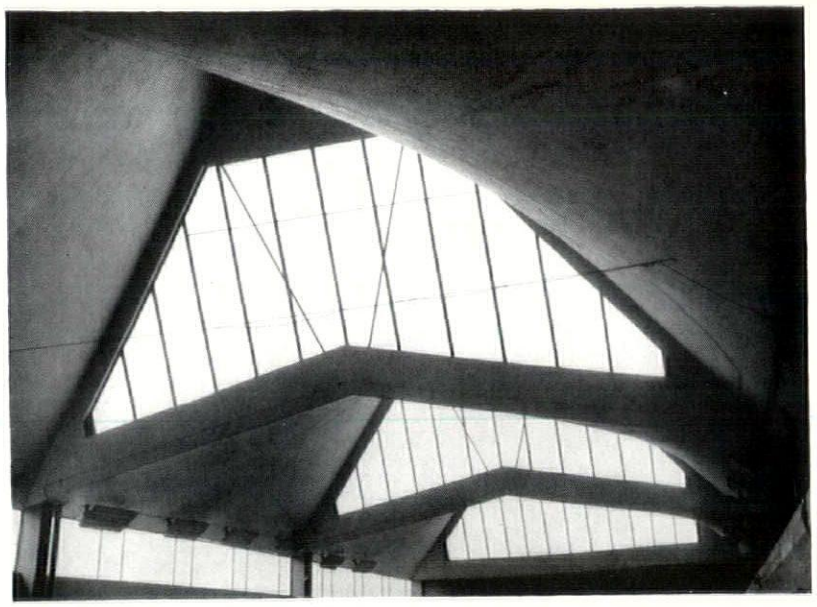
ably accurate, but would hardly suggest the visible facts. Each pyramid has three edges, but stands over a square bay, the difference being made up by flaring out the east and west faces into warped slabs to give the sections seen in 7 and 8, and the internal effect seen in 9. But what adds that final touch of distinction to the vaults is the manner in which each is resolved, at its apex, into a circular ventilator . . . not mere Gaudi-esque finials but wind-tunnel proven, 10.

10

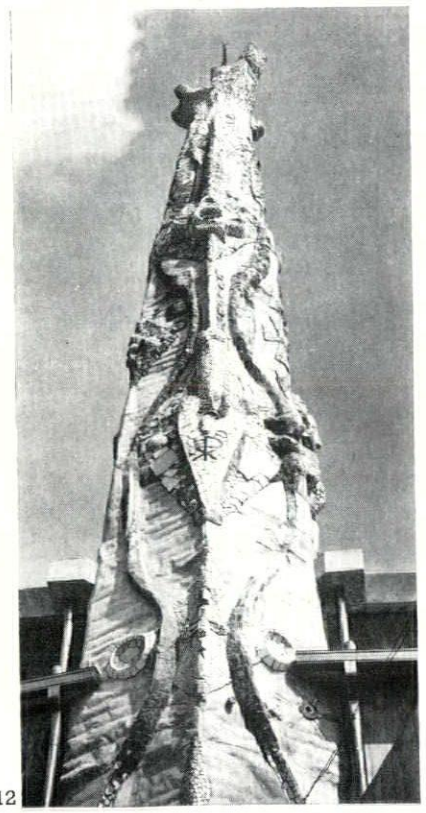




7
8

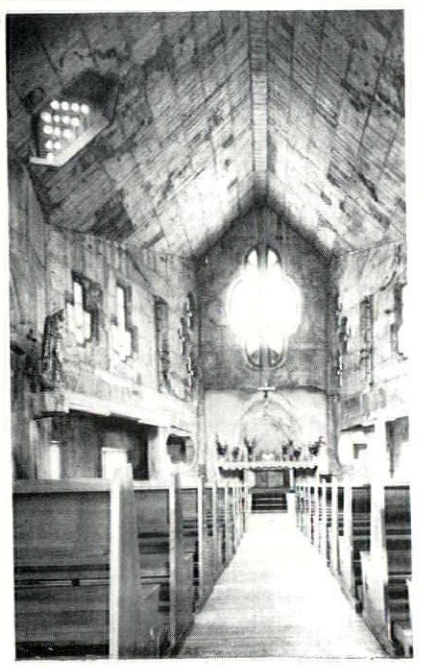


9



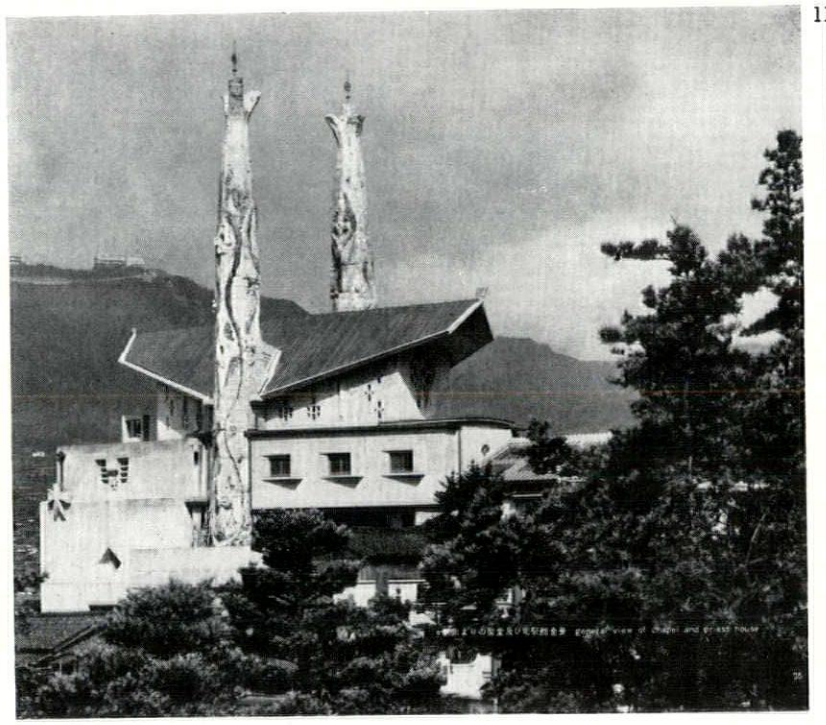
12

13

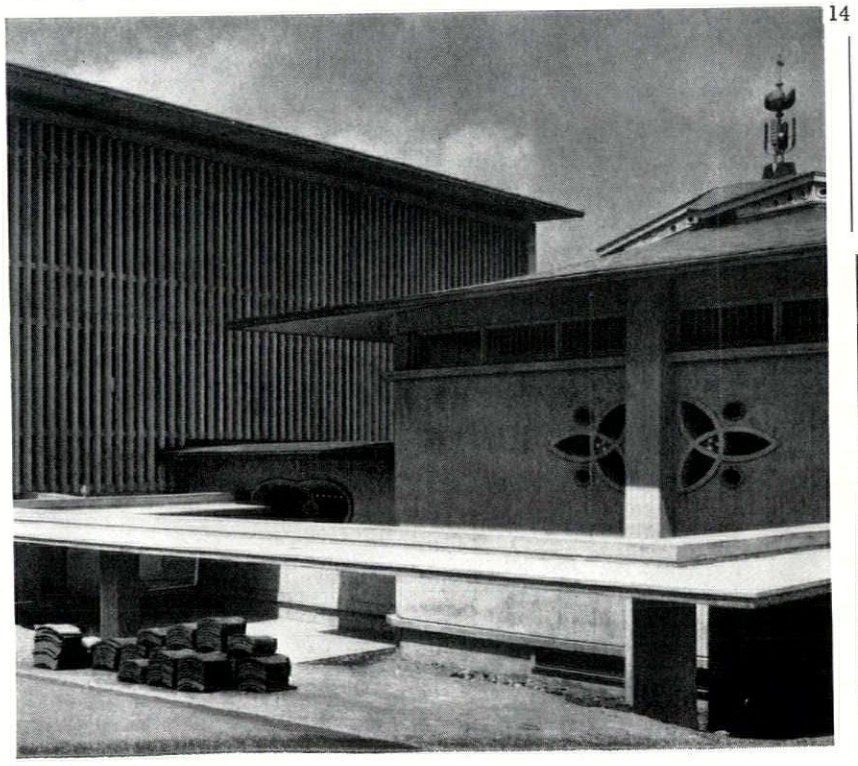


JAPAN SHRINE

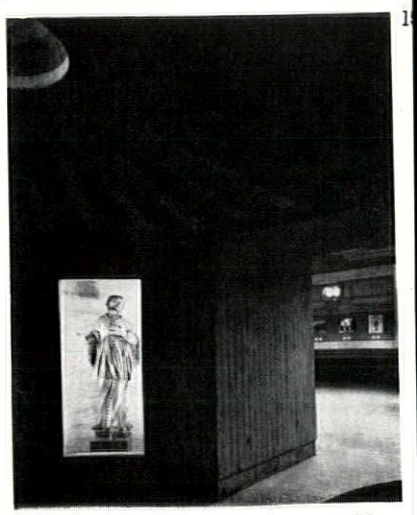
'Wait till the Japanese discover Gaudi!' has ceased to be a phrase to be uttered in jest. It is clear from Kenji Imai's shrine to the Twenty-six Martyrs of Japan, 11, with its extraordinary towers, 12, that either the discovery has been made or that there is no need to make it. It is difficult for a European to know what to goggle at first, or most uncomprehendingly—the exterior, the interior with its raw concrete and 'Chinese' windows, 13, or the completely different buildings alongside, 14, divisible into museum, left, and exhibition hall, right, with distinct overtones, 15, of the *Tesoro* at Genoa. Whatever one likes to make of this building as a work of architecture, it remains a warning against over-simplified estimates of how, and how far, European and Japanese architecture can interact.



11



14 Already we have seen the West's original supposition of a blending of Mies and *sukiya* overwhelmed by the rise of the Corbu/bracketed manner of Tange and his followers. Imai's shrine should be a timely reminder that the Tange version is not the only possible alternative, nor is it necessarily the one that will persist.

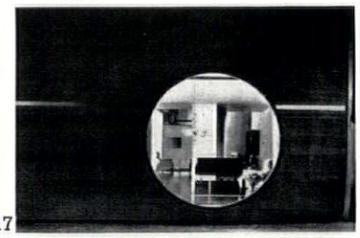




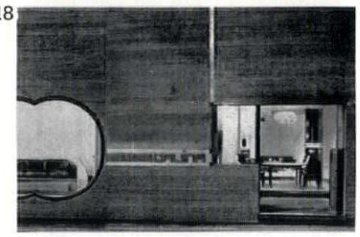
16

THE ARCHITECTURE OF MANNERS

The architecture of Carlo Scarpa is patently mannered, yet never descends into mere mannerism, even when every detail is a gimmick and every usage an affectation. In the Gavina shop in Bologna (illustrated in *Domus*, October 1962) he pulls off effects that would be beyond the temerity of most architects to conceive, even if they should possess the sheer prestidigitation to carry them off. The facade confronts simultaneously bush-hammered *and* plank-shuttered concrete with bands of gold leaf, 16, which establish arbitrary connections between the three voids—one circular, 17, one an inverted L for the entrance, 18, and one like nothing so much as the mask commonly used in TV and films to signify that the camera is looking through binoculars. Where the gold bands meet the corners of the central opening, there are mysterious square cut-outs whose functional justifications would make interesting

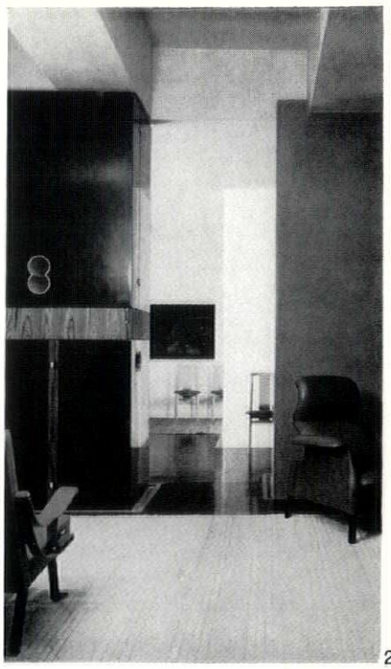


17



18

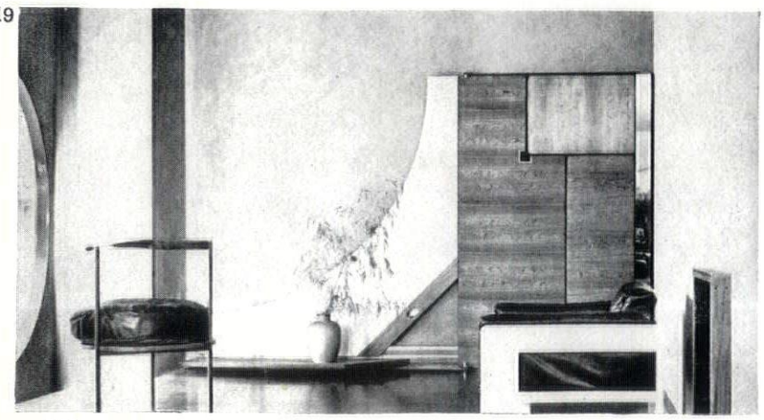
reading, and this device recurs in the interior, 19, as does the binocular keyhole, sometimes in three different sizes in one view, 20, possibly as relief from some more conventionally Ronchamped apertures. The personal involvement of Scarpa in this curious idiom is clear—otherwise why should he *care* as much as he obviously does to make it work out—and this must give some underlying consistency of intention to prevent the whole thing flying apart into unrelated tricks. But so deep a personal involvement raises serious questions about his intention; particularly questions of *how* he sees this *ambiente* as a fit environment for anything so idiosyncratic as the recent Italian furniture, 21, that is sold there. A northern architect would have stood back and created a neutral setting in which the furniture could stand out; Scarpa's Milanese contemporaries would create a setting that was consistent with itself through the repetition of small detail. The idea of stamping two arbitrary trademarks all over the design in this way is so crude at first sight that it recalls the primitive coffee bar era in London; one begins to suspect that the obvious difference between those espresso bars and this furniture shop—the quality of the craftsmanship—may be the real clue to what makes Scarpa succeed where they failed. In spite of the improvizatory quality of, say, the clipping-in of the glass in 16, the detailing is assured because it is well made. An architecture of manners, like a comedy of manners, must be perfectly executed.



20



21

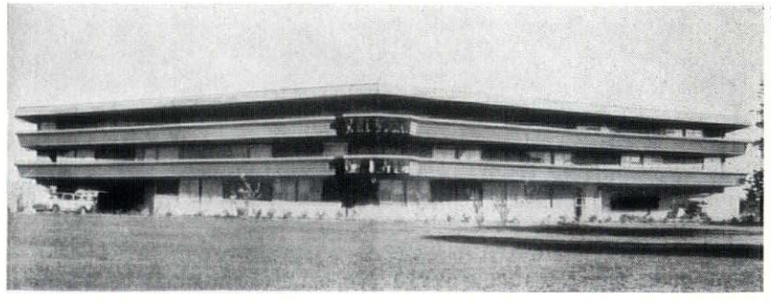


19

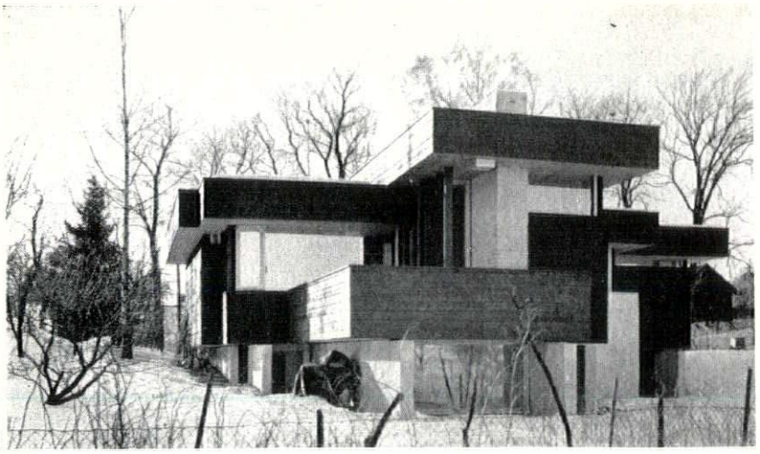
WRIGHT/de STIJL TRADITION

recent work in Australia & Norway

Although *l'Architettura* has now added to the other sacred flames (Wright, Mackintosh, Mendelsohn) that it guards, the memory of Theo van Doesburg—'*de Stijl* is a required experience for every true modern architect,' says the September, 1962, issue—the most resolute re-experiencing of *de Stijl*, the most precise driving forward of exactly van Doesburg's pre-occupations with space seem to be going on elsewhere than in *l'Architettura's* geographical vicinity. Just as the most flourishing school of Wrightians seems to be in Australia



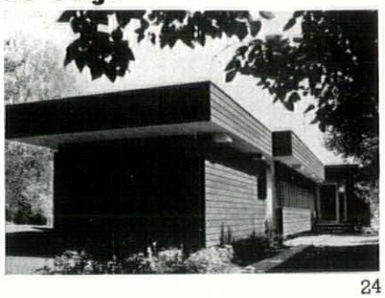
22



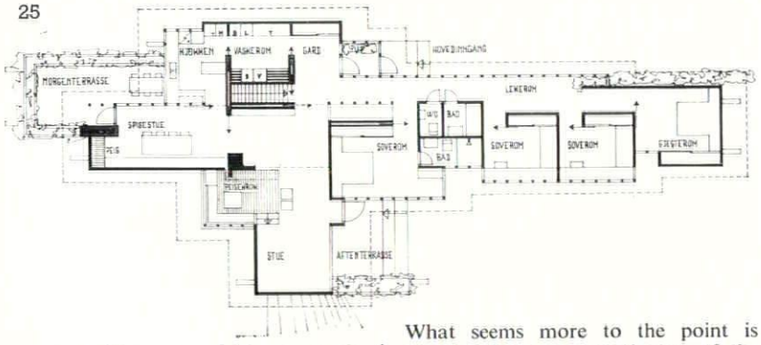
23

these days—this same issue reproduces Enrico Taglietti's motel in Canberra, 22, but there is more and better organic architecture in the suburbs of Sydney—so the most striking *reprise* of van Doesburgian themes in recent magazines has been the single house at Hovik, in Norway, by Bjarne Tjonn, where the terrace elevation, 23, remakes the points of structural sense on which de Stijl space-games were based. But better still, this educated exercise in Rietveld revisited also uncovers those Wrightian

de Stijl



24



25

pre-suppositions on which so much else of de Stijl was based. Literally based, for this is primarily a matter of plan. Far more than the end of the bedroom wing, 24, it is the functional *parti* at Hovik that underscores the Prairie-house debt, 25, with its relaxed mixture of open and corridor planning. Plagiarism? Only in such general terms that the word becomes meaningless.

What seems more to the point is revealed by any general view of the house under snow—a striking similarity of overall conception to the museum extension at Maihaguen (World, February, 1962), the outline perhaps of a distinctive Norwegian manner whose low-lying and spreading forms need no other justification than the need to keep one's head down, out of the winter weather.

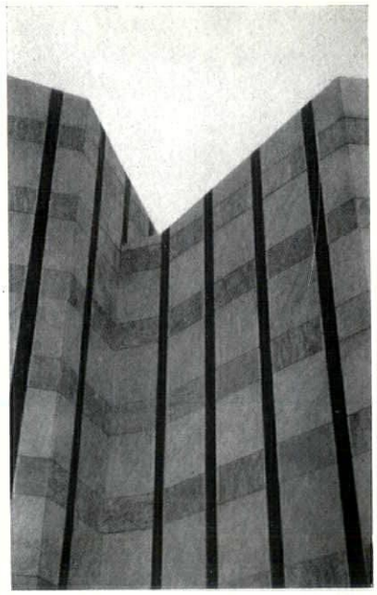


26

FINN GRIN

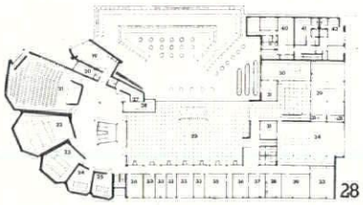
Aalto in Germany

A grin on the face of a famous Finn adorned the cover of *Bauwelt* for October 8 last. Inside were the justifications of his manifest pleasure; the first two Aalto buildings in Germany (outside the specialized conditions of the Interbau exhibition),



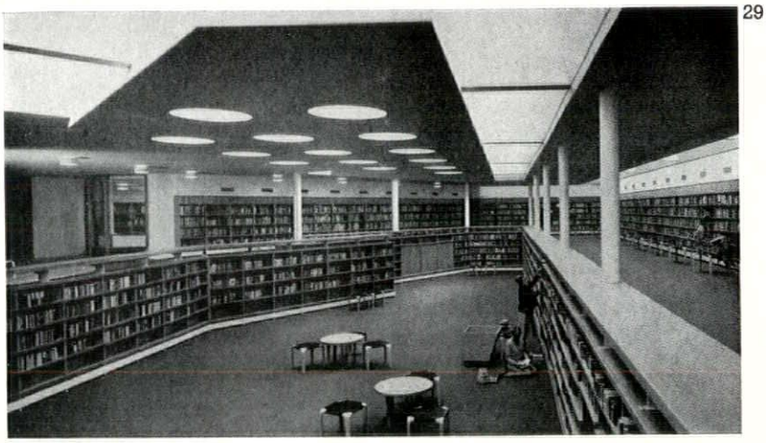
27

These are the two fan-plan schemes previewed in World for November, 1960, and both have turned out to be as striking as was expected. The clustered auditoria, 26, of the cultural centre at Wolfsburg, exhibit an unexpected polychromy in natural stone —which should be enhanced, 27, by the fact that the Volkswagen's home town has a smokeless atmosphere, so that the stones will acquire a natural

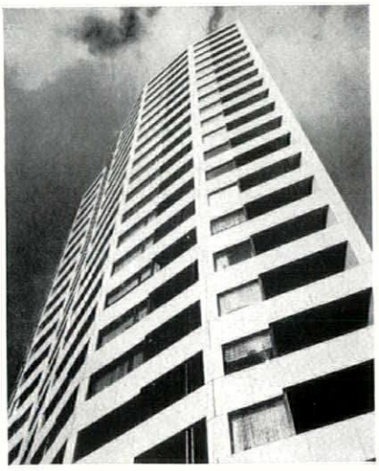


28

patina, not a coating of soot. Internally the centre has a liberally planned library (see plan, 28) whose interior, despite its unusual shape, has something of the calm sobriety, 29, of Aalto's earlier work for this function.

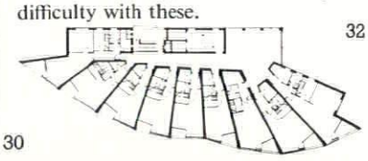


29



30

The *Hochhaus* in the Neue Vahr at Bremen is, as *Bauwelt* rightly says, a landmark, 30, in the lower Weser scene, differing sharply in both scale and form from any of the other tall blocks anywhere near it, 31. The earlier queries about the use and furnishing of some of the more extreme flat-plans produced, 32, by the fan form remain, though Anglo-Saxon readers should remember that a nation that has managed to take some of the room shapes in Scharoun's recent work in its stride, should have no great difficulty with these.



32



31

views and reviews

MARGINALIA

THE END OF VICTORIA STREET

Though its future as a postal address is assured, the physical, architectural, spatial and stylistic life of Victoria Street, S.W.1, is coming to a rapid close. Driven through the slums of Westminster just over a century ago, it was the site of London's first scheduled tram service, and was built up during the ensuing decade. Its length, from Westminster Abbey to Victoria Station, became almost the text-book example of a *rue corridor*, for the cornice levels on both sides of the street were so even that they presented, in raking perspective, the appearance of two long homogeneous facades. In stylistic detail they were far from homogeneous, and gave so encyclopaedic a coverage of every historical and a-historical fancy in Mid-Victorian favour that Peter Donner was able to devote three complete pages to one single building—the Army and Navy stores—in his series of *Treasure Hunt* articles which were the solid foundation of the AR's wartime reappraisal of Victorian Architecture (July-December, 1942).

But Victoria Street contrived to be innovating as well as typical. Quite apart from the tramway, it was also the site of the invention, or—at least—the conspicuous development, of the London flat. When the first flats in Victoria Street were built in 1853, they were also the first in London and, as Dr. Pevsner has recorded in the *Buildings of England* (London, Vol. I, p. 95, second ed.), no word then existed to describe them, and commentators of the period were obliged to make cross-reference to the living habits of Paris and Edinburgh, and it was from the latter that the word *flats* came.

Artillery Mansions, Victoria Street's most notable block of flats, so beloved in recent years by the craggy-brick school of students at the AA and the Poly, are of a later vintage, being dated 1895. They will go, quite soon, along with most of the rest of the south side, under a gigantic redevelopment scheme centring round the rebuilding of the Army and Navy, in which a number of property owners have had the sense to agree to employ the same architect—Mr. Cecil Elsom. Other sections have gone already, Monsanto House having replaced a sizable block of properties at the Abbey end some six years ago. Opposite, on the corner of Great Smith Street, another large redevelopment, to the designs of Ronald Fielding and Partners, is changing the form as well as the substance of the street, by stepping back from the original building line—though without capitalizing all the possibilities of the site, as outlined by Gordon Cullen in the AR for June, 1958.

In fact, these possibilities, which included the virtual creation of a terminal square, would have involved the demolition of Abbey House, on the other side of the street, which does not seem likely in view of that building's recent face-lift. But at the other end of Victoria Street, opposite part of the property involved in the Army and Navy rebuilding scheme, the redevelopment of the Stag Brewery site has created a new square of tall office blocks, just back from the original building line, that has effectively destroyed the feeling of the *rue corridor*. Just what it has created in its place is difficult to say, as yet, but the Stag site development will be the subject of a townscape study in a forthcoming AR, and this may help to clarify the nature of this urban transformation.

Amid all this re-shaping and remaking, one island of typical and extreme Victoriana seems likely to remain—for a little while, at least. The only conspicuous site in the whole of Victoria Street that remains undeveloped and is not yet the subject of a planning application is the astounding Windsor House—'a nightmare of megalomaniac decoration,' says Dr. Pevsner—and if this is to remain, together with that excellent Victorian pub, the *Albert*, on the other side of the entrance to Palmer Street (in fact, a pedestrian shopping walk) one very effective memorial group, 1, to the street's remarkable architectural past will survive.



1, *looking west along Victoria Street, with Windsor House on the right and the* Albert *next to it.*

NATIONAL GALLERY REPORT

'One of the most eventful periods in the history of the Gallery,' is how the Trustees describe the years 1960–62 in their introduction to the latest *Report* (price 2s. 6d.) of the National Gallery's activities. For the general public, art-conscious or not, the main event was the theft of Goya's portrait of the Duke of Wellington, but although this well-publicized disappearance is chronicled as fully as security and a modicum of embarrassment allow, the piece of news that portends most for the immediate future is that the Ministry of Works has reversed its original decision to lease off the Hampton's site, immediately adjoining the gallery, for twenty-five years or more. Instead only short-term leasing is now contemplated, while the whole future of the combined National Gallery/Hampton's/National Portrait Gallery site is reviewed, with the probable intention of moving the Portrait Gallery to the Hampton's site. Beyond this the main substance of the report is concerned with techniques of cleaning and restoration, and the renewed controversy on these topics that was triggered off by Andrew Forge's article in the *New Statesman* in May of last year.

The very full account of the controversy is also very fair, allowing for twinges of righteous indignation here and there, and the whole document

The fronts of these houses in Princes Square, Bayswater, London, boast (if that is the word) many of the features normally found on the back of mid-Victorian terraces including, 2, the glass-house at the half-landing of the main stair, as well as several generations of external plumbing. In fact, like other terraces of the same date and area, they are planned with their true front, with all the best rooms, facing on to a communal, but private, garden, 3, and with the services on the street side. This humane planning concept is of such unique interest and limited use that the outcome of a Ministerial enquiry following the rejection of a preservation order on this particular pair of houses (Nos. 48 *and* 49*) is awaited with some apprehension.*



2



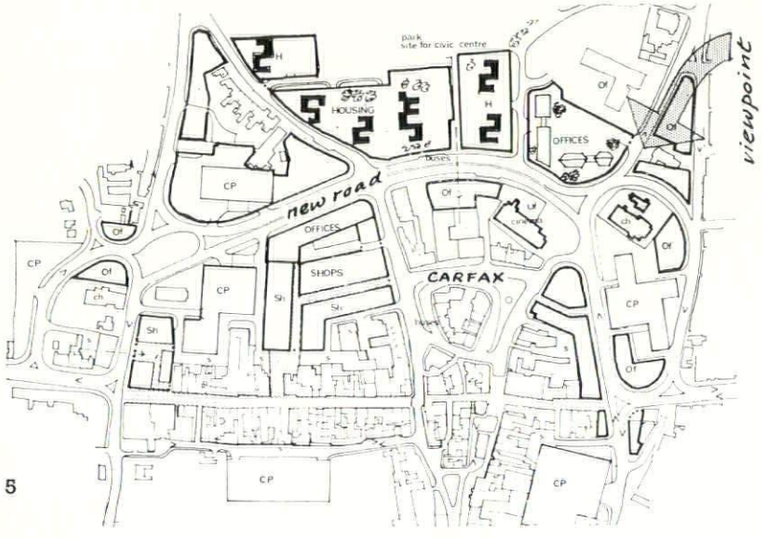
3

makes fascinating reading for the light it throws not only on the extensions and ramifications of Scrape/Anti-scrape (to which overt reference was made in the controversy) but also on some subtler aspects of the schism between Sir Charles Snow's two cultures. Not only are sensibility and science seen to be at war, but there are some notable changes of front. In particular, some big guns among progressive art-historians, who supported the Gallery in the earlier controversies of the 'forties, or at least were neutral, came out in full voice against the Gallery this time, on the side of sensibility, and with language and lapses in the rules of evidence that do no credit to the claims of Art-History to be an historical science. Confusingly enough, the outcry on this occasion ran counter to the movement of taste—while the historians were pleading for more *sfumato* and less direct confrontations of strong colour, hard-edge abstract painting was chasing free-form expressionism from the smart commercial galleries, and—as far as one can judge—history was on the side of the Gallery, not (for once) its critics.



4

4, *aerial view of the Carfax, Horsham.* 5, *map of the centre of Horsham showing the proposed road alterations. The arrow shows the viewpoint of the two pictures at the bottom of the page—*6, *as it is now and,* 7, *after demolition to make room for the new road.*



5

STOP PRESS

ROAD VERSUS TOWN

Horsham, Sussex, though well inside the commuter belt, still retains the character of a country town, and the Carfax, 4, a wedge-shaped space at the centre with an island of shops, fine trees and a Victorian bandstand, is a natural place for people to congregate. At present, however, along with the rest of the town, it is strangled by traffic.

By the county council's reckoning almost half the traffic has no business there, but is passing through. A north-south by-pass (London-Worthing) is under construction, but that still leaves the east-west traffic, and logically the by-pass system should be extended to take this. Instead, to judge from the official scheme recently displayed in the town, 5, the county planning officer proposes to run a new east-west road through the town just south of Horsham Park. Considerable demolition is involved and, presumably to attract a 75 per cent grant from the Ministry of Transport towards paying for it, this road is designed as Class I to take fast traffic flow. More like Silverstone than Horsham, it cuts a brutal swathe through the town 88 ft. wide, with an enormous roundabout of Kingston by-pass scale at one end. For instance, the present approach to the centre from Crawley, 6, though unremarkable as architecture, is good townscape; it looks what it is. If the county council plan is adopted, all but the church will be demolished and the whole thing opened out, 7.

This opening out is intentional for, to quote the handout, 'the creation of buildings and spaces about this road have been designed to minimize the effect of this width by creating spaces across the road rather than that the road itself should take the form of a corridor of buildings.' This seems strange logic indeed and can only lead to even greater disintegration of the town. Furthermore, if the scheme is adopted and a ministry grant obtained, it will presumably put paid to any further grant for a by-pass in the right place, i.e. outside the town.

To cover the remaining 25 per cent of cost it is understood that the council intend to build offices along the new road and this will of course increase the traffic yet further.

In protest a local group has now produced its own plan, designed by Roy Worskett, which demands a real east-west by-pass outside the town and shows the Carfax paved over as pedestrian space.

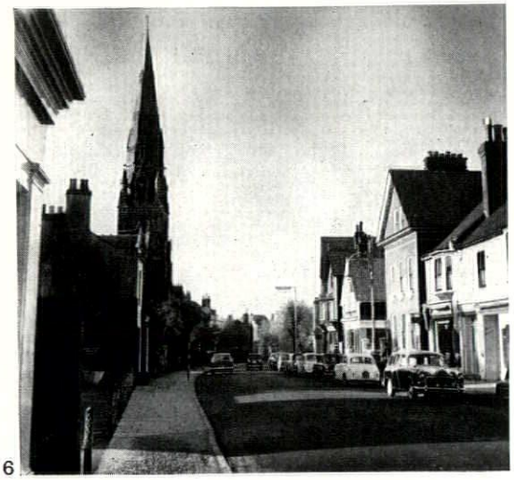
BOOK REVIEWS

MORE GOOD OFFICES

OFFICE BUILDINGS. *By Jürgen Joedicke. Crosby Lockwood. Price* 90s.

The author's convictions seem to be rationalist, Bauhaus modified. Anything against this? He has contrived anyway an excellently produced and printed book, covering the subject in logical order and taking in small and moderate sized buildings as well as the giants. Plenty of comment on relative detail; the scope does not run to discussion of the town planning and urban considerations which make sense—or nonsense—of office buildings.

The main sections are: Plan; Structure; External Wall Construction; Heating, Air-conditioning and Lighting. They are followed by some 28 'Buildings Illustrated' consisting of good, clear photographs mainly of exteriors, supported by plans and details in some cases. These cover the free world, more or less, and the standard is high. The few general photographs, showing for instance the rather grim Chase Manhattan Bank in its setting, hint at the relationships with other high—and low—buildings which provide this form of building with interest. But—the September number of the *National Geographical Magazine* had a cover view of Rio from across the bay, an enchanting, evocative broken cliff of buildings at the water's edge, a threshold to the mountains behind. The omission of grouping of high buildings is sad. English buildings illustrated, mostly for definite clients not just for letting, compare well enough and seem to preserve a feeling of the individual country which the rest have almost completely lost.



6



7

Of the text the section on The Plan is least interesting, as might be expected. However there *are* some moderately exciting things within these terms that the author could have discussed. Granted that floor to ceiling height is about 9 feet, is it generally true that a feeling of the outside world is enough for office workers; if so, how deep—and therefore of what general plan form—can an office be before this feeling is lost? Also what is a good shape for a room? Soane advocated not more than a double square, preferably a proportion not exceeding 1:1½. Nowadays, with properly scaled and disposed furniture, could an 8 ft. wide room 20 ft. deep work? Also, if a fair degree of artificial lighting is allowed, the external wall could be angled, etc. to gain the play of light internally which is surely more interesting than the blank skin of glass that office windows always are. Dr. Joedicke's plans are invariably neat, partitioning hitting structural members. In fact many of the patent partitions work better if they are independent of internal columns, making the window junction at a mullion of some sort. Dr. Joedicke points out that patent partitioning is very expensive initially; one might add that its advantage of flexibility is doubtful (in actual use) in the sense that it is less disturbing to adjust departments within an office than the partitions.

In the sections on Structure and External Wall Construction the analysis is also on conventional lines. However the notes, comments and particularly the concise and excellent descriptions of buildings used to illustrate types, contain many interesting points. The author appears to have a good eye for the architecture/structure synthesis, the modulation, which really determines whether this kind of building is architecture or just the provision of desk room. For very tall buildings the Pirelli-type structure, of long spans supported on the wind-bracing service towers, emerges as best. Steel decking is shown, provoking the thought that we seem to have a large excess of steel plant which someone ought to investigate. The advantages, cost permitting, are substantial and there are plenty of prototypes, in the United States particularly.

On heating and air-conditioning Joedicke has a lot to say—in concise form—that should interest English architects. The data for comfort conditions are given and again the best comments are rather too well hidden in the text. Some points seem to be omitted; for instance the dirt which, entering by windows in high winds, can ruin the decoration of a room in a tall building in next to no time. The chilled water system is surprisingly not described. The section on lighting is conventional but the illustrations make a point the author omits: this is enormously a matter for individual feeling and a test of design ability.

To sum up it would be a pity to ignore an on the whole excellent book because we are disgusted and bored by the ordinary English office building. Urban renewal will continue and many new buildings will be—at least in part—offices. I hope that developers will buy this book and conclude that it costs no more to employ a good architect than a bad one and that doing so could bring them applause rather than well deserved abuse.

James Cubitt

ON THE JOB

THE ARCHITECT'S GUIDE TO RUNNING A JOB. *By Ronald Green. Architectural Press. Price*, 16*s*.

With the RIBA applying pressure for better management in architects' offices it is surprising that there are so few books on the subject and those that exist are such heavy reading. So it is timely that Ronald Green's articles published in *The Architects' Journal* are now available in book form.

We train architects in building technique and in design, but they usually get thrown in at the deep end when it comes to running a job. This may be inevitable since students find contract administration terribly boring in the abstract, but a few years later, when they are young architects actively concerned with a specific job, it becomes fascinating.

The young assistant architect, fresh out of school, who finds himself with a load of administration in the office will find this book admirable in giving him background information and a sequence of operations in which to work. But he should not expect more: it is not so much a guide to running a job as to scheduling a job; in fact it tells him 'when' not 'how.' He will still need his Hamilton Turner.

The book could have been made more valuable if the limitations of a small book had been accepted and comprehensiveness had not been tried for. References could have been given under each of the 62 headings so that the reader could have been referred to more detailed information instead of leaving him to plough through all the books in the bibliography if he needs more information about one stage.

Lastly, anyone who has tried to use the new RIBA certificates on small jobs knows that a small job is a fundamentally different thing administratively from a large one. This book is definitely oriented to the large contract. The architect making a living out of small jobs must take short cuts and have a very flexible system if he is to have time to design his buildings as well as run the jobs.

John Winter

JAPANESE CITY

KYOTO. *By Martin Hürlimann. Thames & Hudson. Price*, 35*s*.

Mr. Hürlimann's photographs are always worth looking at, and Kyoto, the ancient capital of Japan, is a good subject for him. This book reproduces 132 photographs, of which eleven are in colour, and Mr. Hürlimann himself provides a short but informative note about the subject of each.

Kyoto being richer than any Japanese city in historic monuments, he naturally concentrates on these—temples, shrines, pagodas, palaces, sculpture and the beautiful and ubiquitous gardens—but he does not ignore modern architecture since there is a good picture of Kyoto's most notable modern building: Kunio Maekawa's festival hall. He also includes some street scenes and studies of people, but these mostly illustrate Kyoto's traditional guise rather than the ramshackle appearance that all Japanese cities present to the public eye. More attention paid to typical scenes of modern Kyoto life would not only have given a better balanced picture of the city but would have been an exciting challenge to Mr. Hürlimann's skill as a photographer; chaotic though they may be by the townscapist's standards, Japanese cities nevertheless have their own vigour and vitality.

J.M.R.

LIFE OF WATT

JAMES WATT. *By L. T. C. Rolt. B. T. Batsford. Price*, 16*s*.

Mr. Rolt now adds to his list of classic biographies of the early engineers this comparatively brief work on Watt. Like the others, it is well written, intelligent, informative and entertaining. Unlike them, it could not claim to be definitive or to offer any fresh fruits from original or unpublished sources. Five works on Watt are listed in the bibliography (including, of course, the ineluctable Smiles) and the author fully acknowledges his debt to the Memorial Volume prepared for the Watt Centenary Commemoration in 1919. The book is the latest addition to the Batsford series on the Makers of Britain and, as such, it is most welcome for the knowledge it distils and the illusions it dissipates about a genius who was the chief progenitor of the Industrial Revolution and thus of the fantastic world in which we live.

The seminal force of Watt's engine is, of course, generally realized. How many know more than that about the man and his work? Some even believe that he invented the steam engine. Newcomen, before him, was in fact the prime builder of the first practicable steam engine. Neither man discovered the power of steam (not even by watching a kettle-lid rise) for that had been known since classical times. Through the application of the theory of latent heat which he had learned from his friend Dr. Black, Watt's great contribution was to harness that power by methods (notably the rotative engine) which were far more effective than Newcomen's, whose crude machine, while of immense value in its time, was highly inefficient and could, in any case, be used only as a mine pump.

But even the inventions of Watt might not have been applied to industry if he had been less fortunate in his partnership with the shrewd and sympathetic Boulton—and perhaps also in his marriage to his second wife, 'one of the wisest of my activities' as he confessed.

He hated the cut-and-thrust of commerce and was by nature a rather timid, moody and hypochondriacal recluse. Though events carried him, aided by the pressures of his many lifelong friends, into a rigorous industrial life and to eventual fortune, he was happiest when tinkering in the seclusion of his workshop. He had begun his career as an instrument-maker and became a fine craftsman. Among his activities he invented an apparatus for drawing in perspective, an abortive 'steam wheel,' a press for copying letters and drawings which became a universal item in offices for more than a century and, in his old age, a machine for copying sculpture. He also discovered, at the same time as Cavendish, the chemical constituents of water. As a puritan in the Scottish tradition, he was no questing philosopher in the modern sense of the word, and like so many others of his empirical kind he could not, and did not attempt to, foresee the vast social and economic upheaval his work would bring, the 'tragic paradox of the industrial revolution,' as the author puts it, 'that while wealth accumulated, men decayed.'

Mr. Rolt tells us all these things and many more. Being a trained engineer he gives us authoritative technical descriptions, but these are not always easy to follow. The early engines shown in the plates have inadequate captions and help too little. A few simple diagrams in the text might have brought full comprehension to the tyro of a fascinating subject. That is my only complaint about an admirable monograph.

Eric de Maré

VICTORIAN BRISTOL

BRISTOL IN THE 1880's. *By Reece Winstone. Published by Reece Winstone. Price* 12*s*. 3*d*. (*laminated*); £1 (*cloth*).

This, the sixth in Mr. Winstone's wholly admirable series of illustrated records, takes the story of Bristol back from 1962 to 1880, to horse-trams, schooners, to crossing-sweepers, to gas lamps, high Victorian churches, and umbrella'ed Jubilee ceremonies, broad-gauge locomotives and Board schools, clogs and watch-chains, and nose-bags. The photographs (more than 200 of them) are as uniformly fascinating as is the brief text—much of it quoted from contemporary newspapers. Unusual events are chronicled month by month—a new tram service, an attempt at electric street-lighting, a stranded whale, an unsuccessful suicide from the Suspension Bridge, the publication of a poem 'Love in a Tram-Car' by Friese-Green, the removal of a reredos by E. Godwin. Nothing seems to miss Mr. Winstone's indefatigable and affectionate eye. How lucky that Bristol possesses so observant a citizen. How sad that his story should get so much more visually dispiriting as it advances towards today. No wonder that the author has chosen to work backwards and that his next volume will deal with the 1870's.

H.C.

BOOKS RECEIVED

URBAN RESEARCH METHODS. *Ed. Jack P. Gibbs. D. Van Nostrand. Price*, 95*s*.

THE MODERN HOUSE, USA. *By Kate E. Rogers. Harper & Bros., New York.*

ANATOMY FOR INTERIOR DESIGNERS. *3rd edtn. By Julius Panero, illus. Nino Repetto. Whitney Library of Design, New York. Price* $8.95.

DESIGN FOR MODERN LIVING. *By G. and U. Hatje. Thames & Hudson. Price* 84*s*.

THE SKETCHBOOK OF VILLARD DE HONNECOURT. *Ed. Theodore Bowie. George Wittenborn Inc. New York. Price* $3.00.

A DICTIONARY OF MODERN SCULPTURE. *Ed. Robert Maillard. Methuen. Price* 45*s*.

DESIGN GRAPHICS. *By C. Leslie Martin. Macmillan, New York.*

THE CITY IS THE PEOPLE. *By Henry S. Churchill. W. W. Norton, New York.*

ARCHITECTURE THE INDISPENSABLE ART. *By W. R. Dalzell. Michael Joseph. Price* 30*s*.

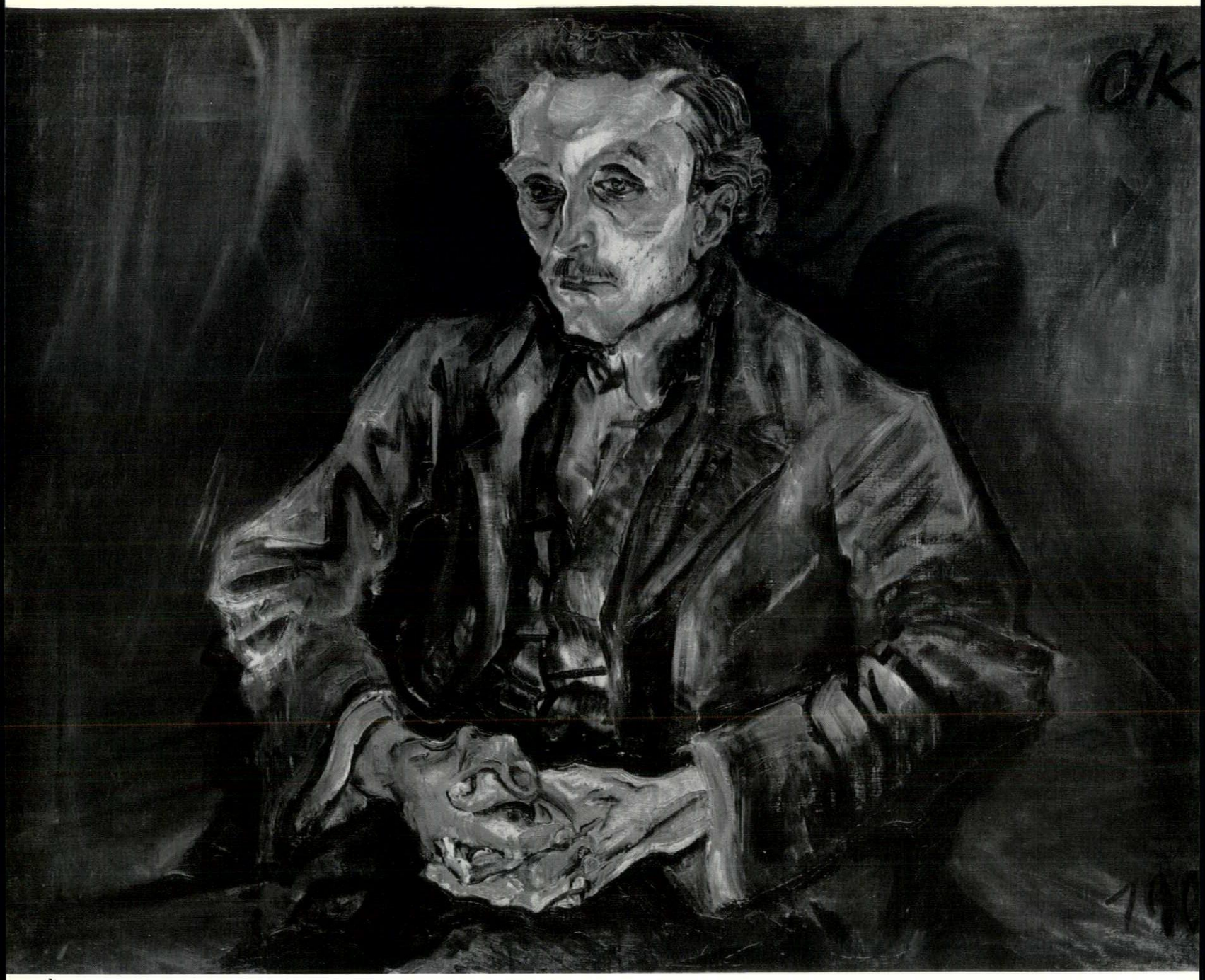
TIMBER IN BUILDING. *By A. L. Osborne. B. T. Batsford. Price* 35*s*.

PHOENIX AT COVENTRY. *By Basil Spence. Geoffrey Bles. Price* 35*s*.

A DICTIONARY OF EGYPTIAN CIVILIZATION. *By G. Posener, assisted by S. Sauneron and J. Yoyotte. Methuen. Price* 48*s*.

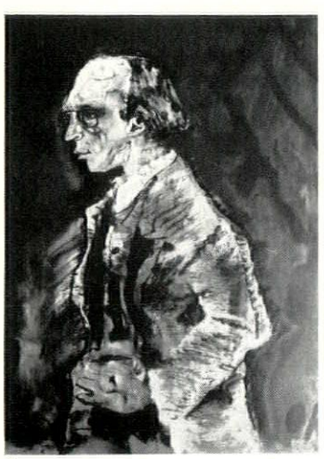
TRATTATO DI DISEGNO EDILE. *By R. Vitali & U. Ghianda. Vitali & Ghianda. Price* L.3.600.

PRESTRESSED CONCRETE STRUCTURES IN ITALY. *Supplement to May issue of L'Industria Italiana del Cemento.*



1

To the shock experienced by many on encountering for the first time a whole room full of forceful early portraits by Oskar Kokoschka, there was added the revelation that he must also have been something of an honorary member of the pioneers of modern architecture. The great retrospective exhibition at the Tate Gallery (which closed last month and is reviewed by Robert Melville on page 438) abounded in cross-references to the world of revolutionary architecture and its patrons, friends and supporters. Above, 1, is his revealing portrait of Adolf Loos painted in 1909; at the left are, 2, Herwarth Walden (1910) of *der Sturm*, who made the ideas of Loos (and the Futurists) known to Germany, and 3, the artist himself in 1912 with Alma Mahler, who was to be, among other things, the first Frau Gropius. But from the point of view of Kokoschka, the key figure is undoubtedly Loos, who took him up, in one of his most combative moods, in 1908 (the year in which *Ornament and Crime* was published), became his firm friend and tried to rescue him from obscurity and slavery (in the eyes of Loos) to the commercialism of the Wiener Werkstatte. Loos bestirred himself energetically on behalf of the young painter, trying to obtain commissions for him, sending him 'to Professor Forel, who lived in the neighbourhood, to let K paint his portrait. I then offered the picture to the museum authorities in Berne, for 200 kronen. It was turned down. I submitted it for exhibition at the Vienna Kunstlerhaus. It was turned down. Next, to the Klimt circle for their exhibition in Rome. Turned down by the opposition. Only Mannheim had the courage to acquire it. A painting for 200 kronen,' wrote Loos in 1931, 'and nobody, no gallery wanted it.'



2



3

Peter Collins

PARALLAX

Those architects who base their theory of architecture on Sigfried Giedion's analysis of its modern developments (and this, I suspect, is tantamount to saying all architects under forty) will doubtless be so used to the idea that Space-Time is an essential element of contemporary architecture that they may consider it an impertinence to enquire whether, outside the realm of astronomy and nuclear physics, the term means anything at all. Giedion himself is curiously vague about the precise way this new space concept operates. Part VI of *Space, Time and Architecture* is called 'Space-Time in Art, Architecture and Construction,' and its first chapter is called 'The New Space Conception, Space-Time.' Yet in this first chapter, the hyphenated word does not occur at all, whilst in the remaining eighty pages of Part VI, it occurs only four times, namely with reference to the three famous buildings and one famous project in which its characteristics are apparently to be discerned.

Paul Rudolph believes that the concept of Space-Time has been the motivating force behind much of the International Style, and that in the hands of a great man, this concept can be immensely successful[1]. On the other hand, John Burchard and Albert Bush-Brown contend that even the serious efforts of Giedion have been unable to build believable connections between Gropius's *Werkbund* building at Cologne and the recondite Space-Time of Einstein[2]. It seems worth enquiring, therefore, what Space-Time really does signify in terms of architecture, and whether, if it means anything, the meaning could be more accurately expressed in simpler terms. This enquiry aims neither at philological hair-splitting nor at substituting one catchword for another. Its purpose is to give a clearer idea of what the fundamental aesthetic nature of contemporary architecture is, whereby it can be more accurately studied and its future possibilities more effectively explored.

One difficulty of analysing the implications of Space-Time in architecture is that it seems to mean different things to those who use it. In some passages it evidently means 'related to Einstein's theory of relativity,' whilst in others it seems to mean only 'related to *avant-garde* paintings of the 1910's and 1920's.' Sometimes it is used as a synonym for 'four-dimensional,' sometimes as the equivalent of 'non-Euclidian geometry,' and on at least one occasion it is used to explain the architectural significance of Zen Buddhism. I propose to look briefly into each of these various meanings in an attempt to isolate those ideas which have some application to architectural design.

Firstly, we can, as Burchard and Bush-Brown rightly observe, dismiss as an illusion any idea that using the words 'Space-Time' establishes a firm analogy with Relativity. Indeed, Giedion in one instance seems to dismiss this relationship himself as a 'temporal coincidence'[3]. However inspiring the announcement of Einstein's initial theory must have been to painters and writers when it was published in 1905, and however exhilarating his startling experimental proof of the final theory (published a decade later) must have been in 1919, the fact is that neither had anything to do with the kind of space that painters, sculptors and architects are involved with, but were a development of the algebraic techniques of analytical geometry, extended to solve problems in dynamics. Moreover, although Einstein's general theory of relativity (which is concerned with accelerated motion) involves non-Euclidian geometry, his 'special' theory of relativity (which is concerned with uniform velocity) does not.

It is clear therefore that when Giedion talks about non-Euclidian geometry as if Euclidian geometry were limited to three dimensions[4], and claims that 'like the scientist, the artist has come to recognize that classic conceptions of space and volume are limited and one-sided'[5], or that 'the essence of space as it is conceived today is its many-sidedness[6], he is not talking about anything which would have been intelligible to Einstein; for Einstein never claimed that space was many-sided, or that 'in order to grasp

[1] *Canadian Architect*, March, 1959, p. 65.
[2] J. Burchard and A. Bush-Brown, *The Architecture of America*, pp. 317, 429.
[3] S. Giedion, *Space, Time and Architecture* (1956 ed.), p. 432.
[4] *Ibid.*, p. 431.
[5] *Ibid.*
[6] *Ibid.*, p. 432.

the true nature of space the observer must project himself through it.' On the contrary, it was precisely because of the impossibility of measuring our absolute velocity through space that he engaged upon his famous research. His great feat was to demonstrate why it was that the true nature of space was not apparent to observers moving through it, and the truths he enunciated were more to the effect that problems of measurement involving mass and light are not so much a matter of geometry as a matter of history. 'The past,' wrote R. G. Collingwood in his *Philosophy of History*, 'consisting of particular events in space and time which are no longer happening, cannot be apprehended by mathematical thinking because mathematical thinking apprehends objects that have no special location in space and time, and it is just that lack of peculiar spatio-temporal location that makes them knowable'[7]. Einstein's theory may, without unduly broadening the meaning of 'history,' be said to constitute the ultimate extension of historicism[8] to our interpretation of nature by relating it to astronomy and nuclear physics.

In such circumstances one would not expect to find any detailed explanation of the Space-Time qualities of modern architecture in Einstein's own writings, but he makes one remark in his introduction to Max Jammer's *Concepts of Space* which provides a useful clue as to his own ideas concerning the relationship between architecture and space. 'Now as to the concept of space,' he wrote, 'it seems that this was preceded by the psychologically simpler concept of place. Place is first of all a small portion of the earth's surface identifiable by a name . . . a sort of order of material objects and nothing else'[9]. Now this is precisely the kind of space involved in architectural design, and one might contend that a 'place' (plaza, piazza) is the largest space that an architect is able to deal with as a unified work of art.

Closely related to the analogy with Einstein's theory of relativity is the notion that modern architecture is characterized by its use of a fourth dimension. 'The fourth dimension,' wrote Le Corbusier in *New World of Space*, 'is the moment of limitless escape evoked by an exceptionally just consonance of the plastic means employed'[10], and whatever this may mean exactly, it is obviously related to Giedion's notion that the 'fourth dimension' enables us not merely, like the Cubists, to depict the world in a new way, but to *see* it in a new way. The four-century old habit of seeing the outer world in terms of three dimensions, Giedion tells us, rooted itself so deeply in the human mind that until quite recently no other form of perception could be imagined. No wonder, he concludes, that the modern way of seeing the world in terms of four dimensions should be so difficult to comprehend[11].

Now 'fourth-dimensional' in architecture presumably means time considered as a measure of displacement, and since buildings do not move (although Moholy-Nagy defined Space-Time architecture in terms of automobiles, trains and trailers)[12], the 'fourth-dimensional' component must necessarily be contributed by the observer. Yet Giedion states not only that to appreciate a Space-Time structure in its entirety one must move through it and around it; he also states that one can appreciate both the inside and outside simultaneously by staying in the same place—a seemingly contradictory distinction which depends in fact on the extent to which the structure is sheathed in plates of glass.

According to Giedion, it is impossible to comprehend Le Corbusier's Maison Savoye by a view from a single point, since 'quite literally,' he says, it is a construction in Space-Time; the body of the house has been hollowed out in every direction—from above and below, within and without—so that a cross-section at any point shows inner and outer space penetrating each other inextricably, in a way which Borromini had been on the verge of achieving in some of his late Baroque churches[13]. Le Corbusier gives much the same interpretation of it, although he does not use the expression Space-Time, and considers that his building exemplifies the exact opposite of Baroque principles (which, according to him, produced an architecture conceived on paper around a fixed theoretical point). Moreover, far from considering his own principles exclusively modern, he derives them from Arab architecture. 'Arab architecture gives us an invaluable lesson. It is appreciated *whilst walking*, and it is only thus, in moving around, that the observer sees the architectural dispositions develop'[14].

