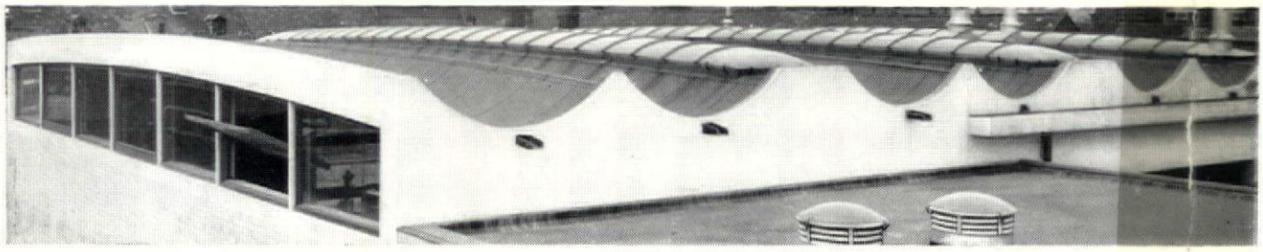


REVIEW 63

THE ARCHITECTURAL REVIEW VOLUME CXXXIII NUMBER 791 JANUARY 1963 FIVE SHILLINGS



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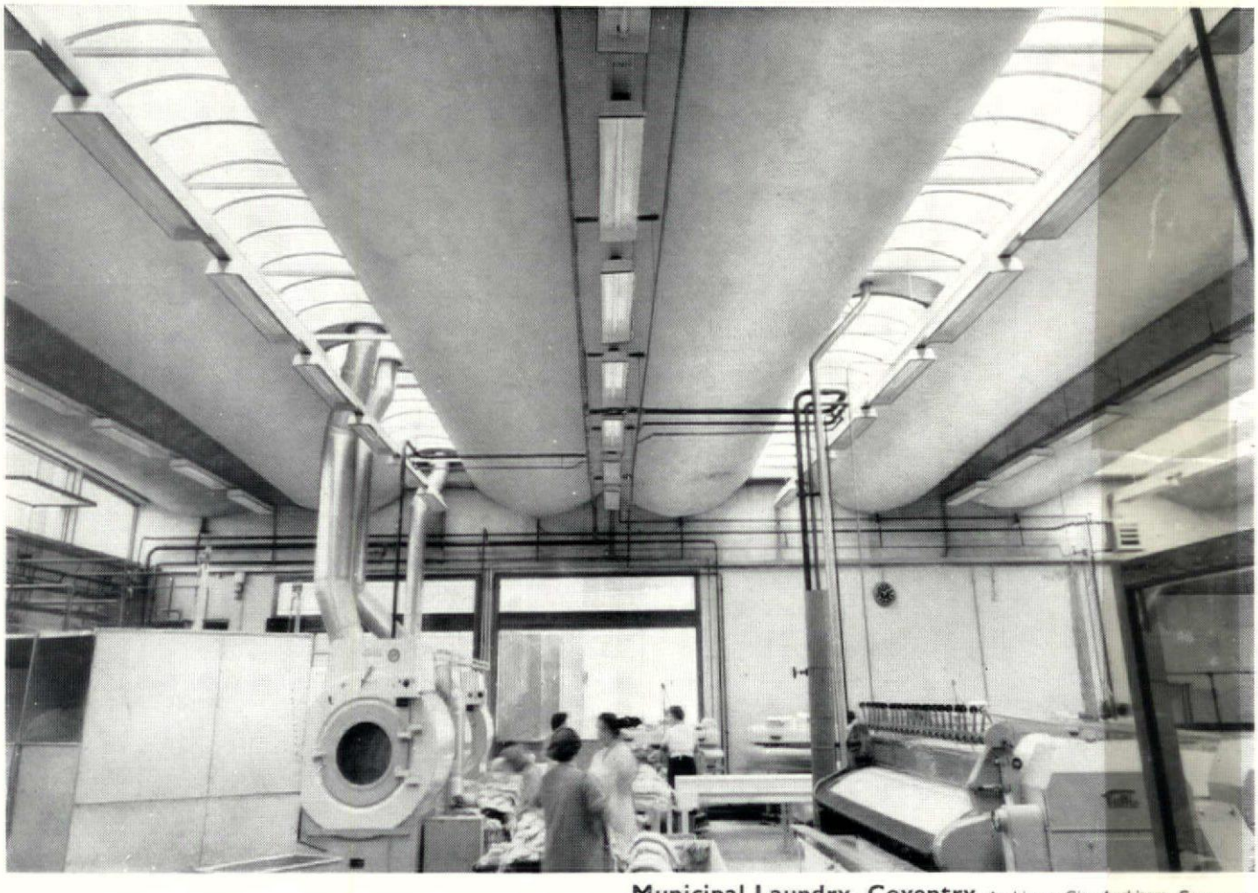

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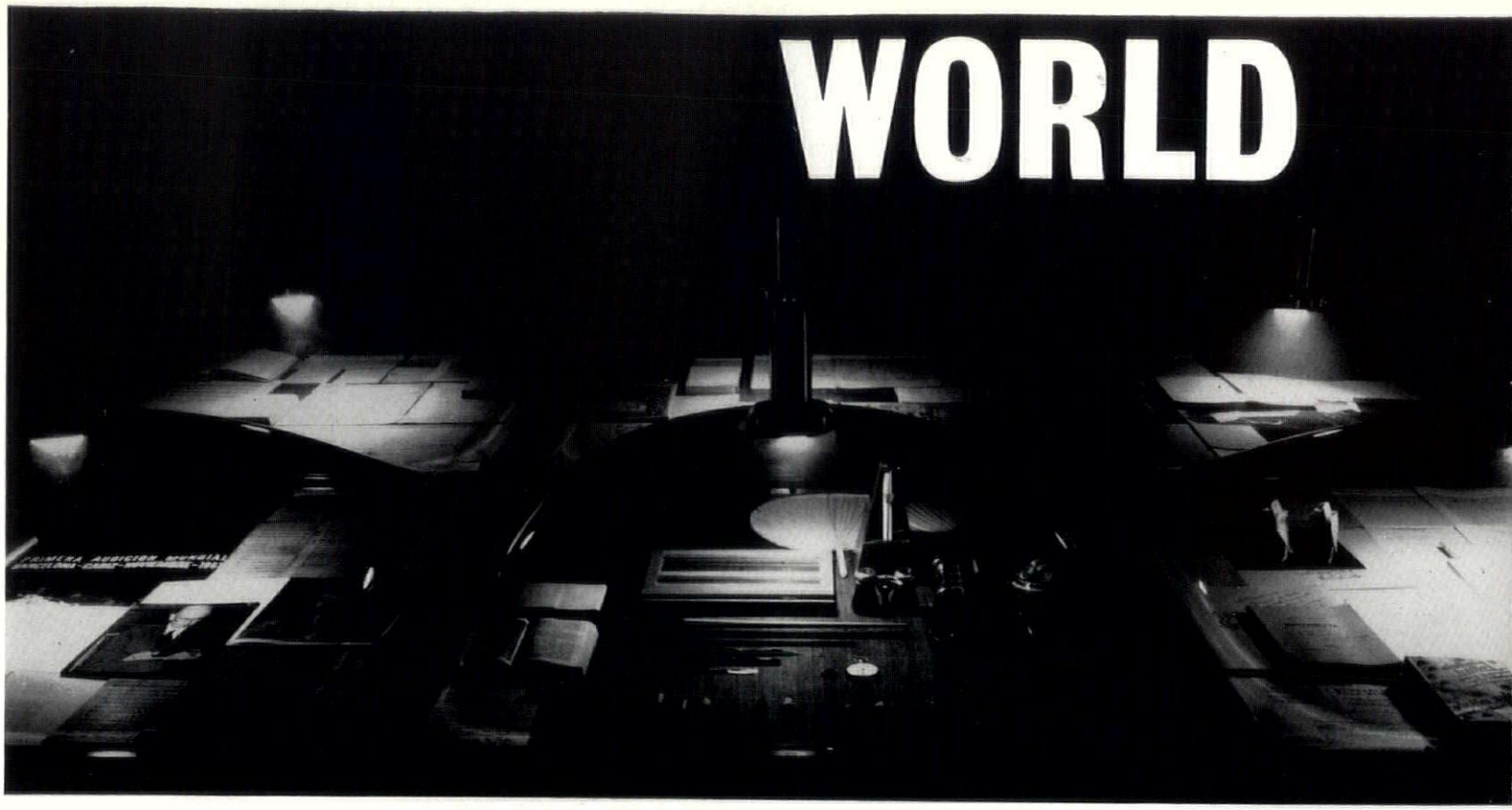
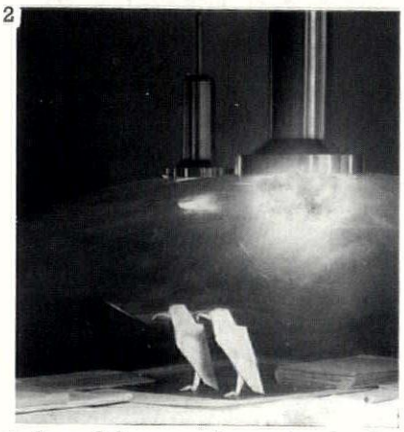


1

EXPO de FALLA

When an original idea breaks through in Spanish design nowadays, it is apt to take drastic form. There was nothing tentative about José Garcia de Paredes's display technique for the de Falla exhibition in Granada last summer—the whole concept of the display-dome-lamp is there, 1, complete at the first shot. Each dome of slightly tinted plastic is one metre square, protects not only documents from de Falla's life and work, but also three-dimensional objects (such as the paper birds, 2, dedicated to the composer by Miguel de Unamuno), and is lit by a single lamp in the crown of the dome, thereby preventing external glare on the transparent surface and providing a convected airflow to ventilate the display. Twenty-four of these *grandes cupulas abombadas*, 3, cluster in the centre of the refectory of San Jeronimo, whose pure Renaissance volume is otherwise undisturbed by the exhibit, the contents of which had been rigorously edited to fill precisely the area domed over with the maximum informative effect. The catalogue, also by Garcia de Paredes, is very hip too.

2



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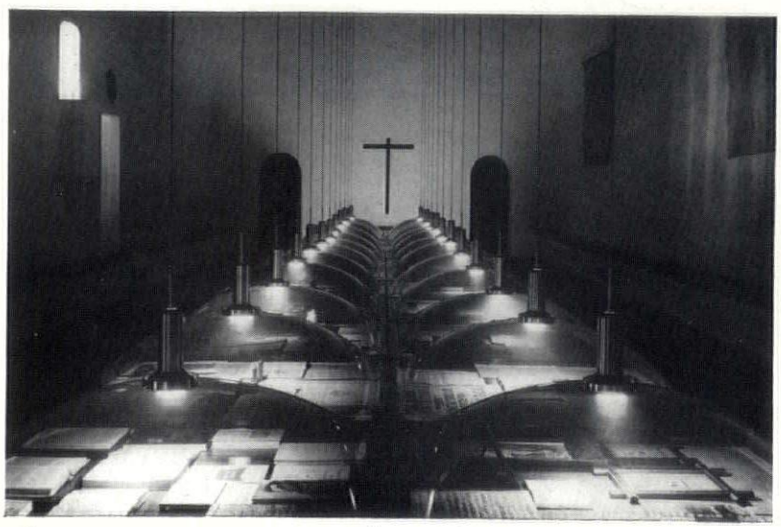
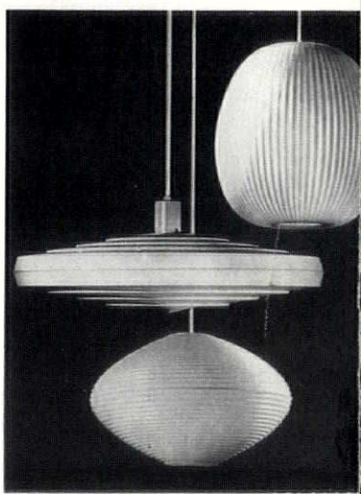
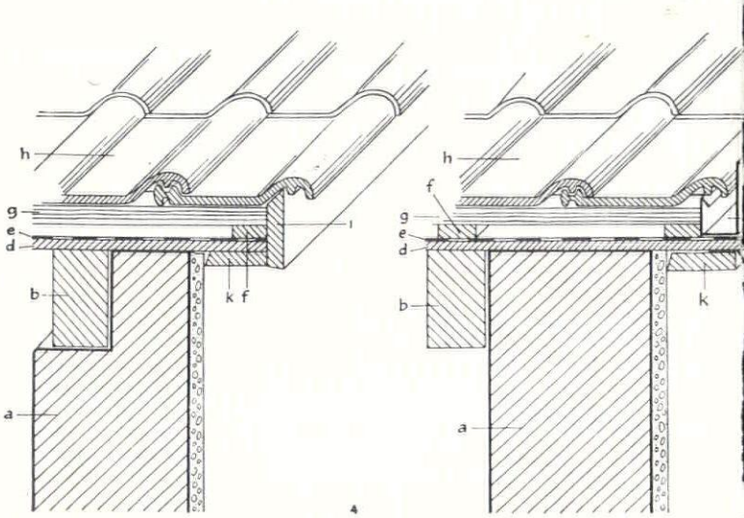


1

GERMAN DETAILING

The clarity and profusion with which German periodicals publish architectural details has been a subject of comment in World more than once in the past. Now comes a complete magazine entitled *Detail*, published bimonthly in Munich and comfortably settled into its stride—in which it reverses the normal balance of a quality architectural magazine and devotes a great deal of space to detail, with a supplement for serious discussion, instead of the other way about. Detail, as such, it treats under three main headings—products, be they constructional components or more or less free-standing objects such as plastic light-fittings, 4, by Reininghaus of Iserlohn; methods of detailing a particular problem, such as an eaves





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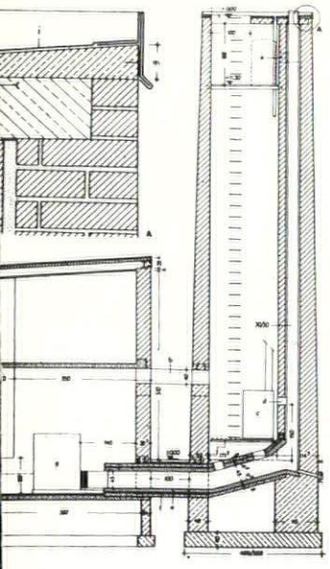
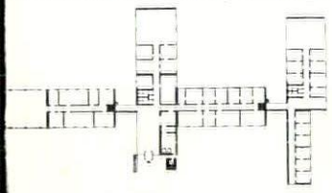
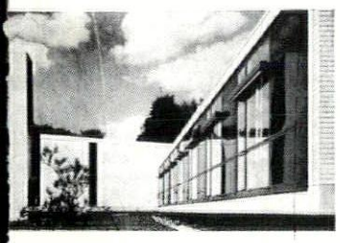


tail

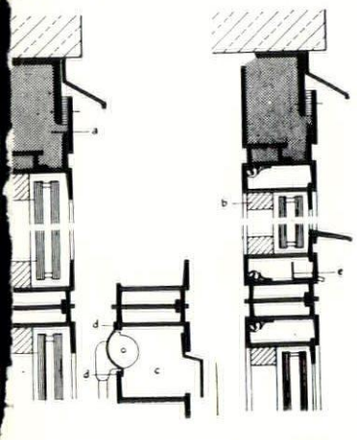
, 5, or the detailing of a par-
ar building (in No. 4, 1962), such
he flue-stack, 6, with craftily
ed capping, from Fritz Traut-
's unusual office-complex for
ohlt-Taschenbuch (otherwise Ro-
, the backbone of the German
r-back industry).
is is in any case a building that
d be worth illustrating for more
its detailing. Its site is suburban,
einbeck, outside Hamburg, and
its a spreading plan, not unlike
recent schools, held together
xes of communication, 7, though

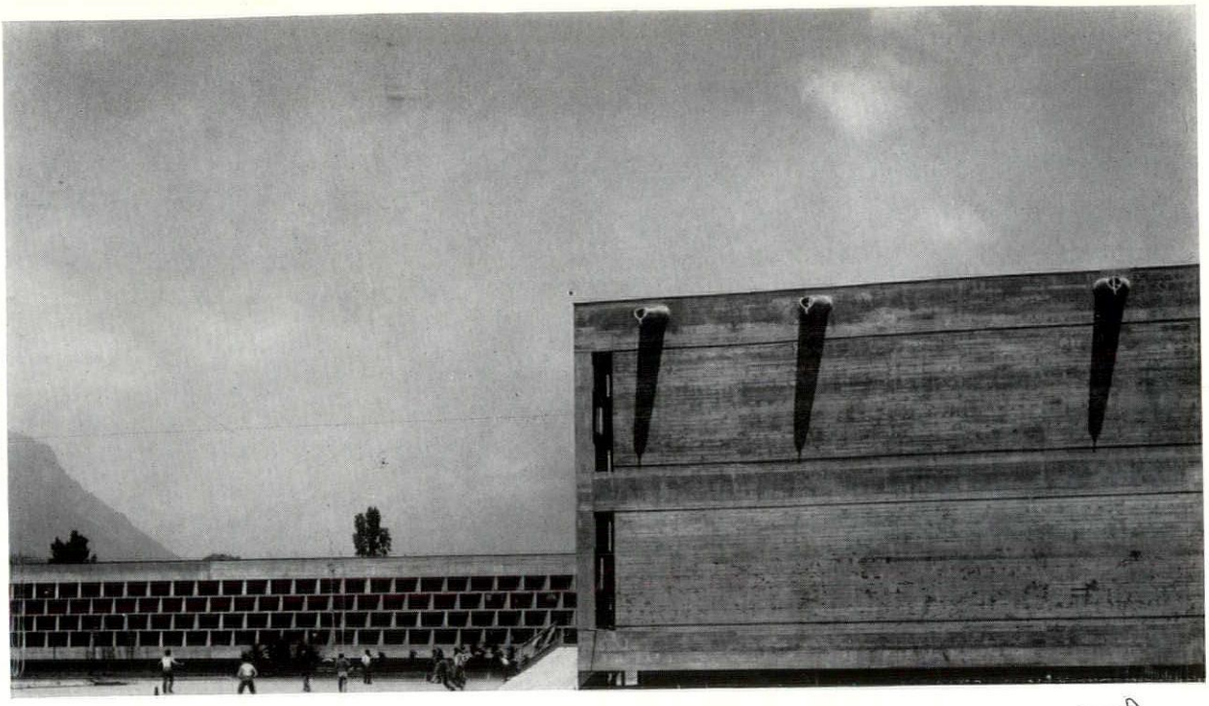


does not produce any undue or
d formality in the elevations, 8.
truction is in concrete, brick



steel, 9, and 10 shows to particular
ntage in the windows and window-
which are built up from mostly
lard sections with an almost
ian ingenuity, 9, if not with
ian intent.





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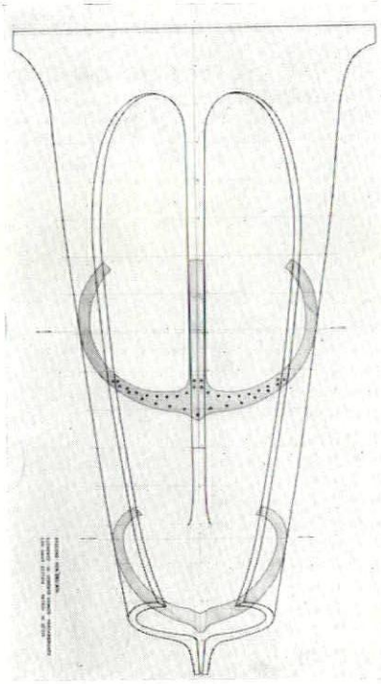
MARXER

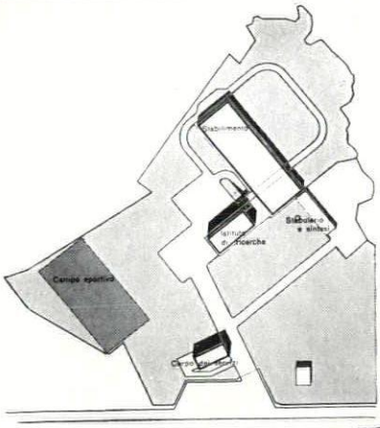
Pharmacological Research Laboratory

13



Something at Ivrea that is not Olivetti would be news indeed: the Marxer Institute, 10, just fails to fulfil this rare specification—it is not quite at Ivrea, but five miles away at Loranzé on the Castellamonte road, and it is not absolutely outside the Olivetti orbit, for the foundation of the Italian Marxer company is due to Adriano Olivetti who recognized in Antoine Marxer, not only a distinguished biologist and 'modern sage' but also a kindred spirit.

The installation at Loranzé consists of a laboratory block flanked at right angles by a lower production building, see plan, 11, while a small services block stands by the main entrance to the plant. The architecture, which is due to Alberto Galardi of Milan, is almost unique in recent Italian work in its simplicity and in the use of exposed *béton brut*—Vigano's Istituto Marchiondi (AR, May, 1961) is less straightforward and less close to Le Corbusier. Direct reminiscence of Corbu appears here most notably in the solutions employed in throwing off, 12, 13 and collecting, 14, rainwater,



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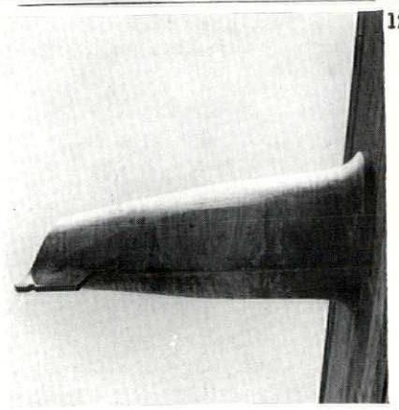

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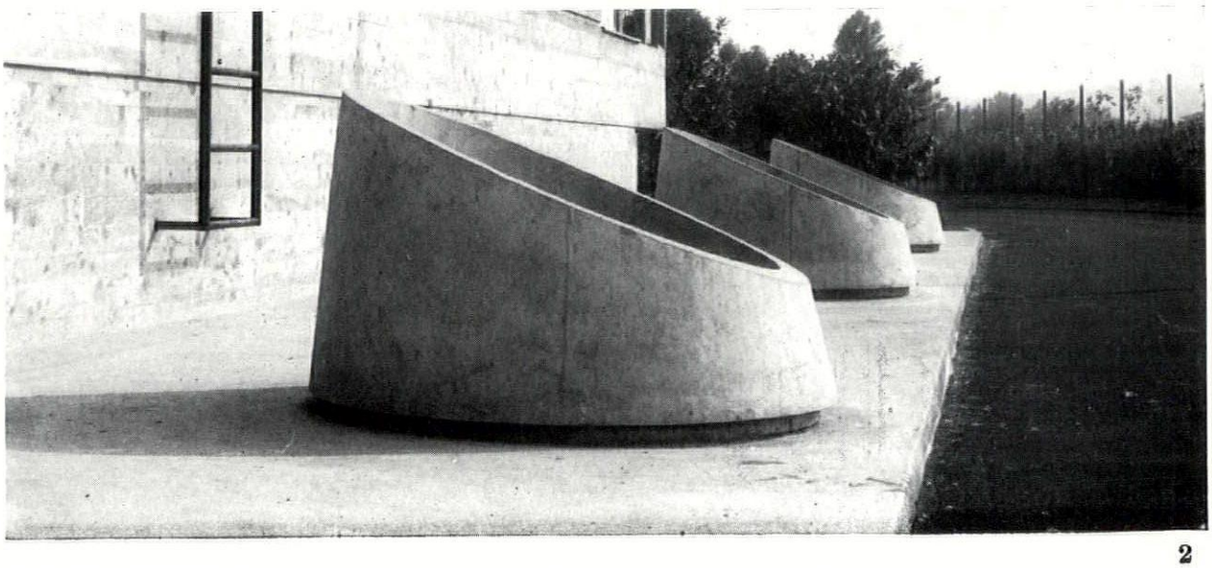

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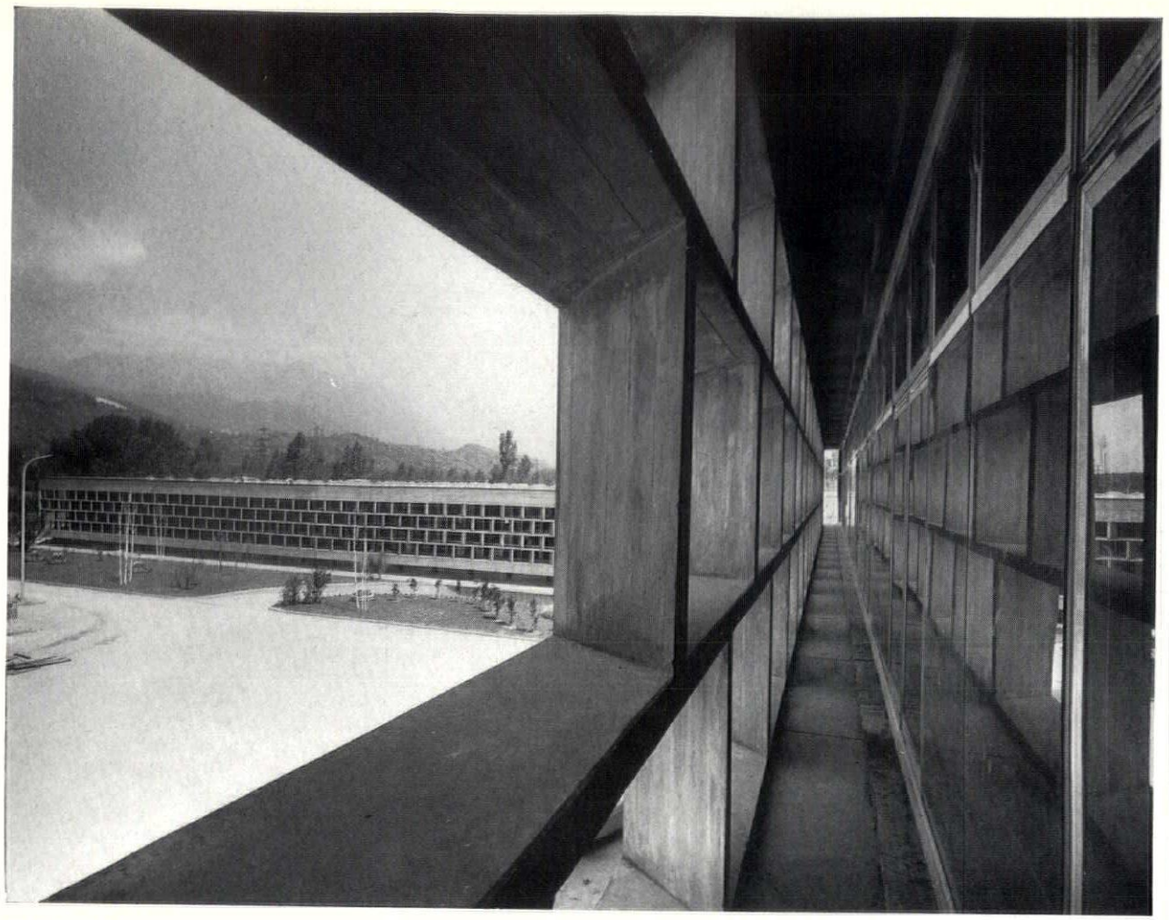


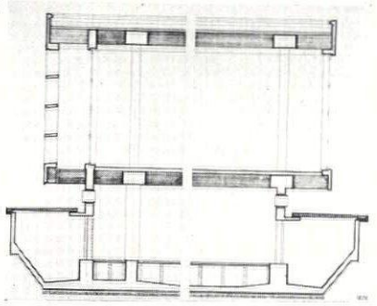
15

MARXER

and to some extent in the type of *brise soleil* employed, 15. Facades without sun shading, whether blank, or glazed, 16, show an unforced simplicity in the use of rough-shuttered concrete which is most unusual in this material which has become a preferred instrument of personal rhetoric.

In section, too, both the laboratories and the production plant show a welcome simplicity, 17, that avoids the excesses of turning services into monumental drama, and offers instead adequate overhead and underfloor spaces for wiring and conduits, together with ample clearance for larger duct-work in the basements, with access via the removable covers to the 'areas' which run the full length of each block beneath the overhang of the ground-floor structure. Although much has been made in the Italian press and elsewhere of the relation of these buildings to their landscape—'becomes part of it' according to the official Marxer handout—it seems that their real authority comes from the air of a straightforward job done in a straightforward manner, and an equally straightforward contrast with the forms of the landscape, justified by pure functional suitability.

17



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ulm 6

Zeitschrift der Hochschule für Gestaltung

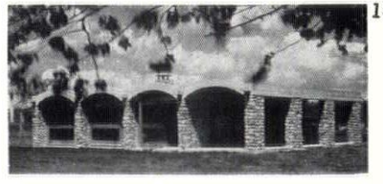
A welcome return to publication after some two years' absence from the design scene is that of the *Zeitschrift der Hochschule für Gestaltung* at Ulm, appearing under the same classic three-letter title as before (see above) but for this, its sixth issue, in a new format, with a tall page instead of the original *quadrat*. Also, in contrast to earlier issues, its contents are not devoted solely to a single theme or topic, but range over a variety of fields, and there is intended to be a regular quarterly publication under the editorship of Gui Bonsiepe (one of the most notable products of the HfG's *Information-Abteilung*). Informed observers of the Ulm situation will note two changes of tone and intention as compared with earlier manifestations of the local *Weltanschauung*. One is an explicit moving away from the preoccupation with analytical techniques which has so far been taken as the mark of the Maldonado regime—at the head of the first article stands a quotation from Ernest Bloch to the effect that 'he who only analyses, loses the world' and the introductory editorial speaks of the 'debate between rationalism and intuitionalism' almost as if someone believed that there really are Two Cultures.

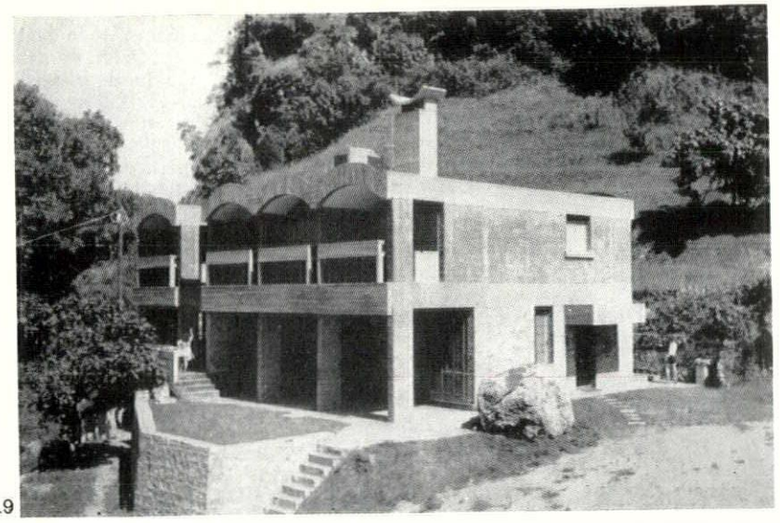
The other change, which may or may not be deducible from this move toward a 'middle attitude' on design, is an explicit concern with current events on the design scene. Without descending from its lofty perch, *Ulm* appears to have leaned over forward far enough to peer into the jungle of real life below, and launch a few Jovian thunderbolts on the mere humans down there. Quite apart from reports on the sundry pilgrims who have climbed up the hill to Ulm level in parties of visiting firemen, there are sharp correctives launched at the heads of German middle-class consumers, the German film industry, German politicians, Reyner Banham for being seduced by *Playboy* magazine, and above all, Denis Hulsman and Georges Patrix, authors of a French popular handbook on industrial design, which is smartly and effectively shredded by Tomas Maldonado himself, on the grounds of slant, bias, chauvinism and plain inaccuracy—a rousing performance which means that *Ulm*, in return, must be faultless in all these respects, or suffer a like fate from hostile critics itself. Tempering mercy with justice one must observe that the translations into English in *Ulm 6*, fail, on occasions, to match the standard expected if this is to be the official second language of the school.

100 HOUSES

The fat special issue of *Architecture d'Aujourd'hui* (September, 1962) devoted to a hundred houses of today made nourishing reading, albeit heavy going at times, in spite of André Bloc's distinctly non-conformist introductory essay calling for more individual houses (at a time when architects in most countries are concerned to arrest the sprawl that this kind of development can cause). There are in fact more than ninety houses in the main part of the issue, including fifteen belonging to their architects, beginning with the Eames house (which *A d' A* seems to have discovered rather late in the day) and concluding with Henry Maillard's weekend barrel-vaults, 18,

18





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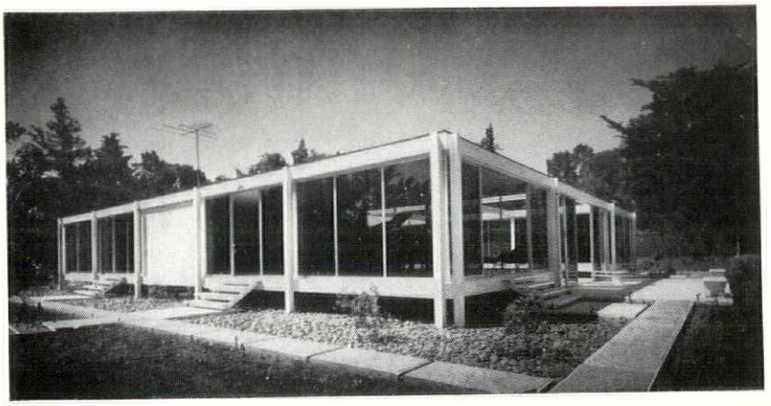

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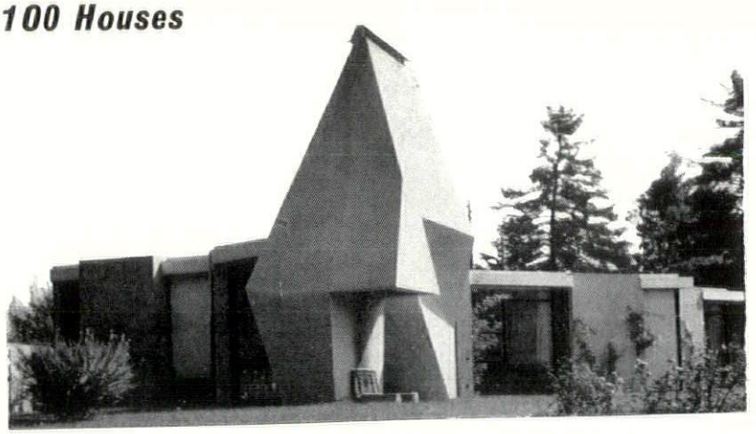


21

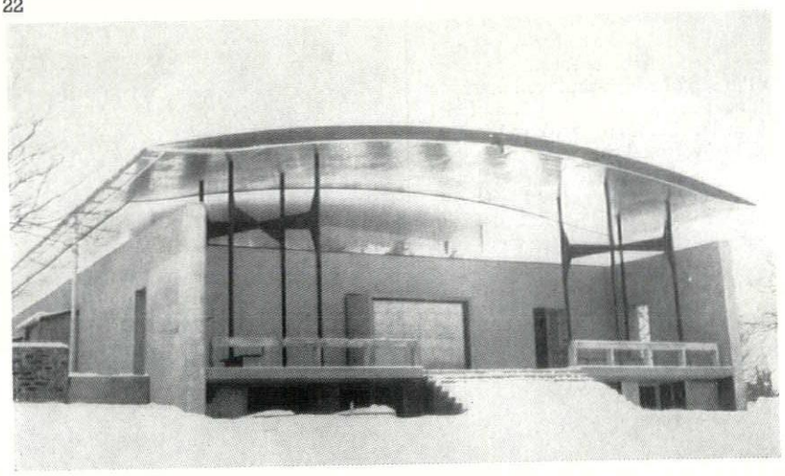
at Motteux. The parentage of this design will be clear enough to all those who know their Corb, but it is by no means the most obvious piece of *Jaoulisme* to be illustrated. Facing it, *A d' A* illustrates a house in that 'political anomaly,' Campione d'Italia on Lake Lugano, designed by Dolf Schnebli, and paying even more direct tribute, 19, to the Master's Algerian brickwork and pseudo-Catalan vaults.

But there the matter finishes: in spite of the obvious suitability of the Jaoul solution to both the techniques and the economics of the housing market, and in spite of the obviously enhanced likelihood of finding work of this persuasion in a French magazine, those are all the Jaouls there are. Despite a sprinkling of umbrella vaults and wavy slabs, a fairly rationalistic assembly of horizontal and vertical planes still seems (on this evidence) to be the mark of the house of today. Not all were as extreme as Craig Ellwood's houses, 20, in the new and more Miesian idiom of his recent Californian work but this type effectively represented the norm. The breaks, when they came, were even more sensational in effect than their style might have justified, though Robert Frei's house for a potter outside Geneva would make a powerful impact, 21, in any company, especially in plan. Nevertheless its value here was to underline the extraordinary degree of conformity that exists in domestic design throughout those parts of the world that boast, in Bloc's words, *une certaine généralisation du bien-être*.

SAINT PROUVÉ

steel frame church at Mazamet

A Prouvé church is an unexpected occurrence, but one turned up, 22, in the August-July (1962) issue of *l'Architecture Francaise*. As might be expected, the conception and execution are both interesting. The basic *parti* is a constructional one—the base and enclosing walls, 24, are in traditional masonry, while the roof and its supports are an independent steel-framed structure, 22, dropped into the *temenos*, so to speak, and so clear is the distinction of the parts that one is tempted at first sight to suppose that Jean Belmont, the architect, designed the masonry part and Jean Prouvé the metal. But the design integrates perfectly satisfactorily—probably just because this parti is *so* basic—and the cruciform groups of supports that hold up the oversailing roof, far from appearing as strangers in the nave, 23, make a very effective articulation of the space of the liturgical room, 25.



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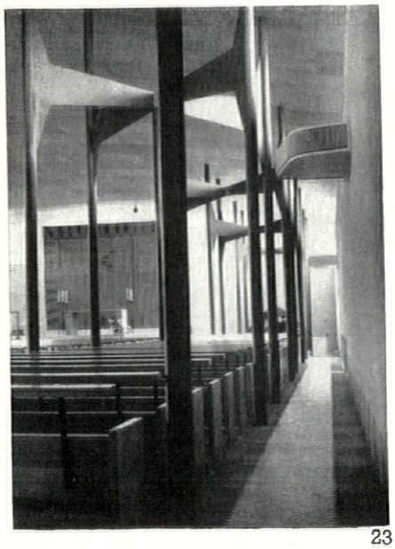

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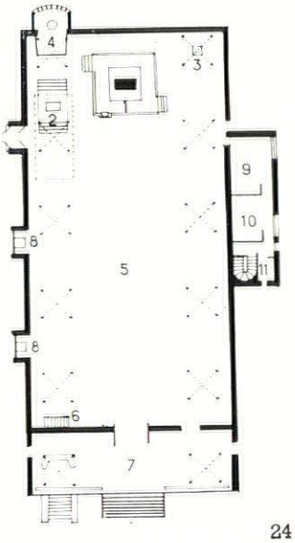

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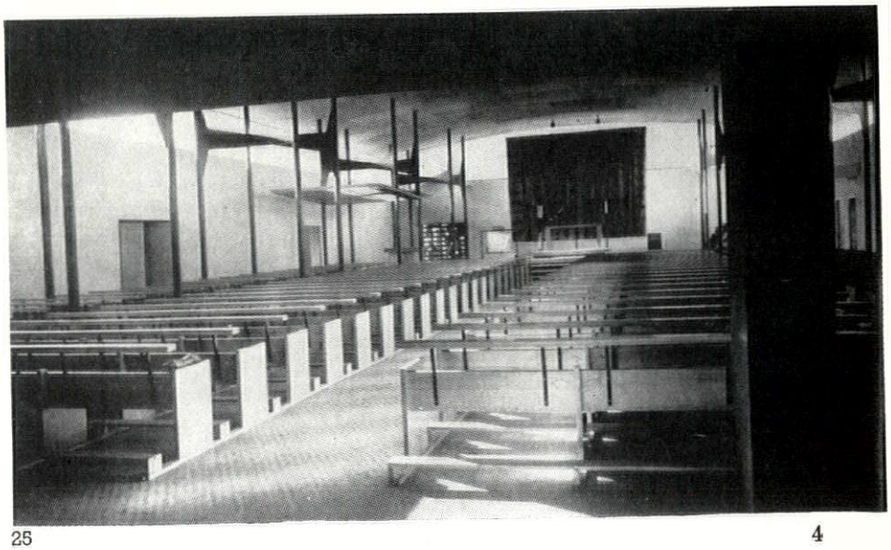

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views and reviews

MARGINALIA

IUA REPORT

Less promptly than its sponsors originally hoped, the official report on the 1961 congress of the International Union of Architects in London has now appeared, and is none the less welcome for the delay. It gives a full record of the physical facts of the Congress (the events, visits, the special buildings and so forth), of its officers and secretariat, the papers by Professor Hitchcock, Professor Nervi and Dr. Hryniewiecki, the national sections' official comments on the papers, the discussions by the three working groups, J. M. Richards's summing-up, and the Congress resolutions. This fascinating review of the state of professional opinion at the beginning of the sixties on the subject of the Congress—the impact of new materials and techniques—is issued in two basic versions, English and French (with Spanish and Russian summaries in both cases) and may be ordered, price 70s. on a standard form, from the Cement and Concrete Association, 52 Grosvenor Gardens, London, S.W.1.

POSTSCRIPT ON FINSTERLIN

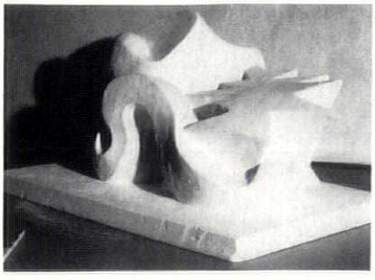
We are evidently not the only ones to take an interest in Finsterlin.* Berlin, during the Bauwochen, has had an exhibition of his work, and here, as a postscript to Professor Pevsner's article, are two portraits of the man, 1, 2, and two models which were included in this exhibition, 3, 4, one of 1921, the other of 1960.

In his opening speech called 'Casa Novissima' (illustration 19 of last November, it may be noted, was called Casa Nova), Finsterlin said:

'Most of you will have come here assuming that at the age of seventy-five I have a different, more mature, tamer or perhaps even negative relation to the ideas of my youth. The contrary is true. Today, after half a century, I stand by these ideas, and the revived international interest of colleagues proves to me that the Glass Chain (as we called our young architects' society) was broken by the First World War, not by its own failing. . . . Should we not now, after the *Wirtschafts-Wunder*, have a cultural miracle as well? There is something of the twenties in the Berlin of today. Not that I imagine that within a reasonable time Finsterlin cathedrals and houses will be built, but there is a longing for live play and greater richness of form. The technical progress of it should tempt us to make use of these magnificently widened possibilities in order to create a style for our time; which is architecture once more and not just building. To stimulate this I have kept my "fantastic architecture" on ice for so long.'

* AR, November, 1962. 'Finsterlin,' by N. Pevsner.

1, 2, Hermann Finsterlin at work and play. 3, model of 1921 and, 4, design for a building.



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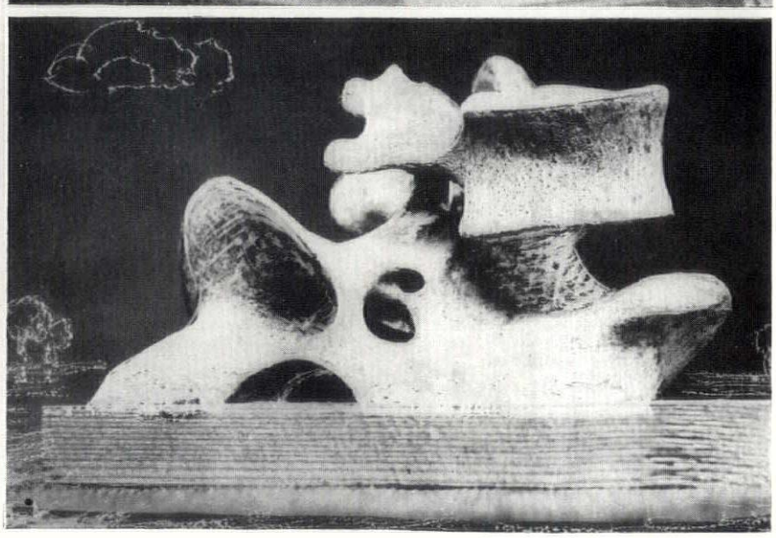

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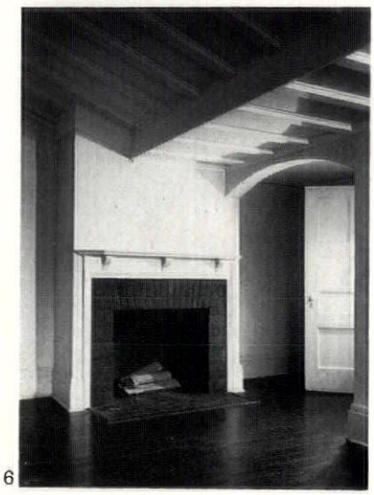
NON-CONSERVATION IN USA

It is a sad commentary on Ada Louise Huxtable's article on Conservation in New York (AR, August, 1962) that even while members of AGBANY (see below) were parading and picketing in defence of McKim, Meade and White's Pennsylvania Station in New York, another work by the same architects, and no great distance away by American standards, the W. G. Low house at Bristol, Rhode Island, came under the demolisher's pick. The name of the Low House may not mean much to European readers, but its form undoubtedly will, 5, with its enormous roof sweeping out to cover the whole of its fairly extensive ground plan in a single gable. It is one of the most assured designs of McKim, Meade and White's 'shingle period,' but its present owners found it inconvenient (they claimed) on a number of grounds and decided to demolish and re-build on the same site. The news reached Professor Jordy, who gave the alert, and Philip Johnson and Henry-Russell Hitchcock wrote firm letters to the owners,



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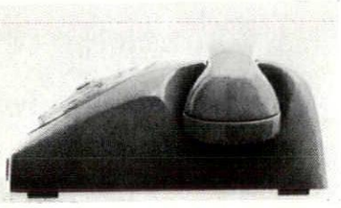
who—unfortunately—were not deterred. Fortunately, however, the opportunity was taken, before the demolition, to make a photographic record of the house for the Historic American Buildings Survey, and the results, 6, not only give a clear idea of the extreme simplicity of McKim interiors of the epoch, but also show how close that simplicity could be to English work of the same (late Philip Webb) period.

The AGBANY picket may not have saved the other and larger McKim, Meade and White edifice of Penn Station, but it has certainly established AGBANY in the eyes of New Yorkers, who now know that the initials stand for Action Group For Better Architecture in New York. The reason for this impact is not only the uniqueness of the event itself (comparable to the case of the Euston Arch in London) but also to the fact that architects and architecture are sufficiently current topics among intelligent New Yorkers for passers-by to recognize among the picketers Philip Johnson, Aline Saarinen, Arthur Drexler, Ulrich Franzen—and having recognized them, to know who they were and what they did. The chances of an equivalent picket line having the same effect in London would be slight.