Giedion's other great Space-Time paradigm, the Bauhaus, is also, according to him, too complex to be summed up at one view, so that it is necessary here again to go around it on all sides, to see it from above as well as below. This means, he says, new dimensions for the artistic imagination; 'an unprecedented many-sidedness.' But for him, the specific Space-Time quality of the building is attributable to the fact that the extensive transparency permits interior and exterior to be seen simultaneously *en face* and *en profile* 'like Picasso's *L'Arlésienne* of 1911-12'[15].

Perhaps, then, Giedion's views might be summarized by saying: modern architecture is characterized by the fact that the inside of a modern building can often be appreciated from single external viewpoints, and the external totality of a modern building can only be appreciated as a sequence of visual impressions. If this is so, it is the converse of what occurs when one looks at traditional buildings of similar purpose; for in a typical Renaissance villa comparable to the Maison Savoye, the totality of the outside of the building is intelligible from a single viewpoint (because of the axial symmetry), whereas the interior can only be appreciated as a sequence of visual impressions obtained by moving from room to room. But 'fourth-dimensional' does not, for Giedion, simply refer to the movement of an observer. In an introductory passage, he makes clear that he regards it as evidence of the evolution of art. The Renaissance manner of seeing the world three-dimensionally, he tells us, was an important step forward,

[7] *Op. cit.* (1956 ed.), p. 5.
[8] Cf. previous article in AR, August, 1960, p. 101.
[9] *Op. cit.*, p. xiii.
[10] *Op. cit.*, p. 8.
[11] S. Giedion, *Ibid.*, p. 431.
[12] L. Moholy-Nagy, *Vision in Motion*, p. 256.
[13] S. Giedion, *Ibid.*, pp. 518–9.
[14] Le Corbusier, *Oeuvre Complète de 1929–1934*, p. 24.
[15] S. Giedion, *Ibid.*, p. 489.

because the art of previous centuries had been two-dimensional. Thus our contemporary four-dimensional vision is in one sense revolutionary, but in another sense it is simply an inevitable advance in the evolutionary progress of civilization[16].

Disregarding the question whether all the art of pre-Renaissance cultures really was in fact two-dimensional, whether even painting was then two-dimensional, and whether, for example, a mediaeval Italian painting depicting the same person participating in several sequential events on the same panel is to be called two-dimensional, three-dimensional or four-dimensional[17]; disregarding also the logical extension of Giedion's theory which would seem to imply that the next development of art is to become five-dimensional, then six-dimensional (as in the dynamic theory of gases) until eventually it becomes *n*-dimensional; it is surely enough to say that this evolutionary theory is only possible if one considers the *creation* of space to be indistinguishable from the *depiction* of space. That painters have found new ways of 'conquering' space, first by mastering perspective and then by discovering techniques for producing the illusion of infinity, is a matter of common knowledge. But to suggest that architects before 1400 actually *created* only two-dimensional architecture, in the way that between 1500 and 1750 they were creating three-dimensional architecture, and that the Baroque heralded the creation of four-dimensional architecture, is to divest the words of any real tectonic meaning, and nobody except Moholy-Nagy has ever been rash enough to try to demonstrate the theory by reference to historical examples. He illustrates the theory by asking us to believe that Egyptian architecture was 'one-dimensional' because their temples could be comprehended by walking through the sphinx alley leading towards its façade; that Greek architecture was 'two-dimensional' because the architects of the Acropolis designed a two-dimensional approach to 'the temple'; and that the spectator inside a Gothic cathedral became the centre of co-ordinated space cells of all directions, whilst the Renaissance and the Baroque brought man into closer contact with the inside and the outside of its buildings. 'In our age of airplanes,' he concludes, 'architecture is viewed not only frontally and from the sides, but also from above —vision in motion'[18]; i.e. Space-Time.

The interpretation of architecture in terms of space was initially a contribution of German philosophers, and it goes back at least to the beginning of the nineteenth century[19]. But the influential disseminators of this idea were the late nineteenth-century German art-historians, and it is significant that when Wölfflin (from whom Giedion derived his basic ideas about the primacy of space in art-historical analysis) discusses architectural space most eloquently, it is with reference to the *painting* of an architectural interior, rather than to an architectural interior itself. Altdorfer's early sixteenth-century painting of the birth of the Virgin, he tells us, characterizes well the fundamental difference between the German and Italian conceptions of space, since here 'space is undefined and in motion,' whereas with Brunelleschi all forms are defined and distinct. In Altdorfer's interior, he continues, the nave and aisles flow into one another, 'and what is more, a rotating, whirling movement throws the entire space into a turmoil.' The church's ground plan remains intentionally unclear, and the painting, he therefore concludes, compensates for the completeness of the diverse views offered to the spectator wandering on the spot 'by transforming finite into infinite form'[20].

When Wölfflin discusses Baroque interiors, his descriptions are almost indistinguishable from Giedion's description of the Space-Time experience of the Maison Savoye. 'We move round them,' he writes, 'because in the intersections new pictures constantly arise. The goal cannot lie in a final revelation of the intersected form—that is not even desired—but in the perception, from as many sides as possible, of the potentially existing views'[21].

Nevertheless, Giedion's interpretation of Baroque clearly differs from Wölfflin's in that Giedion sees Baroque only as the anticipation of Space-Time, and I suspect that the immediate source of Giedion's theory is to be found not in Wölfflin's lectures or Einstein's theory, but in an extremely influential and popular German book which appeared in 1918, when Giedion was a student in Munich, namely Spengler's *Decline of the West.* If specific evidence were required to demonstrate Spengler's influence on Giedion, it could be adduced by the term 'Faustian,' that most Spenglerian of expressions, which occurs in *Space, Time and Architecture* on page 525, with reference to the League of Nations competition. But for readers of Giedion, nothing could be more conclusive than the following quotation from *Decline of the West:*

'The Temple of Poseidon at Paestum and the Minster at Ulm . . . differ precisely as the Euclidian geometry of bodily bounding-surfaces differs from the analytical geometry of the position of points in space referred to spatial axes. All Classical building begins from the outside, all Western from the inside. . . . There is one and only one soul, the Faustian, that craves for a style which drives through walls into the limitless universe of space, and makes both the exterior and the interior of the building complementary images of one and the same world-feeling. . . . The Faustian building has a *visage*, and not merely a façade'[22].

'Faustian' might well be an appropriate substitute for the increasingly unpopular word 'International' as a stylistic identification of twentieth-century architecture, but regardless of 'style,' I would suggest that in fact the visual effects usually referred to as Space-Time, Fourth-Dimensional, and so on, are nothing more or less than modern developments of the exploitation of effects of parallax. The phenomenon of parallax (whereby an apparent displacement of objects occurs when the point of observation changes) is also, like Space-Time, a device for astronomical measurement, but unlike Space-Time it has always

[16] *Ibid.*, p. 431.
[17] Cf. P. A. Michelis, in *Journal of Aesthetics and Art Criticism*, viii, pp. 71–86.
[18] L. Moholy-Nagy, *Ibid.*, p. 244.
[19] Cf. Hegel's *Philosophy of Art* (1920 ed.), pp. 91–7.
[20] H. Wölfflin, *The Sense of Form in Art* (1958 ed.), p. 67.
[21] H. Wölfflin, *Principles of Art History* (Dover ed., n.d.), p. 223.
[22] O. Spengler, *Decline of the West* (1926 ed.), p. 224.

been an important element of architectural composition, and has been manifest in architecture ever since the first hypostyle hall was constructed. It occurs in every large space containing rows of free-standing columns, and must have produced particularly striking effects in the great mediaeval churches and halls when these were also subdivided by low screens, or spanned by deep hammer-beam roofs.

The aesthetic revolution which has occurred in architecture within the last century has consisted firstly in the reversal of the traditional method of exploiting parallax, and secondly in its extension by means of a greater use of cantilevers and glass. Reversal of the traditional method is best exemplified in Le Corbusier's work, and it is probably this which relates it so closely to Cubism; for, as Sir John Summerson has observed, 'just as Picasso's work is, as he has said, a sum of destructions, so, in a sense, is Le Corbusier's; for to him the obvious solution of a problem cannot possibly be the right solution . . . he sees the reverse logic of every situation'[23]. Extension of the traditional method is best exemplified in the works of Gropius, and particularly of Mies van der Rohe, that greatest of all pioneers of modern parallax, whom Giedion, with regard to Space-Time, completely neglects. But all the leading architects of the century have exploited it to some extent, whether it be Frank Lloyd Wright's use of large balconies or free-standing mushroom columns, or even Perret's emphasis on isolating point supports. Its most striking development today is in the use of high towers which change their apparent relationship as one moves round the building, as introduced by Louis Kahn.

By the reversal of traditional methods of parallax, I mean the fact that until the present century, parallactic effects were usually visible in large covered spaces because of the need for intermediate supports, whereas nowadays technology seems to have imposed a moral obligation to roof even the largest areas as uninterrupted volumes. Conversely, whereas formerly buildings containing a number of rooms produced no effects of parallax within their sequence of prismatic enclosures, all subdivided spaces now tend to be treated as if they were converted hypostyle halls. By the extension of parallax, I mean that modern structural systems have removed any compulsion to make structural space-articulators symmetrical, whilst recent developments in glass-making and in heating and ventilation have allowed the same tectonic elements to be visible in parallax both inside and out.

Giedion is clearly right in distinguishing between these new parallactic phenomena and the *trompe-l'oeil* spatial effects of the Baroque, since it was precisely the lack of parallactic displacement which hampered the illusion that Baroque pictorial effects were real. But he is wrong in implying that Baroque designers never did exploit parallax in a modern way, for it occurs in rococo interiors where large mirrors are placed symmetrically on opposite walls. According to Wölfflin, the beauty of a rococo mirror hall differs from the beauty of a Renaissance interior (the ultimate effect of which lies, he says, in the geometric proportions) because one is intangible and the other tangible, and because one is imprecise and the other clear[24]. But the main distinction is surely that in a rococo mirror hall, the architecture and the occupants are reflected to infinity by images which always remain in true perspective relative to each observer, no matter where he may move. Thus three-dimensional geometric proportions are extended further into space, whereas the aim of Baroque interior decorators was to destroy geometric proportions altogether by disrupting the volumes which unadorned architecture naturally creates.

It will be seen, then, that there was something very radical and important in the mid-eighteenth-century fondness for mirrored interiors, as there was also, by the same token, in their fondness for ruins (where interiors and exteriors also appear to be seen simultaneously). Both these features, often regarded as merely whimsical frivolities, were the aesthetic roots of modern architecture as it exists today. Indeed, some writers of the time seem even to have been dimly aware of the true significance of such effects, as when Robert Wood, describing the ruins of Palmyra in 1753, observed that 'so great a number of Corinthian columns, mixed with so little wall or solid building, afforded a most romantic *variety of prospect.*' The effect was undoubtedly exploited deliberately by Soufflot at Ste. Geneviève, for as Wolfgang Herrmann remarks, 'while the visitor moves forward, the cluster of columns seems to move too, opening up constantly changing views'—an effect actually described by Soufflot's successor Brébion in a letter dated 1780[25].

What is most strikingly novel about current attempts to exploit effects of parallax is that they are so often used without adequate regard for the needs of privacy, and that they are so often described in unnecessarily pompous terms. Phrases such as 'continuity of space,' 'mobility of space,' 'expansion of space' and 'over-lapping and tied-together space-volumes' are no doubt harmless justifications for an exceptionally lavish use of glass, yet when one of the great Rococo exponents described the new idea in 1737, he wrote simply that 'the mirrors make a mutual reflection between each other, thus prolonging the view and producing a very pleasant effect'[26]. It is difficult to see why anyone need say more than that.

Giedion's terminology will probably persist, whatever interpretation we give it, because of the modern credulous appetite for pseudo-scientific mumbo-jumbo; and the fact that it was used recently to explain traditional Japanese architecture and its relation to Zen Buddhism will occasion no surprise[27]. It is even to be found outside architectural writings, as for example in a recent sociological periodical where, in an article entitled 'A Study of Free-Time Activities of 200 Aged Persons,' their Space-Time activities are carefully described[28]. Yet here, on close examination, it is apparent that 'space-time activities' was simply a misprint for 'spare-time activities,' and one may perhaps be excused for wondering whether a similar typographical transposition has not occurred in one or two recent books on modern art.

[23] J. Summerson, *Heavenly Mansions*, p. 189.

[24] H. Wölfflin, *Ibid.*, p. 223.
[25] W. Herrmann, *Laugier*, p. 121 and footnote 72.
[26] J. F. Blondel, *Decoration des Maisons de Plaisance*, I, p. 27.
[27] N. H. Carver, *Form and Space of Japanese Architecture*, p. 130.
[28] *Sociology and Social Research*, xlv, p. 157.

GOLDEN LANE: STAGE 2



1

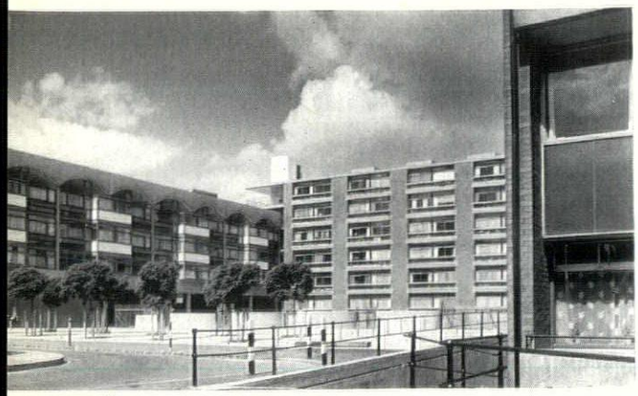
1, the west side of the estate seen from a bombed site beyond Goswell Road. Great Arthur House, the 16-storey block, is part of the first stage of this Corporation of London housing scheme which was illustrated in the AR in June, 1957. In front of the tall block is the end of the four-storey block of flats (Block X) which forms part of the final stage illustrated here. 2, looking north up Goswell Road past Block X. The ground floor is occupied by shops set back behind the columns.

HOUSING, GOSWELL ROAD, LONDON

ARCHITECTS | **CHAMBERLIN, POWELL AND BON**

2





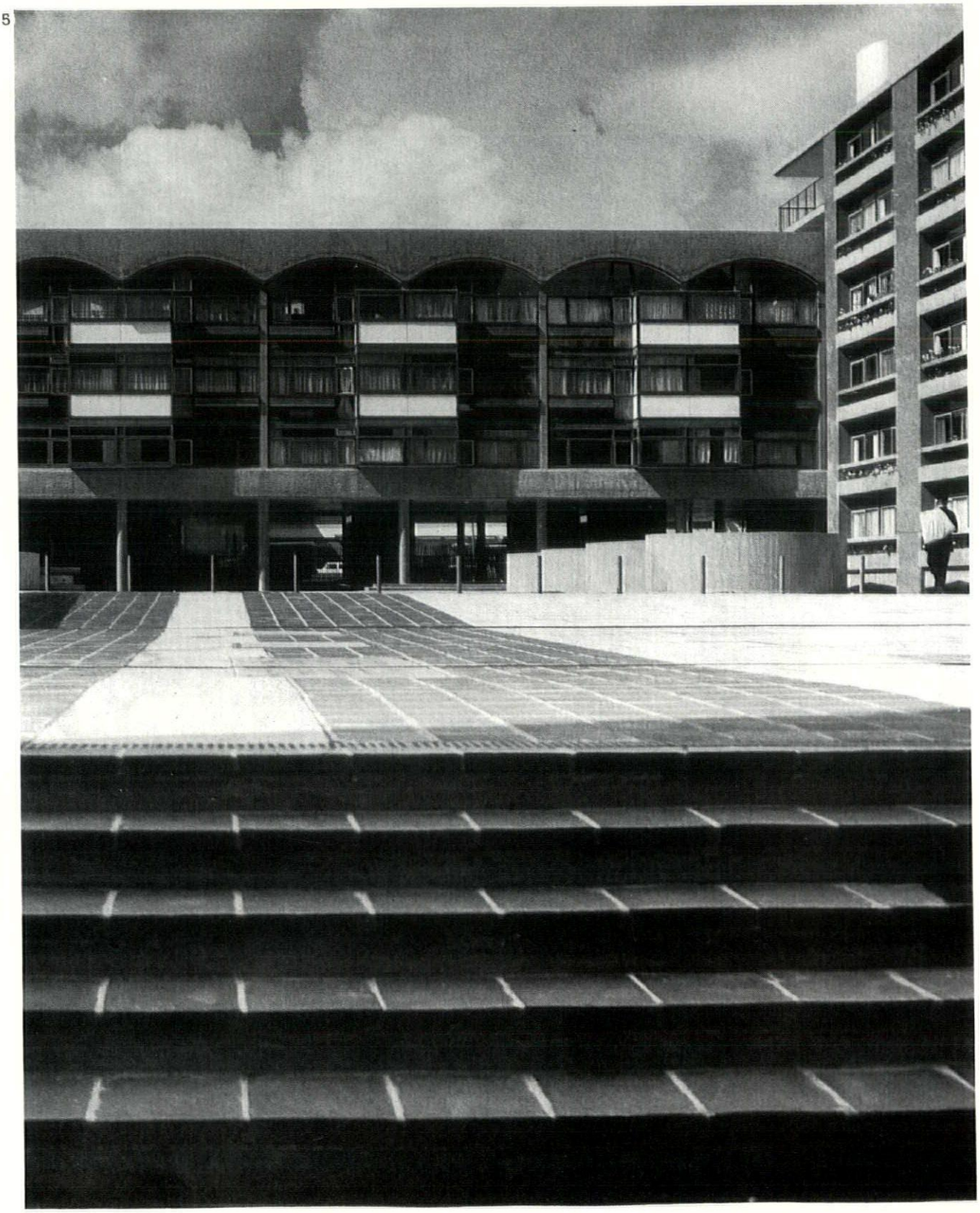
3

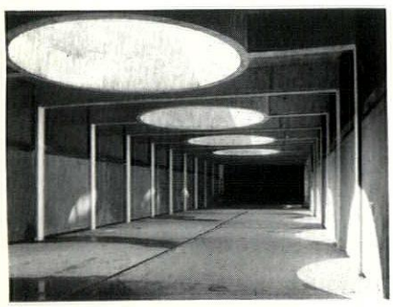


4

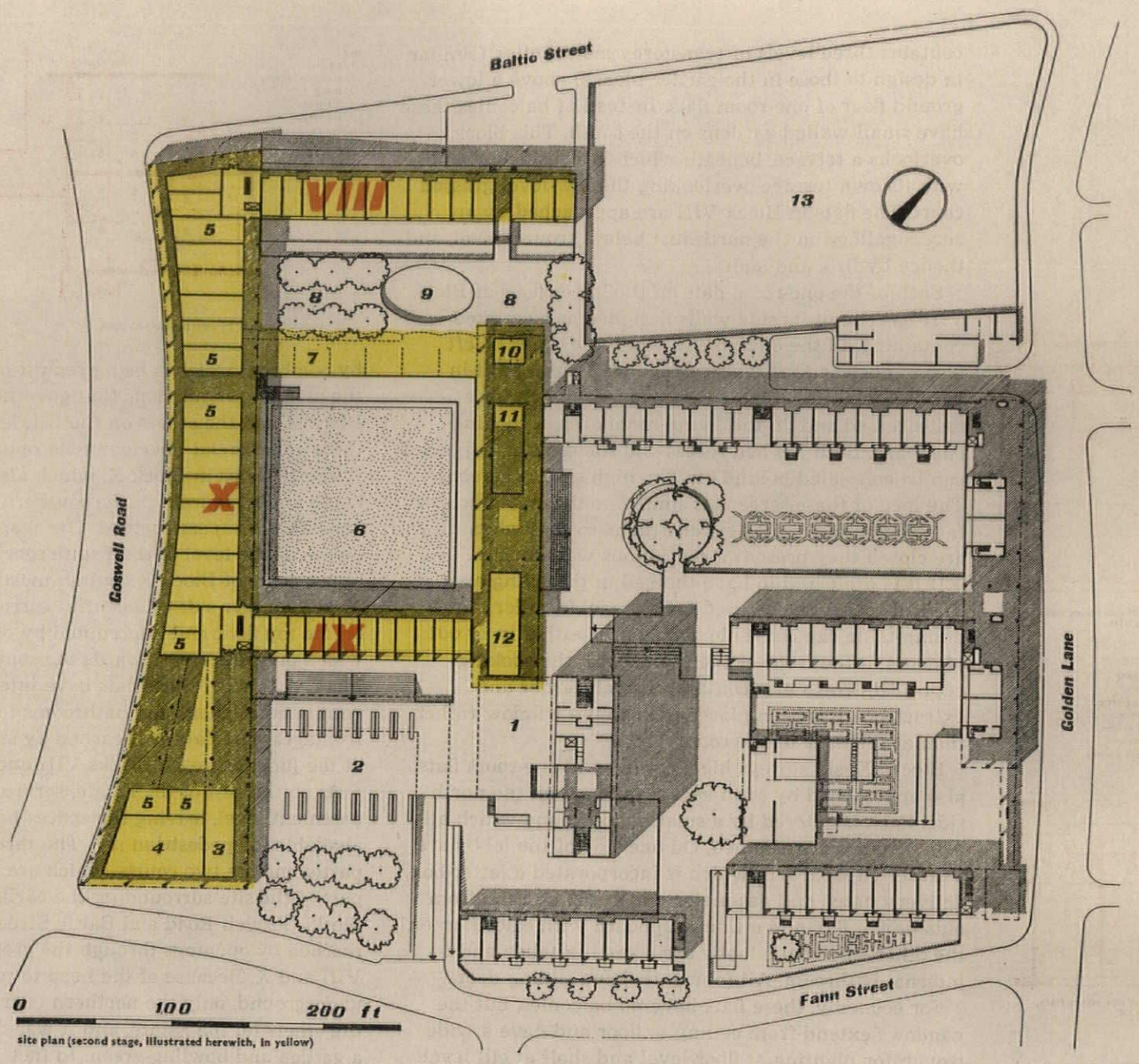
3, the entrance courtyard seen from Fann Street. Block X is on the left and Block IX is in the centre. In the foreground is the ramp to the underground service road (see circulation plan on facing page). 4, looking west along B ock VIII to Block X. The walled gardens on the right belong to the one-room flats underneath the maisonettes. 5, Block X seen from the west, with Block IX on the right. The row of drums provides ventilation to the underground service road. 6, looking along this service road, with lock-up garages on either side.

5





6

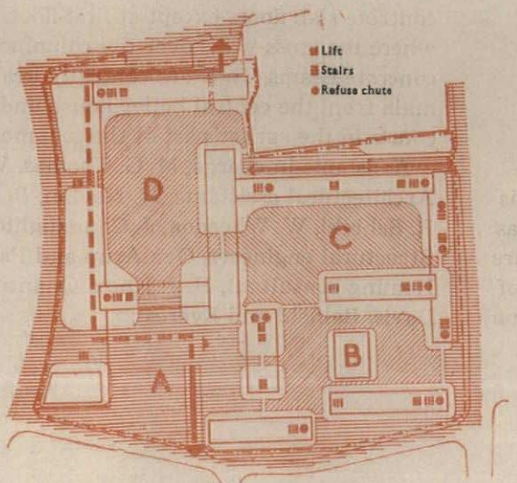


key
1, underground boiler house.
2, pedestrian court with garages under.
3, restaurant.
4, public house.
5, shops.
6, low level court with tennis court
7, city residents' club.
8, playground.
9, sunk pit for ball games.
10, nursery room.
11, open badminton court.
12, enclosed badminton court.
13, site of future LCC primary school.

site plan (second stage, illustrated herewith, in yellow)

HOUSING, GOSWELL ROAD, LONDON

key
A, public court open to Fann Street and Goswell Road under Block X.
B, central community court.
C, inner court.
D, physical recreation court.



circulation plan showing internal service roads

An extension of the same architects' Golden Lane housing scheme (illustrated AR June, 1957), which it completes. The scheme is for the Corporation of the City of London, though sited just outside the City's northern boundary, and is a further development of the scheme that won an open competition held by the City in 1952.

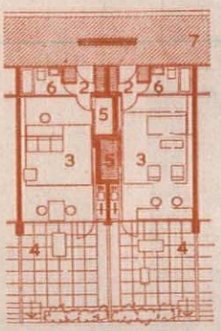
The extension houses 580 people, making a total population for the Golden Lane Estate of 1,400 people at a density of 200 to the acre. It occupies the western side of the site (see plan of the whole layout) and consists of three blocks (Block VIII, Block IX and Block X on the plan), together with a recreation building which separates the low-level court between Blocks VIII and IX from the similar court between Blocks IV and V in the earlier part of the scheme.

Block VIII, at the north-west (Baltic Street) corner,

contains three levels of two-storey maisonettes (similar in design to those in the earlier blocks) above a lower ground floor of one-room flats. Instead of balconies these have small walled gardens on the south. This block overlooks a terrace, beneath which is a residents' club with its own terrace overlooking the low-level grassed court. The flats in Block VIII are approached by an access gallery on the north just below ground level, and thence by lifts and stairs.

Each of the one-room flats on the lower floor of Block VIII has one of its side walls designed as a cranked wall containing all the equipment, while the other is left free of obstructions. This storage wall has a built-in wardrobe in the lobby, a recess large enough for a full-size bed and, in the living-room area, a cooking-cupboard. Both the bed-recess and the cooking-cupboard can be concealed behind 6ft. 6in. high sliding screens. The face of these screens is similar to the match-boarded face of the solid wall between them, so that when they are closed they present a continuous wall-surface.

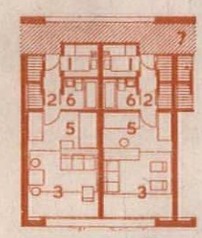
If it is preferred to have the bed in the living-area, the bed-recess can be used for storage. In order that the dining-table can conveniently be used either in or out of doors in the front of the living-area, the cooking-cupboard, which also contains a small larder and extract fan, has been placed next to the window rather than at the back of the room.



plan of one-room flats, Block VIII

key
1, cooking unit.
2, lobby.
3, living area.
4, terrace.
5, bed recess.
6, bathroom.
7, access gallery.

Block IX, six storeys high, contains 72 one-room flats, also approached by open access galleries on the north side. Each is entered by a small lobby round which all utility rooms are planned. On one side of the lobby are a larder-cupboard, in which is incorporated a letter-box, delivery hatch and gas-meter which can be read from outside the flat, and a linen-cupboard with calorifier; on the other side of the lobby are a small kitchen and internal bathroom. All four units have sliding doors.



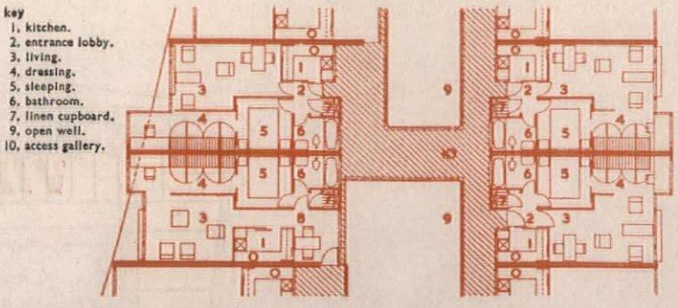
plan of one-room flats, Block IX

key
1, kitchen.
2, lobby.
3, living area.
5, sleeping area.
6, bathroom.
7, access gallery.

For economy, these flats have no balconies, but the windows extend from ceiling to floor and have a wide trough for planting at floor level and shelf at cill level. These are of pre-cast concrete built into the brick piers, with exposed aggregate on the outside and polished on the inside. The shelf has circular holes for flower-pots, designed also to present an interesting pattern when empty. The strip of floor next to the window is covered with quarry-tiles, the remainder being hardwood. The flanking walls are plastered, but the inside of the pier next the window, where bookshelves are provided, is in brick to match the rest of the window wall.

There is no fixed furniture in the room, but sockets are provided in floor and ceiling the length of a bed away from the rear wall so that tenants can partly subdivide the room if they wish by some kind of free-standing fitment or shelving.

Block X, on the 500ft. long Goswell Road frontage, is four storeys high with shops on the ground floor. It has been designed as a coherent piece of street architecture of even height—and contrasts with the opposite side of Goswell Road (which suffered almost equal destruction



key
1, kitchen.
2, entrance lobby.
3, living.
4, dressing.
5, sleeping.
6, bathroom.
7, linen cupboard.
9, open well.
10, access gallery.

plan of two-room flats, Block X

by bombing) which is being rebuilt piecemeal. Nor have the planning regulations that governed the height of Block X and the others on the Estate been applied to these commercial developments opposite.

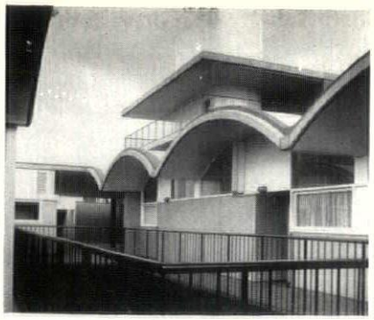
The 16 shops in Block X, which also has a public house and restaurant at the southern end, are recessed beneath the superstructure. The shops have stores below, at the level of the Estate service road. The three upper floors of Block X contain mostly two-room flats planned either side of a central corridor which is open on the top floor and interrupted by open wells which widen progressively towards the southern end of the block. A third of these flats have internal, artificially ventilated kitchens and bathrooms to economize frontages. The flats are reached by staircases and lifts at the junctions with Blocks VIII and IX.

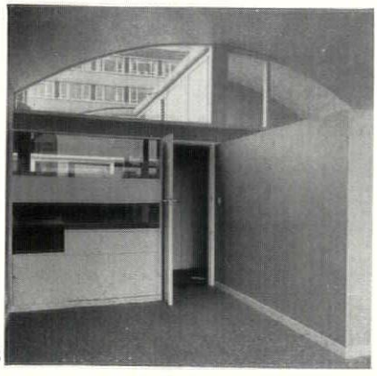
As on the rest of the Estate, service roads are sunk to basement level, leaving the spaces between blocks available for pedestrian use. The three new blocks partly enclose two courts, which are open to the central part of the site surrounding the earlier sixteen-storey block. Goswell Road and Baltic Street can also be reached by openings through the ground floors of Blocks VIII and X. Because of the need to provide garages underground, only the northern court could be sunk like the others on the Estate, and it was designed to contain a garden and bowling-green. In fact, hard tennis-courts surrounded by high chain-link fencing have been introduced instead, against the architects' advice, producing a uniformly hard environment, where the softer environment created by grass and planting was considered desirable. On the eastern side of this court is a recreation building, with badminton court, swimming pool and gymnasium.

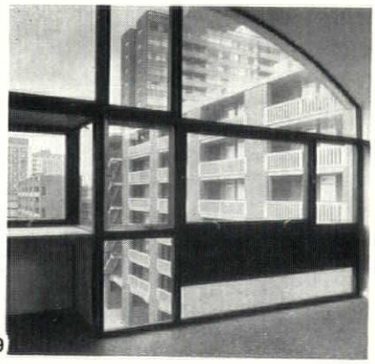
All the blocks are in load-bearing brick, with *in-situ* concrete slab floors except at first-floor level in Block X where the cross-walls over the columns are designed as concrete beams. They are centrally heated from a ring main from the central boiler house under one of the courts in the earlier part of the scheme.

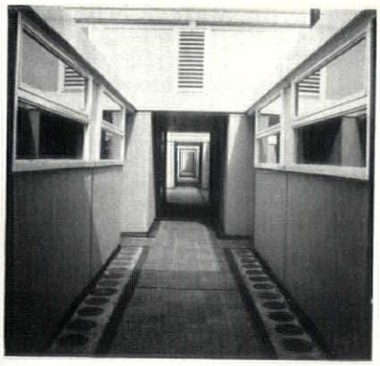
Assistants in charge, M. G. Thomas, W. Williams. Architectural assistants, M. Neylan, P. Deakins, R. Sabbiki, W. Wheedon, J. Connaughton, R. Chisholm. Structural engineers, Ove Arup and Partners. Heating consultant, H. J. Knox. Quantity surveyors, Davis, Belfield and Everest.

HOUSING, GOSWELL ROAD, LONDON









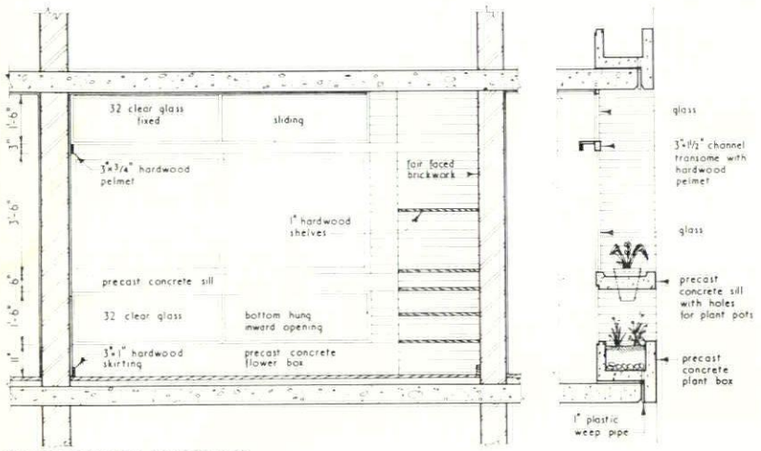


block X

7, access gallery to the top floor of Block X, with the lift tower for Blocks IX and X behind. 8, living-room in one of the top-floor flats, looking towards the kitchen. 9, view from the top floor looking out on Block IX. 10, top-floor access corridor. 11, close-up view: the top and bottom fascia are in-situ concrete, pick-hammered to expose and split the aggregate. The window framing is of hardwood with white cast glass infill panels. The exposed edges of the floor slabs are finished in grey-green ceramic mosaic tiles.

block IX

12, looking west along Block IX towards Block X. 13, 14, two views of the south elevation of Block X, showing the flower troughs and cills with holes for flower pots (see drawing below and notes on page 394.)



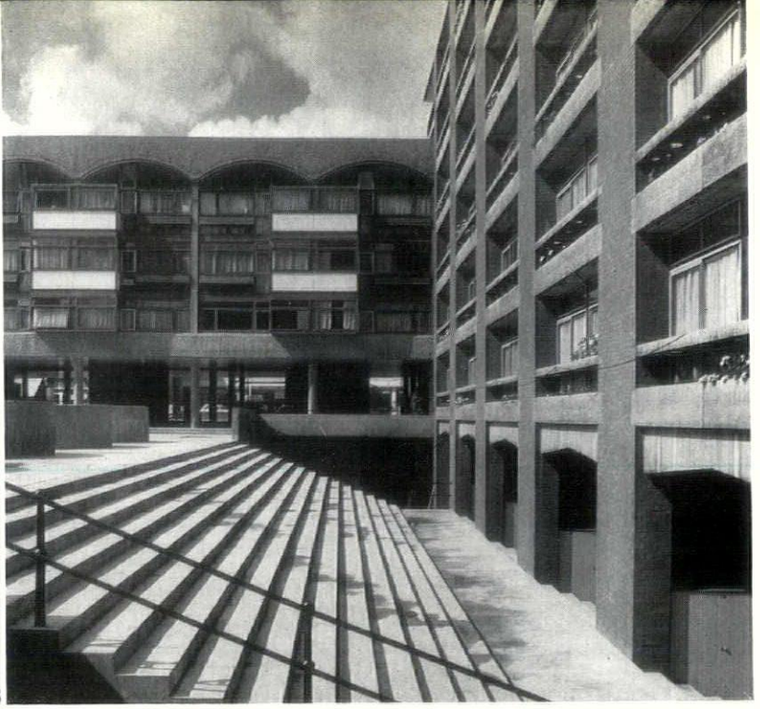
elevation and section, flat in Block IX

HOUSING, GOLDEN LANE, LONDON

photographs by H. de Burgh Galwey

Facing page: 15, Block VIII from the south. This block is almost identical to the maisonettes built in stage 1. The facing bricks are Uxbridge purple flints and the balustrades are fair-faced concrete. The panels below the windows are of dark-blue opaque cast glass in aluminium frames. The only external surfaces requiring regular maintenance are the panels on the back of the balconies, which can be repainted easily without scaffolding. 16, the north side of Block VIII in Baltic Street, showing the ramp down to the underground service road. 17, the children's creche at the north end of the sports building. The concrete canopy extends to the right to form a roof over the swimming pool and badminton court.

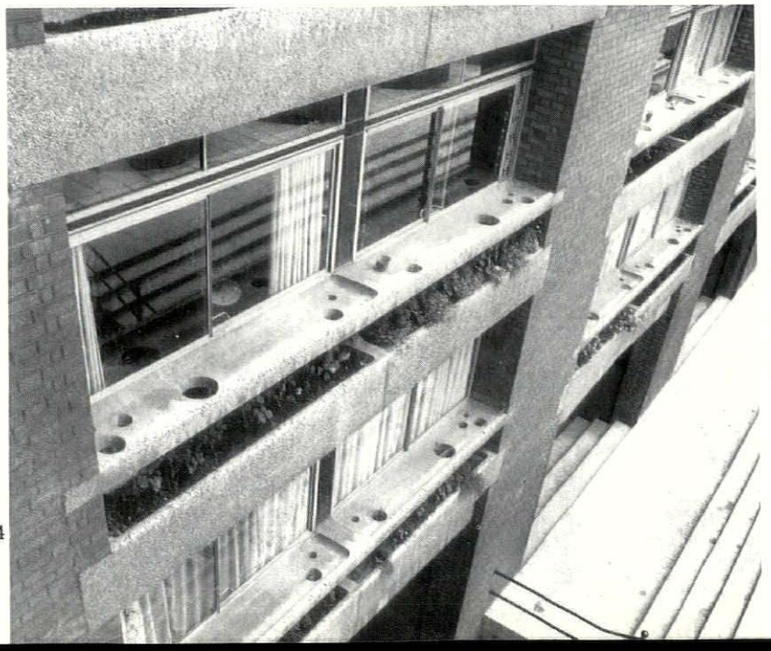
12

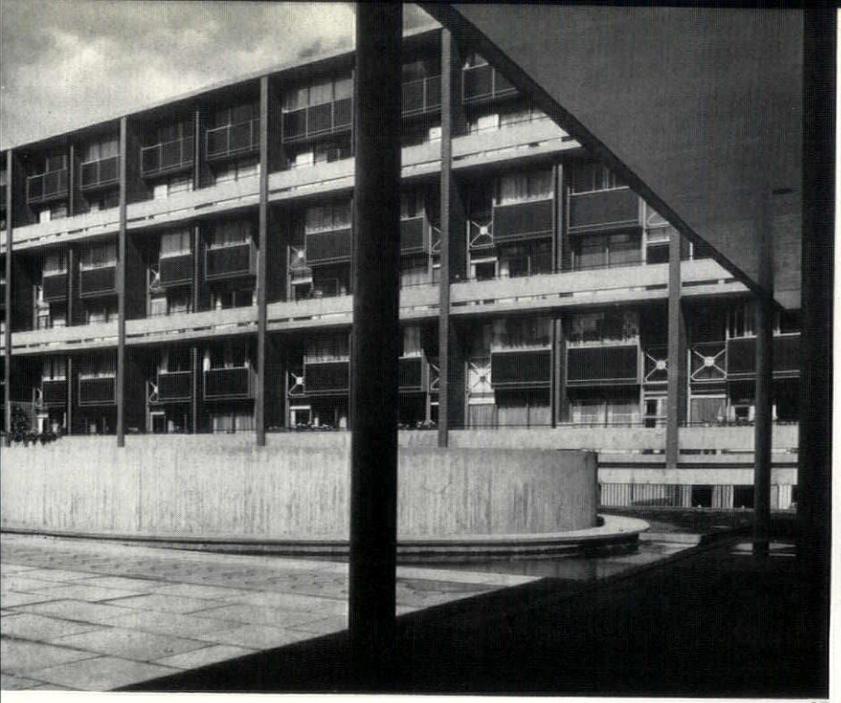


13



14







15 16

block VIII

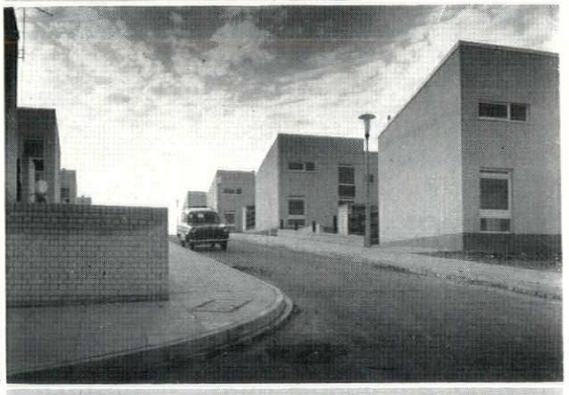
17

creche

HOUSING AT PETERLEE

ARCHITECTS | *H. DURRELL (Chief Architect to the Development Corporation in succession to R. J. A. Gazzard); M. W. Naunton (Deputy Chief Architect); Techmasp Kharaghat; Derek Flower; R. W. Stewart (architect in charge)*

WINDSWEPT NEIGHBOURHOOD

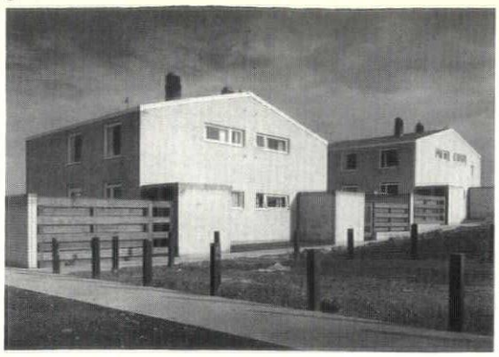


1

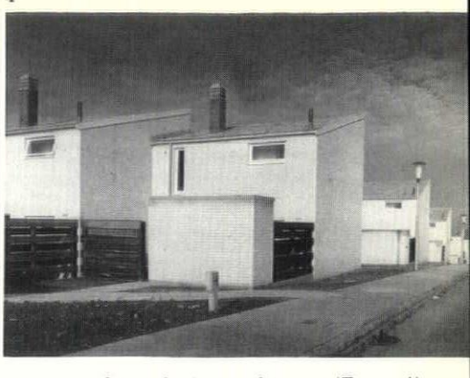


2

3



4



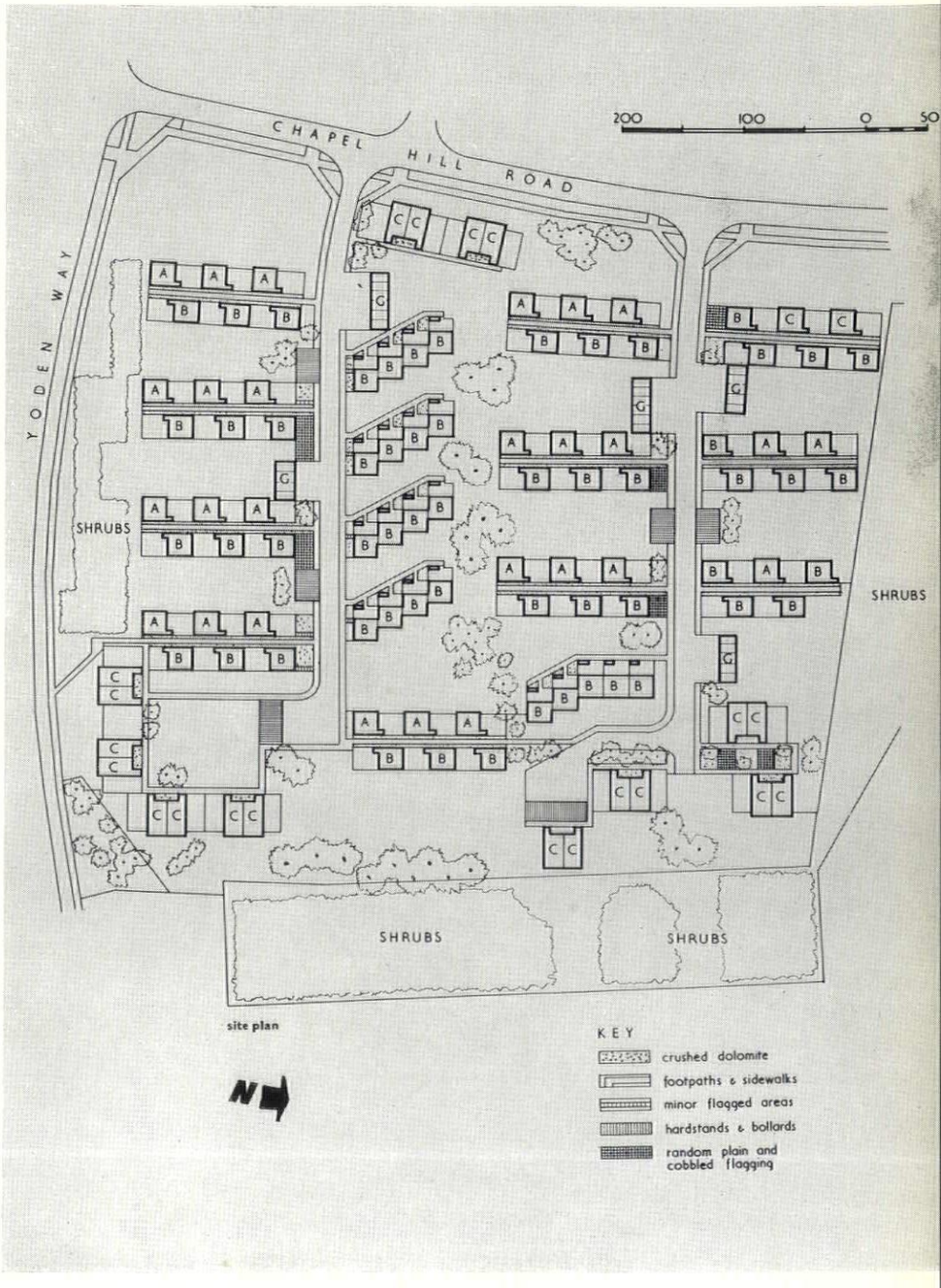
Facing page: 1, looking west with the staggered terraces of two-bedroom houses (B on site plan) on the right. 2, two-bedroom houses backing on to a footpath.
Above: 3, three-bedroom semi-detached houses (C on site plan). 4, the staggered terraces from the west.

The Chapel Hill neighbourhood of Peterlee new town, the completed parts of which are illustrated here, is probably the most exposed in the town, sloping as it does into the north-east winds which strike it unimpeded off the North Sea. An acute re-entrant angle formed by the contours made any conventional layout impractical. It has a fine panoramic view of the coastline to the east.

The houses in Chapel Hill IV (the site illustrated), together with those in Chapel Hill III, create the skyline seen from the main road into Peterlee from Horden. An overriding consideration arising from the exposed nature of the site was the necessity to provide sheltered approaches to the houses and this suggested the form of the clusters of houses grouped along a footpath in which are located all services and from which entry to houses and gardens is effected. Each house has a small private garden screened by a high fence, but its living-rooms look out into areas of public open space between the clusters in which children can play. The landscape design reflects the need for shelter, and tree plantations at the perimeter of the site are placed so as to reduce the wind force. Within the site grassed areas between the terraces are broken up by further groups of trees which will emphasise the rhythm of the terraces. Views of the sea are obtained from many first floor rooms. The houses are served from parking bays off the roads, and pedestrians have access through the site from the opposite end of each group, thus achieving a valuable degree of pedestrian-vehicle segregation.

Chapel Hill IV contains 110 houses, including four three-bedroom police houses, and 26 garages. There is provision for another 34 garages. The houses are of three types: three-bedroom semi-detached (C on site plan), of which there are 20; three-bedroom in 'clusters' (A on site plan), of which there are 29; two-bedroom in 'clusters' and staggered terraces (B on site plan), of which there are 57. The acreage is 7.72, giving a density of 14.3 houses per acre.

The houses are of white brickwork punctuated by black boarded panels beneath the windows, which are of timber. Floors and roofs are also of timber. Outhouses, garages and retaining walls are connected to the houses by horizontally boarded fences and gates.

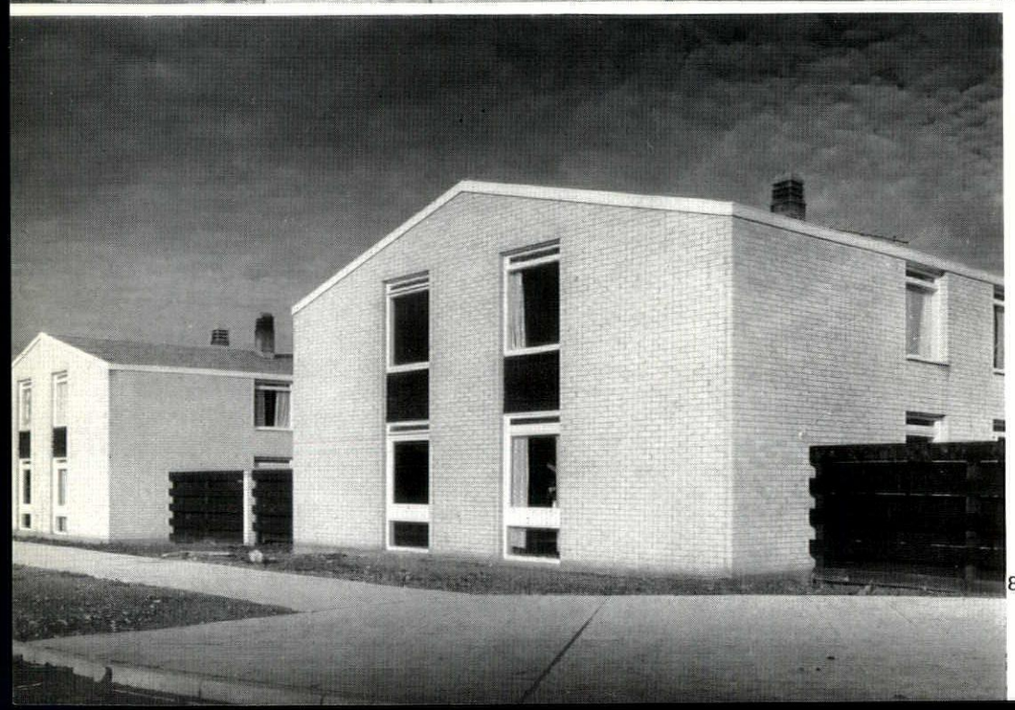




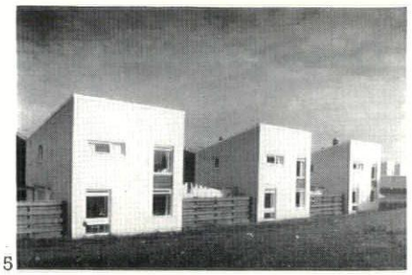
6



7



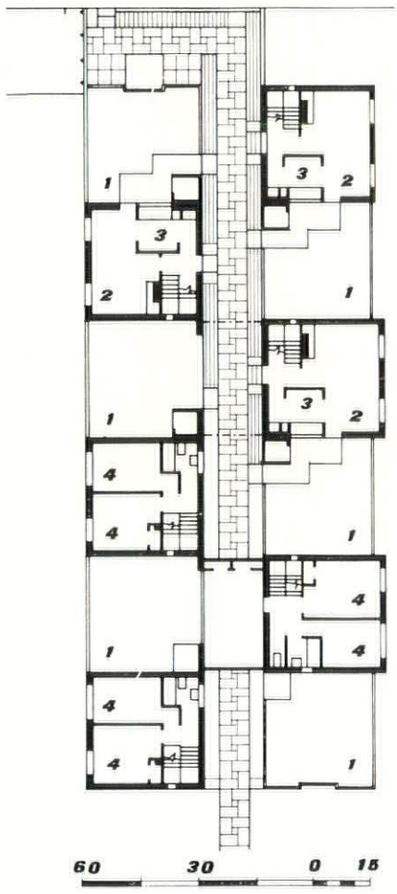
8



5

5, distant view of the two-bedroom houses (B); 6, the footpath approaching a group of two-bedroom houses (see plan below). 7, the footpath as it runs between the houses. It has the services beneath it. 8, a group of semi-detached houses.

HOUSING AT PETERLEE



floor plans, house types A and B

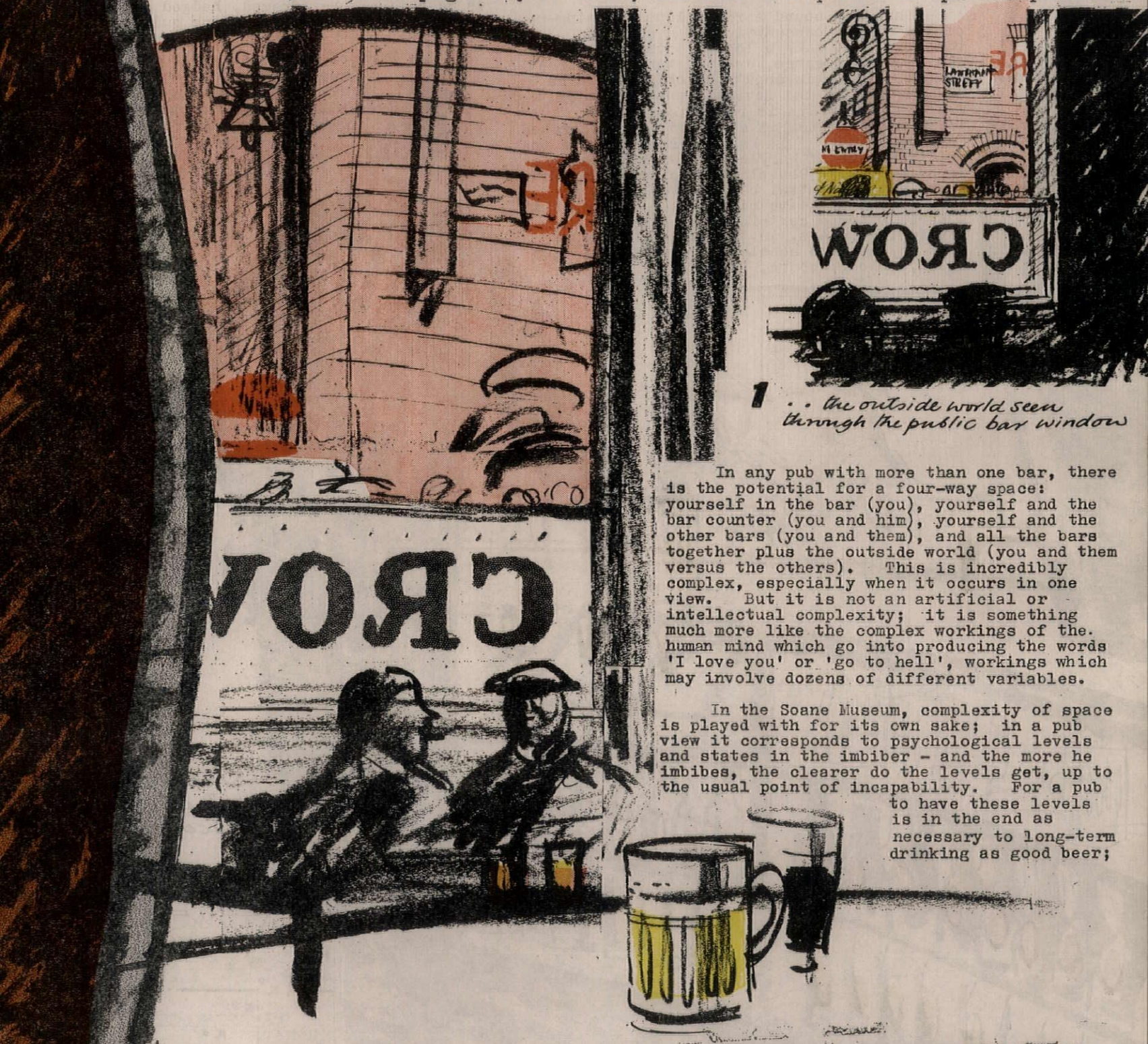
key
1. garden.
2. living room.
3. kitchen.
4. bedroom.

photographs by H. de Burgh Galwey

PUB IN FOCUS

Ian Nairn & Kennetth Browne

A pint of bitter can be just so much alcohol, and a bar can be just a bare room in which you knock it back. That's existence. But the drink can be as subtle and as exciting as you wish, if you choose your brewery; and the room, as these pages try to show, can become a powerful spatial parable.



1 . . the outside world seen through the public bar window

In any pub with more than one bar, there is the potential for a four-way space: yourself in the bar (you), yourself and the bar counter (you and him), yourself and the other bars (you and them), and all the bars together plus the outside world (you and them versus the others). This is incredibly complex, especially when it occurs in one view. But it is not an artificial or intellectual complexity; it is something much more like the complex workings of the human mind which go into producing the words 'I love you' or 'go to hell', workings which may involve dozens of different variables.

In the Soane Museum, complexity of space is played with for its own sake; in a pub view it corresponds to psychological levels and states in the imbiber - and the more he imbibes, the clearer do the levels get, up to the usual point of incapability. For a pub to have these levels is in the end as necessary to long-term drinking as good beer;

2 . . . a big barrel curving one way, the bar counter curving at ninety degrees to it . . .

KB

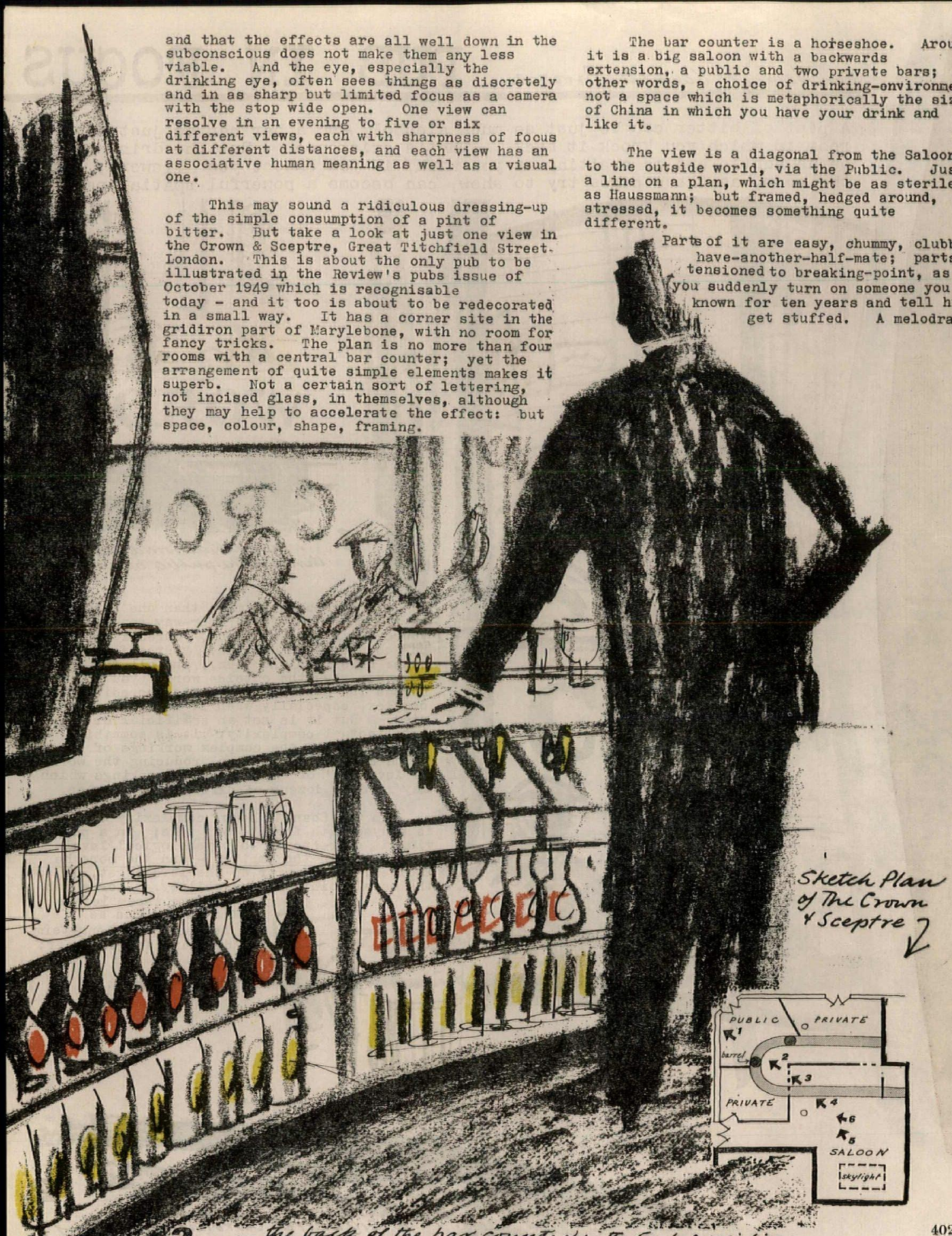
and that the effects are all well down in the subconscious does not make them any less viable. And the eye, especially the drinking eye, often sees things as discretely and in as sharp but limited focus as a camera with the stop wide open. One view can resolve in an evening to five or six different views, each with sharpness of focus at different distances, and each view has an associative human meaning as well as a visual one.

This may sound a ridiculous dressing-up of the simple consumption of a pint of bitter. But take a look at just one view in the Crown & Sceptre, Great Titchfield Street. London. This is about the only pub to be illustrated in the Review's pubs issue of October 1949 which is recognisable today - and it too is about to be redecorated in a small way. It has a corner site in the gridiron part of Marylebone, with no room for fancy tricks. The plan is no more than four rooms with a central bar counter; yet the arrangement of quite simple elements makes it superb. Not a certain sort of lettering, not incised glass, in themselves, although they may help to accelerate the effect: but space, colour, shape, framing.

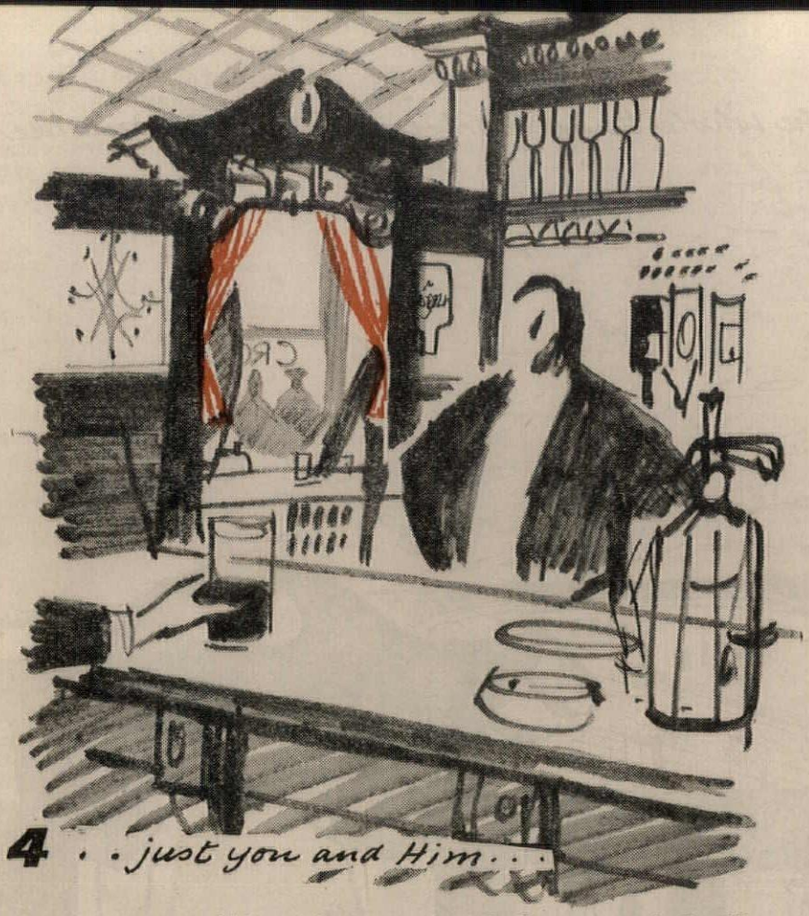
The bar counter is a horseshoe. Around it is a big saloon with a backwards extension, a public and two private bars; in other words, a choice of drinking-environment, not a space which is metaphorically the size of China in which you have your drink and like it.

The view is a diagonal from the Saloon to the outside world, via the Public. Just a line on a plan, which might be as sterile as Haussmann; but framed, hedged around, stressed, it becomes something quite different.

Parts of it are easy, chummy, clubbable, have-another-half-mate; parts are tensioned to breaking-point, as when you suddenly turn on someone you have known for ten years and tell him to get stuffed. A melodramatic



3 . . the back of the bar counter with God presiding . .

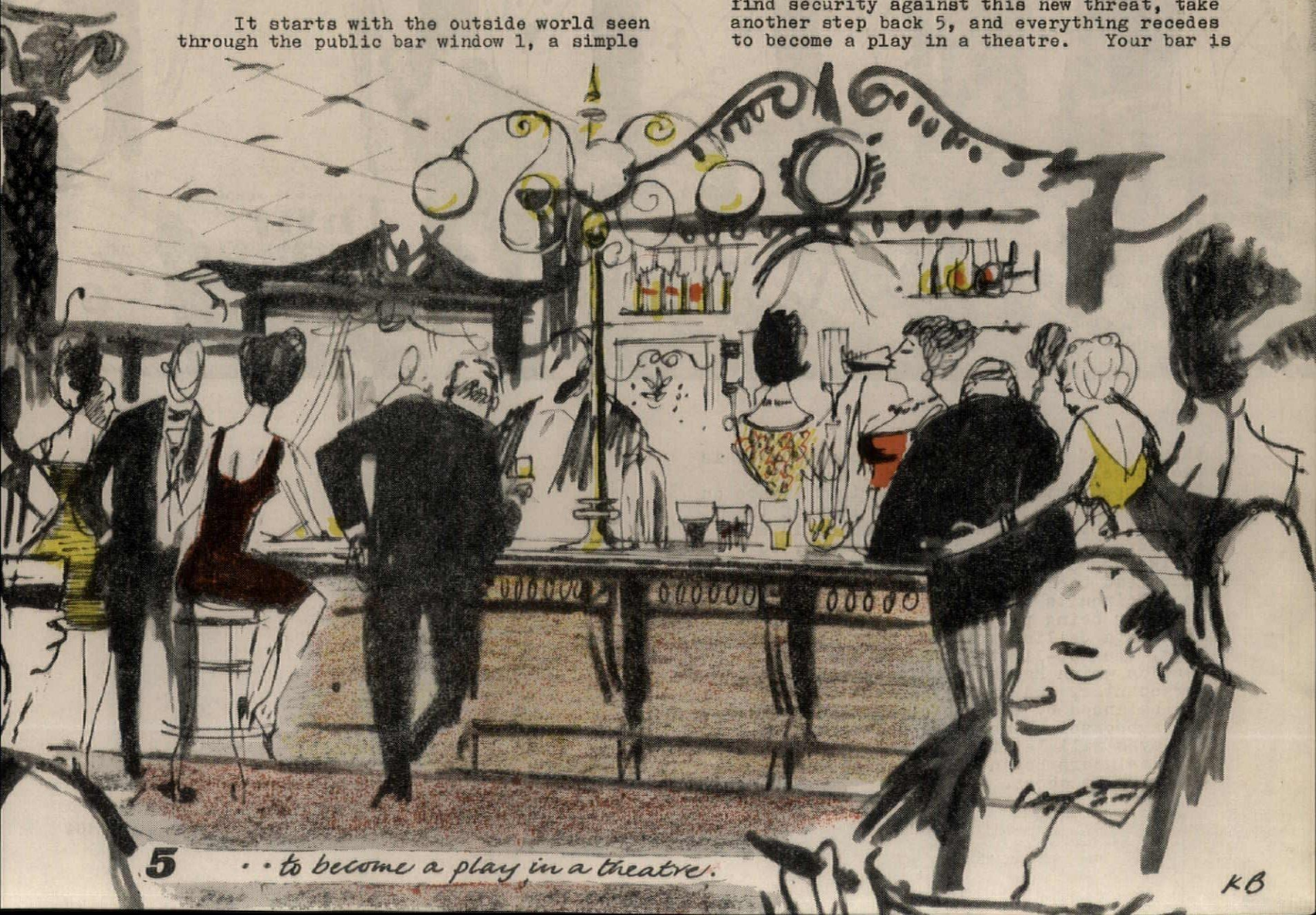


4 . . just you and Him . . .

proposition, but on the whole you get further by accepting it than by denying that it exists.

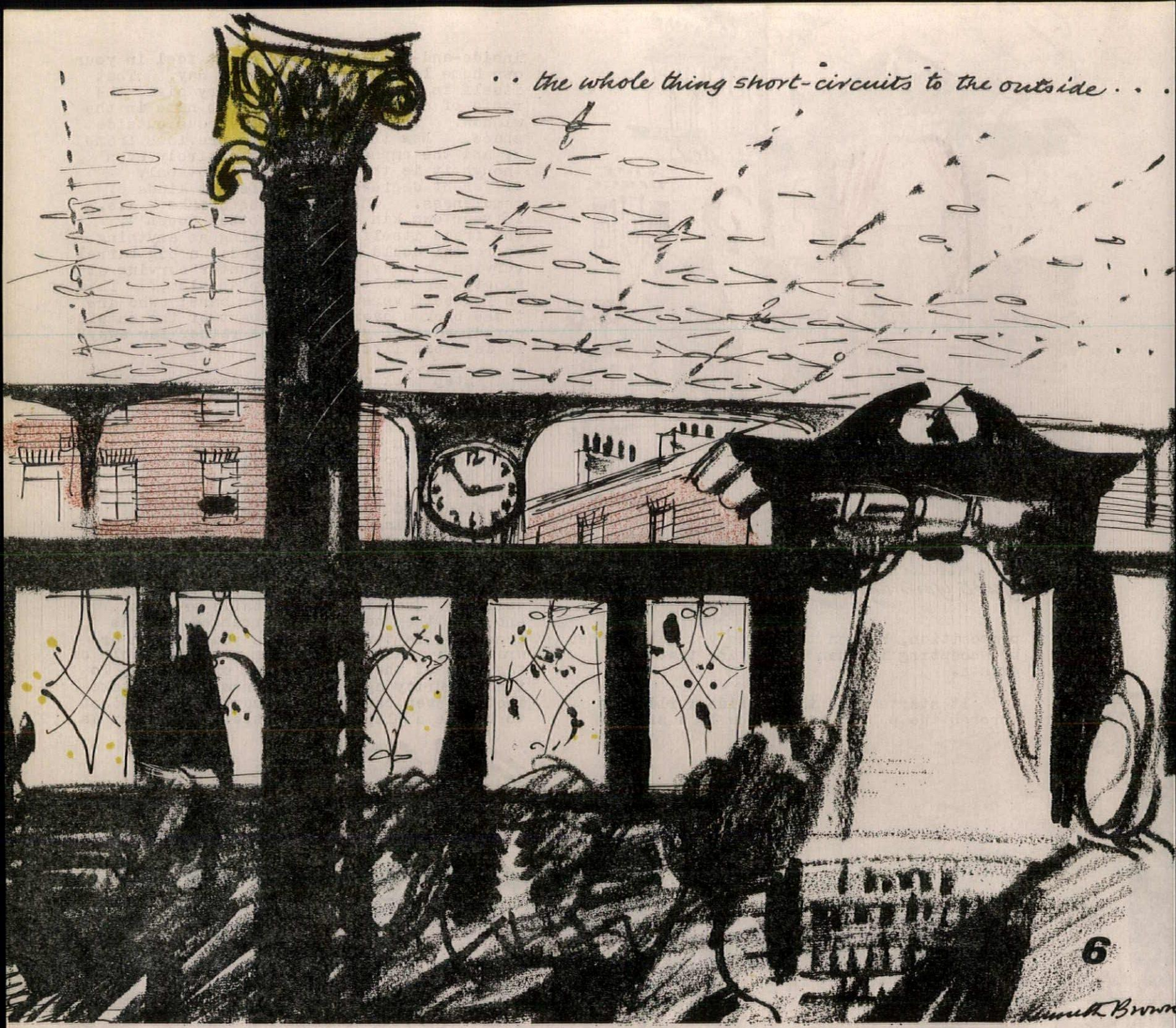
It starts with the outside world seen through the public bar window 1, a simple inside-and-outside as you might feel in your own home looking out on a cold day. That itself is complex - the no entry sign, the roofs of cars, the reversed pub name in the window. That is pub space versus outside space. Now then, frame the previous frame 2, and the emphasis changes entirely even though it is the same view. Not only different degrees, but different kinds of remoteness. One remoteness drinks - i.e. is your own kin - and the other doesn't. The frame itself is as rocking as anything Borromini could have arranged: a big barrel curving one way, the bar counter curving at ninety degrees to it (see plan also). This is yourself versus the other bars: who are these blokes over there - part of the outside world, part of yourself but rather far away? It is a bit like UNO.

Step back one pace and drop the sights. What the eye has previously registered as a bit of Borromini, common-sense now tells you is something else 3 - the back of the bar counter, with God presiding and you feeling a bit godlike yourself by facing the same way, with Him and looking out at Them. This perspective is unsettling, the skull beneath the skin, and the eye passes on to 4 where the whole thing is neatly bordered. Without the frame of looped curtains and wooden top it would disintegrate: but it is because they make up a certain shape, not because they happen to be a good bit of Victorian design. Even the best details are not enough; they need to be arranged. This time, God is turned towards you, benign or wrathful: just you and Him with the whole of the rest of the sequence out of focus. To find security against this new threat, take another step back 5, and everything recedes to become a play in a theatre. Your bar is

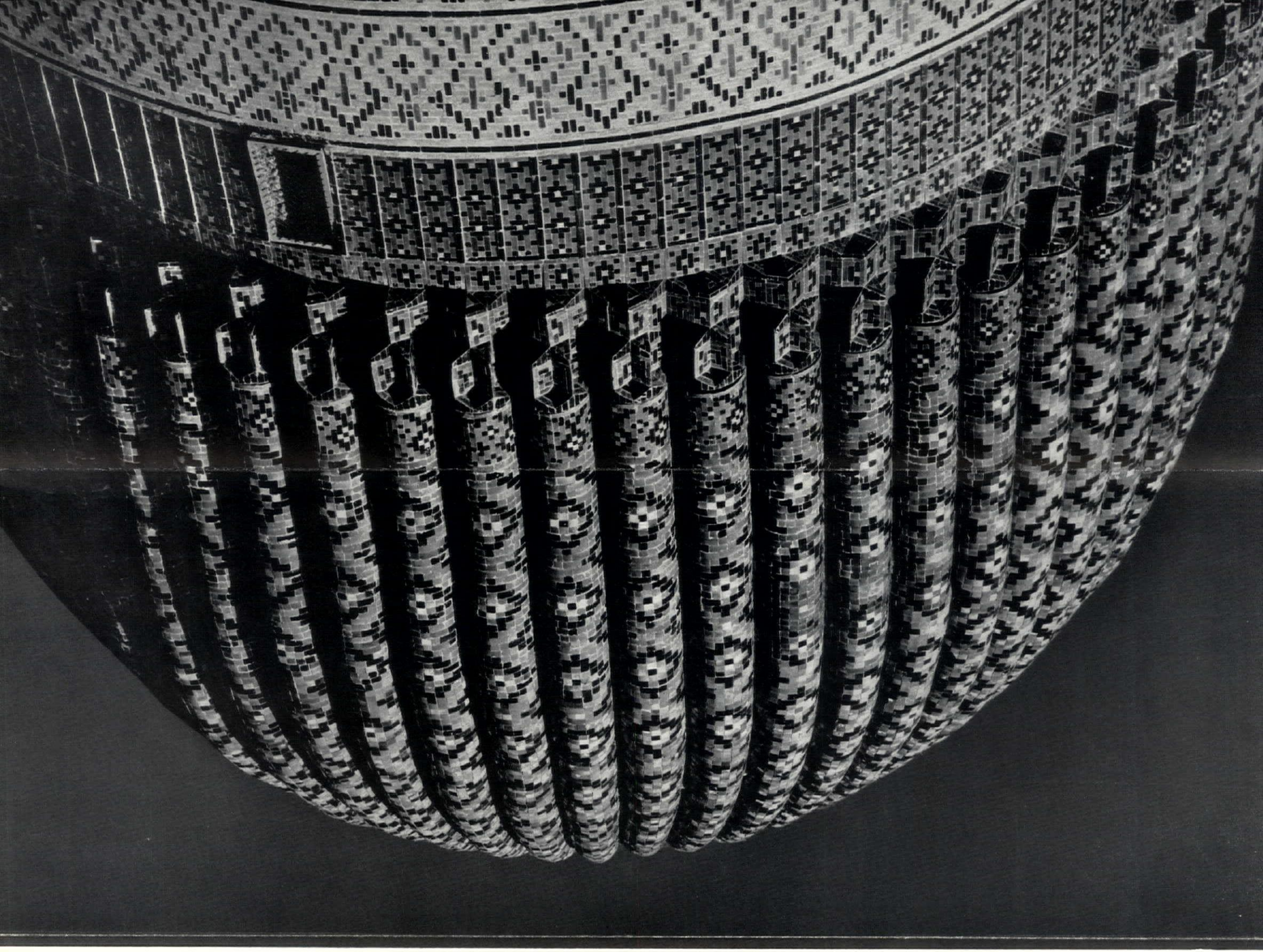


5 . . to become a play in a theatre.

KB



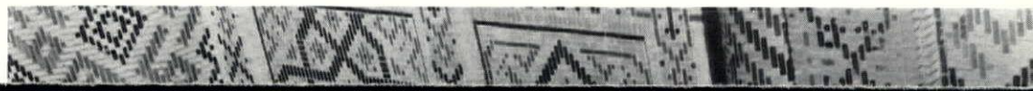
the rest of the audience, the bar counter is the stage. Stages 1, 2 and 3 are all telescoped into a Beyond. Bright lights on dark woodwork, joviality, the legs of the girl at the other end. Yet space is not mocked. Look upwards - to reflect, to strike a contemplative attitude, to throw your head back in laughter - and whole thing short-circuits to the outside like a tape-recorder being played back, 6. The lincrusta ceiling wriggles away above all the bars, the top-lighting frames the Wren reredos which has here unaccountably become a bar counter, and cruelly bright chimney pots are balanced by the pub clock. Conscious and subconscious meet and melt: but only if the eyes will let them. And, also, only if pub designers begin to recognise what drinking is about.

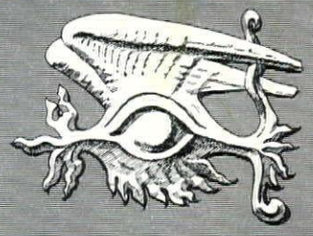


7



8

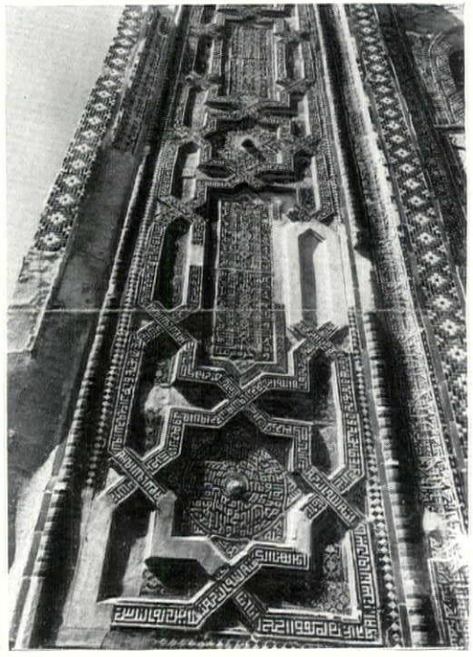




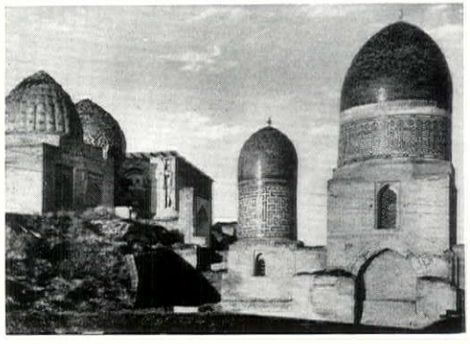
the exploring eye

Although Samarkand is one of the famous cities of the East, known to European travellers since the days of Marco Polo, and its richly detailed Islamic monuments are familiar to scholars and historians, it has been little visited in recent years. Since 1924, when the region of which it is the centre was incorporated in the Soviet Uzbek Republic, access has been difficult. There has been, however, news of intense activity in the restoration of its ancient buildings, and these photographs have now become available to show the results of the restoration work recently carried out on the Islamic monuments by architects appointed by the government of Soviet Uzbekistan. The work has included the excavation of buildings that had become buried in drifts of sand and research into the original methods of tile-making and glazing in order to restore the tile-patterned domes and minarets for which these buildings are notable.

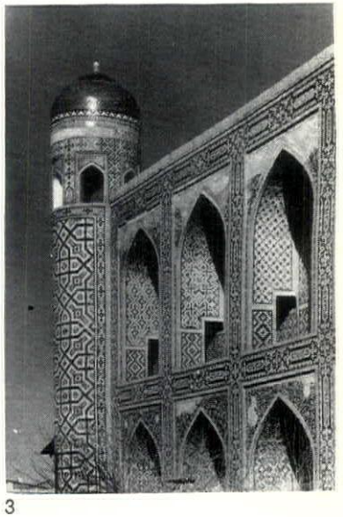
Samarkand lies in an oasis at the foot of the Hissar Mountains, which form part of the Soviet-Afghanistan frontier. It flourished particularly in the Timurid dynasty, which began in 1369. Timur the Lame (Tamerlane) its founder is himself buried there and his grandson, Ulugh Beg, was responsible for a number of the buildings—mosques, tombs and madrassahs (religious schools)—illustrated here, bringing architects and craftsmen from all over the Moslem world to design them.



1



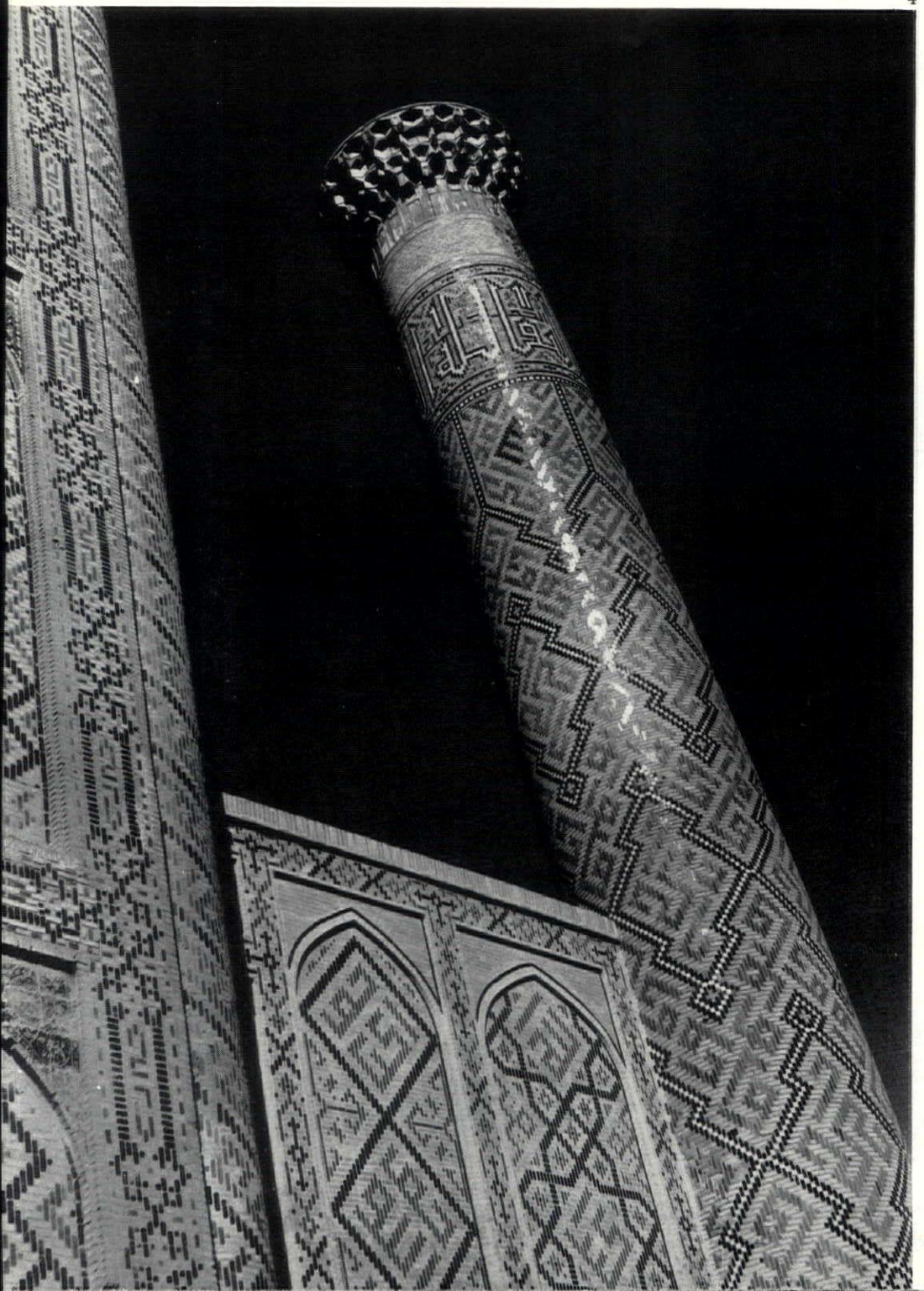
2



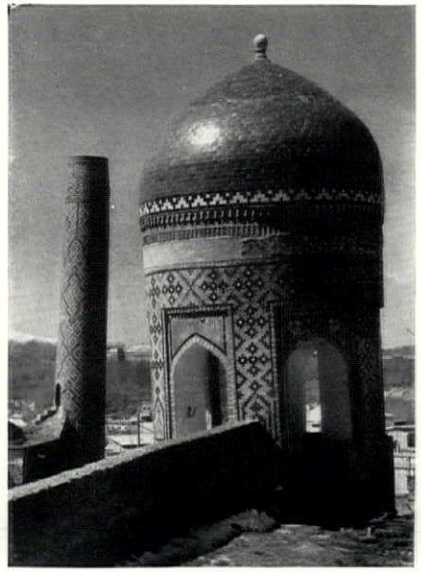
3

Results of recent restoration work on the Islamic monuments of Samarkand: 1, detail from the gateway of the Usta Ali mausoleum (sixteenth century). It is part of the Shah-i-Zinda group of mausoleums, 2, which stands on the southern slope of Afrosiab hill, the site of old Samarkand—500 BC to AD 1220. 3, the Tilla-Kari madrassah (mid-seventeenth century).

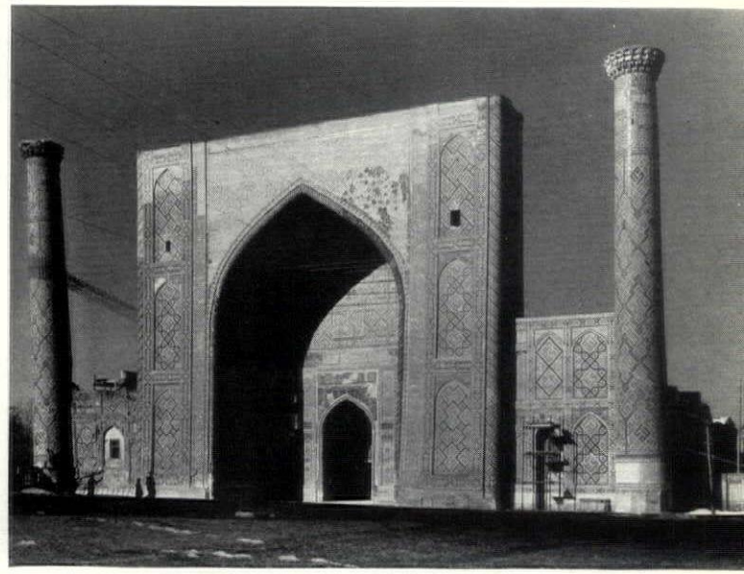
4



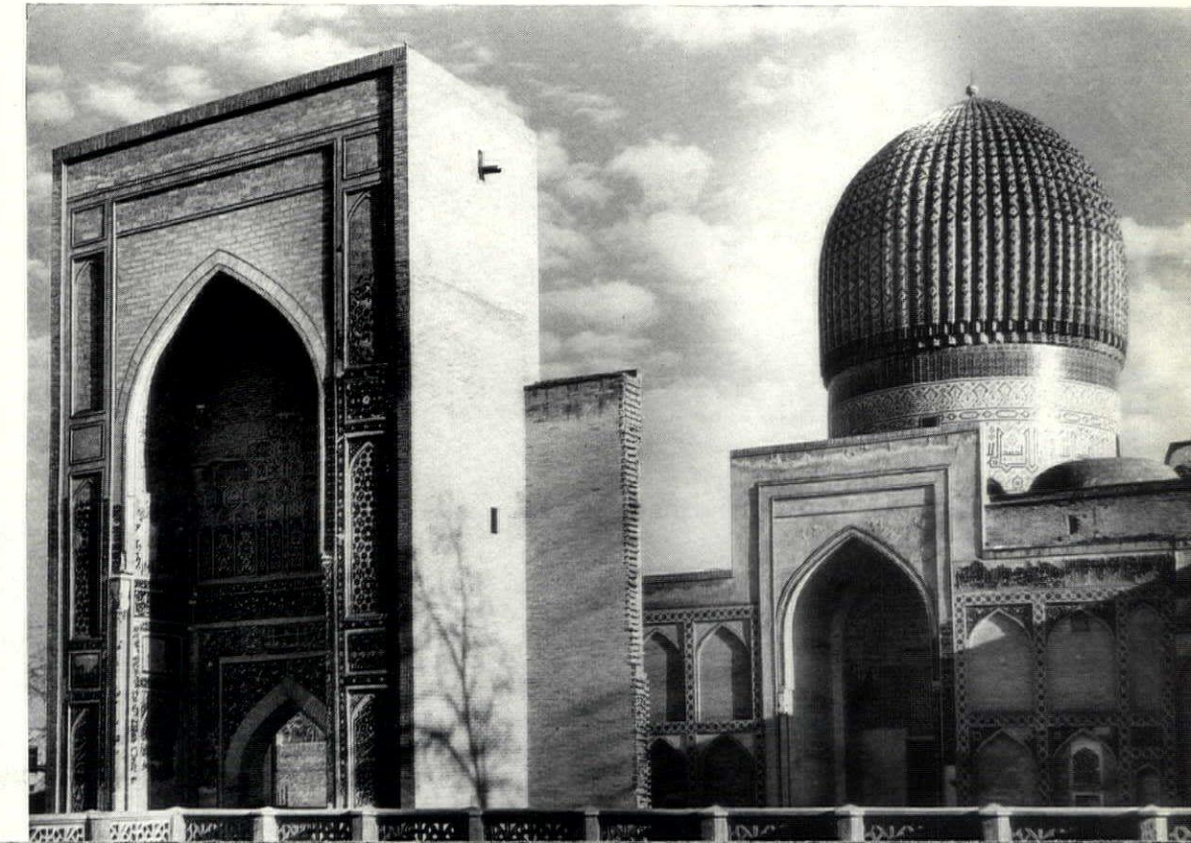
5



6



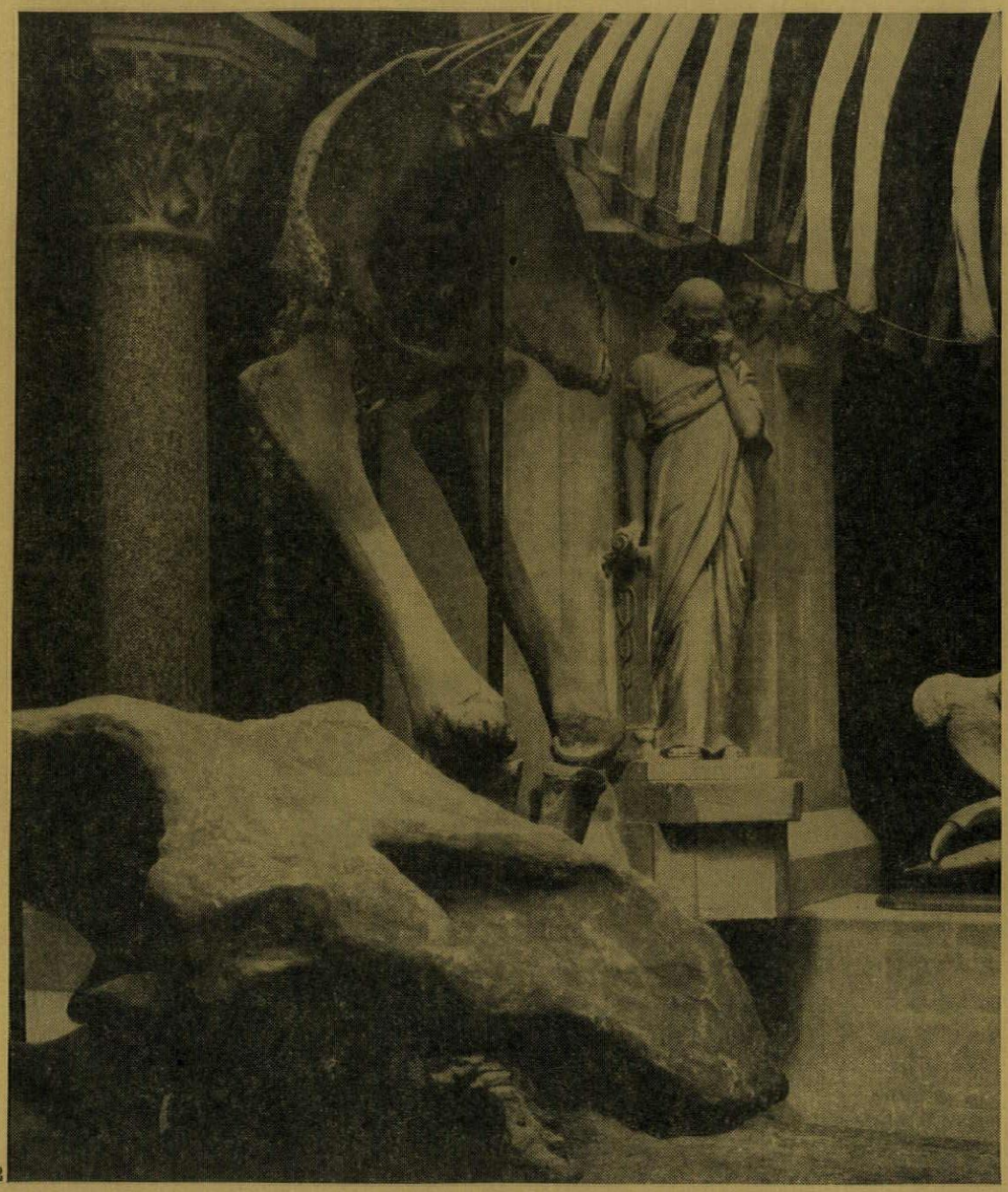
Ulugh Beg madrassah (1420), *on the west side of Samarkand's Registan* (*or market square*): 4, *north-east minaret after restoration;* 6, *main façade.* 5, *Tilla-Kari madrassah* (*see* 3, *overleaf*). 7, *Gur-Emir mausoleum* (*fourteenth century*), *after restoration.* 8 (*facing page*), *close-up of the ribbed dome of the same mausoleum—see also cover of this issue.*




Order CROCODILIA
Order CHELONIA

THE OXFORD MUSEUM

Under the glass roof of the Oxford Museum, opposite the skeletons of great beasts and the iron-Gothic structure suggest a biological analogy. Yet, despite the fact that it housed the celebrated debate on Darwinism between Bishop Wilberforce and T. H. Huxley, this new home for forward-looking sciences in Oxford was a triumph of backward-looking art, under the patronage of Ruskin himself. The building, nevertheless, has considerable importance, historical and aesthetic —see Mr. Ferriday's account of it on the next seven pages. 2 *(right) is another detail, complete with statue of Hippocrates).*



2

Peter Ferriday

There was recently talk of demolishing the Oxford Museum. The shortage of laboratory space made the University authorities look about for sites and a plan was prepared in which the existing building was retained and a new one, in part rising from great depths in the forecourt, attached. But there was a meeting in the course of this in which a vote was taken as to whether, should it prove necessary, the Museum should be demolished. The vote was for allowing the demolition.

Thus the Oxford authorities, who might have been expected to feel susceptible to the appeals of architectural value and historic associations, proved to be

totally unsusceptible to them; if the leaders of Oxford learning are so easily willing to dispose of the past who can blame the aldermen of the City of London for demolishing the Coal Exchange? When the matter of the Museum reaches the Minister of Housing and Local Government, as it well may in a few years time, how will he decide? The last two Ministers have made it plain that they do not regard their statutory duty of preserving buildings of architectural and historic interest as a serious business. If the Euston Portico and the Coal Exchange, both major national monuments, have been condemned the Oxford Museum would seem to have no chance. It is not *a major building, but it is a valuable one and it is a part of Oxford's history—and should any building of historical importance in such a town as Oxford be demolished? We can only hope that a more enlightened Minister, if to hope for a more enlightened Oxford is too much, will feel that the buildings of Oxford are nationally important.*

Meanwhile, in the following article Mr. Ferriday explains the circumstances and describes the process by which this unique building was created, and in doing so underlines its historical and architectural significance. His article is illustrated by photographs specially taken by Eric de Maré.



3, *Dr. Henry Acland (right), the promoter of the museum, photographed with Ruskin.*

'Sir Harry hinted that a column, if possible, should be structural as well as decorative. Mr. Flack replied that all the columns had been ordered, adding, "and all the capitals different—one with dragons in the foliage, another approaching to the Ionian style, another introducing Mrs. Flack's initials—every one different." For he had read his Ruskin.'*

The building of the Oxford Museum was an event of significance in the history of the University, the study of science in England, and the development of nineteenth-century architecture. That the housing of research should become an occasion for *avant-garde* art was largely due to the varied interests and friendships of Dr., later Sir Henry, Acland, the chief promoter. Of Oxford in the 1840's Acland wrote: 'The Science studies of the University were from various causes almost extinct, notwithstanding the efforts of Buckland, Kidd, and Daubeny: Kidd, a man of a truly scientific spirit; Daubeny, a sincere high-minded, able chemist, both had failed. I felt the work before me desperate or hopeless. The intellect of the University was wholly given to ecclesiastical and theological questions.'

What expenditure there was in Oxford on the teaching of science derived from bequests, particularly those of Radcliffe, Matthew Lee, and Dr. Aldrich. These were, in amount, insignificant—the Lee lectureship in anatomy was worth £100 a year (later raised to £200) and the Aldrich gift for the Professor of Chemistry, of Anatomy, and Medicine was for £130 a year. 'The University had not a single laboratory for students in any subject. The Regius Professor of Medicine had neither books, drawings, apparatus nor apartment.'

To remedy this a memorial was prepared by Charles Daubeny, the Professor of Chemistry and Botany, Henry Acland, Lee's Reader in Anatomy, and their colleagues in 1847, advocating a university science building; 'Believing that the future welfare of the University is intimately connected with the progress of all her institutions, we are desirous of furthering such steps as may tend to the erection of an edifice within the precincts of the University for the better display of materials illustrative of the facts and laws of the natural world. And in connexion with such an edifice we should recommend that there should be one or more lecture-rooms arranged in a manner suited to demonstrative lectures, and an apartment calculated to serve the purpose of a library and place for scientific meetings as occasion may require.' This memorandum Buckland, depressed by earlier

* *A Room with a View*, by E. M. Forster.

failures, refused to sign and it was in consequence useless. For all that it marked the beginning of a concerted movement to introduce the study of science and the beginning of Acland's management.

In the 1840's it could hardly have been expected that there could be much enthusiasm to spare for scientific studies in Oxford. Fervour had been used up, exhausted Tract by Tract, in one of the great episodes of the University's history. (There was nothing decadent about Oxford —it was the second centre of England, at the height of its importance—and the Withdrawal to Littlemore was an event of significance to the world.) But progress was made and in 1849 there was a meeting of twenty members of Convocation at which it was agreed that proper accommodation for the natural sciences was needed, and a committee, including such diverse men as Buckland, Bishop Wilberforce and Pusey, formed to further the work. An estimate for the building was obtained from Underwood, the Oxford architect, and a fund opened. The need for the building was confirmed by the University Commissioners, to whom Acland gave evidence, in their report of 1852, and in the following year Convocation voted that a Delegacy be appointed to report on the needed building. At the end of 1853 four acres in the Parks were bought from Merton for £4,000 and the University was committed to the advancement of science.

That the University had come to accept the scientists to the extent of spending money was due mainly to Henry Wentworth Dyke Acland, one of the Aclands of Killerton. Acland, born in 1815, had a severe Evangelical upbringing and the urgency of doing good to his fellow men was firmly implanted. At Christ Church he became a friend of Ruskin and Liddell. From Oxford he went to St. George's Hospital for three and a half years—'When for the first time I opened the door of a dissecting room, a stalwart porter in blue apron, shirt sleeves tucked up, threw towards the lofty skylight a black and human head, and, kicking out his foot in jest, called out to the students: "Who wants a kick?" and caught his football in his hands.' Acland was a sensitive and excitable man and his surviving the rigours of medical studies at that time testifies abundantly to his toughness and sense of vocation. 'A surgeon of note was shown to me when I entered my profession, as the one man strong enough to carry away a body under each arm from a graveyard, for the "body snatchers" of a "Resurrection party".' When Acland returned to Oxford he was appointed Lee's Reader in Anatomy, and as a private practitioner built up the largest consulting practice in Oxfordshire. 'Seventy miles a day was no unusual journey, and often it was not till four o'clock in the afternoon that he began his country rounds. . . . No one of any respectability thought of dying without seeing Dr. Acland.'

The energy was by any standards remarkable, for Acland was a sociable man as well and a family man with a quiverful of sons. He was a good water-colour painter and a close friend of George Richmond the portrait painter who turned plain Janes into pretty Janets for a modest fee. Through Ruskin he met the Pre-Raphaelites; he holidayed with Millais and the Ruskins in Scotland in 1853 (the occasion on which the cunning Scotch woman snaffled the boy genius) and subsequently bought the portrait Millais painted there of the Graduate. He met Rossetti in 1855 and gave his most famous diagnosis in that year: 'Acland examined her most minutely, and was constantly paying professional visits—all gratuitously, being an intimate friend of Ruskin. I went down on purpose to have a conversation with him about her health, and was glad to find that he thinks her lungs, if at all affected, are only slightly so, and that the leading cause of illness lies in mental power long pent up and lately overtaxed.'

These connexions, Ruskin-inspired, with the latest and best in art led to the mating of art and science on the acquired acres. Acland was, according to an Oxford contemporary, stiff, humourless, and oversensitive—he was ill and took to his bed for a week after seeing Tom Taylor's *Joan of Arc*. 'His habit of assuming in argument a tone of moral superiority was wont to exasperate opponents.' But he was, in getting his way, efficient.

In 1854 the University held a competition for the new building. The conditions were that it should be of two storeys in the form of three sides of a quadrangle, which was to be glassed over, and that it should not cost more than £30,000. There were, according to the *Builder*, thirty-three designs submitted—thirty-two according to everyone else including Acland —and the reporter of that journal analysed them when they were exhibited:

Gothic of all kind	12
Greek, more or less German in treatment	3
Roman, more or less after Wren with pedimented porticos, columns, etc.	4
Italian, more or less Barryan or Palatial	6
Elizabethan	1
The Order of Confusion	2
Original, Crystal Palace work tacked on to various regular book details...	3
Abominations, about	2
Total	33

A short list of six designs was referred to P. C. Hardwick, and Acland and Ruskin campaigned energetically for Gothic because, in Ruskin's words, 'the essence and power of Gothic, properly so called, lay in its adaptability to all need; in that perfect and unlimited flexibility which would enable the architect to provide all that was required, in the simplest and most



4, medallion of Benjamin Woodward—the architect of the museum—by the sculptor Munro.

convenient way.' Hardwick reported that two designs were suitable but that neither could be built for £30,000. *Nisi Dominus aedificaverit domum* was Stones of Venice Gothic, *Fiat justitia, ruat coelum* was, according to the *Builder*, in the Barry style of the Board of Trade and was also elaborately coloured in spite of the competition rule to the effect that all drawings be black and white or sepia. The trickery did not avail, for *Nisi Dominus* was selected and the architects found to be Sir Thomas Deane, Son and Woodward. E. M. Barry received £100 for *Fiat justitia*.

During the competition Ruskin was not enthusiastic over the winning design—'I think *N.D.*, though by no means a first-rate design, yet quite as good as is likely to be got these days, and on the whole good'—but once he became acquainted with Woodward's work at Trinity College, Dublin, he was animatedly concerned. Hearing the final decision he wrote to Acland: 'I have just received your telegraphic message from Woodward, and am going to thank God for it and lie down to sleep. It means much, I think, both to you and me.' (The Victorian habit of thanking God for things in which He could surely have taken little interest was extraordinarily common and representative of Oxford's self-regard.) There is no one who now, because of his egocentricity, his hectoring, his purple patchery, his eccentricity, his aphorisms a yard long, his hogging the credit, more repels than Ruskin, yet he was a man of profound

insight and the Oxford Museum was to be the occasion for putting his views* into practice.

In Benjamin Woodward he found a congenial and agreeable architect. Woodward, born in 1815, became a partner of Thomas Deane in the firm then styled Sir Thomas Deane, Son and Woodward in 1852. The firm became straight away competition winners with Woodward doing the designing. 'He was a grave and curiously silent man: of his partners, men greatly his inferiors, the elder, Sir Thomas Deane, was a ceaseless chatterbox, the younger, son to Sir Thomas, stammered. Speaking in Congregation, Jeune hit off the trio after his manner: "One won't talk, one can't talk, one never stops talking".' Writing in 1855 Ruskin paid Woodward a high if curious compliment in a letter: 'However, if you want sherry you must go to my father. If I want Gothic, I must for the present go to Mr. Woodward, or Mr. Scott.' W. H. Rossetti described him as 'the most modest, retiring, and shyly taciturn man of noticeable talent whom it has ever been my fortune to meet. He was of handsome and rather stately presence, eminently gentle and courteous.'

The Woodward design was altered before any work was started. His iron roof, partly cast and partly wrought, was superseded by one designed by Skidmore, famous for cathedral screens and other decorative items but quite inexperienced in structural work. Skidmore put forward a design of wrought iron tubular construction which he suggested would be 'a new application of wrought iron for building purposes, more in accordance with the principles of Gothic architecture.' His proposal (at £3,100) was adopted and the original design (at £5,216) dropped.† The first stone of the new building was laid by the Chancellor, Lord Derby, in June, 1855, and Ruskin began his planning; 'I hope to be able to get Millais and Rossetti to design flower and beast borders—crocodiles and various vermin. . . . I will pay for a good deal myself, and I doubt not to find funds. *Such* capitals we will have!'

Nothing in the building went easily. Having granted the money Convocation put difficulties, some of ludicrous pettiness, in the way of Acland and Woodward. Then Skidmore's roof showed signs of weakness and William Fairbairn was consulted, with the result that the roof had to be rebuilt to the original design. The contract with Lucas Bros. of 1855 was for £29,041, but by October, 1858, £39,553 had been spent—two years later the expenditure had risen to £60,980 and the building was still unfinished.

The Museum was never a first-rate design—it was too large and complex a building for £30,000; Gothic may have been cheaper than Classic but it was not that economical. The central tower feature was both unnecessary and feeble and the Glastonbury Kitchen at the side was silly without being amusing. The ironwork of the roof, a profusion of Skidmore botanical detail now obscure from want of paint, had merits of originality and appropriateness but it looks fussy and complicated from the ground—though rather more exciting from the gallery—and must be considered more wasteful than successful. Considering the ease and elegance with which the railway engineers were spanning their stations it is surprising that Woodward did not economize on his roof for the sake of decoration elsewhere; his great room would have been more impressive if he had done so. Generally, the building looks a little skimped, a little starved, spread rather thin, and it has an air of amateurishness and improvisation. It has, too, the reverse advantage of ingenuous charm. The obviously cheap dormers are a sufficient indication that money shortage was rather more to blame than any failing of the architect; for this reason at least the comparison that has been made with the Natural History Museum in South Kensington is unfair on Woodward.

It was chance that led to the Oxford Museum becoming a building of architectural note. Ruskin had firm opinions as to the significance of sculpture in architecture. They were connected with, or rather led to, his social and economic views, for his aesthetics produced his economics and not the other way round. From the perception of the corporate endeavour, the multitudinous detail and manifold and independent skills required in Gothic as against the singly planned, directed, controlled, detailed Classic—the group of skilled men harmoniously working together as against the operatives being directed by an architect—Ruskin came to advance views on the nature of work and the meaning of wealth which set him apart from his contemporaries and most influenced his juniors. He wrote to Acland: 'Your Museum at Oxford is literally the first building raised in England since the close of the fifteenth century, which has fearlessly put to new trial this old faith in nature, and in the genius of the unassisted workman, who gathered out of nature the materials he needed.' Addressing the workman at the Museum, Ruskin explained his views on labour, mediaeval and modern. The report of his words included: 'They all worked together as one man; and nothing great had been done in architecture, save by associated bodies, in which every man had some connected work to do, and where all the faculties of the mind and hand were brought out to the utmost.' Of the Museum itself he was reported to have said to the artisans: 'The workmen employed on the decorative part of that building would have an opportunity of displaying their talent in this respect, because he knew that Mr. Woodward was preparing designs in Dublin, for capitals which were unrivalled for their originality.' In a lecture of 1877, long after he had lost interest in architecture, Ruskin added: 'And when I said that the workman should be left free to design his work as he went on, I never meant that you could secure a great national monument of art by letting loose the first lively Irishman you could get hold of to do what he liked in it.'

These views were not held by the Gothic practitioners, or at least not acted upon. In revived Gothic there was abundant sculpture, but it was almost always straightforward copywork and architect-executant, predesigned work. (The conditions of the profession, with its contracts and so forth, made this inevitable.) Certainly some of the architects could design the decorative parts with wit and originality, but this was hardly what Ruskin had in mind. The alternative was to call in decorative experts—for glass, furniture, sculpture—but this again was not what Ruskin had in mind. It may be that the Ruskinian dream of the happy band of brother craftsmen was an impossible one; at all events it was not the sort of dream that such eminent professionals as Street and Waterhouse could have had any sympathy with. And equally it may be that, though Ruskin was essentially right about the significance of sculpture in Gothic, he was wrong about its significance in *revived* Gothic, in a smoky, urbanized England, an England with a building industry that would not throw up gay craftsmen on demand. The striated brickwork, the Minton tiles and patterning were perhaps the Victorian alternative to sculpture.

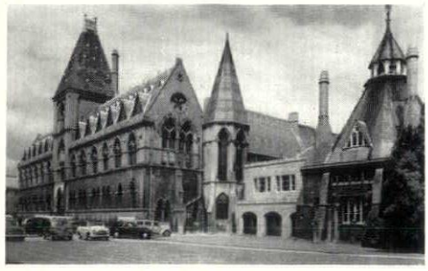
At the Museum Ruskin was fortunate in that Woodward had discovered a sculptor, James O'Shea, in, from a professional aspect, a state of nature. O'Shea came to Oxford with his brother John and his nephew Edward Whelan, or Whelland, as assistants. Acland described their effect; 'The temper of the Architect has reached the men. In their work they have pleasure. The capitals are partly designed by the men themselves, and especially by the family of O'Shea, who bring wit and alacrity from the Emerald Isle to their cheerful task. The carving of the capitals and the decoration of the windows, limited, very limited, as our means have been, have raised ever-living

[*continued on page* 415

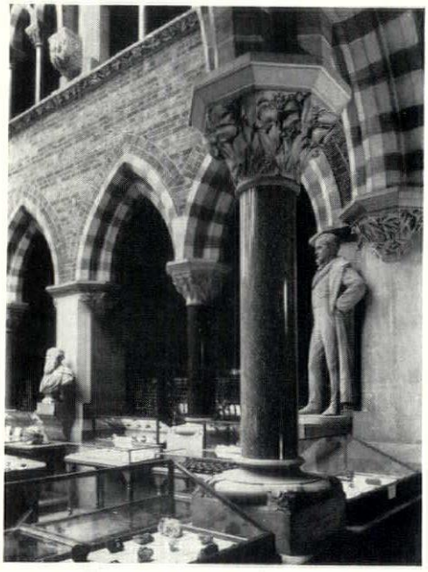
* 'Butterfield or Ruskin' in *Early Victorian Architecture*, by Henry-Russell Hitchcock.

† This and other information was kindly supplied by Dr. P. H. D. Kennington.

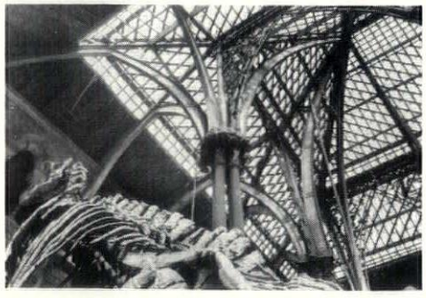
THE OXFORD MUSEUM



5



6



7

5, exterior of the museum (architect, Benjamin Woodward). 6, interior of the main court showing some of the capitals and corbels decorated by James O'Shea. 7, 8, 9, the iron roof of the main court.



8



9



10

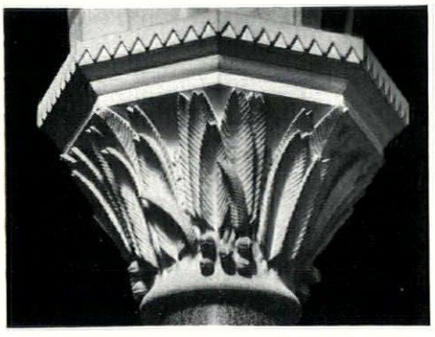


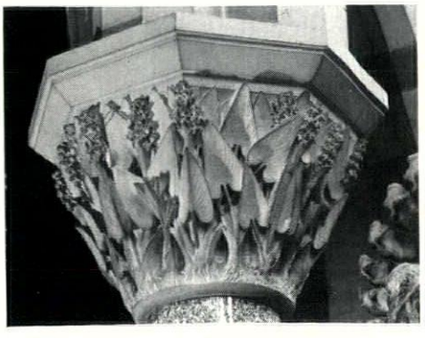


11
12

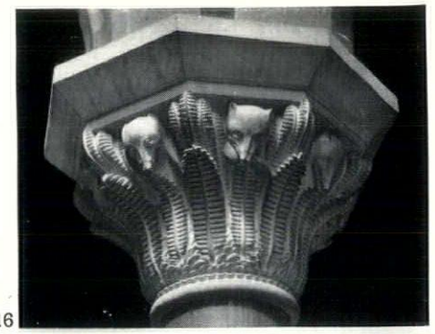


13

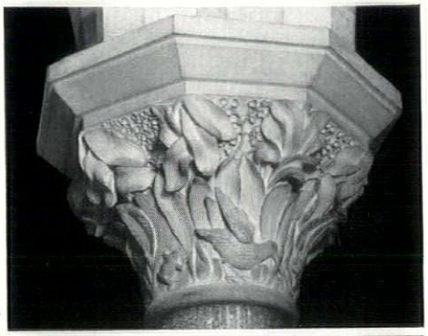




14
15



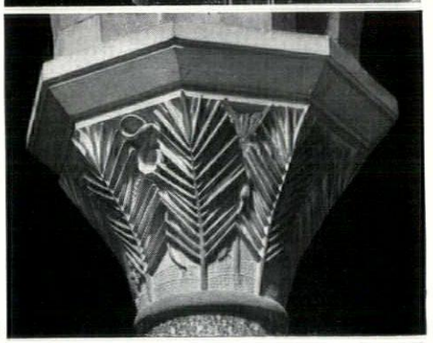
16



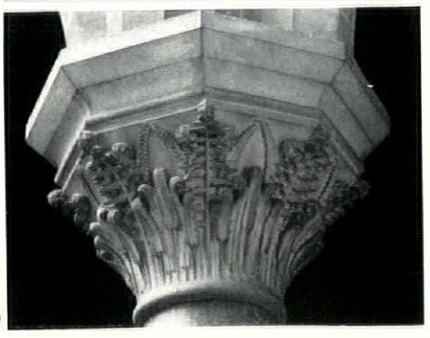
17



18



19



20

THE OXFORD MUSEUM

10-20, *a selection of the capitals around the main court, designed and carved by James O'Shea with his brother and nephew.*

continued from page 412]

interest.' Ruskin particularly stressed the need for external beautification—here his aesthetics followed his moral views; sculpture outside was of public service, sculpture inside private indulgence. The O'Sheas spent much of their time and ingenuity in sculpting round the windows and showed that if Ruskin's heart was in the right place his judgment was weak—the climate has done its worst and the carving was on the wrong scale and in the wrong position to the point of inconspicuousness. It was certainly not the fault of the sculptors who were all that Woodward and Ruskin thought them to be.