KONTUR

The 1962 edition of the excellent Swedish design annual, *Kontur*, is now

out and can be had in an English edition (from Svenska Slojdforeningen, $2). As usual it ranges at large over all aspects of design, including handicrafts, furnishing, graphics, folk-art (even prehistoric rock engravings), product design and architecture. Among the buildings illustrated are the Wenner Gren centre and the bird museum on Oland, both to be discussed in forthcoming issues of the AR, while the featured product design is that for the new Ericsson telephone, 7,



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with an illuminating coverage of the ergonomic, technical and production studies, well illustrated with sketches, that went into its design. *Kontur*, as is so often the case with things Swedish, is a little deceptive in appearance—it is not just a lavishly produced promotional hand-out, but conveys a good deal of solid information on a number of subjects not normally found grouped together between one pair of covers.

CORRESPONDENCE

DO IT YOURSELF

To the Editors.

SIRS,—To Mr. Ian Nairn's quite outstanding article in your November 1962 issue, there is little to be added, but your readers may be interested to hear of the sequel to one of the incidents mentioned.

As Mr. Nairn says, we completely dredged the canal to Stourbridge for only £74; continuing the work in the teeth of every threat and admonition that Mr. Ives (who is, delightfully, also the 'Chief Traffic Officer' of British Waterways) and his colleagues could muster. Of course, we had the law on our side. In the end, no fewer than 118 boats navigated to Stourbridge from every part of the country; and more than 90 of them ascended and/or descended the famous Sixteen Locks which British Waterways had posted as 'Dangerous.' There were no incidents whatever, apart from trouble caused by debris thrown into the locks, fished out by boat crews, and regularly thrown back in. In short, the Stourbridge Rally was a resounding success in every way. Now for the sequel: British Waterways have reacted to the emergency by stating that the canal is to go forward for closure this November, and Mr. Marples has expressly 'approved.' Previously, British Waterways expressly refused to quote a toll to a canal carrier who had an offer of traffic to Stourbridge.

The bitter and protracted scandal of the canals is reaching a climax. The new Transport Act destroys almost all the ancient rights of the public over navigable waterways, and only the most determined action by large numbers of people can be expected to prevent most of the system being closed during the next few years, even though closure today actually costs much more than restoration and use, and even though thousands are willing to work as volunteers along the lines so eloquently suggested by Mr. Nairn.

Yours, etc.,
ROBERT AICKMAN.
(Founder and Vice-President,
Inland Waterways Association),
London, W.C.1.

BOOK REVIEWS

THE WASTE OF HOMES

HOUSING. *By Stanley Alderson.* BRITAIN IN THE SIXTIES SERIES. *Penguin Books. 3s.6d.*

Mr. Alderson is to be congratulated on a first-class contribution towards current thought on the nature and solution of the housing problem in England and Wales. Facts are assembled logically in pungent prose, unbiased weight given to each aspect (old, new, council, private enterprise, owner-occupied, and so on); and a remedy put forward which is simple, radical and yet strictly practical.

It is widely assumed that there is an overall housing shortage. This is not so. The 1961 census returns showed that households greatly exceeded dwellings only in the Greater London conurbation. Indeed, it is said to be difficult to find tenants for subsidized council houses in some northern towns. The real problem—hitherto unacknowledged—is the fantastic waste since 1919 of our existing stock of homes. Mr. Alderson has some caustic things to say of the Rent Acts, designed and enforced, it would seem, to punish the landlord rather than to help the tenant; of a rating system which taxes improvements but exempts empty wasted dwellings; of the indifference or even hostility of many Local Authorities towards Discretionary or Standard Grants; of Building Societies which refuse mortgages on old houses and Local Authorities who undervalue them and thus force larger deposits from would-be buyers—and so on. Decay is widespread.

It seems inconceivable that, far from ending this senseless waste, policies from 1939 to 1954 virtually forbade major repairs, while a left-wing writer in 1961 could say 'it is one of the myths of housing that rented houses are in their present state because of rent control.' It is a comfort to hear such nonsense so briskly refuted by Mr. Alderson, who points, instead, to the millions of affluent families enduring sub-standard homes in a time of rapidly rising social standards; enduring them moreover in those old industrial areas where citizens' needs and rateable financial resources are often in inverse ratio, and where a blighted environment can be even more daunting than an ill-equipped home.

Mr. Alderson's aim in cutting through the rancid undergrowth of this administrative and financial jungle is threefold; to make the greatest immediate use of our existing stock of dwellings, to restore freedom of choice to the consumer, and to draw on the large but so far unexploited funds which people are willing and anxious to spend on housing. This he would do through a new Housing Fund based on and run by the nationalized Building Societies, with Income Tax officials on their boards. Every transaction to do with housing would be paid into or drawn out from this fund, whose duty it would be to grant 100 per cent mortgages on any type or age of dwelling, subject only to a surveyor's report and an undertaking by the borrower to spend on the property any sum considered necessary for its repair and/or improvement. The supporting framework would require the abolition of subsidized rents and of rent control; restoration of Schedule A to its full value; the introduction of a new system of housing allowances; regional authorities imposed on local authorities; the architects deprofessionalized, the estate agents professionalized and the Building Societies nationalized. Land speculation would be controlled by a tax on land—*not* land nationalization—subtly adjusted to discourage or attract development from or into prosperous or decaying areas. With this armoury Mr. Alderson envisages a programme of 325-425,000 new dwellings a year for the next twenty years, plus an extensive programme of repairs and improvements. This sounds somewhat overwhelming. But the case is well argued, temperately put forward and well worth serious consideration at the highest level.

Mr. Alderson's marshalling of the facts is admirable. His remedies are refreshingly radical. His human and aesthetic values are disturbingly low. He seems in fact to have accepted uncritically from modern planners, architects and administrators much of their attitude to urban renewal and the people who live in those areas. Like them he keeps his sights firmly fixed on bricks and mortar, on money-bags and bye-laws. He is an engaging but disconcerting mixture of the sensible and the naive, the humanist and the vandal. Thus he accepts that houses should be demolished according to age, oldest first, because (he says) real housing standards were only introduced in 1919. He accepts as incontestibly good, 'compulsory purchase' and 'comprehensive redevelopment'; the dead hand of 'zoning'; the existence of farming and horticulture only as potential green belts or building sites; working-class preferences, clearly and often expressed as to where and how they wish to live, as non-existent. If Mr. Alderson's remedies are adopted there seems a chance at last for a real regeneration of Britain. One hopes, however, that the guiding principles will be quite different from those obtaining now and accepted by him. Instead of visual and financial desiderata, architects' vanity and developers' greed, would it not be possible to base them firmly on human needs, human wishes and ultimate human satisfaction.

Elizabeth Denby

ECCLESIOLOGICAL INFLUENCE

THE CAMBRIDGE MOVEMENT: THE ECCLESIOLOGISTS AND THE GOTHIC REVIVAL. *By James F. W. White. Cambridge University Press.* 1962. 32*s.* 6*d.*

The arrangements, the furniture, the atmosphere of nearly all English parish churches derive from the work of a group of young Cambridge clerics who founded the Cambridge Camden Society in 1839. They were inspired by their elders and betters in Oxford, but the Tractarians, busy with the Early Fathers or flirting with the Whore of Babylon, had paid no particular attention to ecclesiology. John Mason Neale, Benjamin Webb and Beresford Hope set about putting the Houses of God into proper (catholic) order with gusto and offensiveness.

The intricacies of ecclesiology, such things as the symbolism of lychnoscopes, admirably detailed here by Dr. White, belong to church and not architectural history, but the work of the young enthusiasts did have a direct influence on the church architects of the time. For old churches they recommended repairs to the tottering fabrics, the ejection of pews, the demolition of galleries and three-deckers, the re-use of chancels where they were closed, the rebuilding where they were demolished, and general (catholic) refurnishing. In new churches their aims were to raise the standard of design, in Middle Pointed, and to insist on long chancels. In both old and new churches they were extraordinarily successful.

The ecclesiologists were a mixed blessing; they were learned, industrious and silly-clever. What those interested in architectural history are indebted to them for is their publication *The Ecclesiologist*, perhaps the liveliest building paper ever put out. It is a fine source of information about the conditions of churches in the 1840s and as revealing for an understanding of the background of the Gothic Revival. The standards, half aesthetic and half ethical, were uncertain, but the manner was trenchant—'Mr. Poynter should really by this time have learned to do better.' The transepts of a Ferrey church were likened to paddle-boxes. But the certainty of expression only hid some radical confusion of thought. One review of a new church included this—'We give it the highest praise when we say that many have mistaken it for an old church.' Yet their most favoured architect was Butterfield and later contributors included Street and Burges—these three may all have been long chancel men but nothing they did was likely to be mistaken for old work. It seems that the Camdenians trusted to their taste when they liked something which did not quite fit their views.

The effectiveness depended upon the directness of attack. An account of the condition of Cliffe-at-Hoo in 1845 is a fair example. 'The north-aisle is used for a day-school, with all the accompanying juvenile nastiness; the west-end of the same aisle is a rubbish hole . . . the transepts are all falling, and the tower is shored up with a gigantic buttress of brick—a sort of section of a pyramid—full ten feet wide at the base. . . . There are local reasons why *this*, of all churches, should be treated with decency. Its incumbent—so thoroughly non-resident that we could only find out his name by the clergy list—appears, on the same authority, to receive from the Church's patrimony £4,586 per annum at the very lowest. We do not believe that £50 have been spent on the fabric during the present incumbency.' The incumbent, or his parishioners, could hardly have liked that, and it is indeed pretty good standard Victorian reform writing. In the same year the alterations to the Norman church at Alford, Surrey (a new aisle and rebuilt east end) by Woodyer, and to Catsfield, Sussex (new aisle and restored chancel)

by Carpenter, were recorded with relish—for some of the injudiciousness of restorations the Society was partly to blame but to read their accounts of the existing conditions of the fabrics is to understand why they didn't see the dangers ahead.

The most entertaining and revealing episode in their history concerns a disagreement with Gilbert Scott. Scott was generally one of the favoured architects and being the sycophantic and shrewd man he was he cultivated their friendship. In 1844 he won the competition for the Nicholai-Kirche in Hamburg, a triumph which raised him straight away to a high place in the profession. The ecclesiologists condemned him for entering the competition—'But the question arises, how must we characterize the spirit that prostitutes Christian architecture to such a use?' In other words Gothic was too holy for Lutherans. This making of Gothic in itself of religious consequence shows the Camdenians at their silliest, but Scott, characteristically, tried to please them and reason with them. He replied with a long defence of the Lutheran church, no doubt ghosted like his buildings, but his cowardice did not avail. 'No: the simple question is this: is the body for whose use Mr. Scott erects this building, a part of the One Holy Catholic and Apostolic Church, in which the Faith teaches us to look for salvation? Is a body in separation from Christendom, Catholic? Is a body in rebellion against Bishops, Apostolic? . . . In the meantime, though we cannot alter our mature opinion already expressed, we beg to thank Mr. Scott for bringing to our notice so many signs of hope in the Lutheran community; and we trust—as we pray—that these will go on increasing, until the entire body is reconciled to its Holy Mother, and S. Nicholas will at length become in reality a church!' This patronizing nonsense, made the stranger coming from churchmen whose own organization was not recognized as Catholic or Apostolic by the greater church, was connected with the more respectable argument that Christian architects are necessary for Christian buildings.

This theory has been made fun of as the 'Ethical Fallacy' but handled with a little skill the theory is surely not as fallacious as all that. While architecture might be three-quarters formal problems, lack of sympathy or cynicism in the other quarter will out, or trimming — Scott — will out. Misogynists, however dexterous in verse forms, are not likely to write invigorating love poems.

The work of the Camdenians is now going out of favour, for the new liturgical movements do not favour the mysteries of long chancels. The new churches are going to be, by Camdenian standards, very low and uncatholic and unapostolic. But for those interested in the work of Butterfield, Scott, Street, and all the other Goths Dr. White's study, though primarily addressed to students of church history, offers much interesting and revealing information on the group of young enthusiasts who so powerfully affected architectural ideas.

Peter Ferriday

SYMPATHETIC GUIDE BOOK

BOHEMIA AND MORAVIA. *By Brian Knox. Faber and Faber.* 63s.

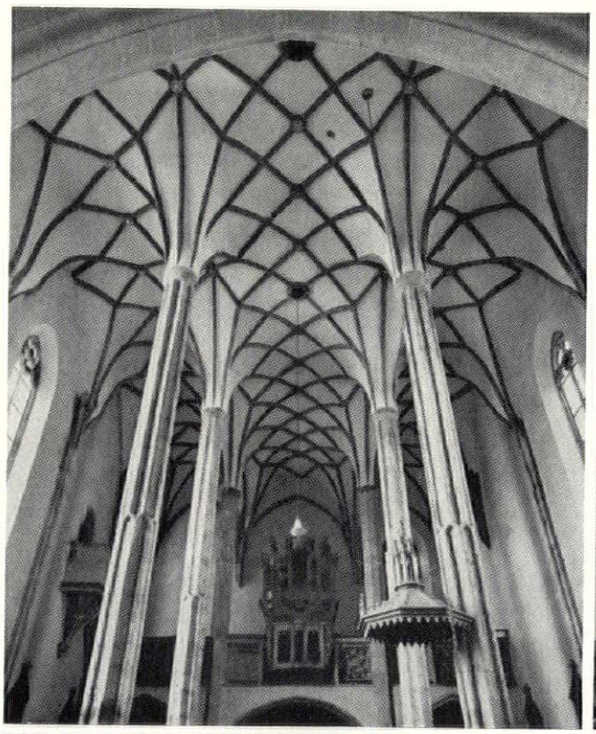
'Connais-tu, Marienbad?' Everybody saw the film, but Brian Knox has seen the town more recently, in fact, than any fictional *année dernière* and records 'Edward VII's favourite, Marienbad or Marianske Lazne, lies by comparison (with Karlovy Vary) comfortably spread around its public gardens, but even it is held in on three sides by hills; only Frantiskovy Lazne dares to extend itself over the open country.' Fine, but what is the point of this eyewitness account of three faded Bohemian spas? The passage is typical of the matrix of personal observation, itself astute, acute and architecturally sensitive, in which Brian Knox has embedded a vast amount of book-learning (all of it apparently impeccable and scholarly) about a body of regional architecture that Western Europe is in danger of forgetting, to its great disadvantage.

Czech architecture belongs to the great European tradition, sometimes as complementary balance to an extreme—the vaults of Dolní Dvoriste, 8, or of Bechyne, 9, positively demand to be set against the contemporary fantasies of late perpendicular in England—sometimes as a term of direct comparison (as with Santini, the Bohemian Hawksmoor, already known to AR readers through Dr. Pevsner's article of February, 1957), and sometimes because it is just too good to be left out—svaty Mikulás church, Prague, 10, is a building that any country would be proud to own, and so is any other by Killian Dientzenhofer, while another of Mr. Knox's illustrations, 11, reveals (in somewhat modified form) one of the key buildings of the Modern Movement, Mies van der Rohe's Tugendhat house, now an infant school.

The range of this book—from the Charles Bridge to Namesti Prace in Gottwaldov (i.e. Work Square in Zlin)—is yet another of its remarkable virtues. To the best of my knowledge it is the first architectural guide-book (other than the *Buildings of England*) that covers the full range of stylistic sympathies expected of an architecture-fancier today, and to read it is rather like enjoying an evening of really good slides with particularly close friends—except that both the pictures and the historical information are always and reliably in focus. To have carried such scholarship within the compass of a personal tone of discourse; to have organized the material into historically comprehensible groups which are equally comprehensible as short tours by motor car, is to have produced a guide-book almost in the eighteenth-century taste. If, in consequence, it is not easy to use as a work of quick reference (though the index is excellent), this is a small price to pay for an architectural book which is constantly engrossing to read, and manages to present a large body of material in a manner which is so vivid that one has a constant feel of the scene in which the buildings are set.

P.R.B.

Four illustrations reproduced from Bohemia and Moravia, *reviewed above; 8, vaults at Dolni Dvoriste (fifteenth century); 9, vaults at Bechyne (early sixteenth century); 10, abbey church of svaty Mikulas, Prague Old Town, begun in 1727; 11, Tugendhat house, Brno, by Mies van der Rohe.*



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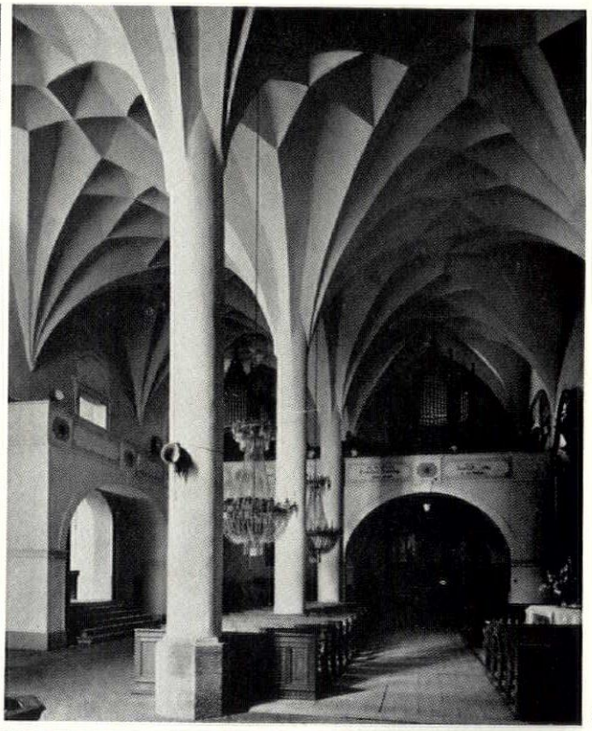

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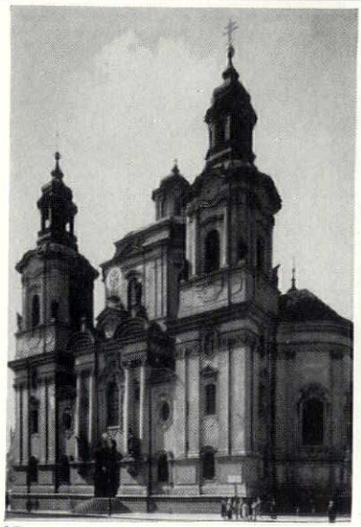

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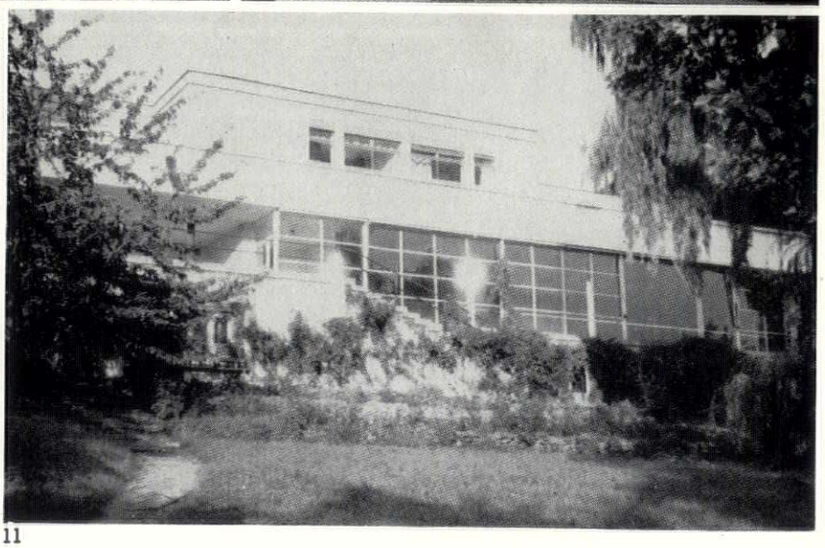

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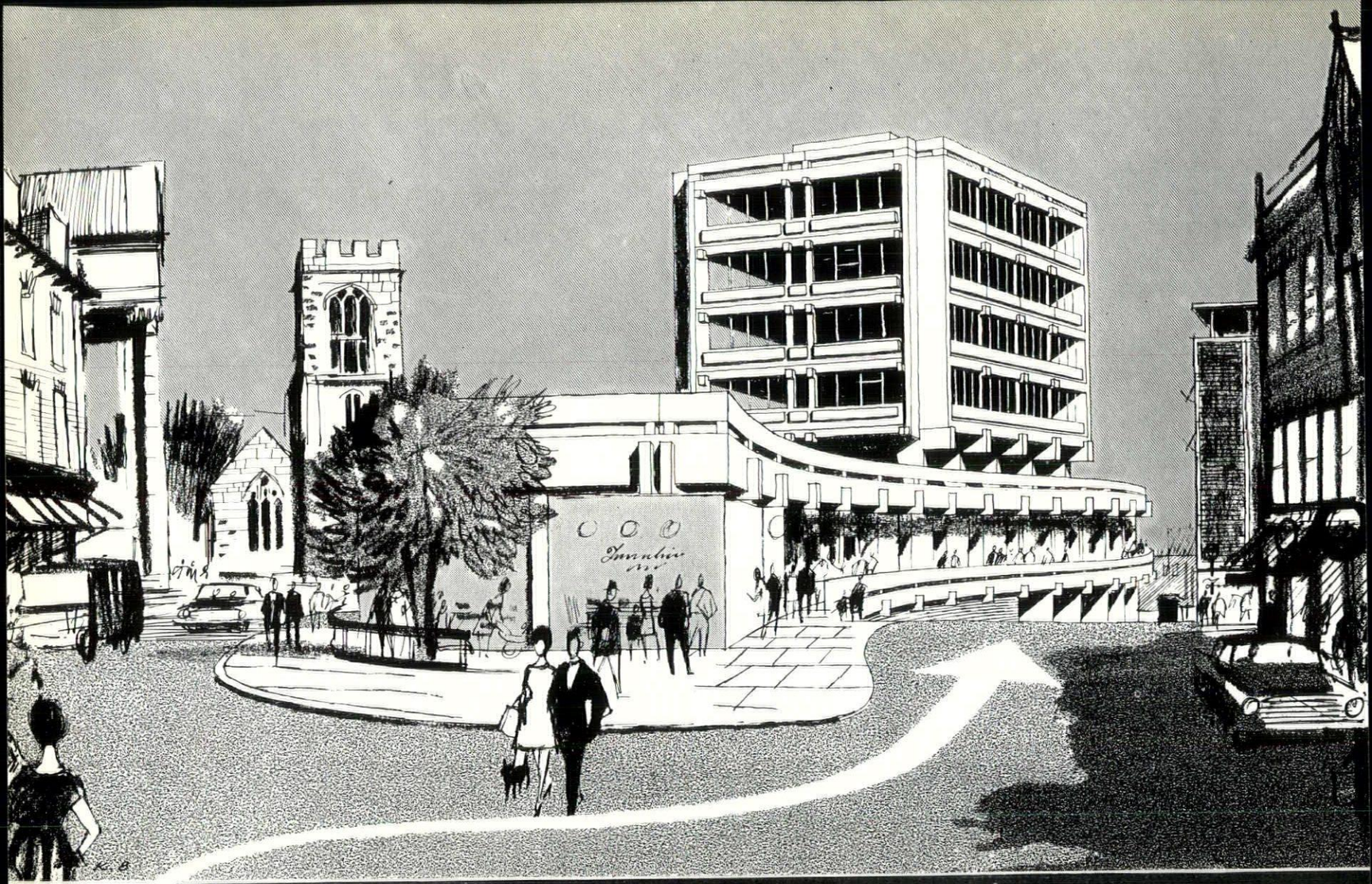
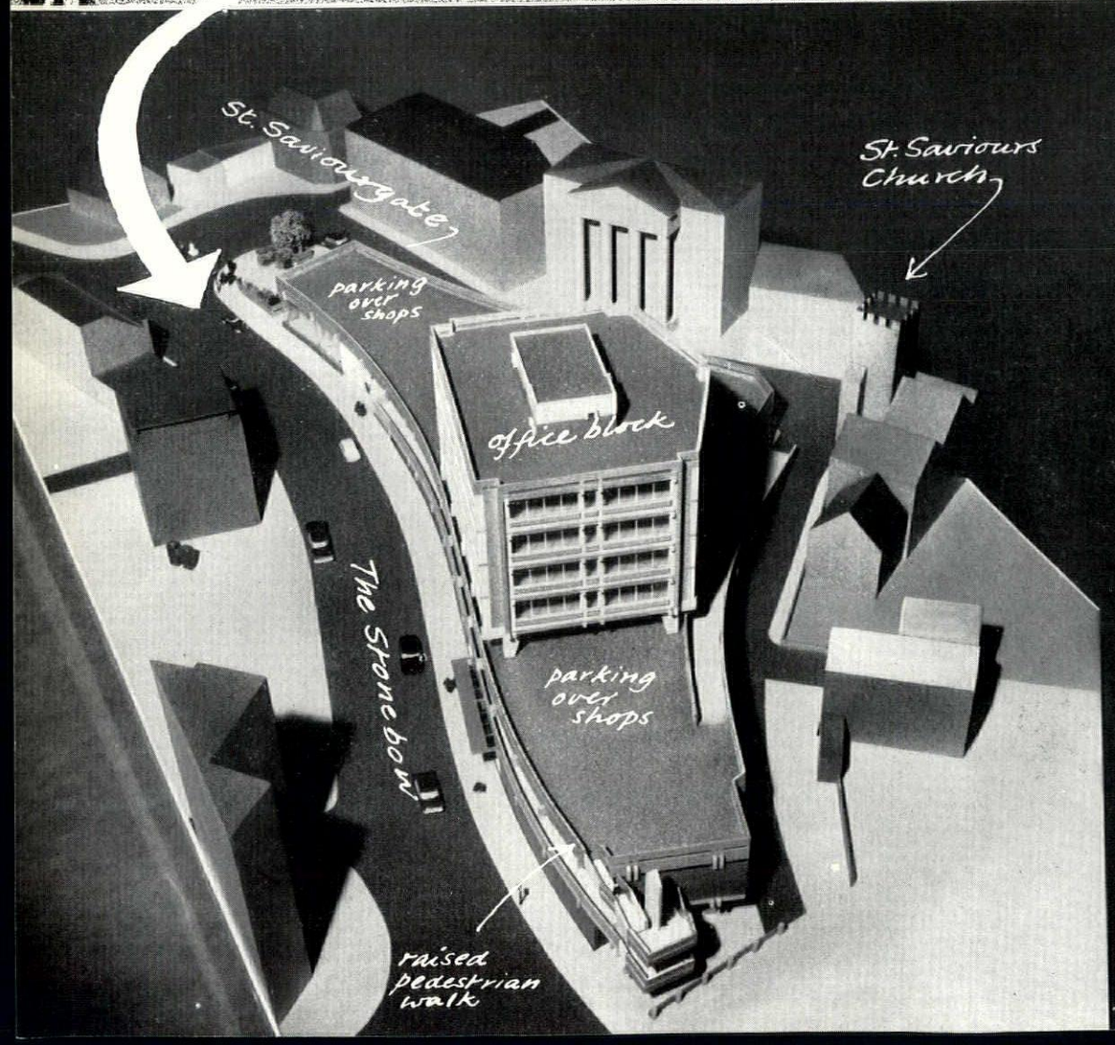




On an island site between the Stonebow and St. Saviourgate, York, in an area well endowed with distinctive townscape character and architectural monuments, this block of shops and offices, with raised pedestrian walk and upper-deck parking, represents the kind of project that we must hope to see increasingly as large-scale developers move into the central areas of historic provincial cities. Whether other developers will follow the lead set here by the architects, Hartry, Grover and Halter (whose design is further illustrated on pages 54–55) remains to be seen, but an increasing number of developers appear to be employing more open-minded architectural offices, and there is therefore hope that we shall see an increasing number of attempts to find original solutions to the problem of dealing honestly with present needs, and tactfully with ancient townscapes.

PREVIEW

As the patterns of finance and town-making of the early nineteen-sixties have unfolded, it has become clear that there must soon be a series of collisions between large-scale commercial developments and the surviving historical townscapes of Britain's provincial capitals—in project form, a far from disastrous collision (illustrated opposite) appears among the buildings in hand for 1963 that are surveyed in this special *Preview* issue of the AR*, and others, though not all as good, are known to be in various stages of forwardness in other cities.

Where it is a question of re-developing a large block of property in even a thriving provincial city, the lessons of the City of London, or of other historically valuable parts of the capital, are no guide. Not only is the essential character of the place different, but the effects of scale are reversed—a developer may find it possible to throw together into one site more absolute acreage in the provinces than would be possible in London, with its highly fragmented pattern of land ownership, but even if he does not, the effect of a smaller development will be disproportionately greater in the more compact and more unified central townscape that many of our middle-sized cities still possess. To pull down a four-storey Victorian Gothic hotel in, say, Shrewsbury, and replace it with a single-storey supermarket is to produce a townscape upheaval whose scale could only be equalled in the City of London by levelling a block practically a quarter of a mile square.

All this, of course, is quite irrespective of the quality of the architecture, which—in some provincial cities—could be quite bad and still be an improvement on what already exists there. But there is an irreducible short-list of specially valuable cathedral cities and local capitals where even the very best architecture needs to be carefully vetted because of the unique qualities of the townscape into which it will have to fit. On the whole, such cities have not had to confront the large-scale developers so far, and reconstruction has tended to follow the random and piecemeal pattern of the bomb-craters left by the *Luftwaffe's* so-called 'Baedeker' raids during the late war.

This 'development holiday' is now drawing rapidly to a close—the large-scale proposals for the centre of Bath which caused controversy last year are symbolic of the turn that events are now taking; the proposal to build eight-storey offices on the Pantiles at Tunbridge Wells is an earnest of the rupture of scale, as well as style, that may result. Whatever the architectural quality of these proposals, they are intended to occur in townscapes whose value is acknowledged and—more important—whose character is unique. They ought not to be lightly undertaken, therefore.

The uniqueness of these cities is the key to the problems they raise, for it is their quality of unrepeatable solutions to particular combinations of urban function and topographical location that guarantees their value, and distinguishes them as places. The quality of the Rows in Chester which makes them worth preserving and, if possible, extending, is not only that multi-level pedestrian shopping decks are an agreeable environment, but

* Once again compiled on behalf of the Editors by Mr. C. Michael Pearson.

that they only occur in this rich and complex way in, precisely, Chester. If they were to be re-developed with shopping on any other pattern, however well-designed and functionally suitable, Chester would thereby be diminished. No matter what application and imagination were expended by the architects in the creation of some other urban character, the short list of Baedeker towns would be the shorter by Chester.

It could be argued that other solutions might be better for present shopping and traffic conditions (though no developer has offered one to date) but this would not alter the fact that a unique human artefact had perished—it is as if one had asked to be introduced to Dr. Schweitzer, but were offered some less distinguished man on the grounds that he was a better organist. The Chesters and Schweitzers of this world are irreplaceable; the removal of any one Baedeker town increases the pressure on the others. But it can very properly be argued that they are all becoming physically run-down, partly because the nineteenth century passed most of them by. They cannot be allowed to stagnate merely because they are works of art, and, in any case, part of their attraction is that they have not been reduced to the gilded parasitism of Venice or the deathly elegance of Sienna. They enshrine a way of life that is still of value to the twentieth century and therefore they must, somehow, be brought up to current standards of performance.

It is a sad fact that most of the development that has been done or proposed in cities like Norwich, or Exeter so far, falls short of these current standards about as far as it falls short of the standards of urbanity set by the pre-existing townscape. Fortunately, the exact opposite of this double failure does exist: the kind of mind that is capable of conceiving a radically modern solution to the re-organization of a sizeable urban site, is usually also capable of the courtesy of the strong, rather than the obsequiousness of the weak. The project for the re-development of the Stone-Bow/St. Saviour's site in York, which is illustrated on pages 54-55 and also forms the subject of the frontispiece, is a preview of the way in which a strong design can complement the existing townscape while introducing new functions and better service of old functions.

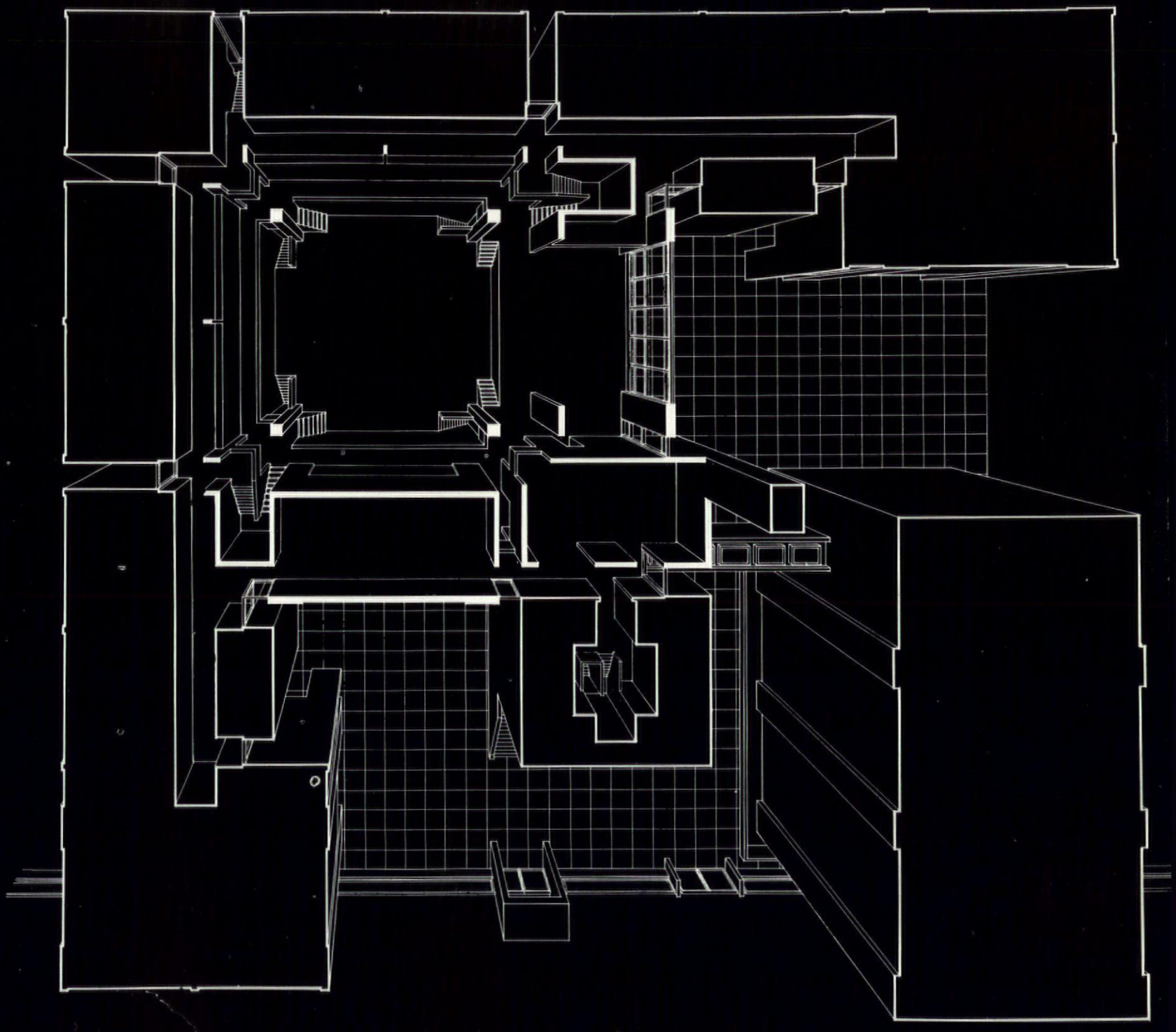
Characteristically, this scheme comes from a 'new' office (Hartry, Grover and Halter) and is clearly a 'young man's' conception in its blunt, straightforward concrete detailing and its re-shuffling of conventional ideas about circulation-levels. The high-level parking deck is, indeed, a feature which it shares with one or two other designs in this issue, but it is deliberately employed here to separate the shopping functions below and the offices above; by more or less reaching the perimeter of the site all round it ensures a clearly defined cornice to mark the building line on the sky and present the pedestrian with a firmly framed street-space in which to move, even when the fall of the ground has been exploited to give a raised pedestrian shopping-deck in the manner of the Chester Rows.

Because the lower parts are organized in this way, exploiting the full site rather than 'presenting a piazza to the common good' in the conventional modern commercial manner, the small office-tower above is seen as clearly separated from the older buildings around it, no fewer than three of which are churches of historic interest. A piazza-and-podium solution would inevitably have pushed the tower to the back of the site where it would have been almost certain to collide visually with an adjoining monument; as it is, the tower avoids crowding any of them and will be largely invisible from the small streets around the perimeter of the block.

Not every architect of a Baedeker re-development will be so fortunate in having so clearly defined a site, nor such clearly defined problems around it. He may have to employ a more involved and complex solution such as that proposed by Scott, Brownrigg and Turner for a site opposite Royal Avenue in Chelsea —see page 56. This is not, admittedly, a provincial city, but the architectural style and townscape quality is quite like that of some substantial market-towns, while only large-scale re-development facilitates solutions that work by hollowing out existing island blocks of buildings and would be impossible in piecemeal re-developments round the perimeter—the protracted fate of the Lion Yard scheme in Cambridge is a warning of the care needed in the realization of a scheme of even this theoretically 'disappearing' kind, but its utility as a means for the functional rejuvenation of such a block without significantly altering the existing townscape pattern remains, and a similar project is in hand for a derelict-hearted block in Salisbury.

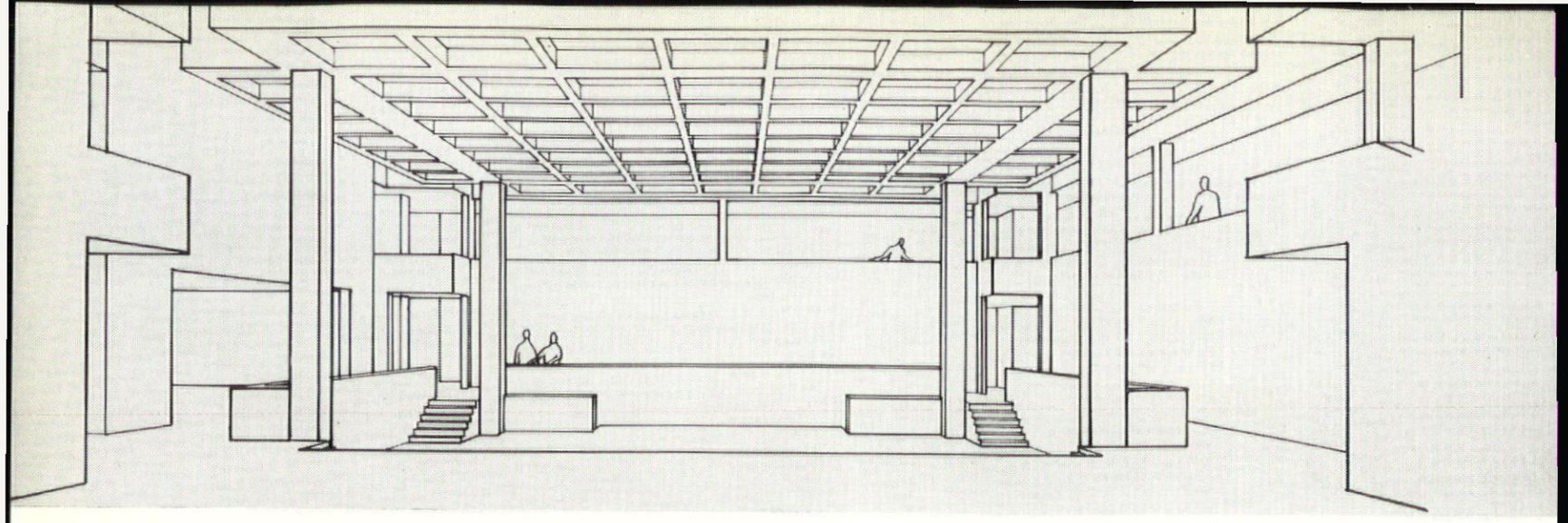
All in all, this type of problem may prove to be one of the major architectural exercises of the 'sixties. It cannot be solved by the use of concepts such as *contrast* and *foil*, though these will still serve well enough for the insertion of isolated modern buildings. Where it is a question of block-sized re-developments in the shadows of cathedral or castle, guild-hall or assembly rooms, the younger talents whom this preview issue shows emerging as a new generation of developers' architects will have to deploy their radical skills to the full and take their courage in both hands: the death and life of historic British cities is at stake.