It is difficult to tell how much of a wag James O'Shea was. Much of the sculpture was humorous, but was he really the last of the Irish Primitives or did he rather find the serious Acland and Ruskin fair game for a joker? 'i am a fraid that this Gentleman is a fraid that those orniments will cost too much money—but the Price of the window without tuching those Jambs would be £9 and would be very cheap carving—if i was to Doo all the upper windows i would carv every Jamb for nothing for the sake of art a lone—rather than Lave them.' There are signs in that letter, transcribed by Mallet, of spoofing, although Acland never suggested or thought that O'Shea was putting it on. The transcription of Irish English could surely only have been done by someone who could perfectly well write English English, and if you can spell window and jambs and gentleman then 'i' and 'Doo' are unlikely errors—and 'a lone' and 'a fraid,' though charming, are much too good to be true.

Not much of O'Shea's literary joking seems to have survived but what has has all this leg-pull character. 'I wish I had 3 or four like my Selfe and we would carve every Jamb in the place from time to time and Bak all the cost of them—i would not desire better Sport than putting monkeys cats dogs rabbits and hares, and so on, in different attitudes on those jambs.' 'by carving them [windows] will add Beauty to the Building that i canot Explain only with my Hammer and Chizel.' To the Vice Chancellor he wrote: 'I am engaged in Carving at your New Museum and I wish throo you to get Liberty from the University to Present them with a Capital a free Gift According to my own tast under the Aproval of the Architect. The one which I would wish to doo is that which Divides the Door Intering the Museum Cort.' O'Shea may have been a rustic from the Emerald Isle but surely he had outsmarted the Doctors.

What O'Shea did and what makes the Museum precious was to carve the capitals right the way round the court. Photographs



21, *James O'Shea carving a window. This and the picture on page* 410 *are reproduced from* A History of the Oxford Museum *by H. M. Vernon,* D.M., *Fellow of Magdalen College, and K. Dorothea Vernon; Clarendon Press,* 1909.

convey the freshness, vivacity, directness, daring and humour far better than words. The capitals are, though unequally successful, a brilliant collection and the work of a man with a real apprehension of what could be done with Hammer and Chizel and a man unaffected by current professional work and copyism. Of all their qualities perhaps the joyous daring is the most obvious—often the subjects selected were unlikely and seemingly unmanageable, but O'Shea went confidently a Head; if that one did not quite work then the next one did. There is no collection like it since the mediaeval chapter-house, and the Ruskinian prescription was abundantly justified. It seems certain that O'Shea was entirely responsible, although various people, like Hungerford Pollen, suggested subjects and produced suitable specimens from the Botanical Gardens, and Ruskin's remark that Woodward was 'preparing designs in Dublin, for capitals which were unrivalled for their originality' suggests that some of the credit for at least inspiring the work should go to the architect. O'Shea carved each capital, with the corresponding two corbels and leaves on the base of the shaft, for £15, a not very generous reward. His work did not last long and he was finally given the sack. Acland recorded the circumstances. 'O'Shea rushed into my house one afternoon, and—in a state of wild excitement—related as follows.

"The Master of the University," cried he, "found me on my scaffold just now." "What are you at?" says he. "Monkeys," says I. "Come down directly," says he; "you shall not destroy the property of the University." "I work as Mr. Woodward orders me." "Come down directly," says he; "come down."

' "What shall I do?" said O'Shea to me. "I don't know; Mr. Woodward told you monkeys, the Master tells you no monkeys. I don't know what you are to do." He instantly rushed out as he came, without another word.

'The next day I went to see what had happened. O'Shea was hammering furiously at the window. "What are you at?" said I. "Cats," says he. "The Master came along, and says, 'You are doing monkeys when I told you not.' 'To-day, its cats,' says I. The Master was terrified and went away." ' As a result O'Shea was invited to leave the University. Before his departure Acland

went to see him carving the never finished porch. 'What are you doing, Shea?'

'Parrhots and Owwls!'

'Parrhots and Owwls!'

'Members of Convocation!'

There they were, blocked out alternately.

What could I do? 'Well,' I said, meditatively, 'Shea you must knock their heads off.'

'Never,' says he.

'Directly,' said I.

Their heads went!

There was obviously more to it than that; for O'Shea, after doing a little work for Thomas Woolner, the sculptor and art dealer, in London, disappeared entirely from the scene. Ruskin in 1877 referred to his failure: 'He was a man of the truest genius, and of the kindest nature. Not only the best, but the only person, who could have done anything of what we wanted to do here. But he could only have done anything of it, after many years of earnest learning; and he too easily thought, in the pleasure of his first essays, that he had nothing to learn. The delight of the freedom and power which would have been the elements of all health to a trained workman, were destruction to him, and there were hundreds to despise. I could not teach him—nothing but the master's constant presence would do that—and I dared not discourage him. I hoped he would find his way in time, but hoped, as so often, in vain.' Whatever the reasons for the failure what astonishing genius was lost.

The building of the Museum coincided with the building and temporary decoration of the Union, Woodward's other famous, and charming, Oxford work. The frolics there, from Val Prinsep's instruction to his cabby to take him to the Union and finding himself deposited at the workhouse, to the music of the popping soda bottles, are part of Oxford's history. The Ruskin-Woodward episode was one of the key events of the architectural history of the early Victorian age. Woodward's only other important English building, the Crown Life Assurance Office in Blackfriars Street, was demolished after a very short life and his one London house has also disappeared.

The set who were responsible for the Museum quickly broke up. O'Shea was sacked. Woodward's health deteriorated—Woolner wrote to Mrs. Tennyson in November, 1858, 'his life looks as weak as a little candle in the open air'—and he went to the Mediterranean in a desperate attempt to hold on to life. Finding it was all useless he decided that he wished to die in Oxford and set off alone. He died in an inn at Lyons on the journey back. He was an architect of the highest promise—would Scott have so abundantly succeeded had not Woodward and Carpenter died young? Ruskin soon lost interest in the Museum and in architecture altogether. More and more he had come to feel out of sympathy with the times and helpless to stand against the rush of Victorian progress and the spread of ugliness; for the rest of his life he was a prophet of despair and his dreams had turned to nightmares.

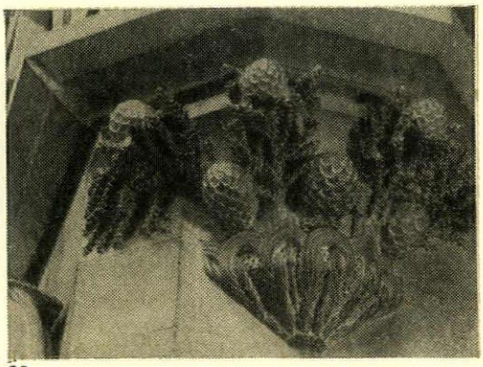
The building was never finished. Neither Hungerford Pollen's or Woolner's design for the porch was carried out, many of the windows were unsculpted, and the interior decoration only started in a cheap and rudimentary way by a Mr. Swan. But almost immediately the Museum was the scene of a debate of immense importance. The British Association for the Advancement of Science met in Oxford in 1860, a year after the publication of *The Origin of Species*. With malice aforethought Bishop Wilberforce, unkindly known as Soapy Sam, who had been primed by Owen, the palaeontologist, attended the meeting of Section D on Saturday, June 30, at which Dr. Draper, of New York, was to read 'Intellectual Development of Europe considered with reference to the views of Mr. Darwin.' So many attended, 700 it was reported, that the long west room, later cut up for the library, had to be used; 'the very windows by which the room was lighted down the length of its west wide were packed with ladies, whose white handkerchiefs, waving and fluttering in the air at the end of the Bishop's speech, were an unforgettable factor in the acclamation of the crowd.' Dr. Draper began 'Are we a fortuitous concourse of atoms'—but the seven hundred had come only to hear Wilberforce or his opponent Huxley. 'Now, we thought, for business; but no, there was another act of comedy. From the back of the platform emerged a clerical gentleman, asking for a blackboard. It was produced, and amid dead silence he chalked two crosses at its opposite corners, and stood pointing to them as if admiring his achievement. We gazed at him, and he at us but nothing came of it, till suddenly the absurdity of the situation seemed to strike the whole assembly simultaneously.'* Wilberforce spoke energetically for half an hour on a subject about which he knew nothing but on which he had taken advice which was soon proved to be incorrect. He made one mistake, that of tone. 'If any one were to be willing to trace his descent through an ape as his *grandfather*, would he be willing to trace his descent similarly on the side of his *grandmother*?' (This was directly to Huxley.) At this Huxley whispered to Sir Benjamin Brodie, 'The Lord hath delivered him into mine hands.' The reports of his reply vary but one goes: 'He was not ashamed to have a monkey for his ancestor, but he would be ashamed to be connected with a man who used great gifts to obscure the truth.' The popular account was that he said 'I would rather be descended from an ape than a bishop.' By resorting to silly vulgarity and cheap pseudo-chivalry Wilberforce alienated a large part of his learned audience and the result was a Huxley triumph.

In being the stage so early for a significant event in the development of scientific studies the Museum had quickly justified the hopes of its promoters. Oxford had now other th ngs to show than Church of England controversialists.

22, statue of Linneus and, 23, corbel decoration by O'Shea.



22



23

* The accuracy of reports depends on how near you are to the platform. 'He (Mr. Dingle) used the blackboard and a mathematical demonstration on the question—"Let this point A be man, and let that point B be the mawnkey." He got no further; he was shouted down with cries of "mawnkey".'

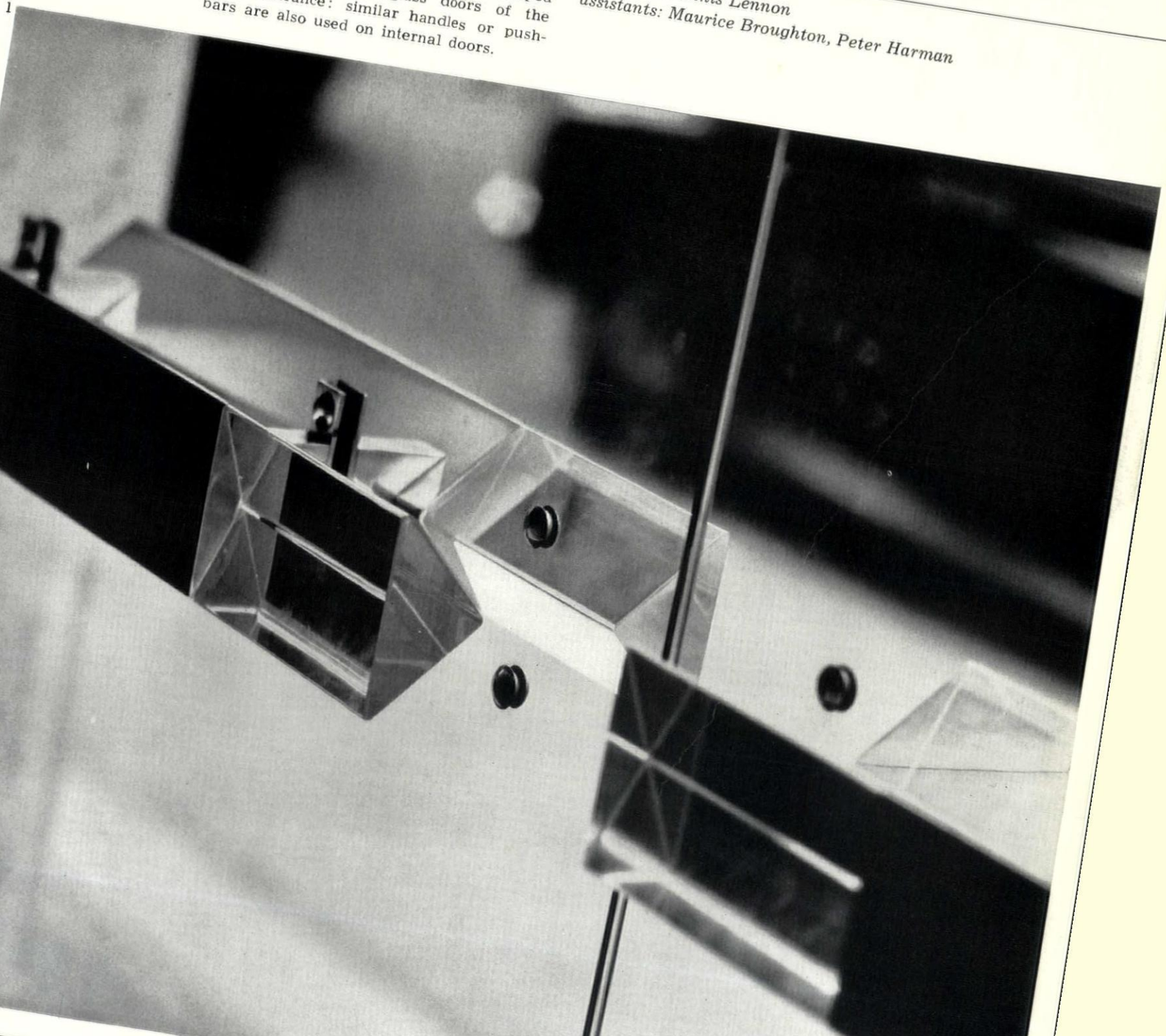
ID
a monthly review of interior design

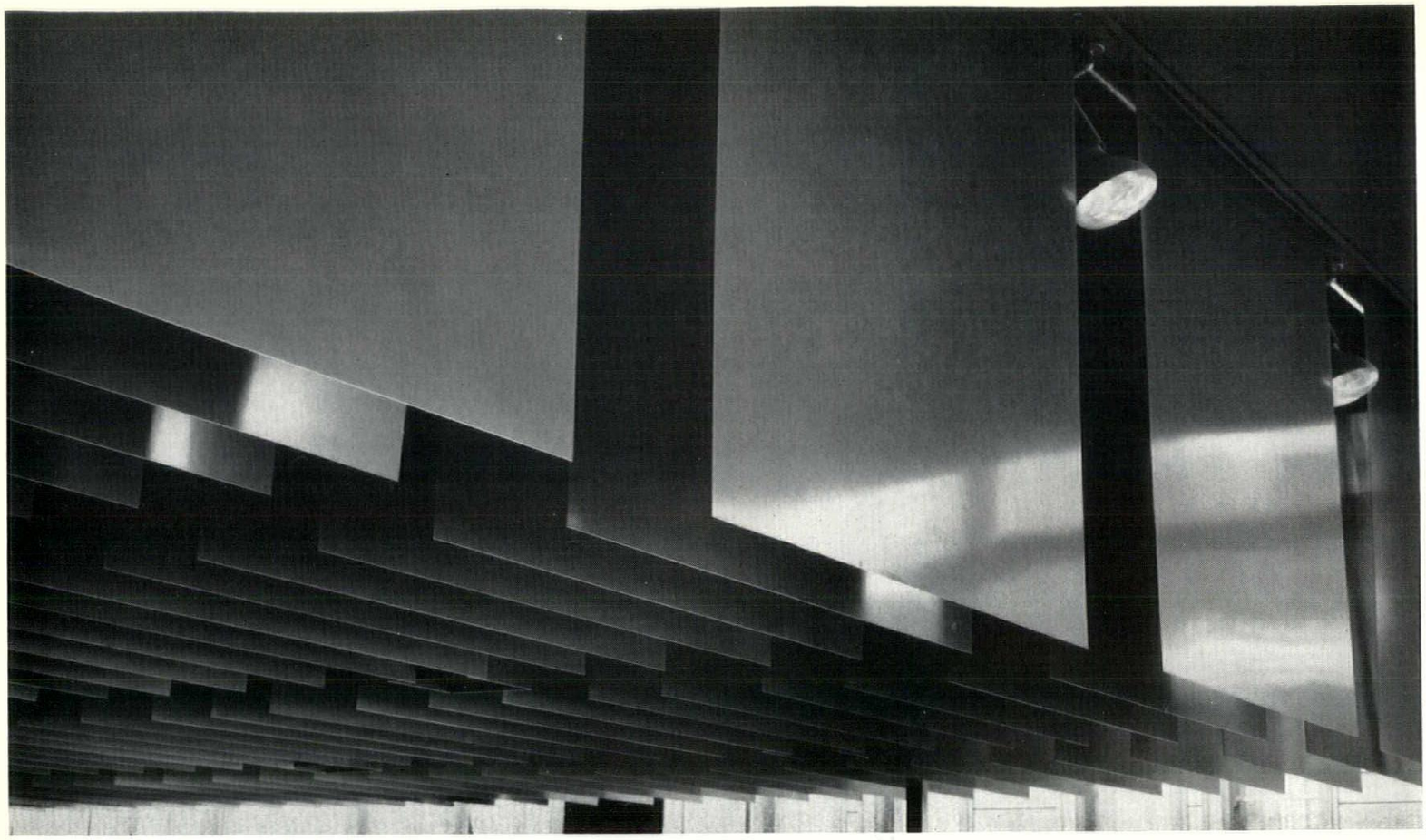
Showrooms in Hanover Street, W.1

architect: Dennis Lennon
assistants: Maurice Broughton, Peter Harman

An unusually successful blend of eye-catching glitter and functional space, this shop and showrooms for Messrs. Morleys, the well-known manufacturers of hosiery, occupies the street floor, with office mezzanine above and basement showroom below, of a new block just off Regent Street (architects: Morrison Rose and Partners). The problems of designing premises of this kind, which must look convincingly *grande luxe* whether or not they contain special displays, and irrespective of the style and content of those displays, call for a nice balance between bravura and tact. The solution reached here, of functional simplicity in expensive materials, is one of the few that resists changes of fashion.

1, brass and clear plastic prism-shaped door-handles on the glass doors of the street entrance: similar handles or push-bars are also used on internal doors.





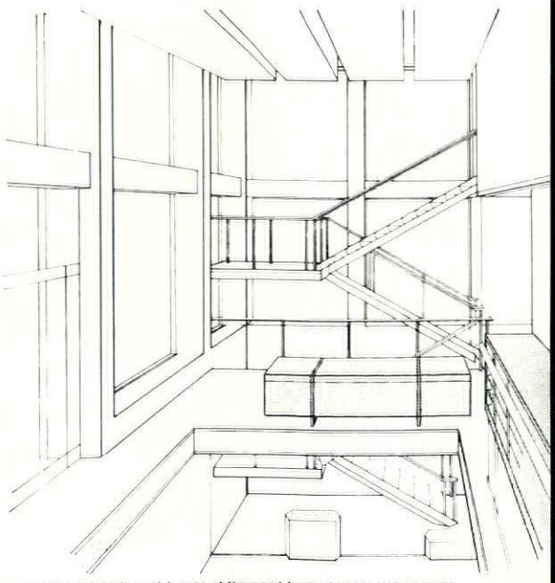
2



4



3



perspective of interior, with part of floor and louvred screen to basement stairs removed: street front at left, office mezzanine upper right.

2 (opposite), blue-painted, sheet-steel lighting baffles on the ceiling of the main showroom space.
3, the exterior by night, with staircase at left, entrance two bays to the right.
4, from the first landing of the stair, with the entrance at right, flanked by suspended display fittings in brass, topped by light-fittings of clear plastic prisms.



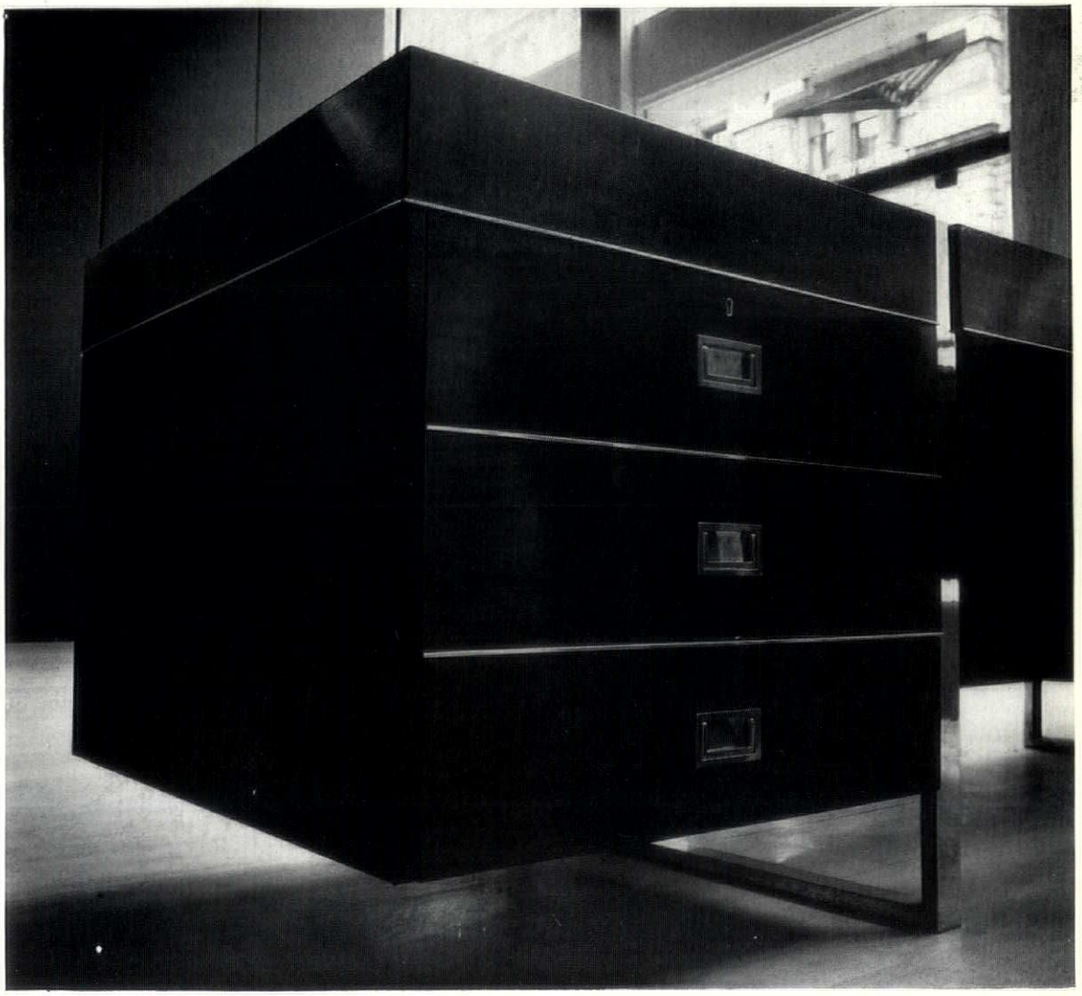
5



7



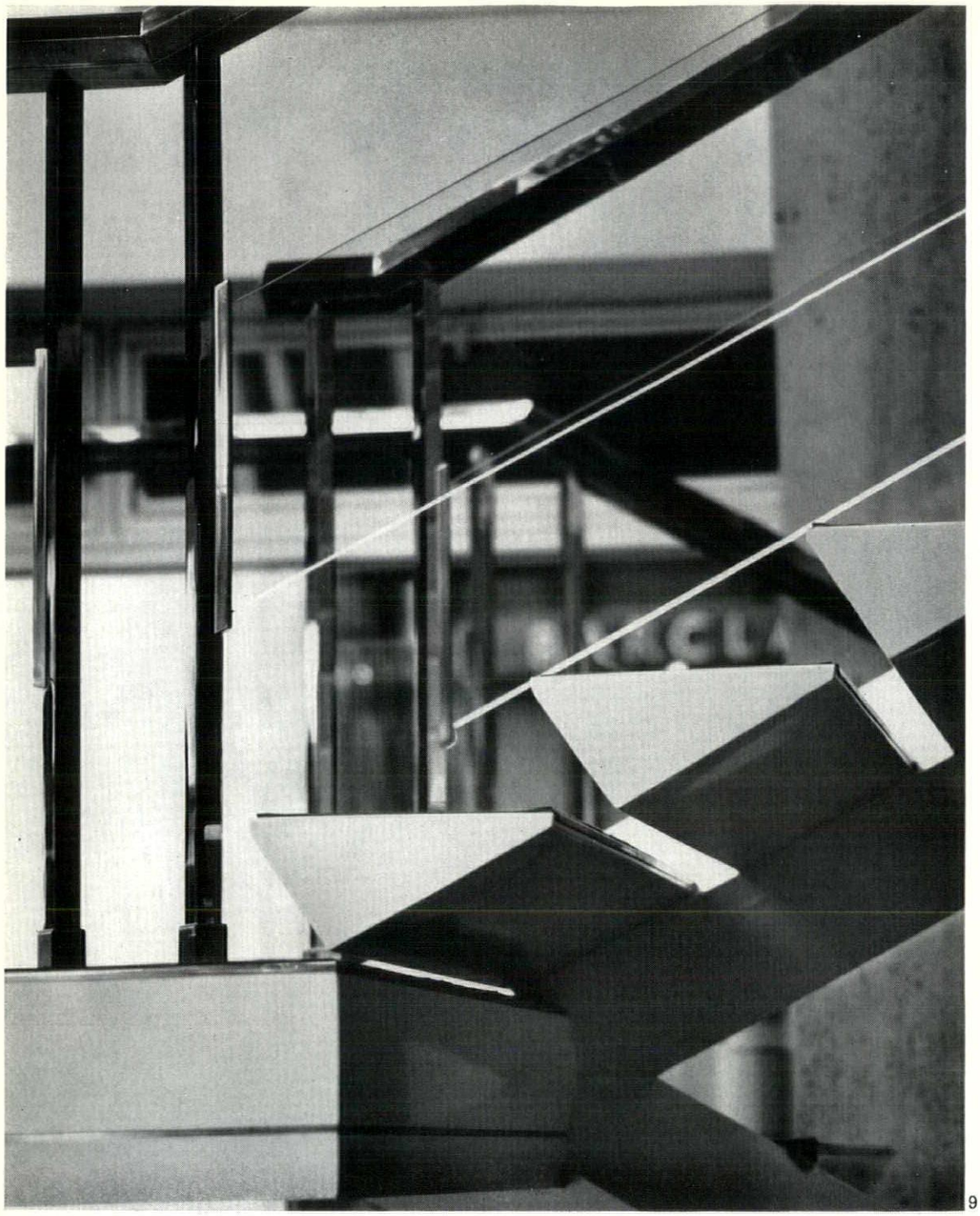
6



8

ID ***Showrooms in Hanover Street, W.1***

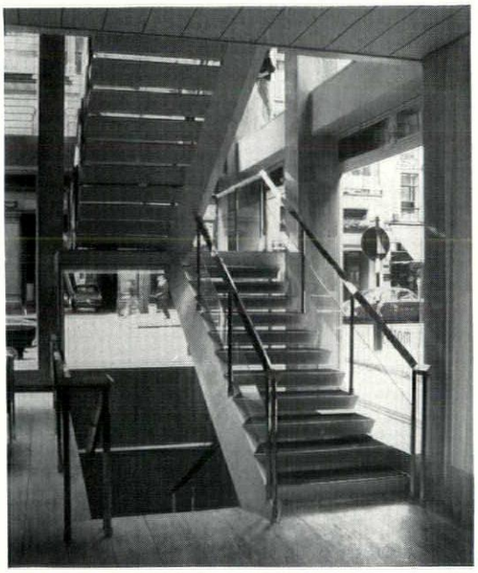
5, sitting area at rear of main sales floor: display and storage fittings of aspen-wood.
6, low chair, purpose-designed by the architect, in black leather.
7, reception desk and stairs, with entrance to ground-floor offices at right.
8, detail of reception desk, in rosewood with brass trim and chromed steel frame.



9

ID

Showrooms in Hanover Street, W.1



10



11

9, close-up of staircase: steel structure cased in aluminium, balustrade of brass, chromed steel, and plate-glass panels.
10, general view of stairs, showing central beam from which treads are cantilevered.
11, louvred screen at foot of stairs in basement display area: upholstered furniture in orange or red fabric, tables in travertine on metal legs, carpet dark brown.

Nikolaus Pevsner

Gordon Russell and Twentieth Century Furniture

Sir Gordon Russell was born in 1892, seventy years ago. His contribution to industrial design in this country belongs to the present, his contribution to the establishment of a twentieth-century style in English furniture belongs to history. It is this alone that I can feel competent to deal with, and so this congratulatory paper is devoted exclusively to that purpose. His life enters decisively into the story, but it will here only be treated as an accompaniment. Sir Gordon is working on his own memoirs, and my paper must not try to poke the currants out of his cake.

S. B. Russell, Sir Gordon's father, moved to Broadway in 1904, having bought the Lygon Arms, in the conviction that the motor age would revive country inns and there would be scope for inns of the highest standards. Among these there should also be the furnishing of the rooms with genuine antique furniture. The buying of furniture necessitated a repair shop at the back. Soon it had customers also from the village and the country around. 'Any necessary repairs (are) carried out by skilled craftsmen in the workshop on the premises,' says the first booklet of the Lygon Arms, a remarkably well printed and well got-up production called *The Story of an old English Hostelry*.* By 1914 about ten men were working in the shop† and antiques were also bought for re-sale. Americans discovered the hotel and the shop, and before 1914 considerable shipments of antiques left Broadway station. Gordon Russell, then twenty-two, had had a grammar school education and a practical education in the inn including a close interest in the repair shop. This included the making of pieces for the Lygon Arms, some beds, single and double, and some towel rails. Gordon Russell designed them, if that is the right term for what work preceded the making of these solid, rustic, extremely heavy pieces, 1, which still exist.

Artist-Craftsmen of the Cotswolds

They are evidently naive work, from the point of view of design as well as of craftsmanship. This needs some emphasis; for in the Cotswolds, and not far from Broadway, some of the most sophisticated artist-craftsmen of England were working at that very time. William Morris, by the products of his workshops founded in 1861 and even more by his addresses and lectures delivered between 1877 and his death in 1896, had given a new meaning to craft in England. He had taught with enthusiasm and fanaticism that all healthy art in all healthy periods had been craft, that industry had ruined craft and that only by artists choosing to be craftsmen could art, and with it civilization, be rescued. He was an ardent lover of nature and of honest country building and country craft. What he preached he lived. He learnt to carve, to illuminate, to weave, to dye, and he designed as easily as he rhymed. He lived in a Georgian house in London, but in a stone manor house in the country, at Kelmscott, near Lechlade, a mere thirty miles from Broadway.

Nearer still, at Sapperton, less than twenty miles away, one of Morris's most faithful disciples, Ernest Gimson (1864–1919), had begun in 1903, one year before S. B. Russell bought the Lygon Arms, to design furniture and metalwork and have it made in his own workshops. Gimson was trained as an architect at Leicester. He moved to London in 1886. Among his first London friends were Ernest and Sidney Barnsley, Ernest working under Sedding, one of the most original church architects of those years (Holy Trinity, Sloane Street), Sidney under Norman Shaw. Gimson had met Morris already in Leicester. He now met Webb, Morris's closest friend amongst architects, as well as Emery Walker and Lethaby. Gimson, apart from working architecturally, learnt to do plaster decoration with his own hands and to make chairs.

For a while Gimson apprenticed himself to a chairmaker near Ledbury. Lethaby also was interested in furniture. He, together with Mervyn Macartney and Reginald Blomfield, ran a firm, Kenton & Co., during the years about 1890, for which they designed furniture. They did not make anything. The furniture was shown in 1896 at the exhibition of the Arts and Crafts Exhibition Society, a body which had been formed in 1888. Work by Gimson had already been in the exhibition of 1890, by Gimson and by Sidney Barnsley in that of 1893. Ernest Barnsley appeared for the first time in the exhibition of 1896. Later in the 'nineties Gimson and the two Barnsleys decided to leave London and move into the country. They looked round and finally found Pinbury in Gloucestershire. In 1903 Gimson changed Pinbury for Sapperton. The Barnsleys went on with their honest, well designed and excellently made furniture until they died, Ernest in 1925, Sidney in 1926. Gimson, whose workshop was at Daneway House, did much in the same honest rustic style, but also a good deal that was more elaborate, sophisticated and original. Among his work one remembers turned chairs and chairs with ladder-backs, tables with chamfered legs and rails of many shapes and patterns, cabinets of square shapes with drawers of varying shapes and sizes rhythmically alternating with small doors to cupboards, cabinets on high stands, cabinets with dainty bands or frames of small-scale inlay. These cabinets were by no means imitated from, or sometimes even inspired by, the past. They were pure Arts and Crafts; i.e. an original early twentieth-century contribution. The same can be said of his metalwork, firedogs, altar-crosses and the like. They are indeed particularly imaginative and subtle. In the furniture shop the foreman was Peter Waals, a Dutchman by birth and upbringing. Waals carried on after Gimson's premature death—perhaps more in the Barnsley than the Gimson spirit. His workshop was at Chalford in Gloucestershire, and he died only in 1937.

S. B. Russell knew Gimson. Gordon Russell however never met him. But he knew the members of another equally interesting group which had settled down even nearer Broadway, at Campden, only five miles away, over Broadway Hill, in 1902. The head of this group, the Campden Guild, was C. R. Ashbee (1863–1942), also a fervent follower of Morris, but a man very different from Gimson, much more sophisticated and in the style of his products much less single and concentrated. Ashbee was the son of a wealthy father, a businessman and book collector of curious tastes, and a German mother from Hamburg. He went to King's College, Cambridge, but had to fend for himself as his mother had left his father and he had stood by her. In 1888, when he was twenty-five, he started the Guild and School of Handicraft at Essex House, Mile End Road, in the East End. The idea of a guild came from Morris and Ruskin, and in his various books Ashbee recognized his indebtedness to both. His first book was

* 1914, p. 39.
† *Ib.*, edition of 1929, p. 27.

called *A Few Chapters on Workshop Reconstruction and Citizenship*, and his second *An Endeavour towards the Teachings of John Ruskin and William Morris*. They came out in 1894 and 1901.

The guild occupied itself chiefly with furniture and metalwork, but in 1898 a private press was attached to Essex House. Ashbee also worked as an architect and built several houses in Chelsea (Chelsea Embankment and Cheyne Walk) which are amongst the best and most original of their date in England. Ashbee believed in the village as much as in craft, and so —in spite of obvious commercial disadvantages—he moved his guild in 1902 to Campden. He tried to establish for his craftsmen a life both rural and culturally stimulating. Theatricals played an important part. Guildsmen also had their own small-holdings. Ashbee was unable to make a financial success of the guild at Campden, and it went into liquidation in 1908. He succeeded in reviving it but the First World War finally killed it. Guildsmen however stayed on at Campden, notably Alec Miller, the carver and sculptor, and the brothers Hart, one a silversmith, the other a carver.* Ashbee's style differed from Gimson's in being always a little closer to *Art Nouveau*. He liked floral and foliage elements in long, undulating curves and used them not only in his metalwork but also in wood or metal panels or mountings on furniture. The Guild worked at Campden while Gordon Russell was at school there. Locals disapproved of these Londoners and perhaps also their activities, although these certainly had nothing in the very least scandalous.

Finally, one more artist must be mentioned, Fred Griggs (1876–1938), who first came to see the guild and then stayed, until in 1926 he began to build himself Dover House, a Cotswold dream house, large, rambling and hidden away from the street. He did not finish it till 1934, and died four years later. He was a wood-engraver primarily, and his illustrations in the Highways and Byeways books, and also a few in Morris's *Collected Works*, teem with medieval fantasy and are translucent with a true understanding of Cotswold building craft. He knew a good deal about this kind of architecture and designed his own house in all its details. In 1919 he intended to go into partnership with Gimson, but Gimson died before anything came of it.

So around Broadway in the early years of this century the spirit of William Morris was very much alive, and work of a solid, honest, but also delicate and imaginative kind was being done, in furniture and in metalwork. Technically, these artist-craftsmen and designers were ready to remain the pupils of their predecessors of a few centuries ago, but formally they were original and refused to be satisfied with imitations of the past—a strange mixture of revival and pioneering, characteristic of the best of those years in design as well as architecture and in Britain as well as abroad.

* I am most grateful to Mrs. Ashbee and Mr. George Chettle for information on C. R. Ashbee, and to the late Alec Miller for having put at my disposal his yet unpublished account of Ashbee and the Campden Guild.

Broadway beginnings

But—and this is the most curious fact about the beginnings of furniture making at Broadway —the humble new beds of about 1910 made for the Lygon Arms are in an odd way survival rather than revival and not at all pioneering. S. B. Russell knew the Campden Guild as well as Gimson. But no reflection of this appeared yet at Broadway. Just as the blacksmith still clinked away in his shop in the village street, so the Lygon repair shop still did naturally and without reflection what it was called upon to do.

When war broke out in 1914, Gordon Russell was called up at once, and when he came back he was anxious to build up something of his own, attached to Broadway but not exclusively to the Lygon Arms nor to antiques. Gimson and the Barnsleys had proved that good honestly-made furniture not designed to imitate furniture of the past was a possibility, and incidentally Heal's in London had proved that it could be designed, made and sold commercially. At Broadway the craftsmen were there, the showroom was there. So Gordon Russell went to London in order to show a few designs he had made to two men whose judgment he valued: to Percy A. Wells, the head of the cabinet-making department at the Shoreditch Technical Institute, and to John Gloag, who had become assistant editor of *The Cabinet-maker*.

Percy Wells (1867–1956) was a distant relative of Mrs. S. B. Russell. Gordon Russell had met him before the war, when Wells had walked over to Broadway after a visit to Ashbee's guildsmen at Campden. Wells was the author of the 'cabinetmaker's bible,' *Modern Cabinet Furniture and Fitments*, written jointly with J. Hooper and first published in 1909. He was a craftsman who had learnt the trade from the bottom, first as an apprentice and then as a journeyman. He was bluff and sincere; his judgment could be trusted, and it was encouraging. That made a great deal of difference to Gordon Russell, and a little later he could privately dedicate a copy of the fourth edition of the *Hostelry* book which came out in 1924 and was the first to have a chapter on the new venture of furniture-making: 'To Percy A. Wells without whose help and encouragement the last chapter might have remained unwritten.'* Percy Wells indeed, after 1920, visited Broadway several times a year regularly and advised.

John Gloag also encouraged,

* Copy with the Misses Wells who kindly allowed me to see their relics of the life of their father.

Gordon Russell and Twentieth Century Furniture

1, bed by Gordon Russell for the Lygon Arms, Broadway, c. 1914.
2, cabinet for the Palace of Art at the Wembley Exhibition, 1924.
3, cabinet in walnut inlaid with ebony, box and laburnum. Made for the Paris Exhibition, 1925.
4, two chairs of 1925.

5, writing cabinet, 1927.
6, boot cupboard in Cuban mahogany with brass ring handles, 1925.
7, sideboard in Cuban mahogany, 1925.
8, the Weston dining room in Japanese oak, 1929.

9, unit bookcases, in black walnut, light oak or cherrywood, c. 1930.
10, fireside chair designed by Eden Minns, and table in black walnut and sycamore, designed by R. D. Russell. Both 1930.
11, the Kineton dining room in walnut, designed by Eden Minns, 1930. The chairs are by R. D. Russell.

12, Shipton bedroom designed by W. H. Russell, 1930. Dressing table in black walnut with chromium mirror frame and handles.
13, adjustable fireside chair designed by W. H. Russell, 1930.
14, the first radio cabinet designed by Gordon Russell's for Murphy's, 1931.

15, cabinet for Murphy radio, 1934.
16, 17, 18, cabinets designed by R. D. Russell for Murphy radios, 1936-1938.



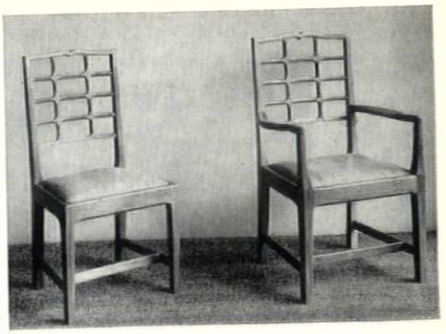
1



2



3



4



5



6



7



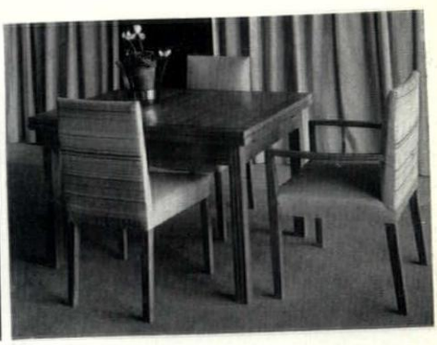
8



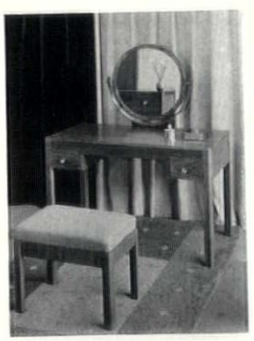
9



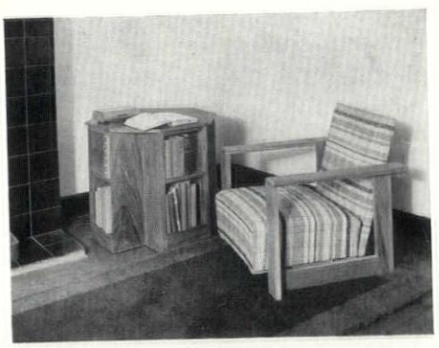
10



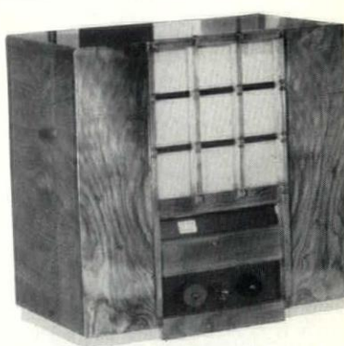
11



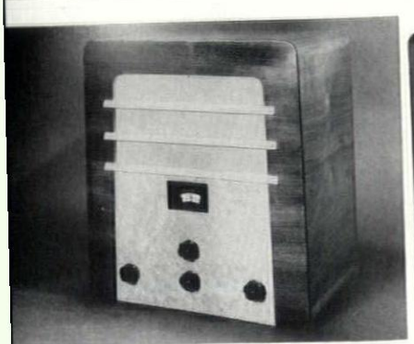
12



13



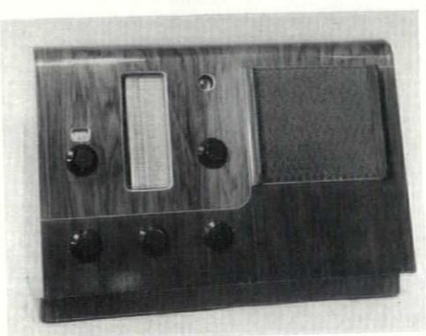
14



15



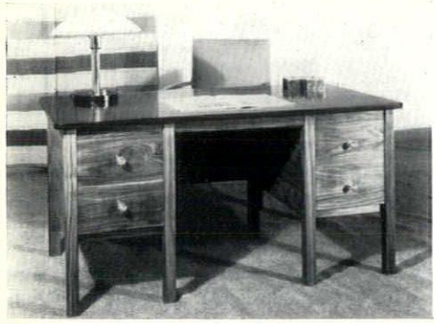
16



17



18



19



20



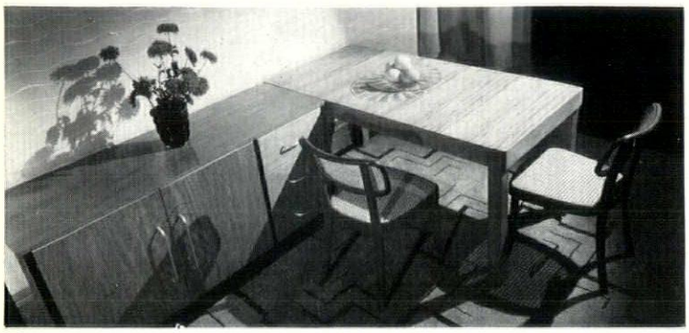
21



22



23



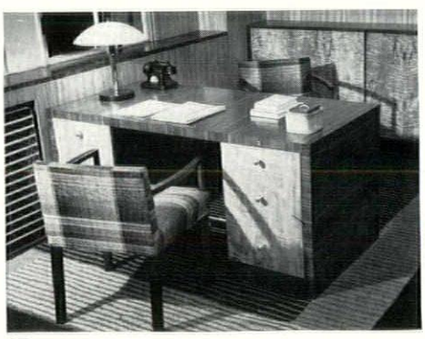
24



25



26



27



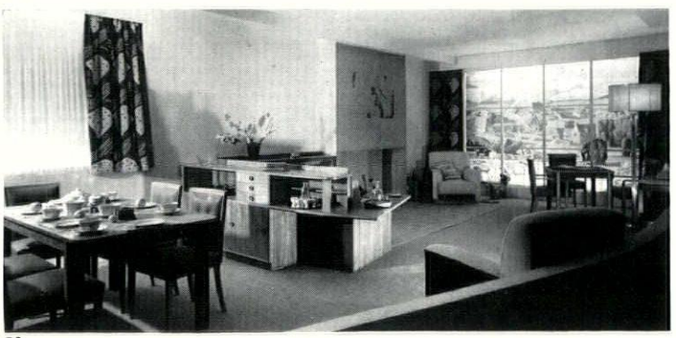
28



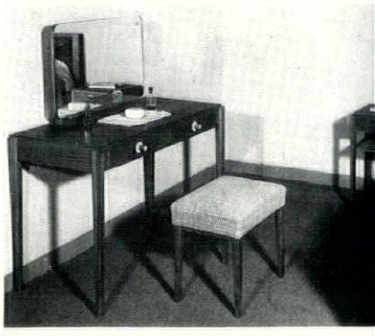
29



30



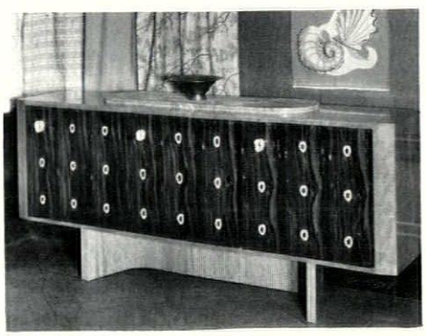
31



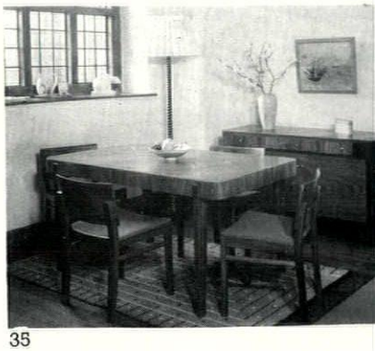
32



33



34



35

Gordon Russell and Twentieth Century Furniture

19, desk designed by Gordon Russell in black walnut with matt black cellulose top, 1933.
20, desk designed by David Booth in walnut and sycamore, 1932.
21, bentwood stool designed by Alvar Aalto and sold by Gordon Russell's in 1933.
22, bent beechwood chair designed by Thonet and sold by Gordon Russell's in 1936.
23, the Isokon bent plywood chair designed by Marcel Breuer and sold by Gordon Russell's in 1937.

24, the Finstock dining room in Honduras mahogany and Macassar ebony with aluminium handles anodyzed satin silver. Designed by R. D. Russell, 1934.
25, the Thirty-Four I bedroom, 1934.

26, settee and easy chair, 1934.
27, office furniture in Brazilian rosewood and Japanese chestnut. Made for O. T. Falk & Co. in 1934.
28, study furniture in oak, with chairs covered in dull coral satin, designed by R. D. Russell.
29, sideboard in Indian rosewood from the Woburn dining-room.

30, sideboard in African rosewood from the Sudeley dining-room.
31, living room designed by R. D. Russell for the British pavilion at the Paris Exhibition of 1937.
32, the Aston bedroom in American black walnut, designed by W. H. Russell, 1938.

33, drinks cabinet in African rosewood and ebony, designed by J. Wilson in 1938.
34, sideboard in pearwood with doors veneered with coromandel ebony and an inlaid pattern formed by cross sections of beef bone. Designed by R. D. Russell and shown at the Arts and Crafts Exhibition Society at the Royal Academy, 1938.
35, dining room in figured walnut plywood. Designed by J. Wilson for the Good Furnishing Group, 1939.

and in addition he illustrated some of the work of the young firm, first in the *Cabinetmaker* in 1923,* and then in the year-books of the Design and Industries Association which had been founded in 1915 and which Gordon Russell speedily joined. John Gloag was the editor of the year-books, and the issues for 1923–4 and 1924–5 had illustrations of Gordon Russell pieces.

The enterprise indeed began to make its mark. If the fourth edition of the *Hostelry*, to which reference has already been made, says that the cabinet workshop had 'not as yet had much time to become known,' that was an understatement; for by 1924 it employed about thirty. On the advice of Percy Wells the repair shop had been separated firmly from the shop making new pieces, and also on Wells's advice Edgar Turner, son of Jim Turner who had from the start been in charge of the repair shop, had gone for six months in 1923 to a good Shoreditch firm to learn the finer points of cabinet-making. Moreover, Wells also sent improvers from his institute to Broadway, and among them in 1924 arrived W. H. Russell, seventeen years old then, and later (and still now) chief designer of the firm.†

At Cheltenham in 1922 an Exhibition of Cotswold Arts and Crafts was held, and here Gordon Russell showed for the first time. Major Longden, of the Department of Overseas Trade, who was responsible there for exhibitions, happened to see this and in 1923 invited Gordon Russell to furnish a model café for the Second Annual Exhibition of the recently founded Institute of Industrial Art in the north court of the Victoria and Albert Museum. Heal's were the other firm asked to furnish a room. As a result of this the first complete dining-room was ordered by a private patron, Mr. A. Hartley, of Rochdale. Also in 1924 an invitation was received from the Wembley Exhibition to show in the Palace of Art, and the cabinet, 2, made by Edgar Turner for the exhibition was sold to Lord Dunsany for £200. An even more elaborate cabinet, 3 (made by C. Marks), was shown at the Paris Exhibition of 1925 and received a gold medal. The firm received two silver medals as well. Such a cabinet would have taken a craftsman six months to make.

The style of these early pieces, 4, was closely modelled on that of Gimson, the Barnsleys and Peter Waals. English timbers were used throughout—oak, walnut, cherry, chestnut, cedar, yew, laburnum. They were left in their natural colour. Legs and handles were heavy, chamfers deep, panels bevelled. Simple stools, sold at 39s. 6d., were made side by side with elaborate pieces with inlay. When early in 1926 Percy Wells wrote on Gordon Russell in *The Architects' Journal** the craftsman was mentioned by name against every illustration.

Enter the Architect

But Gordon Russell was not wholly satisfied with these spectacular successes of only five years' work. He soon began to realize, as indeed Lethaby had done, and Voysey, Ashbee and others, that craft on its own was not enough, that the greatest strides in the prodigious progress of English design which the late nineteenth and the early twentieth century had seen had been due to architects not to craftsmen, and that this movement now, being left in the hands of craftsmen, even such admirable craftsmen as the Barnsleys and Peter Waals, was in danger of stagnation. The wider viewpoint of architecture ought to be brought into the workshop, and so in 1924 R. D. Russell, the youngest son of S. B. Russell, aged twenty, was despatched to the Architectural Association in London to train as an architect. He stayed until 1927. Rarely has the dictated choice of a profession been so successful.

The years 1924–7 were years of confusion in English design. The Arts and Crafts movement had influenced the trade only to a very small degree. Heal's, under (Sir) Ambrose Heal (born in 1872), was almost the only example of a large and prosperous, old-established firm taking up the Arts and Crafts innovations intelligently and developing them with originality. The furniture shown at exhibitions of 1900 (Paris) and 1901 (Glasgow) by Heal's is, with its cubic shapes and dainty inlays, as fresh as any designed—indeed a little later—by Gimson. Heal's could not afford to specialize in such pioneer work. But they popularized simple oak 'cottage' furniture successfully, and they also went on with furniture of Georgian inspiration. Nothing could be more telling than the catalogues which, from 1921, they brought out regularly year after year and which they called 'Reasonable Furniture.' In these and other catalogues natural oak suites of frame and panel construction in the Arts and Crafts tradition appear side by side with semi-Georgian sideboards and a few pieces in which the pretty square patterns on the veneered carcasses are still in the spirit of the pioneer work of 1900. These pieces of Heal's, such as for example the sideboard C809 of 1921† and the bedstead C365 of 1924 are perhaps the most original designs produced in England during the quinquennium after the war.‡

Then, however, the Paris exhibition of 1925 came. It was a great event, and its effect on decoration and furnishing was on the whole disastrous. The exhibition might have been the triumph

* Aug. 18, p. 313; Sept. 1, p. 450; Sept. 8, pp. 500 and 501; Sept. 15, pp. 545 and 549; Sept. 22, pp. 596 and 597; Sept. 29, p. 662; Dec. 15, p. 583; Dec. 29, p. 703.

† He is not a relation of the Broadway Russells.

* Vol. 63, Jan. 20 and 27.

† Illustrated in THE ARCHITECTURAL REVIEW, vol. 59, 1926, p. 174.

‡ Messrs. Heal's possess an enviably complete range of catalogues, and I had the privilege, thanks to the kindness of Mr. Anthony Heal and Mr. S. V. Bell, of using them for this present purpose.

Gordon Russell and Twentieth Century Furniture

of that sound, crisp new style of architecture which had grown between about 1900 and 1925 in America, in France, in Germany and Austria. This new style was not entirely absent at Paris—Le Corbusier's *Pavillon de l'Esprit Nouveau* was certainly the most exciting individual building, and Mallet Stevens's cubism was startling—but it was smothered by chiefly French displays of arbitrary cubic and arbitrary streamlined shapes and by jagged, jazzy applied decorations—modernistic vagaries only too easily adopted as clichés. Their origin was Expressionist experiments conducted during and immediately after the war first by architects and then by designers in Holland (de Klerk) and Germany (Mendelsohn) and also a little later in Sweden and France.

England on top of all that had exhausted its impetus from the Morris and the Arts and Crafts years and had settled down to a comfortable, reasonable, uneventful neo-Georgian which in furnishing meant genuine eighteenth-century pieces or copies of them. In 1925 concurrently both the genuine modern style and the bogus modernistic one entered the country. The earliest house in the new twentieth-century style, New Ways at Northampton, was designed in 1926 by Peter Behrens for Mr. Basset-Lowke and has a share in both trends. THE ARCHITECTURAL REVIEW illustrated it in the same year. It also reported on some of the fantastical post-war Expressionism in 1922 and 1923 (de Klerk, Taut, Dudok, Mendelsohn at his most streamlined, and the Gothenburg Exhibition). In 1924 it wrote on Gropius, in 1925 on the Paris Exhibition, in 1926 and 1927 on Le Corbusier. In 1925 an office building in Red Lion Square by Joseph Emberton for Austin Reed's was illustrated. This, though less drastically novel, also belonged to the new style in its flushness and absence of mouldings.

The mannerisms of French decoration at and after the Paris exhibition are, however, reflected in THE ARCHITECTURAL REVIEW too, and their repercussions in England can be followed in the volumes for 1927 and 1928, but more fully in the *Studio Yearbook of Decorative Art* of the same years. The designers and firms involved included the Bath Cabinet Makers, Betty Joel, Stark Brothers, and also the architect Joseph Emberton who has just been mentioned on the side of the gods and who was to come forth on the same side even more decisively, in 1930 with his design for the Royal Corinthian Yacht Club at Burnham-on-Crouch. But in 1927–8 he certainly wavered.* Even in the catalogues of Heal's about 1930 modernistic suites found entry. They appear, it is true, side by side with their 'reasonable' furniture, just as in THE ARCHITECTURAL REVIEW and the *Studio Yearbook of Decorative Art* the Barnsleys, Peter Waals, and now of course also Gordon Russell went on being illustrated. The only thing that was still lacking everywhere was furniture to correspond with the style of Behrens and Gropius and Le Corbusier, furniture such as, for example, Adolf Schneck was designing about 1927 for the *Deutsche Werkstätten*; that is, nothing extreme and nothing as daring as Breuer's and Mies van der Rohe's tubular steel chairs, but chairs, tables and sideboards without mouldings and frills, of an uncompromising un-period appearance, and moreover making use of veneering on solid boards or on plywood.

Illustrations of such furniture could in 1927 just be seen in some of the continental magazines.* But who saw them? Certainly not Gordon Russell, and also—curiously enough—not those teaching or studying at the Architectural Association. The Architectural Association schools were in fact untouched. R. D. Russell was impressed by Steen Eiler Rasmussen who at the time taught for a short period. Rasmussen is familiar now as the author of the most sensitive book on London (*London, the Unique City*); his gentle and persuasive pedagogic genius is better known in his own country. It was his feeling for materials and workmanship which R. D. Russell admired. Inspiration from Le Corbusier or Gropius or indeed Dudok neither he nor his three friends who were at AA at the same time remember: Marian Pepler (later Mrs. R. D. Russell), D. W. Eden Minns and David Booth.† All these three, from 1930–1 onwards for a few years, worked for Gordon Russell's too, as will be seen presently.

The Output of the Workshops

At Broadway meanwhile the workshops went on their own way, their style not materially changing, but their production methods beginning to take notice of the possibilities of some machinery. The first planer was bought in 1924 or 1925, and it was followed by a circular saw, a band saw, an Elliott woodworker, and a dimension bench. Two morticers, two spindles, a tenoner and a thicknesser came in 1929. By then timber was roughly planed before being handed out to the craftsmen, according to a timber-list made out by the foreman. But the craftsman still made his individual pieces throughout. Suites (that is, sets of dining-table, sideboard and chairs, or dressing-table, wardrobe and chest-of-drawers) were still unknown at Broadway. This was a workshop, not a factory. Customers commissioned whole rooms only very rarely, and contract work was as rare.*

Prices varied a great deal. They were not at all high for small utilitarian pieces, but a writing cabinet such as 5, No. 614 of 1927, of which six were gradually made, sold at £120. A 6 ft. oak dining table (No. 318 of 1925) was priced at £9 18s. 6d., the 4 ft. 9 in. sideboard to go with it at £13 18s. 6d. A Spanish chestnut dressing chest of 1925 (No. 219) sold at £18 18s., but a 6 ft. wardrobe of walnut (No. 518 of 1926) at £70. These prices can be gathered from printed catalogues, an innovation of about 1926.

It was said a little earlier that the style did not yet change at Broadway, but there are, among the pieces illustrated or recorded, two which contradict this statement. They are a boot cupboard, 6, of Cuban mahogany (No. 365 of 1925) and a Cuban mahogany sideboard, 7 (No. 383 of 1925). Instead of frame and panel construction, both have flush fronts. The cupboard even has doors of veneered blockboard. The two designs clearly belonged together, as the use of the same ring-handles indicates. On the other hand the cupboard has broad feet which repeat in contemporary style Gordon Russell pieces of the normal Arts and Crafts type (e.g. the cupboard No. 435), but the sideboard—and the circular table which goes with it—have finely moulded, almost reeded, slender legs. Did Gordon Russell, when he designed these pieces, realize how far he departed from the tradition he had himself established? He tells me that, as far as he can remember, he was guided by certain eighteenth-century precedents—wardrobes with flush veneered doors built up of reversed mahogany strips—and by occasional flush Gimson pieces, such as a chest of about 1916. The sideboard incidentally is remarkably similar to some of the work of Ambrose Heal at the same moment and a little earlier.† The origin in the case of Ambrose Heal, it will be remembered, is a compound of Sheraton inspiration with the great originality of Heal's pioneer work of about 1900. So these square, flush shapes are a continuation of the English eighteenth century and the English style of 1900 rather than an effect of Continental 1925. However that may be, Gordon Russell's two mahogany pieces remained an exception for the next four or five years.

In the years between, the only important trend to be noticed is that for simpler, less costly pieces. Typical examples in a simplified Arts and Crafts style are the Gunstock table (794, 1928; in oak £3 10s.; in mahogany £3 15s.), the Coxwell Bedroom (oak, 836–41, 1929; dressing table £4 18s. 6d.; bed £3 17s. 6d.) and the Weston Dining Room, 8 (oak, 853, etc., 1929; table £4 18s. 6d.; sideboard

* *Studio Yearbook*, 1927, p. 95. He also still wavered in 1930 when he showed the design for the Olympia exhibition halls at the Royal Academy, with a facade heavy with Dutch memories.

* For Schneck's work see for example *Die Form*, vol. II, 1927, pp. 129, etc.

† Marian Pepler was at the AA in 1924–9, Eden Minns in 1924–7, David Booth in 1925–31. (*See* the Class Lists at the AA.) Mr. J. M. Richards, who was also at the AA in the same years, confirmed to me this unrevolutionary atmosphere.

* The only contract work recorded was for some simple oak tables and chairs for St. Thomas's Hospital (1925–6).

† Cf. again the sideboard C809, illustrated in Heal's catalogue of 1921.

£12 12s.; single chairs £2 15s.). They remained popular right through the 1930's. Of the Gunstock or the Weston table a dozen or more would be made at a time. It will be noticed that the Coxwell and Weston were designed and handled as suites, and this was an innovation too. The trend for simple suites had of course been acknowledged by Heal's even before 1928. But then Heal's was a big shop, and it was in London. It is said that in connection with an exhibition held at the Arlington Galleries in Bond Street in 1928, Gordon Russell began to feel the disadvantage which it was to his firm to be confined to Broadway; that is, confined to one outlet and to a village. After all, the firm now employed about 120 people. It was clearly outgrowing Broadway—not as a domicile but as a trading centre.

So the decision was taken to open showrooms in London, and in 1929 a shop at No. 28 Wigmore Street was rented. At that time the shop's retail trade was already no longer confined to furniture but included glass from Powell's and Stevens & Williams (some designed by Gordon Russell) and textiles from Donald Brothers, the Old Bleach Linen Company and Wardle's. Nor was the trade altogether confined any longer to retail. Gordon Russell believed in the suitability of furniture of the Weston type for schools and colleges, and substantial contract orders were indeed received in 1929 and 1930. Bolton School ordered 1,700 chairs and 450 desks. Bryanston, Dartington Hall, King's College Aberdeen, The Downs School Colwall, Emmanuel College Cambridge, and others followed.

A Revolutionary Year

The year 1930 was the *annus mirabilis* of Gordon Russell's. Of the four revolutionary events in the history of the firm, two belong to 1930. The first had been the decision to make new instead of repairing and selling old furniture. The second concerns style, the third production methods.

Style first. The remarkable fact is that in 1930, without any preparation but the greater simplicity of the rooms of 1928 and the mysterious boot cupboard of 1925, Gordon Russell furniture suddenly turned modern in the sense and on the aesthetic level of the best of Continental furniture. Nor can it be said—as might be tempting to suggest—that the cause of the change was the celebrated Stockholm exhibition of 1930, the one in which Asplund was responsible for the buildings. They taught Sweden and other Continental countries that within the new style solutions were possible, lighter, more airy and more metallic than the chunky cubistic houses of the 'twenties had been. But for the change of heart in Gordon Russell's the exhibition came too late.*

And just as no external explanation for the change seems convincing, so no single prime mover within the firm can be named. The fact is that Gordon Russell himself may well have been responsible in the first place. He certainly designed the completely straightforward unit bookcases, 9 (No. 913), which aesthetically as well as programmatically set the tune. On the other hand, being in personal charge of the drawing office he now encouraged others to design, and they designed in the new way. They were of two kinds: on the one hand W. H. Russell, who from being a learner in the shop had gradually become chief draughtsman; on the other hand R. D. Russell and Eden Minns both back from the AA—trained in, and in close touch with, London. Yet no difference in style or even handwriting can be discovered between them. Eden Minns designed the low fireside chair, 10 (No. 917)—one can assume that by and large the numbers represent the order in which designs were produced—and this chair again shows no sign of harking back to the character or the detail of the Weston and Coxwell rooms of the year before. R. D. Russell's circular table No. 966 is a specially beautiful piece. The angular supports rising out of the cross-shaped stretcher are broad flat bands of sycamore, the two-tier tops are of walnut. Later in the year Eden Minns designed a walnut dining room, Kineton, 11 (Nos. 982, etc.), and W. H. Russell a bedroom, Shipton, 12 (Nos. 989, etc.), and an adjustable fireside chair, 13 (No. 998).* The chairs of the Kineton room were by R. D. Russell and were distinguished by the curve of the tops of the arms. One of the most memorable facts about this production of 1930 is that there seems to be so little hesitation. The confusion into which the Paris *artistes décorateurs* and jazz modernism had plunged the English furniture trade left hardly any traces.†

This new style posed one problem. The flush surfaces, the square legs, the exact unmitigated angles partook of the connotations of machine precision which played such a significant part in the modern style of architecture. Yet the furniture was all hand-made, by the same men who had done the elaborate pieces of the past years and with the same meticulous care. However, the style once accepted, the lure of the machine was bound to make itself felt. And not only could it be argued that the style called for the machine but there was also the additional attraction of reduced cost, if machines were to be given a greater share in the production, and of a wider market. This was a commercial attraction, but it had its social implications too. Gordon Russell must have felt a mission. He was the only one in his country yet to believe in this new style. Could others be converted to it? Clearly the most likely converts were not the rich, but professional men and then the enlightened, enterprising and underpaid class of school-teachers, librarians, scientists in laboratories and so on. The fact that one desk brought out in 1930 (No. 948) had handles not of brass but of stainless steel and red eranoid was a sign of how Gordon Russell's mind worked.

Enter the Radio-cabinet

But the change of manufacturing methods, the step into quantity production, might have taken many years, if it had not been for another event of 1930, the event which led to the third of the revolutionary moves. The story is one of pedagogic significance. If Gordon Russell's had not moved in the direction they did move, Mr. Frank Murphy would not have rung up Gordon Russell one day to ask him to undertake the designing and making of wireless cabinets for him, and if Gordon Russell had not believed in the necessity and the advantages of trying his hand at mass production, he would not have accepted the offer. Frank Murphy was an engineer. He had been in the General Post Office before the war, and then in advertising. He had just started in the radio trade. The day after the telephone call he and E. J. Power came to Broadway and met Gordon and R. D. Russell. Shortly afterwards the Russell brothers went to see the Murphy factory at Welwyn Garden City. The collaboration was established, and it resulted in great advantages to both sides, to Murphy's because they got the best wooden radio cabinets then existing in any country in the world, to Gordon Russell's because they learnt what real engineering precision meant and how the most intelligent use can be made of machinery.

Radio cabinets at that time were either period or jazzy; that is, either imitation-Georgian with cabriole legs and the function carefully hidden, or with soundholes decorated by a fretwork tree with gnarled branches or a fretwork rising sun. The first of the new cabinets came out in 1931. It was simple and straightforward, tripartite with the two narrow outer parts plain and in the centre part the controls and a square soundhole with a grid dividing it into nine small squares, 14. In 1932 the same type was continued. It was supplemented by two cabinets with slightly modernistic soundholes and in 1933 with a circular soundhole decorated with the three-ray motif of the Mercedes cars. The models of 1934, especially the console ones, such as 15, achieved a greater independence from even the more general characteristics of the other cabinets, and since then year after year brought new and interesting designs,* 16, 17, 18. They were all done by R. D. Russell. By 1939 the design of the Murphy cabinets had changed the attitude to design of quite a number of radio manufacturers, a gratifying case of one firm's enterprise leading to improvements in a whole industry.

The production of the Murphy cabinets was at the beginning beset with all kinds of troubles. The initial order was for about 1,000 cabinets. They were made in batches of 250. Broadway had no experience of that kind of work nor a factory to do it in. It was doubtful whether it should have one. Gordon Russell felt a responsibility to the village and its character and of course also to the Lygon Arms. After all, in 1934 Gordon Russell's had more than 400 employees and so Broadway must have seemed blatantly inadequate. So the radio makers emigrated. Geoffrey A. Jellicoe designed a factory on the Guinness estate at Park Royal, and in July, 1935, it was occupied.

At Broadway R. D. Russell took charge of the drawing office in 1931 and remained until, in 1932, he joined Murphy's and did his—by no means reduced—work for Gordon Russell furniture as an outside designer and consultant. At the same time, from 1931 to 1933, Gordon Russell himself continued to design, and the desk, 19 (No. 1080), is his. It was conceived for quantity production, with ½ in. walnut-veneered plywood panels tongued into the posts. David Booth also was designing at Broadway. Due to him is, for example, 20, a fine desk (No. 1051, walnut with a sycamore drawer front), the fall-front desk (No. 1030) and the Evenlode bedroom of 1933 (Nos. 1063, etc.). When R. D. Russell and David Booth left, W. H. Russell finally took over.

After 1930

Gordon Russell's had found their style in 1930. From 1931 it was developed. No new departures have to be listed, except for one, not connected with the production of the firm. In 1933, on the suggestion of Gordon Russell himself, the shops began to stock Alvar Aalto's new bentplywood chair. Aalto had invented (or in fact re-invented) this technique of furniture-making only in 1932. In 1933 an exhibi-

* So at least I was assured by the principal actors in the play. All the exhibition could do was to provide 'a huge confirmation.'

* Mr. W. H. Russell's first independent piece was the desk No. 943.

† No traces at all would be just a slight exaggeration; for the desk No. 947, designed by Gordon Russell, has a concave, vertically fluted drawer front which was a modish touch, and the big tripartite wardrobe designed by R. D. Russell and illustrated in the catalogue of July, 1930 (*Catalogue of Furniture designed and made by Gordon Russell Ltd.*), on p. 37, has a top to its centre which is stepped up in what must again be called a modish fashion. The same motif appeared in the same year, or perhaps in 1929, in the fireplace at Mr. Hartley's house Follifoot, near Harrogate, also by R. D. Russell, and illustrated in the same catalogue of 1930 (p. 40).

* The earliest modern and well-designed Italian cabinet was, according to *Stile Industria*, No. 11, 1957, p. 6, that designed by Figini & Pollini and made by HMV Italiana in 1934. It was the result of a competition held by *Domus* in 1933. On well-designed radio cabinets in Germany I have not succeeded in getting reliable information. But all seems to point to a late start too. The only other English firm to approach cabinet design—at least for a time—with the same boldness was Ekco's. Their cabinets of 1933 and 1934 were designed by Chermayeff and by Wells Coates and made of bakelite.

tion took place in London* and Gordon Russell must have seen the stools, 21, and tables there, ingeniously simple pieces which could be sold at very low prices. The decision of a firm, famous by then for fine cabinet work, to offer such mass-produced pieces not made by themselves shows a remarkable objectivity and a remarkable appreciation of the distinct aesthetics of hand-made and machine-made furniture. In the same spirit, in 1936, the best designed of Thonet's famous bent beechwood chairs, 22, were admitted to the shop, and in 1937 Marcel Breuer's bent plywood chairs, 23, made for Isokon†, the factory started by Jack Pritchard, London friend of Walter Gropius and promoter of the Lawn Road flats.

As for Gordon Russell's own output, production remained as before in batches of six or twelve. The most intersting work was certainly R. D. Russell's. In 1934 he designed the Welbeck dining-room of Honduras mahogany (Nos. 1096, etc.) with rounded corners and inlaid lines of sycamore on the table top and with rounded legs repeating to the outside the curvature of the corners of the top. From the planning point of view the Finstock dining-room, 24, and bedroom (Nos. 1114, etc.) of the same year ought to be recorded, because it was an attempt at a consistent design for the furniture of a whole flat or at least bed-sitting room. The desk and dressing-table for instance were identical. The Thirty-Four I room, 25 (Nos. 1100, etc.), as its curiously unromantic name indicates, tried to achieve a standard product at a price lower than any that had been made before. Dressing-table, chest of drawers and wardrobe cost £31.‡ The settee and easy chair, 26 (Nos. 1110 and 1150, again of 1934), were the *nec plus ultra* of that cubism which these years of the Lawn Road flats liked. The width of the arms across the top was 8 ins.

But R. D. Russell's finest work during 1934 and indeed the following years was on the contract side, and especially for private offices. Only one or two examples can here be illustrated, such as 27 for O. T. Falk & Co. For much of the soft furnishings which now appeared in the showroom Marian Pepler (Mrs. R. D. Russell) was responsible, occasionally as a designer, mostly as a buyer. Marian Pepler, side by side with Marion Dorn, was the best textile designer in England. Marion Dorn's work was more striking and varied, Marian Pepler's had a sensitivity and quiet perfection not surpassed anywhere in Europe. As a buyer she and her successor from 1936 onwards kept in close touch with Edinburgh Weavers for fabrics to be specially designed and made for the showrooms, with the Welsh Tweed Mills, 28, for which Marianne Straub was designing, with Helios (a subsidiary of Barlow & Jones), with other British manufacturers and with certain Continental suppliers. There was, of course, also Swedish and Dutch glass, Wedgwood pottery and much else to be provided. Geoffrey Jellicoe designed larger showrooms at No. 40 Wigmore Street which were occupied in 1935. The shop was a joy to move about in. Speaking from personal memory I would say that the furniture of between 1935 and the war, in its entirely contemporary, never mannered, and never showy style, equalled the best on the Continent, and its workmanship was more perfect than any I saw in the Continental shops I visited. The fact that the men who made these pieces, however much of the rough and preliminary work machines were gradually taking off them, were still the same men who had been the craftsmen of the 1920's bore fruit. The other fact that at Broadway the drawing-office was in constant touch with the cabinet-shop also bore fruit.

The range of furniture was now extended to include some more luxurious suites such as the Hazleton bedroom of sycamore with a little ebony inlay and a large curved dressing table (Nos. 1134–41), the Woburn dining-room of Indian rosewood, 29, with the remarkable sturdy circular and banded table legs (Nos. 1165, etc.) and the Sudeley dining-room of African rosewood, 30, with its gentle curves to the centre part of the sideboard (Nos. 1260–1). They sold at £150, £94 10s. and £115 respectively. There was here clearly a policy of trying to retain the market for the best in materials and finishes and lead it towards modern design. But Gordon Russell himself was still sufficiently attached to the ideals on which the firm had originally been built up to suggest to W. H. Russell a dining-room and a bedroom of oak with reminiscences of the Arts and Crafts in its general character and such details as the corner posts and handles (Enstone dining-room Nos. 1162–3, Ilmington bedroom, Nos. 1156–8). They were not as much of a success as he must have wished.

1937 was the year of the Paris exhibition. R. D. Russell designed a large living-cum-dining room for it, 31. This was done at the invitation of the Board of Trade and represented Britain excellently. The only other firm invited was Heal's. The two parts of the room were separated by a curved fitment, and the bold hangings were designed by Marian Pepler and made by Edinburgh Weavers. The room was intended to appear sturdy and reliable and in that respect rather marks the climax of the style of the thirties than the beginning of the new more delicate style which was to culminate in the fifties.

A New Elegance

This new style made its appearance in 1937–39, first the Aston bedroom by W. H. Russell, 32 (Nos. 1299–1304, 1938), an inexpensive walnut job selling at £44 10s. for the usual three pieces. The dressing-table and the bedside table had slim tapering legs and the handles were of light grey plastic. A second example of the new elegance was a drinks cabinet of African rosewood and ebony, 33, designed by J. Wilson (No. 1317, 1938). The black stand had tall circular legs and a gently concave front, and the interior of the cupboard was lined with grey plastic. A third example may be added, because it was a very special piece, a long sideboard, 34, by R. D. Russell which was shown at an exhibition of the Arts and Crafts Exhibition Society held at the Royal Academy in 1938. It was of pearwood with a front of coromandel ebony inlaid with irregularly shaped rings which were in fact sections of beef bones polished.*

As interesting socially as this piece was aesthetically, and at least as significant, was Gordon Russell's own initiative in the same year, 1938, in convening a group of like-minded retailers and suggesting to them the manufacture by Gordon Russell's of standard suites which would not be sold to anyone else. They would carry the Gordon Russell name, but they would be machine-made, 35, and they would, owing to this and to larger orders than Gordon Russell's own retail trade could ever place, be cheaper than such furniture had been hitherto. The members of the group, calling itself the Good Furnishing Group, were Beattie's of Wolverhampton, Elsa Booth of Oxford, Elizabeth Denby, Dunn's of Bromley, Gane's of Bristol, Mummery & Harris of Frinton, Rowntree's of Scarborough, Schofield's of Leeds, and Wells of Bedford.

The fact that Gordon Russell believed in this scheme is of considerable significance. The Murphy cabinets had been his company's first step in the direction of manufacturing for others and of manufacturing on a large scale.† This new venture was a logical extension. The war deprived it of its effects.

The war meant the closing of the London showrooms, bomb damage to the Broadway showrooms, the making of ammunition boxes, model aircraft, wind-tunnel models, Mosquito wing nosings, instrument cases and so on. But to Gordon Russell it meant a widening of the range of his activity in perfect continuation of the direction which he had in his mind and which had led to the Murphy and then the Good Furnishing enterprises. About the middle of 1942 Hugh Dalton, then President of the Board of Trade, set up a committee to advise him on the introduction of standard furniture to supply wartime needs sensibly and speedily. The chairman was (Sir) Charles Tennyson. Gordon Russell was one of the members. The first pieces appeared early in 1943, rather undiplomatically called utility furniture.

They were the only furniture which was permitted, and they were well made, as far as circumstances allowed—much better made than the hire purchase stuff which a large part of the public had bought before, and they were decently if not excitingly designed. They did not have to face the problems of design for mass production as they had to be designed to be manufacturable by moderate-sized and small firms. The large firms were as a rule busy on aircraft parts. In the end about 600 firms made this utility furniture. As a result of the experience gained with the first ranges Gordon Russell suggested to Sir Charles Tennyson the forming of a permanent design panel, and after the acceptance of the suggestion became its chairman. The later ranges of utility furniture designed under Gordon Russell were a considerable improvement and approached the style, if of course not the craftsmanship, of the Gordon Russell furniture of before the war.

In 1944 Hugh Dalton set up the Council of Industrial Design. In 1947 Gordon Russell became its director. In 1955 he was knighted, in 1960 he retired from it. The work for the Council was a final achievement. Making the best furniture by hand, making the best modern furniture by hand, selling the best modern fabrics and other furnishings with it, making the best-designed modern furniture by machine, selling it through others, designing modern furniture on a national scale, and so in the end directing the whole national movement towards good modern design—no personal development could be more logical and more satisfying. Sir Gordon Russell, being able to look back on this achievement while building a dry wall or a brick-vaulted store-room at his house and in his garden on the hill above Chipping Campden, must regard himself as a lucky man. That he is, in his retirement, busier than ever before, and not only privately but also publicly, goes without saying. Too many know that they cannot afford to let such wisdom, such tolerance, such shrewdness, such immense experience, and such clarity of direction lie fallow.

I have to thank for generous help in preparing and writing this paper, apart from Sir Gordon Russell himself, Professor R. D. Russell, Mr. W. H. Russell, Mr. E. T. Ould, Mr. Anthony Heal and Mr. A. V. Freeman.

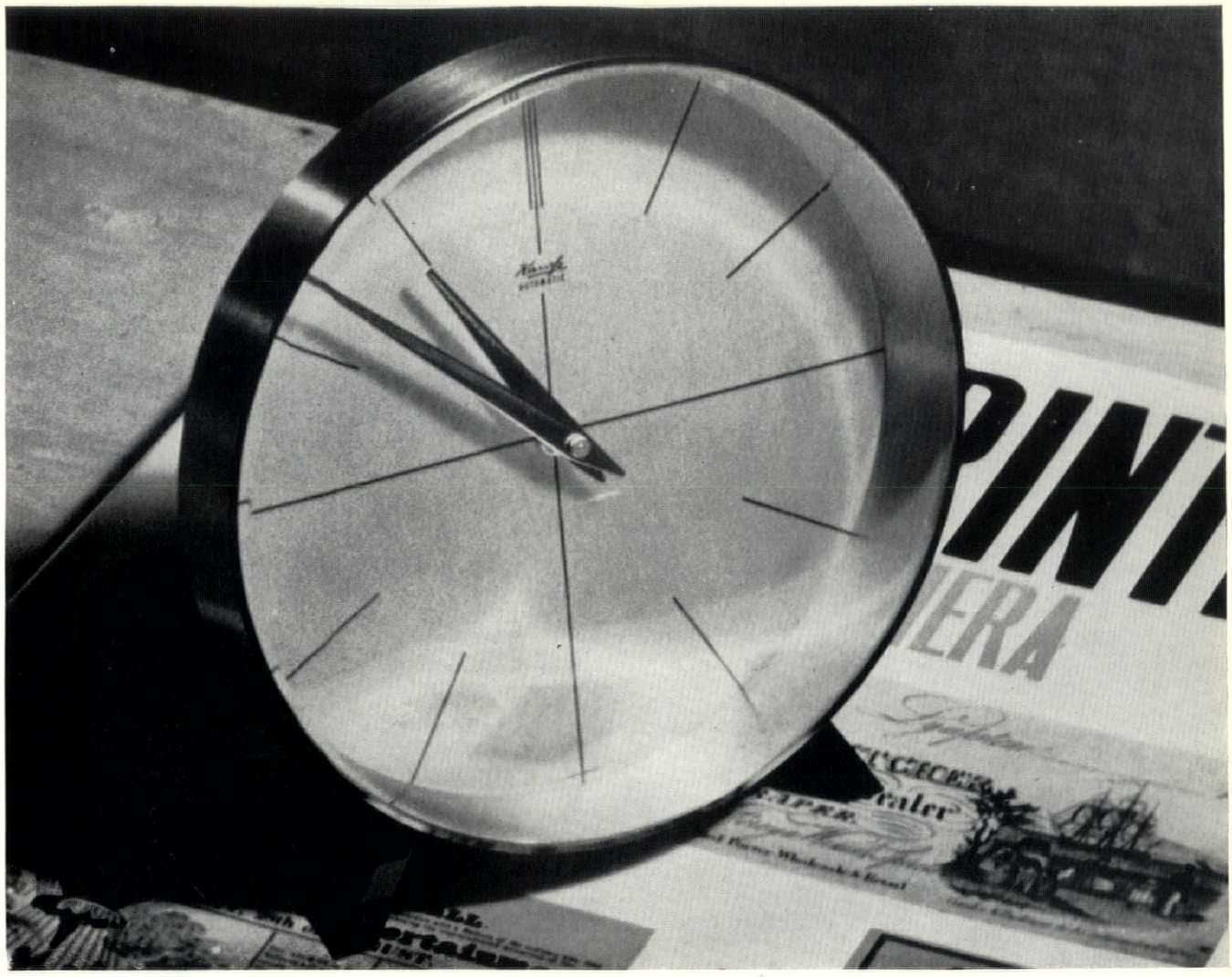
*See the Aalto catalogue of the Museum of Modern Art, New York, 1938.

† They were designed in 1937, not in 1935, as stated in P. Blake, *Marcel Breuer*, Museum of Modern Art, New York, 1949, p. 56.

‡ The Coxwell bedroom in oak of 1928 had sold at £30 16s. 6d. or £40 5s. (according to the dressing-table used) and the Dartington bedroom in oak of 1928 at £34 13s. 6d., but that was before the slump.

* The same had been done by Gimson in a box illustrated in the Gimson monograph of 1924, pl. 39, No. 5.

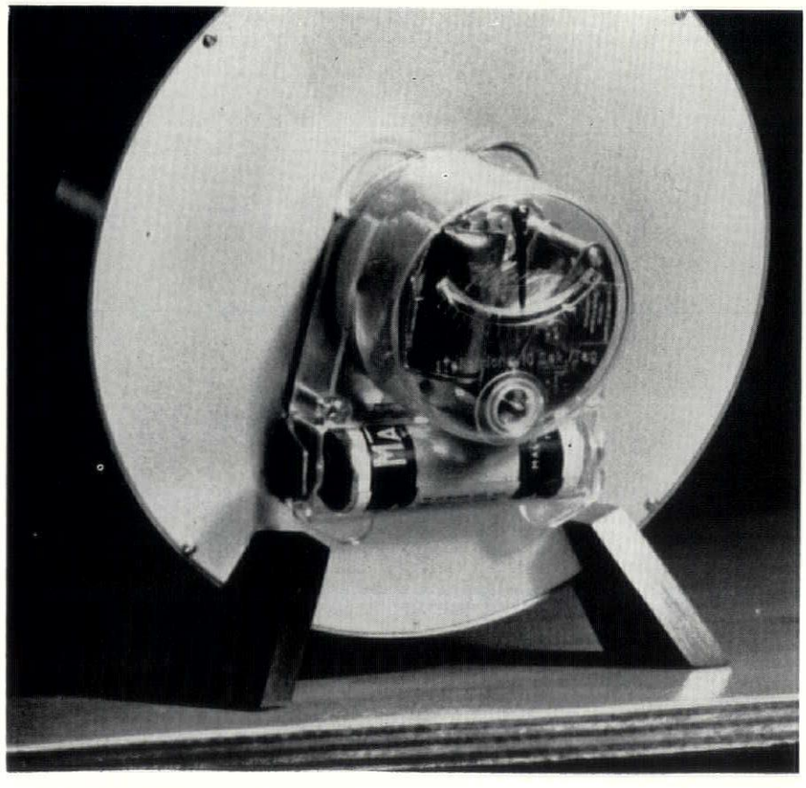
† The factory at Park Royal being available, similar contracts were made with Bush, Ekco, Ultra and RGD, all manufacturers of wireless cabinets. In 1939 simple but handsome stands were made for radio cabinets and sold by Murphy dealers. Their prices were remarkably low (22s. 6d., 27s. 6d., 30s.). Actually one radio table, X.802, had already been made in 1931. This was the first Gordon Russell furniture not to be handled in the Broadway and London showrooms of the company exclusively.



1

DR
design review

table clocks



2

The man who sets out to buy a table-clock today will find himself up to the eyes in rubbish—22-carat rubbish as often as not, with first-class movements, but visually so illiterate and unfunctional as to be intolerable in a well-designed interior. Nevertheless, studious research and energetic leg-work around the shops will prove that a few well-designed table-clocks are still being produced, and three of them are illustrated on this and the following page.

1, Kienzle model 35/0410. Outstandingly the best design from an enormous range of battery operated clocks by a German manufacturer of all kinds of timekeeping equipment. A faint aura of science-fiction *à la* Detroit, kept firmly under aesthetic control by great restraint of form and metal finishes—machined, not plated steel. Face diameter about seven inches, price £10 18s. Selfridges and a few other large shops.
2, the movement side, with cover removed, showing the three-year mercury cell which

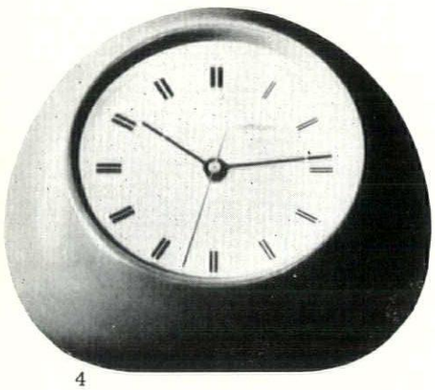
provides the power, and the compactness of the machinery (which normally tempts clock-designers to throw restraint to the winds).

The only table-clock to establish itself as an international norm, comparable to the Eames chair, is the Secticon, designed by the Milan architect Angelo Mangiarotti, manufactured (appropriately enough) in Le Corbusier's home town, La Chaux de Fonds, and sold in England (for reasons of trade-mark registration) as Selticon with an *l*. A high-class machine with a formidable reputation for accuracy, it tends to be marketed only through very high-class shops, such as Garrards, Regent Street, and to be priced in guineas.

3, front and rear views of Secticon model t1; height 9½in., price 24 guineas.



3

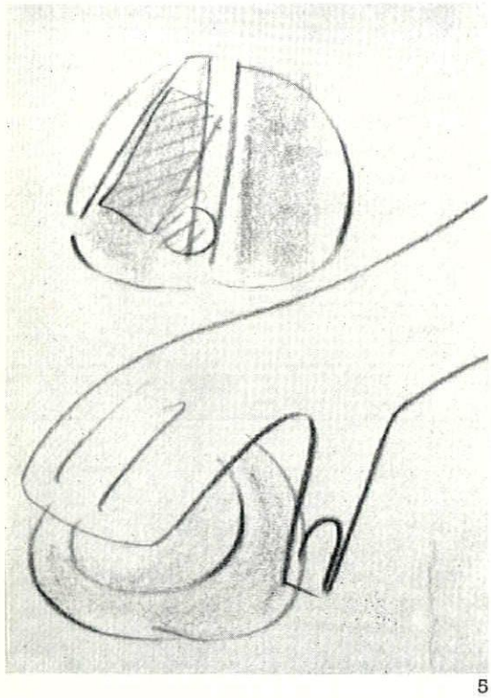


4

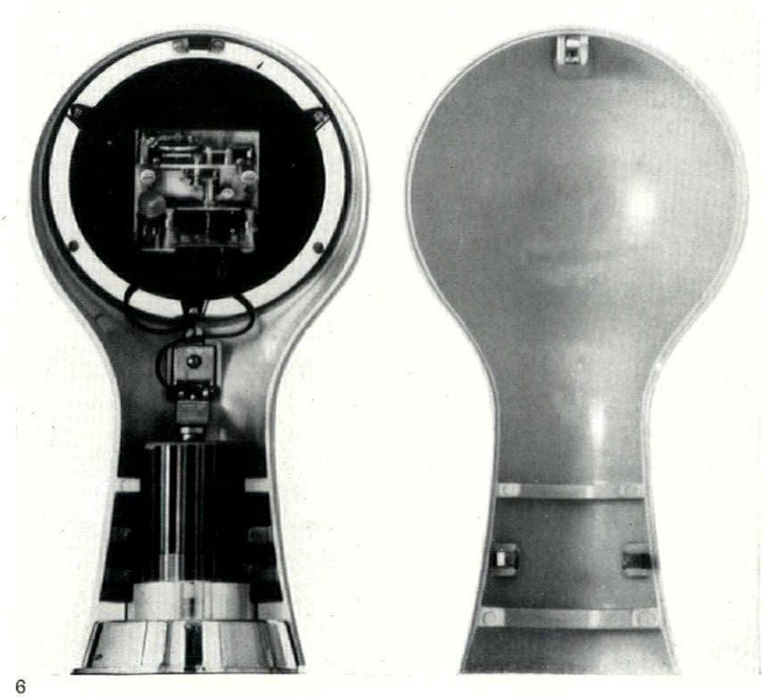
4, the smaller model t2; the face is about one-third smaller than that of model t1, the price 20 guineas.

5, two drawings by the designer of Secticon from the lavish promotional literature that supports its sales; the upper sketch shows how the case of model t2 opens for servicing, the lower one the ergonomic claim that these are forms 'amiche alla mano.'

6, model t1 opened up; the use of plastics for the case has shocked some sections of the trade, but justifies itself on performance (and sales).



5

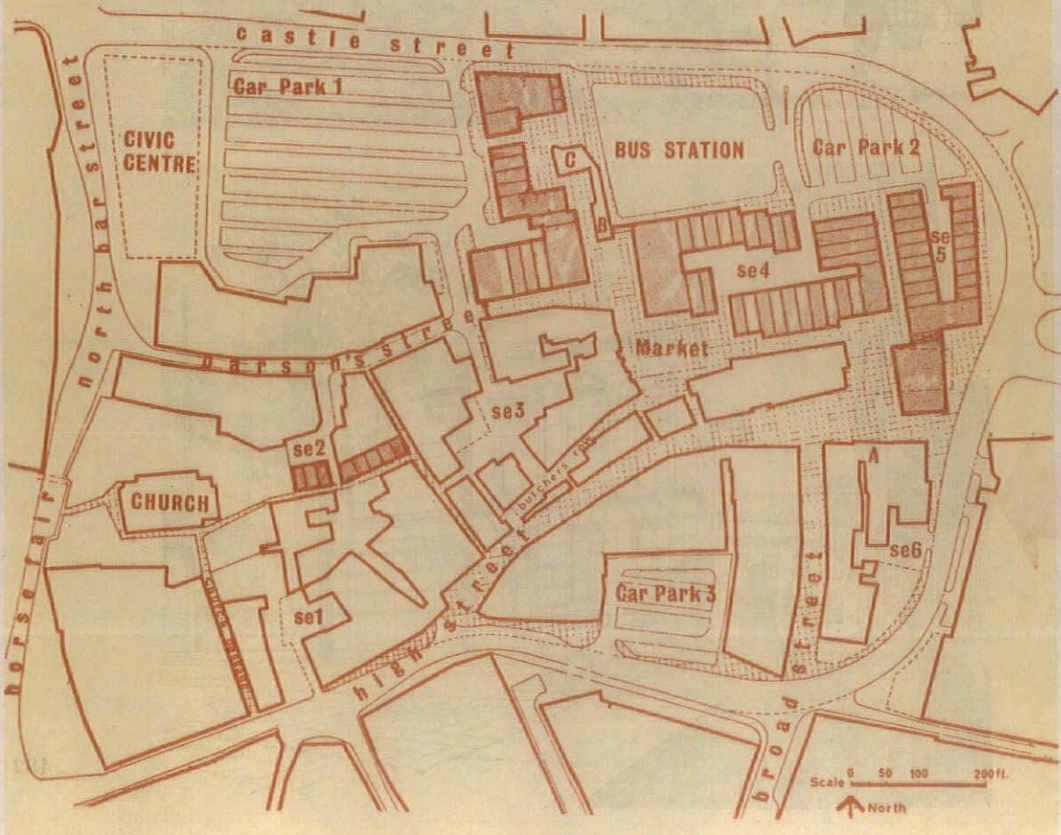


6

Banbury
plans a new centre



Above, the centre of Banbury as it is now, seen from the north-east. Below, map of the proposed new centre. The ring road is shown by a broken line, pedestrian areas are hatched and new buildings tinted.



The scheme illustrated here, which has been approved and is to be acted upon by the Banbury (Oxon) borough council, is an example of unusual and creditable foresight. Banbury is one of the towns to be expanded under the Town Development Act, which will clearly require an extension of the shopping facilities in the central area, together with improved traffic circulation and car-parking. Instead of waiting for developers to move in—as is often done—and start submitting perhaps unsuitable proposals, the council decided to formulate their own policy for remodelling the central area and invited the Civic Trust to put forward a scheme. After various alternatives had been considered, the scheme illustrated emerged, designed for the Trust by Noel Tweddell and Roy Worskett, assisted by Victor Rose. Messrs. Hillier, Parker May and Rowden advised on the economic aspect of the scheme, which was presented to the townspeople at a public meeting.

The scheme avoids the method of improving traffic-flow that is too often used in such towns: that of widening the narrow High Street, which would have broken open the compact central area, introduced through motor-traffic where it was least wanted and destroyed the town's established character. Instead, the whole central area has been reserved for pedestrians, the motor-traffic being taken round a two-way ring road. This has been designed in detail by the County Council to by-pass the greater part of the High Street and the area surrounding the present Market Place. The ring road, part of which was established when the Trust was called in, encloses about 28 acres, on which the main shopping and administrative areas of the town will now be sited. Vehicular service to shops is by means of cul-de-sac courts reached from the ring road, and by Parson's Street which will penetrate the pedestrian area but not serve through traffic. Inside the ring road are three car-parks with room for 566 cars on the ground (these will later be made multi-storey); also a bus-station. Space for a civic centre is set aside on the western edge of the area.

The scheme increases the number of shops in the central area by 50. Some 40 shops will be cleared away in the Market Place and elsewhere, but about 90 new ones built. A small number of these are in a passage leading eastwards from the church, but the majority are in four compact blocks north and east of the Market Place. As replanned the latter will accommodate about 70 stalls (as against 87 at present), but more stalls could if necessary be added in the direction of the town hall. The income from the new shops will be used by the Council to offset unremunerative development.

The new blocks of shops will be seen in contrast with the existing buildings retained south and west of the Market Place. The architectural problems of assimilating such a quantity of new work, so close to the existing buildings, and of creating at the same time a coherent pattern of pedestrian squares and walkways are clearly very great. The Civic Trust architects have tried to solve them by concentrating on the spaces between the buildings and providing strong points of visual interest at the ends of the series of spaces. The long new shopping frontage is conceived as a background to the changing views of the spaces and to the existing buildings. This is envisaged as having a continuously glazed first floor, which will provide a framework within which the work of individual developers can be kept under control. To reinforce the visual interest at the terminal points of the various spaces, three existing buildings (marked A, B and C on the plan) have been exploited. They are: A, a chapel with a high classical portico; B, a robust little building at present used as the St. John Ambulance Headquarters, to continue as offices; C, a good Georgian house used as Government offices. Illustrations overleaf show how these have been woven into the new pattern as well as how some of the new enclosures and vistas have been contrived.

From the townscape point of view the weakest aspect of the scheme appears to be the building heights, since most of the new shops are to be only two storeys. Proposals

by the architects for flats over the shops and for more second-floor accommodation were not thought to be financially viable. This will detract somewhat from the proper enclosed, built-up effect, but there will be a few new three-storey blocks, including that which closes the eastern end of the pedestrianized High Street, that occupying the north side of the Market Place and that at the extreme western end of the new shop development.

Having approved the Civic Trust's scheme, the borough council now intend to acquire themselves all the property within the area that requires rebuilding and seek tenders from one or more developers willing to carry out the work.

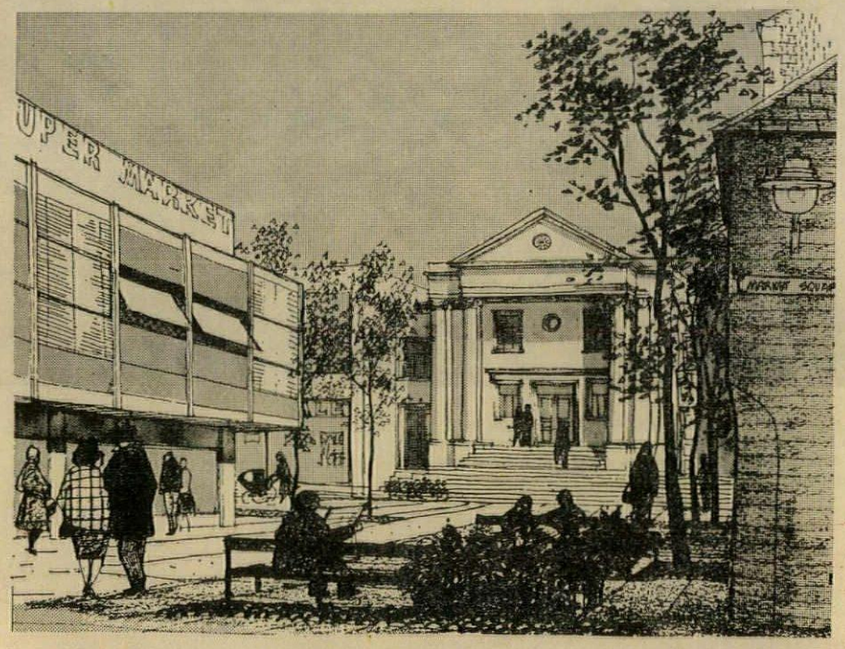


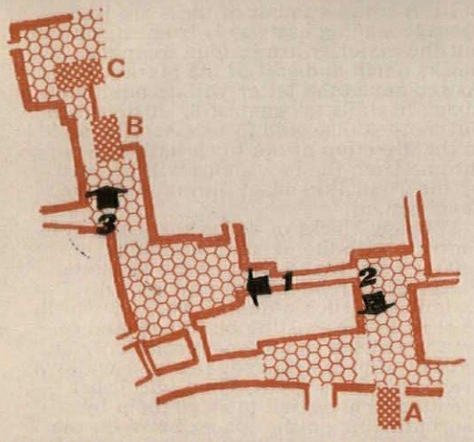
1





2

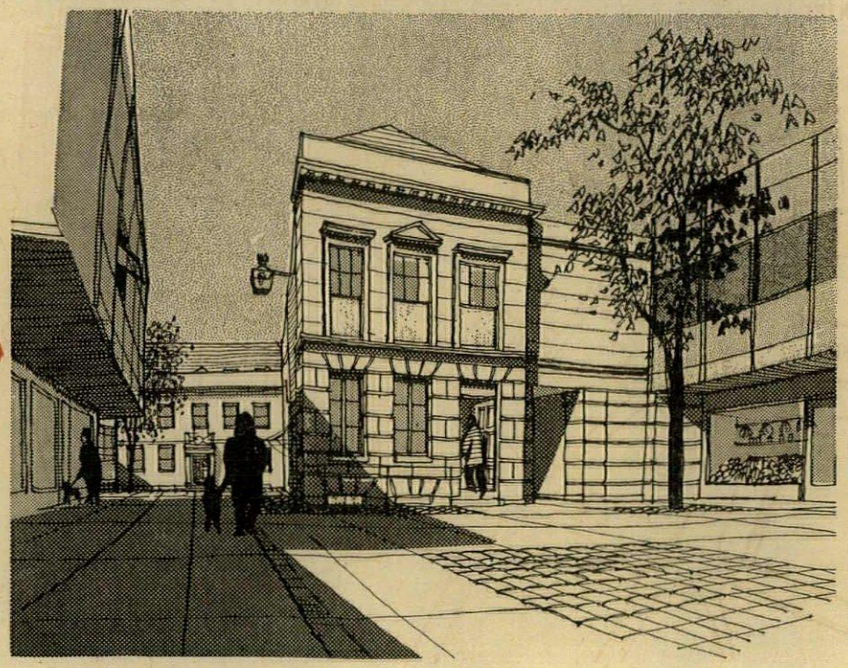




Above, plan of the pedestrian centre, with viewpoints of the illustrations which show the area as it is now and how it will look when the scheme is completed. 1, *the market square.* 2, *the chapel in the High Street (A on plan).* 3, *looking out of the square towards buildings B and C.*



3

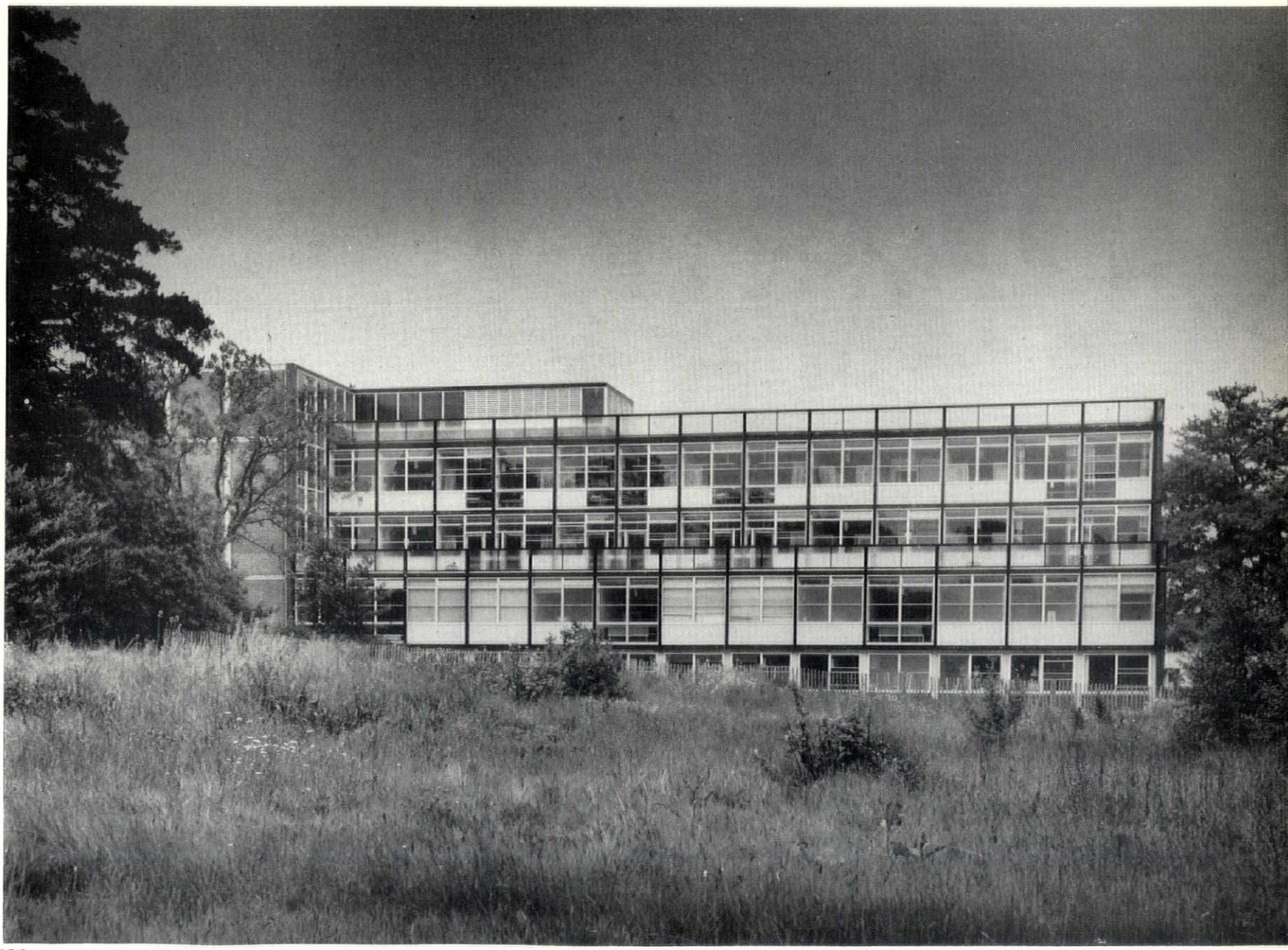


Hospital, Crawley

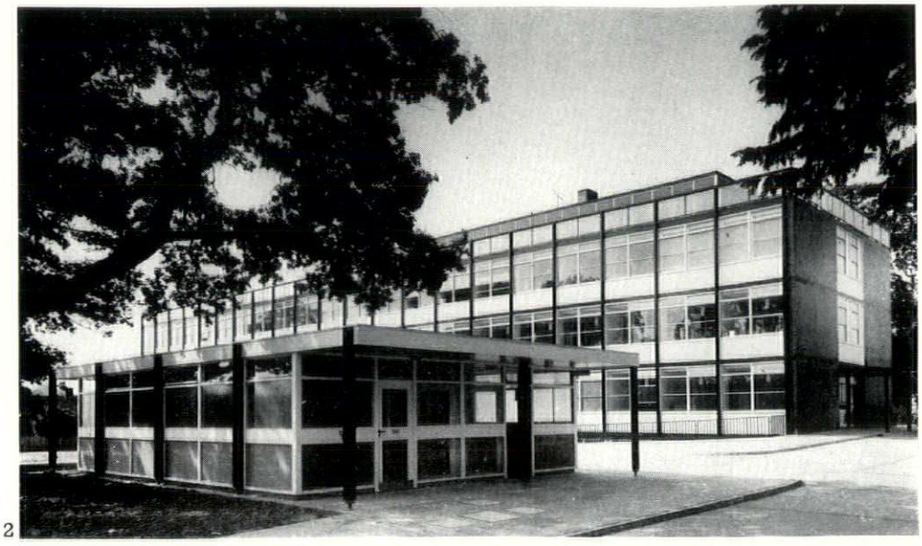
ARCHITECTS: YORKE, ROSENBERG & MARDALL

The first stage of a general hospital for Crawley new town, containing maternity, out-patient and casualty departments. It is sited near the town centre and adjoins the existing cottage hospital—a converted private house. The two upper floors of the four-storey building house the maternity department, which has 42 beds. On the ground floor are the maternity entrance and admission and consulting rooms, as well as the out-patient department with independent entrance and circulation. The sloping site has been used to house the casualty department above ground at one end of a semi-basement floor, the other end being used for storage, boiler-room, etc. A

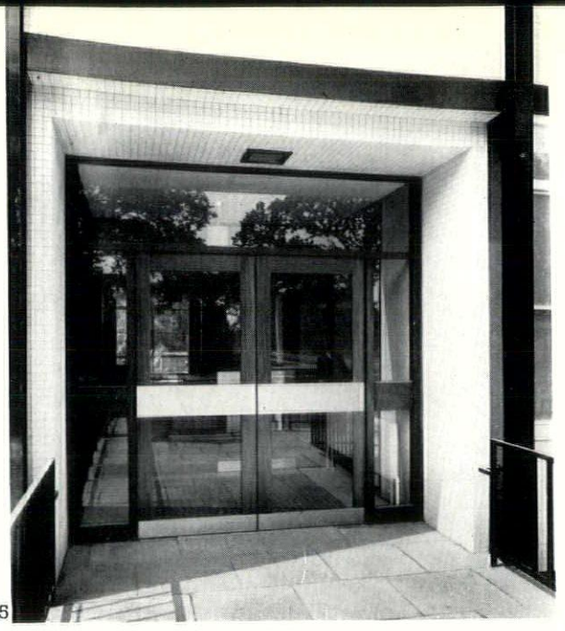
1, *the west elevation.*



Hospital, Crawley

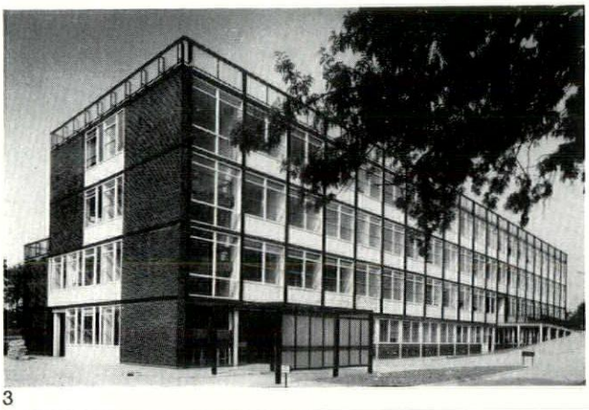


2

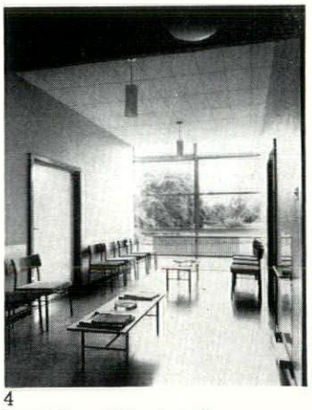


5

2, the entrance lodge and the main block behind. 3, from the east, with the casualty entrance on the lower ground floor. 4, the out-patients' waiting area. 5, entrance to the out-patients' department.



3

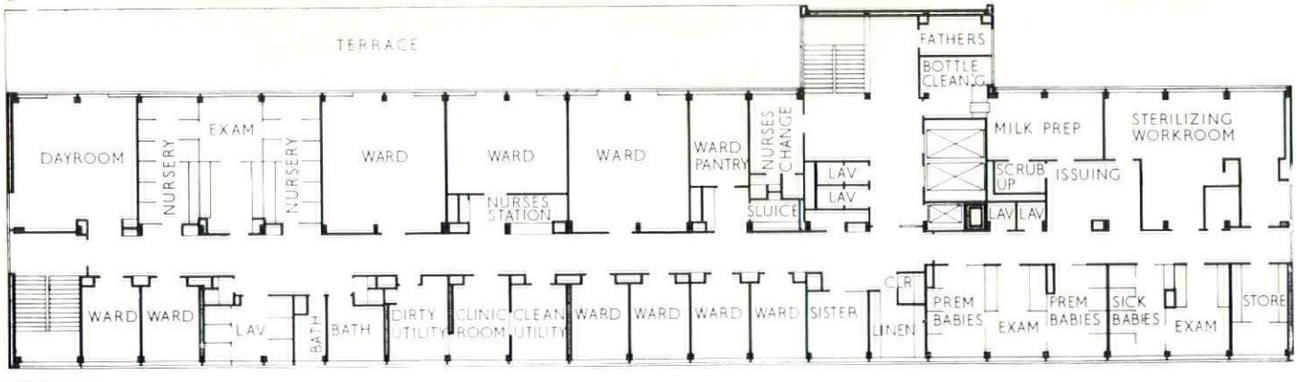


4

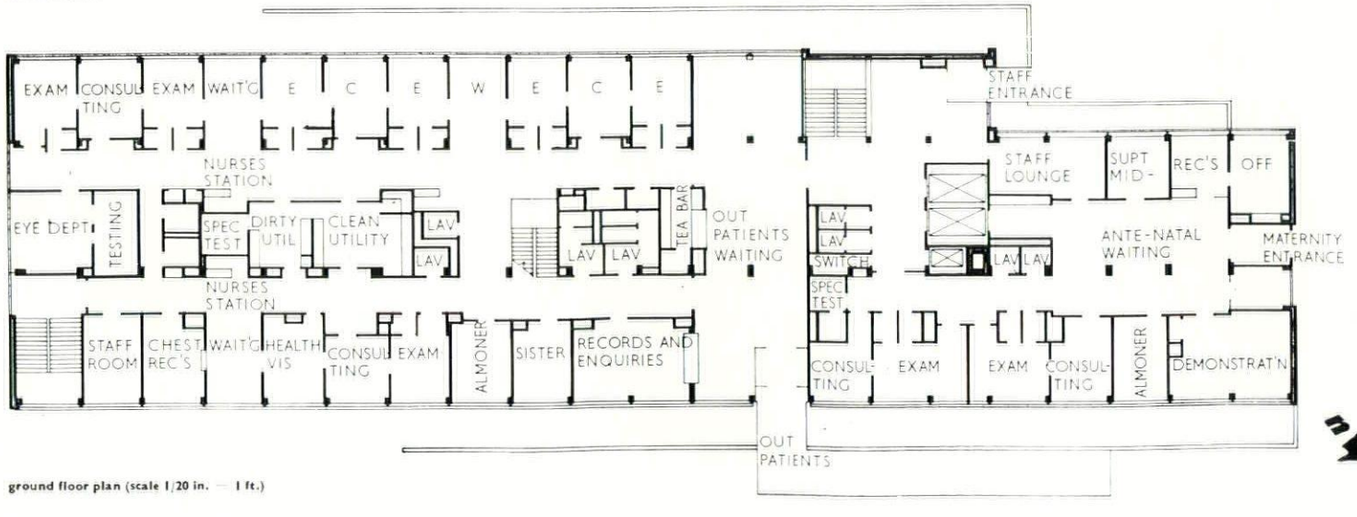
projecting staircase and lift hall will be the link with the remainder of the hospital still to be built.