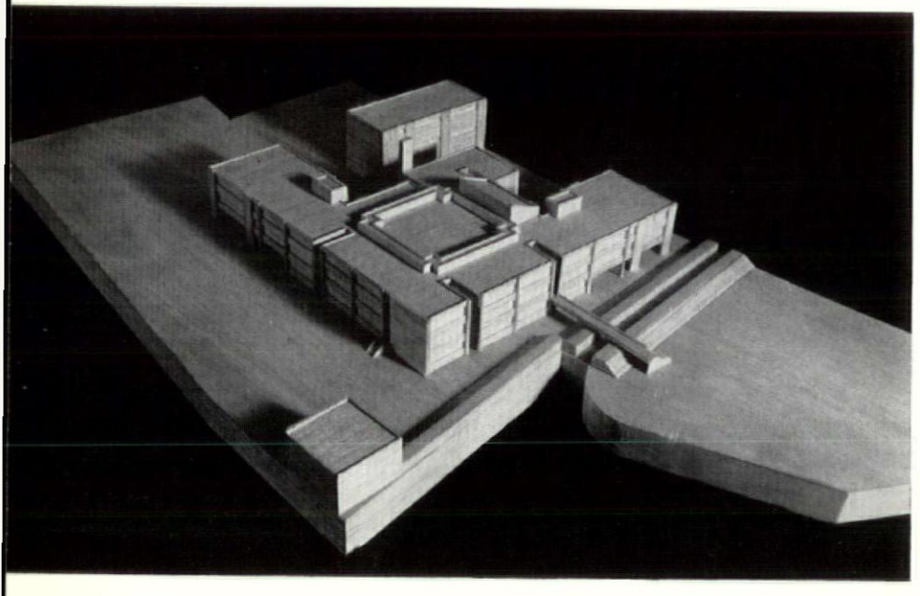
SCHOOLS



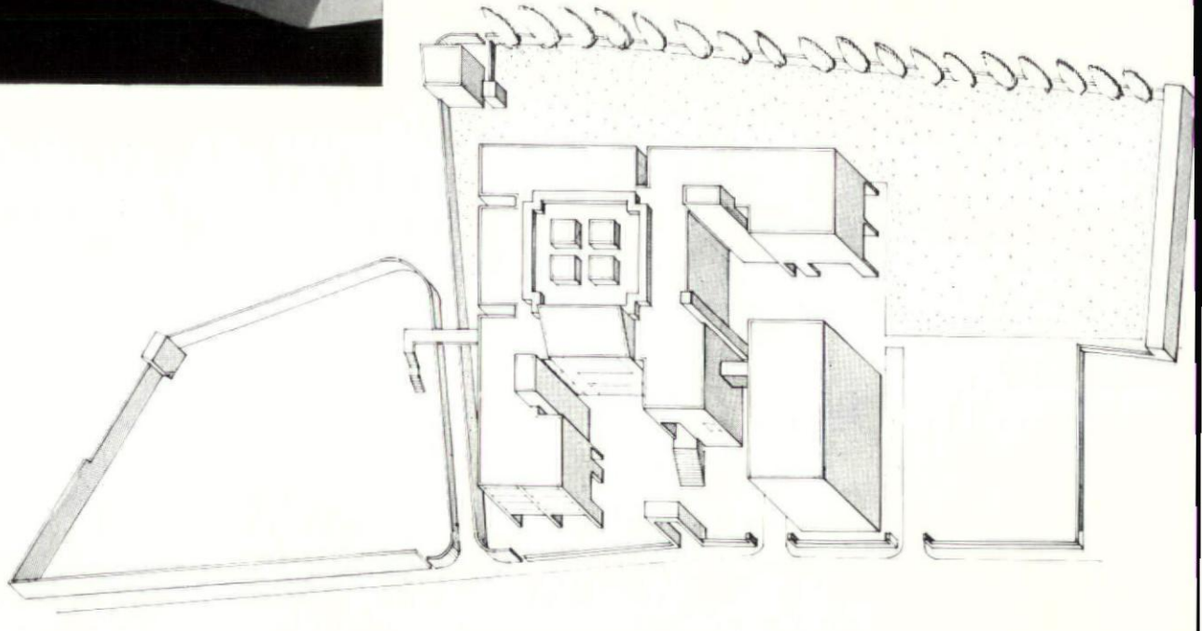
Secondary School, Stratford, E.15, architects Colquhoun and Miller: above, internal organization showing the assembly hall and main circulation routes

see over →

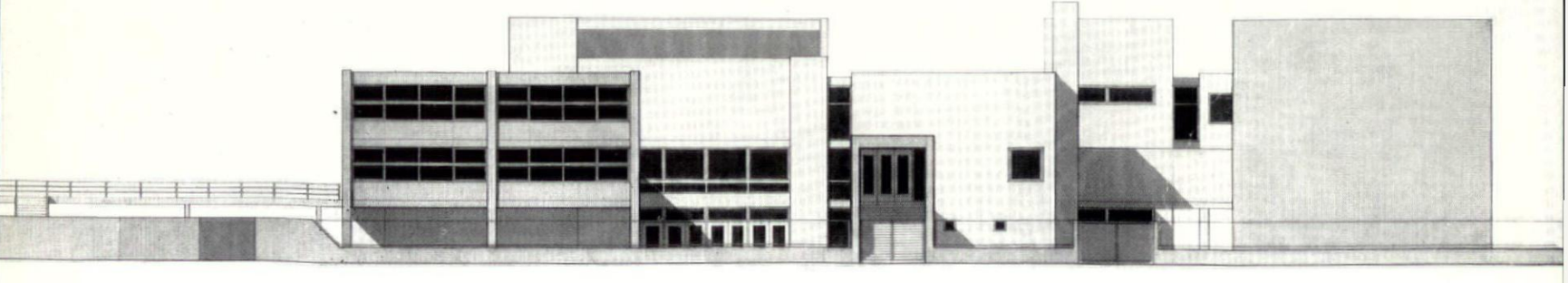




Above, the assembly hall
Left, air-view from the south-east



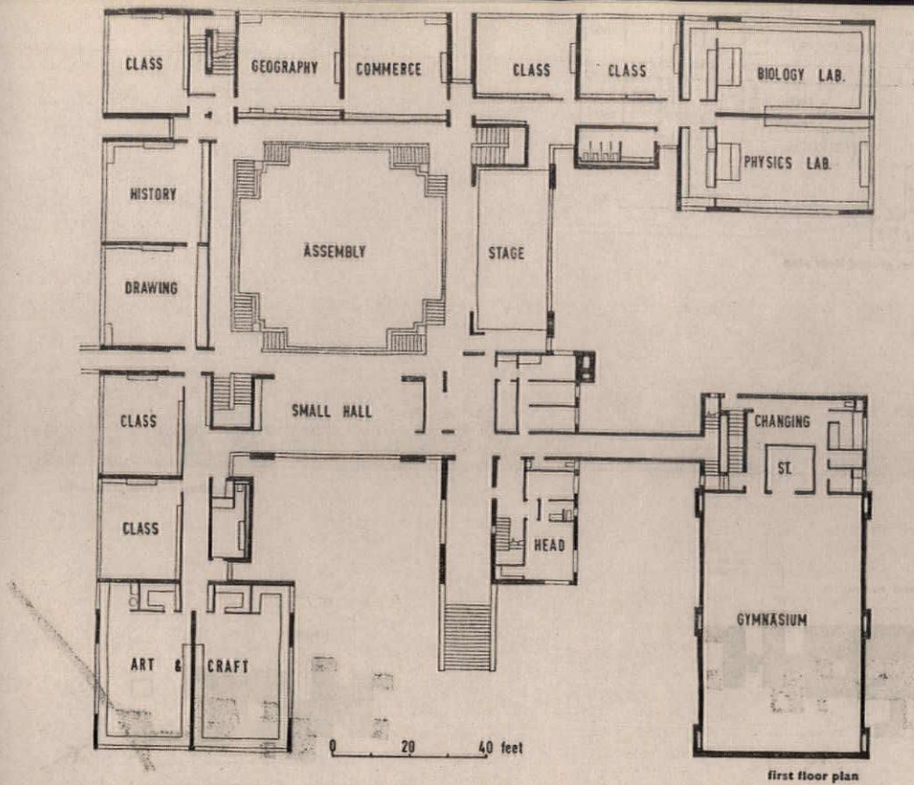
Secondary School, Stratford, E.15:
right, axonometric showing the
main entrance from Forest Street.
Below, north elevation to Forest Street



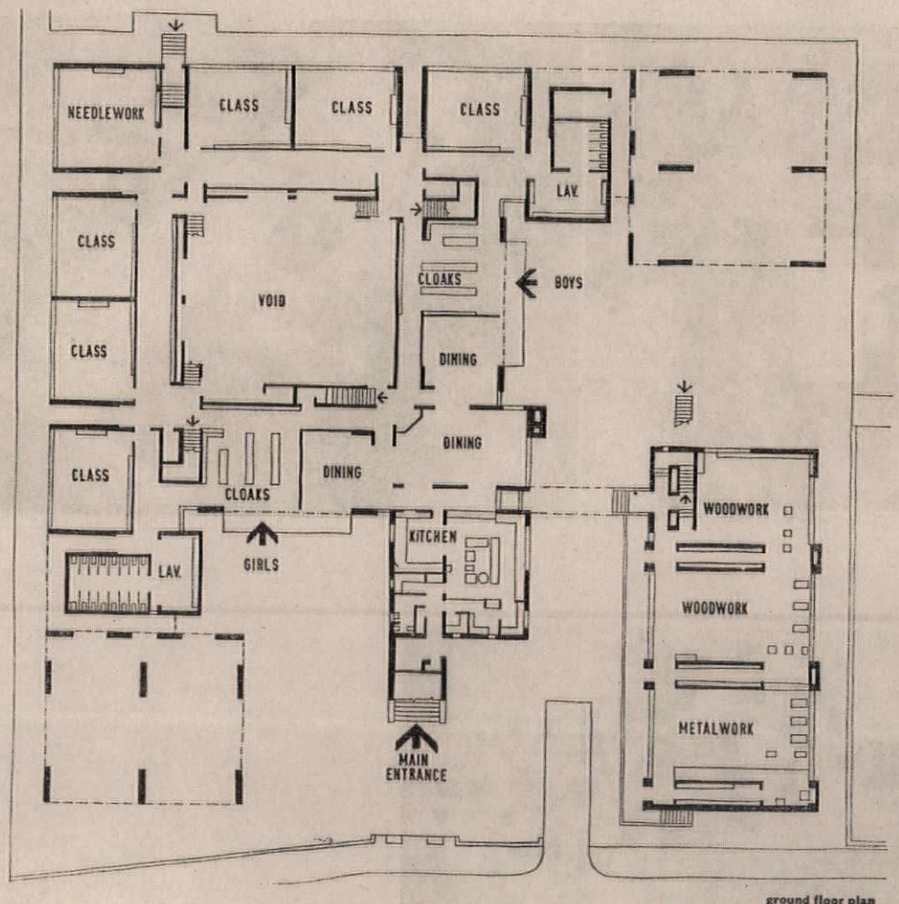
Secondary School, Stratford, E.15

Colquhoun & Miller

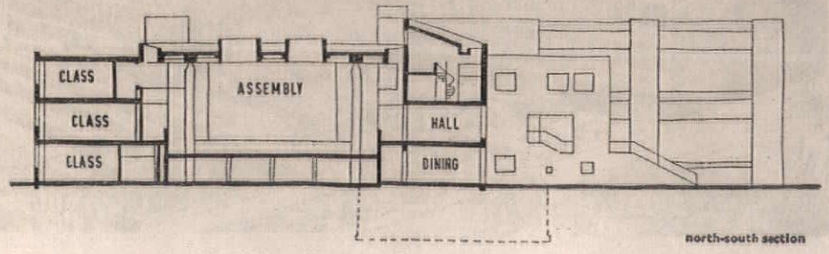
CLIENT: County Borough of West Ham.
SITE: 3 acres at Forest Gate, divided by a public footpath into unequal parts. Existing school on eastern part will not be demolished until completion of new buildings. Access from Forest Street to the north.
ACCOMMODATION: Six form entry mixed secondary school for 780. Future extension for 120 when school age is raised to 16 years. Three-storey complex consisting of main L-shaped building with classrooms, assembly, dining, staff rooms, library and a secondary building containing workshops and two gymnasia. Assembly hall is raised 7 ft. above ground floor level. It is surrounded on two sides by a gallery at first floor which is the main circulation level and forms the central portion of the access corridor to the classrooms. There is a similar gallery at second floor which also overlooks the assembly. Stage and small hall, with library over the latter, occupy the other two sides of the assembly. The main source of light in the assembly is a strip of roof lights separating this roof from the surrounding structure on all four sides. First floor bridges connect the main building with gymnasia and eastern portion of site, passing over public footpath. The main entrance is up an external stair to first floor level in the staff wing at north-west corner of assembly. Main vertical circulation is at north-east and south-west corners of assembly. Further short stairs give direct access from ground level to assembly and from assembly to first floor and these also provide escape from assembly. Pupils' entrances are through cloakroom areas, under small hall and stage, and directly related to lavatories and covered play spaces under ends of classroom L. They are approached through forecourts framed by two arms of classroom L and gymnasia. Workshops and gymnasia are stacked one over the other and latter have a gallery over changing rooms. Access to and escape from gymnasia is by means of double scissors staircase within single enclosure.
STRUCTURE AND FINISHES: Load-bearing brick crosswalls and piers, stiffened in places by concrete edge beams. Floors, precast prestressed T beams. Assembly roof, two-way in situ r.c. grid, pin jointed to in situ r.c. columns and independent of surrounding structure. Exposed concrete finish. Windows, timber painted white. Walls, externally fair-faced brick, internally plaster painted white. Fittings, varnished timber. Floors, composition tiles, hardwood, quarry tiles.
SERVICES: Oil-fired low pressure hot water serving convectors, skirting coils and radiators.
COST: £337,000.
SITEWORK: Started October 1962, completion by October 1964.
In collaboration with Thos. E. North, borough architect. Assistant architect, Paul Yarker. Quantity surveyor, J. Burrell. Structural consultants, F. J. Samuely & Partners. Mechanical and electrical consultants, Wingfield-Bowles.



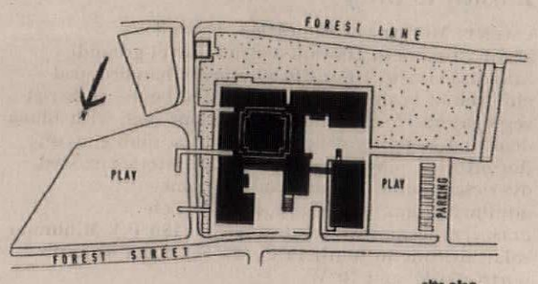
first floor plan



ground floor plan



north-south section

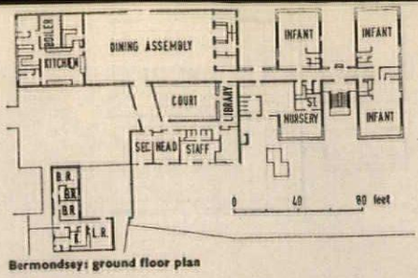


site plan

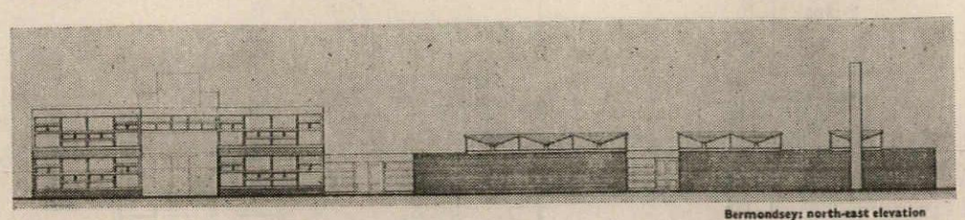
Two Primary Schools, Bermondsey and Southwark

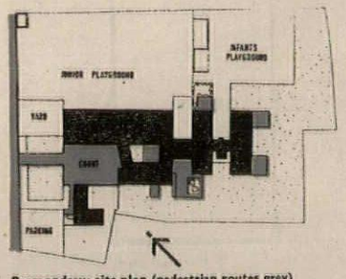
Eric Lyons

CLIENT: London County Council.
SITES: Both restricted and have existing schools which must remain working until completion. Bermondsey 2.3 acres near Rotherhithe tunnel entrance. Southwark 1.8 acres.
ACCOMMODATION: Each for 285 primary and 30 nursery children. Teaching, administration, assembly, dining, kitchen and service areas. For building economy one design used for both schools.
STRUCTURE AND FINISHES: Walls, load-bearing brick work with red facings. Roofs, woodwool on timber. Larger spans in steel. Windows, wood.
SERVICES: Oil-fired low pressure radiators. Floor heating under wood block to assembly, dining and nursery. Central trench feeds vertical ducts to teaching block.
COST: Approximately £175,000 for both, including demolition and external works.
SITEWORK: Bermondsey started September 1962, completion by January 1964. Southwark started April 1962, completion by July 1964.
Job architect, E. Nigel Laws. Quantity surveyors, Monk & Dunstone. Structural consultants, Flint & Neill. Heating consultant, A. C. Mann. Electrical consultants, London County Council, Electrical Department.

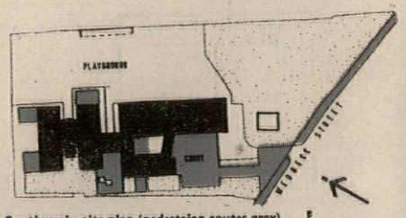


Bermondsey: ground floor plan


Bermondsey: north-east elevation

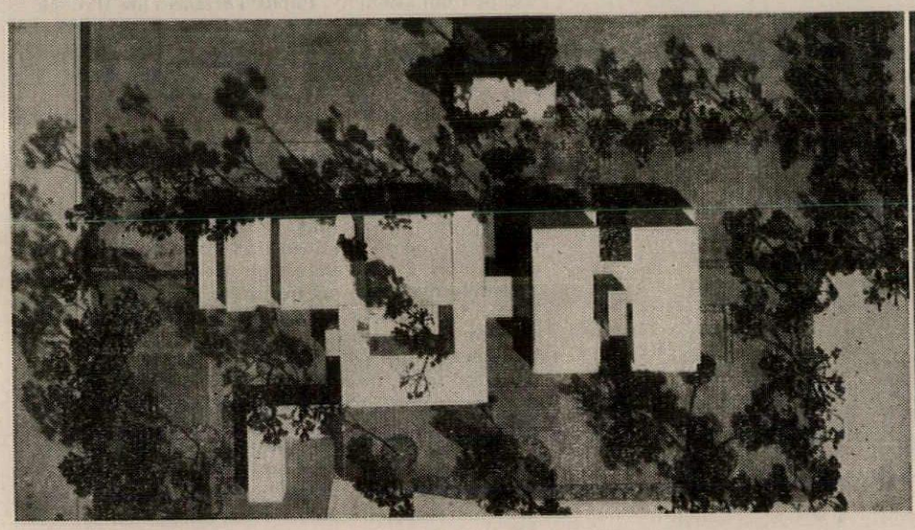


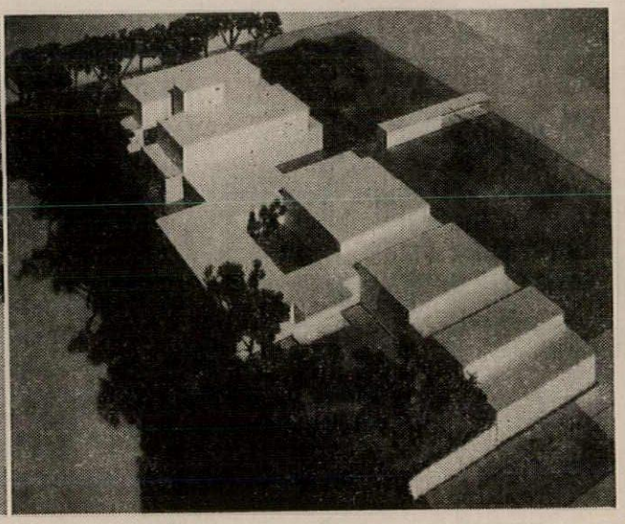
Bermondsey: site plan (pedestrian routes grey)



Southwark: site plan (pedestrian routes grey)

Below left, Bermondsey: air-view with main entrance to left
Below right, Southwark: air-view from south

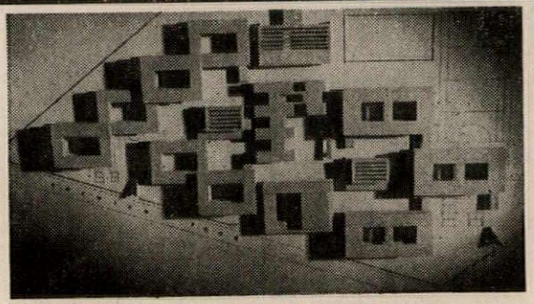




School, Kuwait

Bartlett & Gray

CLIENT: Ministry of Education, Kuwait.
SITE: 20 acres in Hawalli district. Level ground.
ACCOMMODATION: For 640 physically handicapped children of both sexes, including 400 boarders. Strict segregation of sexes into two sections each with blind, deaf and mentally deficient institutes, dining, gym, dormitories, playing fields, etc. Dormitories massed over classrooms, forming courts. Clinic, administration, workshops, kitchens, etc.
CLIMATE: Temperature up to 85°C. (186°F.). Minimum solar altitude to south 14°C. (57°F.). Solar azimuth north, 70°E. and 70°W.
STRUCTURE AND FINISHES: R.c. frame with precast vertical elements.
SERVICES: Air-conditioning to staff, theatre, clinic.
COST: Estimated £2,177,000.
SITEWORK: Starts January 1964, completion by 1966.
Leslie Wright, David Hackett, Selim Bawarny. Quantity surveyors, John C. Barnsley, Snell & Partners. Structural consultants, Norris & Partners.


Air-view of model

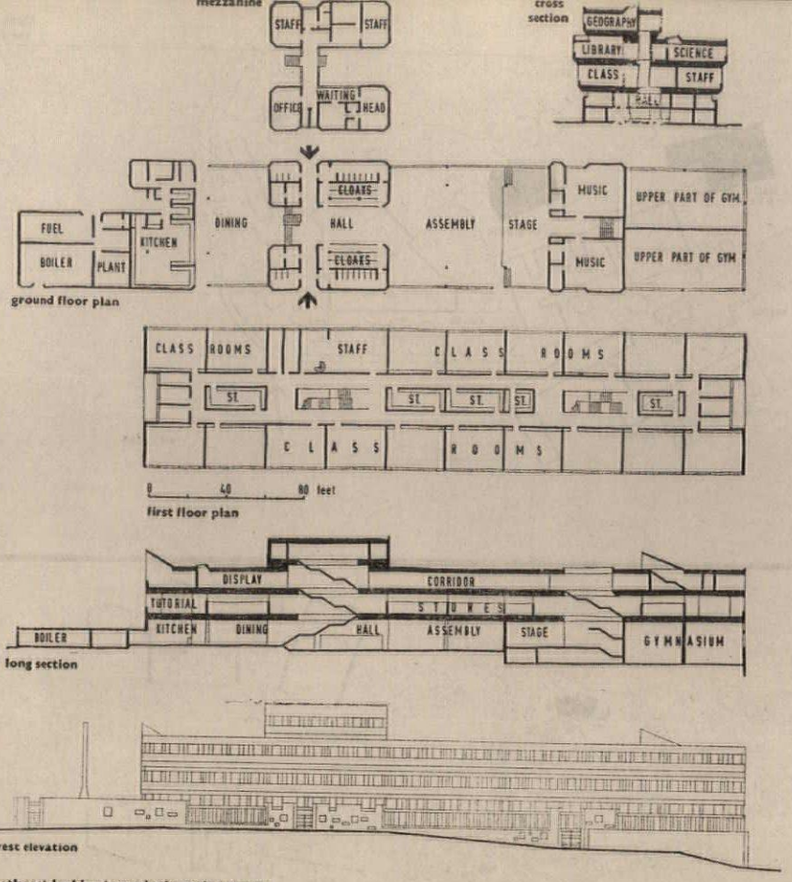
Below, dormitory accommodation around courtyard

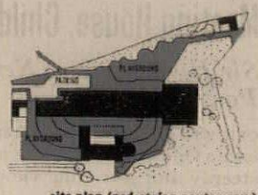


Secondary School, Cumbernauld

Gillespie, Kidd & Coia

CLIENT: Dunbarton County Council.
SITE: 9 acres, with school on prominent grass mound among mature trees, between inner ring road and main Glasgow-Stirling road.
ACCOMMODATION: Ultimately for 810 girls, but in the interim for boys and girls.
STRUCTURE AND FINISHES: Steel frame with side span open webbed steel joists. Floors, precast concrete slabs finished with hardwood strip on bearers or quarry tile. External cladding, precast concrete panels with lightweight block back up. Internal partitions, facing brick and plastered clay block. Ceilings, generally plastered with some timber lining.
SERVICES: Oil-fired boilers, radiators and convectors.
COST: Approximately £425,000.
SITEWORK: Starts Spring 1963, completion after two years.



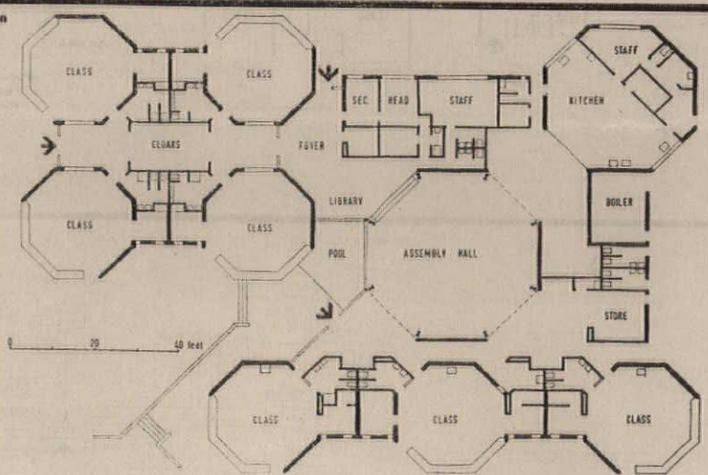


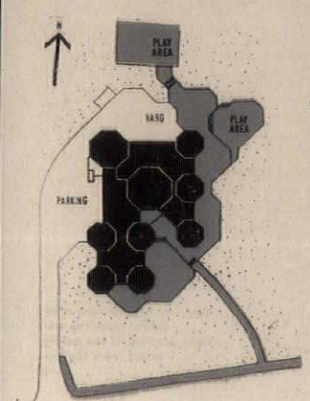
site plan (pedestrian routes grey)

Below, from north-east looking towards the main entrance



ground floor plan





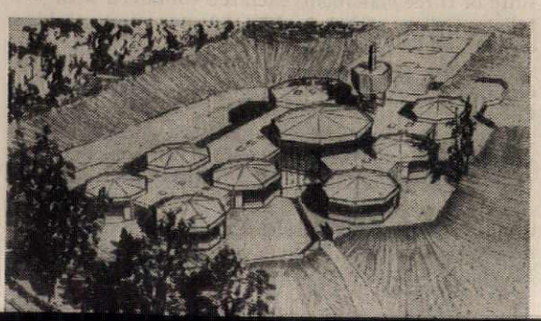
site plan (pedestrian routes grey)

Primary School, Leicester

Peter Moro & Partners

CLIENT: Leicester County Council.
SITE: Birstall, suburb of Leicester.
ACCOMMODATION: 280 children; 160 juniors and 120 infants.
STRUCTURE: Load-bearing brick with kitchen and hall in steel frames.
COST: Approximately £60,000.
SITEWORK: Started October 1962, completion by end of 1963.

Job architect, John Ridgewell. Quantity surveyors, Davis, Belfield & Everest. Structural consultants, Clarke, Nicholls & Marcel. Mechanical consultant, Raymond Allington.

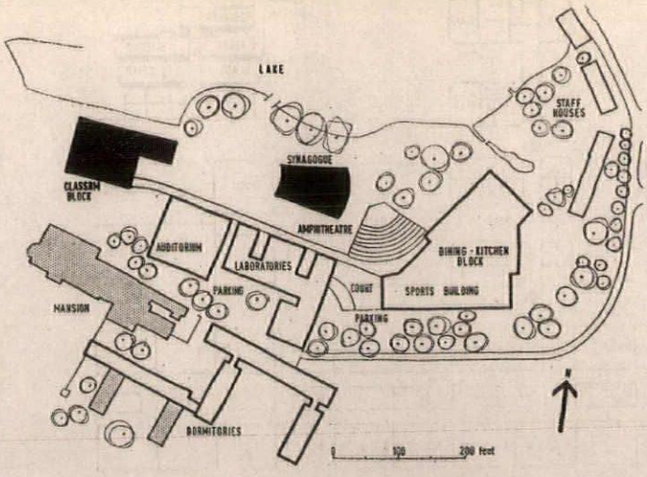


Right, air-view from south-east

School, Wallingford

Tom Hancock

CLIENT: Carmel College.
SITE: Large country estate, 2 miles from Wallingford.
ACCOMMODATION: Stage 1; 10 classrooms, arts rooms, 6 seminars, lecture hall, staff room in two-storey building around double-height hall. Six laboratories, stores and preparation rooms in single-storey building. Four staff houses. Synagogue to seat 550. Stages 2 and 3 to follow.
COST: £139,000. Stage 1, including external works.
Associate in charge, John Toovey. Assistants, Sydney Meades, John Edwards. Quantity surveyors, Davis Belfield & Everest. Structural consultant, Anthony Hunt. Heating consultant, David Kut. Landscape consultant, Michael Brown.



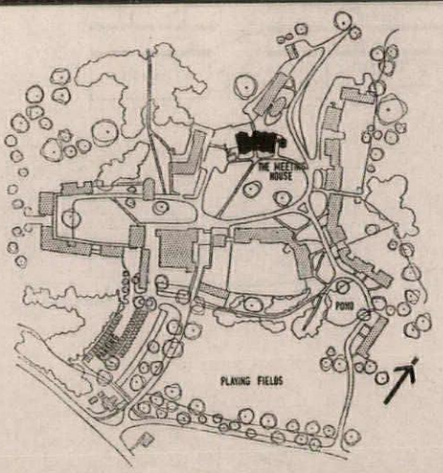
site plan

Opposite, air-view from the south with existing Carmel College to the left

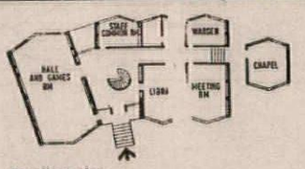
Meeting House, Children's Village, Sussex

Sir Hugh Casson, Neville Conder & Partners

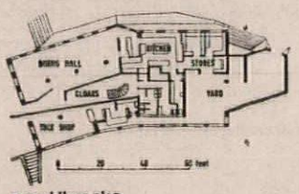
CLIENT: Pestalozzi Children's Village Trust.
SITE: One edge of village green. Ground slopes steeply and gives fine views to north, overlooking cliff-like and dramatic valley.
ACCOMMODATION: Part of complete village development. On completion will serve as library and series of meeting rooms.
STRUCTURE AND FINISHES: Load-bearing brick. R.c. first floor. Timber roofs and infill panels between upper storey crosswalls.
SERVICES: Radiators and fan units.
Quantity surveyor, A. S. Wilson. Structural consultants, Jenkins, Potter & Bingham. Mechanical consultants, A. J. Smith & Partners.



Left, site plan



first floor plan



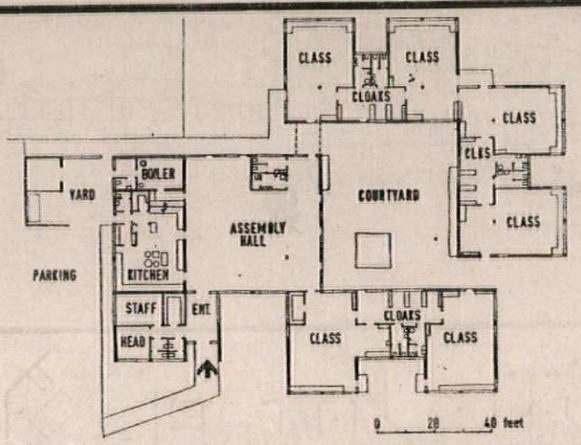
ground floor plan

Opposite left, from the south-west, right, from the north

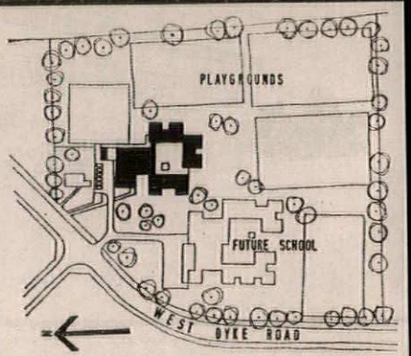
Primary School, Redcar

Johns, Slater & Haward

CLIENT: North Riding of Yorkshire County Council.
SITE: 7.25 acres including for future junior school.
ACCOMMODATION: For 240 infants in six classes.
STRUCTURE AND FINISHES: 12 ft. planning grid. Walls, facing brick. Windows, cedar. Roofs, pyramids built up from joists and boarding on timber beams on precast concrete columns. Slate covering.
SERVICES: Warm air units in classroom and hall.
COST: £52,565 gross.
SITEWORK: Started April 1962, completion by August 1963.
In collaboration with R. Allport Williams, County architect. Associate in charge of job, J. L. Harding. Associate in charge of development, H. Fleck. Assistant, B. G. Law.



plan



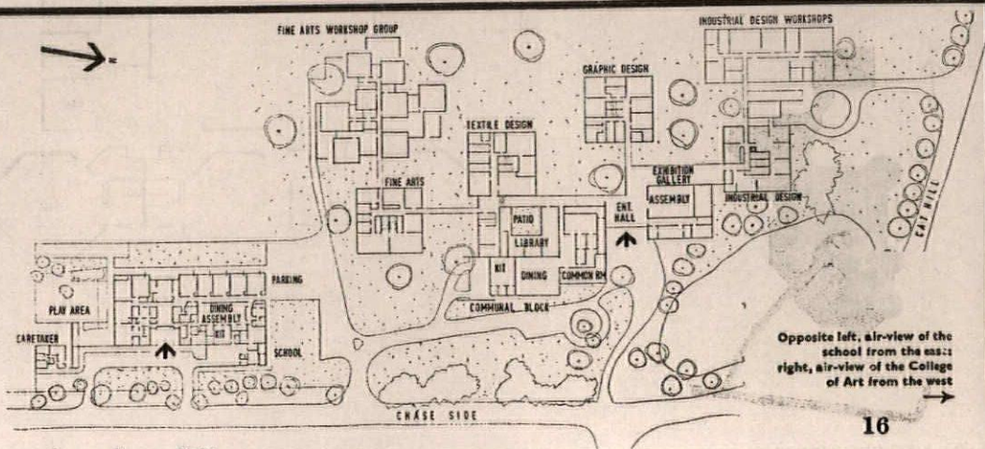
site plan

Opposite left, from north-west looking towards main entrance with two larger classroom units on the right: right, interior of corridor alongside assembly hall

School and College, Southgate

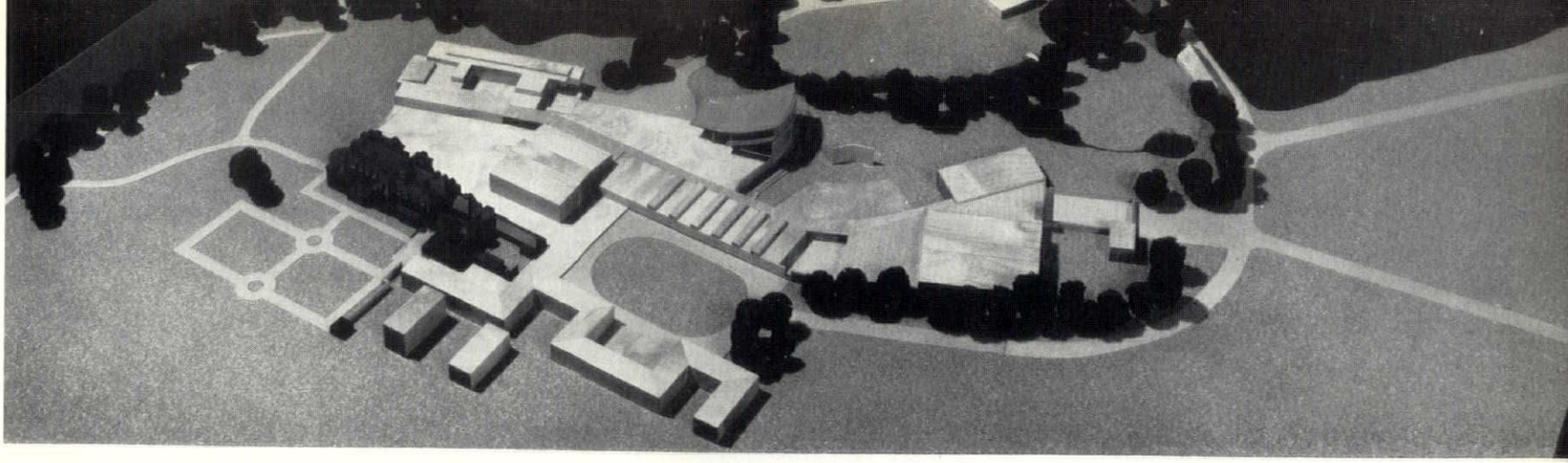
Whitfield Lewis, Middx. County Architect

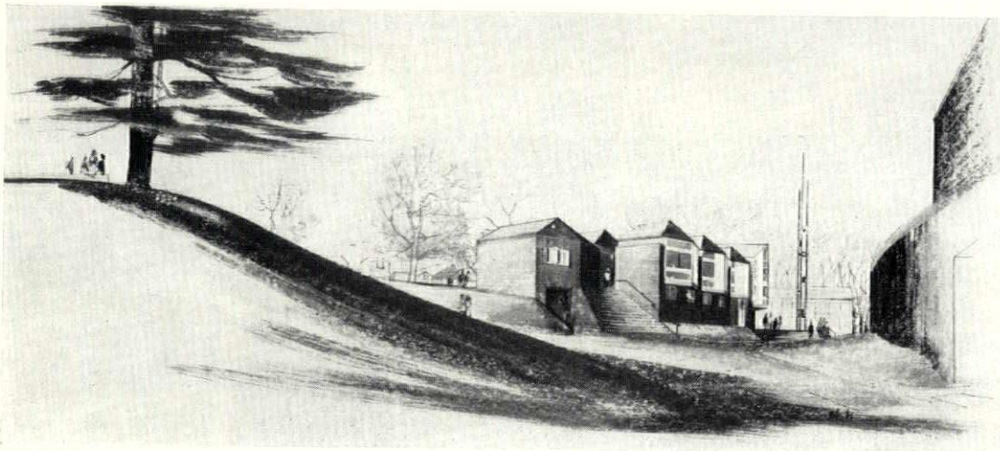
CLIENT: Middlesex County Council.
SITE: 4 acres of gently sloping parkland.
ACCOMMODATION: E.S.N. School; for 180, nursery and suite of three classrooms each self-contained with toilets. College of Art; textile, industrial and graphic design and fine arts departments.
STRUCTURE AND FINISHES: School; load-bearing brick crosswalls. Assembly roof, timber clad steelwork. College; r.c. frames with precast structural mullions.
SITEWORK: School, starts March 1963. College, 1964–5.
COST: School; £80,000. College £650,000 approx.
Deputy county architect, C. E. Hartland. School; Assistant county architect, D. M. Wilson. Job architect, A. S. West. College; Assistant county architect, George F. Holden. Job architects, Gabriel Newman, Kenneth Smith, Roger Tomalin.



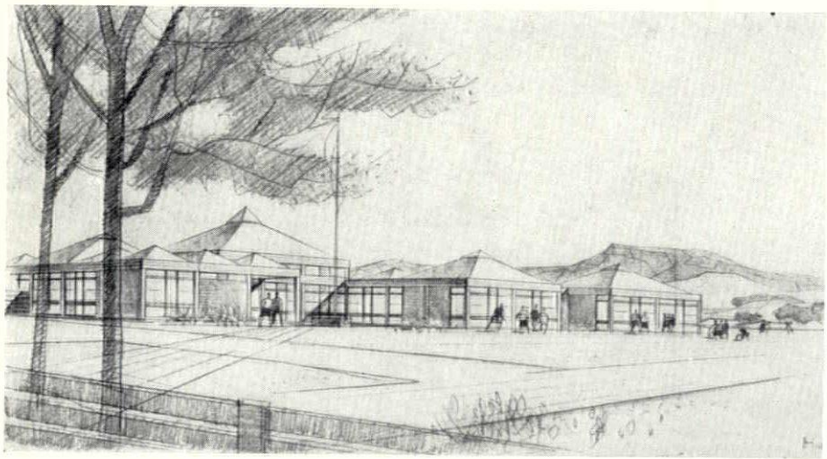
site plan: School for Educationally Sub-normal children left, College of Art right

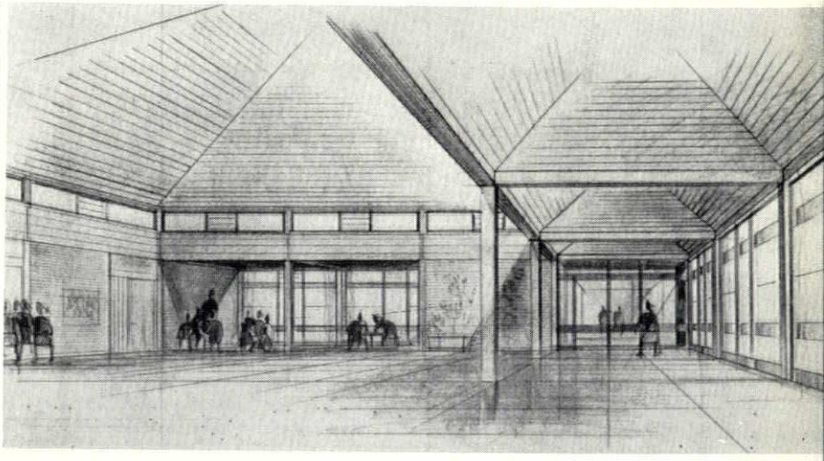
Opposite left, air-view of the school from the east: right, air-view of the College of Art from the west

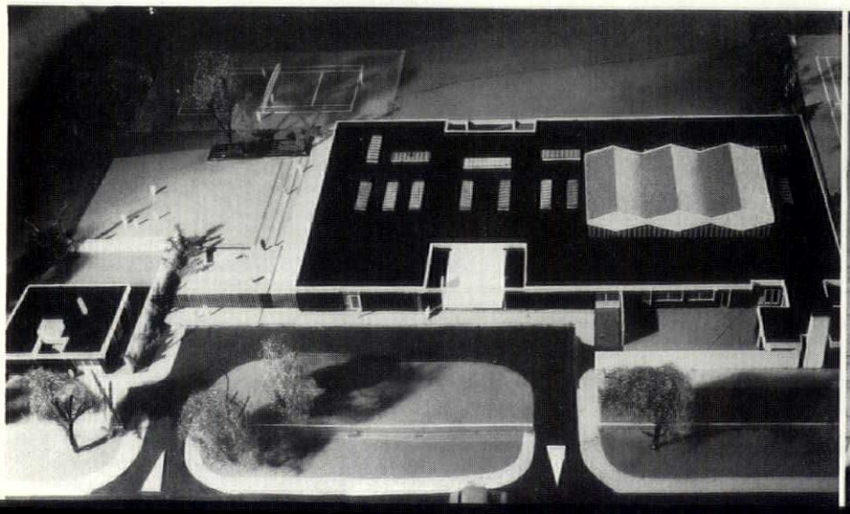






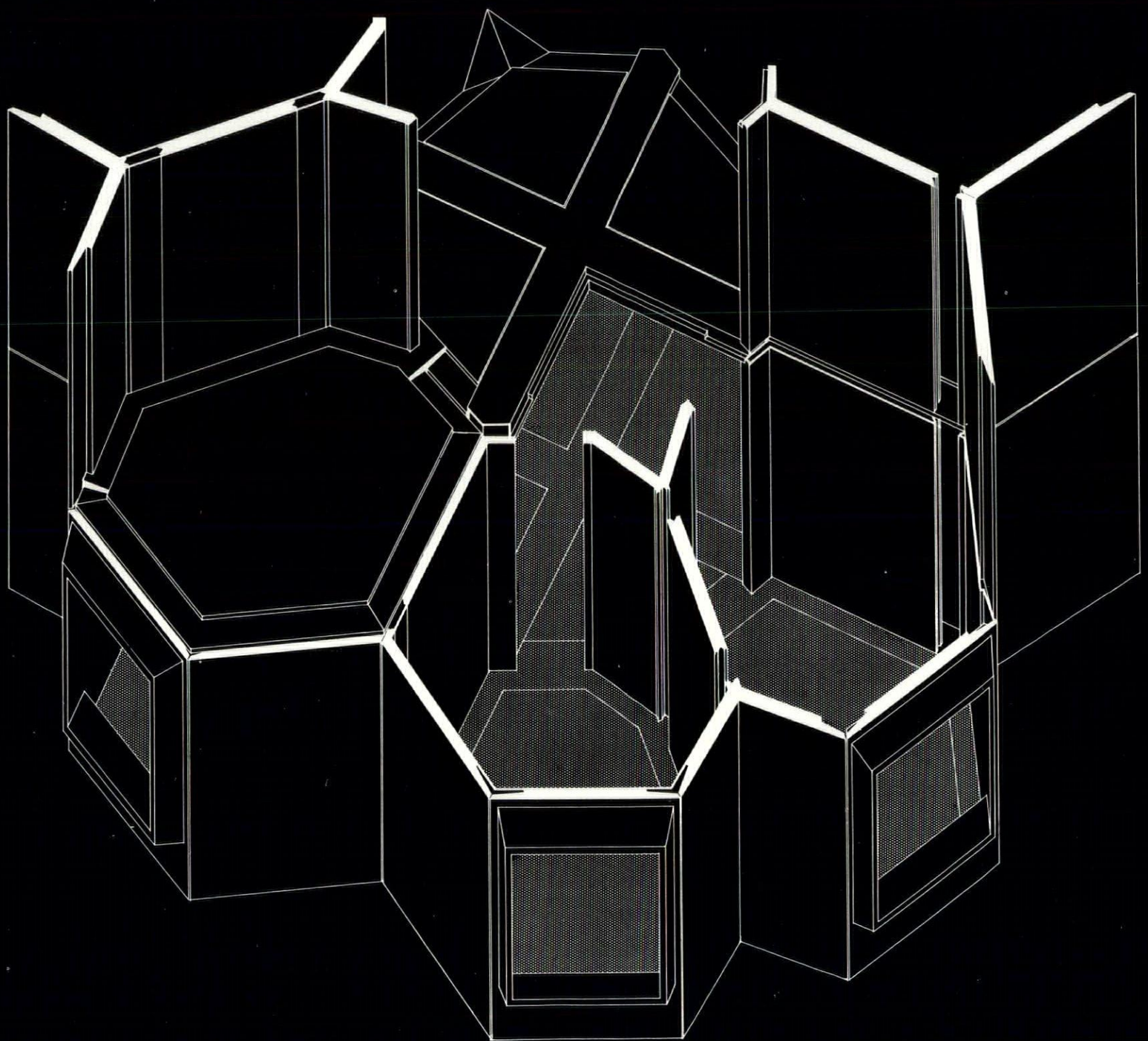








COLLEGES

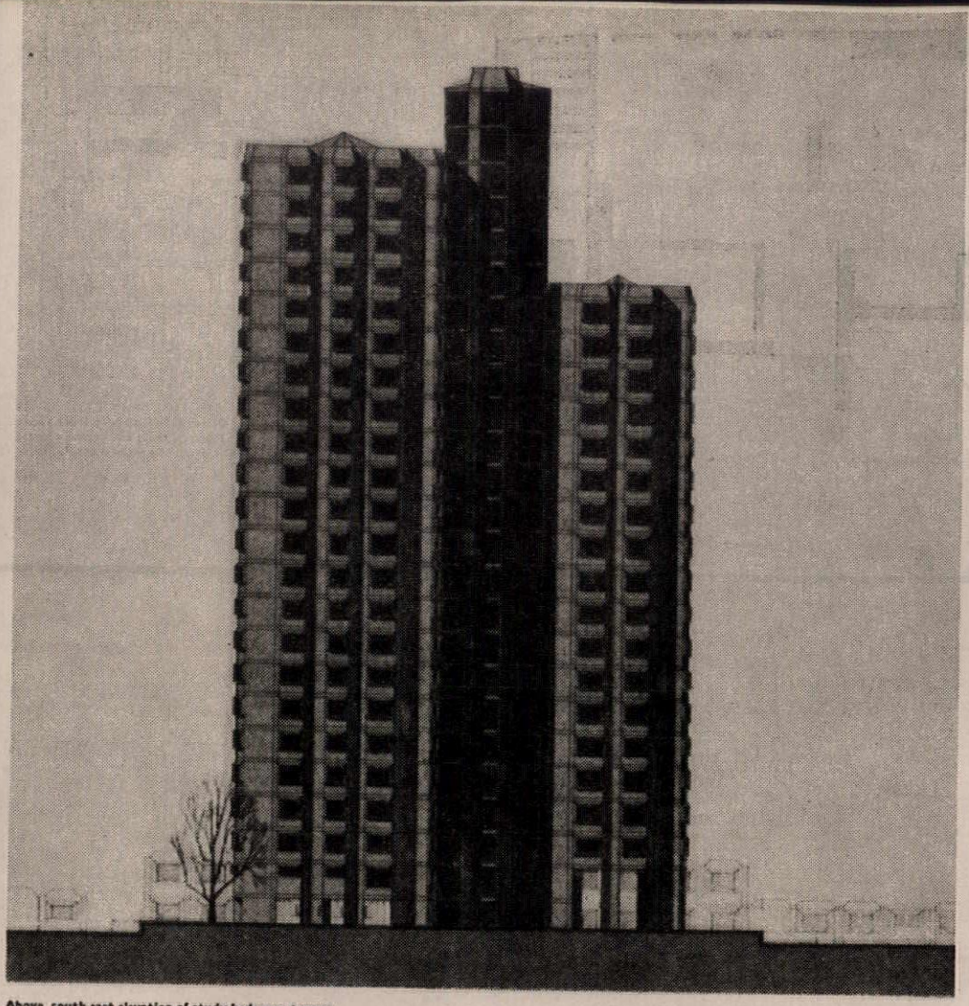


Teachers' Training College, Loughborough: above, a section of the study bedroom towers showing the relationship of the structural precast concrete units

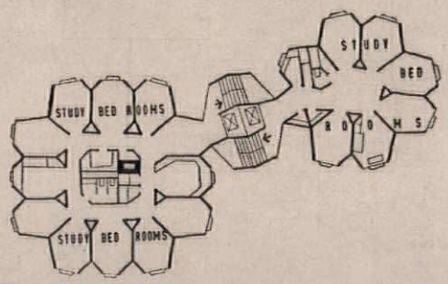
Teachers' Training College, Loughborough

Gollins, Melvin, Ward & Partners

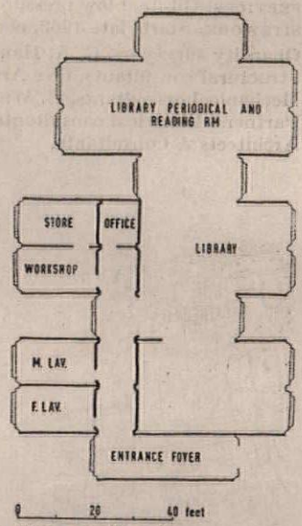
CLIENT: Leicestershire Education Committee.
SITE: Flat land adjacent to existing college. Part of educational zone on outskirts of town.
ACCOMMODATION: General teaching places, workshops, gymnasium, etc. Grouped in low buildings around large open court. 22-storey and linked 17-storey towers house 200 female and 100 male students respectively. Petal plan of elements forming towers allows study-bedrooms to have a variety of outlook and individual character with economical lateral circulation.
STRUCTURE AND FINISHES: Precast concrete sections throughout. Tower units form individual rooms and collectively create basic structure plus partitions and window units. Glazing direct to concrete with plastic sections. Glass louvres for ventilation.
SERVICES: Central boiler house beneath tower supplies domestic hot water and low-pressure hot water to convector heaters. Two high-speed lifts serve tower.
Associate, B. J. Mayes. Assistant, A. I. Gregson. Quantity surveyors, Langdon & Every. Structural consultants, Clarke, Nicholls & Marcel.