The building has a reinforced concrete structural frame on a 10 ft. 6 in. grid with a single line of internal columns on the two upper floors and a double line on the lower. Floors, roofs and staircases are reinforced concrete. External walls, where not glazed, are hollow brick with glazed brick, flint-lime brick or mosaic facings. Windows are aluminium with either vertical sliding sashes or centre pivoted toplights, set in softwood frames.

The building was designed in collaboration with Richard Mellor, architect to the South-Western Metropolitan Regional Hospital Board. Associate partner, J. Penoyre. Architect in charge, A. R. Parry. Structural consultants, F. S. Snow and Partners. Services consultants, Donald Rudd and Partners. Quantity surveyors, E. R. Babbs and Sons.



first floor plan



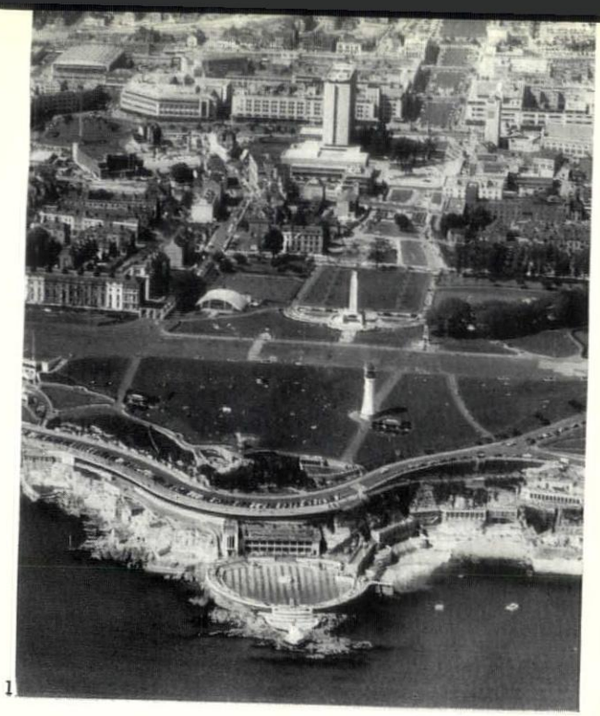
ground floor plan (scale 1/20 in. — 1 ft.)

Civic Centre, Plymouth

ARCHITECTS: JELLICOE, BALLANTYNE & COLERIDGE

The building is part of the civic layout planned in 1956 by the city architect, H. J. W. Stirling, when he introduced a pedestrian square on the line of Armada Way, the north-south axis terminating at the Hoe which had been laid down in the earlier Abercrombie plan. The square has been designed by G. A. Jellicoe and his partners as a garden. The new civic centre stands on its west side, facing the old Guildhall on the east side with St. Andrew's Church beyond. Also on the east side, still under construction, are new law-courts designed by the city architect.

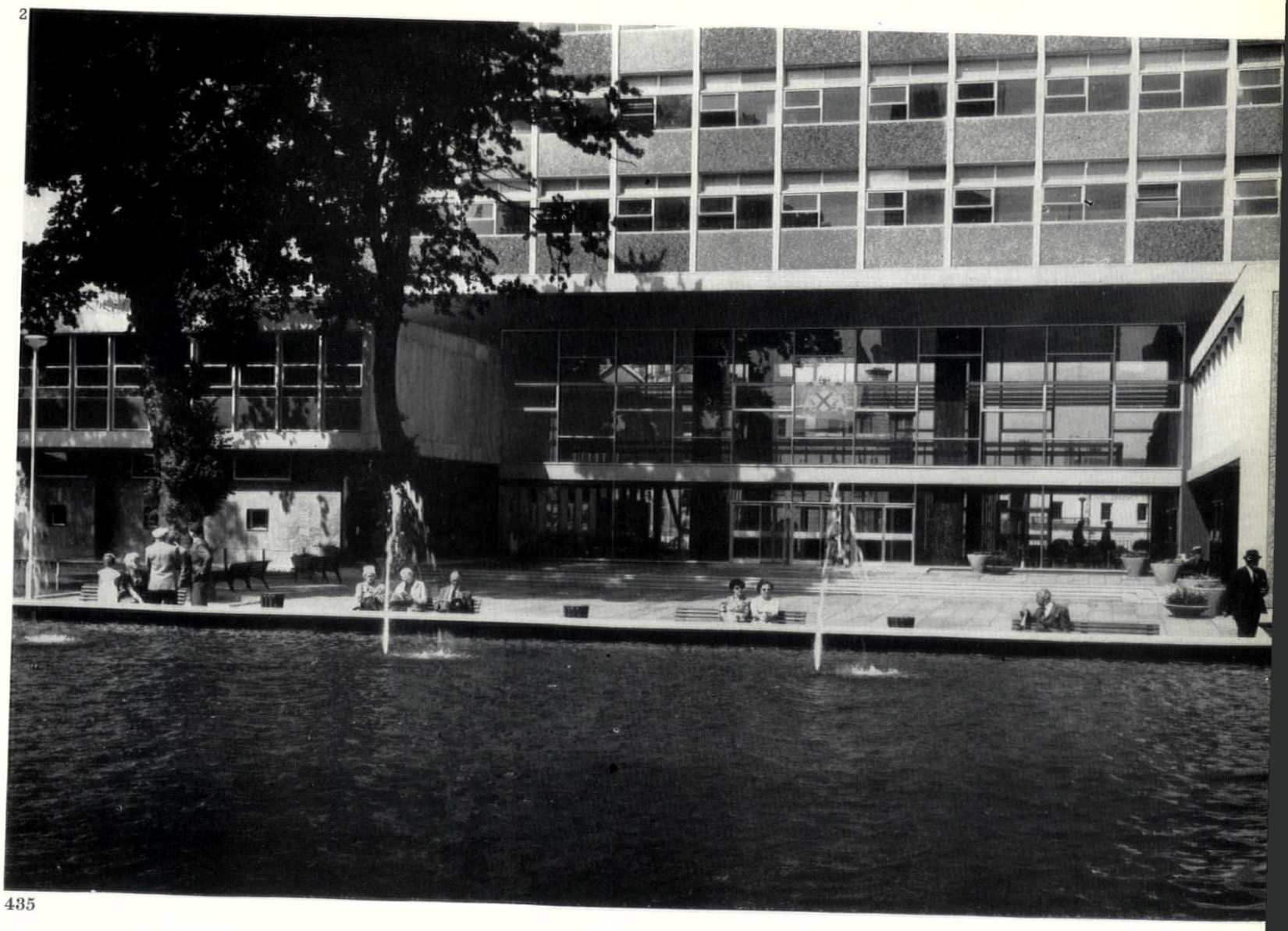
The civic centre consists of a fourteen-storey rectangular tower, containing council offices and a restaurant on the top floor, a two-storey range of offices surrounding the base of the tower (where there is an entrance hall with exhibition gallery over) enclosing a paved courtyard, and the council

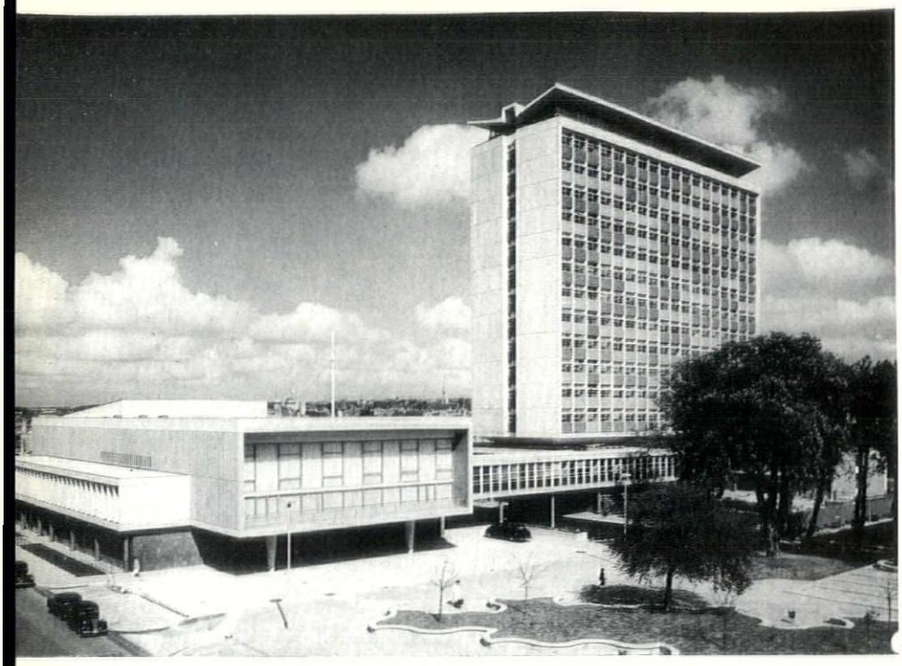


1

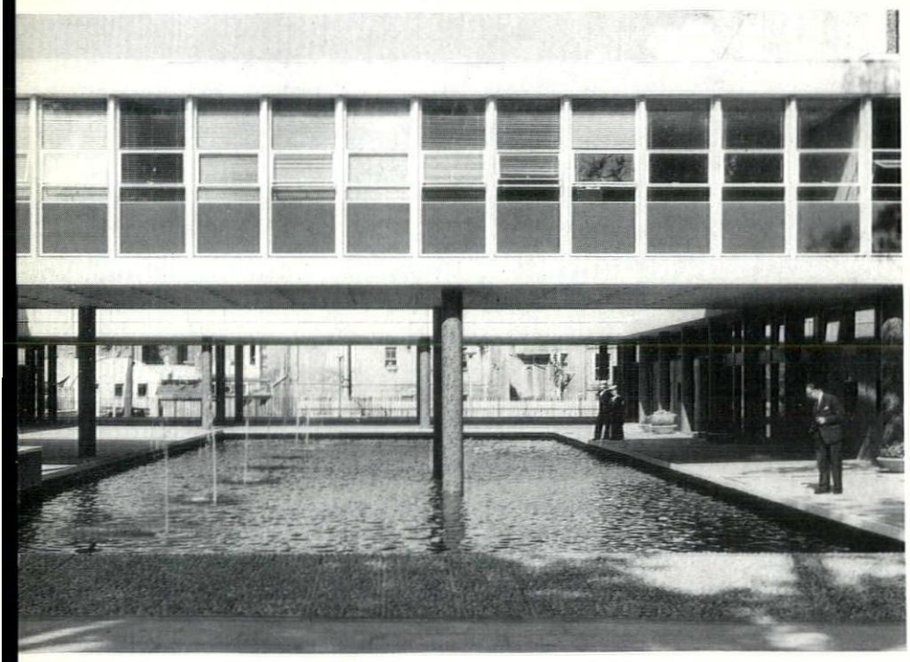
1, aerial view from above the Hoe, looking north up Armada Way to the civic centre. 2, the base of the tall block seen from the garden square.

2





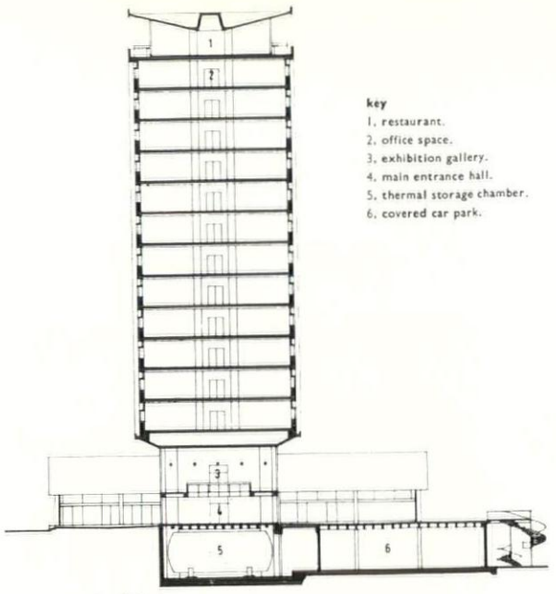
3



4



5



section through tall block



6

Civic Centre, Plymouth

3, from the south-east, with the council house on the left. 4, link between the tall block and the council house. 5, the entrance hall to the municipal offices. 6, looking east with the Guildhall and St. Andrew's church beyond the civic centre.

house at the south side of the two-storey block. The council house is also of two storeys and has members' rooms and committee rooms on the ground floor. On the first floor, reached by a ceremonial staircase surrounded by a glass screen, are the council chamber, a large reception room with balcony and the Lord Mayor's suite.

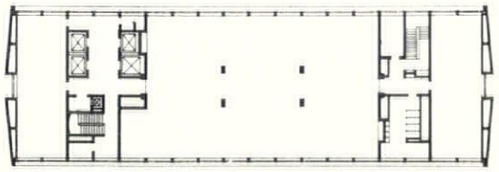
The north and south walls of the tall block, which are blank except for a vertical central strip of window, are faced with slabs of Cornish granite. The east and west faces have green granite panels between the rows of windows, varying in tone according to a geometrical pattern. The lower blocks are faced with riven slate on the ground floor. The circular columns through which the internal courtyard is reached are faced with red glass mosaic. The blank upper walls are faced with storey-height precast panels with an exposed aggregate of pink and grey Plymouth limestone. The precast columns are reconstructed Portland stone. Ground-floor windows have



7, *the members' lobby on the ground floor of the council house.*

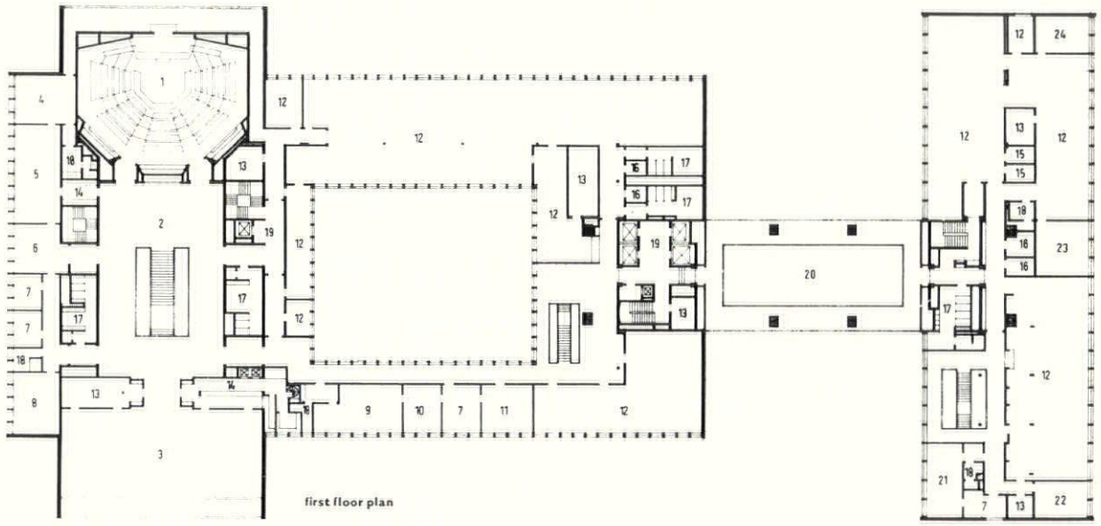
hardwood frames. First-floor windows in the council house are aluminium. Elsewhere they are steel.

Partner in charge, Alan Ballantyne. Associate, A. H. Hadley. Assistant architects, A. D. Lofts, Aileen Ballantyne, R. A. Meredith, T. W. Everton. Architectural assistants, R. E. Matthews, R. M. Boyes. Structural engineers, Ove Arup and Partners. Services engineers, Hoare, Lea and Partners. Quantity surveyors, H. S. Haughton and Partners.



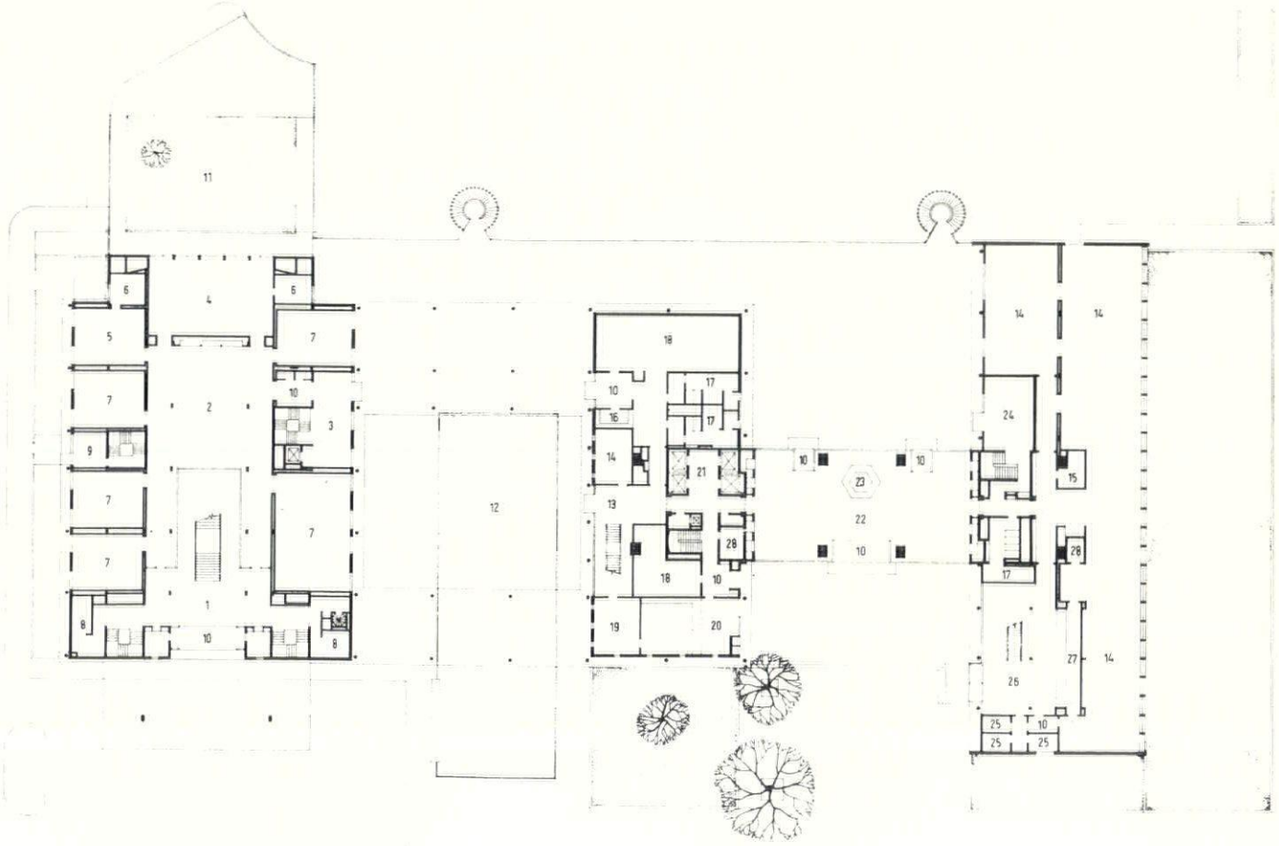
typical floor plan, tall block

key
1. council chamber.
2. foyer.
3. reception room and balcony.
4. lord mayor's private parlour.
5. lord mayor's official parlour.
6. ante room.
7. secretary.
8. lady mayoress.
9. town clerk.
10. law library.
11. deputy town clerk.
12. office space.
13. store.
14. servery.
15. interview room.
16. service room.
17. lavatory.
18. private lavatory.
19. lift hall.
20. exhibition gallery.
21. housing manager
22. deputy housing manager.
23. children's officer.
24. deputy children's officer.



first floor plan

key
1. entrance hall council house
2. members' lobby.
3. members' entrance hall.
4. members' room.
5. lady members' room.
6. writing room.
7. committee room.
8. cloakroom.
9. press and public entrance
10. lobby.
11. members' garden.
12. pool.
13. entrance hall to town clerk's office.
14. office space.
15. service room.
16. servery.
17. lavatory.
18. mail room.
19. telephone manual switchboard.
20. holiday information.
21. lift hall.
22. entrance hall.
23. information desk.
24. entrance hall to children's department.
25. interview room.
26. entrance hall to housing department.
27. rent counter.
28. store.



ground floor plan (scale $\frac{1}{64}$ in. = 1 ft.)

EXHIBITIONS

PAINTINGS AND PHOTOGRAPHS

It seems that English critics have been the slowest of all to recognize the genius of Kokoschka. It's not that we attacked him. Unlike the critics in his native land, we have never been virulently against him. Our offence is to have remained silent even when he made his home here and became a British subject. Worse still, if we spoke of him at all it was to give the false impression that he was connected with German Expressionism.

All the same, his friends in England have worked unremittingly on his behalf, and have somehow managed to make us believe that we treated him almost as badly as the French treated Van Gogh. One of the glossies has summed up the harrowing story: although 'a mere thousand pounds would have bought one of his pictures,' during the war he had to live 'in a cottage in Polperro, and his wife baked Austrian delicacies for their living.'

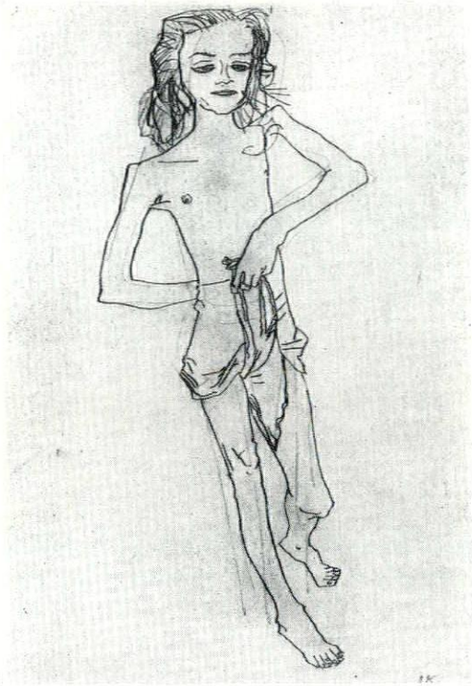
According to Meier-Graefe, even French critics 'without being paid for it' were calling him 'the greatest, the finest, the most imaginative painter' (full stop!) as long ago as 1931. One wonders who these Frenchmen were. There were no quotations from them among the encomiums reprinted in the catalogue of his seven-room retrospective at the Tate. This is a pity. It would have put the French in a particularly good light because Gombrich says that English tardiness is due to our being 'orientated towards Paris.'

Only one or two people 'in the know' realized that for several years the Arts Council has been labouring under a sense of shame, and that whilst putting on retrospectives of one notorious Parisian after another was straining every nerve to arrange a Kokoschka exhibition. 'Twice before an exhibition was planned,' says Gabriel White, 'but on both occasions it had to be abandoned . . . in order that the hardly tried owners should be allowed to enjoy their pictures, which were almost permanently on loan to major Kokoschka exhibitions in Europe and America.' The Arts Council, suffering the humiliation of being last in the queue, was paying dearly for the insensitivity of others.

But finally they brought about the most comprehensive of all the Kokoschka retrospectives. The opening day was the day of atonement, the day of total conversion, of utter enlightenment, the day the critics were writhing on the floor. Millbank became, as one English critic ecstatically remarked, the 'one true way,' and all who trod it shed their guilt and were made clean.

Well, nearly all. I'm still out in the dark, and very worried. It wouldn't be reasonable of me to suppose that all the other critics are wrong. They've evidently had a revelation that has passed me by.

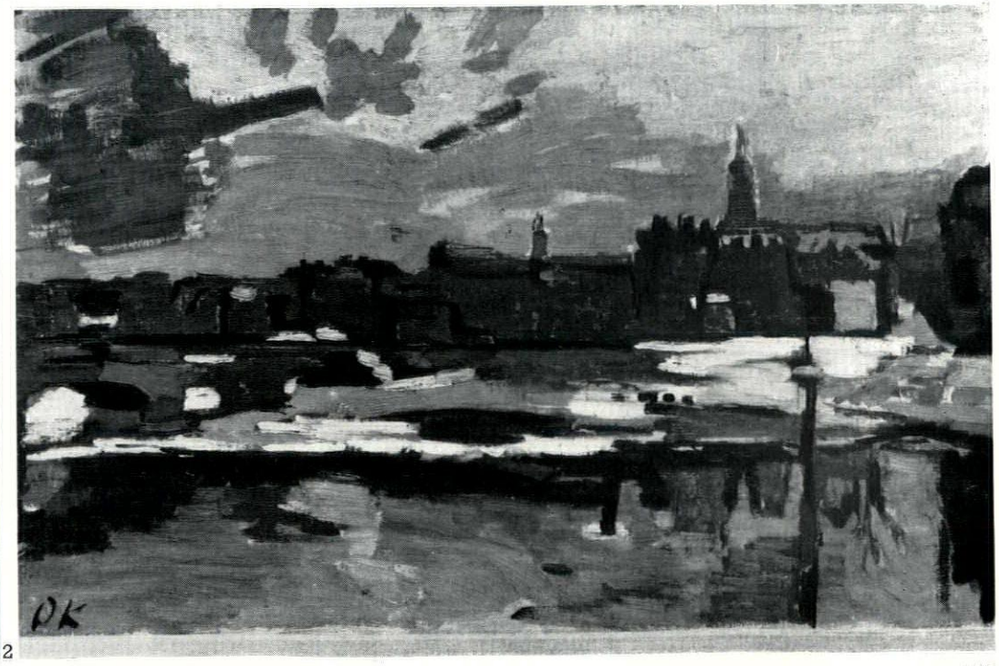
Perhaps I admire too much the early portrait for which Charles Clore paid £30,000 and which has been hanging in the Tate for some months past. It was in the first room of the retrospective, among several works which were almost its equals, and the atmosphere was electric with promise. No painter in our time has made a better beginning. But everything else seemed in one way or another tamer. Everything, that is, except a marvellous drawing of the same period called 'The Acrobat's Daughter,' 1, which has an unforgettable snatching quality in the line, as if it were by Klimt gone berserk.



1

One of the effects of 'revelation' mentioned by several critics was well described by the critic of *The New Statesman*. 'He has made us forget the art books, the movements and the influences, taking us back to the only thing that really matters: the painting on the wall.' I, and perhaps it's my loss, couldn't forget the art books and the movements for a single moment. The early portraits held the promise of a great contribution to the Expressionist movement. They had great linear force which sprang not from psychological insight but from an intense perception of living objects. In this period, but never again, his line encompassed in a miraculous way the different degrees of vitality in his sitters, as represented at one pole by the almost feverish intensity of his portrait of Herwarth Walden, where a sudden accent of red, stolen from Munch, becomes a blazoned symbol of the highly potent stuff he's made of, and at the other, the portrait of the Marquis of Montesquieu, looking like the brittle remains of a monstrous succulent, and the comic relic of a regime that deserved to die. I am sorry that the Arts Council couldn't provide photographs of these two works, for they disclose clearly enough Kokoschka's affinity with Munch and the German Expressionists.

After a meltingly pretty period in which



2

Kokoschka developed a painterly style and used appropriately over-sweet tones for the embellishment of compositions with religious themes that were characterized by a self-consciously naïve figuration, his affinity with the German Expressionists reappeared for a time after the first world war, when his work in a painterly style achieved great power and resonance. It is no accident that these works were painted during his five-year stay in Dresden, the home of *Die Brücke*, and not surprising that the broad areas of richly intense colour and the even saturation of the canvas in his splendid views of the Elbe, 2, can be attributed to an interest in the landscapes of Ernst Ludwig Kirchner, the leading painter in *Die Brücke*. There were also some notable paintings of the figure in the same period, among them the delight-



3

ful 'Girl with Flowers and Cat,' 3, but they lack the edge and definition given to the landscapes by the sharp, square-cut brush marks. All he needed now was some fusion of this feeling for broad areas of colour

4



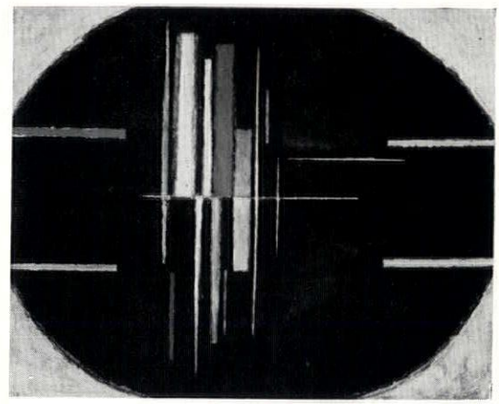
with his earlier sense of linear structure, for it seems to me that the early portraits and the works of the Dresden period are like separated lovers, and that if Kokoschka had striven to bring them together he might indeed have been among the elect.

Instead, he chose to become the grandiose topographer of cities, 4, a virtuoso of the messily sublime, a pettifogger of the slashing attack, an anti-colourist whose rainbows of niggling brush strokes turn colour into a monochromatic mince. These landscapes are like descriptive set-pieces in a huge cosmopolitan novel for middlebrows.

The really interesting thing about them is that under their spell the critics have revealed their hatred of the entire modern movement. In the light of this curious critical manifestation, something that Gombrich said in his introduction to the exhibition takes on a sinister significance. After somewhat unexpectedly using the word 'expressionism' to describe the work of Kokoschka's Dresden period, and contending, for some reason that quite escapes me, that he might at this point have become a surrealist, but instead became 'the unrivalled landscape painter of our age,' he remarks: 'It was the painter of these vigorous masterpieces to whom the insane label of "degenerate" was affixed by the Nazis.' I hope I am wrong, but there seems to be an implication here that others who were suppressed by the Nazis may have deserved the label. It nerves me to hint that since Kokoschka, single-handed, has succeeded in making even critics 'forget the art books and the movements' the Nazis might not have failed in their attempt to do precisely the same thing if they had been less wholesale in their suppressions. Certainly the post-Dresden townscapes of Kokoschka should not have been lumped with the art of Picasso, Matisse, Braque, Miro Kirchner, Beckmann, Nolde and so on.

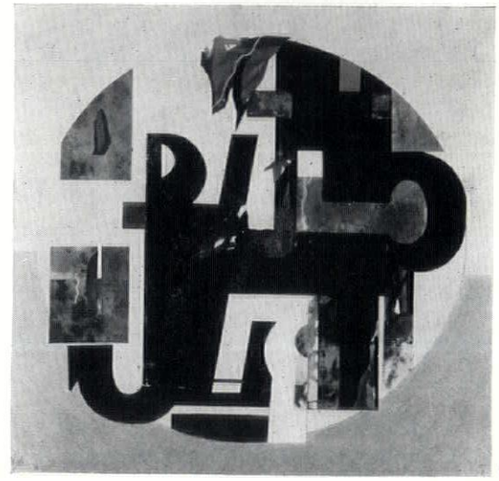
A painter doesn't turn reactionary because he admires Rembrandt or Velasquez or Tiepolo or Courbet, but because of a belief in the self-sufficiency of his own talent. Kokoschka hasn't been alone in yielding to the delicious feeling of being 'lonely in his greatness.' Munch, Derain and Chirico became reactionaries too.

But I begin to feel like those sans culottes, in novels about the French Revolution, who could sense an aristo even if he was wearing a tricolour shirt. Alan Reynolds, for instance, seems to me to be much more stubbornly a reactionary in his 'pure' abstractions than ever he was as a landscape painter. I still think that in the period when he was devoted to Samuel Palmer and Paul Klee he made a notable contribution to romantic landscape painting, but I notice that in the 'Statements by the Artist' included in J. P. Hodin's handsome monograph on his work, published by the Redfern Gallery to celebrate his latest exhibition, there is no mention of Palmer or Klee. He now calls the 'English Tradition' a provincial manifestation, but I think that if only for old time's sake he could have added Palmer's name to the sentence which begins 'There are, of course, some exceptional paintings by Girtin, Cox, Cozens, Blake. . . .' His latest exhibition of 'Structural Improvisations' is as handsome as the monograph, and the paintings in which the shapes are totally devoid of irregularities or references to his landscape style are the most successful, yet they have nothing to do with the intellectual climate in which geometrical abstraction becomes discovery. They are excellent examples of the craft of painting. They glow with subtle glazes and a justifiable pride in sound workmanship. But they leave one with the macabre impression that one has been looking at late Victorian Mondrians, 5.



5

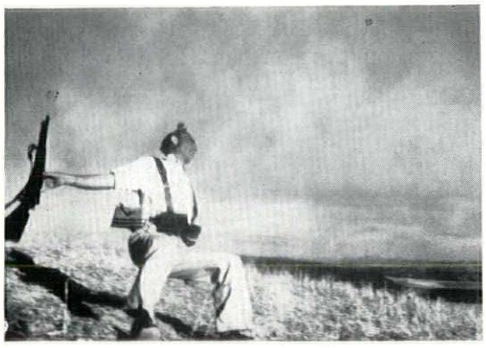
There's something of the fin-de-siècle aesthete about many of our artists; no roughing of the edges can hide the fundamental neatness and preciosity of Reynolds, and the same, I think, can be said of the collages of Keith Sutton. The mingling of fragmented brutalist display lettering with sharply closed off areas of tachiste texture his best collages, 6,



6

recently exhibited at the Hanover Gallery, produces a sharp-flavoured decoration, but all the pieces fit too patly together to surprise the eye and touch a nerve.

Surprisingly enough, neither did Robert Capa's famous war photographs do much to one's nervous system. One had anticipated that the big blow-ups on view at the American Embassy would give one the sensation of being out there with him, still standing up behind his camera when everyone else had dropped down. Even the most famous photograph of all, taken at the moment when a bullet went through a soldier's head in the Spanish Civil War, 7, is not sensational, although the sense of a deadly blow dealt from a distance grows on one. One sees little of the 'enemy' except when they are prisoners of war. There is none of the violence and passion of the hand-to-hand struggle, and the most moving photographs are of civilians.



7

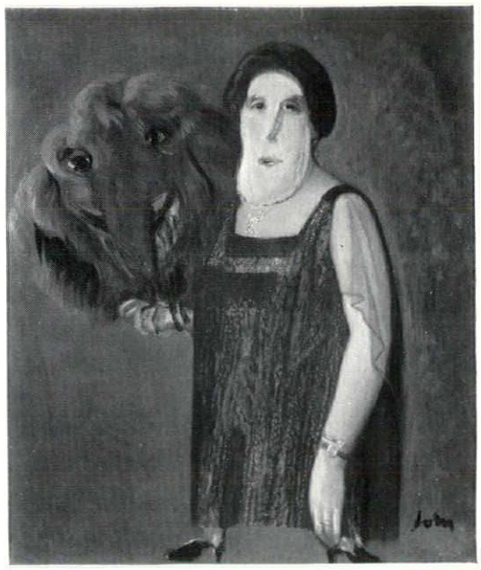
The most dramatic of all are the photographs of crying Italian women, and the most dreadful, the one that really sears the eyes, was taken in Paris. It's a shot of a young woman collaborator being marched along a street between rows of jeering spectators, with her head shaved. I can still scarcely believe that I've seen it, for she is carrying in her arms a naked child.

At Arthur Tooth & Sons' fifth exhibition in the series they call 'Recent Developments in Painting' there were elegant and typical works by Corneille, Francis, Millares, Michaux and Tapies and examples of Jenkins, Mathieu and Riopelle which hinted at change or presented less familiar aspects of their work. Frédéric Benrath, a young Frenchman whose work I've not seen before, was represented by one rather fearsome piece of surrealist abstraction, 8, which, along with Jorn's amusingly malevolent 'interpretation' of an academic half-length society portrait, tended to curdle the atmosphere of refined and elegant meandering. Jorn has left the dress and the arm of the portrait as they were originally painted, but has added feet to turn the woman into a dwarf. He has repainted the face, but, by leaving the eyes as they were, creates a particularly cruel dissonance. He has given the ostrich-feather fan the face of a bird or of a beady-eyed old man. He calls it 'La Dolce Vita,' 9.

Robert Melville



8



9

TOWNSCAPE

VENICE IN DANGER

'It is the task of civilized men to defend urban landscape, above all in towns where their fathers for centuries have created the unmistakable face of the work of art. "Italia Nostra" sends an appeal to all, throughout the world, who care for the future of Venice, now seriously menaced in her aesthetic integrity.'

These alarming words are the introduction to a pamphlet distributed by Italia Nostra (an association which exists to protect the Italian landscape) before the association arranged an exhibition in the hall of Palazzo Ducale at the end of last year*. The exhibition showed all the atrocities perpetrated in Venice over the past century; the gradual destruction of public green areas; additions of new storeys to existing buildings; the new island of Sacca Fisola built with the typical features of a mainland village; and the new pseudo-modern buildings.

Whilst Sansovino in the 'golden age' of the city counted over 500 public gardens, now there may be perhaps half a square yard per head of population when the minimum requirement is thought to be six square yards. Astonishing numbers of storeys have been added to existing houses, and these are nothing but excrescences built for the sole advantage of the speculator. When one comes to consider recent building, one is forced to the conclusion that nothing worth while has been erected since the fall of the

*The exhibition is comming later this month to London. It will be shown at the RIBA from Dec. 11th to Jan. 6th.

1, *since the construction of the motorway bridge under Mussolini's dictatorship, in Venice, as elsewhere, the car has become the beloved symbol of economic progress. Its further infiltration into the city would be devastating.*

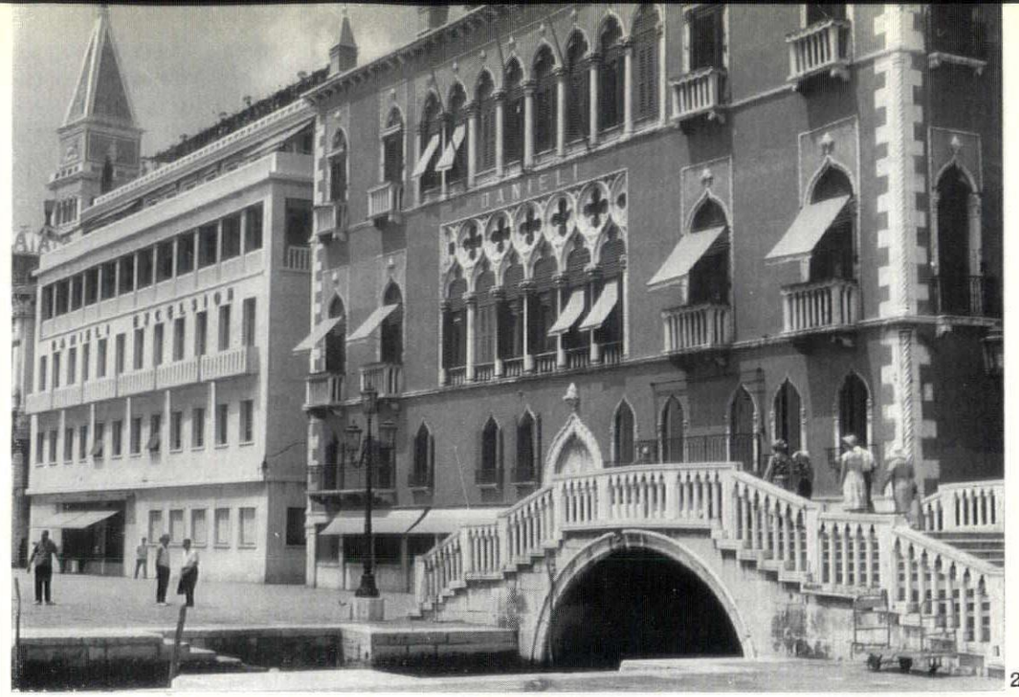


Republic at the hands of Napoleon in 1797; indeed in looking at what has been built recently, one is attacked by pangs of distaste so that on reading in the pamphlet the discouraging sentence: 'In the preservation of Venice's unique local characteristics, historic and ancient buildings must have absolute priority over any innovation or modification made to the town' one feels inclined to sympathize. But when one looks at the Fondaco Dei Turchi, a preservers' restoration, one would have preferred to let it sink in the Grand Canal.

Who is to be held responsible for this architectural degradation? Mr. James Morris in his book, *Venice*, pointed out how the city declined from power to luxury, from luxury to flippancy, from flippancy to impotence; till Napoleon swept it aside and then, after a period of Austrian domination, it was given by Bismarck to Italy in 1866. Today the Venetians have still not forgotten their history and their splendid isolation. Their union with the Italian State was in some ways only of a nominal character, and the sense of detachment which once contributed to their greatness, now, by only bolstering their complacency, has allowed them almost to ruin the face of their city.

When Frank Lloyd Wright produced his plan for an architectural students' hostel the city divided into two parties and the opposition party prevailed. (Even Hemingway, while hunting lions, cabled 'A fire is better for Venice'). Probably not everyone knows that Wright's proposed building, which had details sensitively drawn from the Venetian tradition, was to make but a humble appearance on the Grand Canal, at the side of a much taller palace. A green creeper was to cover a great part of the façade and Wright himself was prepared to alter the plan in order to satisfy the city commission.

The then Mayor of Venice, one of the leaders of the opposition, said to me, 'We have saved Venice.' But they failed to save Venice from unknown local architects who, hired by the revitalized 'Industria Alberghiera,' placed three abominable box-like hotels in the most prominent places: the Danielino by the Doge's Palace, the Bauer Grunwald by the Church of St. Moise and, recently, the Park Hotel in the Papadopoli Gardens. One can understand how architecture free from any formula and even rebelling against the plumb-line can mislead 'ortodossi' and 'eretici,' but anybody endowed with the blessing of sight can see how these three buildings violate the Venetian scene. No hint can be perceived in them of that drive towards the sky which everywhere gives evidence of the fact that Venice sprang from the sea like Venus. They do not crave for



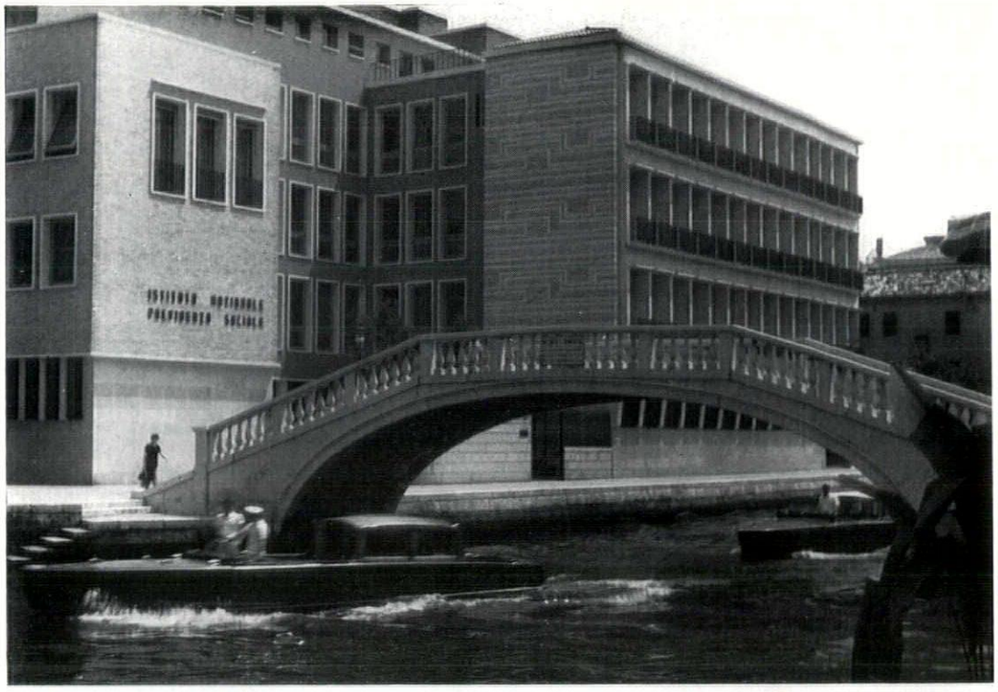
2


3

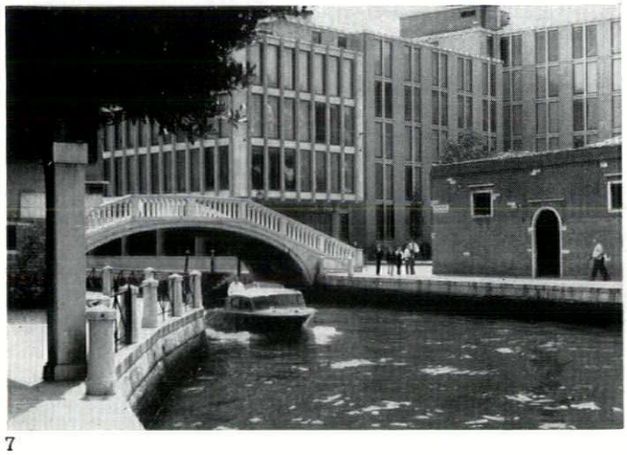

4


5

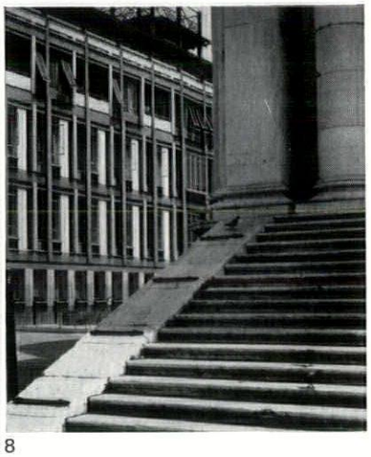
New buildings in Venice. 2, the 'Danielino', erected almost alongside the Doge's Palace as an extension of the Danieli Hotel. The intrusive effect of the new building in contrast to the old needs no emphasis. In spite of what modern techniques could have done to equal the delicacy of old Venetian architecture a ponderous dull, flat marble surface is all that has been achieved in the Bauer Grunwald Hotel, 3, for which the Town Council obtained a special demolition order but gave it up in exchange for a worthless tenement to be built at the expense of the owner of the hotel, a tenement which contributed to spoil another district of the city. The Park Hotel, 4, erected in the Papadopoli public gardens, clogs with its clumsy shape and outline the whole movement of the canal. The pseudo-modern look of the new houses, 5, in Rio Nuovo by the Piazzale Roma, may be attributed to the preservationist's opposition to a true modern architecture.



6

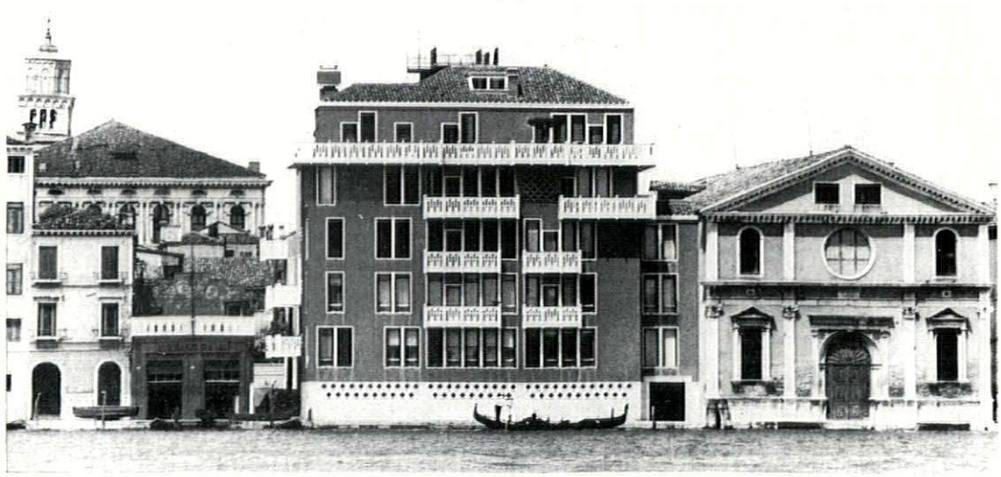


7



8

6, another dull and unworthy addition to Venetian architecture: a recent building in the Rio Nivoro. 7, the SADE offices in the Rio Nuovo, one of the very few new buildings in Venice representative of our time and one of the first to make large use of glass panels in a vertica rhythm proper to the Venetian tradition. What has not been understood in Venice is that buildings of any style or date can retain their full character if flanked, fronted or backed by the neutrality of twentieth-century glass architecture but not by weak competitive imitations. Glass also acts as an additional reflecting surface, which enhances the existing architecture and increases the effect of transparency produced by the water. Predominance of voids over solids is the essence of Venetian architecture. This house, 8, by Professor G. Samonà, Dean of the School of Architecture in the University of Venice, alongside the Church of St. Simeone Piccolo, shows that modern architecture can find its place in Venice as successfully as anywhere else. The treatment of the facade with its subtle chiaroscuro network and the verticals of the decorative window panels belong to the 1960's as well as to the Venetian tradition. Even a compromise between the old and the new can also find a place in the Venetian scene if sensitively drawn like this house, 9, on the Zattere by I. Gardella, which recalls the graceful asymmetry of early Venetian architecture.



9

'mirroring water' as most of the Venetian palaces do; they just lie ungracefully and loosely on the ground.

The right place for them would be within that supreme example of bad planning, the inland appendix of Venice called Mestre, centre of the industrial area which the town-planners are trying to link effectively to the historic centre. Only recently the region round Venice has been undergoing the industrial revolution which has revitalized the North of Italy. Perhaps in earlier times an efficiently equipped capital was not necessary for an agricultural region, but now the need for a plan has become urgent, in order to give the city adequate facilities for tourists as well as control of the industrial area.

A national competition was held in 1956 by the town council to sponsor entries for a new planning scheme for Venice. The winners of the first prize presented the town-planning committee with a plan which roughly coincided with the committee's own views but has since aroused much criticism and discussion, especially as to whether the 'business centre' should be placed between Venice and the industrial area or at the beginning of Venice herself. But the major cause of controversy is the problem of linking the two areas with fast means of transport. Venice, including the constellation of satellite islands, has always been a highly articulated and differentiated organization, where different functions had different locations: glass works in Murano, lace in Burano, lagoon fishing in Pallestrina, sea fishing in Chioggia, agriculture in Mazzorbo, heavy industries in Mestre and Marghera, tourist bathing at the lido, thus anticipating some aspects of the modern city. Therefore it would seem more sensible to have the business centre at a focal point between Venice and the industrial area, in continuous growth, and let Venice become something like a residential quarter of the new metropolis, dedicated to artistic, cultural and scientific life. But the town council still seems in favour of keeping the business centre in the old town and increasing the parking facilities. At the bottom of this there is the thought that it could be very difficult to link the historic centre thoroughly to the hinterland in which case old Venice would not survive 'museumisation.' (One must consider the fact thate very year no fewer than 3,000 Venetians leave the city for more convenient residences.)

Whatever the decision is, Venice's whole environment is at stake. Now every project or alteration has to be authorized by the *Sovrintendenza Ai Monumenti* acting on behalf of the Fine Arts Commission of the Ministry of Education in Rome. It is

absolutely necessary that there should be a body with different interests and more vision than the people at the town hall, to safeguard the city in this moment of great change and to provide her with modern buildings qualified to stand on the soil of the Serenissima. The accompanying illustrations show the sort of new building Venice is being burdened with under the present regime.

Manfredo Bellati

HISTORY

'THOSE GREAT COOPS'

Pigeon towers are a notable feature of the Persian landscape. In the area round Isfahan alone there were once over three thousand, many of which survive, some still being used for their original purpose, that of collecting dung. Dozens may be seen together, like enormous chessmen diminishing away into the distance. The following account of them is taken from Sir John Chardin's *Travels in Persia*, published in 1720.

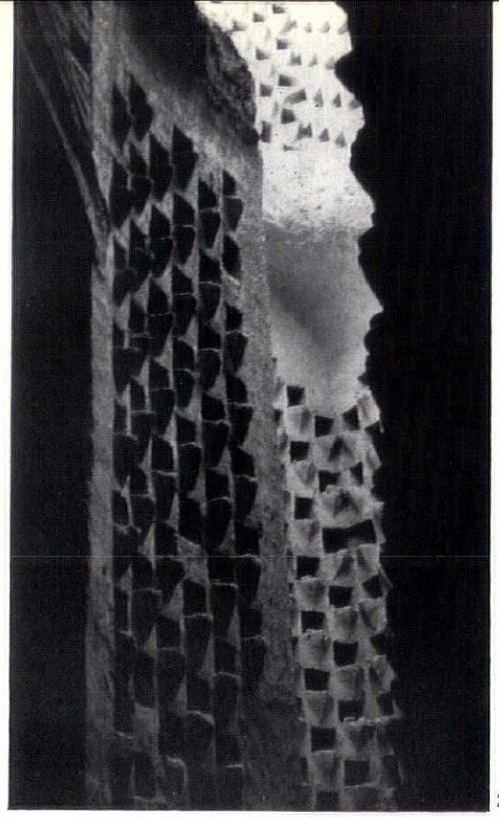
Tame and wild Pidgeons are to be found in all Parts, but the wild ones are in greater Plenty; yet they breed abundance of Pidgeons all over the Kingdom, upon the account of their Dung, which is the best for Melons. I don't think there are any finer Dove-Cots in any part of the World. . . . Those great Coops are six times as big as the biggest we have; they are built with Brick overlaid with Plaister and Lime, full within of Holes for the Pidgeons to breed in. All may build them that will, except those Inhabitants who are of a different Religion from the Natives, there being no Clause to exclude them from that Privilege, 'tis but paying the Dung Tax. They reckon above three thousand Pidgeon-Houses about Isfahan, all built for the sake of the Dung, more than for the sake of the breed of the Pidgeons, as I have observ'd. They call it Tehalgous, i.e. enlivening: It is sold a Bisty, or fourpence, the twelve pound Weight, on which the King lays a small Tax. One of the best Sports the Rabble can have, is to catch Pidgeons in the Country, and in the Cities also, tho' 'tis forbidden. They take the wild Pidgeons by means of the tame ones, which are bred up for that purpose, and which they cause to fly all the day-long after the wild ones; and all those they meet with they take in amongst them in their own Flock, and carry them to the Dove-Coat.

Sometimes tame Pidgeons bring away likewise other tame Pidgeons from their Dove-Coats; so that all of a sudden a Pidgeon-House happens to be gutted and clear'd: No Satisfaction must be expected in that case; the Pidgeon that flies in to a strange Pidgeon-House, is accounted a wild Pidgeon. Those Pidgeon-Hunters are called Kester-baze, and Kester perron, i.e. Deceivers and Stealers of Pidgeons. Those words, in a moral Sense, are scandalous, denoting an idle Fellow, and a Pickpocket: Truly the Pidgeon-Stealers spend whole days at that Trade, and are not diverted from it by the severity of the Winter-Season.

These Persian pigeon-towers are on an average about 40 ft. high. The pigeons enter generally through perforated pinnacles. The entrance door is blocked with mud bricks, and is only opened once a year for taking out the manure. Many now have wide vertical fissures, 1, which peasants attribute to the sudden appearance of a snake, causing all the pigeons to start up at once, the vibrations from the whirring of their wings splitting the walls open. When the plaster rendering falls off, the mud bricks weather away like snowmen in a slow thaw.

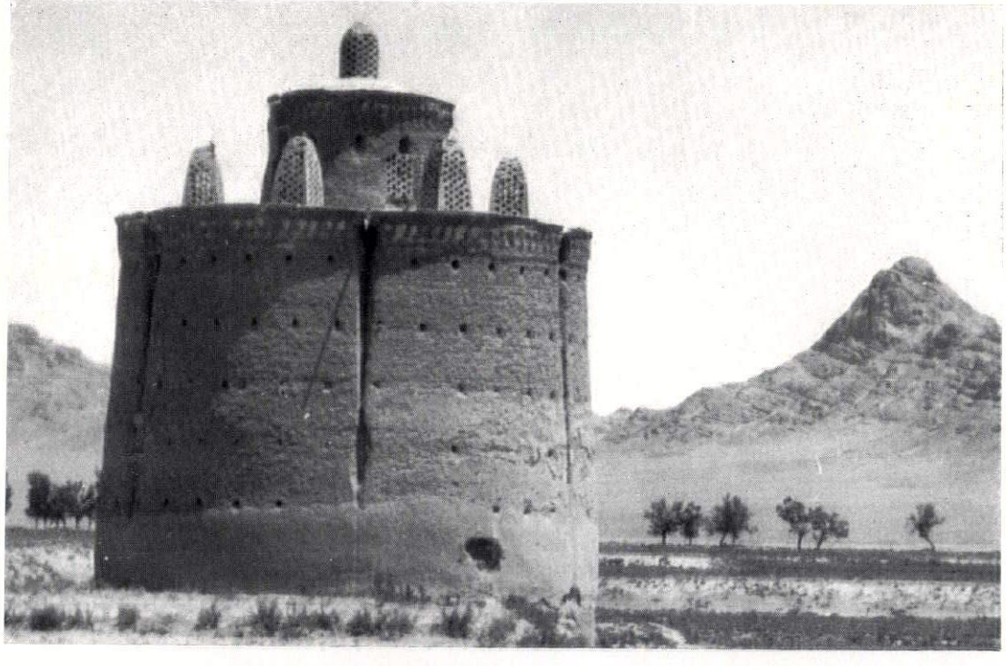
The form is generally based on two concentric cylinders, the central one carried up higher than the outer. All interior surfaces are indented with roosting niches, 2. In some instances, as in the case of the magnificent seventeenth-century tower on the immediate southern outskirts of Isfahan, 3, the outer cylinder is quatrefoil on plan. This provides greater wall area for niches and also greater stability. The niches are set out with great geometrical precision and the interiors, not intended to be seen, often show a magnificent intuitive handling of space.

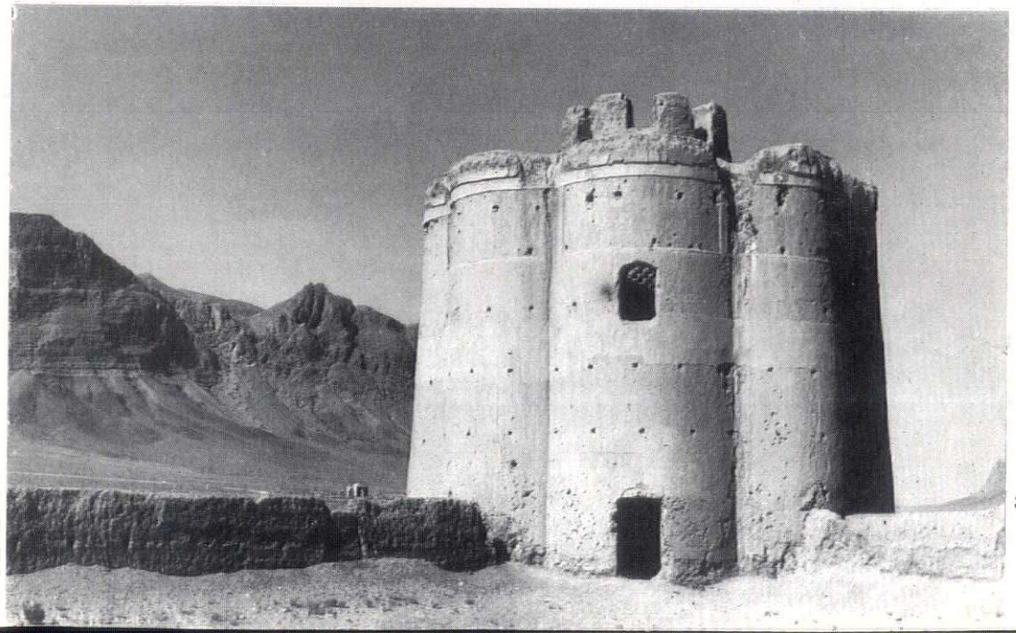
Edmund Wilford



2

1





3

SKILL

FIRE PROTECTION
2, FIRE EXTINGUISHING EQUIPMENT

This is the second article by Clement Shepherd on the fire protection of buildings. In last month's article he considered the various built-in methods of locating a fire and giving the alarm. In this article he considers the means available to extinguish the fire. These can be automatic devices such as sprinklers, or hand operated equipment located strategically for immediate preventive use.

This section deals with fire extinguishing equipment which is in some way incorporated into the fabric of the building. The extinguishing agent used in the system will vary according to the nature of the fire to be quenched. Table 1 gives three categories of fire and the agents most suitable:

Table 1

Ordinary carbonaceous materials	*Flammable liquids*	*Live electrical equipment*
Water	Water (from special spray systems)	Carbon dioxide
	Foam	Dry powder
	Carbon dioxide	Carbon tetrachloride
	Dry powder	Chlorobromomethane
	Carbon tetrachloride	
	Chlorobromomethane	
	Steam	
	Nitrogen	
	Exhaust gas	

Water

Fixed equipment which uses water as the extinguishing agent is the most common installation and may be divided into four groups: (1) hose reels, (2) hydrant systems, (3) automatic sprinkler systems, (4) drencher systems.

Hose reels: Hose reels (which may be used by unskilled persons) consist of a length of non-kinking rubber tubing with a nozzle attached being wound on a reel and permanently connected to the water supply.

Size: The hose should be between $\frac{3}{4}$ in. and $1\frac{1}{4}$ in. internal diameter and not more than 75 ft. in length (reinforced hose 120 ft. long). The nozzle is usually $\frac{3}{16}$ in. or $\frac{1}{4}$ in. bore.

Distribution: Hose reels are best placed near room exits or staircase landings and arranged so that no part of the building is more than 20 ft. away from the nozzle at full extension. Consideration in this calculation should be given to obstructions (partitions, etc.).

Water supply: The water supply should be a minimum flow of 5 gallons per minute.

Hydrant systems: Hydrant outlets are necessary in tall buildings or buildings with large floor areas in order to provide the fire brigade with an easily accessible water supply. The system may be divided into two distinct types: (1) wet rising mains or wet risers, (2) dry risers.

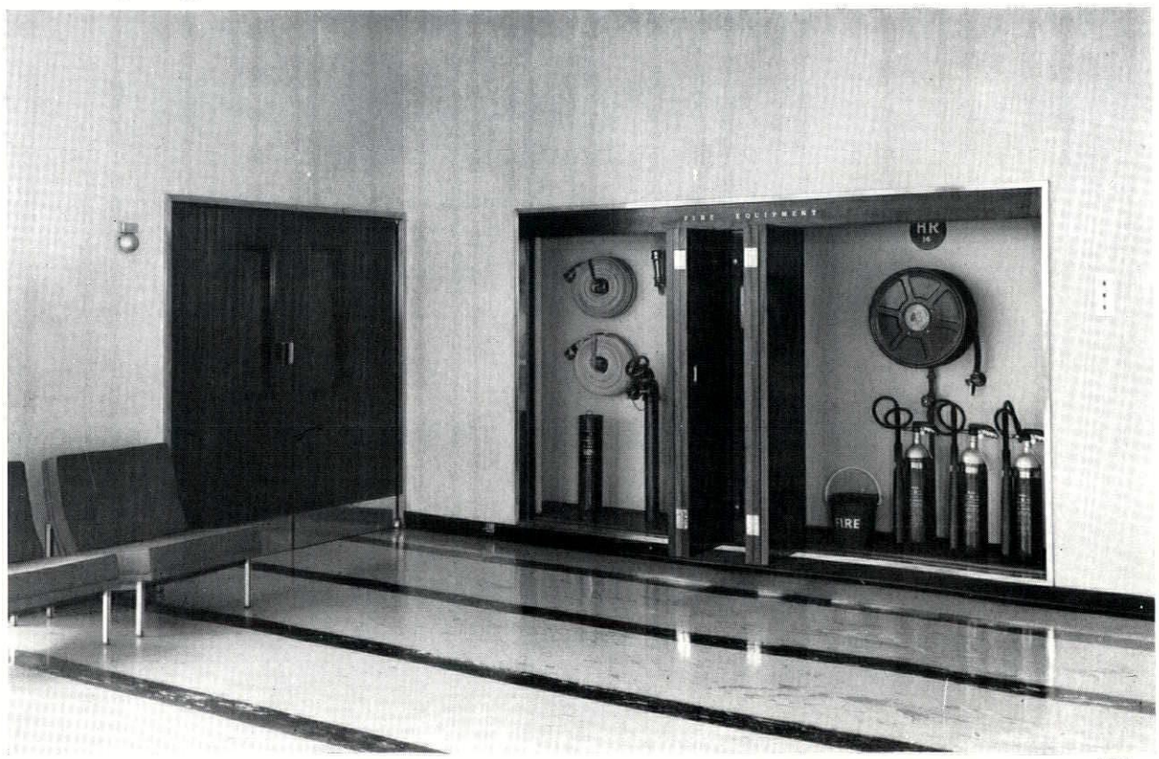
With type (1) the pipework is connected to the water mains and constantly charged with water.

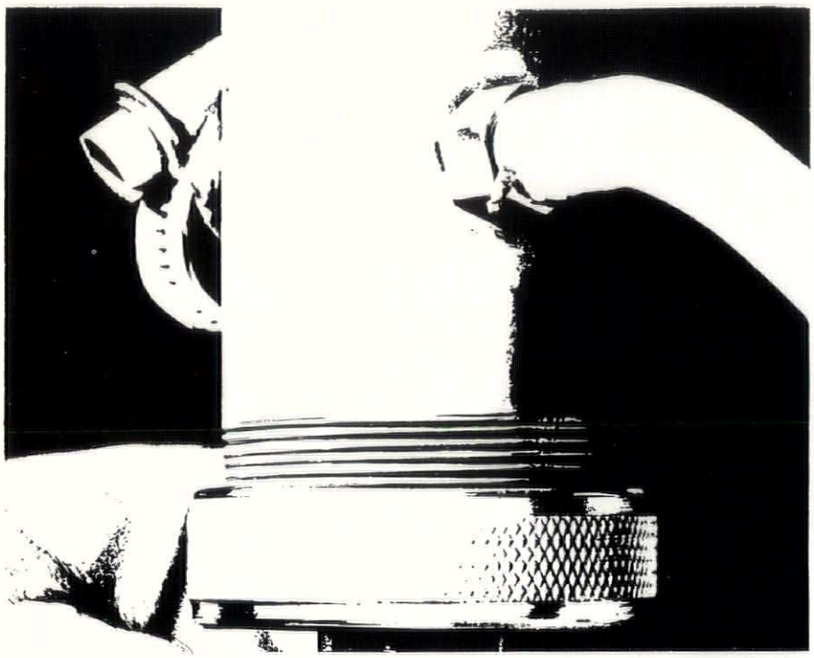
Type (2) is unconnected but has couplings at ground level to which the fire brigade may connect their pumps. Dry risers are used where the pressure in the town's mains is insufficient to give a useful head of water at the highest hydrant outlet or where the pipework is unprotected from frost. They should only be used in buildings less than 200 ft. high and in areas where adequate pumping appliances are easily available.

Size: Outlets should be a $2\frac{1}{2}$ in. gauge instantaneous pattern conforming to British Standard 336 : 1954 and positioned 3 ft. to

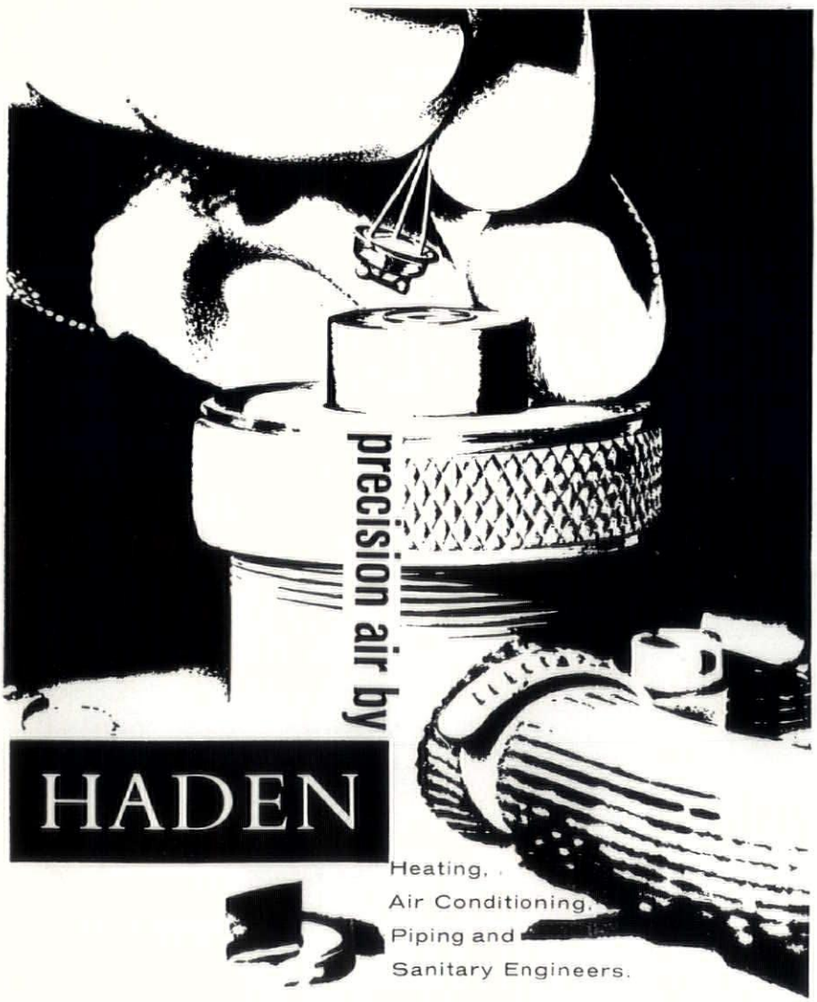
[continued on page 446

1, fire equipment cabinet in the entrance hall to the CAV laboratories, Acton. In the left compartment a hydrant point is located with its attendant hoses and nozzle. In the right can be seen the 'first aid' hose reel. The hand appliance in the left compartment is an asbestos blanket and in the right are a sand bucket and CO_2 hand appliances.





TRANSISTORS are TOUCHY ABOUT AIR



but only during manufacture. Transistors, the tiny, versatile newcomers that are revolutionizing the Radio and Electronics industries, must be made under very precise conditions. Once made, they put up with anything. Basically they consist of a crystal of Germanium or Silicon in a highly purified form (less than one part in 100 million of impurity) which is artificially 'contaminated' with a minute amount of another substance, under strictly controlled conditions. This is where Haden come in with 'Precision Air'. A transistor shop is air conditioned by Haden to very precise limits of Temperature, Humidity and Filtration. And just how precise is 'Precision Air'? It very much depends on what you do and what you need, and Haden technical people can give you advice on this too. But if you need, say, Temperature maintained to an accuracy of 0·1°C, Humidity varying only 5%, and Filtration at better than 98% of particles 5 microns in diameter; if you need air of this order of precision, then Haden have supplied it, and can do it for you.

precision air by

HADEN

Heating,
Air Conditioning,
Piping and
Sanitary Engineers.

G. N. HADEN & SONS LIMITED, 7/12 TAVISTOCK SQUARE, LONDON, W.C.1. Branches throughout the U.K; also in Africa, Middle East and Far East.



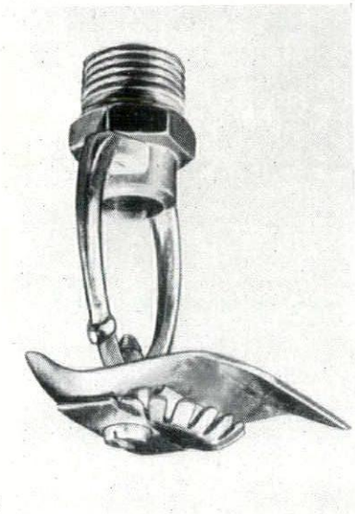
2



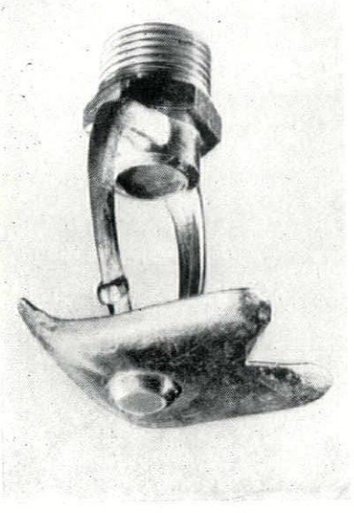
3

2, Grinnell *Quartzoid Bulb Sprinkler head by Mather and Platt.* 3, D *type* Grinnell *Sprinkler head with masking ring by Mather and Platt.*

4, 5, *drencher heads by Matthew Hall.*



4



5

continued from page 444]

3 ft. 6 in. above finished floor. The rising main itself should be not less than 4 in. bore and as free of bends as possible (with two outlets at each floor or in a building more than 150 ft. high the main would be a 6 in. bore). Two outlets may be taken off each riser at each floor.

Distribution: At each floor level (and where necessary on the roof) hydrants should be placed so that (1) all parts of the building are within reach of a jet from a nozzle fitted to a single length of hose and (2) no part of the building is more than 125 ft. from an outlet. (At a hydrant pressure of 30 lb./sq. in. the throw of a jet from a $\frac{3}{4}$ in. nozzle fitted to 75 ft. of hose is 65 ft.) Rising mains must be easily reached in case of fire and are usually placed on staircase landings. Inlets to a dry riser are normally housed in a glass fronted box on an external wall or in a special box below pavement level. Clear identification is necessary.

Water supply: 30 lb./sq. in. pressure of water at each hydrant (supplying a $\frac{3}{4}$ in. nozzle). 50 lb./sq. in. where the outlet is over 80 ft. A booster pump may be used where mains pressure is insufficient (if this is electrically operated it is advisable to have a duplicate pump driven by other means to safeguard against electricity power failure). Above 200 ft. the pressure of water obtained by the use of pumps near ground level is not normally sufficient. In this case storage tanks and automatic pumps on upper floors may be necessary.

Automatic sprinkler systems: The complete floor area of a building may be protected by a sprinkler installation consisting of a network of pipes with outlets at calculated intervals controlled by sprinkler heads. The sprinkler head contains a heat-sensitive element (usually a soldered strut or a frangible glass bulb containing an expansible liquid), which on actuation releases a valve and allows water to flow. A deflector head ensures uniform distribution of water spray. Immediately a sprinkler head opens a warning bell is automatically sounded. Should the system be exposed to frost it is possible to charge the pipes with air under pressure during winter months. In this case water only flows to the heads when there is a drop in air pressure, which occurs when a sprinkler head opens.

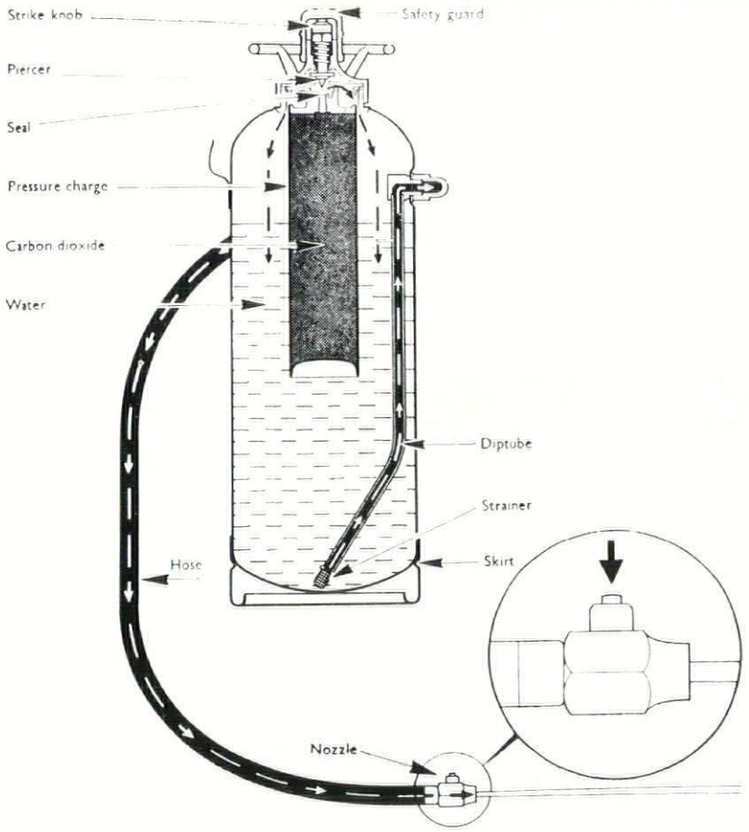
Distribution: It is advisable that every part of a building in which a sprinkler system is installed should have protection. Obstruction of the heads (by stored goods, partitions, etc.) must be avoided. Enclosed spaces formed by suspended ceilings, hoists, ducts, etc., should also be protected.

Water supply: An unlimited supply of water is required (usually the town's mains) capable of producing a pressure of 5 lb./sq. in. (minimum) at the highest sprinkler head when the 2 in. drain and test valve is open. If an automatic pump is used the running pressure at the highest sprinkler should be 25 lb./sq. in.

Maintenance: The system should be tested weekly to ensure the alarm is in working order. The water supply should be tested every three months by means of the 2 in. drain and test valve.

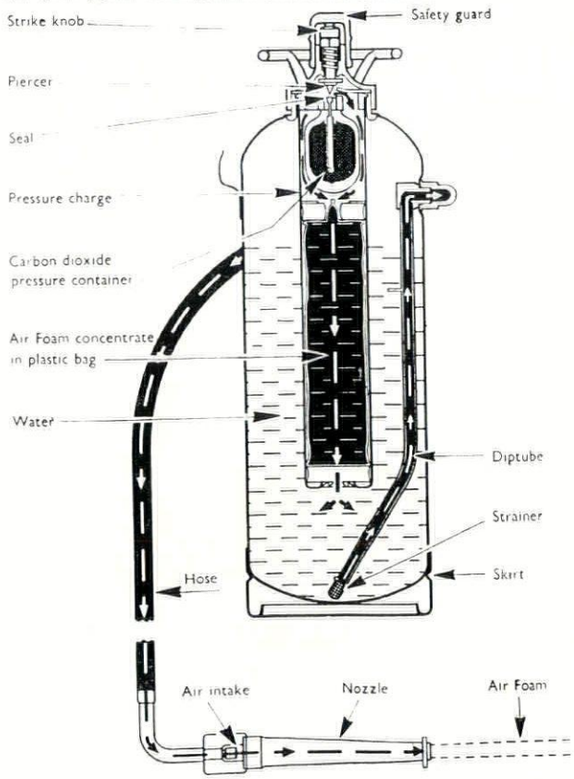
Drencher systems: The drencher system is designed to prevent fire spread between adjacent buildings as a result of radiation or flying brands. It consists of piping to convey the water, drencher heads (similar to sprinkler heads) with special de-

[continued on page 448



6, *diagram of gas pressure type water hand appliance.*

7, *diagram of foam hand appliance (mechanical operation).*

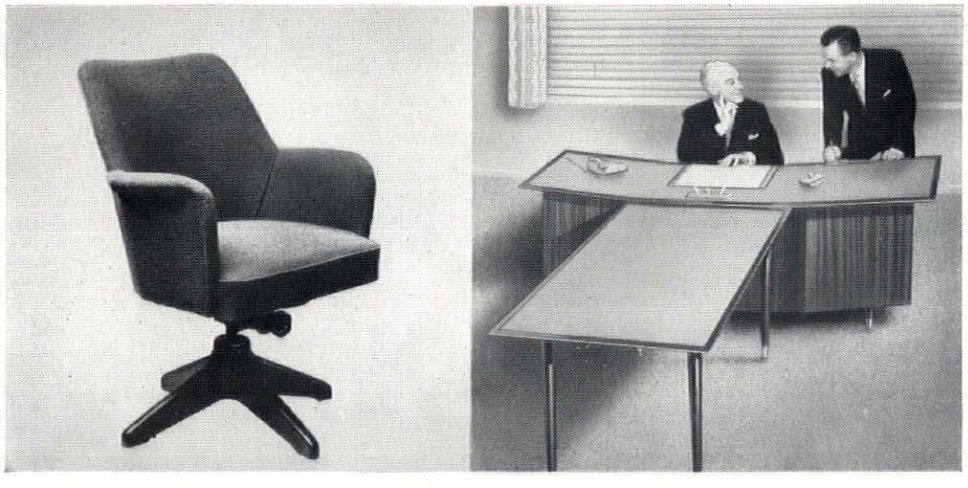




970 EXECUTIVE DESK
in sapele mahogany 7ft x 3ft with shaped inlaid Vynide top and twin pedestals arranged at an angle for easy use of drawers. The bottom drawers take foolscap suspended filing



S.P. 945 TABLE
to match the extension table, can be used for meetings, and then be moved away when not required. 6 ft x 3 ft. Also available with boat-shaped top.



PL 12 REVOLVE AND TILT CHAIR
Ideally suited for the executive desk. Covered in leathercloth or moquette with polished hardwood frame. Also available PL13 Tub chair and PL14 semi-tub en suite.

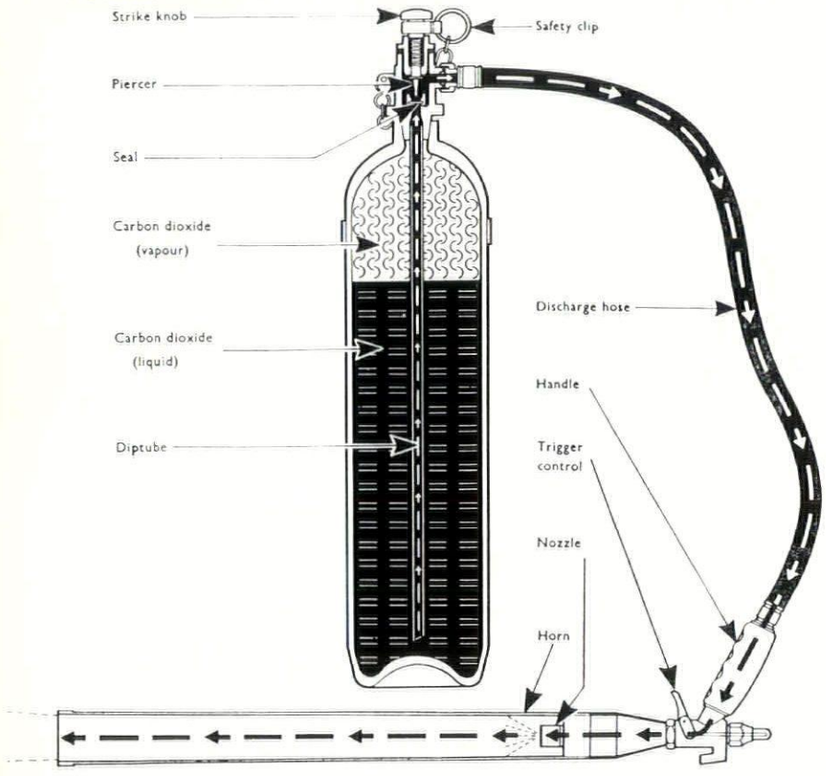
'I pick ESAVIAN furniture every time'

Top executives take naturally to ESAVIAN furniture because it's exactly right for their needs. Superbly constructed, unpretentious, impressive, quietly creating a harmonious atmosphere of confidence, comfort and efficiency for staff and visitors alike.

ESAVIAN offer a complete range of office furniture as well as a comprehensive floor-to-ceiling furnishing service. Have your secretary phone or write TODAY for full details of Esavian's contract furnishing.

ESAVIAN *quality-built furniture and contract furnishing service*

Esavian Limited, Esavian Works, Stevenage, Herts. Stevenage 500
London Showroom: 185 Tottenham Court Road, London W.1. Langham 3436
Birmingham Showroom: Charles Street, West Bromwich. Tipton 1631
Glasgow Showroom: 101 Wellington Street, Glasgow C.2. Central 2369



8, *diagram of carbon dioxide hand appliance.*

continued from page 446]

flectors, and control valves. Manual or automatic systems are available. In the manual system the heads are open, water being discharged when a valve at ground level is open. The automatic system has heat sensitive drencher heads similar to a sprinkler installation.

Distribution: Drencher heads should be positioned to protect 'weak' points in the building—roof, door and window openings, eaves, highly combustible areas, etc.

Water supply: As for sprinklers.

Foam

The use of foam as an extinguishing agent is most common with flammable liquid risks (storage tanks, oil-filled transformers, etc.). The installation may be arranged as a self-contained system in which the foam supply is included as part of the system (these may be manual or automatic operation), or simply a system of pipework and pourers to which the fire brigade may connect foam-making equipment. In the latter case, a foam inlet (suitably protected by a glass panel) is provided outside the building at street level marked 'Fire brigade foam inlet.' There should be indication of the character of risk protected by each inlet, and the area of such a risk.

If the risk involved requires a special foam, care must be taken to see that supplies of this foam are available.

Carbon dioxide

Carbon dioxide installations are also used for flammable liquid risks, but more often for fires in electrical equipment. This agent is also useful for extinguishing fires in carbonaceous materials where water damage is to be avoided.

The installation consists of a battery of CO_2 cylinders connected to a manifold, the gas being distributed through a system of pipes to the outlets. Where it is necessary to flood a complete room allowance must be made for loss of gas through windows, doors, etc.

The systems are often arranged to operate automatically in order that the gas may be applied before too much heat is generated. In this case it is essential to have a warning system so that occupants may escape from the room before operation or, in the case of a room such as a transformer chamber, an interlock which prevents the discharge of gas while the room is occupied.

Apart from CO_2 a number of other gases are available for particular risks. Operation is similar to CO_2.

Dry powder

This installation consists of a dry powder container connected to a gas cylinder and a system of pipework and outlets. On operation (manually or automatically) the pressurized gas (usually CO_2) conveys the powder to the outlets.

The system may be used for fires in flammable liquids or electrical installations, and may be arranged to flood a compartment or discharge locally on a particular risk.

Portable fire extinguishers

There are five main groups of portable fire extinguishers, the group depending on the extinguishing agent contained. They are water, foam, carbon dioxide (CO_2), dry powder and vaporizing liquid. Also within this group are fire buckets and manual fire pumps.

Water extinguishers: This group is subdivided into two types: (1) water (gas pressure), (2) water (soda/acid). To these may be added fire buckets (3) and hand pumps (4).

(1) *Water (gas pressure):* A cylindrical or conical container is filled to an indicated level with water. The gas acting as the expelling agent is stored in a cartridge which is pierced when the extinguisher is operated. The nozzle is sometimes fitted to a length of hose and on some models may be adjusted to give a jet or spray.

Capacity: 1 or 2 gallons.

Weight: 21–26 lb. (1–1¼ gallon container), 33–40 lb. (2 gallons).

Length of jet: 30 ft.

Construction: British Standard 1382.

Use: Suitable for any solid combustible materials (wood, paper, textiles) in which the cooling action of the extinguisher is of importance.

Maintenance: Open up and inspect every year. Discharge and test hydraulic pressure every five years.

(2) *Water (soda/acid):* The container is here filled with a solution of sodium bicarbonate in water. A glass bottle containing sulphuric acid is set within this solution. On operating the extinguisher the acid is released, and this reacts with the solution to produce a gas which expels the water. Otherwise similar to water (gas pressure).

Capacity: 1 or 2 gallons.

Weight: 24 lb. (1–1¼ gallon container), 33 lb. (2 gallons).

Length of jet: As for (1).

Construction: BS 138.

Use: The presence of sodium sulphate and small amounts of acid may damage delicate fabrics. Otherwise as for (1).

Maintenance: As for (1). 'Turnover' models with an open acid bottle should be discharged every two years.

(3) *Fire buckets:* The buckets are filled with either water or sand. They may have a round or flat bottom. The former are less likely to be used for other purposes because of their shape. Lids should be fitted to keep the contents clean and prevent water evaporation.

Capacity: 2 gallons.

Construction: BS 1689 (metal buckets). BS 3184 (plastic).

Use: As for (1). Sand may be used on small fires in inflammable liquids. It may also be used for small fires in electrical equipment but, due to its abrasive nature, may cause damage to the equipment.

Maintenance: Check monthly.

(4) *Manual fire pumps:* A hand pump is mounted in a metal container and fitted with a length of hose and nozzle. This form of extinguisher needs three people for efficient operation.

Capacity: Between 2 and 3 gallons.

Length of jet: 30 ft.

Use: As for (1).

Maintenance: Check monthly.

Foam extinguishers: This group is subdivided into two types: (1) foam (chemical), (2) foam (mechanical).

(1) *Foam (chemical):* A cylindrical or conical container is filled to an indicated level with a solution of sodium bicarbonate in water and a stabilizer. Within this, a separate container is filled with a solution of aluminium sulphate in water. On operating, the two solutions are mixed, the chemical action producing foam and a gas to act as the expellant.

Capacity: 1, 1¼ or 2 gallons (foam produced 8 times this volume). Coverage 5 sq. ft. per gallon (trained operative).

Weight: 20 lb. (1–1¼ gallon container), 33–40 lb. (2 gallons).

Length of jet: 23 ft.

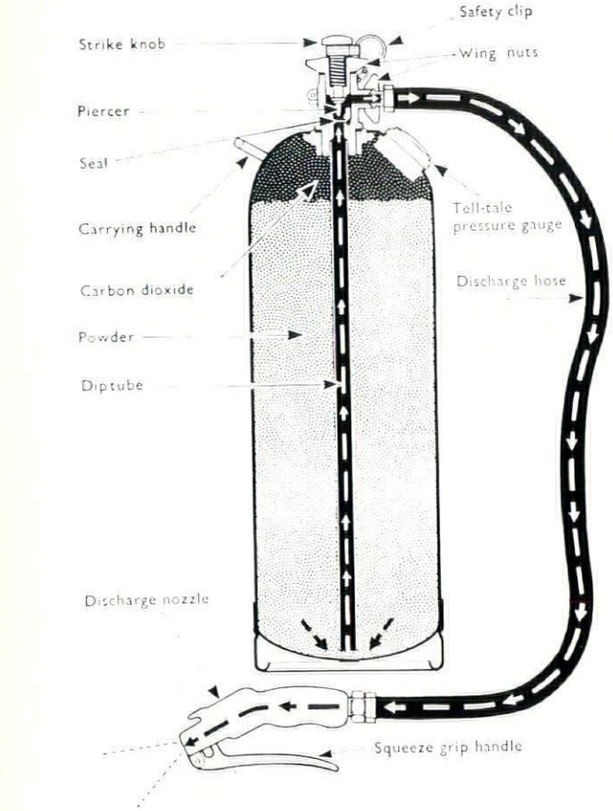
Construction: BS 740, Part 1.

Use: Suitable for use with flammable liquids (especially in containers). Should not be used on live electrical equipment. Particular uses: oil quench tanks, oil fired boilers, linseed boilers, deep fat frying ranges, varnish kettles.

Maintenance: Check annually. Discharge every two years. Hydraulic pressure testing to 300 lb./sq. in. every five years.

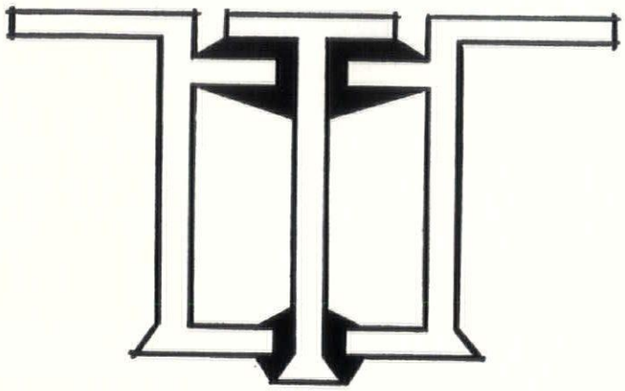
(2) *Foam (mechanical):* Similar to (1) except that the foam compound is stored either as a solution in the body of the extinguisher or in a hermetically sealed inner container. The gas expellant is stored in a cartridge.

[continued on page 450

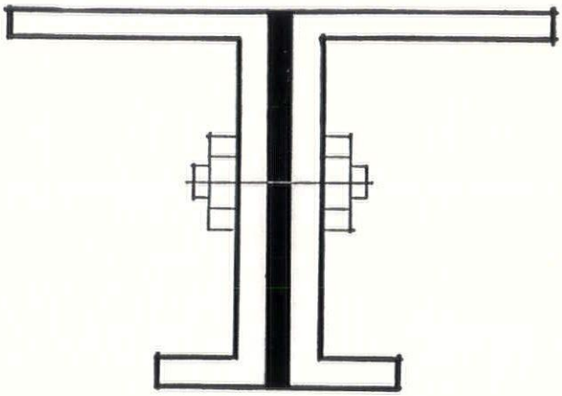


9, *diagram of dry powder hand appliance.*

NUMBER 2 – METAL TO METAL JOINTS



Bostik Mastic No. 1560



Prestik



Prestik

Finding the right sealing compound

These days it's not easy for the architect or the builder to keep bang up-to-date with the latest improvements. This is especially the case with sealing compounds, where the already large number designed to do specialists' jobs is steadily increasing. That's why 'Bostik', who have just about every sealing compound you require, have prepared these notes on the **four main types** of sealing compound.

'Prestik' preformed sealing strips will maintain a flexible seal against years of weathering. They expand and contract with the joint that they're sealing, will not harden, get brittle or shrink. All grades exclude dust, rain and snow: the special grades resist petrol and oil.

'Bostik' butyl-based mastics are made from a butyl rubber base which gives permanent elasticity. They have very good ageing and weathering qualities, and strong adhesion to most building materials. Some form a dry tack-free surface in a few hours and a tough resilient seal in a few days, others remain tacky. They will not shrink, crack or slump.

'Bostik' gun mastic is based on oils and resins and provides a good general-purpose, easily applied sealant for joints which will not be subject to large movements.

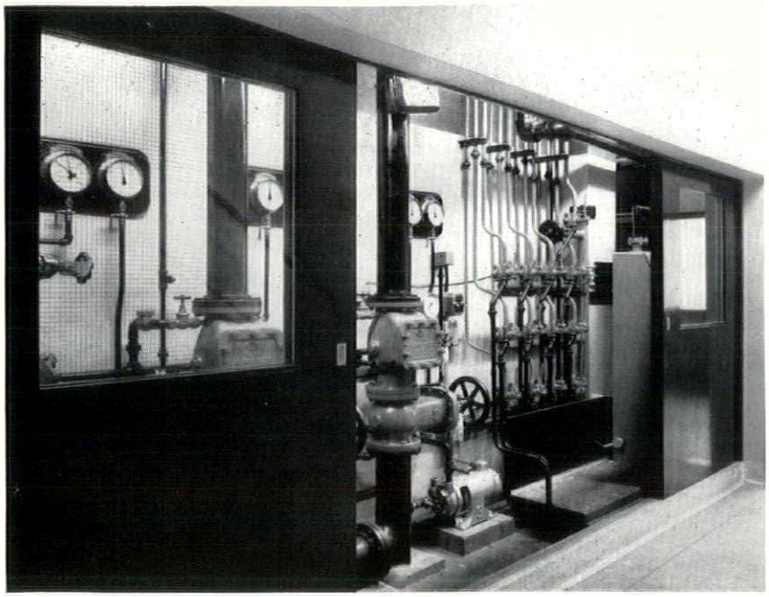
'Bostikol' sealing compounds are based on polysulphide synthetic rubber. Applied in liquid form, they cure in position without shrinking and form a tough, permanent, weathertight seal to resist all arduous conditions met in curtain wall structures. A wide choice of grades provides different physical characteristics to suit different conditions.

One last word about 'Bostik' research: if you've any problems to do with sealing or bonding building materials, don't hesitate to get in touch with us. It's our job. We may have solved your problem already. And if we haven't, we'll get down to it right away.

Write to: 'Bostik' Building Advisory Department, B.B. Chemical Co. Ltd, Leicester.

Bostik MAN FRIDAY TO THE BUILDING INDUSTRY

The words 'Bostik', 'Bostikol' and 'Prestik' are trademarks registered in the U.K. and many other countries. Manufactured by Bostik Ltd., Leicester, England.



10, *Fire Control Station at CAV laboratories, Acton. On the left are control valves for the sprinkler installations. Behind the door on the right is the locating console of the smoke detector system which is linked by means of the bank of valves and pipes in the centre to a CO_2 system. The smoke detector heads are located in inaccessible servicing voids and, when smoke is drawn into them, a visible and audible alarm is given. Operating the indicated valve allows CO_2 to pass back through the detector cup to be discharged in the void where the source of fire has given rise to the detected smoke.*

continued from page 448]

Capacity: 1 or 2 gallons (foam produced 8 times this volume).

Weight: As for (1).

Length of jet: As for (1).

Construction: BS 740, Part 2.

Use: As for (1).

Maintenance: Check annually. Discharge every five years. Hydraulic pressure testing to 300 lb./sq. in. every five years.

Carbon dioxide extinguishers: A cylindrical container is filled to approximately two-thirds its capacity with liquefied carbon dioxide and fitted with a sealing disc and piercing device or valve. A special horn, which provides a means of directing the gas, is fitted either to the valve or a length of hose.

Capacity: Up to 15 lb. Coverage 5 sq. ft. every 7 lb. (trained operative).

Weight: 13 lb. (contents 2½ lb.), 54–60 lb. (contents 15 lb.).

Length of jet: 5–6 ft. (2½ lb.), 20 ft. (15 lb.).

Construction: BS 3236.

Use: Suitable for flammable liquids and acts more quickly than foam. Particularly suitable where damage or contamination is to be avoided. Cooling properties are small, and re-ignition may occur after application ceases. CO_2 is a non-conductor of electricity and may be used with safety on electrical equipment. Particular uses: Coating and spreading machines, kitchen ranges, laboratories and electronic equipment.

Maintenance: Weigh and inspect the body for corrosion every six months. Hydraulically tested every five years.

Dry powder extinguishers: A cylindrical container is filled to an indicated level with dry powder. The gas expellant is stored in the main body ('stored pressure') or in a cartridge. The nozzle may be fitted to a length of hose.

Capacity: Up to 30 lb. Coverage: 15 sq. ft. every 7 lb. (trained operative).

Weight: 10 lb. (contents 4–5 lb.), 40 lb. (contents 20 lb.).

Length of jet: 10 ft. (4–5 lb.), 20 ft. (20 lb.).

Construction: British Standard in course of preparation.

Use: Suitable for flammable liquids (including free-flowing). Cooling properties are small and may result in re-ignition. May be used on electrical equipment (non-conductor).

Maintenance: Check annually. Discharge every five years. Hydraulic pressure test every five years.

Vaporizing liquid extinguishers: This group is divided into two types: (1) carbon tetrachloride, (2) chlorobromomethane.

(1) *Carbon tetrachloride (CTC):* A cylindrical container is filled with carbon tetrachloride in liquid form. A hand pump, air pump, or stored gas is used to expel the liquid in the form of a jet or spray.

Capacity: Usually 1 quart. Coverage less than 1 sq. ft. per quart.

Weight: 6 lb. (1 quart).

Length of jet: 25 ft.

Construction: BS 1721.

Use: Suitable for flammable liquids. Due to restricted capacity use is limited to small fires. May be used on electrical equipment (non-conductor). Should not be used in restricted spaces where excessive inhalation of the vapours may occur. Particular uses: Petrol and oil driven engines.

Maintenance: Check annually. Discharge every five years. Hydraulic pressure test every five years.

(2) *Chlorobromomethane (CBM):* A cylindrical container is filled with chlorobromomethane in liquid form. Otherwise similar to CTC extinguishers.

Capacity: Usually 1 quart. Coverage: 2 sq. ft. per quart.

Weight: As for (1).

Length of jet: As for (1).

Use: As for (1).

Maintenance: As for (1).

Positioning of portable appliances: Portable fire extinguishing appliances should be placed in a conspicuous and readily accessible position near staircases and escape routes. If required for special risks they should be adjacent to this risk but not too close to make access difficult in case of fire. Generally speaking appliances should be within 100 ft. of each other.

Fire points should have clear indications giving the following information: (1) How to select the correct extinguisher for the fire (where there is more than one type). (2) How to operate the extinguisher and attack the fire.

A suggested colour identification is as follows:

Type	*Colour*
Water	Red
Foam	Cream
Carbon dioxide	Black
Dry powder	Blue
Vaporizing liquid ...	Orange

Water and foam extinguishers are affected by low temperatures and should not be sited in positions where the temperature is likely to fall below 40°F. On the other hand high temperatures may damage CO_2, vaporizing liquid and constant pressure type extinguishers. Manufacturers should be consulted if the temperature is likely to exceed 110°F.

Distribution: Each building should be considered on its merits. Table 2 (prepared by the Fire Protection Association) gives an approximate guide. It indicates the size and number of appliances required based on a unit of floor area of 250 square yards.

Table 2

Type of portable water appliance	*Size (capacity)*	*Number required per unit of floor area or part thereof*	*Minimum number required on each floor*
Extinguishers	1 or 1¼ gallon	2	4
	2 gallon	1	2
Hand pumps	2 or 3 gallon	1	2
Buckets	2 gallon	3	6

THE INDUSTRY

Overhead doors

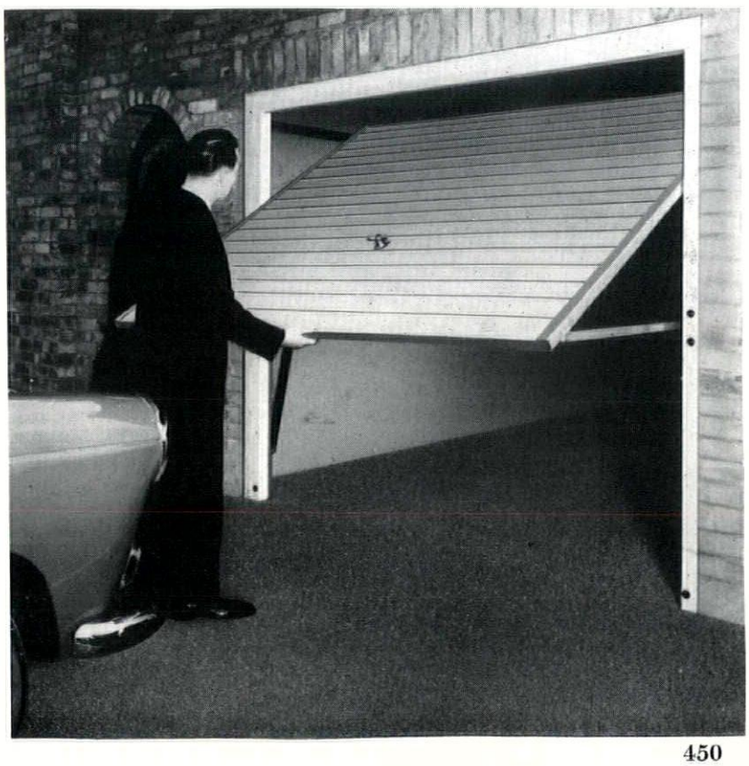
Following the review of up-and-over doors by Anthony Wylson in the Skill articles of August and September, 1961, information has been received of a further addition to the range. This has been produced by the well-known sliding door gear manufacturers, P. C. Henderson Ltd., and is called the *Dolphin* metal up-and-over door. The operating mechanism is the firm's already established *Ultra* overhead door gear. The door itself measures 7 ft. wide by 6 ft. 6 in. high and is made from *Galvatite* hot-dipped galvanized sheet. Construction and the use of pressure rubber mouldings have been combined in an attempt to eliminate the noise nuisance so often associated with metal doors of this type. This attempt, the manufacturers claim, has been successful.

The gear which is spring activated is easy to adjust, giving a smooth, quiet motion and taking up very little space. Headroom of 1¼ in. and side room of 2⅜ in. are all that is required.

Security is dealt with by means of steel locking bolts across the full width of the door and the operating handle for these is entirely internally fixed.

[continued on page 452

1, *the Dolphin up-and-over garage door.*



HOW COAL SOLVED A SPACE HEATING PROBLEM

– for Nottingham & District Technical College

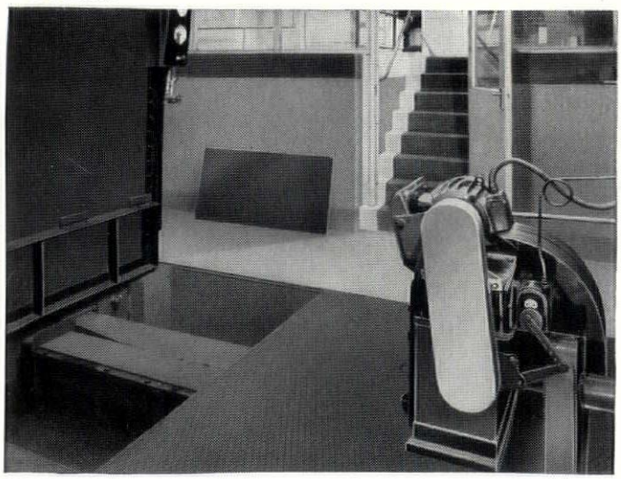
There are nine academic departments in the Nottingham and District Technical College, Burton Street; most of these are housed in the new building, featured here, and this has a floor area of 186,000 square feet which, with 8,000 students, represents a typical modern educational space heating problem. Heat is distributed within the college through pipes and radiators in all lecture rooms, ceiling panels in public areas, and unit heaters in workshops. The care and preservation of some of the delicate technical equipment makes continuous heating essential.

EFFICIENCY, ECONOMY

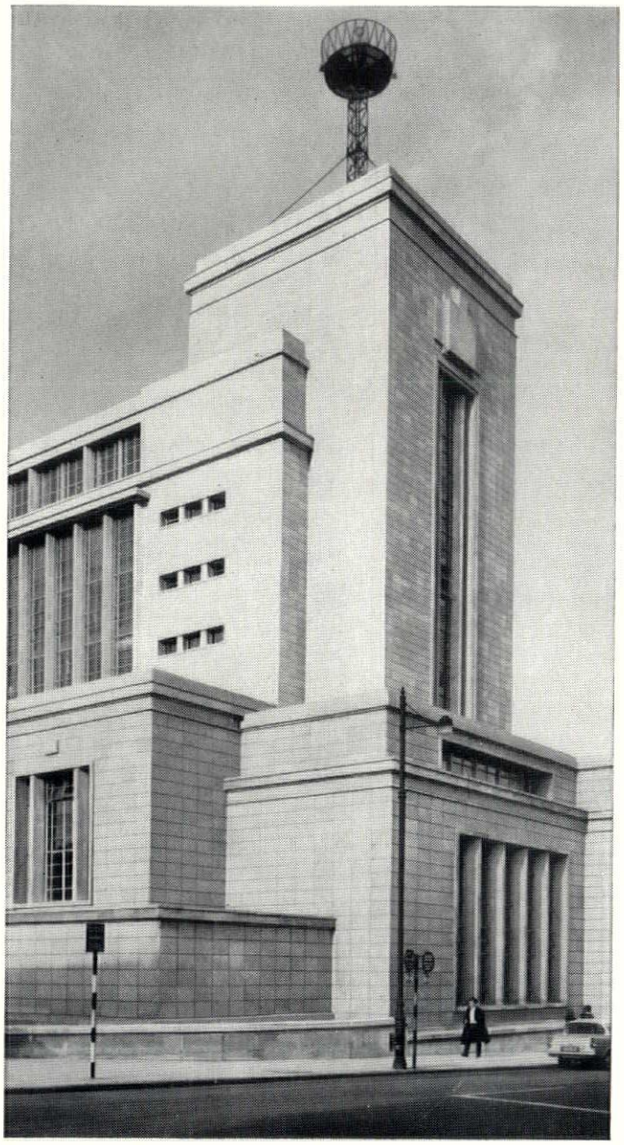
Modern, fully-automatic, coal-burning plant has proved the efficient and economic answer to this problem, providing all the heating and hot water the college is likely to need.

MODERN PLANT

The boiler plant in the new building consists of two 5,000,000 Btu/h water tube forced-circulation, medium-pressure, hot water boilers. Each boiler is fitted with a bunker-to-boiler underfeed stoker thermostatically controlled, and the instrumentation includes draught gauges, multi-point temperature indicators, and smoke density indicators.



Part of the modern and clean boilerhouse showing the stoker coverplate removed



The working pressure is 90 p.s.i.g. at normal rating. Coal consumption is 140/750 lb/h. The minimum flow rate per boiler is 10,000 gallons/h. and the normal flow temperature is 200°F and return 170°F.

COAL CONSUMPTION

The two boilers consume approximately 800 tons of washed nuts a year. Fuel delivery is by lorry directly into underground bunkers. Fuel handling is eliminated.

CLEAN AIR

The new plant operates within the requirements of the Clean Air Act and the college is in an area shortly to become smoke controlled. As a safeguard, a smoke density alarm is fitted to each boiler to give audible warning of smoke emission.

EDUCATION AUTHORITIES PLAN FOR THE FUTURE ON COAL

ISSUED BY THE NATIONAL COAL BOARD

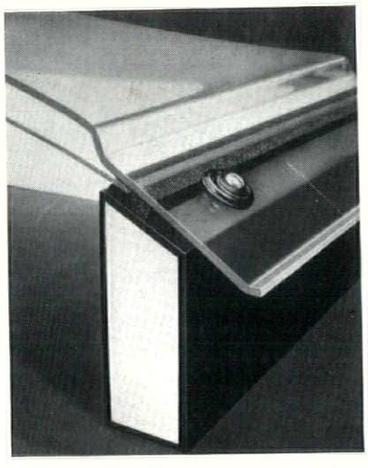
continued from page 450]

A point of interest, though not actually affecting the performance of the door, is the rather neat packaging arrangements employed. The door is supplied in six horizontal sections with side rails, gusset plates, gear and tracks packed compactly into a case measuring 7 ft. 1 in. by 1 ft. 4 in. by 4 in., surely a triumph of co-ordinated engineering and packaging design.

P. C. Henderson Ltd., Harold Hill, Romford, Essex.

Perspex domelights

The use of domelights as a method of introducing daylight through flat roof structures is well known and understood, but snags have been encountered in their practical use. One of these, a common problem with most types of rooflighting, has been that of insulation. The introduction of an ingress for light has almost always meant the provision of an easy egress for heat. An added problem, directly associated, has been that of condensation. These problems are not insuperable, but solutions are generally difficult and very often expensive. A ready answer is now available with the *Coxdome* Mk IV Double Dome. This is, in effect, two domes of acrylic sheeting bonded together round their perimeters providing a pocket of dry inert gas sealed between them. The effect is obvious. The gas provides the completely transparent insulating layer, discouraging the passage of heat and the formation of condensation. Sizes range from 24 in. by 24 in. to 72 in. by 48 in., the smaller sizes up to 48 in. by 36 in. having $\frac{3}{16}$ in. thick outer skins and $\frac{1}{8}$ in. thick inner skins. In the larger sizes the thicknesses are $\frac{1}{4}$ in. and $\frac{3}{16}$ in. respectively. Thermal transmittances



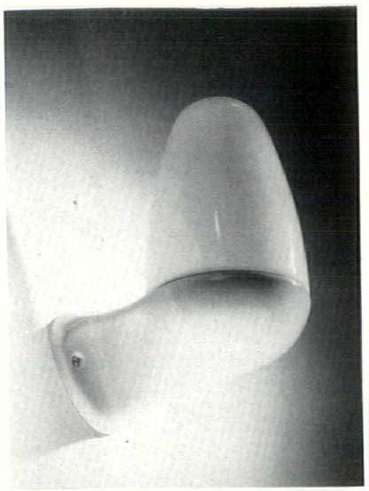
2, *detail of sealing of the Coxdome domelight.*

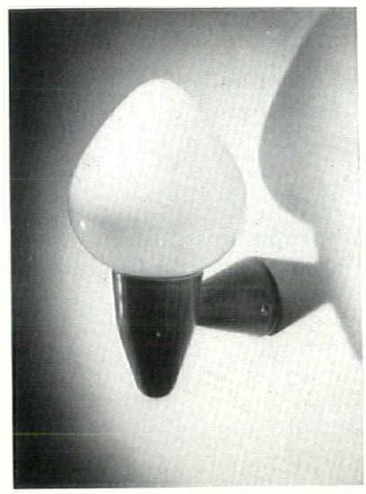
(U values) quoted by the manufacturers are 0.49 to 0.47 according to the thickness of perspex used.

Williaam J. Cox (Sales) Ltd., London Road, Tring, Herts.

Porcelain light fittings

Frederick Thomas & Co. Ltd. have produced a catalogue of Swedish manufactured porcelain bracket fittings. The two simplest designs for low cost ceiling and bracket fittings are available in white only. A second range consists of fittings of a more decorative nature, but designed to take full advantage of the easy cleaning properties of the finish. Colours in this range are white and four pastel shades. The third range is purely decorative in conception and takes full advantage of the rich highlighted nature of glazed porcelain in full bodied colour. The colour range





3, 4, *Swedish porcelain light fittings by Frederick Thomas.*

here is of six hues.

A variety of opal glass bowls is available to fit all of these and prices range from about 19s. to 87s. 6d. complete according to type and glass employed.

The whole range provides interesting additions to interior designers' repertoire and will no doubt enjoy some success if only because of their Scandinavian origin.

Frederick Thomas & Co. Ltd., Everton Buildings, Stanhope Street, London, N.W.6.

CONTRACTORS etc

Housing, Goswell Road, London. *Architects:* Chamberlin, Powell & Bon. *General contractor:* Gee, Walker & Slater Ltd. *Sub-contractors: Ventilation:* Air, Heat & Dust Control (Kings) Ltd. *Sewage pumps:* Adams Hydraulics Ltd. *Lifts:* Express Lift Co. *Curtain walling:* Williams & Williams Ltd. *Glazing:* Aygee Ltd. *Sprinkler system and roller shutters:* Mather & Platt Ltd. *Swimming pool filtration plant:* Becco Engineering & Chemical Co. *Roofing felt:* William Briggs & Sons Ltd. *Plastic roofing:* D. Anderson & Son. *Wood strip floor:* Zeeta Wood Flooring Ltd. *Thermoplastic flooring:* Haskel Robertson Ltd. *P.v.c. flooring:* Adamite Co. *Pavement lights:* Lenscrete Ltd. *Intercommunicating telephones:* Dictograph Telephones Ltd. *Tennis courts:* W. H. Gaze & Sons Ltd. *Steel balustrading:* Roscoe Howard. *Paving tiling:* Carter & Son. *Expanded metal ceilings:* Expanded Metal Co. *Mosaic:* W. B. Simpson & Sons Ltd. *Preformed stacks:* Econa Modern Products Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Windows:* Quicktho Engineering Ltd. *Venetian blinds:* S. C. Williams & Co. *Precast concrete balustrades and flower boxes:* Precast Utilities Ltd. *External doors:* Gliksten Doors Ltd.; Thames Plywood Manufacturers Ltd. *Railing standards and spiral staircases:* David Rowell. *Refrigerators:* Electrolux Ltd. *Terrazzo:* Mosaic & Terrazzo Precast Co. *Metal gratings:* Broads Manufacturing Co. *Paint:* W. & J. Leigh Ltd. *Trees:* Hilliers.

Housing at Peterlee. *Architect:* H. Durell (Chief Architect to the Development Corporation in succession to R. J. A. Gazzard). *General contractor:* L. W. Evans (Contractors) Ltd. *Sub-contractors: Hardrow slates:* Robert Abraham Ltd. *Floor tiles:* Semtex Ltd. *Uxbridge flint bricks:* Cape Building Products. *Sandlime bricks:* Chester Brick Co. *Pressed metal window cills:* South Dock Ironworks Co. *Joinery:* W. Gray (Joinery) Ltd. *Kitchen units, sanitary fittings:* A. J. Wares Ltd. *Doors:* Gliksten Doors Ltd. *Paints:* British Paints Ltd. *Hot water tanks:* Elsy & Gibbons Ltd. *Openable stoves:* Radiation Group Sales Ltd. *Chimney terminals:* Supira (London) Ltd. *Radiators:* Washington Engineering Ltd.