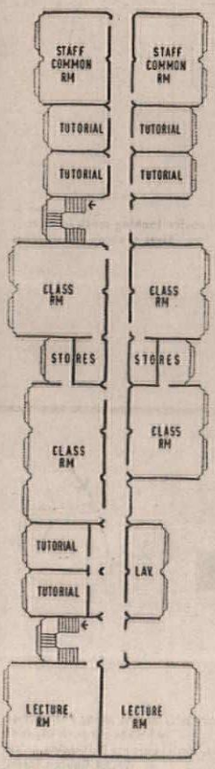
Above, south-east elevation of study-bedroom towers



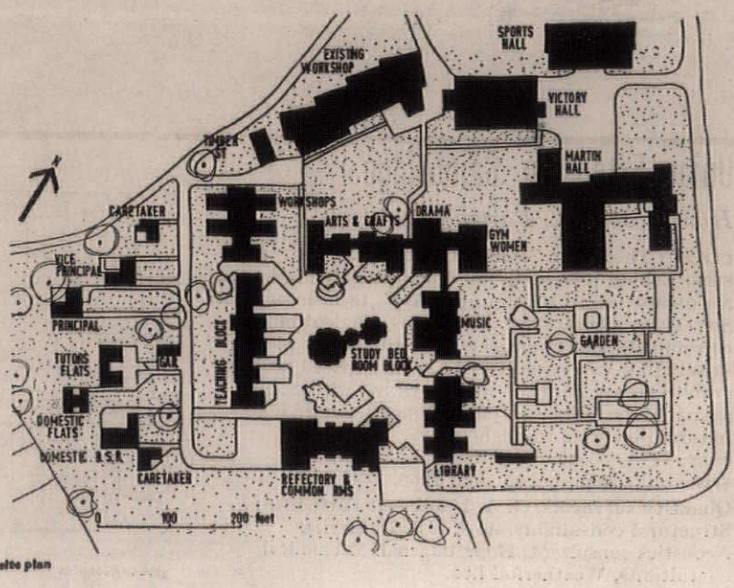
Study-bedroom towers, typical floor plan



Library, ground floor plan



Teaching block, ground floor plan

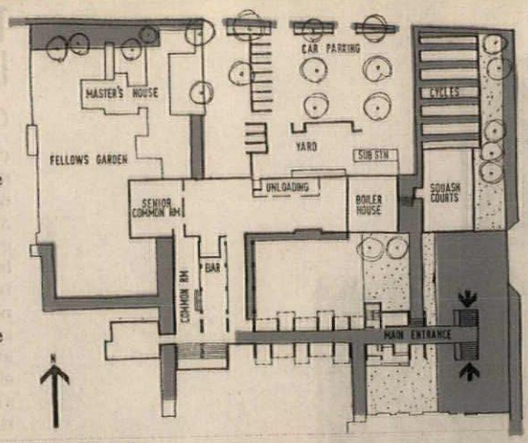


site plan

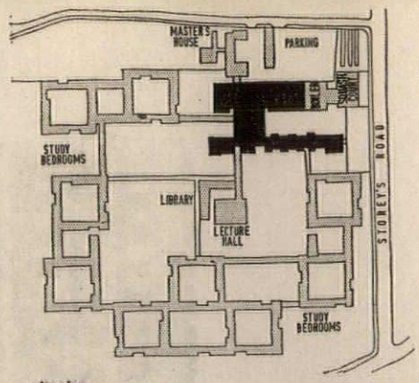
College, Cambridge

Richard Sheppard, Robson & Partners

CLIENT: Churchill College Trust.
SITE: 42 acres rising gently from Storey's Way, north-west of centre (see AR November 1962).
ACCOMMODATION: Stage three. Central buildings house communal and administrative facilities. North side consists of senior common rooms. West side has a large common room and bar on ground floor and a dining hall for 300. College will eventually house 525 students and 65 fellows.
STRUCTURE AND FINISHES: Piled foundations. Walls, load-bearing brick, fair-faced in situ exposed concrete beams, precast concrete cladding units with exposed white aggregates. Windows, teak.
SERVICES: Ventilation in dining, main kitchen and bars. Heating, natural and forced convectors.
COST: £300,000.



ground floor plan



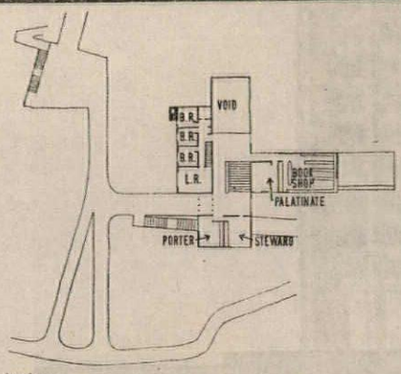
site plan

Opposite left, air-view from above the cycle sheds and squash courts: right, from above the master's house

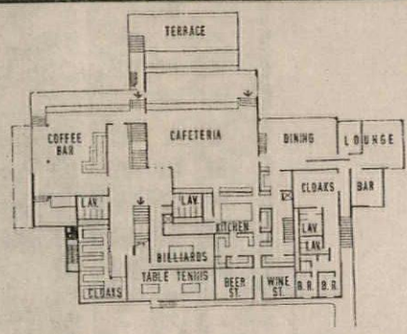
Students' Club, Durham

Architects' Co-Partnership

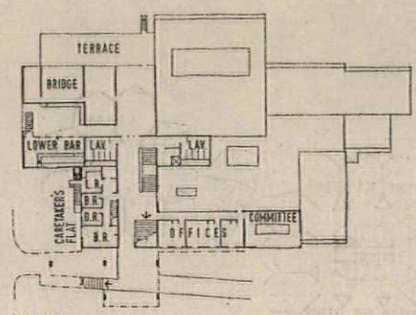
CLIENT: Durham Colleges in University of Durham.
SITE: 1½ acres on the east bank of the River Wear with access from New Elvet.
ACCOMMODATION: To cater for 3,000 students and 75 staff. Cafeteria, coffee bars, lounges, dance hall, games rooms, debating hall and offices.
STRUCTURE AND FINISHES: Load-bearing walls r.c. monolithic with floors. Roofs, special precast concrete units on concrete beams left fair-faced.
SERVICES: Oil-fired low pressure hot water radiators.
SITEWORK: Starts late 1963, completion by 1965.
Quantity surveyors, G. A. Hanscomb Partnership. Structural consultants, Ove Arup & Partners. Mechanical consultants, E. Wingfield-Bowles & Partners. Electrical consultants, Associated Architects & Consultants.



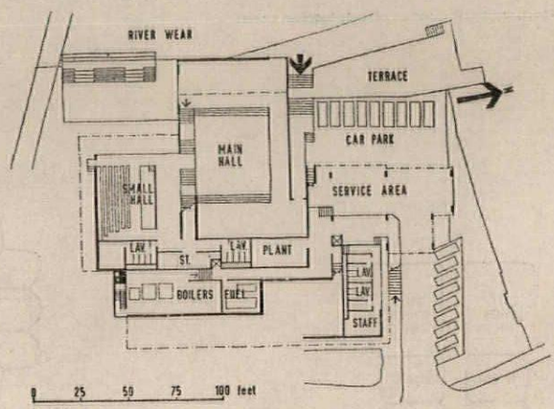
level one



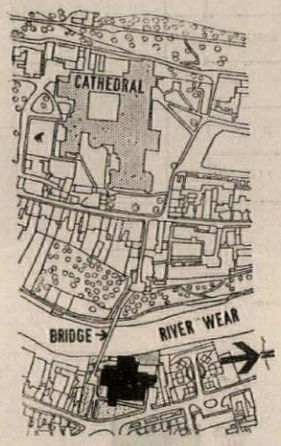
level three



level two



level four



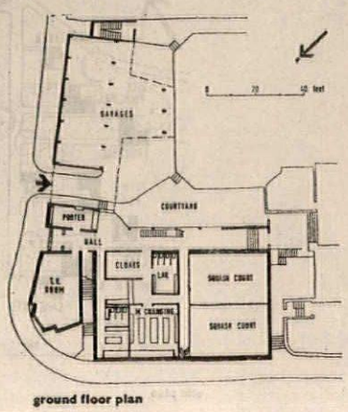
site plan

Opposite, looking south from N-w Elvet towards the entrance

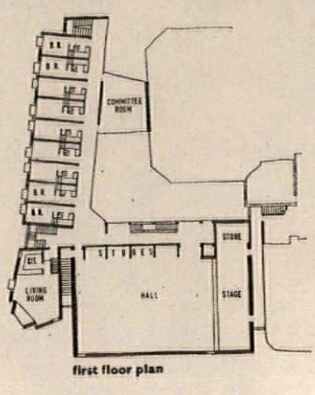
Union Extension, Cambridge

Howell, Killick, Partridge & Amis

CLIENT: The Union Society, Cambridge.
SITE: Behind present Union designed by Waterhouse.
ACCOMMODATION: Multi-purpose hall, 18 bedrooms for Society members, three club rooms, resident officer's accommodation, 2 squash courts, 10 parking places.
STRUCTURE AND FINISHES: R.c. with exposed dark red granite aggregate. Brickwork dark red with deeply raked joints. Windows, painted metal. Internally, natural pine used throughout.
COST: £115,000, new building only.
SITEWORK: Expected to start 1963.
Quantity surveyors, G. A. Hanscomb Partnership. Structural consultants, A. J. & J. D. Harris. Acoustics consultant, Hope Bagenal. Mechanical consultants, Weatherfoil Ltd.

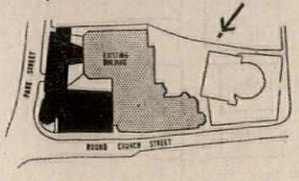


ground floor plan

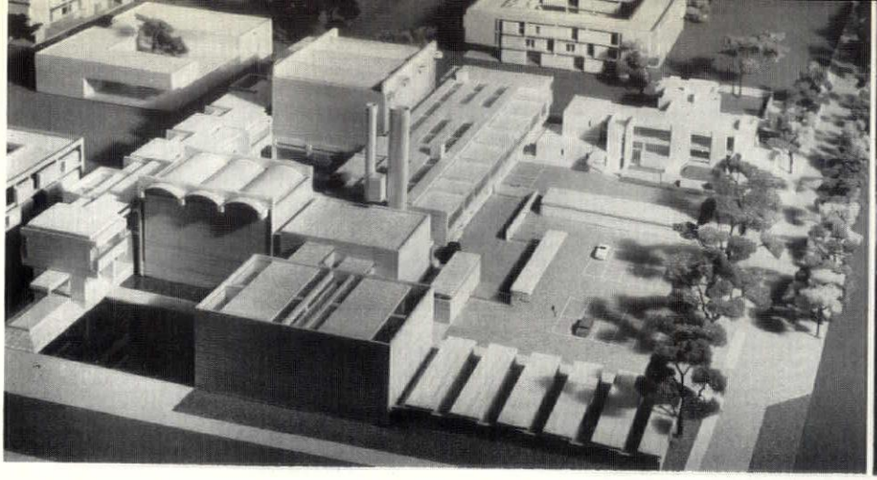


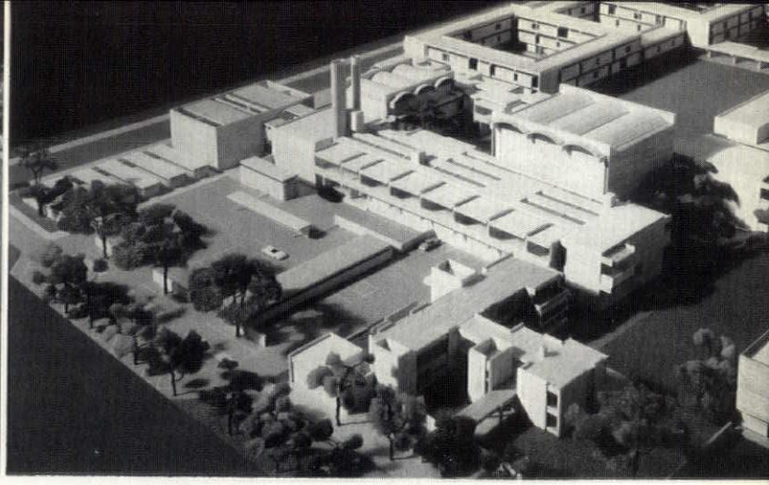
first floor plan

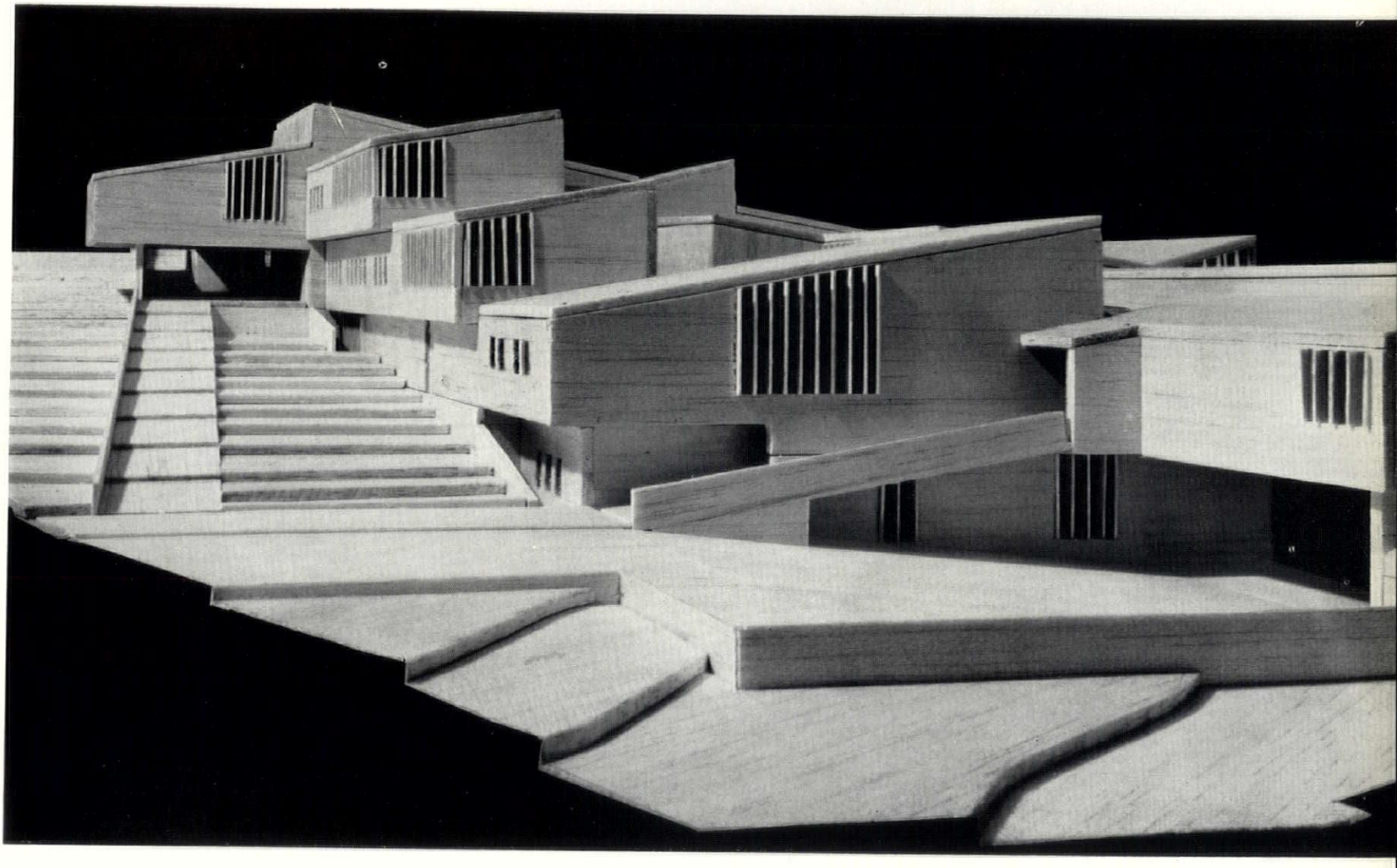
site plan

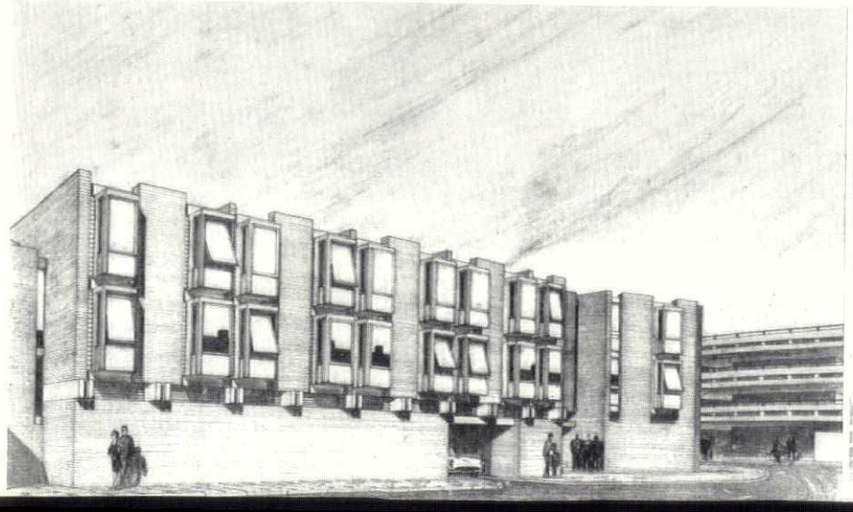


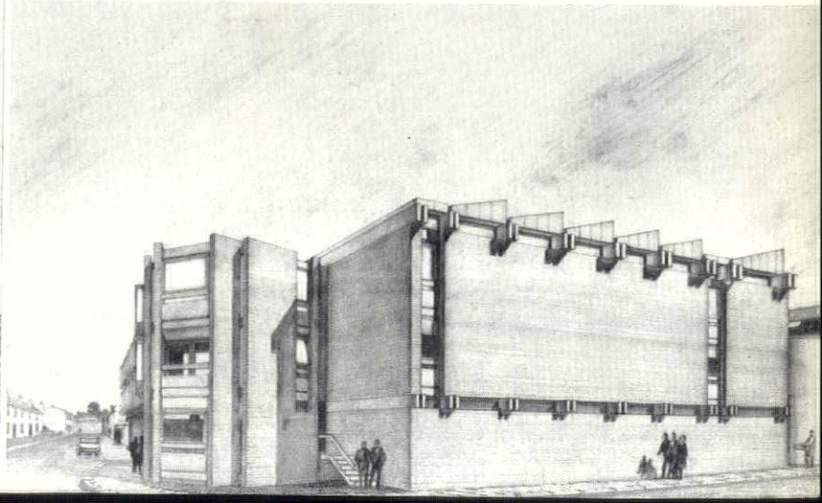
Opposite left, looking along Park Street with the car park beyond: right, multi-purpose hall facing on to Round Church Street

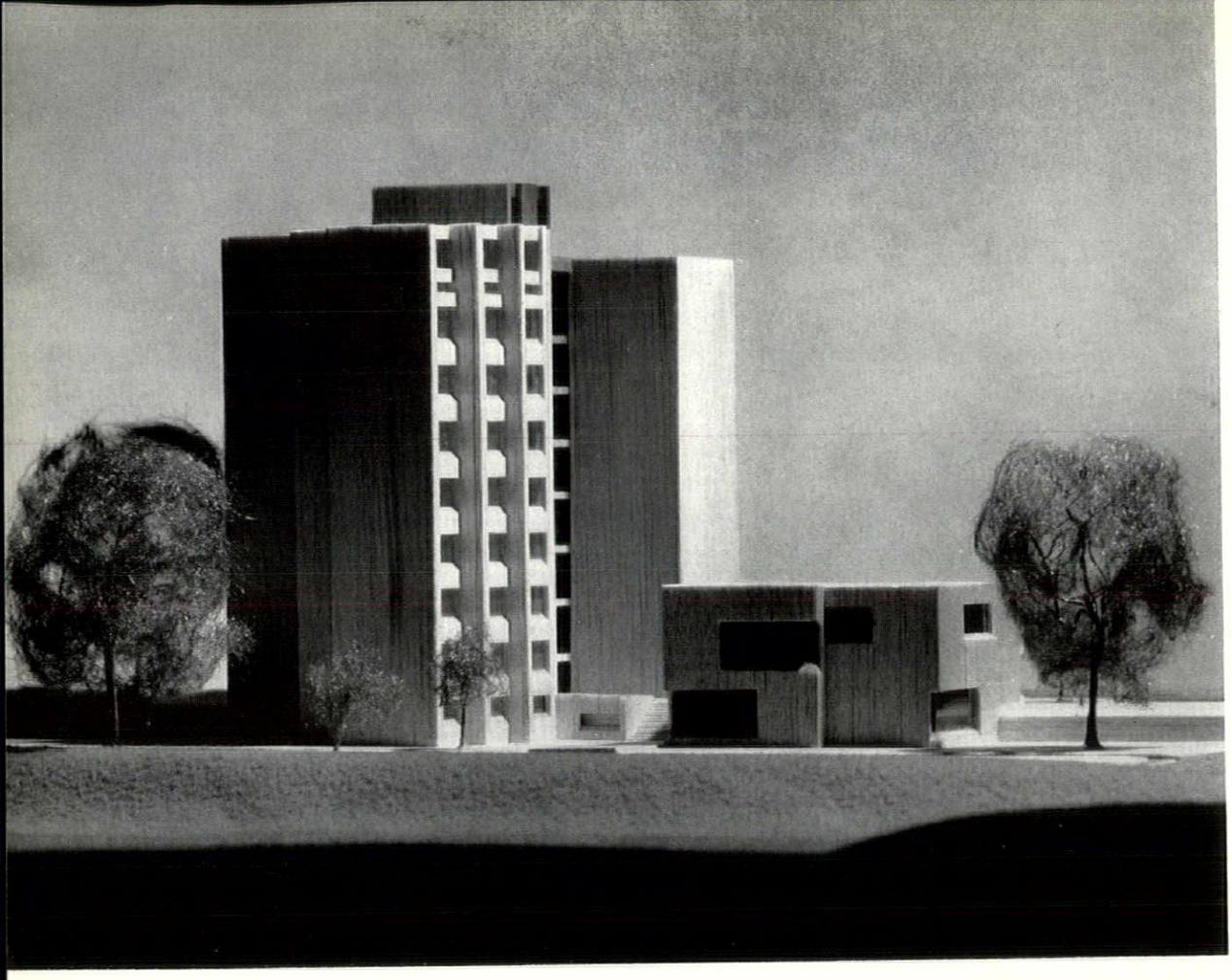


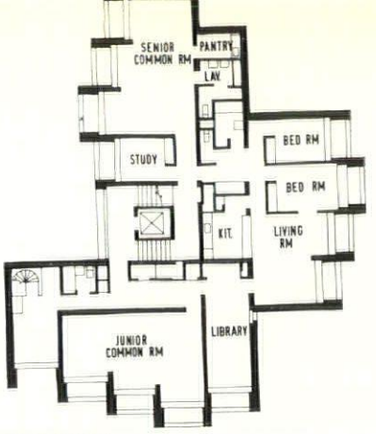






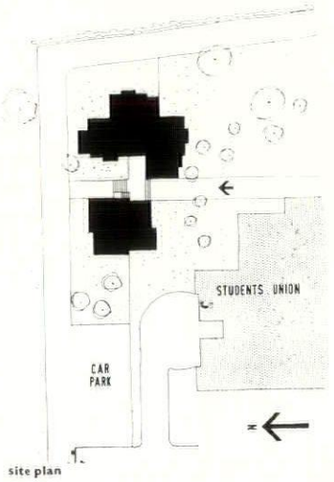




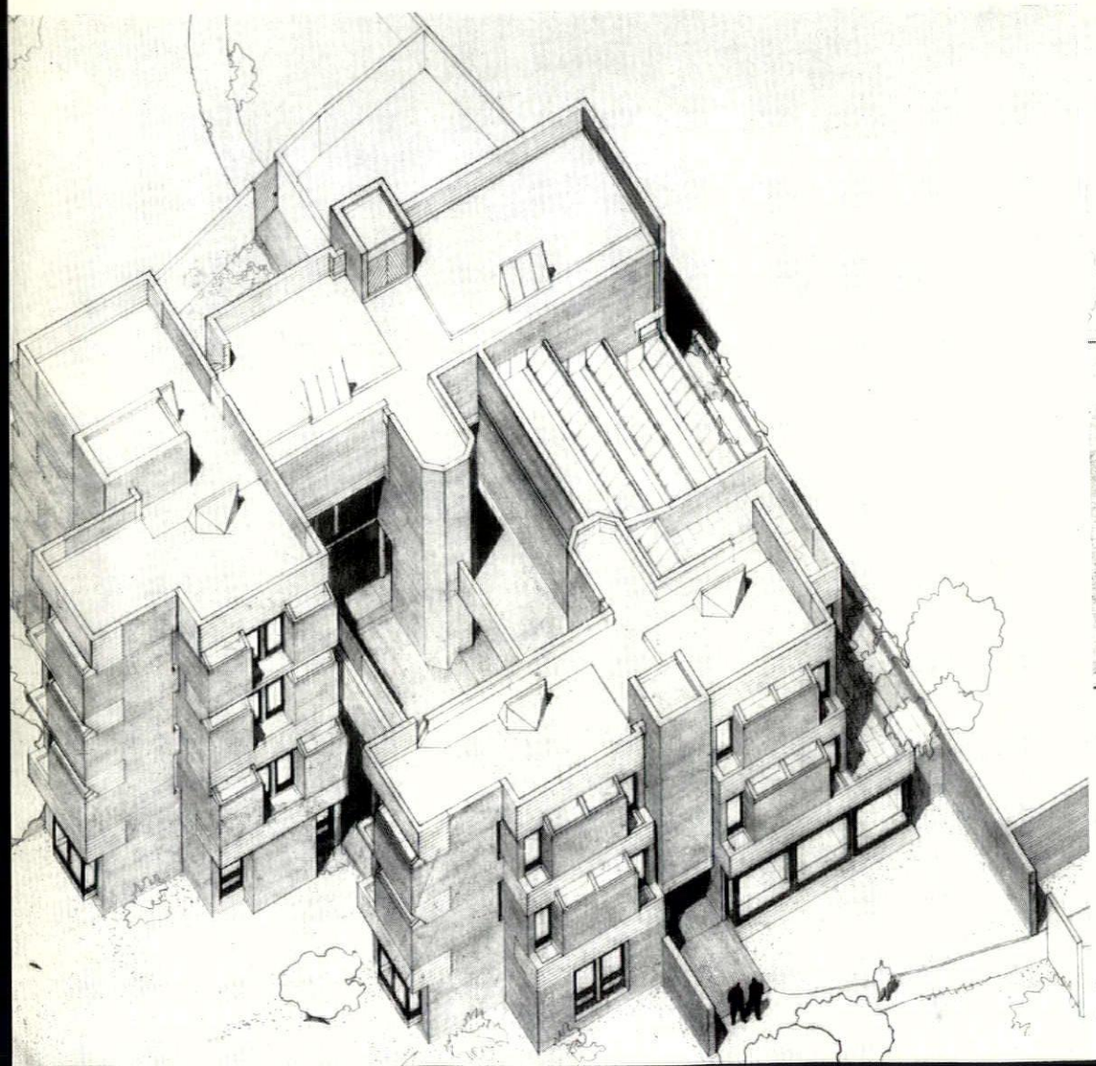


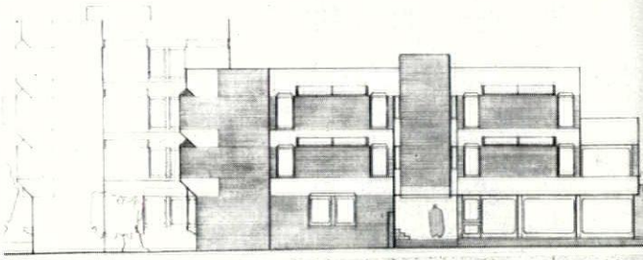
second floor plan

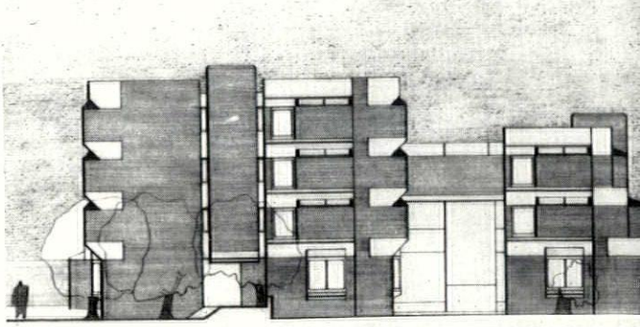
Halls of Residence, Hull:
left, from the north-west

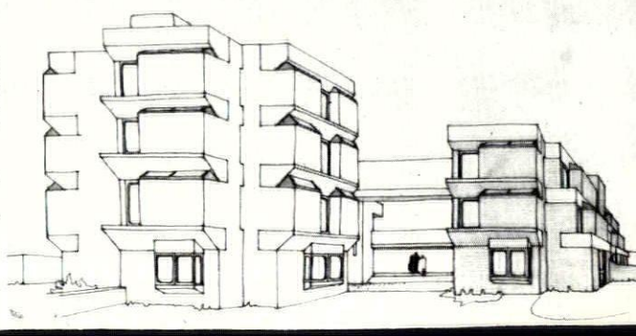


site plan





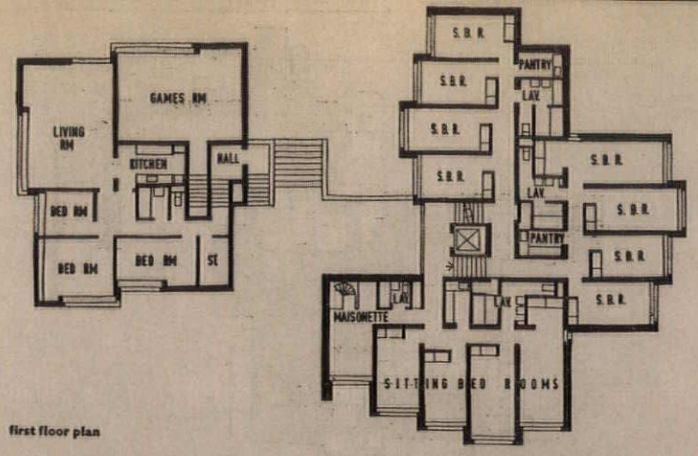




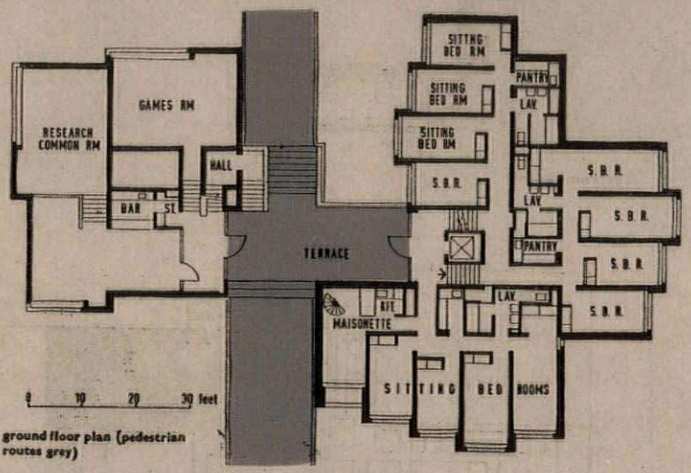
Halls of Residence, Hull

Castle & Park in association with Sir Leslie Martin and Colin St. J. Wilson

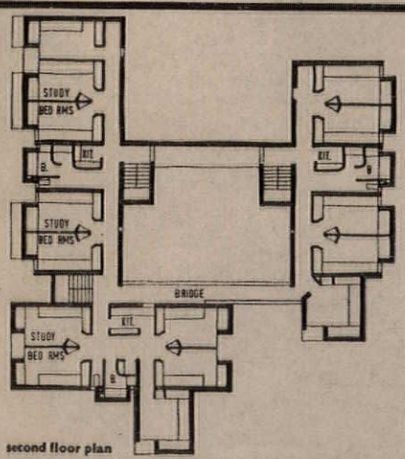
CLIENT: University of Hull.
SITE: Adjacent to Students Union in main University grounds.
ACCOMMODATION: 104 study-bedrooms, four dons' maisonettes, junior, senior and research students' common rooms, library, music room and games room. Each group of study-bedrooms has a service unit with w.c.'s, washroom and kitchenette. Study-bedrooms in varying sizes giving a variety of arrangements and maisonettes usable as single or double rooms when necessary. Existing refectory will provide meals for students in residence. Building developed as a tower due to restricted site available.
STRUCTURE AND FINISHES: Piled foundations, calculated load-bearing brick with red hand made facings to match existing, in situ r.c. floors. Walls and ceilings, plaster painted white. Floors, generally cork tiles. Joinery, varnished clear grade douglas fir. Aluminium sliding windows with louvres at each side for night ventilation. External pavings, brick paviours.
SERVICES: Forced air convectors built into structure providing background heating by natural convection to all parts of building. Booster fans in study-bedrooms can be switched on and are time-controlled in addition to normal thermostats.
COST: £196,483.
SITEWORK: Started April 1962, completion by October 1963.
Quantity surveyors, Monk & Dunstone. Structural consultants, Ove Arup & Partners. Electrical consultants, Edward D. Pearce & Partners.



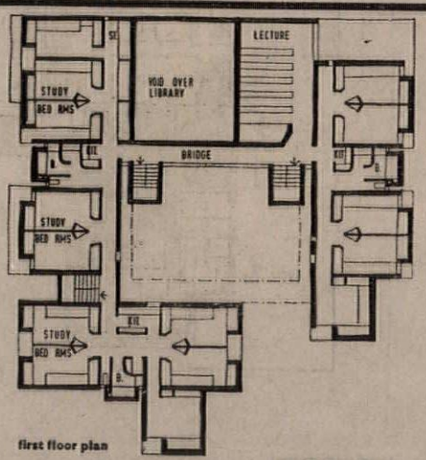
first floor plan



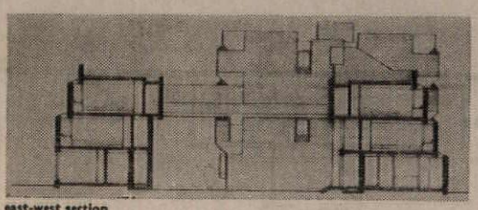
ground floor plan (pedestrian routes grey)



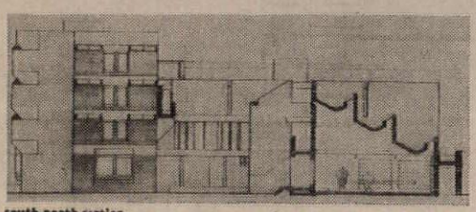
second floor plan



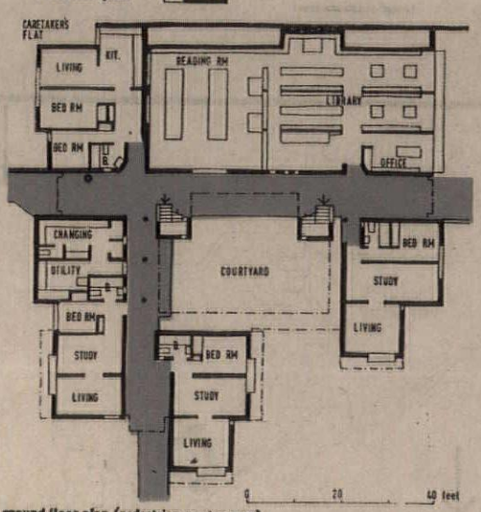
first floor plan



east-west section



south-north section



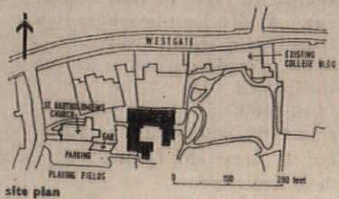
ground floor plan (pedestrian routes grey)

← Opposite left, axonometric view from south-east: right, east elevation, south elevation and view from south

Theological College, Chichester

Ahrends, Burton & Koralek

CLIENT: Theological College, Chichester.
SITE: Old kitchen garden in existing college grounds located between existing buildings and chapel.
ACCOMMODATION: 35 study-bedrooms, 3 staff flats, caretaker's flat, library, lecture room and ancillary services for whole college.
STRUCTURE AND FINISHES: Load-bearing 6 in. concrete block walls with 6 in. r.c. floor slabs. Roofs; timber with woodwool and felt coverings, zinc covering to library. External walls, cavity construction with brick externally and block internally, filled with foam insulation. 6 in. r.c. walls used extensively with boarded finish, backed up with ½ in. polystyrene and 4 in. blockwork. Walls, painted blockwork. Ceilings, plaster, possibly unpainted. Library ceiling, copper faced. Windows and doors treated with Solignum externally. Internally, either natural BC pine sealed or softwood treated with Solignum and wax polished. Brick paving to all walkways and courtyard.
SERVICES: Convector heaters to all study-bedrooms, flats, etc. Hot air units to library and lecture room. Oil-fired boiler.
COST: £61,500, including study-bedroom and library built-in furniture.
SITEWORK: Starts late January 1963, completion by July 1964.
Assistant, Paul Drake. Quantity surveyors, E. C. Harris & Partners. Structural consultants, Felix Samuely & Partners.

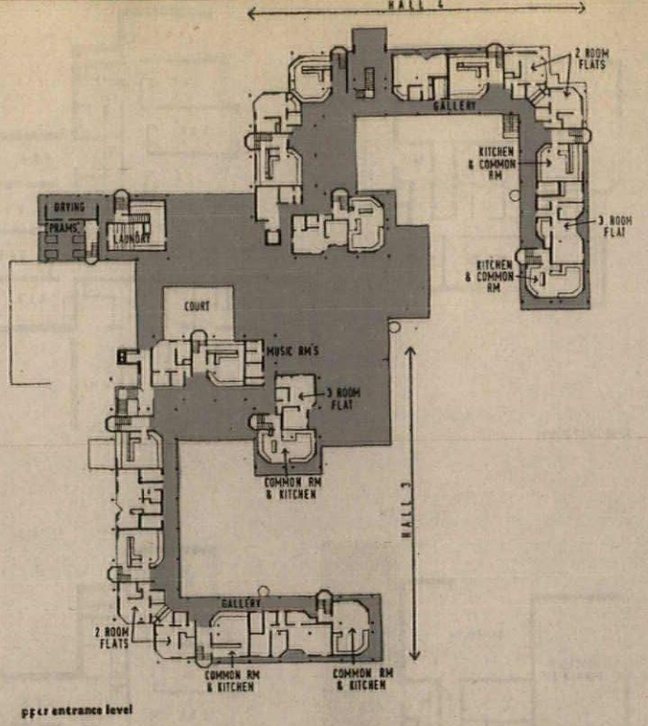


site plan

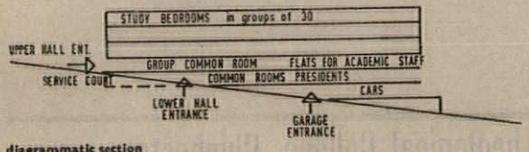
Halls of Residence, Birmingham

H. T. Cadbury-Brown

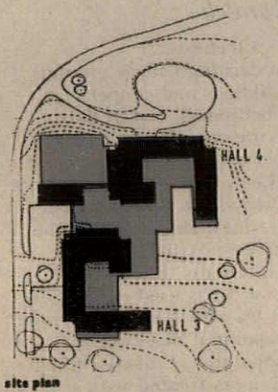
CLIENT: University of Birmingham.
SITE: Adjoining University. Parkland, with many fine trees, sloping down to lake.
ACCOMMODATION: 400 students in two halls, each with separate identity but creating one group. Dining and common rooms separate for each hall. Service core shared. 15 flats for academic staff, 6 flats and 10 bed-sitters for domestic staff. Study-bedrooms arranged in groups of 30 with inward facing common room and kitchen, forming self-service coffee bar, at main circulation level. This opens off covered way to make social contact easy. Outward facing academic staff flat also with this group at common room level. Levels define social functions; top three floors, study-bedrooms; next floor below, principal circulation for hall members with group common rooms and staff flats; below this, general common rooms, president's offices and flats, service core; lowest floor, covered garage, gardener's store, etc. Slope of the ground allows access on three lowest floors. For ease of service there is complete lateral communication at all levels. Central corridor between groups is served by lift for each hall giving trolley access to each room.
STRUCTURE AND FINISHES: Lower floors, concrete frame. Study-bedrooms, load-bearing brick. Spans are from outer wall to corridor spine wall. Precast floor units and edge facings.
SERVICES: Hot water radiators.
COST: £675,000.
Assistant in charge, Stephen V. Holmes. Assistant, Ian R. Davies. Quantity surveyors, A. S. Wilson & Partners. Structural consultants, Clarke Nicholls & Marcel. Mechanical consultants, J. Roger Preston & Partners.



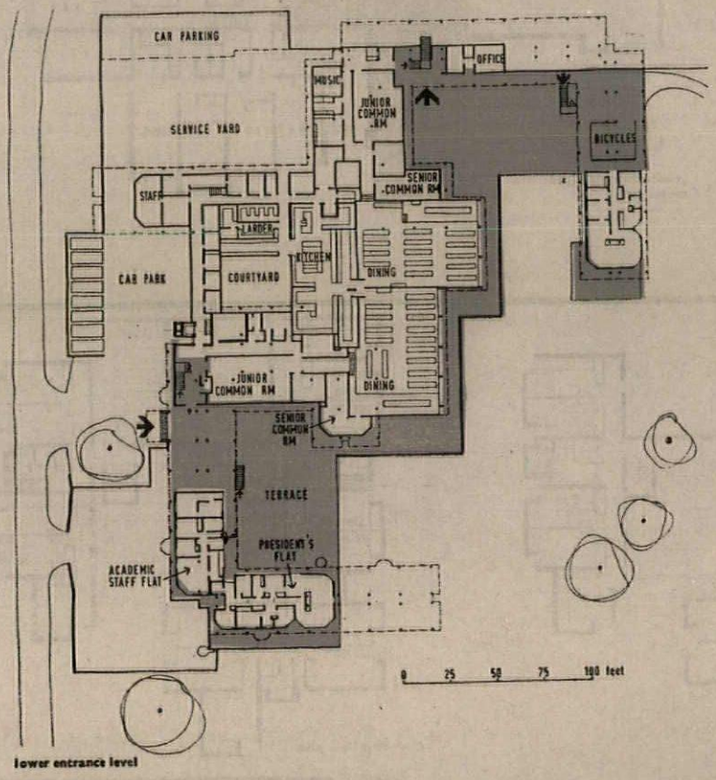
upper entrance level



diagrammatic section



site plan

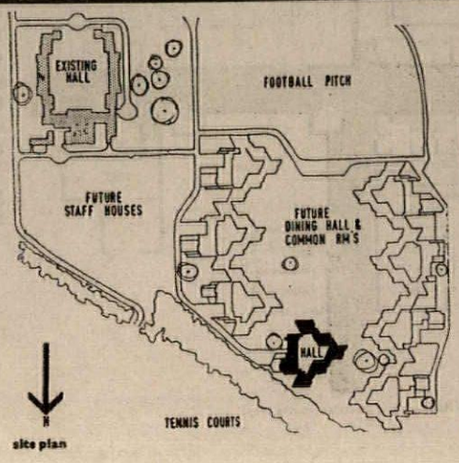


lower entrance level

Halls of Residence, Hull

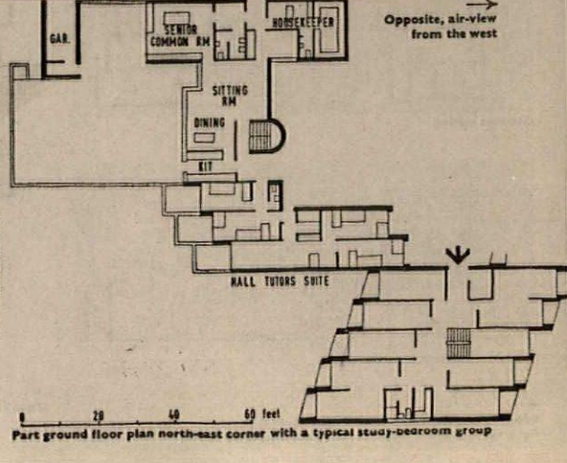
Gillespie, Kidd & Coia

CLIENT: University of Hull.
SITE: 27 acres of gently sloping parkland.
ACCOMMODATION: Ultimate development for 1,200 students and staff in 8 similar halls grouped around central dining, recreation and administrative building. First stage for 135 students. Study-bedrooms grouped around two types of stair access.
STRUCTURE AND FINISHES: Walls, load-bearing brick fair-faced externally. Floors, r.c. with hardwood.
SERVICES: Oil-fired boilers. Forced air convectors on time switch to study-bedrooms.
COST: Approximately £165,000.
SITEWORK: Starts Spring 1963, completion by 1964.
Assistants, A. McMillan, I. Metzstein. Quantity surveyors, Mackintosh & Robertson.



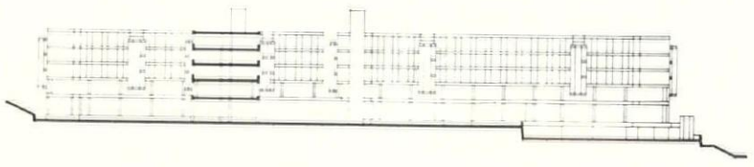
site plan

Opposite, air-view from the west

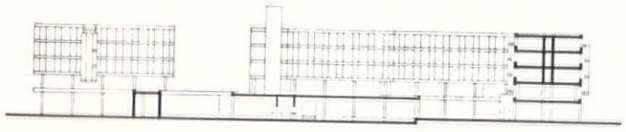


Part ground floor plan north-east corner with a typical study-bedroom group

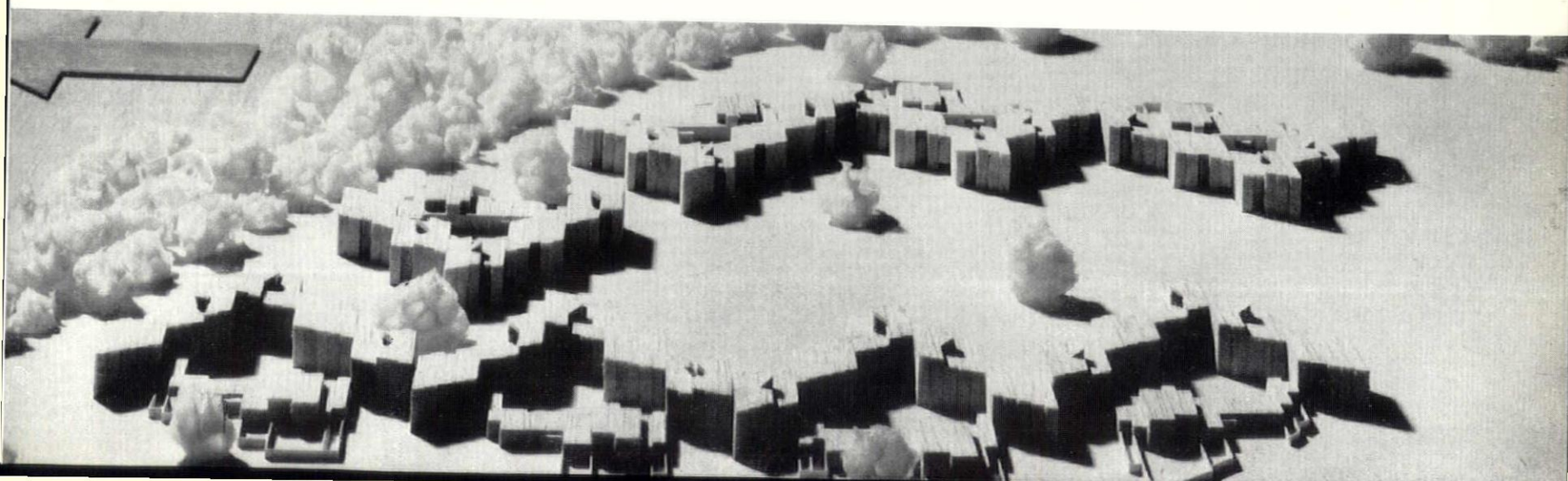
Halls of Residence, Birmingham: above, from the south-east

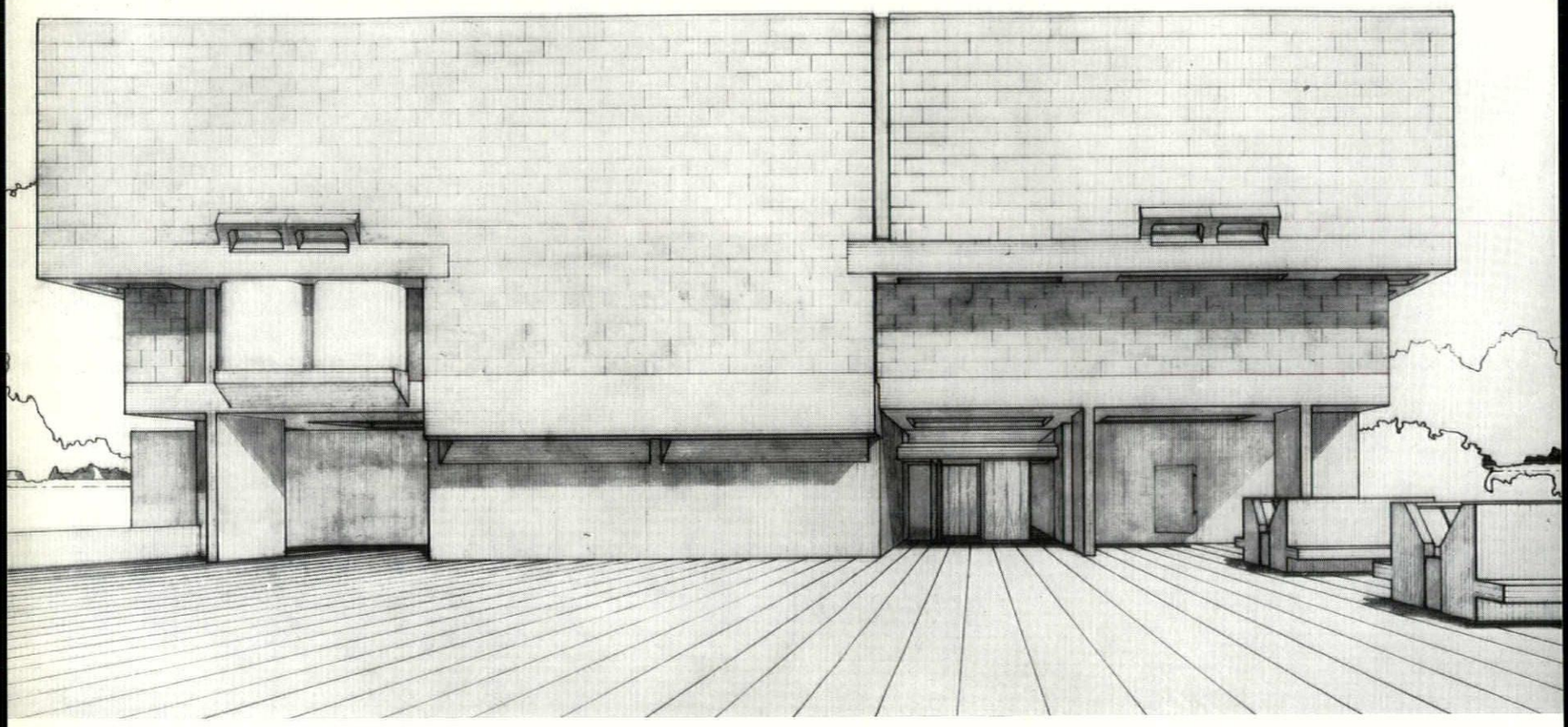


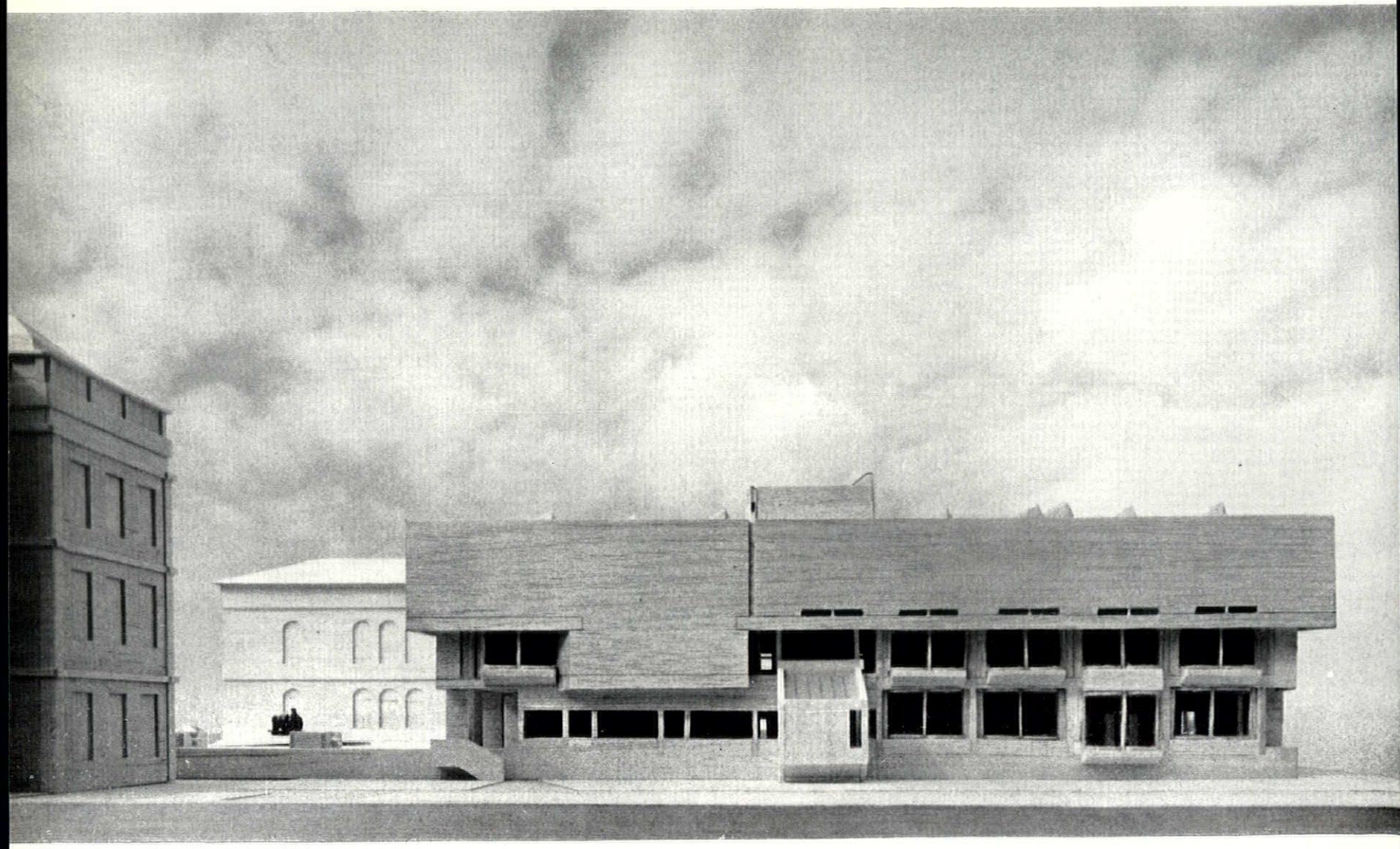
north-south section with Hall 3 to the right



east-west section looking towards Hall







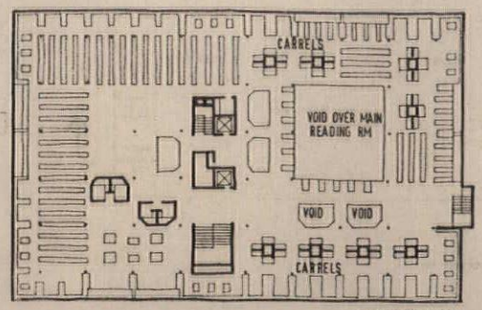
←Opposite top, looking south along the access terrace towards the main entrance

University Library, Dublin

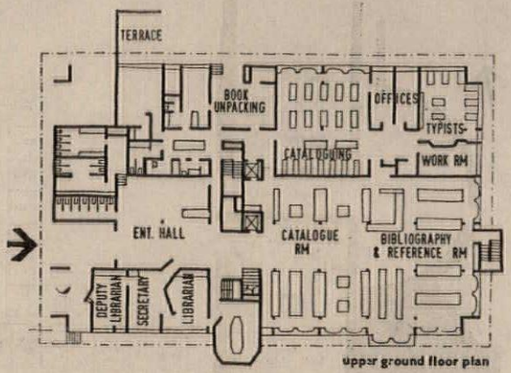
Ahrends, Burton & Koralek

CLIENT: Trinity College, Dublin.
SITE: A narrow strip between existing library and museum within college complex.
ACCOMMODATION: For 400 readers, 1,000,000 books with 200,000 in open access and remainder in closed access basement stack, administration offices, cataloguing room, etc. Initially, part of basement area will be used for teaching.
STRUCTURE AND FINISHES: In situ r.c. frame with 16 ft. 8 in. bays, columns lightly bush hammered, coffered floor with 4 ft. 2 in. wide by 1 ft. 3 in. beams. Roof lights, translucent glass in lead-covered patent glazing. Roof; r.c. fair-faced from shuttering internally with woodwool insulation, lead sheeting and asphalt gutters. External walls; 4 in. granite externally, 2 in. cavity, 4 in. concrete block plastered, forming alcoves for built-in bookshelves. Reading areas have curved plate glass bay windows with bronze ventilators between. Floors; generally linoleum, ribbed black rubber in front entrance and cataloguing halls, carpet in main reading room. Windows, bronze. Forecourt paving, granite.
SERVICES: Heating, warm air system with additional convectors to balance heat loss from glazing and roof lights. Largely artificially ventilated, air filtered and humidity controlled. Air supply to two upper floors through perimeter roof duct from plant room above. Basement plant room for lower floor ventilation.
COST: Estimated at £437,000, plus £69,000 for furniture.
SITEWORK: Starts May 1963, completion by September 1965.

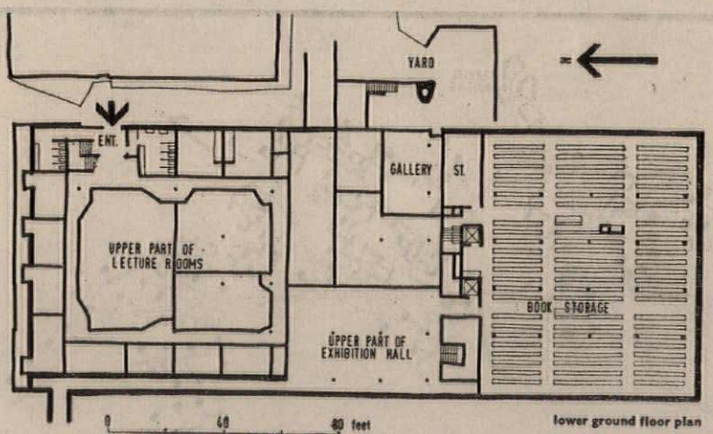
Quantity surveyors, D. A. Degerdon & Partners.
Structural consultants, Felix Samuely & Partners.
Mechanical and electrical consultants, Steensen, Varming & Mulcahy.



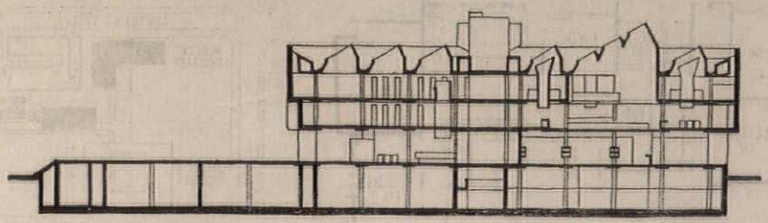
second floor plan



upper ground floor plan



lower ground floor plan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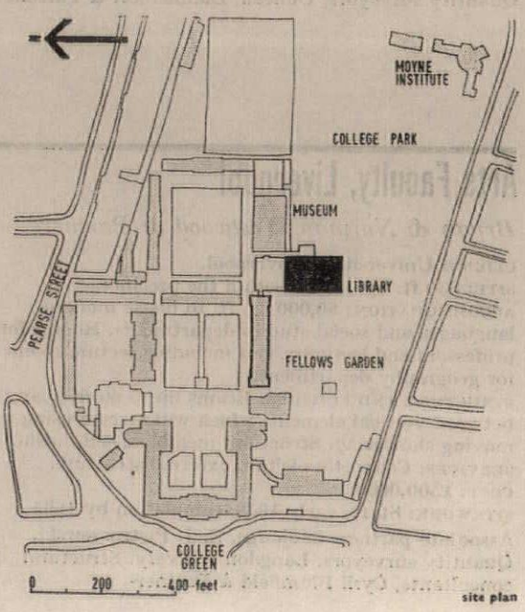


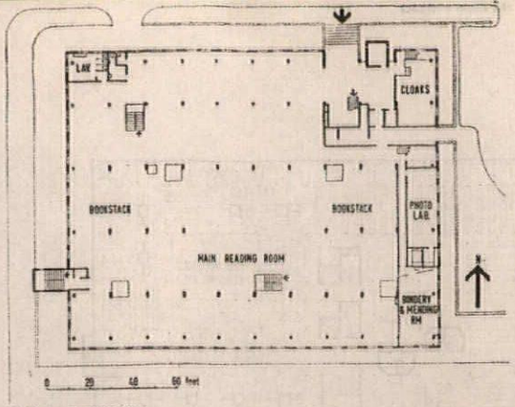
site plan

←Opposite bottom, west side from the Fellows' Garden

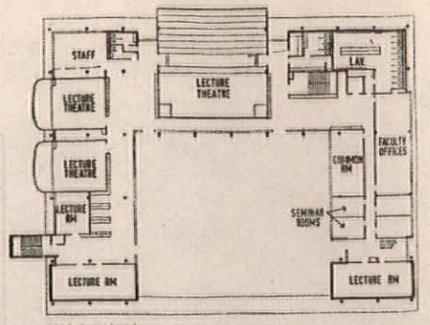
College and Offices, Glasgow

Covell, Matthews & Partners

CLIENTS: E. Alec Colman Group of Companies. Royal College of Science and Technology.
SITE: 1.4 acres, sloping 40 ft., on George Street.
ACCOMMODATION: College; library, faculty lecture and offices, theatres, roof garden, parking for 108 cars; 130,000 sq. ft. offices, 24 shops, parking for 320 cars.
STRUCTURE AND FINISHES: In situ r.c. columns and slabs with precast beams. College, precast cladding. Windows, mill finish aluminium.
COST: Approximately £1,250,000.
SITEWORK: Started August 1962, college completion by late 1963, offices by early 1964.
Design team, B. G. Falk, A. Heaseman, J. Nesbitt. Quantity surveyors, C. William O'L. Markham & Partners. Muirhead, Muir & Webster. Structural consultants, Alan Grant & Partners.



College, entrance level

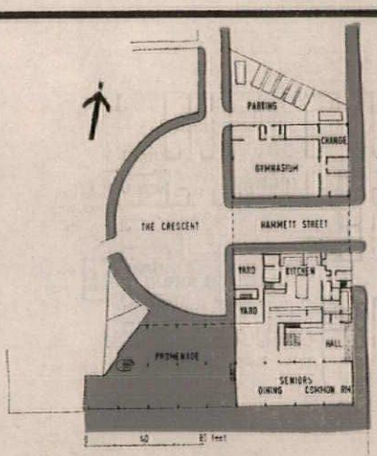


roof deck level

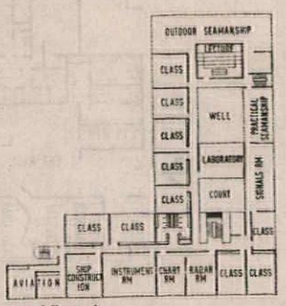
Nautical College, City of London

Hubert Bennett, Architect, London County Council

CLIENT: London County Council.
SITE: 0.4 acre west of Minories and north of Tower.
ACCOMMODATION: Re-housing two local colleges.
STRUCTURE AND FINISHES: R.c. frame and precast panels.
COST: Estimated, £383,600.
SITEWORK: Expected to start January 1964.
Deputy architect, F. G. West. Schools architect, Michael Powell. Assistant schools architect, Peter Jones. Group leader in charge, R. W. Robson-Smith. Assistant, D. Bradford. Structural consultant, Brian Colquhoun & Partners. Mechanical consultants, J. Stinton-Jones & Partners. Electrical consultant, F. M. Fuller, chief engineer, LCC.



ground floor plan

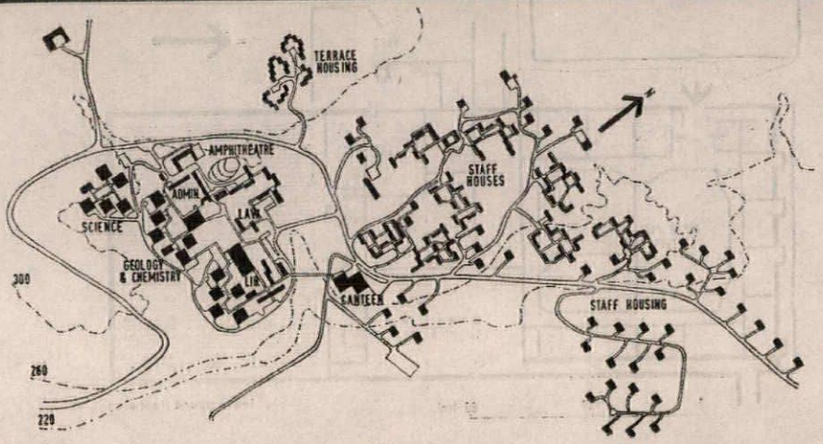


second floor plan

College, Dar-es-Salaam Tanganyika

Norman & Dawbarn

CLIENT: University College, Dar-es-Salaam.
SITE: 850 acres, 6 miles north-west of town.
ACCOMMODATION: Ultimately for 2,000 students. Stage 1 for 200 students by 1964, rising to 800 by 1967, consists of arts faculties, library, science school, union, three residential groups and some sports facilities. Stage 2, for 1,130 by 1973.
STRUCTURE AND FINISHES: R.c. frames, floors and roofs. Local building materials and products.
COST: Stage 1, approximately £1,750,000. Stage 2, approximately £1,000,000.
SITEWORK: Stage 1, completion by 1967.
Quantity surveyors, Duncan, Dannhauser & Parsons.



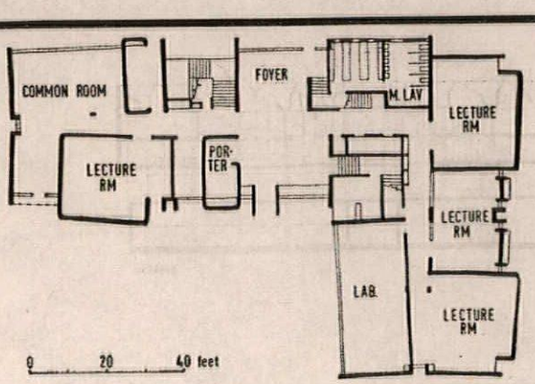
site plan

→ Opposite, air-view from south-east, with faculty buildings left, students' union centre, residential buildings to right.

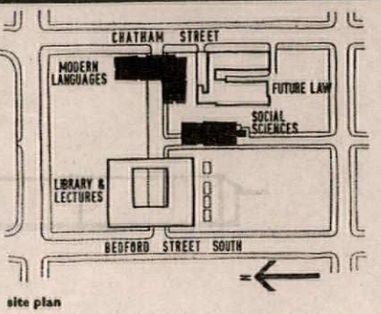
Arts Faculty, Liverpool

Bryan & Norman Westwood & Partners

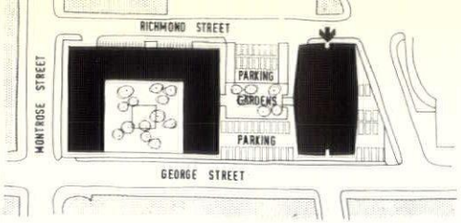
CLIENT: University of Liverpool.
SITE: 330 ft. by 459 ft. within the precinct.
ACCOMMODATION: 80,000 sq. ft. to house modern languages and social studies departments. Rooms for professors and lecturers, but including lecture rooms for geography department.
STRUCTURE AND FINISHES: Beams up to 60 ft. span between vertical elements which will be cast using moving shuttering. Structural members, self-finish.
SERVICES: Convectors within external structure.
COST: £500,000.
SITEWORK: Starts early 1963, completion by 1965.
Associate partners in charge, Z. J. Pietruszewski. Quantity surveyors, Langdon & Every. Structural consultants, Cyril Blumfield & Partners.



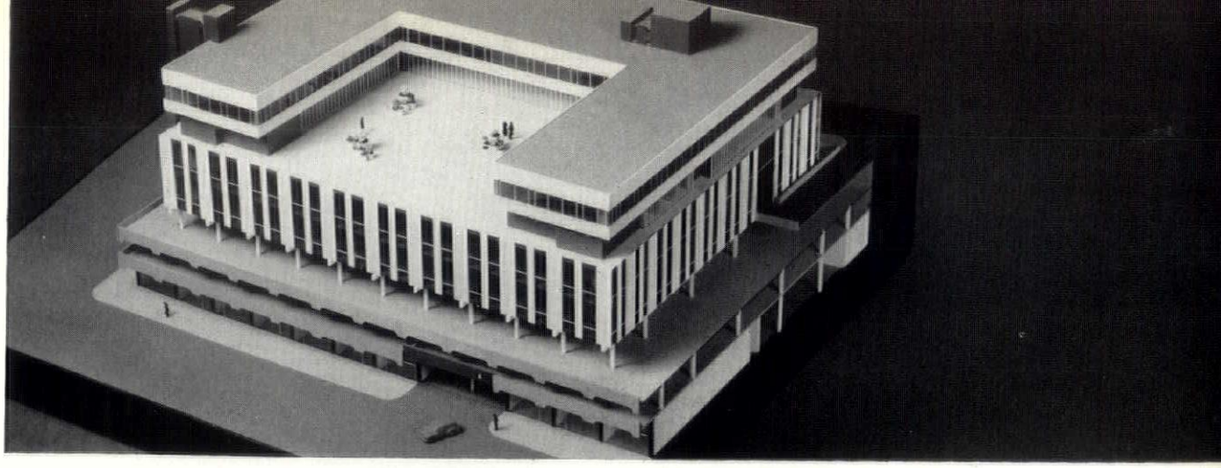
Modern Languages, ground floor plan



site plan

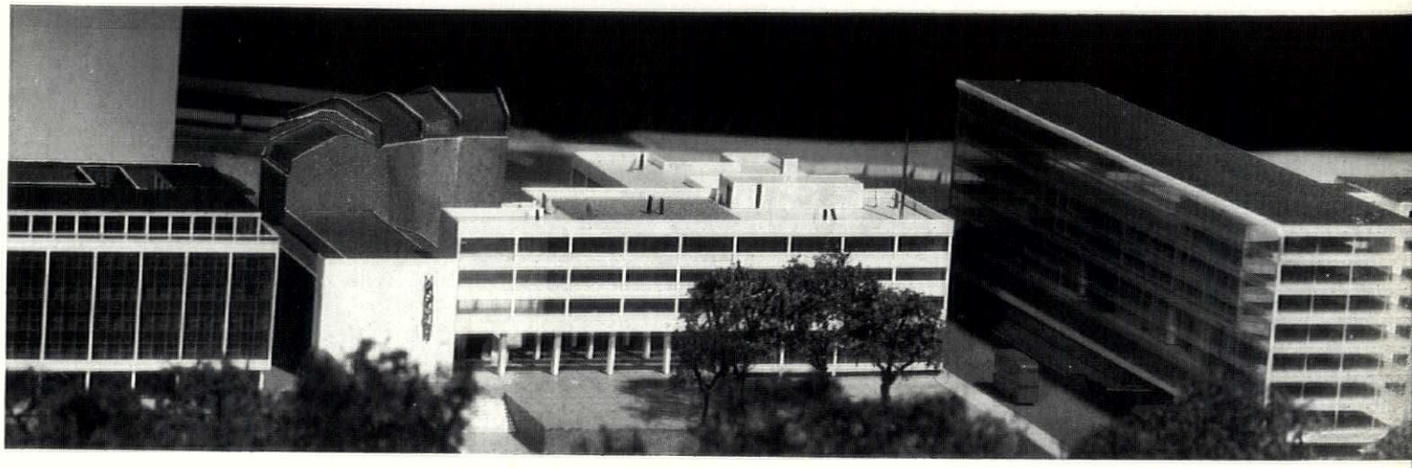


site plan, with upper storeys black on three-storey podium over whole site

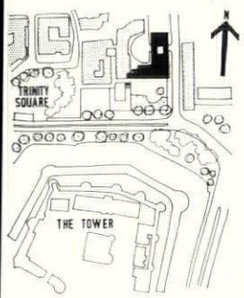


College and Offices, Glasgow: right, college buildings from the south-east

Nautical College, London: right, from the south

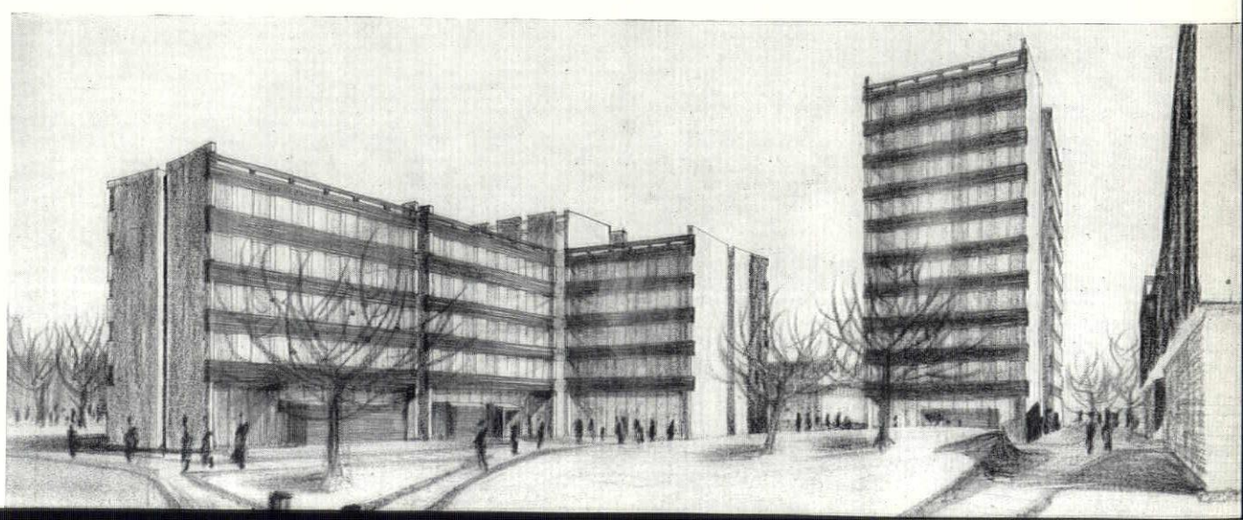


site plan

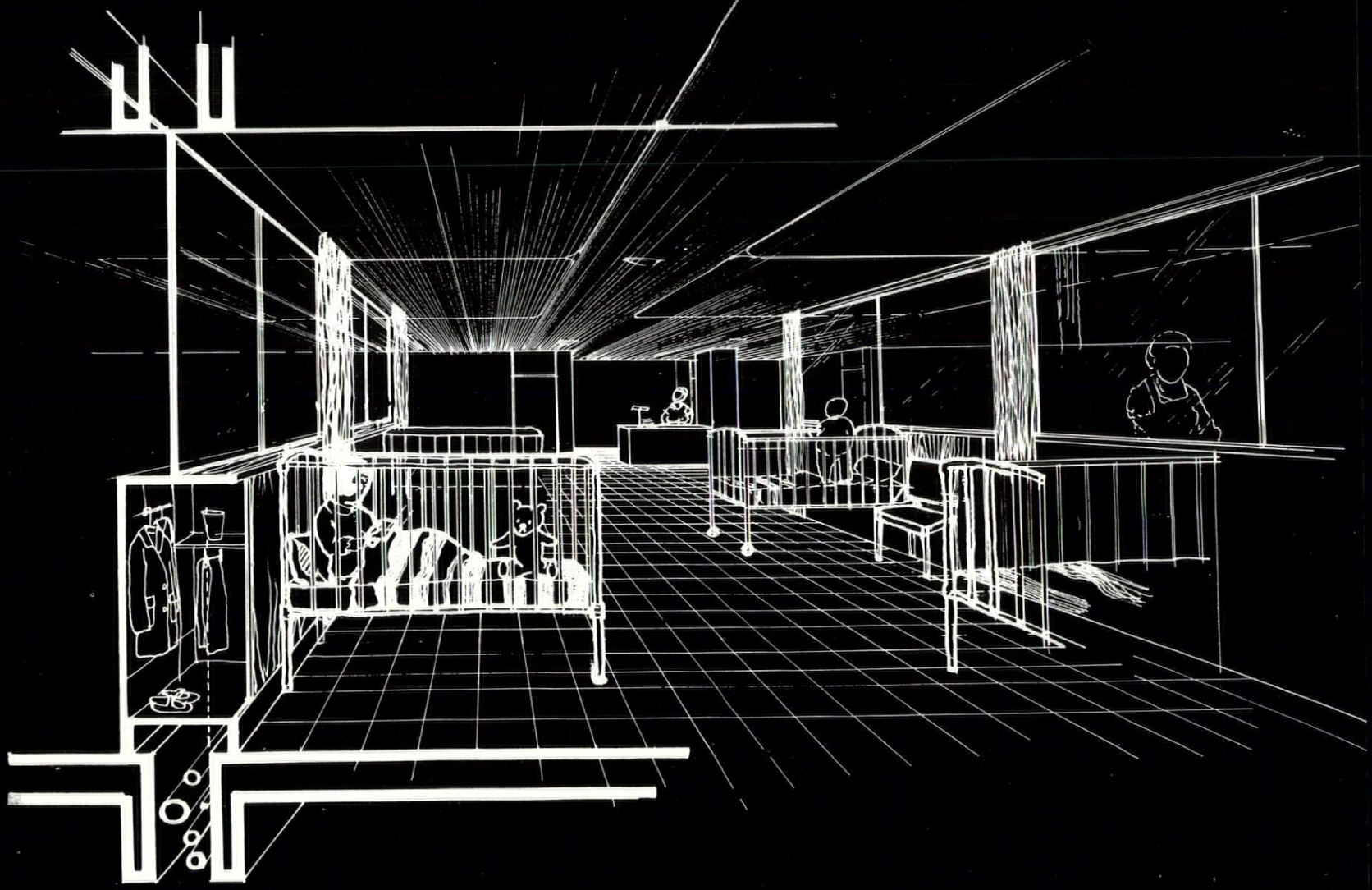




Arts Faculty, Liverpool: right, from the north-west with modern languages left and social sciences right: the arts library and lecture rooms are to the extreme right



HOSPITALS



Children's Unit, Hospital, Edinburgh: typical ward unit showing section through storage cupboards with services between the twin beams below

Children's Unit, Hospital, Edinburgh

Michael Laird

CLIENT: Astley Ainslie, Edenhall & Associated Hospitals.

SITE: South sloping, well wooded parkland, in the Grange residential area.

ACCOMMODATION: Two 20-bed ward units, adaptable for adults. Isolation block plus all essential ancillaries. Four-bed units easily subdivided into two-bed or single-bed units. Upper floor ward units extend over covered play space at ground level and command splendid views. Semi-open ward pattern integrates subdivision/storage/services at floor level.

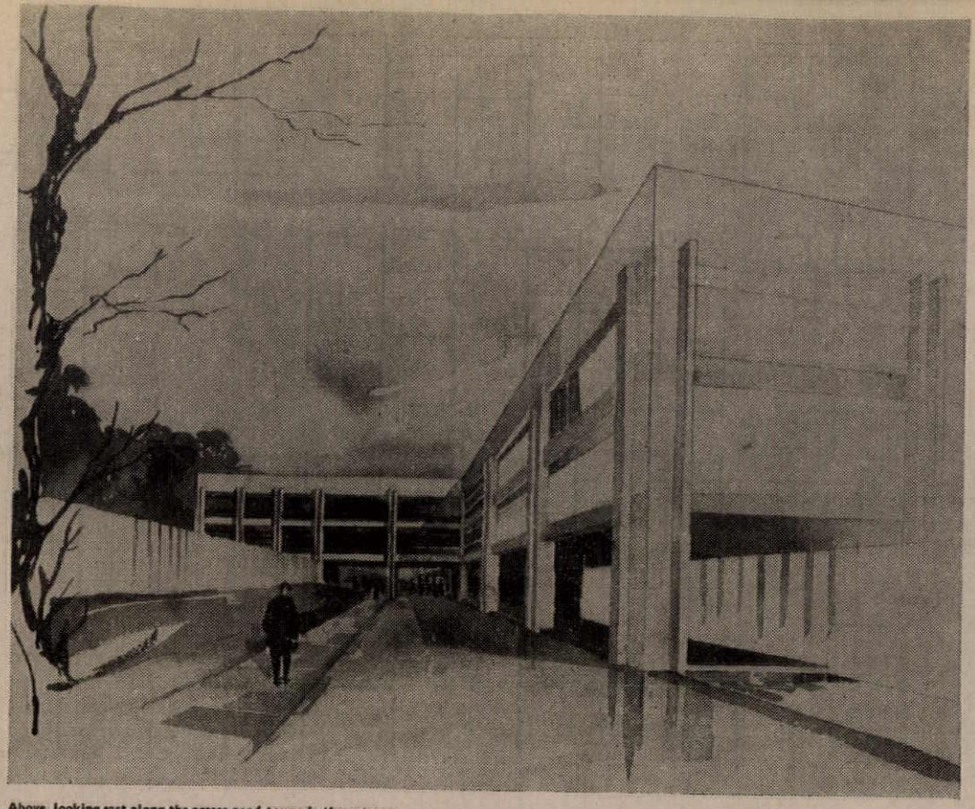
STRUCTURE AND FINISHES: Precast concrete members with exposed aggregate finish. Peripheral H columns at 21 ft. centres and internally at one-third span. Twin floor beams connect transversally.

SERVICES: Beds back up to built-in storage units located over twin beams which contain all services; primary/secondary water, drainage, heating, lighting, power, TV, intercommunication and vacuum cleaning systems. Removable bottom shelves of units give 100 per cent access to services thus avoiding removal of ceiling or floor panels in important areas.

COST: Estimated £160,000.

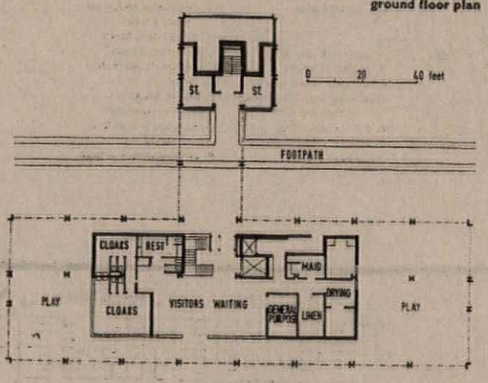
SITEWORK: Started late 1962, completion by spring 1964.

Assistant in charge, T. Donaldson. Quantity surveyors, James Gentles & Son. Structural consultants, Blyth & Blyth. Mechanical and electrical consultants, Ian Hunter & Partners.

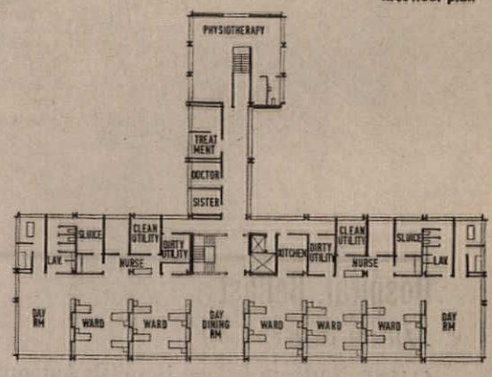


Above, looking east along the access road towards the entrance

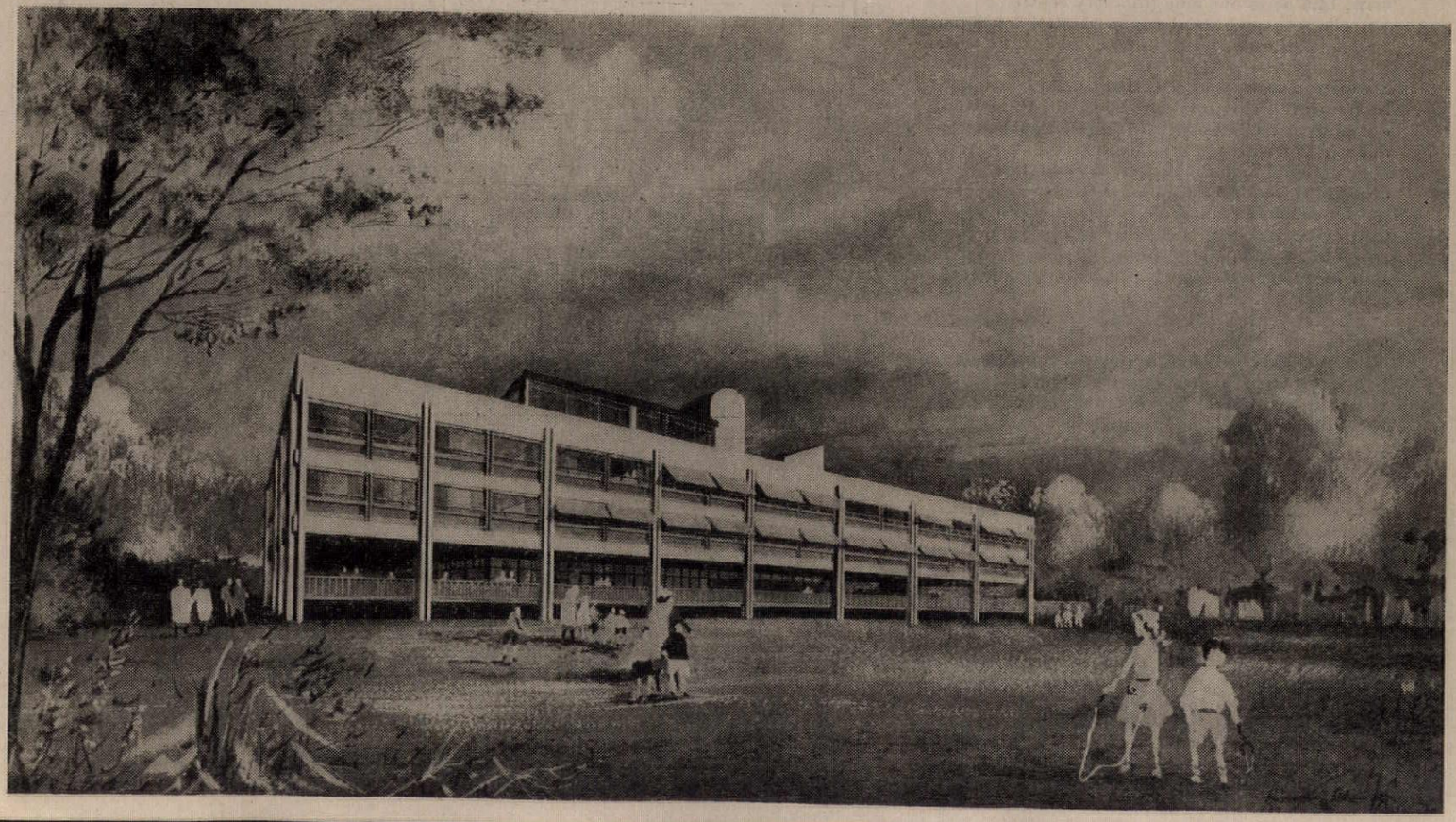
ground floor plan



first floor plan



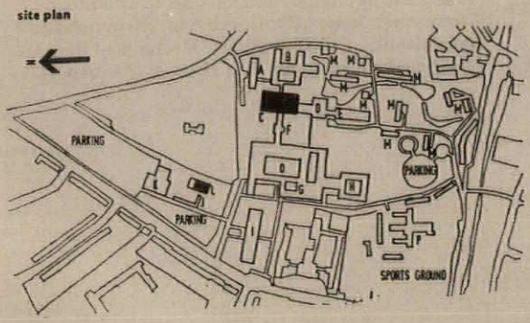
Below, the ward block from the south



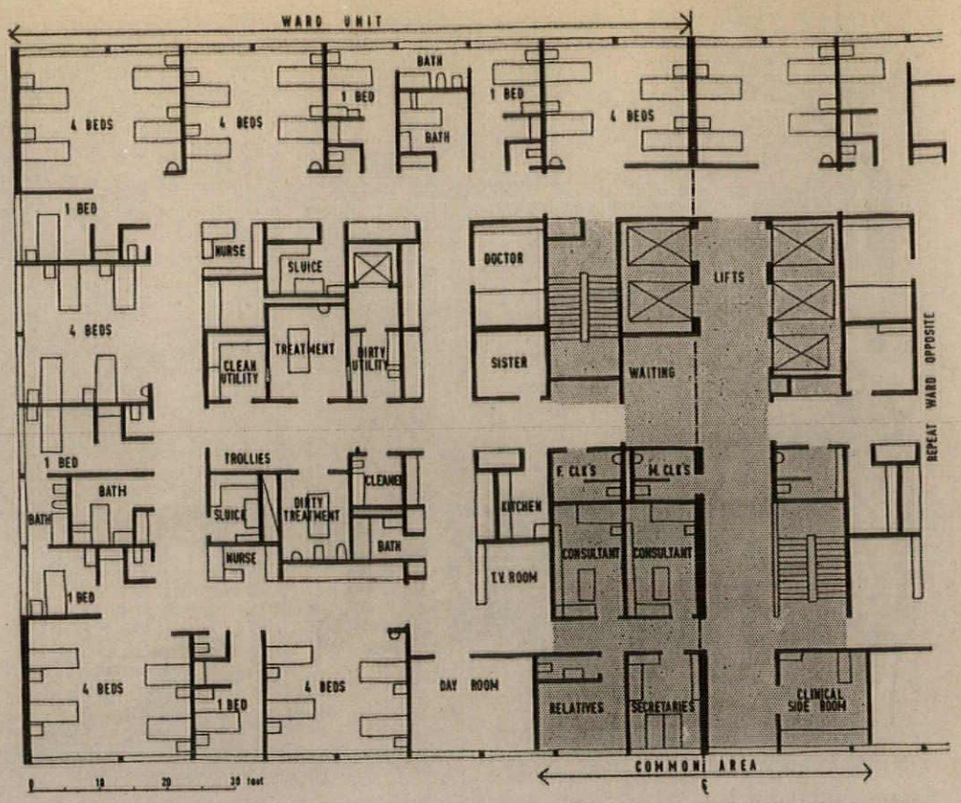
Hospital, Isleworth

Robert Matthew, Johnson-Marshall & Partners

CLIENT: North West Metropolitan Regional Hospital Board.
SITE: 32.5 acres on Twickenham Road.
ACCOMMODATION: Complete redevelopment to provide 933 beds. Stage one includes medical and paediatric ward block of 240 beds, kitchens and boiler house.
STRUCTURE: It is hoped to use a prefabricated form of construction.
SERVICES: High degree of sound insulation required due to proximity of London Airport. Thus all clinical areas will be air-conditioned.
COST: £6 to £8 million. Stage one approximately £800,000.
SITEWORK: Stage one starts May 1965.
Partners in charge, S. Johnson-Marshall, Morris Lee. Assistants, James Clark, Michael Brownson and Catherine Fortlage. Quantity surveyors, Franklin & Andrews. Mechanical consultants, Steensen, Varming & Mulcahy.



site plan



typical ward plan

key to site plan

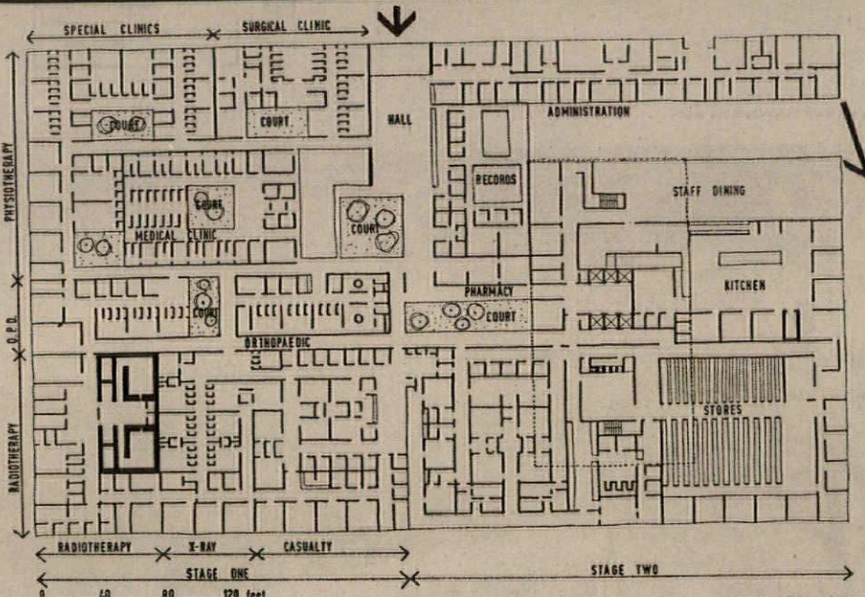
A, isolation wards
B, geriatric wards
C, medical ward block
D, dining hall, clubrooms, unmarried R.M.O.s.
E, nurses' teaching
F, chapel, clinical lecture room
G, diagnostic and treatment block
H, psychiatric block
I, maternity block
J, engineer's workshop
K, laundry
L, boiler house
M, staff residences
O, surgical wards and theatres
P, physiotherapy school

Opposite, air-view from south-east →

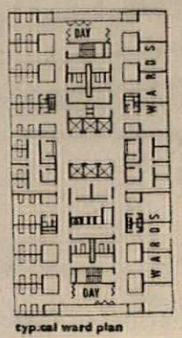
Hospital, Belfast

Munce & Kennedy

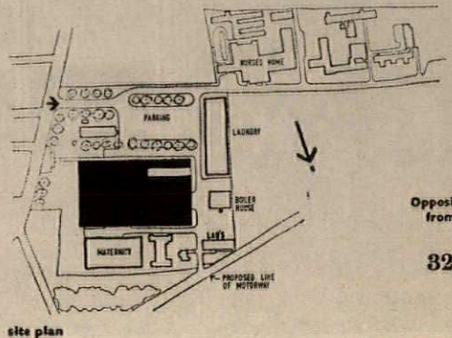
CLIENT: Northern Ireland Hospitals Authority.
SITE: 14.5 acres one mile from city centre. Miscellaneous industrial and residential development adjacent. Site to south will be developed by Queens University.
ACCOMMODATION: 550 beds with existing hospital to be retained giving total of 1,200 beds. Extensive out-patient facilities with 15 suites, diagnostic X-ray department with seven major suites, six theatres. New regional radiotherapy centre with linear accelerator and cobalt units together with minor low output machines and large isotope department.
STRUCTURE AND FINISHES: Precast r.c. frame for speed of erection and co-ordination of services. Fair-faced concrete panels proposed. Windows, probably anodized aluminium.
SERVICES: Centralized plan taking full advantage of services and employing many mechanical and electronic aids including pneumatic tubes, electronic two-way paging, punch card recording system, audio visual in/out register, closed circuit television. Racetrack ward plan; air-conditioned between interior corridors, ventilation to remainder of floor. Heating, balanced system of radiant panels and plenum ventilation. Individual tray service for patients' meals, may necessitate horizontal and vertical conveyors and central dish washing.
COST: Estimated £3,250,000.
SITEWORK: Preliminaries started November 1962. Stage 1 starts May 1964, completion by summer 1967. Stage 2 follows, completion by summer 1970.
Partner in charge, L. A. Roche. Senior architect, H. W. Semple. Assistant architects, G. R. McSheffrey, B. Bain, R. Pead and C. Henning. Quantity surveyors, E. C. Harris & Partners. Structural consultants, Kirk, McClure & Morton. Mechanical and electrical consultants, Oscar, Faber & Partners.



ground floor plan

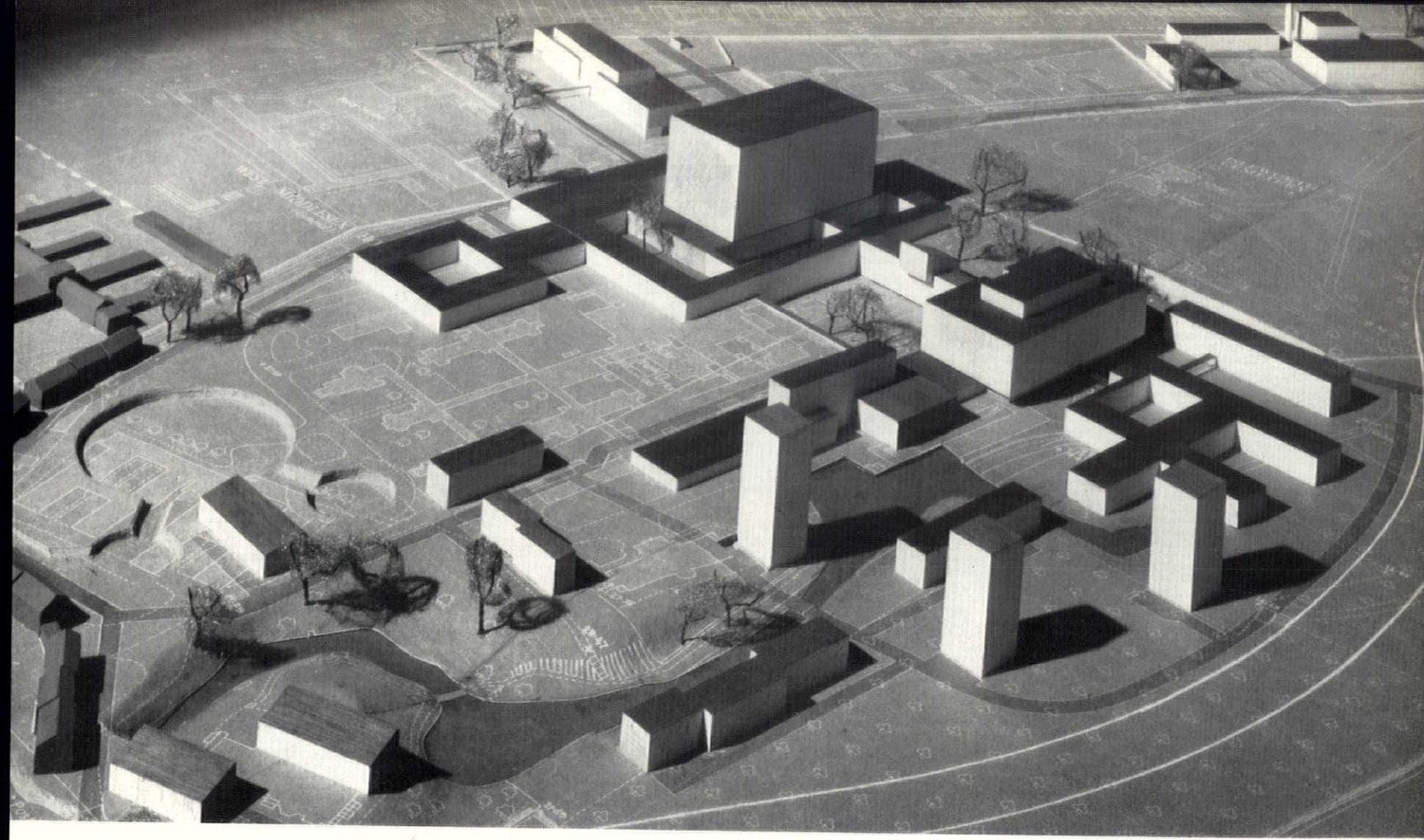


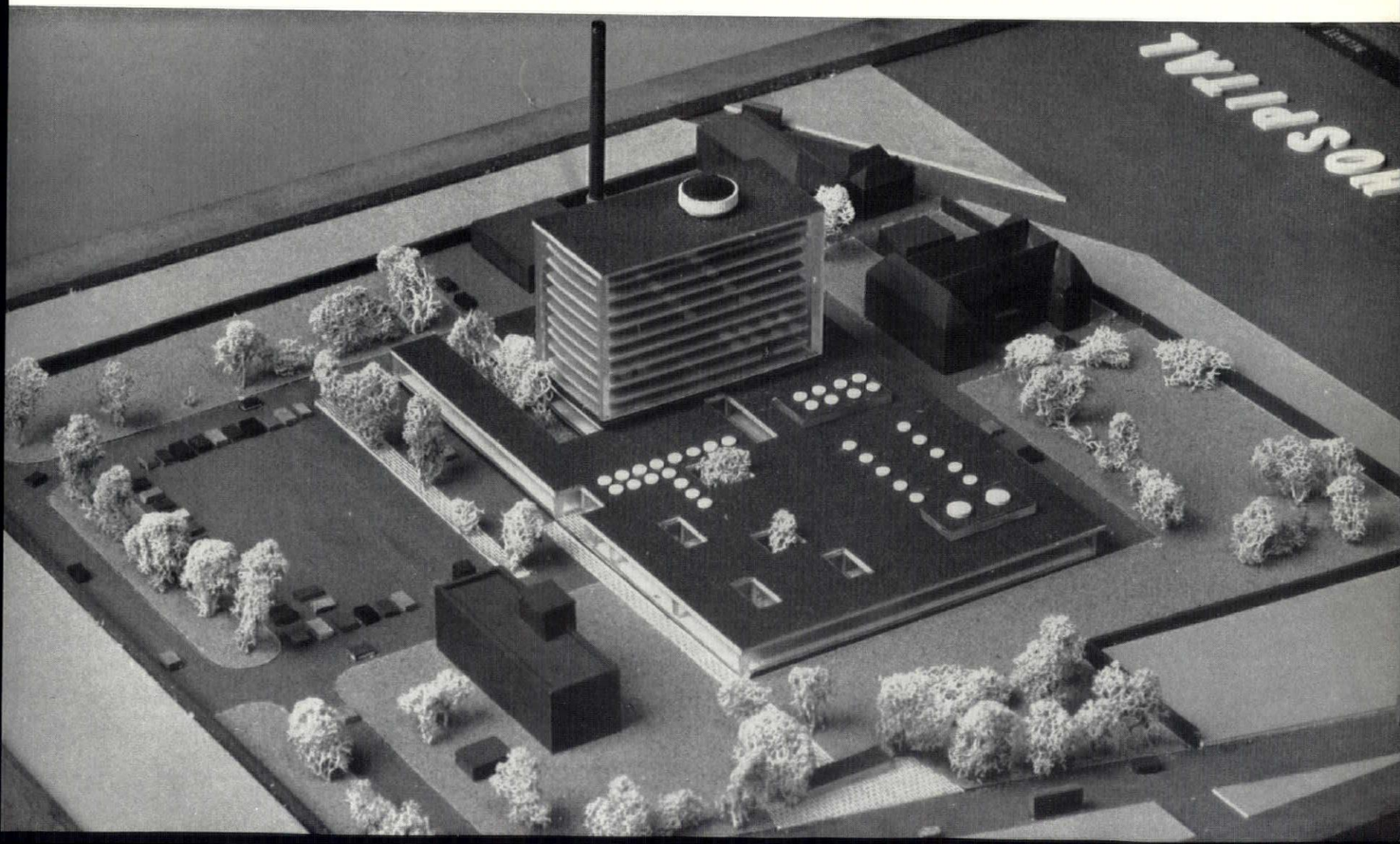
typical ward plan



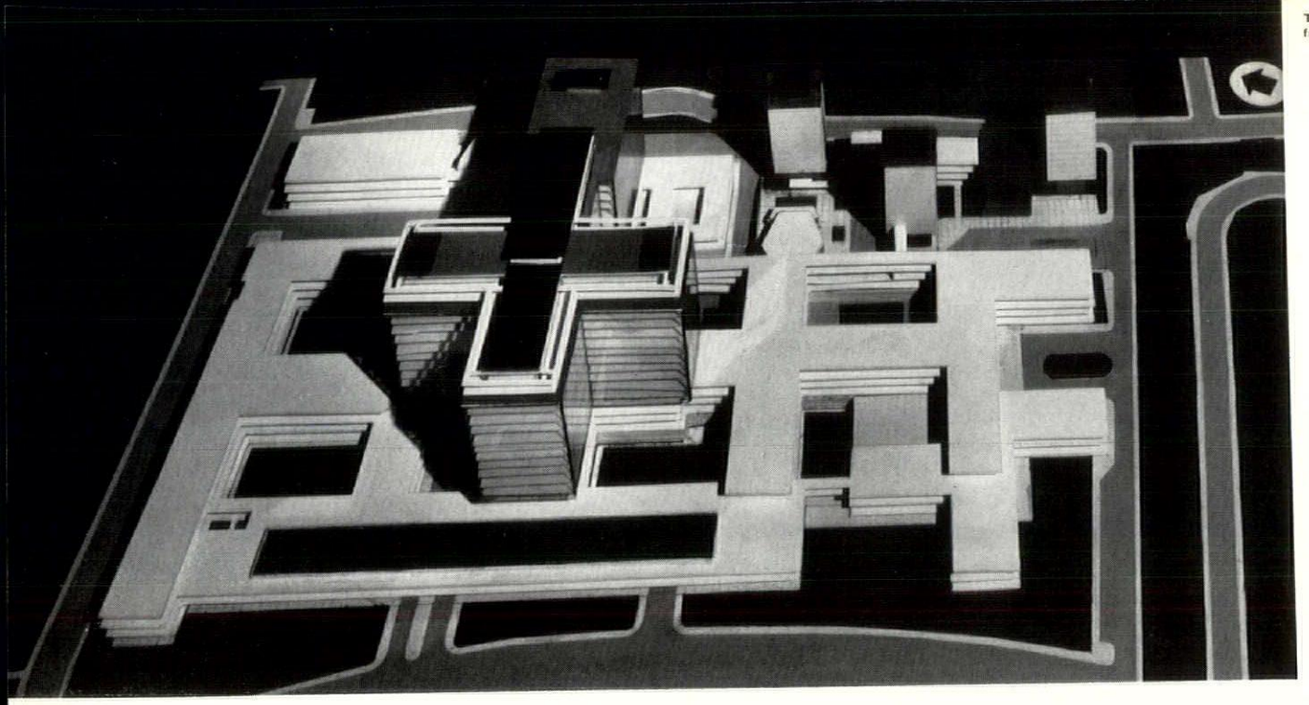
site plan

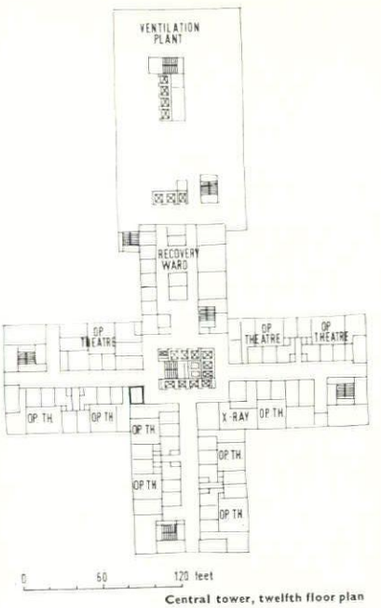
Opposite, air-view from south-east →



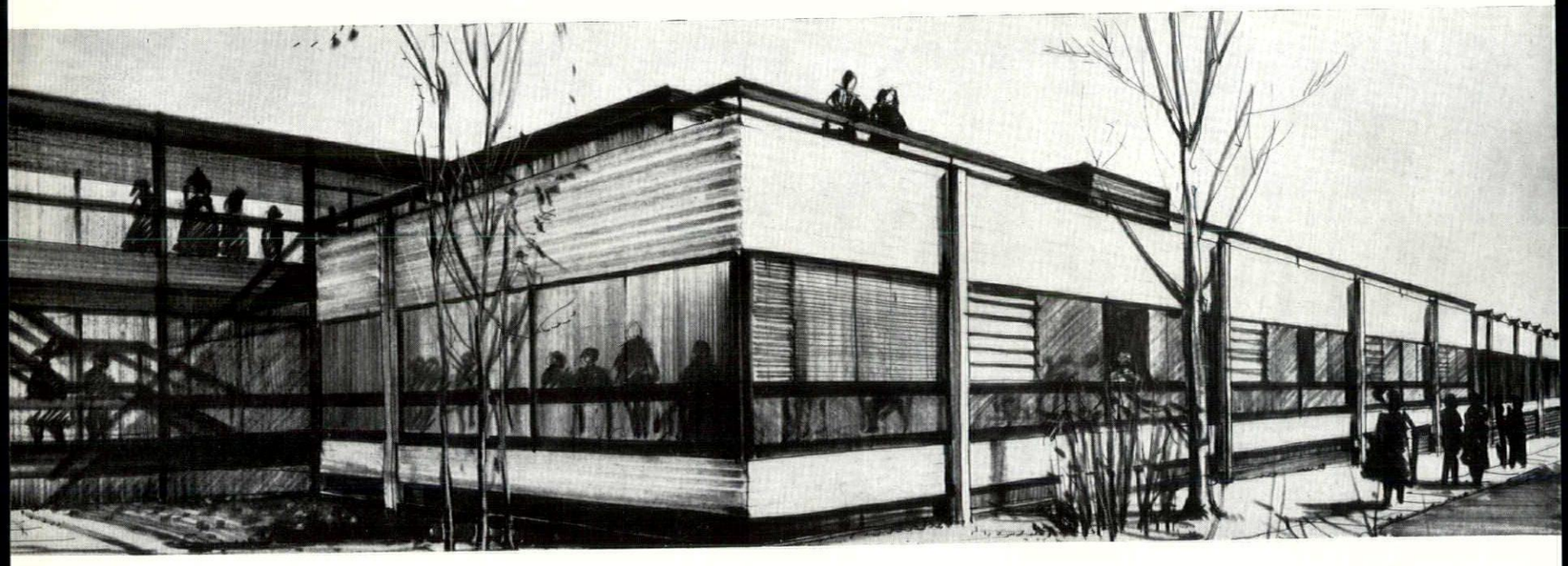

HOSPITAL

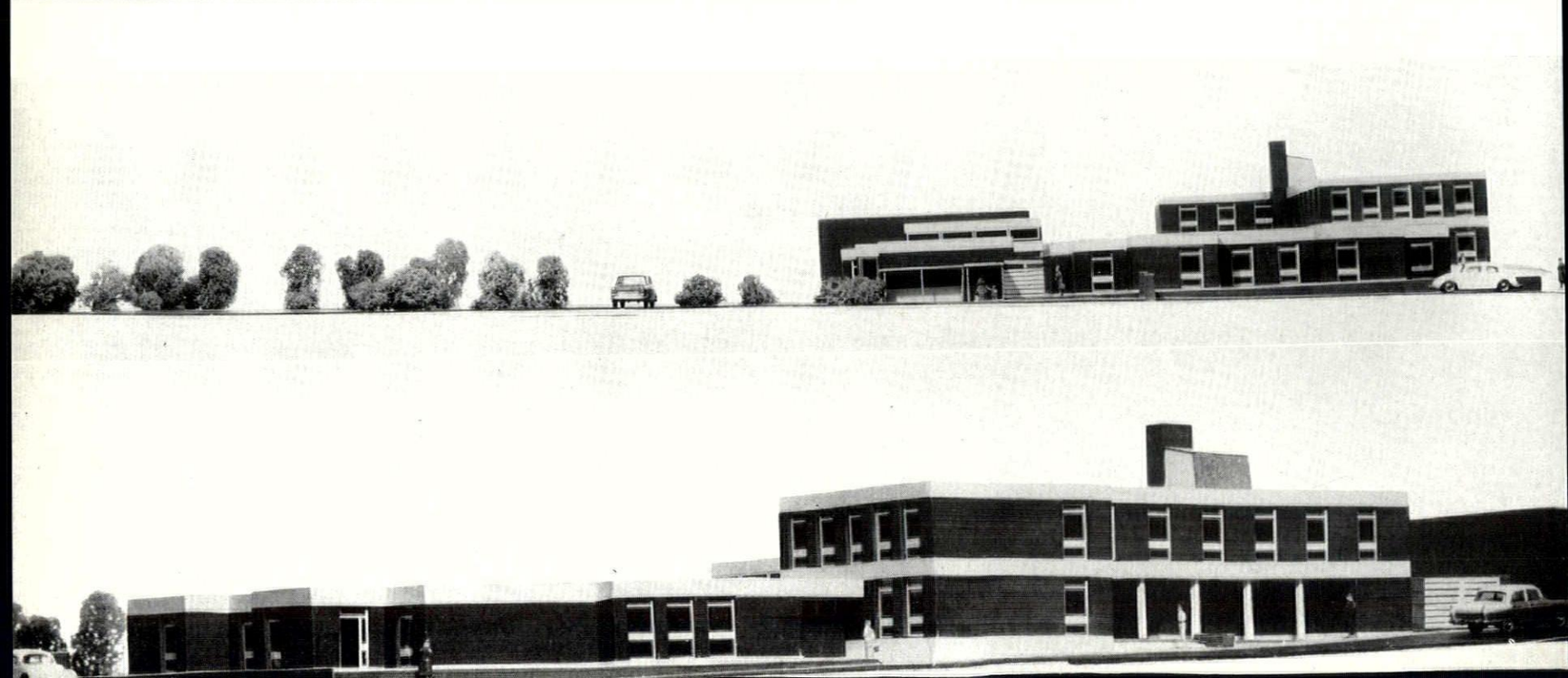
Teaching Hospital, Fulham: left, air-view from the south-west

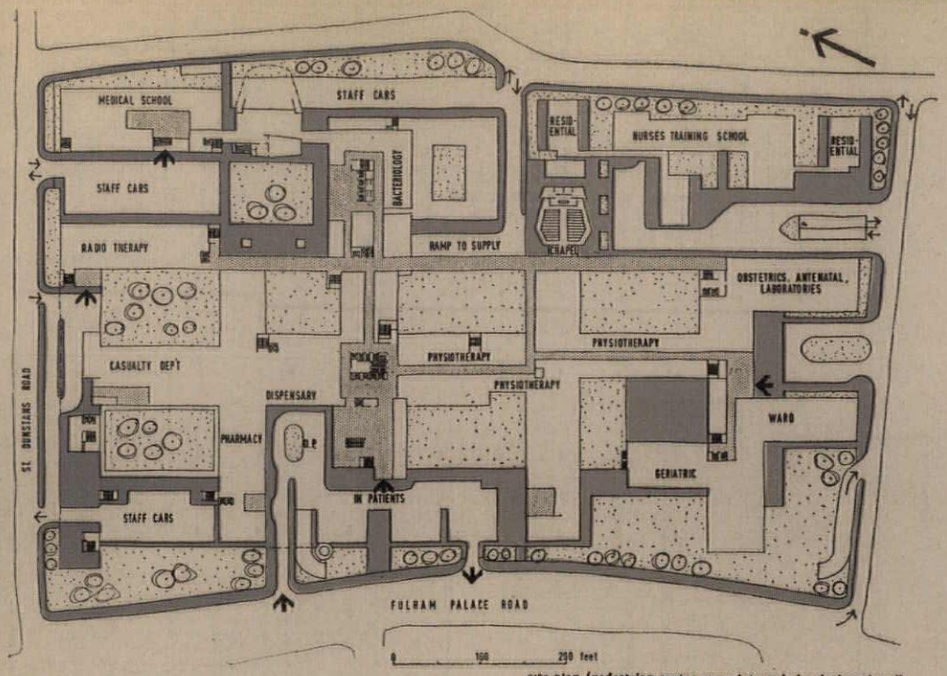




Central tower, twelfth floor plan







site plan (pedestrian routes grey: internal circulation tinted)

Teaching Hospital, Fulham

Ralph Tubbs

CLIENT: Charing Cross Hospital Group and Medical School.

SITE: Enlarged area of present Fulham Hospital, Fulham Palace Road.

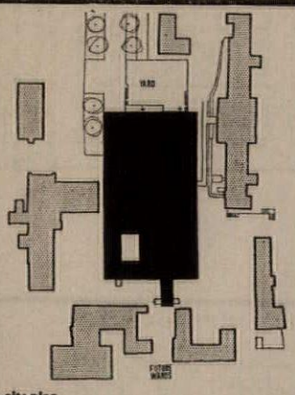
ACCOMMODATION: For 800 beds, designed in three stages. Wards, operating theatres, teaching and research laboratories form cross shaped 14-storey central block. Other departments in two- and three-storeys with open courts to surrounding streets. Residential buildings for 880 staff planned at north-eastern end of site.

STRUCTURE AND FINISHES: R.c. on piled foundations. Externally, ward blocks have facing slabs, low buildings natural materials.

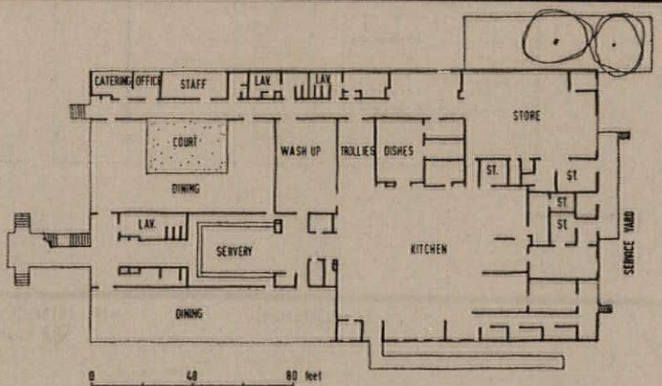
SITEWORK: Preliminaries start 1963. Stage 1 starts 1964.

COST: Approximately £10,000,000.

Assistant in charge, B. W. Loren. Consultant architects, R. Llewellyn Davies and John Weeks. Mechanical consultants, Donald Smith, Seymour & Rooley.



site plan



ground floor plan

← Opposite, from the north-west with the main dining area in the foreground

Hospital, Kingston, Surrey

Ministry of Health Hospitals Research and Development Unit in association with the South West Metropolitan Regional Hospital Board

SITE: First stage in redevelopment of existing hospital. Restricted site, gentle slopes from north-east to south-west.

ACCOMMODATION: Kitchen; for 1,400 mid-day meals, and free from columns to allow replanning. Cafeteria service through two counters to dining rooms each seating 300, coffee and sandwich rooms, group provision and hospital stores, central wash-up for eventual development.

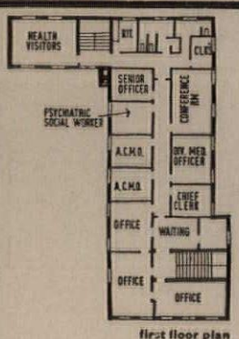
STRUCTURE AND FINISHES: 100 ft. span precast post-tensioned triangular r.c. beams with roof lights between, bearing on in situ columns and beams.

SERVICES: In semi-basement with pipes passing through coffered floor.

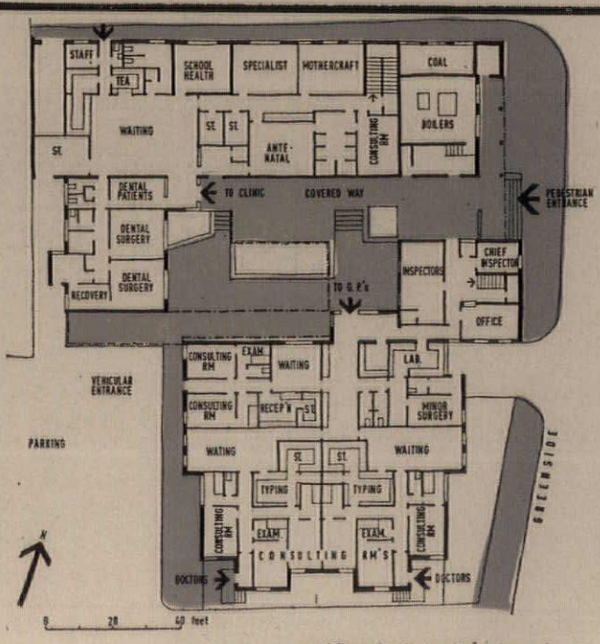
COST: Approximately £350,000.

SITEWORK: Starts July 1963, completion by 1964.

Quantity surveyors, C. E. Kenney & Partners. Structural consultant, Charles Weiss & Partners.



first floor plan



ground floor plan (pedestrian routes grey)

Health Centre, Cleckheaton

A. W. Glover, West Riding of Yorkshire County Architect.

CLIENT: County Council of the West Riding of Yorkshire.

SITE: 1 acre near central bus station, Cleckheaton, in the Borough of Spenborough.

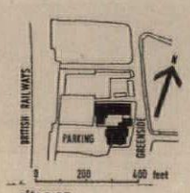
ACCOMMODATION: For five independent but interrelated units; county council divisional medical offices, borough council public health inspectors' offices, county council specialist clinic, school dental surgeries, 8 private practitioners' surgeries. This is the first centre of its kind to be erected in an established town.

STRUCTURE AND FINISHES: R.c. raft foundation. Steel frame with castellated beams over main spans. Single storey, load-bearing brick. Roof, timber joists and felt covering. Floors, rubber, vinyl and pressed clay tiles. Walls, plastered internally, blue brick externally. Windows, double glazed.

SERVICES: Solid fuel low pressure hot water radiation system.

COST: Estimated £90,900.

← Opposite, top, from the south: bottom, view from Greenside with the pedestrian entrance on the right

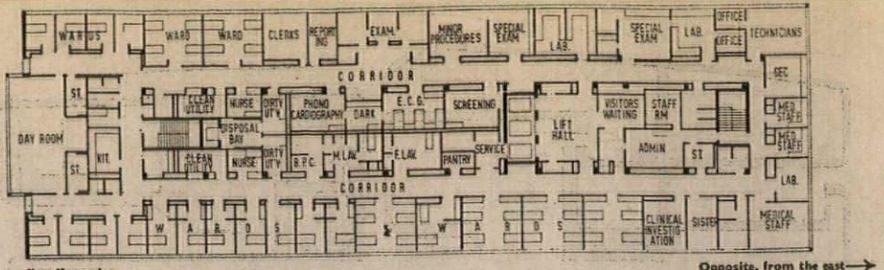


site plan

Hospital, Aberdeen

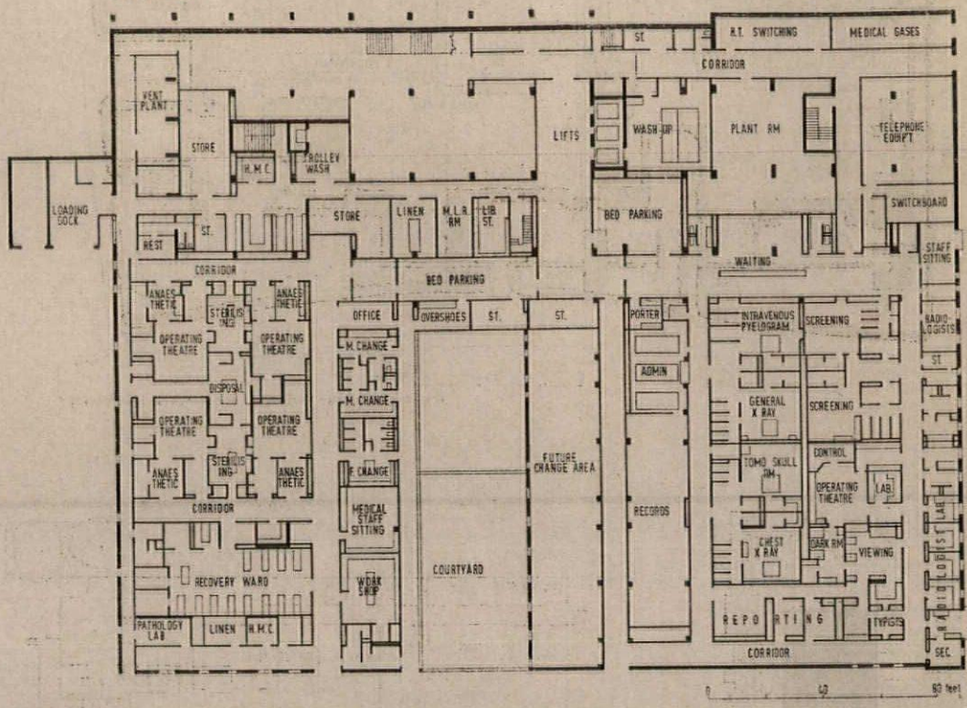
George, Trew & Dunn

CLIENT: N.E. Regional Hospital Board, Scotland.
SITE: 6 acres west of existing Royal Infirmary.
ACCOMMODATION: Teaching hospital of 590 beds, in two stages. Stage one; treatment block with theatre and X-ray and ward block with 130 beds for general surgery, thoracic surgery, cardiovascular investigation and group teaching. Ground floor ward block will be developed in second stage providing reception facilities for patients and visitors serving the whole hospital. Site contours used to provide three circulation levels; upper ground floor with central reception and records is at main ambulance road level, lower ground floor has treatment block for use by both buildings and coincides with ground floor of existing hospital, sub-lower ground floor is main service circulation level. General surgical ward of 58 beds has two parallel wards with 10 bed intensive care unit common to both. Single bedrooms in each ward adjacent to latter unit for greater flexibility of ward use. Clinical investigation and group teaching is common to both wards. Operating theatres; restricted staff and patient access through transfer areas, isolation from each other, dirty materials evacuated to exterior and exploitation of package system from CSSD.
STRUCTURE AND FINISHES: R.c. frame with hollow floor for branch ventilation trunking. Edge beams faced with exposed granite aggregate precast panels. Window spandrils, white mosaic facing.
SERVICES: Plenum heating and ventilation, piped medical gases, central vacuum cleaning, provision for pneumatic tube installation, patient/nurse communication, short wave staff location, TV, etc.
COST: Stage 1 approximately £1,200,000.
SITEWORK: Starts April 1963, completion by 1965.
Principal assistants, G. H. Rice, Lindsay Robertson, Q. Van Dyk. Quantity surveyors, John Dansken & Purdie. Structural consultants, F. A. MacDonald & Partners. Mechanical and electrical consultants, Donald Smith, Seymour & Rooley.



first floor plan

Opposite, from the east →

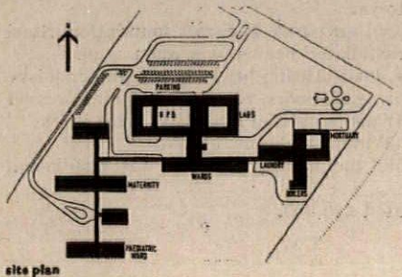


ground floor plan

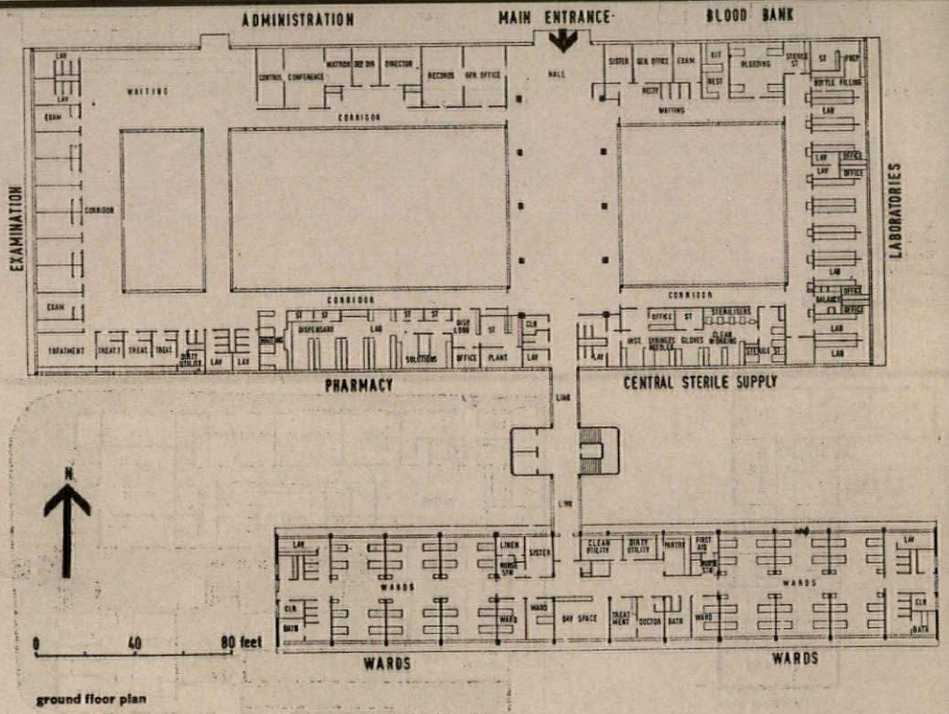
Hospital, Tamale, Ghana

W. F. Vetter & Kenneth Scott Associates

CLIENT: The Ghana Government.
SITE: Approximately 10 acres, 4 miles from Tamale on road to Kumasi. Slight fall to north-east.
ACCOMMODATION: Main ward floors with 53 beds are divided into two nursing units with shared services. 212 beds in five-storey block linked by stair and lift tower to outpatients, casualty, kitchen, stores and CSSD on ground floor with X-ray and four operating theatres over. Single storey; 40 maternity and 32 paediatric beds with delivery suite and ante-natal clinic. Services building; laundry, boiler house, etc.
STRUCTURE AND FINISHES: Main building; r.c. frame, smooth rendered and painted. Infill panels and partitions, concrete block plastered and painted internally, tyrolean render externally. Windows; vertical sliding aluminium sash, plastic louvres for sun control. Single-storey building, steel frame.
SERVICES: Full mechanical services centralized, including piped medical gases to wards. X-ray and theatres, air-conditioned. Steam to kitchen, laundry, CSSD. Other local heat requirements, electrical.
COST: Approximately £1,000,000.
SITEWORK: Start undecided, 2½-year programme.
Quantity surveyors, Widnell & Trollope. Structural consultants, Ove Arup & Partners. Mechanical consultant, Kenneth Stead. Electrical consultants, Barlow, Leslie & Partners.

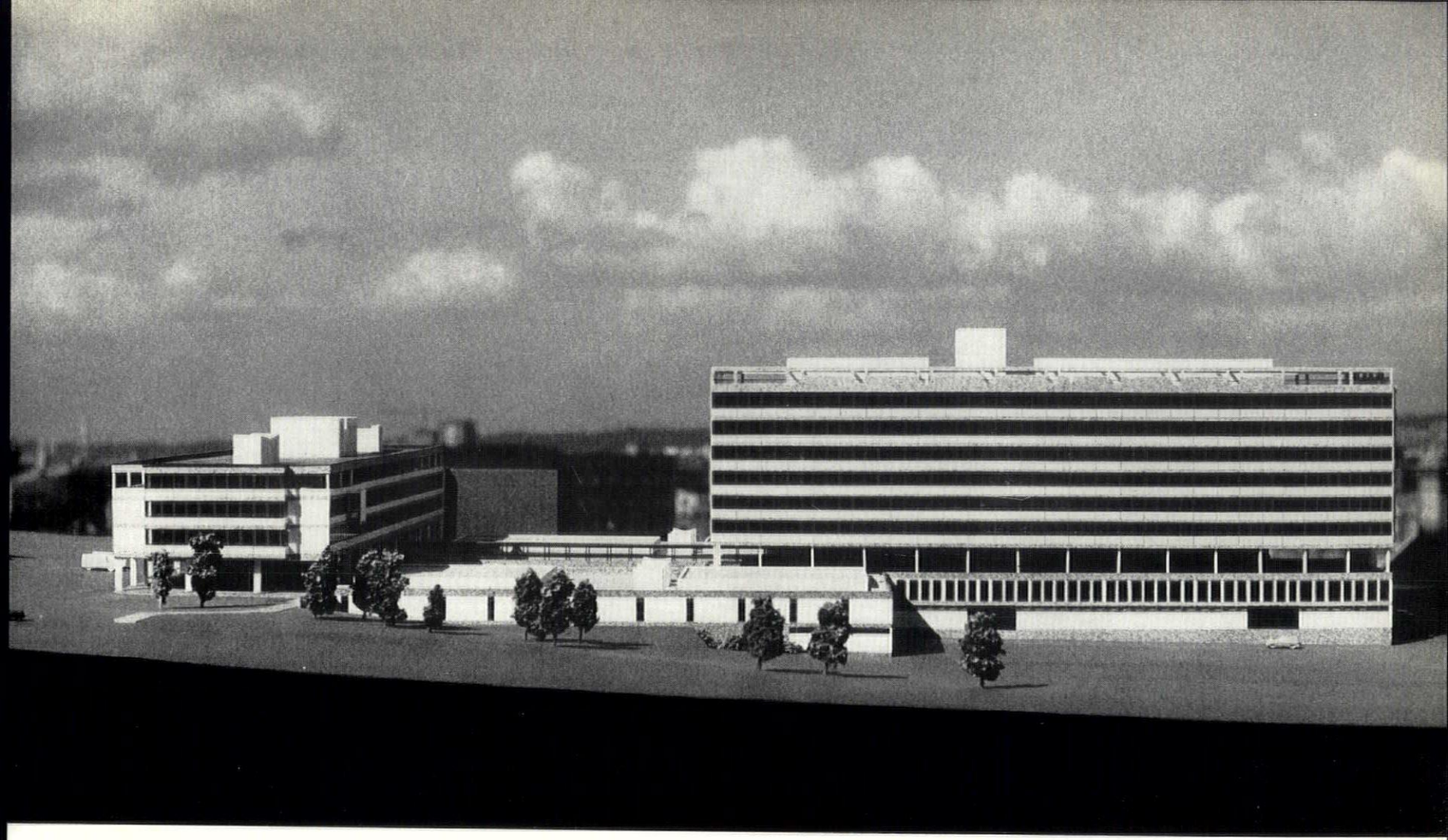


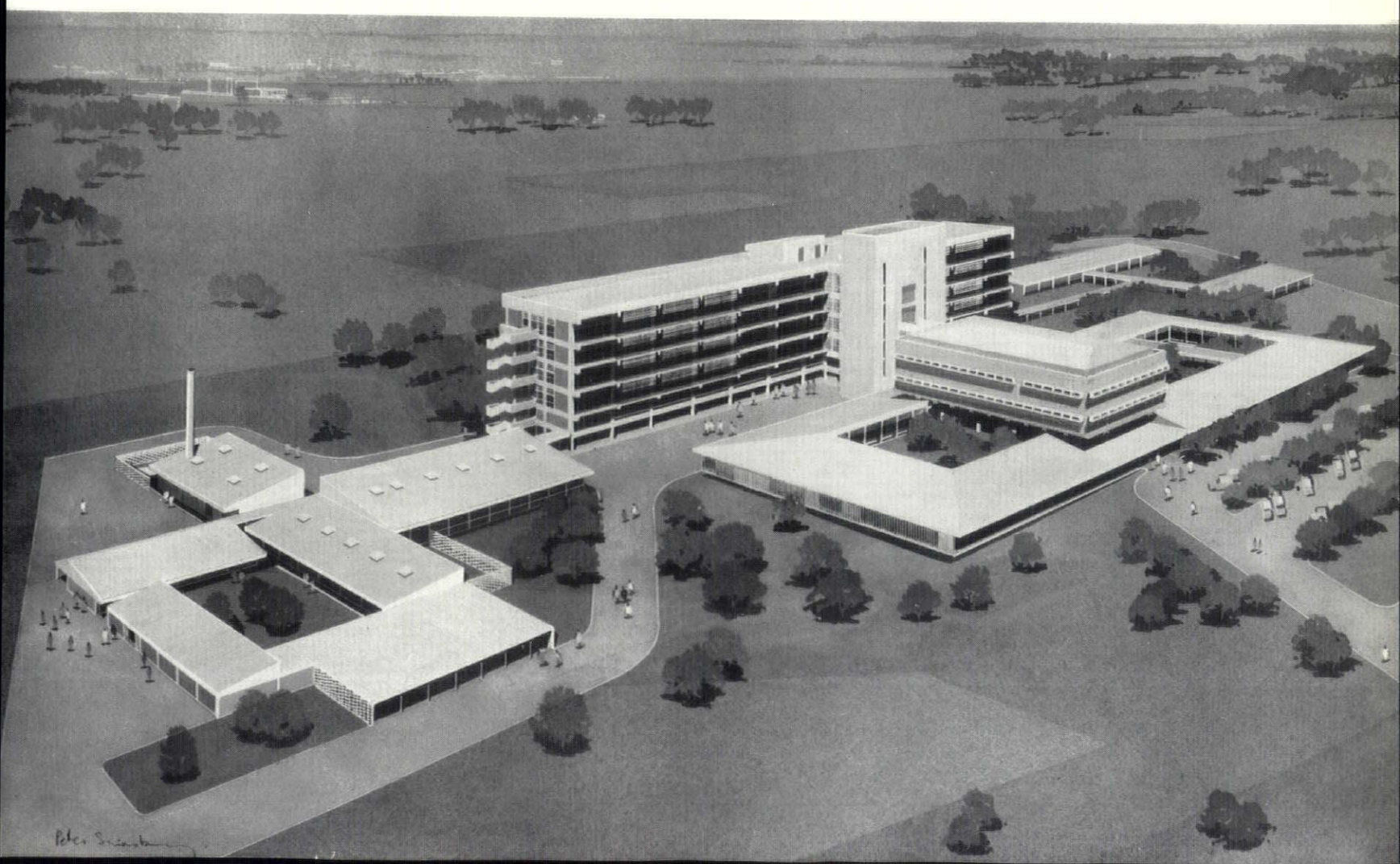
site plan



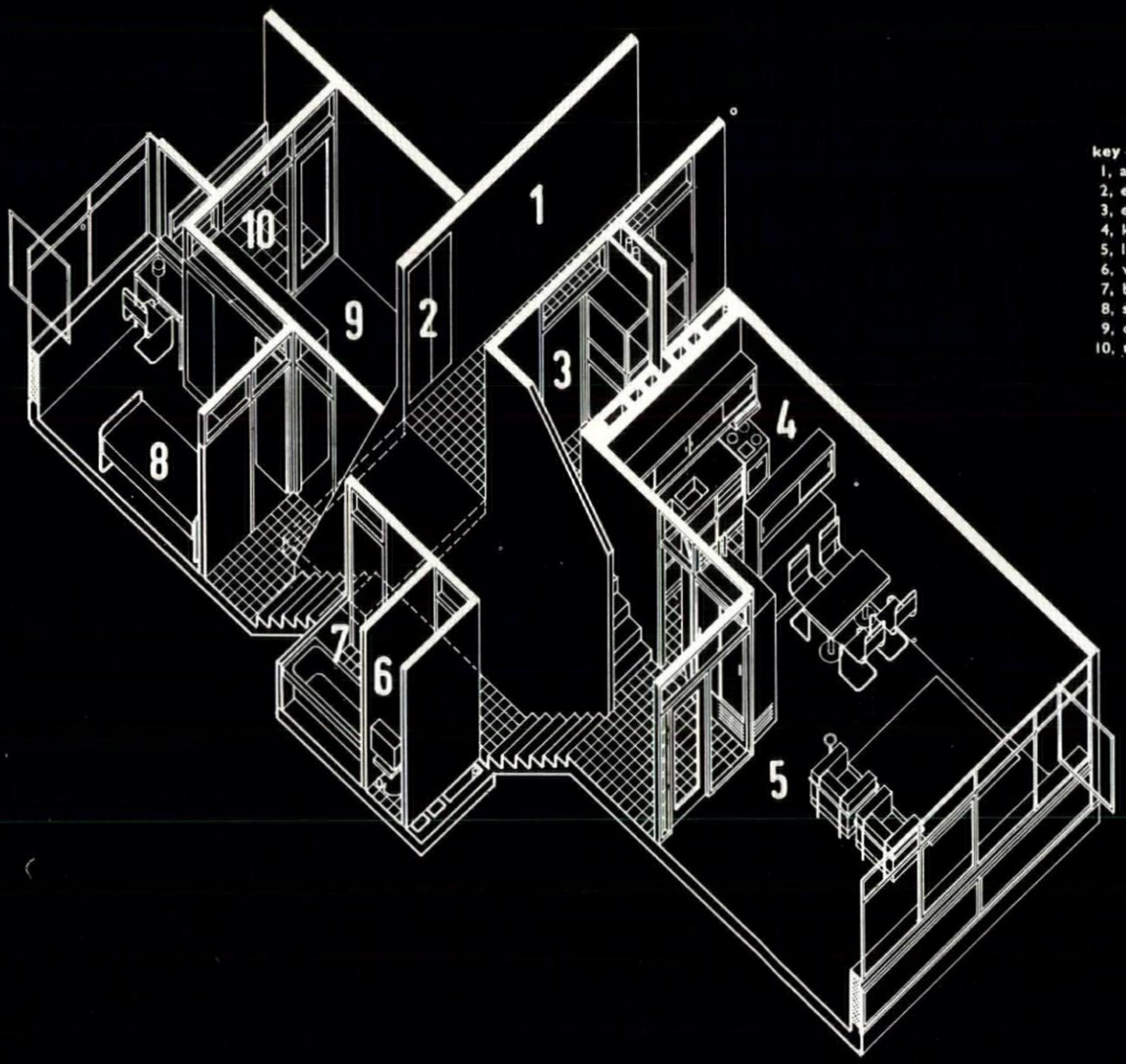
ground floor plan

Opposite, air-view from the north-east →



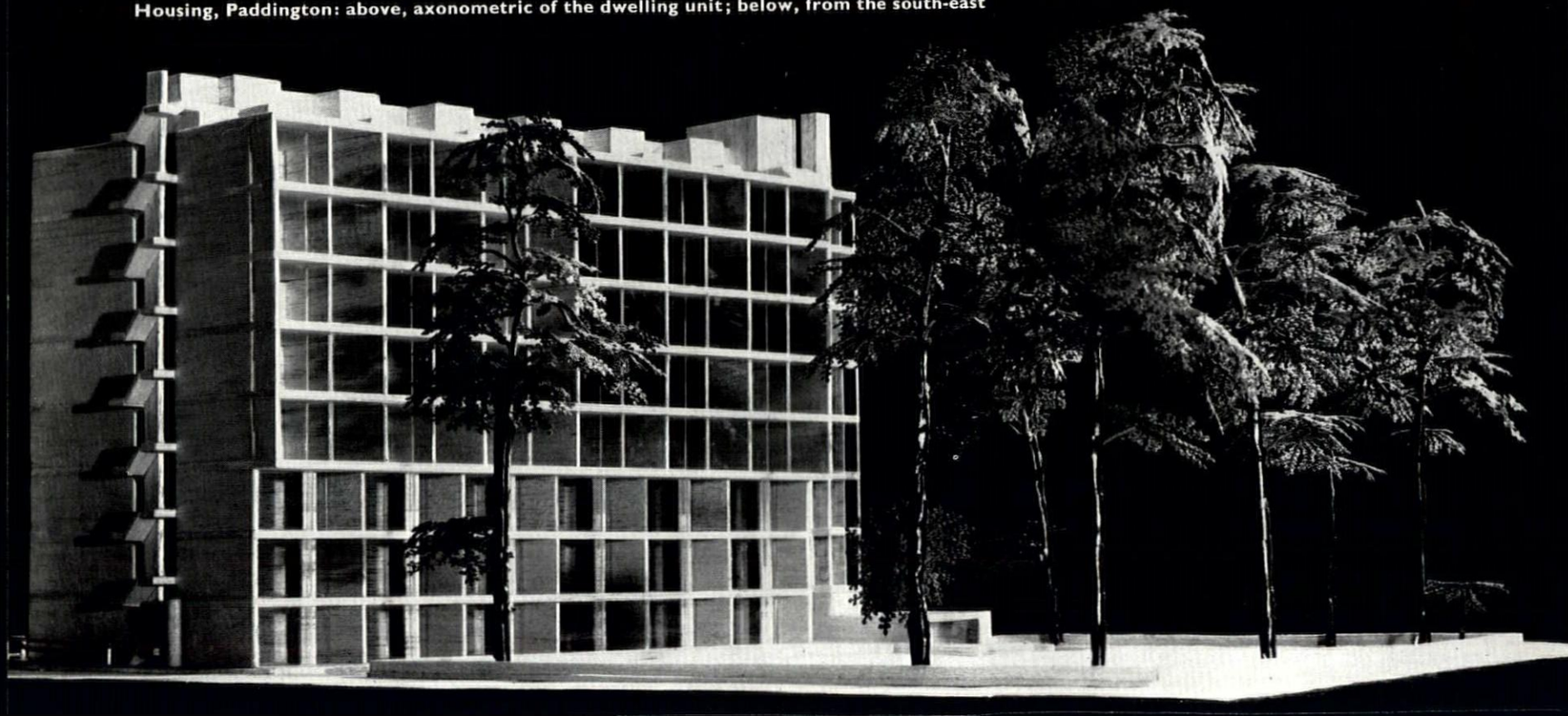


HOUSING



key
1, access corridor
2, escape door
3, entry door
4, kitchen
5, living/dining
6, w c
7, bathroom
8, single bedroom
9, double bedroom
10, terrace

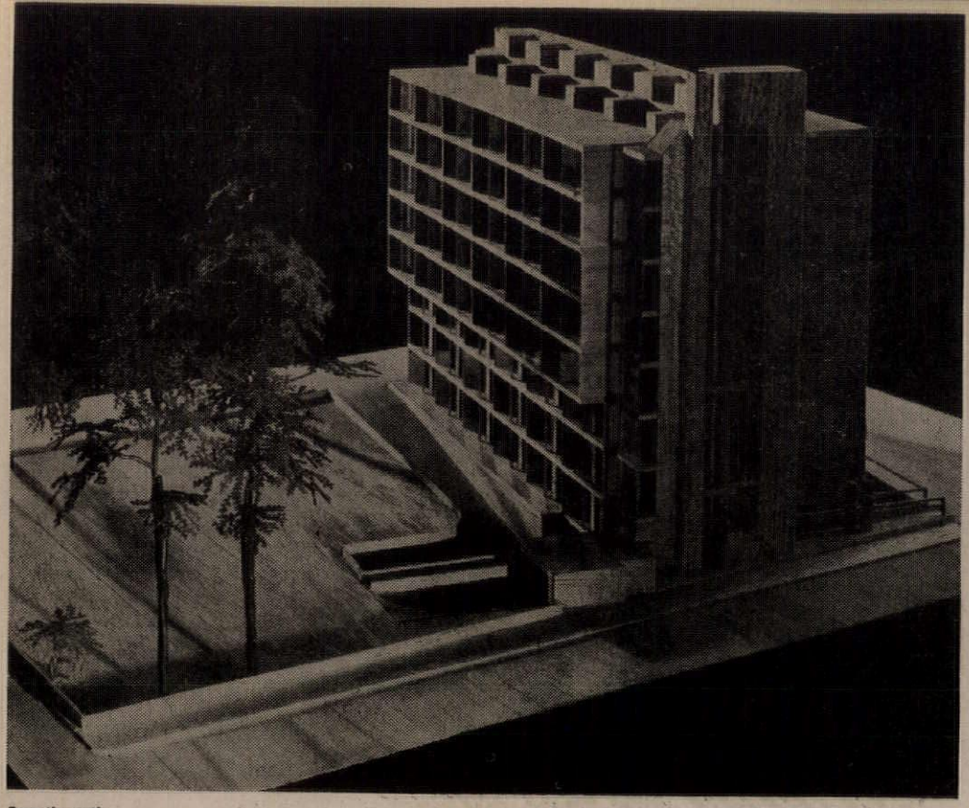
Housing, Paddington: above, axonometric of the dwelling unit; below, from the south-east



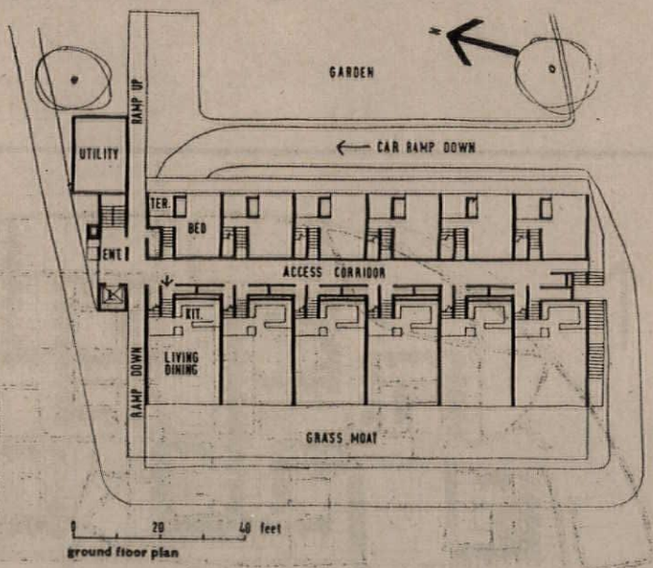
Housing, Paddington

Douglas Stephen & Partners

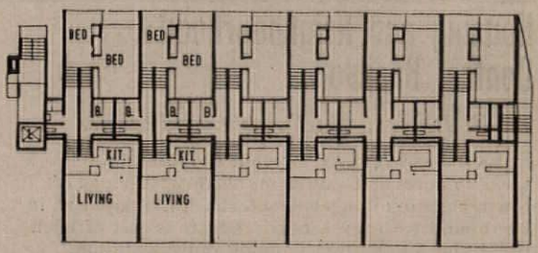
CLIENT: Hector Property Co.
SITE: Development of a London square, at Craven Hill Gardens.
ACCOMMODATION: 30 three-room and 18 two-room maisonettes. Based on LCC scissors arrangement, with all living rooms above each other on west side and bedrooms facing on to garden. This allows living rooms to have afternoon sun and screens bedrooms from street noises. Alternate maisonettes are up- and down-going. The up-going dwelling is entered up a half flight to the living floor and then one returns back up a half flight to the bathroom level and a final half flight to the bedroom. A further half flight gives an upward escape to the next access corridor. Day porter's room and utility rooms at ground level. Basement parking for 24 cars, giving ratio of 1 to 2.
STRUCTURE AND FINISHES: In situ r.c. with surfaces as struck or rendered. Windows, metal and wood.
SERVICES: Bathroom and W.C.'s, mechanically ventilated. Oil-fired warm air heating with heat exchange blower units below linen cupboards. Bedroom, supplemented by electric radiators. One eight person lift with five stops.
COST: £159,000.
SITEWORK: Expected completion by early 1964.
Associate architect in charge, Kenneth Frampton. Quantity surveyors, Lionel Simmons & Partners. Structural consultants, R. J. Crocker & Associates. Heating consultants, Weatherfoil Ltd. Services consultants, Matthew Hall Ltd.



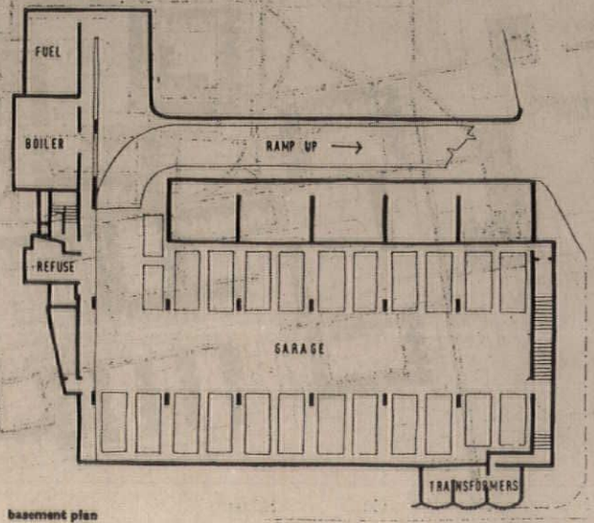
From the north



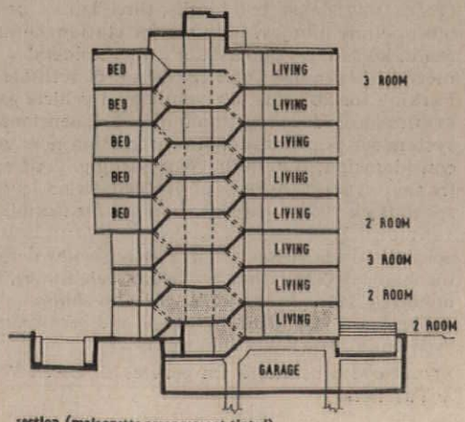
ground floor plan



upper floor plan



basement plan

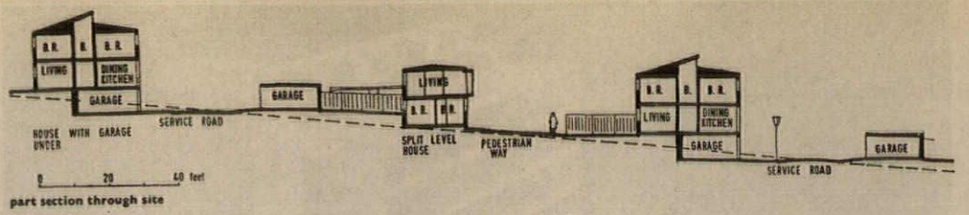


section (maisonette arrangement tinted)

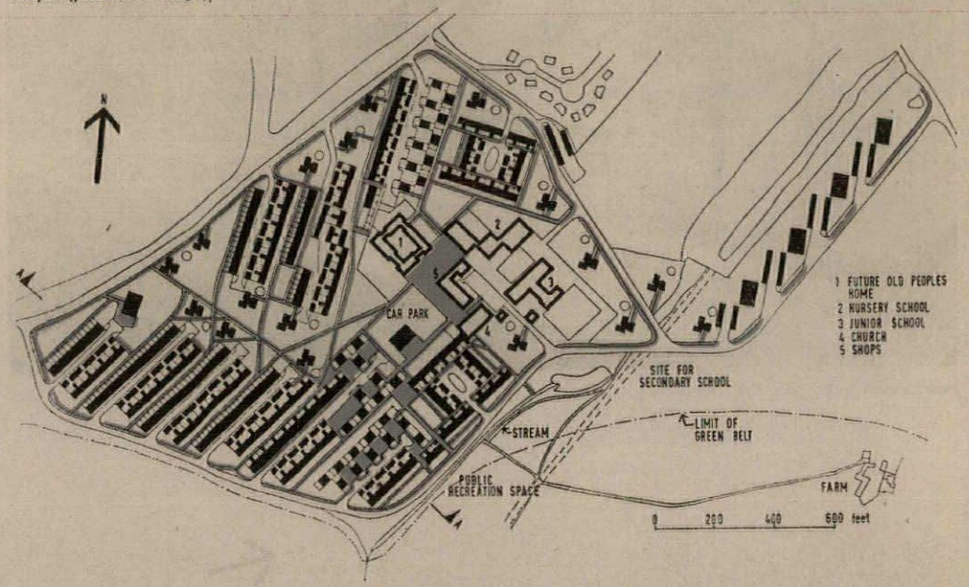
Housing, Primrose Hill, Birmingham

A. G. Sheppard Fidler, City Architect

CLIENT: City of Birmingham Corporation.
SITE: 76 acres within green belt, adjoining south-west city boundary. 42 acres are residential.
ACCOMMODATION: Mixed development of 740 dwellings in modified Radburn layout. 50 per cent of units in two-storey houses forming squares, terraces and semi-detached houses. Two-storey houses; split level types and others over semi-basement garages on slope 1 in 10. Four-storey maisonettes. 9- and 16-storey tower blocks of flats. 12 bungalows for old people. Density 76 persons/acre with 73 habitable rooms/acre in housing area. 100 per cent covered car parking plus additional parking places.
STRUCTURE AND FINISHES: Low buildings; load-bearing no fines concrete, brick facings and shiplap weatherboarded panels. Roofs interlocking concrete tiles. Tower flats; r.c. frames with no fines panels, facings of brickwork, faïence and dashed renderings.
SERVICES: Electric floor heating to halls and living rooms. Supplementary electric fires and power points. Hot water, electric. Cooking, gas or electric.
SITEWORK: Starts Spring 1963, completion by Summer 1966.
Deputy city architect, R. J. Ash. Housing architect, C. Griffiths. Senior assistant architect, D. G. Fenter. Assistant architect, M. H. Reardon. Quantity surveyors, City Architect's Department.



part section through site

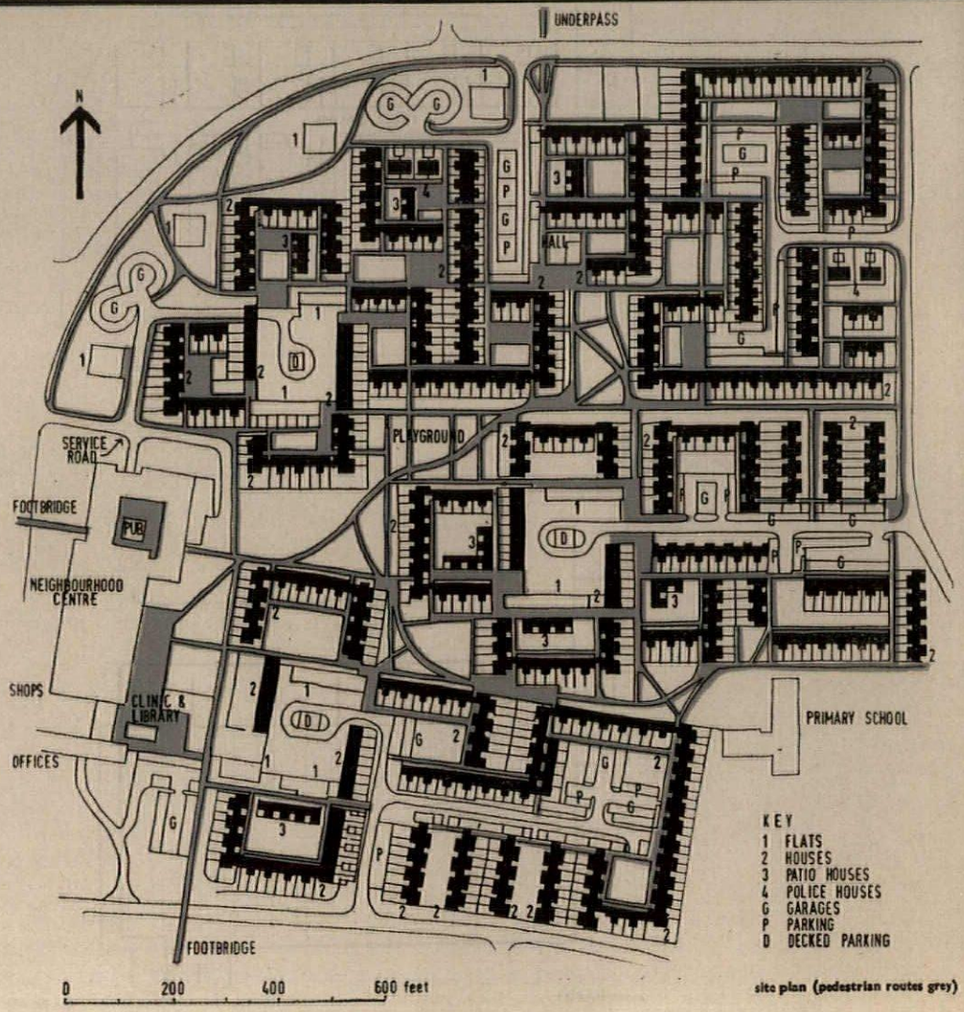


site plan (pedestrian routes grey)

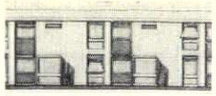
Housing and Neighbourhood Centre, Basildon

A. B. Davies, Chief Architect/Planner

CLIENT: Basildon Development Corporation.
SITE: 55 acres at Laindon on north-west fringe of town. Existing bungalow and shack development in scrub-land with few services. Centre is east of High Road and ½ mile from Laindon railway station.
CIRCULATION: Housing mainly front access. Complete segregation of principal pedestrian and vehicular routes. Centre located on slope giving direct pedestrian access to shops on upper deck, service road and commercial garages at lower level.
ACCOMMODATION: Areas 1, 2, 3; 1,024 dwellings. Density 22.7 dwellings/acre. Will form largest neighbourhood. Standards based on Parker Morris report. 25 per cent multi-storey flats. Some patio houses for old people displaced from shacks. 100 per cent garaging, plus 25 per cent visitors' parking. 60 per cent of garages attached to houses or between flats and three-storey houses. 40 per cent covered parking to be in motor courts at stage two.
CENTRE: 47 shops, two kiosks, three banks, post office, clinic, library, pub, service station, common room, lavatories, undertaker's and builders' merchants premises and 18,000 sq. ft. lettable offices. Parking for 230 cars. 30 commercial vehicle garages.
STRUCTURE: Housing; standardized dimensional system for non-traditional construction now under consideration. R.c. decks over parking. Centre; r.c. frame but steel to shops above pedestrian level with space deck roof and point supports for flexibility.
SERVICES: Housing; gas or electric central heating. communal television aerial. Centre; below deck mechanical ventilation against vehicle fumes, hand operated goods hoists from stores to shops.
COST: Approx. £3¼ m., buildings and centre only.
SITEWORK: Starts autumn 1963.
Structural consultants for centre, Sir Owen Williams & Partners.



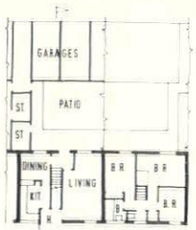
site plan (pedestrian routes grey)



elevation, terrace houses



elevation, semi-detached houses



plans



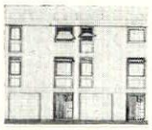
plans



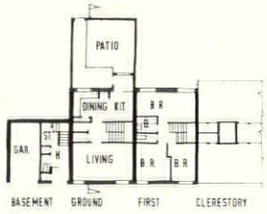
section



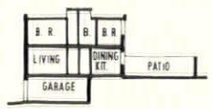
section



elevation, split level houses

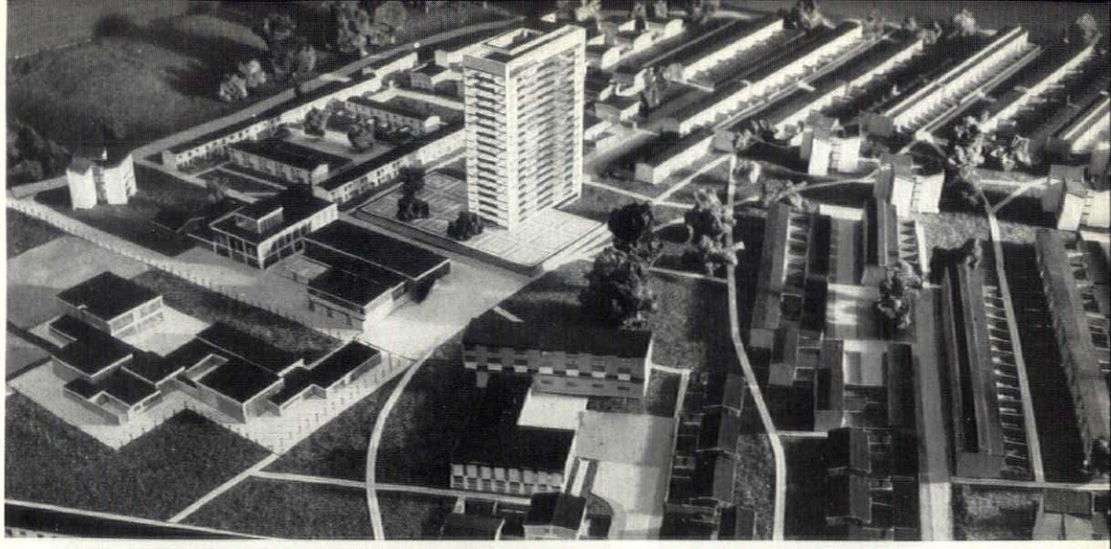


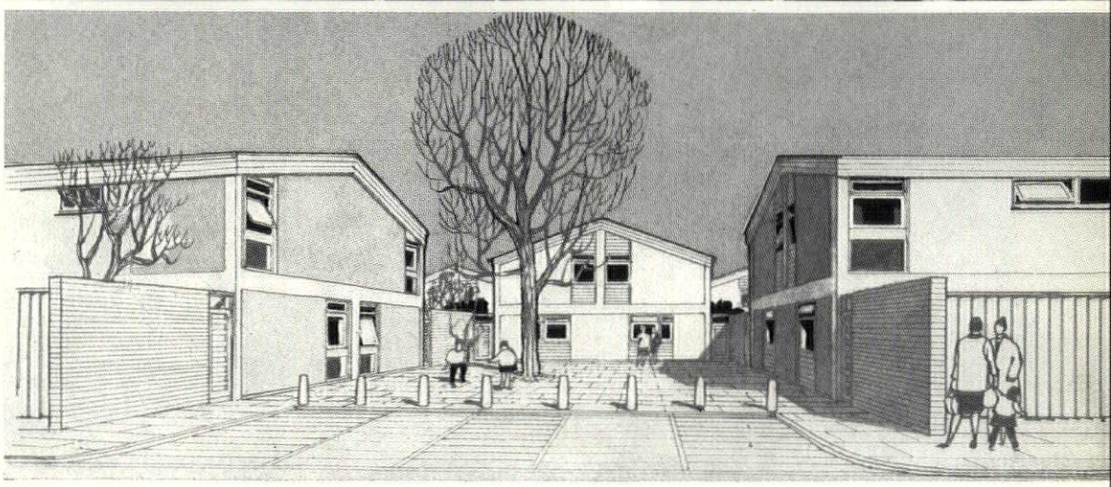
plans

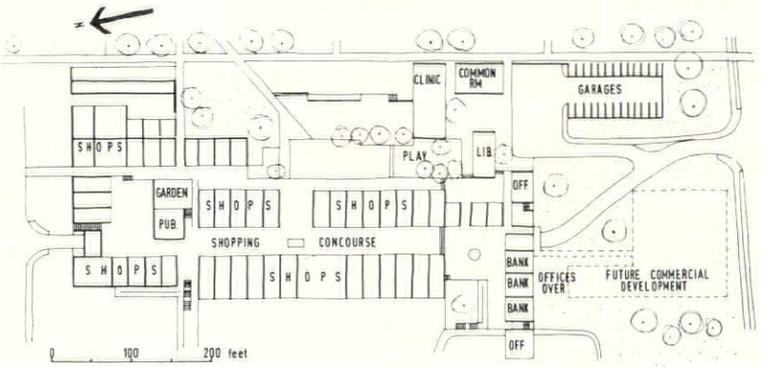


section

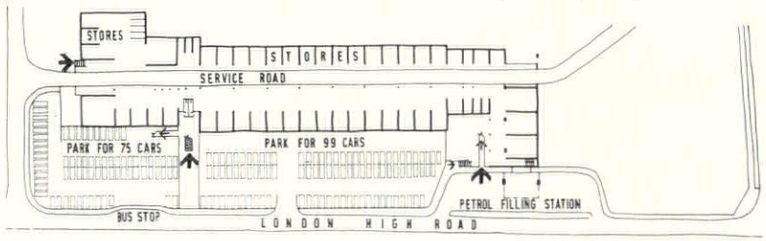
Housing, Primrose Hill, Birmingham: top right, air-view of centre from north: bottom right, a typical group of semi-detached houses





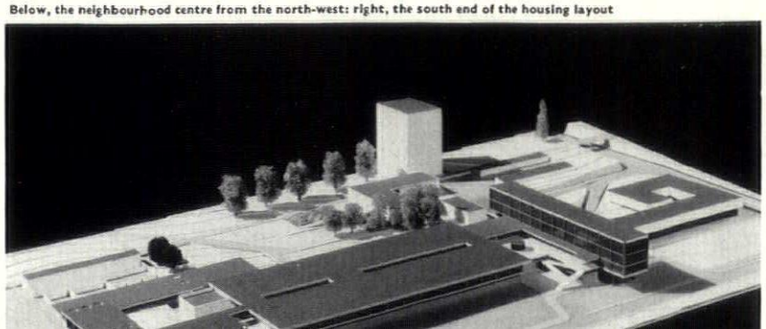


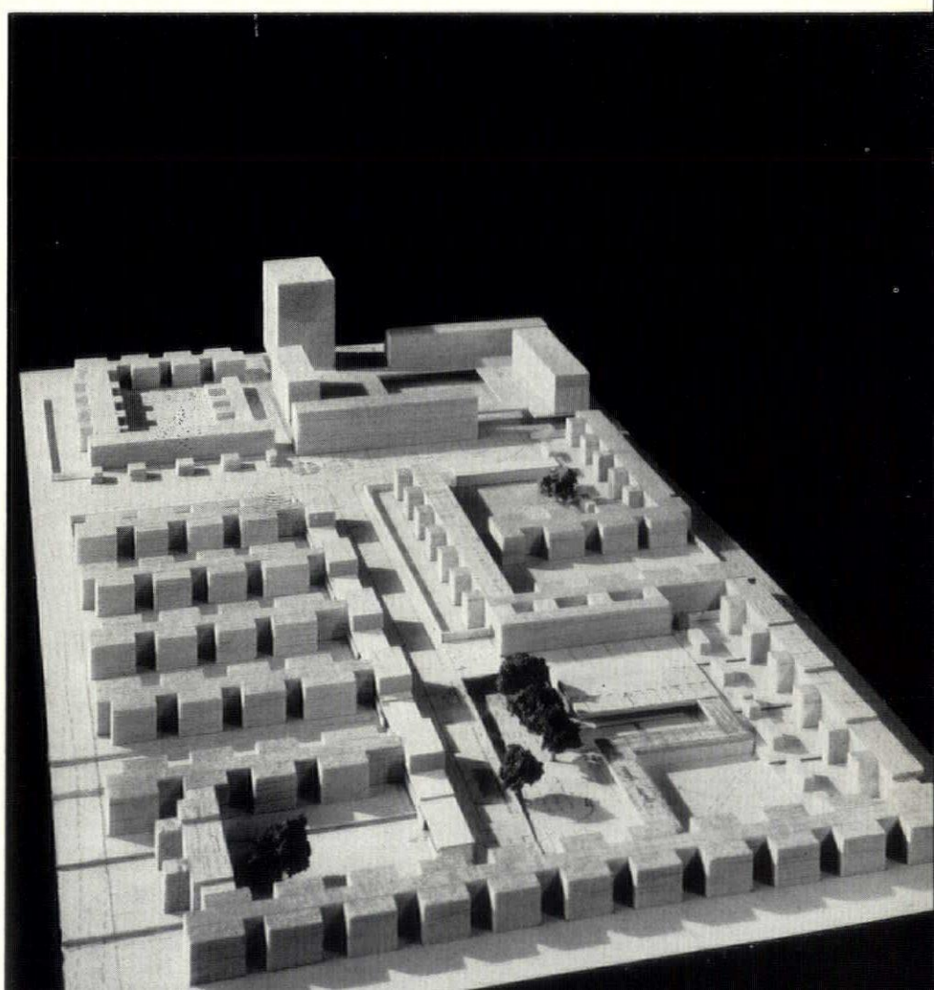
ground floor plan, neighbourhood centre

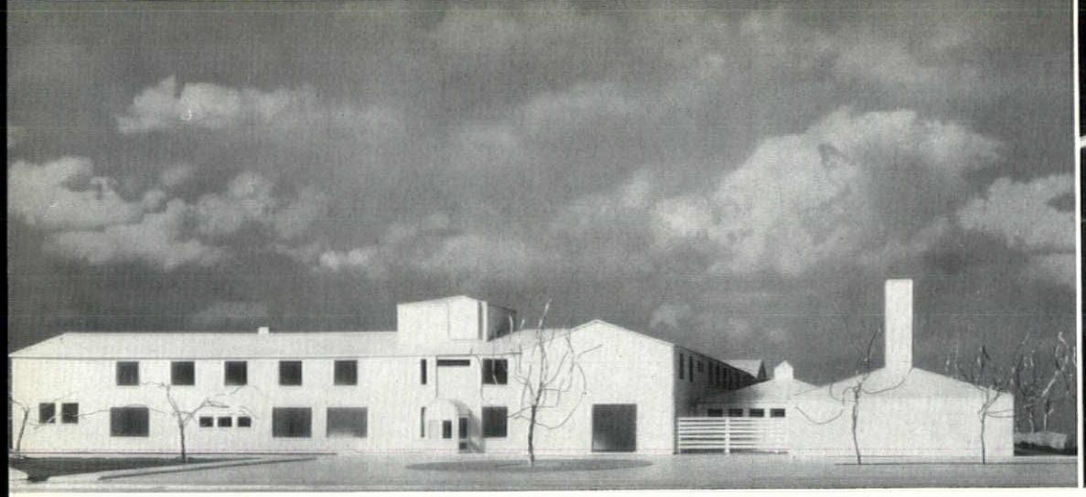


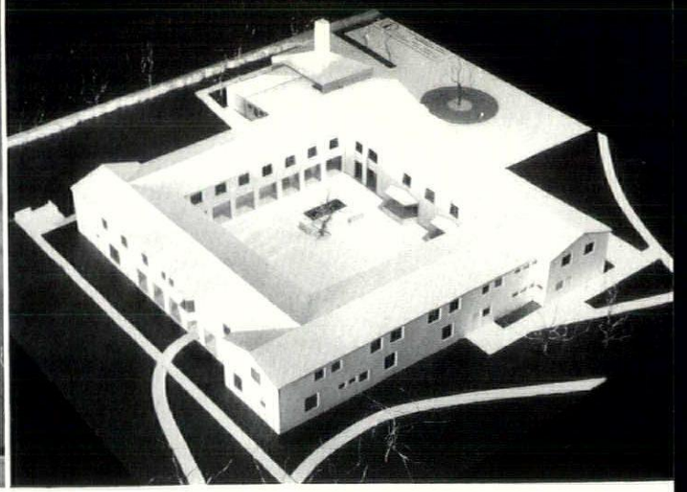
lower ground floor plan

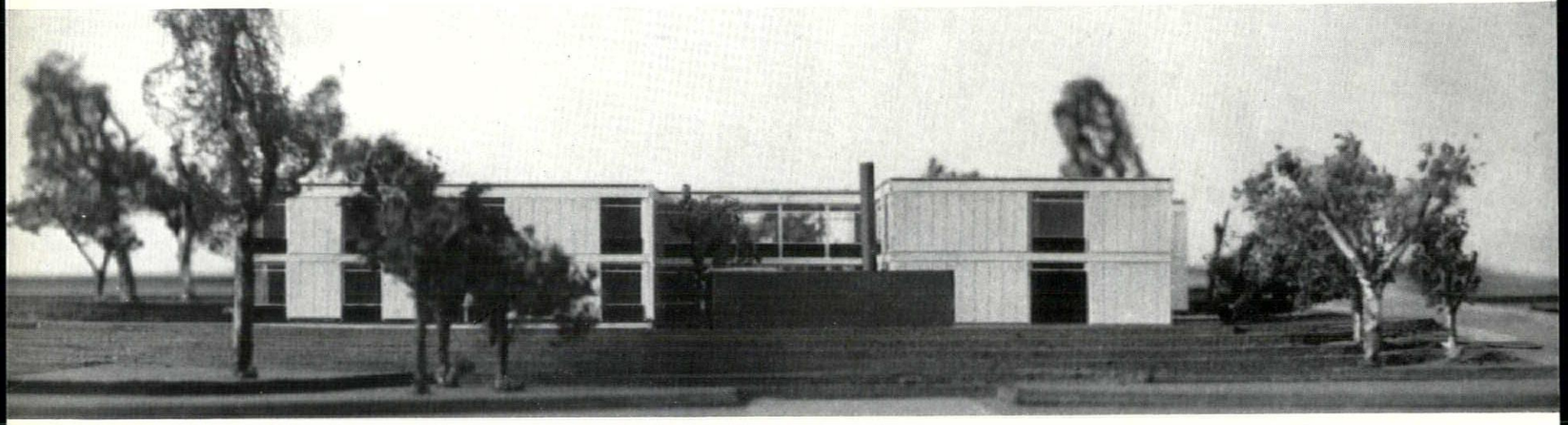
Below, the neighbourhood centre from the north-west: right, the south end of the housing layout

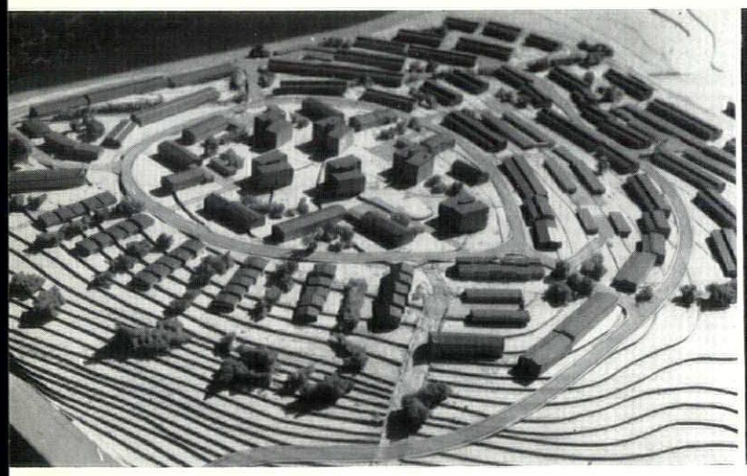


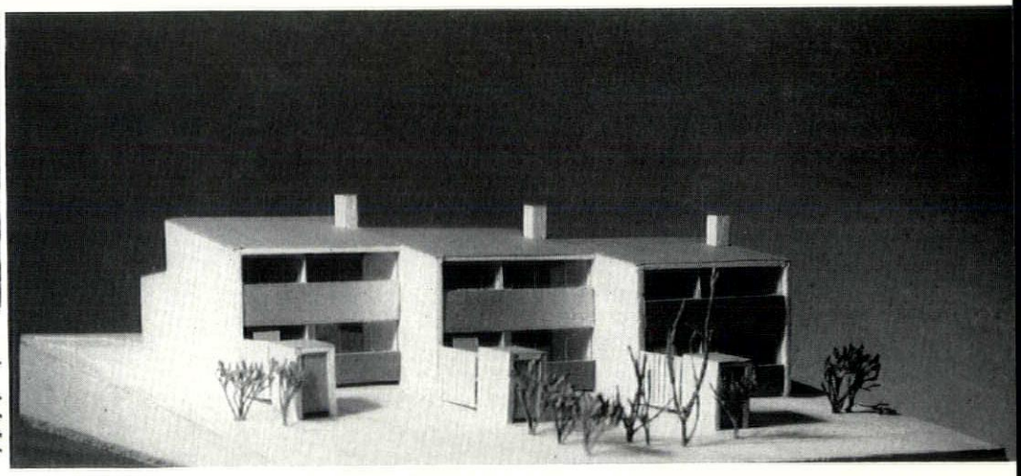


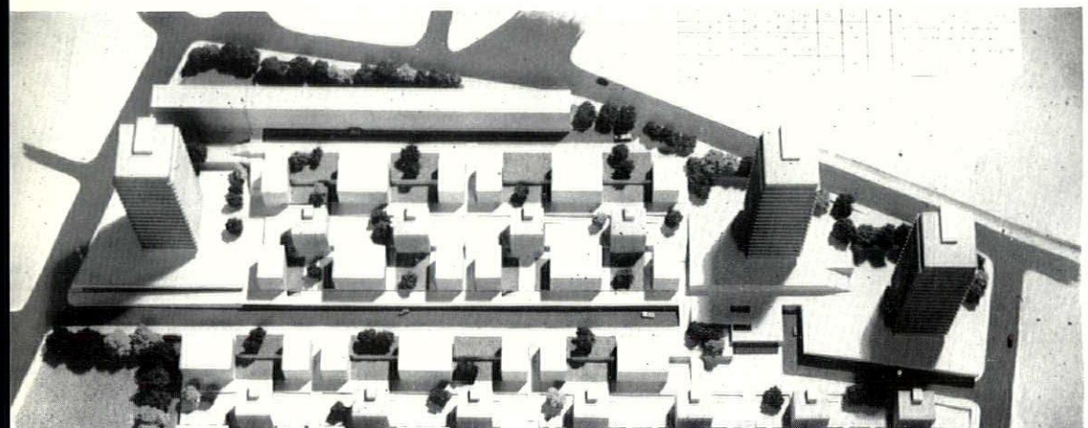


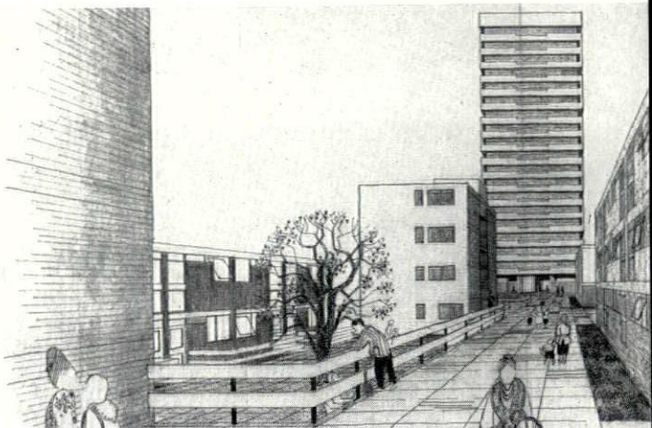


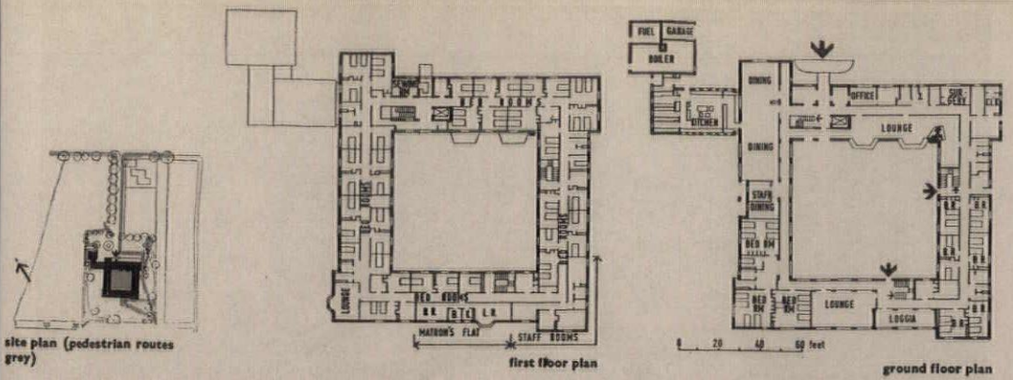










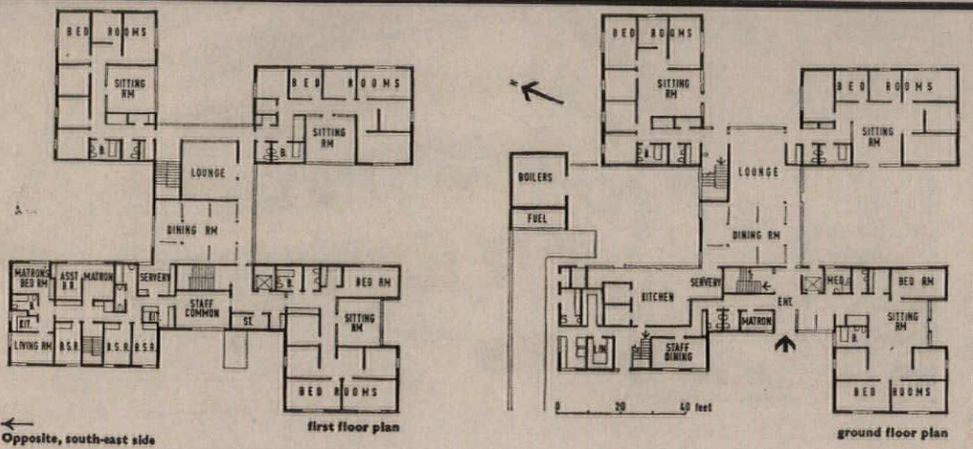


Opposite left, looking south-west towards the main entrance with the boiler house on the right: right, air-view looking north

Old People's Home, Shepperton

Whitfield Lewis, Middlesex County Architect, and B. L. Adams

CLIENT: Middlesex County Council.
SITE: 1.78 acres on Laleham Road near Shepperton.
ACCOMMODATION: 71 old people in one-bed, two-bed and four-bed rooms. Easy access to lounges, dining and lavatories. Matron's flat, staff and doctors' rooms.
STRUCTURE AND FINISHES: Load-bearing fair-faced brickwork. Hollow pot floors, low pitch copper roof.
SERVICES: Oil-fired heating, floor heating to dining.
SITEWORK: Started March 1962, completion by 1964.
Job architect, Beryl Wood. Quantity surveyor, Harry Trinick & Partners. Heating consultant, A. C. Mann. Structural and electrical consultants, chief structural and mechanical engineers, Middlesex County Council.

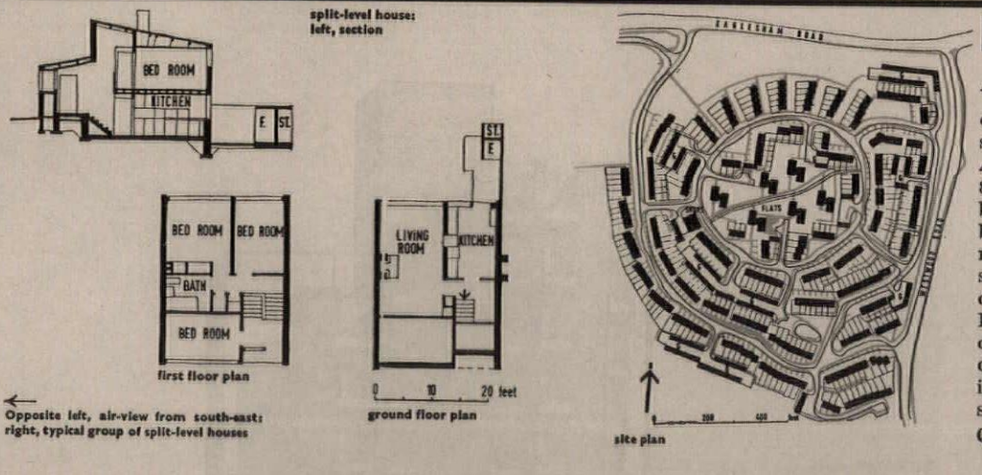


Opposite, south-east side

Old People's Home, Sutton-in-Ashfield

W. D. Lacey, Nottinghamshire County Architect

CLIENT: Nottinghamshire County Council.
SITE: Close to central shopping, cinemas, etc.
ACCOMMODATION: Beds for 50 people on two floors divided into six house units of six or seven bedrooms.
STRUCTURE AND FINISHES: 5M CLASP with storey-height, 1 ft. 8 in. wide concrete panels. Windows, timber with vitreous enamel infill.
COST: £60,000.
SITEWORK: Started 1962, completion by March 1963.
Deputy county architect, H. T. Swain. Group architect, Alan Meikle. Job architect, John Hague. Chief quantity surveyor, J. Scott. Job quantity surveyor, T. O. Human. Heating consultants, Weatherfoil Ltd.

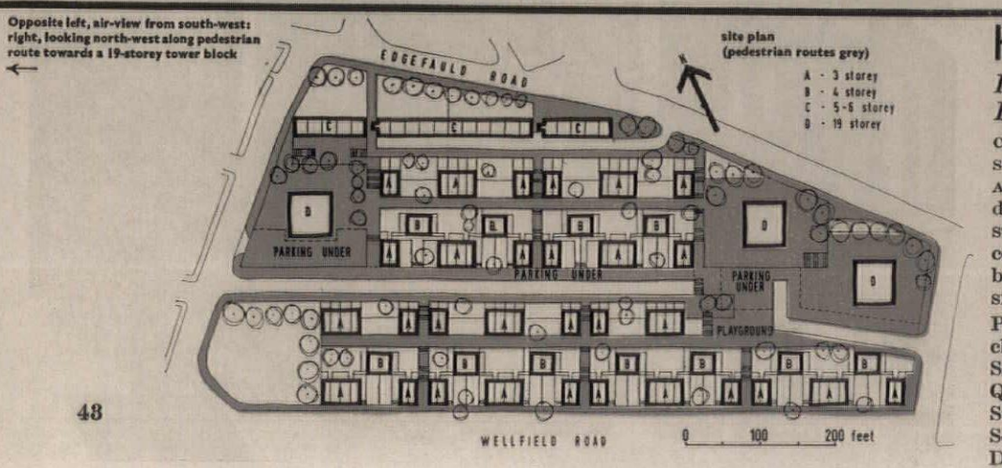


Opposite left, air-view from south-east: right, typical group of split-level houses

Housing, East Kilbride

Alan Reiach & Partners

CLIENT: East Kilbride Development Corporation.
SITE: 32.6 acres on western fringe of town.
ACCOMMODATION: 305 one- to five-room terrace houses. 84 two- and three-room flats in two- and three-storey blocks. 10 one- and two-room flats in two-storey blocks. Density, 12 dwellings/acre. 286 garages giving ratio of 1 to 1.5.
STRUCTURE AND FINISHES: Load-bearing brick crosswalls. Windows, wood with metal opening lights. Houses; timber floors and roofs. Flats; in situ concrete floors and lightweight concrete roof units.
COST: £367,000 for 81 houses, 94 flats, 71 garages including underbuilding, fences, walls, etc.
SITEWORK: Started 1962, completion by 1964.
Quantity surveyors, Sir Wm. Baird & Partners.



Opposite left, air-view from south-west: right, looking north-west along pedestrian route towards a 19-storey tower block

Housing, Glasgow

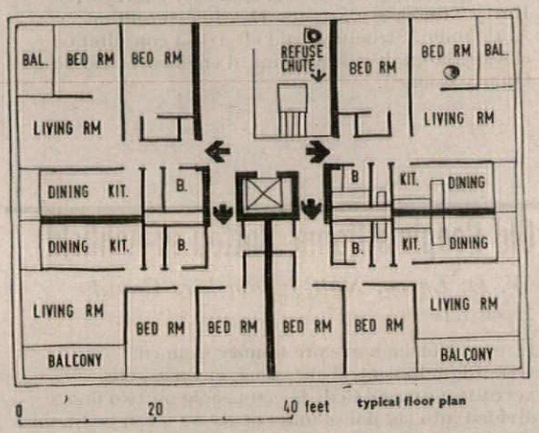
Robert Matthew, Johnson-Marshall & Partners

CLIENT: Glasgow Corporation.
SITE: 8¾ acres sloping 1 in 7, near existing shops.
ACCOMMODATION: 441 dwellings, density 140 dwellings/acre. 32 garages, 126 parking places.
STRUCTURE AND FINISHES: High blocks, load-bearing concrete walls with pilotis at ground floor, precast balcony slabs. Low blocks, brick cross walls.
SERVICES: Controlled output block storage heaters.
Partner in charge, T. R. Spaven. Senior architect in charge, K. E. Graham. Job architects, I. M. T. Samuel, J. W. Hornal, Andrew Traub, G. McKay. Quantity surveyors, John Dansken & Purdie. Structural consultants, Ove Arup & Partners. Services consultants, Architectural and Planning Department, Glasgow Corporation.

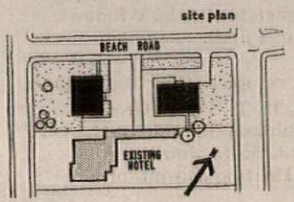
Housing, St. Annes-on-Sea

William Cowburn & Partners

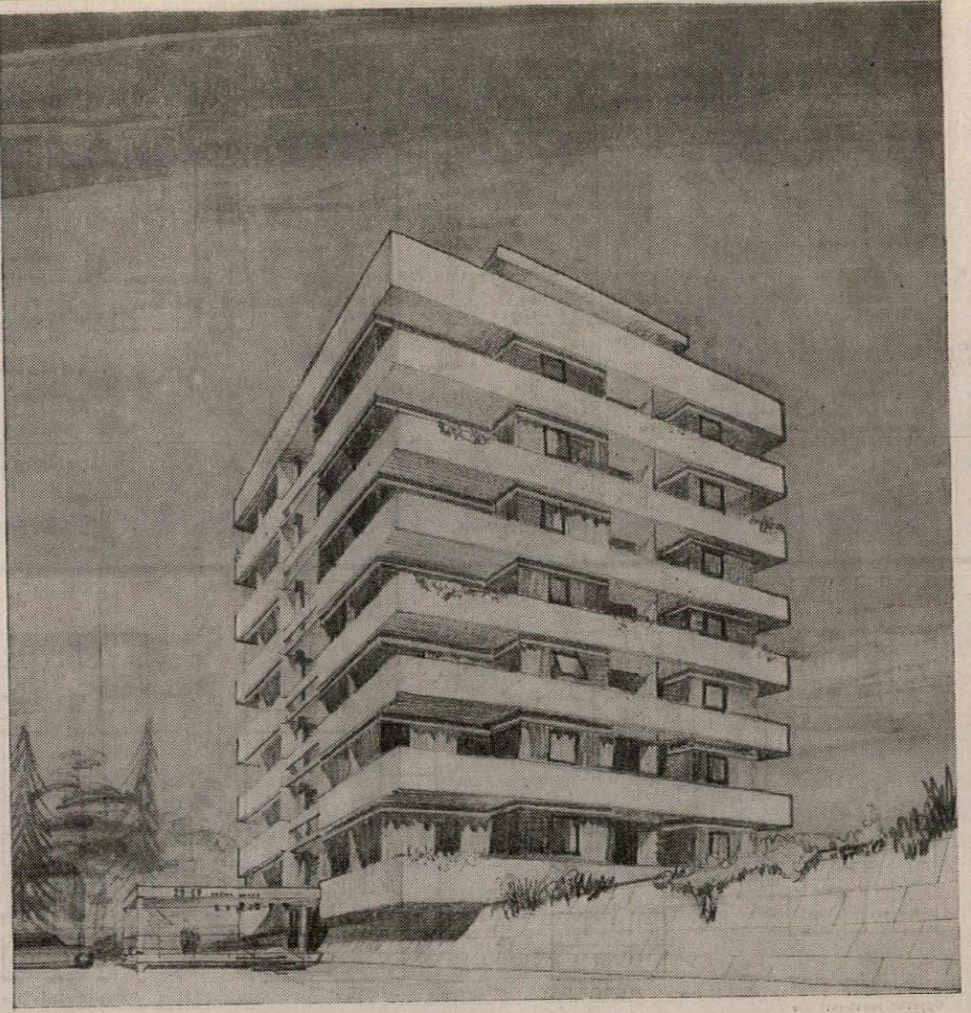
CLIENT: R. F. Brewerton.
SITE: On sea front, close to main square. Views over sea and river Ribble estuary.
ACCOMMODATION: 56 flats in two seven-storey blocks.
STRUCTURE AND FINISHES: Steel frame. Facing panels, precast concrete with white spar exposed aggregate. Windows, gurjun.
Partner in charge, Michael O'Connor. Quantity surveyor, T. Lucas. Structural consultants, Helena-Ericson Ltd.



typical floor plan



site plan



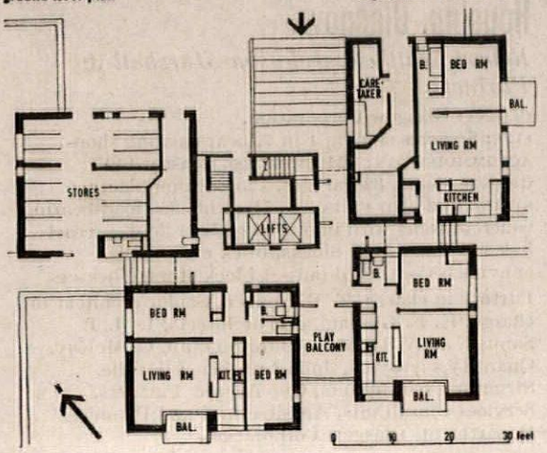
Right, looking towards the entrance

Housing, Lambeth

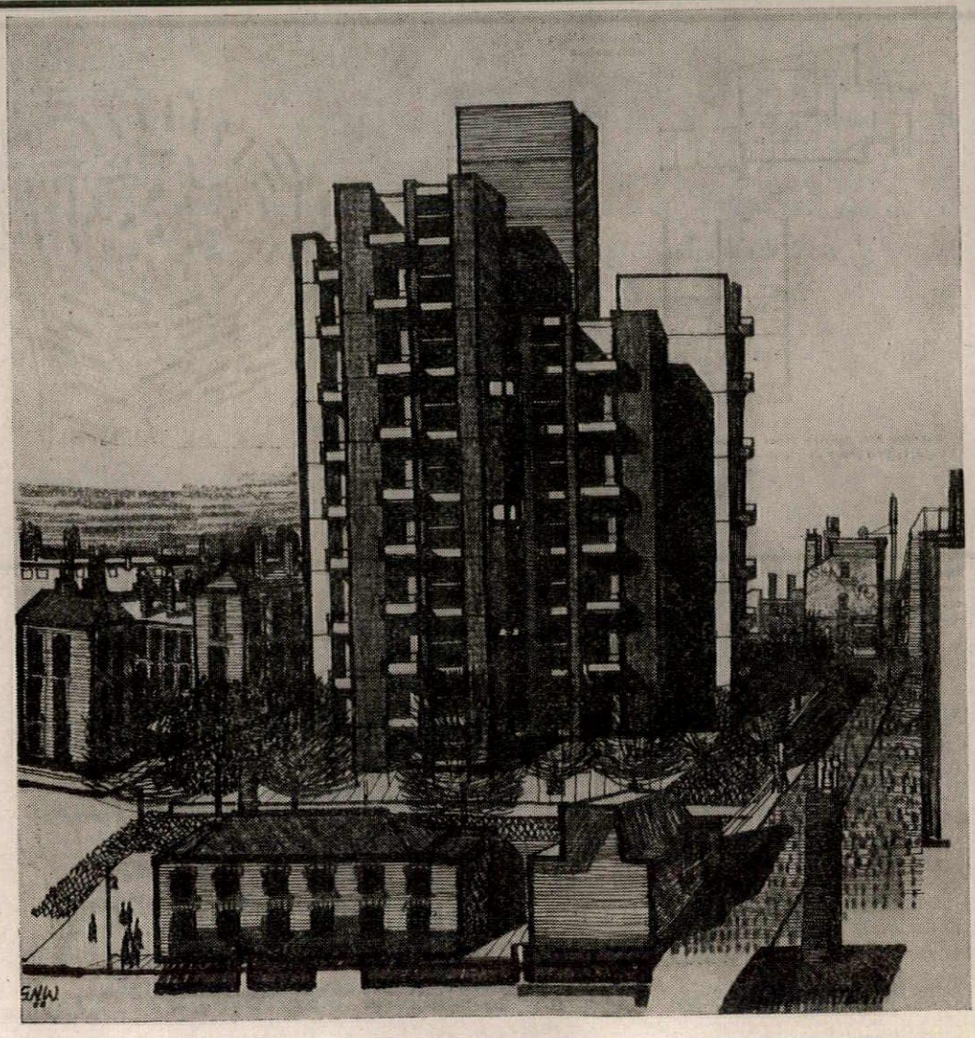
Stillman & Eastwick-Field

CLIENT: Director of Housing, London County Council.
SITE: 0.82 acre in Baylis Road. Bakerloo line runs diagonally under the area.
ACCOMMODATION: 37 two-, three- and four-room flats. 14 garages and 9 parking spaces.
STRUCTURE AND FINISHES: Load-bearing brickwork. Floors and roofs reinforced concrete with 3 in. projecting nib at floor lines. Balconies in situ concrete with exposed aggregate finish. Windows and doors, softwood painted. Screens between towers, galvanized steel. Facing bricks exposed in circulation areas.
SERVICES: Electric floor heating.
COST: £133,000 including external works.
SITEWORK: Expected to start Spring 1963.
Quantity surveyors, Harry Trinick & Partners.
Structural consultants, Charles Weiss & Partners.
Electrical consultants, Richards & Bright.

ground floor plan



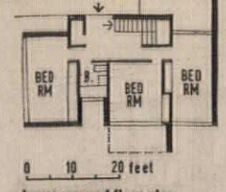
Right, from the south-east



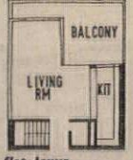
Housing, Cheadle

Derek Walker

CLIENT: Farley House Development Co.
SITE: Farley House, Cheadle, nr. Manchester.
ACCOMMODATION: 28 flats, 4 terrace houses, restaurant, parking for 60 cars.
STRUCTURE AND FINISHES: R.c. frame. 2 in. sandfaced brick externally. Aluminium windows. Floors; wood block in flats, terrazzo in public areas. York stone for pavings.
SERVICES: Central service core. Floor heating.
COST: £200,000.
SITEWORK: Starts March 1963, completion by March 1964.
Assistants, Randolph Stewart Mosscrop. Quantity surveyors, Walker & Biggin. Structural consultants, Chadwick & Oheocha.



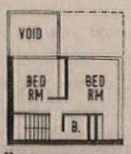
house, ground floor plan



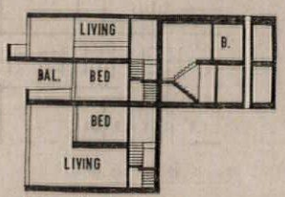
flat, lower floor plan



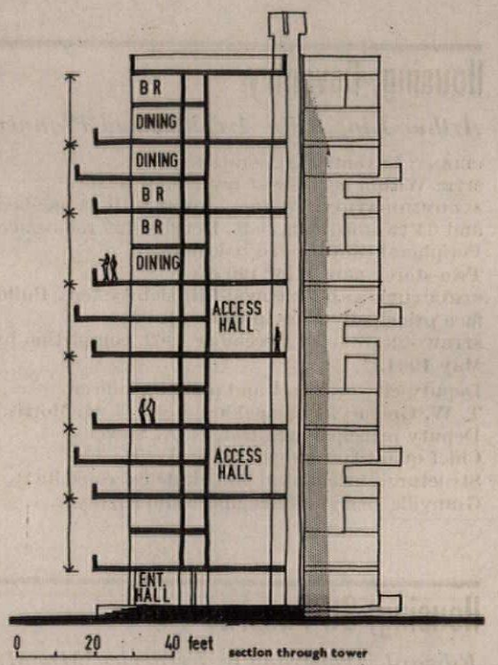
house, first floor plan



flat, upper floor plan

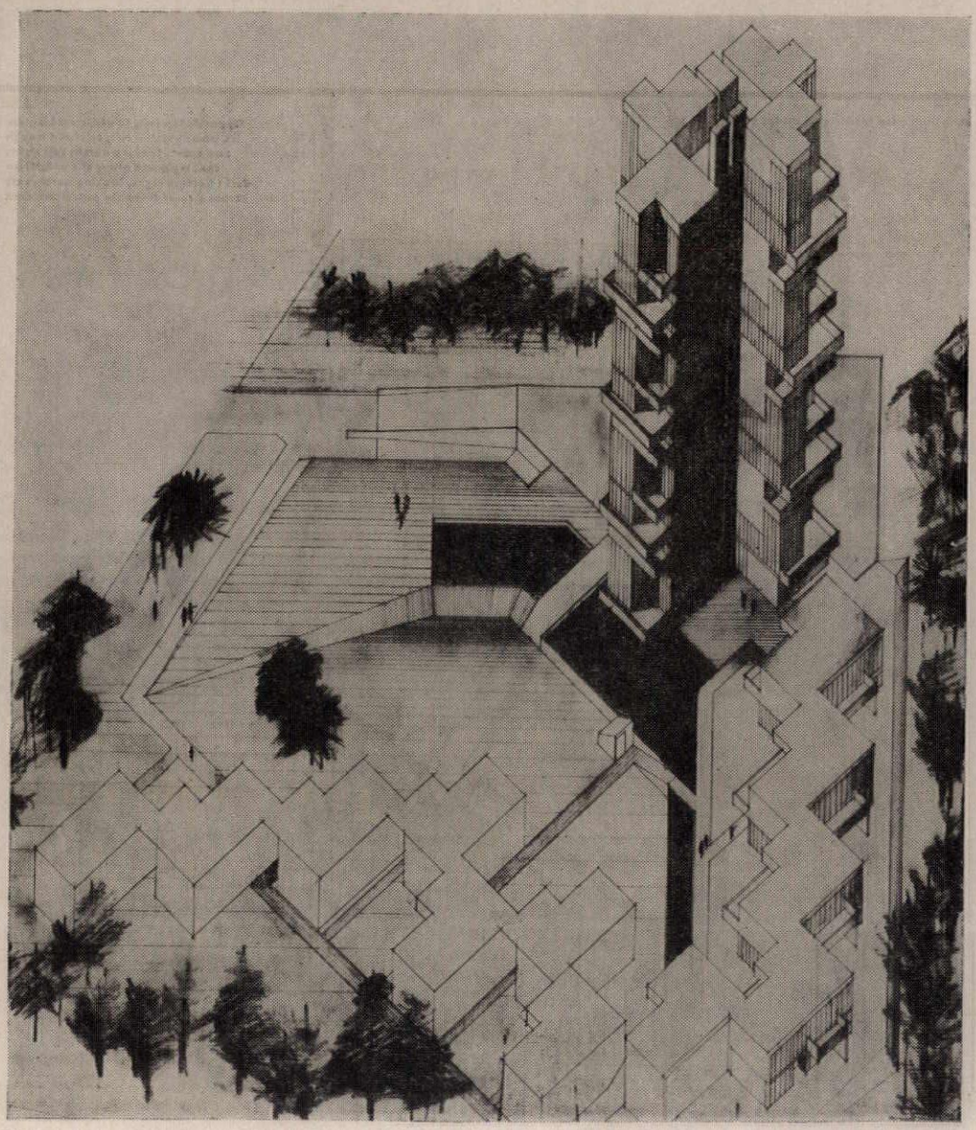


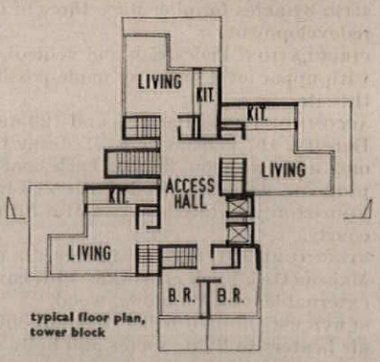
flats, section showing two units with floors reversed



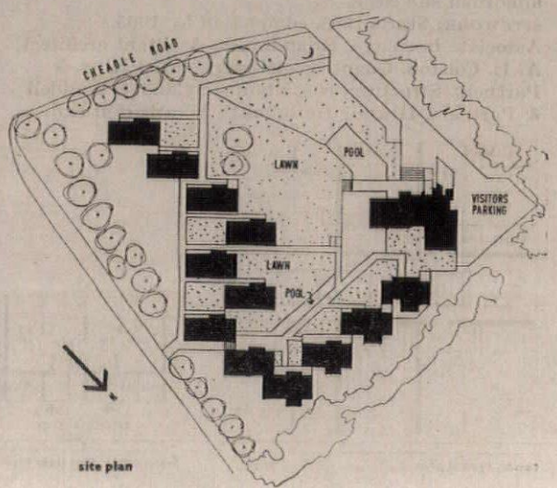
section through tower

Below, axonometric view of Cheadle housing from east





typical floor plan, tower block

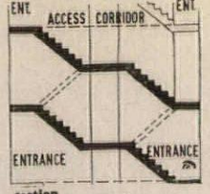


site plan

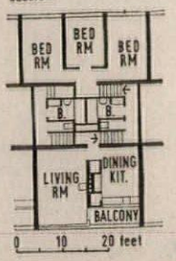
Housing, Southwark

Leonard Manasseh & Partners

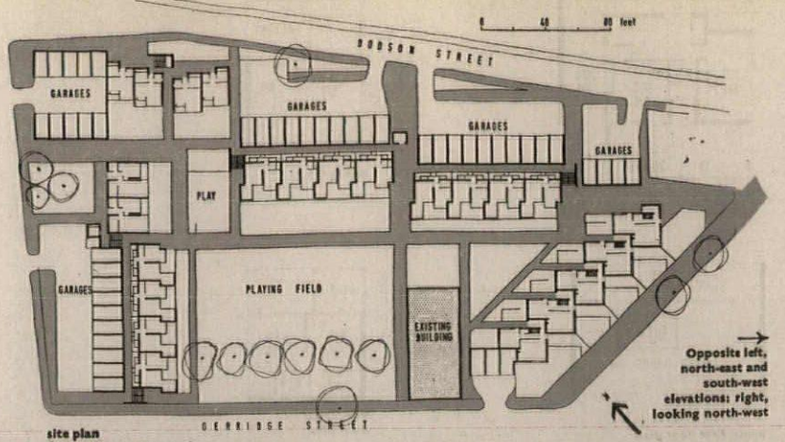
CLIENT: London County Council.
SITE: 2 acres near St. George's Circus.
ACCOMMODATION: For 319 people. 8 one-room flats, 12 two-room flats, 11 two-room flats in six-storey block, 30 three-room flats and 30 four-room flats based on development of scissors type plan, 5 five-room houses in staggered terraces. Density 186 persons/acre. Garages or parking for 75 per cent of dwellings. All living rooms face on to central garden turning their backs on garages and surrounding tenements. Old people near the ground.
STRUCTURE AND FINISHES: 9 in. brick load-bearing crosswalls, floors concrete, roofs aluminium.
SITEWORK: Starts mid-1963.
Quantity surveyors, Cogan & Partners. Structural consultants, Flint & Neill.



section



plan



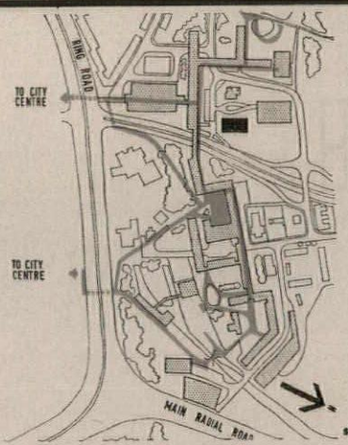
site plan (pedestrian routes grey)

Opposite left, north-east and south-west elevations: right, looking north-west

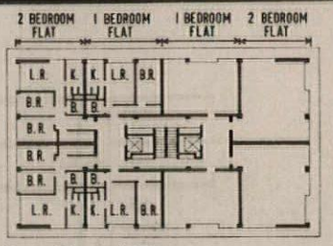
Housing, Coventry

Arthur Ling, City Architect and Planner

CLIENT: Coventry Corporation.
SITE: Within north-west residential sector.
ACCOMMODATION: 17-storey tower with 64 one-bedroom and 64 two-bedroom flats. Density 120 rooms/acre. Peripheral cantilevered balconies.
Two-storey garage for 120 cars.
STRUCTURE AND FINISHES: Lift slab system. Building face principally glass in timber frames.
SITEWORK: Started December 1962, completion by May 1964.
Deputy city architect and planning officer, T. W. Gregory. Principal architect, G. H. Morris, Deputy principal architect, R. A. Stevens. Chief quantity surveyor, R. F. Lear. Structural, mechanical and electrical consultant, Granville Berry, city engineer and surveyor.

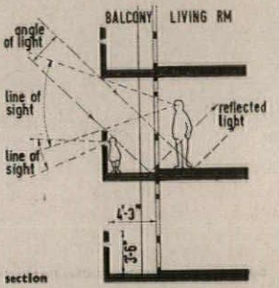


site plan (pedestrian routes grey)



plan

Opposite left, from the north-east looking across the main radial road with the parking garage beyond to the right: right, looking north along a pedestrian route with the main radial road to the right



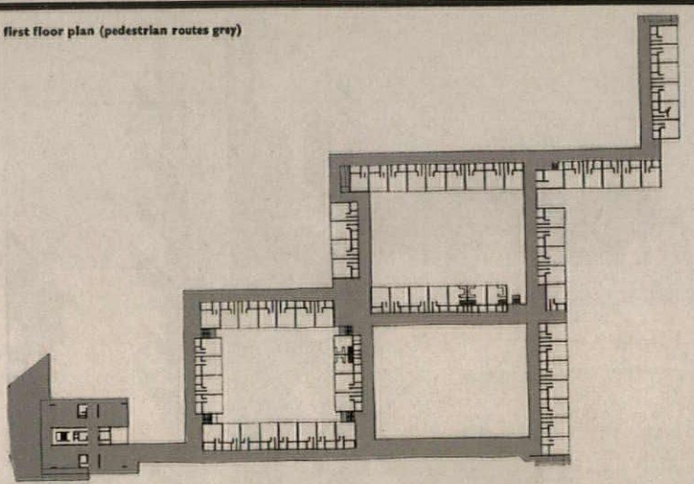
section

Housing, St. Pancras

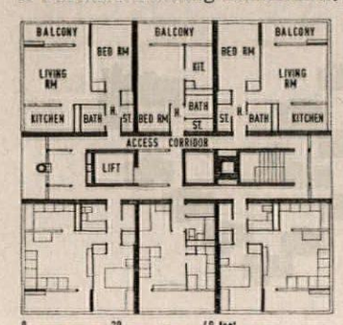
Edward Armstrong & Frederick MacManus

CLIENT: Borough of St. Pancras, London.
SITE: 3¾ acres forming stage three of Gospel Oak redevelopment.
CIRCULATION: Pedestrian and vehicular segregation with upper level walkway made possible by slope of the site.
ACCOMMODATION: 120 flats and 120 maisonettes. Density, 197 persons/acre. 21-storey tower, with one- and two-room flats on each floor, adjacent to proposed neighbourhood centre at Lismore Circus. Four-storey terraced maisonettes form enclosed courts.
STRUCTURE AND FINISHES: Tower, in situ r.c. Maisonettes, brick crosswalls with cavities and brick external leaves. Windows, wood.
SERVICES: Oil-fired boiler, tenant-controlled, warm air heaters to living rooms and halls, background heat to kitchens and bedrooms.
COST: Estimate £896,600 including demolitions and abnormal site costs.
SITEWORK: Starts 1963, completion by 1965.
Associate in charge, Brian Smith. Assistant architect, A. E. Colston. Quantity surveyors, Rider Hunt & Partners. Structural consultants, Bylander, Waddell & Partners. Heating consultants, Weatherfoil Ltd.

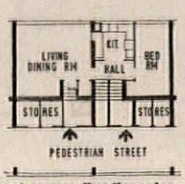
first floor plan (pedestrian routes grey)


ground floor plan (pedestrian routes grey)

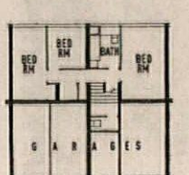
Opposite top left, tower from Lismore Circus: bottom left, section through two courts looking north: top right, looking north along the pedestrian deck: bottom right, looking north-west across a court from the pedestrian deck



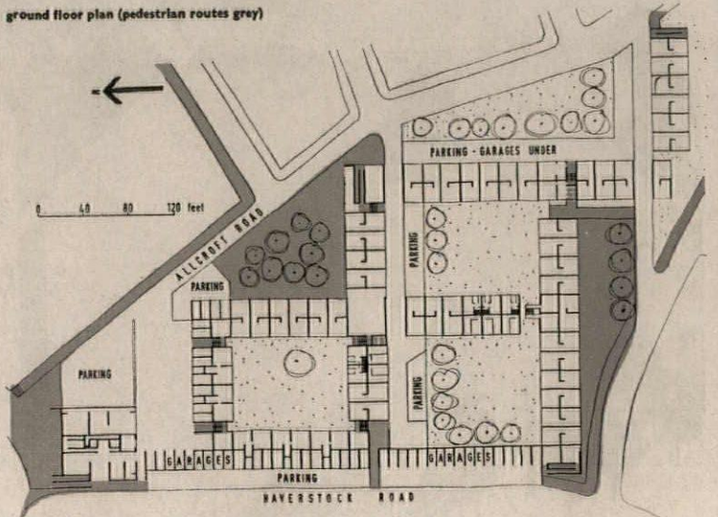
tower, typical plan

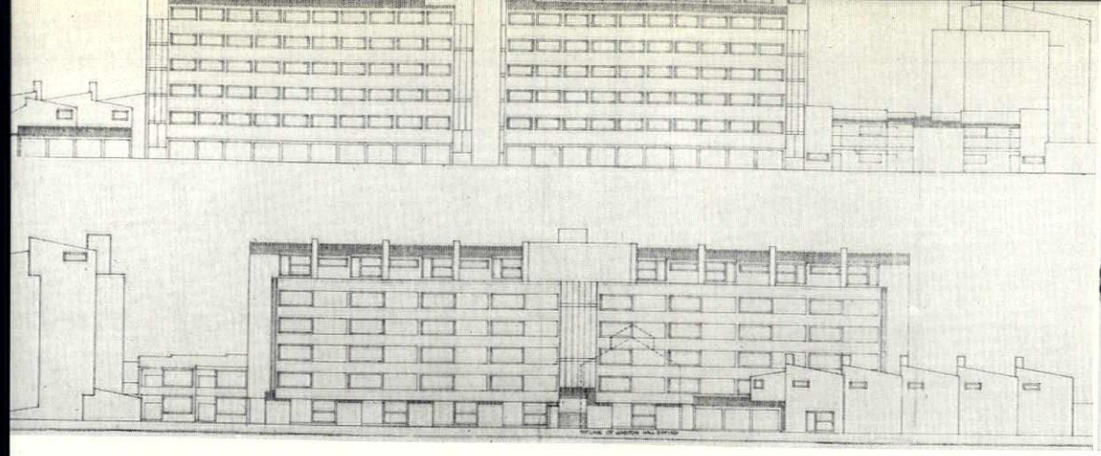


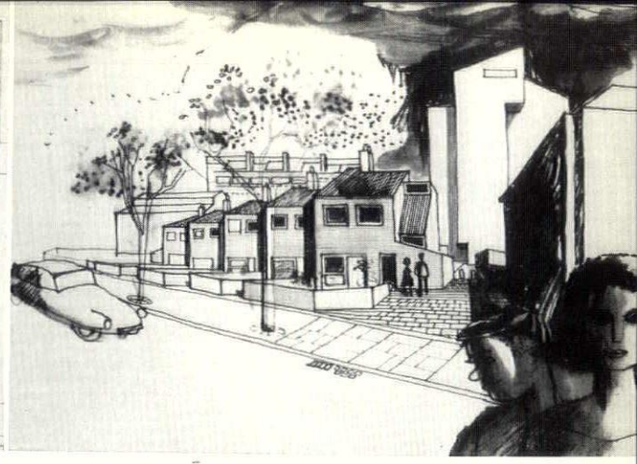
maisonettes, first floor plan

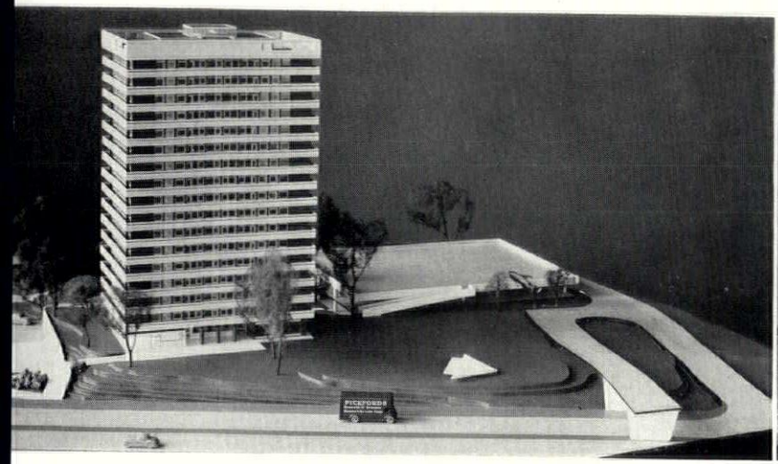


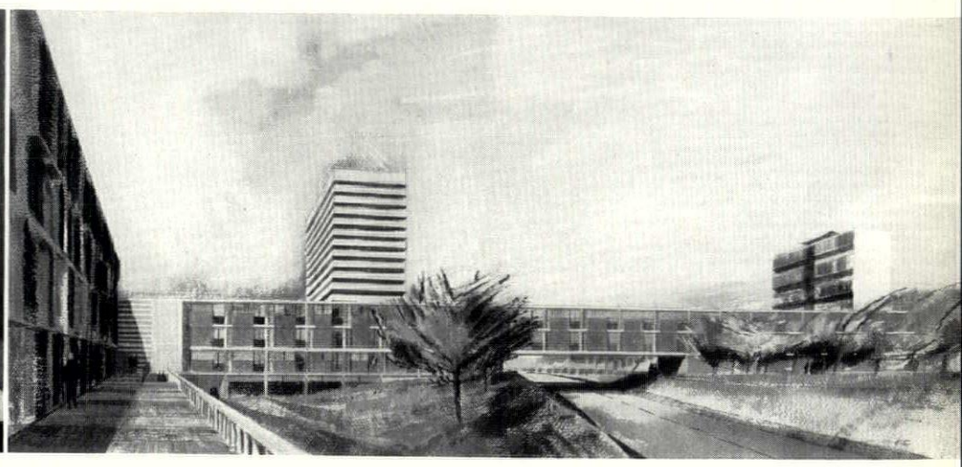
ground floor plan

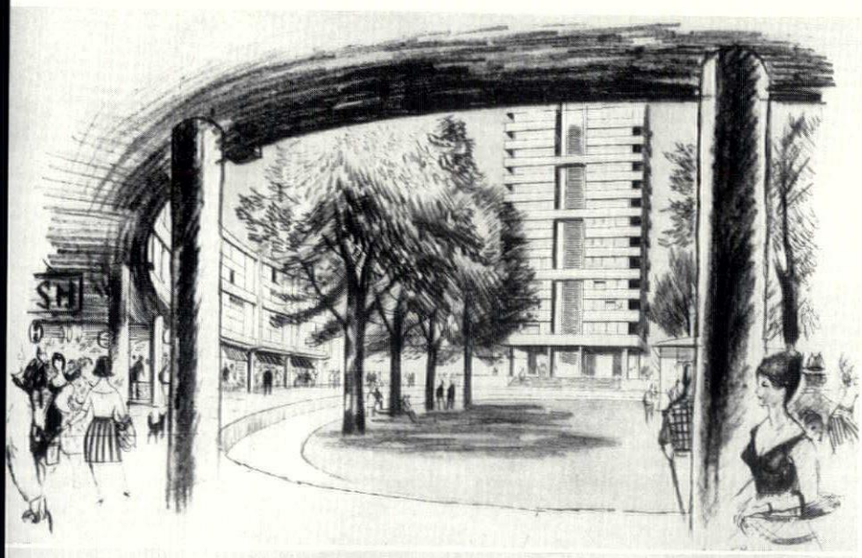


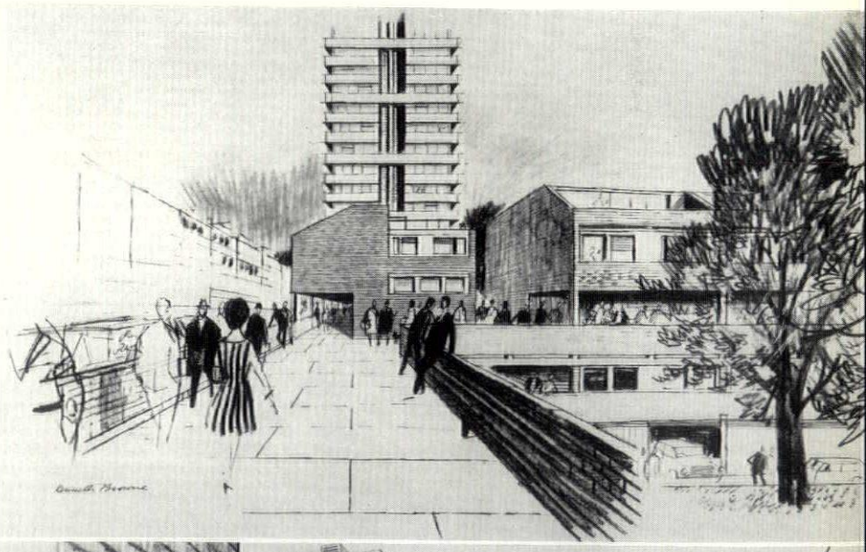


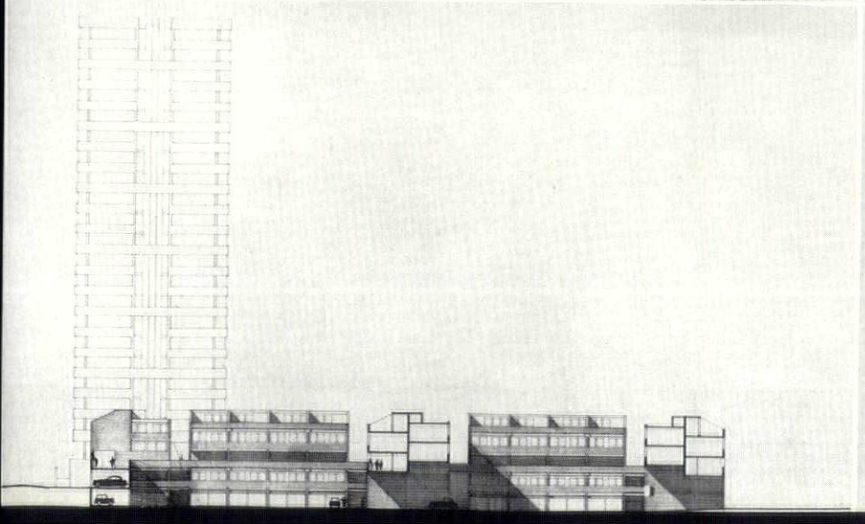


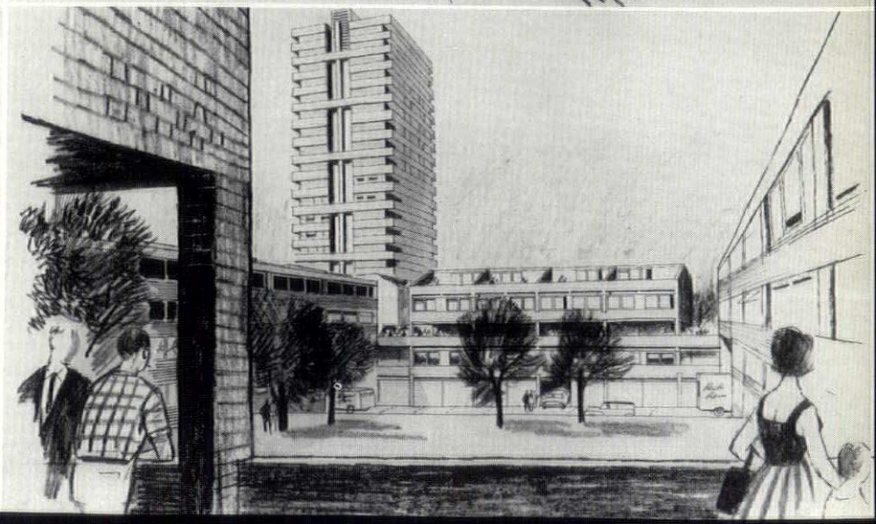




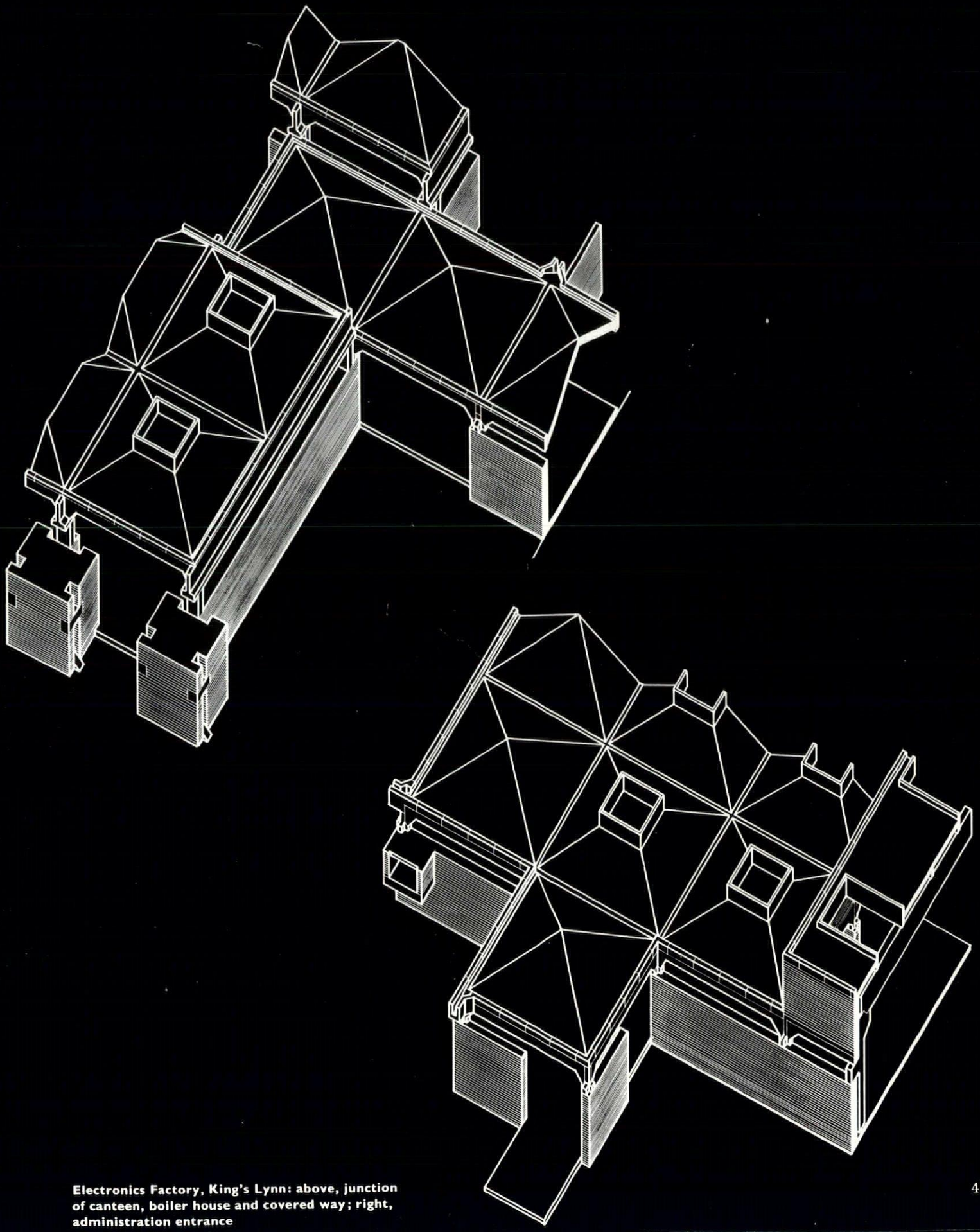








INDUSTRIAL

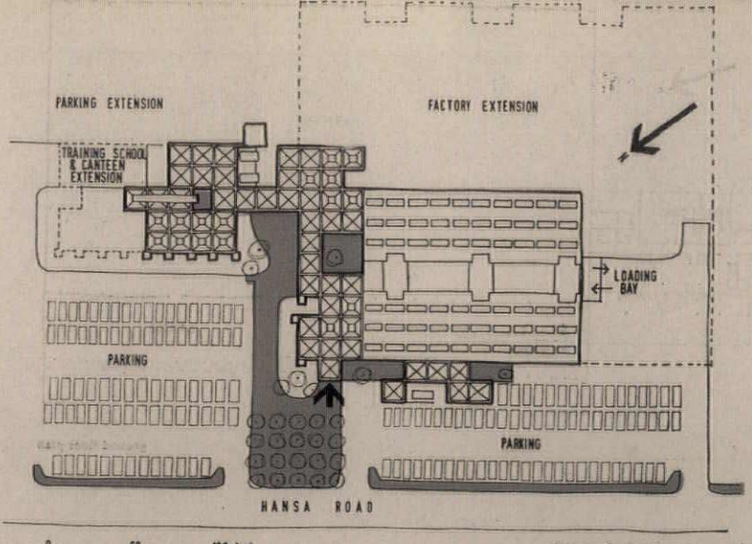


Electronics Factory, King's Lynn: above, junction of canteen, boiler house and covered way; right, administration entrance

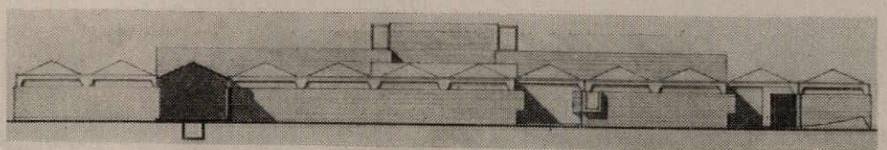
Electronics Factory, King's Lynn

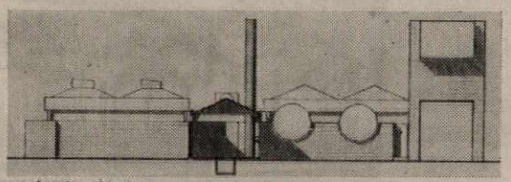
J. M. Austin-Smith & Partners

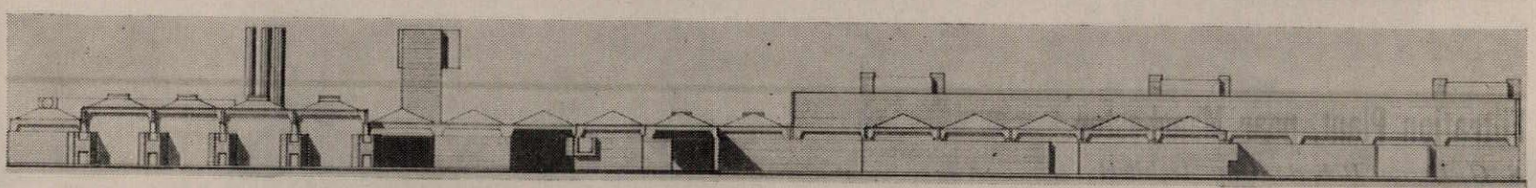
CLIENT: Unicam Instruments Ltd.
SITE: 4 acres on Trading Estate at King's Lynn, surrounded by other factories.
ACCOMMODATION: For production of electronic optical instruments. Production area and offices 24,750 ft., canteen and boiler plant. Buildings generally inward looking on to series of accessible glazed courts. Exterior walls being solid below a clerestorey. Parking for 250 cars.
STRUCTURE AND FINISHES: Walls; brickwork 7 ft. high is load-bearing except to production area where it forms a cladding to the precast r.c. frames supporting wood wool on concrete purlins with rooflights of translucent sandwich sheets. Canteen, office and boiler house; prefabricated plywood pyramids 15 ft. square on system of precast inverted U beams containing clerestoreys within their depth. The same form of beam also braces the structure over production area.
SERVICES: Heating, blown warm air.
Dust filtration and humidity control in optics and electronics section. Floor ducts for main services.
Partner in charge, Mrs. I. L. E. Austin-Smith. Job architect, Thomas Kay. Quantity surveyors, Davis, Belfield & Everest. Structural consultants, Andrews, Kent & Stone. Mechanical and electrical consultants, J. Roger Preston & Partners.