Showrooms in Hanover Street, W.1. *Architect:* Dennis Lennon. *General contractor:* Cooke's (Finsbury) Ltd. *Sub-contractor, glazing:* James Clark & Eaton Ltd.

Hospital, Crawley. *Architects:* Yorke, Rosenberg & Mardall. *General contractor:* James Longley & Co *Sub-contractors: Lifts:* Marryat & Scott Ltd. *Kitchen equipment:* Allied Ironfounders Ltd. *Sterilizing equipment:* Sumerling & Co. *Refrigeration:* Bland Refrigeration Co. *Aluminium external framing and balustrading:* Clark, Hunt & Co. *Staircase balustrades, external railings and miscellaneous metalwork:* The Wessex Guild Ltd. *Terrace surfacing:* Frazzi Ltd. *Aluminium windows:* Alumin Building Components Ltd. *Window control gear:* Teleflex Products Ltd. *Venetian blinds:* J. Avery & Co. *Window and cubicle curtain track:* Silent Gliss Ltd. *Steel canopies:* Smiths (Horley) Ltd. *Patent glazed partitions:* Unilock Partitions Ltd. *Steel shelving:* Norwood Steel Equipment Ltd. *Mechanical services:* H. J. Cash & Co. *Ventilation ductwork and thermal insulation:* Bernard Hastie & Co. *Automatic controls to heating and ventilating systems:* Thermacontrol Installations Co. *Boilers:* Danks of Netherton Ltd. *Oil burners:* Hubbard Combustions Ltd. *Radiators:* Steel Radiators Ltd. *Nurse call system and radio relay:* Hadley Sound & Telephone Systems Ltd. *Staff location system:* Multitone Electrics Co. *Internal telephones:* Standard Telephones & Cables Ltd. *Ceiling lighting fittings and ward night lights:* Frederick Thomas & Co. *Bedhead lights:* Merchant Adventurers of London Ltd. *Wall bracket lights:* Loblite Ltd. *Corridor lights:* Hiscock, Appleby & Co. *Theatre suites general lighting:* Atlas Lighting Ltd. *Operating lights:* Sierex Ltd. *Road lighting columns:* Metal Developments Ltd. *Road lighting lanterns:* Revo Electric Co. *X-ray viewing screens:* Technical Lights & Equipment Ltd. *Glazed bricks:* Keymer Brick Co. *Flint lime facing bricks:* Cape Building Products Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Fire fighting equipment:* Read & Campbell Ltd. *Roller shutters:* Haskins. *Flush doors:* John Sadd & Sons Ltd. *Ironmongery:* N. F. Ramsay & Co. *External ceramic mosaics:* Langley (London) Ltd. *Linoleum and wall covering:* Jas. Williamson & Son Ltd. *Suspended ceilings:* Truscon Ltd. *Acoustic ceiling tiles:* Bowater Sales Co.; Armstrong Cork Co. *Rigid p.v.c. wall sheets:* ICI Ltd.

Civic Centre, Plymouth. *Architects:* Jellicoe, Ballantyne & Coleridge. *General contractor: Great Square, foundation and substructure:* Staverton Contractors Ltd. *Sub-contractors: Superstructure:* Humphreys Ltd. *Lifts:* The Express Lift Co. *Water and heating services, thermal storage vessels:* G. N. Haden & Sons Ltd. *Ventilation and air conditioning:* Matthew Hall & Co. *Slate facings:* The Old Delabole Slate Co. *Slate cills:* The Bow Slate & Enamel Co. *Precast concrete and artificial stone facing slabs:* F. J. Moore Ltd. *Suspended acoustic tile ceilings:* Petradene Ltd.; Roof & Lining Construction Co. *Precast concrete columns and transome units:* The Stone Firms Ltd. *Metal and aluminium windows:* Williams & Williams Ltd. *Aluminium screens:* James Gibbons Ltd. *Facing bricks:* Cape Building Products Ltd. *Steel fire shutters and doors:* Haskins. *Sprinkler fire alarm system:* Mather & Platt Ltd. *Roof lights and dome lights:* Lenscrete Ltd. *Telephone installation:* Standard Telephones & Cables Ltd. *Window cleaning equipment:* Access Equipment Ltd. *Strong room doors:* Chatwood-Milner Ltd. *Precast concrete flooring units:* Preplan Ltd. *Pumps and fountain jets:* John Wallis Titt & Co. *Metal spiral staircase:* St. Aubyn Engineering Co. *Enamel-faced cladding panels:* The Rustless Iron Co. *Fibrous plaster ceilings:* James Walker (Architectural Decorations) Ltd.; F. H. Crocker & Co. *Balustrading:* Haskins; Woodrow Metals Ltd. *Fire hose reels:* Antifyre Ltd. *Grilles:* Dunham-Bush Ltd.; F. H. Biddle Ltd. *Marblework:* Walter W. Jenkins & Co. *Terrazzo and marble mosaic floors:* South Western Flooring Co. *Mosaic facings:* The Marble Mosaic Co. *Flush doors:* Jewsons Ltd. *Wood flooring:* Horsley Smith & Co. (Hayes) Ltd. *Blinds:* Venetian Blinds Ltd. *W.c. partitions:* Venesta Plywood Ltd. *Demountable partitions:* Holoplast Ltd. *Sanitary equipment:* Southalls (Birmingham) Ltd. *Cloakroom equipment:* James Sieber Equipment Co. *Bicycle holders:* Le Bas Tube Co. *Diffusers:* Plyglass Ltd. *Panelling and specialist joinery:* Humphreys Ltd.; Plymouth Shopfitters Ltd. *Veneered panels:* Bartrev Board Co. *Kitchen units:* Kandya Ltd. *Lightweight screeds:* Isocrete Co. *Illuminated ceilings:* General Electric Co.; Atlas Lighting Ltd. *Lighting fittings:* Ionlite Ltd.; General Electric Co.; Atlas Lighting Ltd.; Allom Heffer & Co.; Merchant Adventurers of London Ltd.; Frederick Thomas & Co.; Tucker & Edger; Harris & Sheldon Electrical Ltd.; The Benjamin Electric Ltd.; Simplex Electric Co. *Clocks:* Synchronome Co. *Emergency lighting equipment:* Chloride Batteries Ltd. *Electrical accessories:* Walsall Conduits Ltd. *Fuseboards:* Bill Switchgear Ltd. *Lamps:* AEI Lamp & Lighting Co. *Fixed furniture in council chamber:* D. Burkle & Son Ltd.; Waring & Gillow (Contracts) Ltd. *Contract furniture:* Conran & Co.; Dare Inglis Products Ltd.; W. P. Eglin Ltd.; Evertaut Seating Ltd.; Formation Furniture Ltd.; C. W. F. France & Son Ltd.; Heal's Contracts Ltd.; Hille of London Ltd.; LM Furniture Ltd.; Race Contracts Ltd. Stafford Furniture Ltd. *Paint:* International Paints Ltd.; Inertol Co. *Carpet fixings:* Roberts Smoothedge Ltd. *Carpets:* S. J. Stockwell & Co. (Carpets) Ltd.; Hugh Mackay & Co.; Wilton Royal Carpet Co.

THERMODOME
TRADE MARK

DOUBLE SKIN ROOF LIGHTS

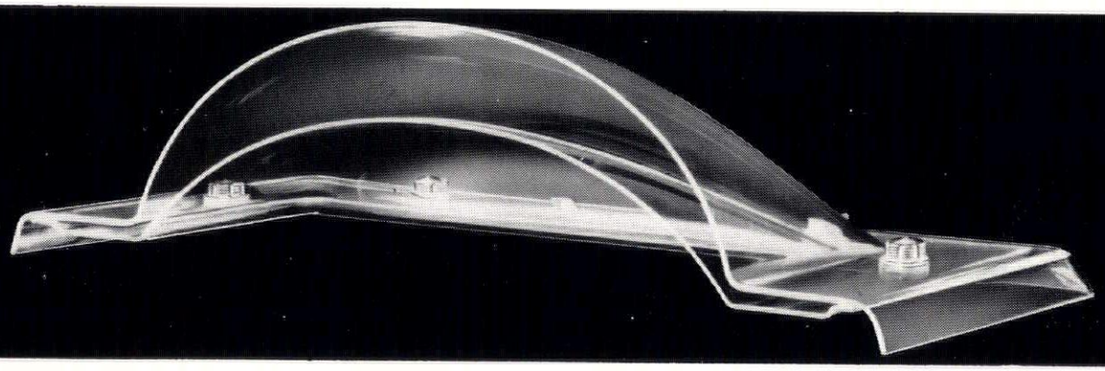
Manufactured under licence G.B. patents Nos. 829442, 850856, proprietors Cordar Limited

WITH

INSULATION AGAINST HEAT LOSS AND ABSORPTION

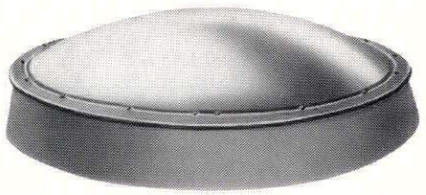
AS WELL AS

SOUND INSULATION



Thermodomes provide the easy and perfect answer where a high degree of insulation against heat or sound is desired. Their installation provides natural overhead lighting in industrial buildings of all types, airports, schools, museums, municipal buildings, power stations, offices, hotels, hospitals and places of entertainment. Circular, square and rectangular available.

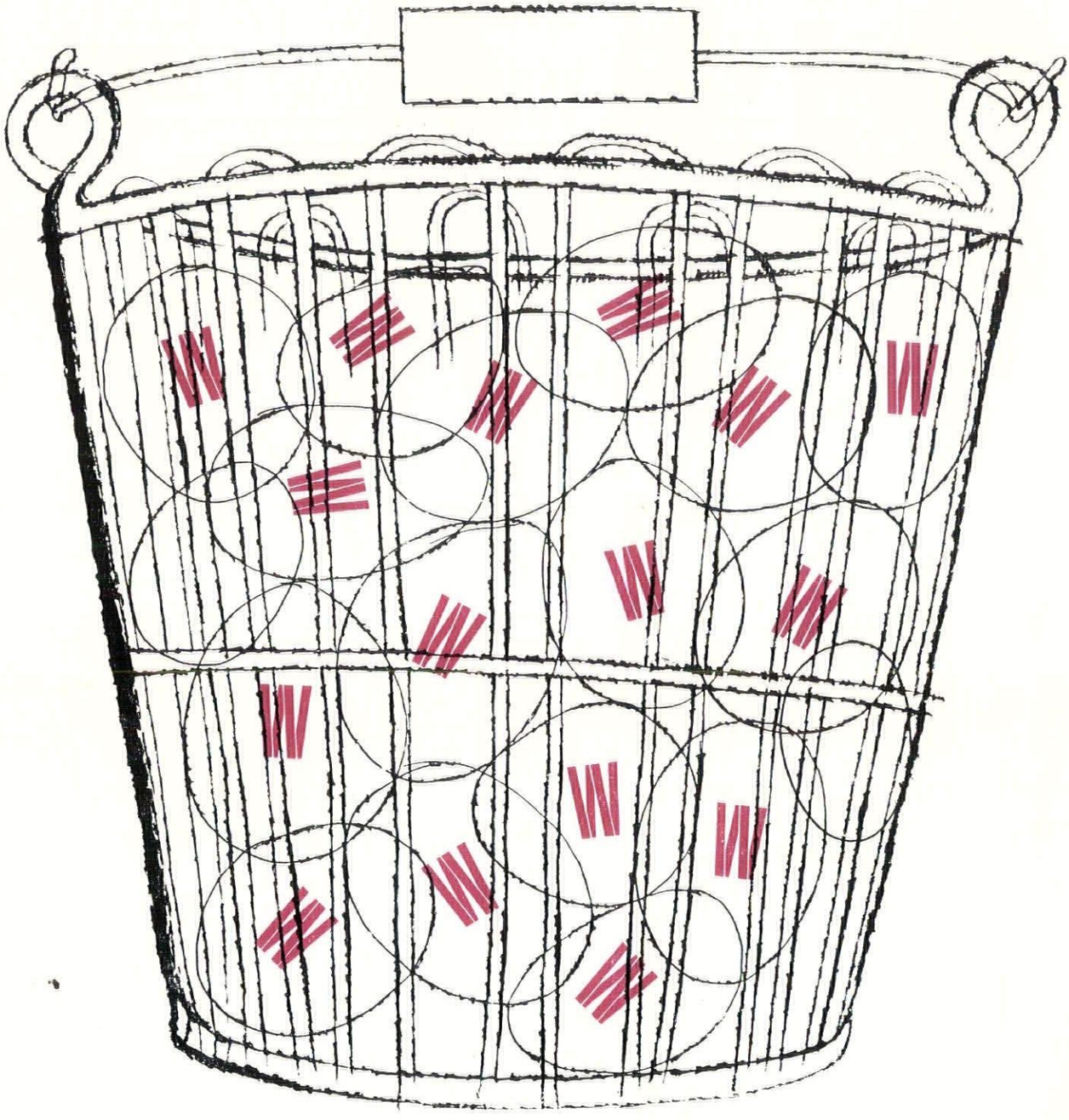
- ✳ Condensation is completely eliminated by the airtight space between outer and inner skin.
- ✳ Insulation against both heat loss and absorption is very high.
- ✳ Light to the maximum amount is admitted for a given aperture due to absence of all glazing bars.
- ✳ Easily fixed to either wood, plastic, metal or concrete upstands.
- ✳ No maintenance or painting is required and there is nothing to rust.
- ✳ Leak proof.
- ✳ Extremes of temperature and weather do not affect them.



NEWDOME LTD.
P.O. Box 45
17 GEORGE STREET · ST. HELENS · LANCASHIRE
Telephone: St. Helens 22189 Telegrams: Bender St. Helens

Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames.
Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter

ALL THE EGGS ARE FOUND IN OUR BASKET



THE WINCILATE GROUP SERVICE—Finest slate quarried and selected. Architects' requirements discussed and drawing prepared. Wincilate slate cills, surrounds, copings, cladding and flooring precision finished, delivered, and fixed. For further details and information sheets, contact the Wincilate Group*, The Town Hall, Bow Rd, London E3

ADV 2203

To get the best service in slate specify WINCILATE by name

* The Wincilate Group: The Bow Slate and Enamel Company Limited, Aberllefeni Slate Quarries Limited, The Slate Fixing Company, Lloyd Quarries Limited, Goddard and Son, Manorian Limited

VOLUME ONE HUNDRED AND THIRTY-TWO JULY-DECEMBER 1962

ARTICLES AND ILLUSTRATIONS

PAGE

Active Fire Defence of Buildings. *Illustrated article by* Clement Shepherd
1. Detection and Alarm Devices 370–374
2. Fire Extinguishing Equipment 444–450

After the Common Market. *Article by* Fello Atkinson 9–10

Air conditioning without refrigeration (The Industry). Illustrated note 146

Airport, The Obsolescent. *Article by* Reyner Banham 252–253

Airport Passenger Buildings. *Illustrated article by* Michael Brawne 341–348

Airports: Towards a Clarified Aesthetic. *Illustrated article by* Raymond Spurrier 253–260

AJ/SfB. *Article by* The Editors 239–241

Aluminium in building (The Industry). Illustrated note 302

Applied Art: Experiments in Glass. *Illustrated note by* Charles S. Spencer 291–293

Architectural Design, A Series of Investigations into the Current Problems of (On Trial). *Illustrated article by* Reyner Banham
5. The Spec-Builders: Towards a Pop Architecture 43–46
6. Mies van der Rohe: Almost nothing is too much 125–128

Architecture: Water Towers. Illustrated note 60–62

Art Gallery, London, Duke Street, W.1. The Robert Fraser. *Architect:* Cedric Price. Exterior, interior views 121–122

Banbury Plans a new centre. Illustrated note 431–432

Basildon New Town, Tower block of flats. *Architect:* A. B. Davies (Chief Architect/Planner, Basildon Development Corporation). Exterior views and plans 312, 336–340

Basildon Town Centre, New Look at (Townscape). *Illustrated article by* Kenneth Browne 332–335

Book Reviews

Aloi, Roberto. Musei–Architettura–Tecnica. *Reviewed by* Michael Brawne 237

Bassi, Elena. Architettura del Seicento e Settecento a Venezia 311

Chadwick, George F. The Works of Sir Joseph Paxton, 1803–1865. *Reviewed by* H. R. Hitchcock 236

Clough, Robert T. The Lead Smelting Mills of the Yorkshire Dales. *Reviewed by* Michael Rix 311

Crowe, Sylvia (Editor). Space for Living: Landscape Architecture and the Allied Arts and Professions. *Reviewed by* L. J. Fricker 154

Cullen, Gordon. Townscape. *Reviewed by* James Morris 6

Fleming, John. Robert Adam and his Circle. *Reviewed by* Marcus Whiffen 237

PAGE

Green, Ronald. The Architect's Guide to running a Job. *Reviewed by* John Winter 385

Hardy, Florence Emily. The Life of Thomas Hardy. *Reviewed by* C. J. P. Beatty 310

Hürlimann, Martin. Kyoto 385

Joedicke, Jürgen. Office Buildings. *Reviewed by* James Cubitt 385

Kidder Smith, G. E. The New Architecture in Europe 311

Manasseh, Leonard, and Roger Cunliffe. Office Buildings. *Reviewed by* Ernö Goldfinger 309

Pane, Roberto. Andrea Palladio. *Reviewed by* Nikolaus Pevsner 81

Rolt, L. T. C. James Watt. *Reviewed by* Eric de Maré 385

Schlemmer, Oskar, L. Moholy Nagy and Farkas Molnar. The Theater of the Bauhaus. *Reviewed by* Reyner Banham 154

Schneck, Adolf G. Neue Möbel vom Jugendstil bis Heute 310

Simonds, John Ormsbee. Landscape Architecture. *Reviewed by* L. J. Fricker 154

Whiffen, Marcus. The Eighteenth Century Houses of Williamsburg. *Reviewed by* Maurice Barley 81

Winstone, Reece. Bristol in the 1880's 385

Books Reviewed

Adam and his Circle, Robert. *By* John Fleming 237

Architect's Guide to running a Job, The. *By* Ronald Green 385

Architettura del Seicento e Settecento a Venezia. *By* Elena Bassi 311

Bristol in the 1880's. *By* Reece Winstone 385

Eighteenth Century Houses of Williamsburg. *By* Marcus Whiffen 81

Kyoto. *By* Martin Hürlimann 385

Landscape Architecture. *By* John Ormsbee Simonds 154

Lead Smelting Mills of the Yorkshire Dales, The. *By* Robert T. Clough 311

Life of Thomas Hardy, The. *By* Florence Emily Hardy 310

Musei – Architettura – Tecnica. *By* Roberto Aloi 237

Neue Möbel vom Jugendstil bis Heute. *By* Adolf G. Schneck 310

New Architecture in Europe. *By* G. E. Kidder Smith 311

Office Buildings. *By* Jürgen Joedicke 385

Office Buildings. *By* Leonard Manasseh and Roger Cunliffe 309

Palladio, Andrea. *By* Roberto Pane 81

Space for Living: Landscape Architecture and the Allied Arts and Professions. *Edited by* Sylvia Crowe 154

Theater of the Bauhaus, The. *By* Oskar Schlemmer, L. Moholy Nagy and Farkas Molnar 154

Townscape. *By* Gordon Cullen 6

Watt, James. *By* L. T. C. Rolt 385

Works of Sir Joseph Paxton, The. 1803–1865. *By* George F. Chadwick 236

PAGE

Brick Palace of 1862, The. *Illustrated article by* Betty Bradford 8, 15–21

Bridge, Runcorn-Widnes Transporter (Obituary). *Illustrated note by* Ian Nairn 288–291

Buenos Aires, Municipal Theatre. *Architects:* Mario Roberto Alvarez and Macedonio Oscar Ruiz. Exterior, interior views and plans 22–23

Cambridge University:
Fellows' Flats, Churchill College. *Architects:* Richard Sheppard, Robson and Partners. Exterior views and plans 329–331
Libraries for the Arts Faculties. *Architects:* Sir Hugh Casson, Neville Conder and Partners. Exterior, interior views, model, drawing and plans 323–328
Residential building for Caius College. *Architect:* J. Leslie Martin with Colin St. John Wilson. Exterior views and plans 315–319
Residential building for King's College, Market Hill. *Architects:* Architects' Co-Partnership. Exterior, interior views and plans 320–322

Chichester, Teachers' Training College. *Architects:* Bridgwater, Shepheard and Epstein. Exterior, interior views and plan 358–360

City Hall, Hong Kong. *Architects:* A. Fitch and R. J. Phillips (Public Works Department, Hong Kong Government). Exterior, interior views and plans 105–112

Civic Centre, Plymouth. *Architects:* Jellicoe, Ballantyne and Coleridge. Exterior, interior views and plan 435–437

Churches:
Cathedral Church of St. Michael, Coventry. *Architect:* Sir Basil Spence. *Illustrated article by* R. Furneaux Jordan 24–34
Cathedral Church of St. Michael, Coventry. *Architect:* Sir Basil Spence. Interior views 35–42

Clocks, Table (Design Review). Illustrated note 429–430

Colleges:
Chichester, Teachers' Training. *Architects:* Bridgwater, Shepheard and Epstein. Exterior, interior views and plan 358–360
Kingston upon Hull, of Technology. *Architect:* Frederick Gibberd. Exterior views and plans 11–14
Leicester, Teachers' Training. *Architects:* Bridgwater, Shepheard and Epstein. Exterior views and plans 361–362
London, South Kensington, Royal College of Art. *Architect:* H. T. Cadbury-Brown with Sir Hugh Casson and R. Y. Goodden. Exterior, interior views, drawing and plans 242–249
Manchester, of Science and Technology, Lecture Hall. *Architects:* Cruickshank and Seward. Exterior, interior views and plans 281–283

PAGE

Oxford, Common-room for Brasenose. *Architects:* Myles and Deirdre Dove. Interior views 349–351
Colour consultant for linoleum and tiles (The Industry). Note 148
Commagene, Anatolia (The Exploring Eye). Illustrated note 113–115
Common Market, After the. *Article by* Fello Atkinson 9–10
Common-room, Oxford, for Brasenose College. *Architects:* Myles and Deirdre Dove. Interior views 349–351
Correspondence:
Cuetara, Edward (Net Sheds, Hastings) 6
Curtin, W. G. (Structural Brickwork) 80
Davies, J. H. V. (Vittone) 236
Glasstone, Victor (Italian Townscape) 153
Gloag, John (Timber-built churches) 309
Gomme, Andor (Hamilton's Glasgow Clubhouse) 236
Huff, William S. (The Buttery-hatch Aesthetic) 79
Martienssen, Heather (Scagliola) 6
Powlesland, John (Structural Brickwork) 80
Wade, Anthony (The Buttery-hatch Aesthetic) 80
Wheeler, John (Explosion in a church) 153
Coventry, Cathedral Church of St. Michael. *Architect:* Sir Basil Spence. Interior views 35–42
Coventry, Cathedral Church of St. Michael. *Architect:* Sir Basil Spence. *Illustrated article by* R. Furneaux Jordan 24–34
Covers:
July: The Gethsemane Chapel of the new Coventry Cathedral
August: Giant heads on the site of the tomb of King Antiochus at Commagene, Anatolia, photographed *by* Ara Güler
September: View of the open lower floor of the museum and art gallery at Matsue, Japan
October: Full set of A's and R's from alphabets of discarded wood letters
November: Photograph *by* Eric de Maré of the pumping-station at Crofton on the Kennet-Avon Canal
December: Entrance archway and dome of the fourteenth-century mausoleum of Gur-Emir at Samarkand
Crawley, General Hospital. *Architects:* Yorke, Rosenberg and Mardall. Exterior, interior views and plans 433–434
Criticism:
Cathedral Church of St. Michael, Coventry. *Architect:* Sir Basil Spence. *Illustrated article by* R. Furneaux Jordan 24–34
La Rinascente Store, Rome. *Architects:* Franco Albini and Franca Helg. *Illustrated article by* Fello Atkinson 268–274
Curtain wall cladding units (The Industry). Illustrated note 304
Cwmbran, South Wales, Industrial offices. *Architects:* Clifford Tee and Gale. Exterior, interior views and plans 130–131

Daylighting Code v. the London Street (Straitjacket or Elastigirdle?) *Illustrated article by* the London County Council's Architects' Department 261–263
Design Review:
Heavy Duty Furniture. *Designer:* Cedric Price. Illustrated note 124
Table clocks. Illustrated note 429–430

PAGE

Do It Yourself. *Article by* Ian Nairn 313–314
Domelights, Perspex (The Industry). Illustrated note 452
Doors, Overhead (The Industry). Illustrated note 450
Dunmurry, Northern Ireland, Factory. *Architect:* James Munce. Exterior, interior views and plan 52–53

Electric Fires (The Industry). Illustrated note 374
Exhibition Buildings, London, South Kensington, for the International Exhibition, 1862. *Illustrated article by* Betty Bradford 8, 15–21
Exhibitions. *Illustrated note by* Robert Melville 57, 132, 285, 363, 438
Exploring Eye, The:
Commagene. Illustrated note 113–115
Samarkand. Illustrated note 405–407

Factory, Dunmurry, Northern Ireland. *Architect:* James Munce. Exterior, interior views and plan 52–53
Factory, Gillingham, Kent, for Bowater-Packaging Ltd. *Architects:* Farmer and Dark. Exterior, interior views and plan 54–56
Farm Buildings, Wooden (Functional Tradition). *Illustrated note by* C. Forehoe 136–137
Finsterlin and some others. *Illustrated article by* Nikolaus Pevsner 353–357
Fire Protection: Active fire defence of buildings. *Illustrated article by* Clement Shepherd
1. Detection and alarm devices 370–374
2. Fire extinguishing equipment 444–450
Flats:
Basildon New Town, Tower block. *Architect:* A. B. Davies (Chief Architect-Planner, Basildon Development Corporation). Exterior views and plans 312, 336–340
Cambridge, Churchill College, Fellows'. *Architects:* Richard Sheppard, Robson and Partners. Exterior views and plans 329–331
London, Golden Lane, Goswell Road. *Architects:* Chamberlin, Powell and Bon. Exterior, interior views and plans 391–397
Functional Tradition: Wooden Farm Buildings. *Illustrated note by* C. Forehoe 136–137
Furniture:
Gordon Russell and Twentieth Century. *Illustrated article by* Nikolaus Pevsner 421–428
Heavy duty (Design Review). *Designer:* Cedric Price. Illustrated note 124
Hospital Ward. *Illustrated article by* Anthony Wylson 64–74, 138–146, 294–302

Garage doors, Overhead (The Industry). Illustrated note 450
Gillingham, Factory, for Bowater Packaging Ltd. *Architects:* Farmer and Dark. Exterior, interior views and plan 54–56
Glass, Experiments in (Applied Art). *Illustrated note by* Charles S. Spencer 291–293

Hall, London, South Kensington, Royal College of Art, Gulbenkian. *Architects:* H. T. Cadbury-Brown with Sir Hugh Casson and R. Y. Goodden. Interior views 275–278

PAGE

Hall, Manchester College of Science and Technology, Lecture. *Architects:* Cruickshank and Seward. Exterior, interior views and plans 281–283
Heating and lighting system, Combined (The Industry). Illustrated note 146
Heating, Room (The Industry). Illustrated note 146
History:
Brick Palace of 1862, The. *Illustrated article by* Betty Bradford 8, 15–21
Finsterlin and some others. *Illustrated article by* Nikolaus Pevsner 353–357
Mackmurdianum. Note 59
Oxford Museum, The. *Illustrated article by* Peter Ferriday 408–416
'Those Great Coops' (Pigeon towers in Persia). *Illustrated note by* Edmund Wilford 443
Hong Kong, City Hall. *Architects:* A. Fitch and R. J. Phillips (Public Works Department, Hong Kong Government). Exterior, interior views and plans 105–112
Hospital, Crawley, General *Architects:* Yorke, Rosenberg and Mardall. Exterior, interior views and plans 433–434
Hospital Ward Furniture. *Illustrated article by* Anthony Wylson
1. Beds 64–74
2. Bedside lockers, overbed tables, and methods of screening 138–146
3. Lighting and communications 294–302
Housing, London, Goswell Road, Golden Lane. *Architects:* Chamberlin, Powell and Bon. Exterior, interior views and plans 391–397
Housing, Peterlee New Town, Chapel Hill Neighbourhood. *Architect:* H. Durrell (Chief Architect, Peterlee Development Corporation). Exterior views and plans 398–400

Industry, The:
Air conditioning without refrigeration. Illustrated note 146
Aluminium in building. Illustrated note 302
Aspect transluscent sheeting. Note 304
Colour consultant for linoleum and tiles. Note 148
Curtain wall cladding units. Illustrated note 304
Electric fires. Illustrated note 374
Heating and lighting system, Combined. Illustrated note 146
Modular theatre system. Illustrated note 376
Overhead doors. Illustrated note 450
Perspex domelights. Illustrated note 452
Porcelain light fittings. Illustrated note 452
Room heating. Illustrated note 146
Interior Design:
Coventry, Cathedral Church of St. Michael. *Architect:* Sir Basil Spence. Interior views 35–42
Greystoke Place, Fetter Lane. Architects' office. *Architects:* Yorke, Rosenberg and Mardall. Exterior, interior views and plans 122–124
London, Hanover Street, W.1. Showrooms for Messrs. Morley's. *Architect:* Dennis Lennon. Interior, exterior views and drawing 417–420
London, Sloane Street. Showrooms. *Architect:* Peter Wood. Interior views 352
London, South Kensington, Gulbenkian Hall, Royal College of Art. *Architects:* H. T. Cadbury-Brown with Sir Hugh Casson and R. Y. Goodden. Interior views 275–278

index

PAGE

London, W.1. Robert Fraser Art Gallery. *Architect:* Cedric Price. Exterior, interior views 121–122
Oxford, Common-Room, Brasenose College. *Architects:* Myles and Deirdre Dove. Interior views 349–351

Japan 1962. Special issue 155–230

Kingston upon Hull, Queens Gardens and College of Technology. *Architect:* Frederick Gibberd. Exterior views and plan 11–14

Laboratories, London, Fulham, for North Thames Gas Board. *Architects:* E. R. Collister and Associates. Exterior views and plans 92–94
Lamp-posts: West London lights. *Illustrated note by* Derek Barton 293
Lancashire Mill Towns (Townscape). *Illustrated article by* Ian Nairn 47–51
Lancaster, Extensions to Royal Grammar School. *Architects:* C. B. Pearson and Son. Exterior, interior views and plans 283–284
Landscape of Hysteria, The
1. The Obsolescent Airport. *Article by* Reyner Banham 252–253
2. Towards a Clarified Aesthetic. *Illustrated article by* Raymond Spurrier 253–260
Lecture Hall, Manchester, College of Science and Technology. *Architects:* Cruickshank and Seward. Exterior, interior views and plans 281–283
Leicester, Teachers' Training College. *Architects:* Bridgwater, Shepheard and Epstein. Exterior views and plans 361–362
Libraries, Cambridge University, for the Arts Faculties. *Architects:* Sir Hugh Casson, Neville Conder and Partners. Exterior, interior views, model, drawings and plans 323–328
Light fittings, Porcelain (The Industry). Illustrated note 452
Lighting and communications, Hospital Ward. *Illustrated article by* Anthony Wylson 294–302
London:
Duke Street, W.1. Robert Fraser Art Gallery. *Architect:* Cedric Price. Exterior, interior views 121–122
Fulham, Lamp-posts in. *Illustrated note by* Derek Barton 293
Fulham, Offices and Laboratories for North Thames Gas Board. *Architects:* E. R. Collister and Associates. Exterior views and plans 92–94
Golden Lane Housing, Goswell Road. *Architects:* Chamberlin, Powell and Bon. Exterior, interior views and plans 391–397
Greystoke Place, Fetter Lane, Architects' offices. *Architects:* Yorke, Rosenberg and Mardall. Exterior, interior views and plans 122–124
Hanover Street, Showrooms for Messrs. Morley's. *Architect:* Dennis Lennon. Interior, exterior views and drawing 417–420
Sloane Street, Offices and Showrooms for Troughton and Young. *Architects:* J. Douglass Mathews and Partners. Exterior, interior views and plans 129–130
Sloane Street, Showrooms. *Architect:* Peter Wood. Interior views 352
South Kensington, Gulbenkian Hall, Royal College of Art. *Architects:* H. T. Cadbury-Brown with Sir Hugh Casson and R. Y. Goodden. Interior views 275–278
South Kensington, Royal College of Art. *Architects:* H. T. Cadbury-Brown with Sir Hugh Casson and R. Y. Goodden. Exterior, interior views, drawing and plans 242–249

Mackmurdianum (History). Note 59
Maisonettes, London, Goswell Road, Golden Lane. *Architects:* Chamberlin, Powell and Bon. Exterior, interior views and plans 391–397
Manchester College of Science and Technology, Lecture Hall. *Architects:* Cruickshank and Seward. Exterior, interior views and plans 281–283
Manchester Reunited (Townscape). *Illustrated article by* Kenneth Browne 116–120
Market, Sheffield, Retail. *Architect:* J. L. Womersley (City Architect). Exterior, interior views, drawings and plans 86–91
Modular Theatre System (The Industry). Illustrated note 376
Museum, The Oxford. *Illustrated article by* Peter Ferriday 408–416

New York, Preservation in. *Illustrated article by* Louise Huxtable 83–85

Obituary: Runcorn then and now. *Illustrated note by* Ian Nairn 288–291
Offices:
Cwmbran, South Wales, Industrial. *Architects:* Clifford Tee and Gale. Exterior, interior views and plans 130–131
London, Fulham Road, for North Thames Gas Board. *Architects:* E. R. Collister and Associates. Exterior views and plans 92–94
London, Greystoke Place, Fetter Lane, Architects'. *Architects:* Yorke, Rosenberg and Mardall. Exterior, interior views and plans 122–124
London, Sloane Street, for Troughton and Young. *Architects:* J. Douglass Mathews and Partners. Exterior, interior views and plans 129–130
Walton-on-Thames, Birds Eye. *Architects:* Sir John Burnet, Tait and Partners. Exterior, interior views and plans 264–267
On Trial. *Illustrated article by* Reyner Banham
5. The Spec-builders: Towards a Pop Architecture 43–46
6. Mies van der Rohe: Almost nothing is too much 125–128
Oxford, Brasenose College Common-room. *Architects:* Myles and Deirdre Dove. Interior views 349–351
Oxford Museum, The. *Illustrated article by* Peter Ferriday 408–416

Parallax. *Article by* Peter Collins 387–390
Persia, Pigeon Towers in (History). *Illustrated note by* Edmund Wilford 443
Peterlee New Town, Housing, Chapel Hill Neighbourhood. *Architect:* H. Durrell (Chief Architect, Peterlee Development Corporation). Exterior views and plans 398–400
Planning: The Business at Trosley Towers. *Illustrated note by* Ian Nairn 367–369
Plymouth Civic Centre. *Architects:* Jellicoe, Ballantyne and Coleridge. Exterior, interior views and plan 435–437
Portraits:
Akashi, Naibu, Bunji Kobayashi, J. M. Richards and Shindo Akashi 216
Fowke, Captain Francis 15
Murano, Togo 194
Raymond, Antonin 221
Tange, Kenzo 160
Yorke, F. R. S. 279
Preservation in New York. *Illustrated article by* Louise Huxtable 83–85
Pub in Focus. *Illustrated article by* Ian Nairn and Kenneth Browne 401–404

Queens Gardens and College of Technology, Kingston upon Hull. *Architect:* Frederick Gibberd. Exterior views and plans 11–14

Residential building, Cambridge, for Caius College. *Architect:* J. Leslie Martin. Exterior views and plans 315–319
Residential building, Cambridge, for King's College, Market Hill. *Architects:* Architects' Co-Partnership. Exterior, interior views and plans 320–322
Rome, La Rinascente Store. *Architects:* Franco Albini and Franca Helg. Exterior views, drawings and model. *Illustrated article by* Fello Atkinson 268–274
Royal College of Art, London, South Kensington. *Architects:* H. T. Cadbury-Brown with Sir Hugh Casson and R. Y. Goodden. Exterior, interior views, drawing and plans 242–249
Runcorn then and now (Widnes-Runcorn Transporter Bridge). *Illustrated note by* Ian Nairn 288–291
Russell and Twentieth Century Furniture, Gordon. *Illustrated article by* Nikolaus Pevsner 421–428

Samarkand (The Exploring Eye). Illustrated note 405–407
School, Lancaster, extensions to the Royal Grammar. *Architects:* C. B. Pearson and Son. Exterior, interior views and plans 283–284
Seattle World's Fair. Illustrated note 82, 134–135
SfB/AJ. *Article by* The Editors 239–241
Sheffield, Retail Market. *Architect:* J. L. Womersley (City Architect). Exterior, interior views, drawings and plans 86–91
Showrooms:
London, Hanover Street, for Messrs. Morley's. *Architect:* Dennis Lennon. Exterior, interior views and drawing 417–420
London, Sloane Street. *Architect:* Peter Wood. Interior views 352
London, Sloane Street, for Troughton and Young. *Architects:* J. Douglass Mathews and Partners. Exterior, interior views and plans 129–130
Shrubs. *Illustrated note by* A. du Gard Pasley 62–63, 287–288
Skill:
Active Fire Defence of Buildings. *Illustrated article by* Clement Shepherd
1. Detection and Alarm Devices 370–374
2. Fire extinguishing equipment 444–450

PAGE

Ward Furniture. *Illustrated article by* Anthony Wylson
1. Beds 64–74
2. Bedside lockers, overbed tables, and methods of screening 138–146
3. Lighting and communications 294–302

Store, Rome, La Rinascente. *Architects:* Franco Albini and Franca Helg. Exterior views, drawings and model. *Illustrated article by* Fello Atkinson 268–274
Straitjacket or elastigirdle: The Daylighting Code v. the London Street (Townscape). *Illustrated article by* the London County Council's Architects' Department 261–263

Teachers' Training College, Chichester. *Architects:* Bridgwater, Shepheard and Epstein. Exterior, interior views and plan 358–360
Teachers' Training College, Leicester. *Architects:* Bridgwater, Shepheard and Epstein. Exterior views and plans 361–362
Theatre, Buenos Aires, Municipal. *Architects:* Roberto Alvarez and Macedonio Oscar Ruiz. Exterior, interior views and plan 22–23
Theatre System, Modular (The Industry). Illustrated note 376
Topography: Wiltshire Surprises. *Illustrated note by* Nikolaus Pevsner 365–367
Towers in Persia, Pigeon (History). *Illustrated note by* Edmund Wilford 443
Town Centre, Banbury plans a new. Illustrated note 431–432
Town Centre, Basildon, New look at (Townscape). *Illustrated article by* Kenneth Browne 332–335
Townscape:
Lancashire Mill Towns. *Illustrated article by* Ian Nairn 47–51
Manchester Reunited. *Illustrated article by* Kenneth Browne 116–120
New Look at Basildon Town Centre. *Illustrated article by* Kenneth Browne 332–340
Straitjacket or elastigirdle: The LCC Daylighting Code v. the London Street. *Illustrated article by* the London County Council's Architects' Department 261–263
Venice in danger. *Illustrated note by* Manfredo Bellati 440–443
Translucent sheeting, Aspect (The Industry). Note 304
Trosley Towers, The Business at (Planning). *Illustrated note by* Ian Nairn 367–369

Universities:
Cambridge, Fellows' Flats, Churchill College. *Architects:* Richard Sheppard, Robson and Partners. Exterior views and plans 329–331
Cambridge, Libraries for the Arts Faculties. *Architects:* Sir Hugh Casson, Neville Conder and Partners. Exterior, interior views, model, drawings and plans 323–328
Cambridge, Residential Building for Caius College. *Architects:* J. Leslie Martin with Colin St. John Wilson. Exterior views and plans 315–319
Cambridge, Residential Building for King's College, Market Hill. *Architects:* Architects' Co-Partnership. Exterior, interior views and plans 320–322

PAGE

Oxford, Brasenose College Common-room. *Architects:* Myles and Deirdre Dove. Interior views 349–351
USA: Preservation in New York. *Illustrated article by* Ada Louise Huxtable 83–85
USA: Seattle World's Fair. Illustrated note 82, 134–135

Venice in Danger (Townscape). *Illustrated note by* Manfredo Bellati 440–443
Vittone. *Illustrated article by* Henry A. Millon 95–104

Walton-on-Thames, Offices for Birds Eye. *Architects:* Sir John Burnet, Tait and Partners. Exterior, interior views and plans 264–267
Water-towers. Illustrated note 60–62
Wiltshire Surprises (Topography). *Illustrated note by* Nikolaus Pevsner 365–367
Wooden Farm Buildings (Functional Tradition). *Illustrated note by* C. Forehoe 136–137

Yorke, F. R. S. 1906–1962. *A Memoir by* E. Maxwell Fry 279–280

ARCHITECTS AND ARTISTS

Aalto, Alvar 382
Akashi, Naibu 230
Akerblad, Hans 3
Albini, Franco, and Franca Helg 268–274
Alvarez, Mario Roberto, and Macedonio Oscar Ruiz 22–23
Anahory, Eduardo 152
Appel, Karel 58
Architects' Co-Partnership 320–322
Armitage, Kenneth 134
Ashihara, Yoshinobu 212, 230
Austin Vernon, and Partners 235
Bacon, Francis 132
Baines, Grenfell and Hargreaves 5
Baldaccini, Cesar 364
Bartning, Otto 354
Belgiojoso, Peressutti and Rogers 308
Benrath, Frédéric 439
Beyer, Ralph 36–42
Blake, Peter 44, 58, 59
Bloc, André 234
Booth, David 424
Bridgwater, Shepheard and Epstein 358–362
Broudy, Charles 135
Burnet, Sir John, Tait and Partners 264–267
Butler, Reg 364
Cadbury-Brown, H. T., with Sir Hugh Casson and R. Y. Goodden 242–249, 275–278
Cafiero, Ligini, Marinucci and Venturi 151
Candela, Felix and Luis La Guette 305
Capa, Robert 440
Carbonell, Ricardo 308
Casson, Sir Hugh, Neville Conder and Partners 323–328
Casson, Sir Hugh, R. Y. Goodden with H. T. Cadbury-Brown 242–249, 275–278
Chamberlin, Powell and Bon 391–397
Chesneau and Verola 4
Clarke, Geoffrey 36–42, 310
Clarke, Geoffrey, Lawrence Lee and Keith New 36–42
Clifford Tee and Gale 130–131
Collister, E. R., and Associates 92–94
Contreras, Carlos 233
Coper, Hans 36–42
Corneille, Guillaume 287
Cossa, Francesco del 239
Costa, Lucio 308
Croce, Plinio Aflalo, Gasperini and Suarez 150
Cruickshank and Seward 281–283
Davies, A. B. 312, 332–340
Debré, Balanda and Amanieux 232

PAGE

Deen, James L. 150
Dellegret, Pierre 151
Dove, Myles and Deirdre 349–351
Darrell, H. 398–400
Eames, Charles 379
End, Henry 150
Eiermann, Egon 78
Eklund, Jarl 234
Eliason, Trond, and Birger Lambertz-Nilsson 150
Epstein, Sir Jacob 30
Erdi, Louis 309
Farmer and Dark 54–56, 60
Faublée, René 232
Fielden and Mawson 137
Finsterlin, Hermann 353–357
Fitch, A., and R. J. Phillips (Hong Kong Government Public Works Department) 105–112
Forseth, Einar 42
Fowke, Francis 8, 15–21
Franchini, Aldo 2
Frink, Elizabeth 36–42
Gammons, J. C. 60
Gardella, I. 442
Gavidia, Dagoberto 308
Gibberd, Frederick 11–14, 256–257, 346
Gibberd, Frederick, and F. J. Samuely and Partners 61
Goodden, R. Y., Sir Hugh Casson with H. T. Cadbury-Brown 242–249, 275–278
Gorky, Arshile 285
Gosling, David 116–120
Gotz, Lothar 2
Graham, John 82, 134
Guarini, Guarino 96–98
Gutbier, Rolf, and Hams Kammerer 76
Hamilton, David 236
Heesen, Wim 291–293
Helg, Franca, and Franco Albini 268–274
Hepworth, Barbara 365
Hockney, David 59
Hoeger, Fritz 353
Horiguchi, Sutemi 176, 198
Howe and Lescaze 231
Hundertwasser, Fritz 287
Hutchison, Neill, and Jean Prouvé 344
Hutton, John 36–42
Imai, Kenji 380
Jacmain, André 2
Jaye, R. Donald 149
Jellicoe, Ballantyne and Coleridge 435–437
Johansen, Jo 77
Jones, Allen 59
Jorn, Angers 439
Juvarra, Filippo 97, 98, 101
Kahlenbach 354
Kajava, Eero 75
Kalinowski, Horst Egon 364
Kallmann, Gerhard, N. M. McKinnell and E. F. Knowles 152
Kammerer, Hans, and Rolf Gutbier 76
Kikutake, Kiyonori 178, 180–181, 215, 230
Kling, Vincent 4
Knowles, E. F., Gerhard Kallmann and N. M. McKinnell 152
Kokoschka, Oskar 386, 438
Kosaka, Hideo 199, 204, 224
Krayl 354
Kurokawa, Noriaki 214
Le Guette, Luis, and Felix Candela 305
La Mâche, Paul 233
Lambertz-Nilsson, Birger, and Trond Eliason 150
Lauritzen, Vilhelm 344
Lee, Lawrence, Geoffrey Clarke and Keith New 36–42
Lennon, Dennis 417–420
Leroy, Fernand 233
Limbrick, Roger 47–51
Lindner, Richard 363
Lindstrom, Süne 61–62
Luccichenti and Monaco 344
Luckhardt, Hans 354
Luckhardt, Wassili 354

index

PAGE

Luckman, Charles, and Associates 343, 346
Lurçat, Jean 310
McKinnell, N. M., Gerhard Kallmann and E. F. Knowles 152
McKinstry, Robert 154
Maekawa, Kunio 163–224
Maki, Fumihiko 200–201
Manchester City Architect's Department 346
Mangiarotti, Angelo 430
Martin, Sir J. Leslie 315–319
Mathews, J. Douglass, and Partners 129–130
Matsushita and Shimizu 135
Matthew, Robert, and Partners 343
Mendelsohn, Erich 353
Michaux, Henri 365
Mijares, Rafael, and Pedro Ramirez Vasquez 305
Miller and Miller 18–19
Mitchell, William 14
Modesto, Helio 4
Modigliani, Amedeo 57
Moore, Henry 363
Munce, James 52–53
Murano and Mori 181, 186, 195, 206, 222
Murano, Togo 173, 194
Murata, Masachika 208
Muratori, Severio 76
Murray-Jones-Murray 346
Nevelson, Louise 285
New, Keith, Lawrence Lee and Geoffrey Clarke 36–42
Niemeyer, Oscar 307
Nikken Design Office 195, 203
Noguchi, Isamu 173
Nüesch, Hanspeter 232
Oe, Hiroshe 210
Ohdaka, M., and M. Tanaka 162
Osaka Design Office 203
O'Shea, James 408–416
Osman, Louis 153
Paolozzi, Eduardo 364
Parkin, John B., and Associates 346
Paxton, Sir Joseph 237
Pearson, C. B., and Son 283–284
Pereira, William L., and Associates 1
Phillips, Peter 58
Phillips, R. J., and A. Fitch (Public Works Department, Hong Kong Government) 105–112
Picasso, Pablo 364
Piper, John, with Patrick Reyntiens 24–42
Poelzig, Hans 353, 354
Portoghesi, Paolo 76
Price, Cedric 121–122, 124
Prouvé, Jean, and Neill Hutchison 344
Pulkka, Rajala and Leppanen 75
Raymond, Antonin 203, 210, 217, 218, 219, 221
Requichot, Bernard 363
Reynolds, Alan 439

PAGE

Reyntiens, Patrick, and John Piper 24–42
Riley, Bridget 134
Rivers, Larry 133
Rondeltap, L. 1
Roosenburg, Verhave, Luyt and de Jongh 1
Ruiz, Macedonio Oscar, and Mario Roberto Alvarez 22–23
Russell, Gordon 423–424
Russell, R. D. 36–42, 423–424
Russell, W. D. 423–424
Saarinen, Eero, and Associates 306, 345
Sakakura, Junzo 174, 196, 213, 214, 222, 224
Samonà, Professor G., Dean of the School of Architecture, University of Venice 442
Scarpa, Carlo 381
Scharoun, Hans 354
Scott, Brownrigg and Turner 5
Sheffield City Architect's Department 5
Sheppard, Richard, Robson and Partners 329–331
Shibaoka, Isao 184
Siren, Kaija and Heikki 61, 233
Sironi, Mario 285
Skidmore, Owings and Merrill 231, 255, 343, 345
Smith, Charles 136
Spence, Sir Basil 24–42
Stam, Mart 60
Steinbrueck, Victor 79, 135
Steiner, Rudolf 353
Sullivan, Louis 85
Sutherland, Graham 36–37
Sutton, Keith 439
Sykes, Steven 36–42
Taglietti, Enrico 381
Tanaka, M., and M. Ohdaka 162
Tange, Kenzo 172, 174, 195, 202, 205–206, 209, 226, 228
Taut, Bruno 354
Thiry, Paul 134
Thomas, Griffith 84
Tippets, Abbott, McCarthy and Stratton 345
Tjonn, Bjarne 382
Tokunaga, Masami 196
Treherne, Margaret 36–42
Tweddell, Noel, and Roy Worskett 431–432
Urabe, Shizutaro 196
van Heelsbergen, Ch. 2
Vasquez, Pedro Ramirez, and Rafael Mijares 305
Verrey, Aloys and Philippe 233
Vitellozzi, Annibale 78
Vittone, Bernardo Antonio 95–104
Walker and McGough 135
Williams, Sir Owen 255
Wilson, Colin St. John, with Sir Leslie Martin 315–319
Wilson, J. 424
Womersley, J. L. (Sheffield City Architect) 86

PAGE

Wood, Peter 352
Woodward, Benjamin 408–416
Worskett, Roy, and Noel Tweddell 431–432
Wright, Frank Lloyd 159, 165
Yakushiji, Ko 187
Yamasaki, Minoru 82, 134
Yorke, F. R. S. 280
Yorke, Rosenberg and Mardall 122–123, 433–434
Yoshida, Isoya 190
Yoshimura, Junzo 187
Yoshizaka, Takamasa 179, 228
Zacchirelli, Enzo 151

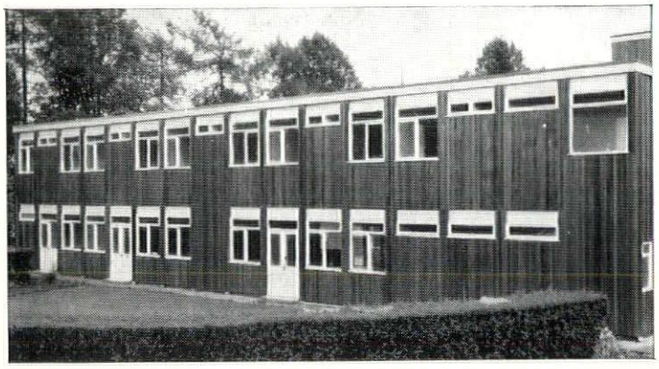
AUTHORS AND CONTRIBUTORS

Atkinson, Fello 9–10, 268–274
Banham, Reyner 43–46, 125–128, 252–253
Barley, Maurice 81
Barton, Derek 293
Beatty, C. J. P. 310–311
Bellati, Manfredo 440–443
Bradford, Betty 15–21
Brawne, Michael 237, 341–348
Browne, Kenneth 116–120, 332–335
Browne, Kenneth, and Ian Nairn 401–404
Carter, John 6
Collins, Peter 387–390
Cubitt, James 385
de Maré, Eric 385
Editors, The 239–241
Ferriday, Peter 408–416
Forehoe, C. 136–137
Fry, E. Maxwell 279–280
Goldfinger, Ernö 309
Hitchcock, H.-R. 236–237
Huxtable, Ada Louise 82–85
Jordan, R. Furneaux 24–34
London County Council's Architects' Department 261–263
Melville, Robert 57, 132, 285, 363, 438
Millon, Henry A. 95–104
Morris, James 6
Nairn, Ian 5–6, 47–51, 288–291, 313–314, 367–368
Nairn, Ian, and Kenneth Browne 401–404
Pasley, A. du Gard 62–63, 287–288
Pevsner, Nikolaus 81, 353–357, 365–367, 421–428
Richards, J. M. 155–230
Rix, Michael 311
Shepherd, Clement 370–374, 444–450
Spencer, Charles S. 291–293
Spurrier, Raymond 253–254
Whiffen, Marcus 237
Wilford, Edmund 443
Winter, John 385
Wylson, Anthony 64–74, 138–146, 294–302

"All-Electric" Installation
to Hille of London
new Showrooms and Offices
at Albemarle Street, W.1
including Floor Warming with embedded
BUTYL SPIRAL HEATING CABLES
carried out by

GRIERSON LIMITED
LONDON, S.W.7

space to your specification



and details to your satisfaction

PEELS
Prefabricated Buildings

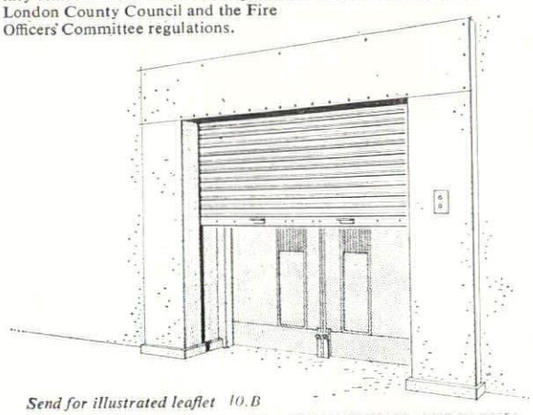
Whatever kind of prefabricated building or extension . . . for any purpose . . . if PEELS haven't got an existing design, they will provide FREE plans exactly to your specification. Workmanship is first-class. Delivery reliable, all Peels ask is a chance to quote! This superb example of Peels ingenuity in up-to-the-minute design and construction, a double storey Convent at Watford.

H. PEEL LIMITED, Dept. AR 3, Sowerby Bridge, Halifax. Phone: Halifax 81211

KINNEAR FIRE SHUTTERS
by the makers of Kinylon and Kinrod Grilles

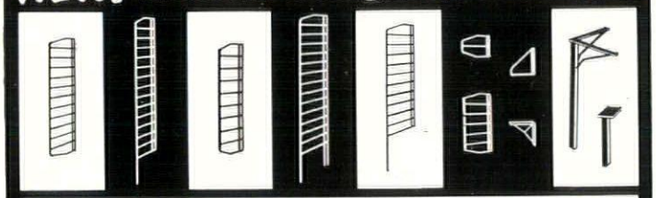
solve the problem

of fires that could cost you more than any insurance would cover. Absolutely fire-proof, Kinnear Fire Shutters save useful wall space and need no ugly floor or overhead tracks. Adaptable to any surround, they remain unseen when not required for duty. Manufactured to London County Council and the Fire Officers' Committee regulations.

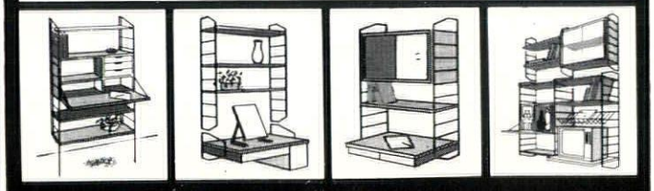


Send for illustrated leaflet 10.B
ARTHUR L. GIBSON & CO. LTD., TWICKENHAM, MIDDLESEX.
Telephone: Popesgrove 2276. Birmingham: Highbury 2804.
Glasgow: Halfway 2928 Manchester: Central 1008 Cardiff: 21983
Also Suppliers of Sliding Door Gear

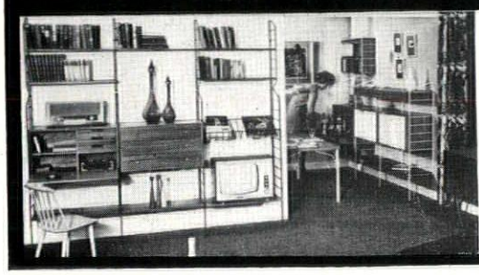
NEW! Modern design on a budget



Brianco introduce a greatly increased range of metal ladder units which enable you to plan exciting interiors at remarkably low cost. Our catalogue gives details of these together with shelves cabinets etc. Whether just filling an alcove or designing a large room setting, Brianco provides the answer. We also have a range of square section metal legs and frames for making your own coffee or dining tables.



BRIANCO Book Shelves Coffee Tables Record Cabinets Room Dividers Desks Chairs Slatted Benches Drink Cupboards Bureaux Chests Book Cases



ORDER BY POST.
Write or call for illustrated catalogue at our showrooms.
Brianco Limited, Dept. (AR 4) 16 Norton Folgate, Bishopsgate, London, E.1.
Only 4 minutes from Liverpool St. Station.

Metal letters
IN STAINLESS or ENAMELLED STEEL
PERSPEX LETTERS

Neon Signs
COMPLETE INSTALLATIONS erected and maintained for the Trade—using plain vans
write or phone for details to

Chase Products
(ENGINEERING) LIMITED
27 PACKINGTON ROAD, SOUTH ACTON, W.3
Telephone: Acorn 1153-4

Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames.
Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter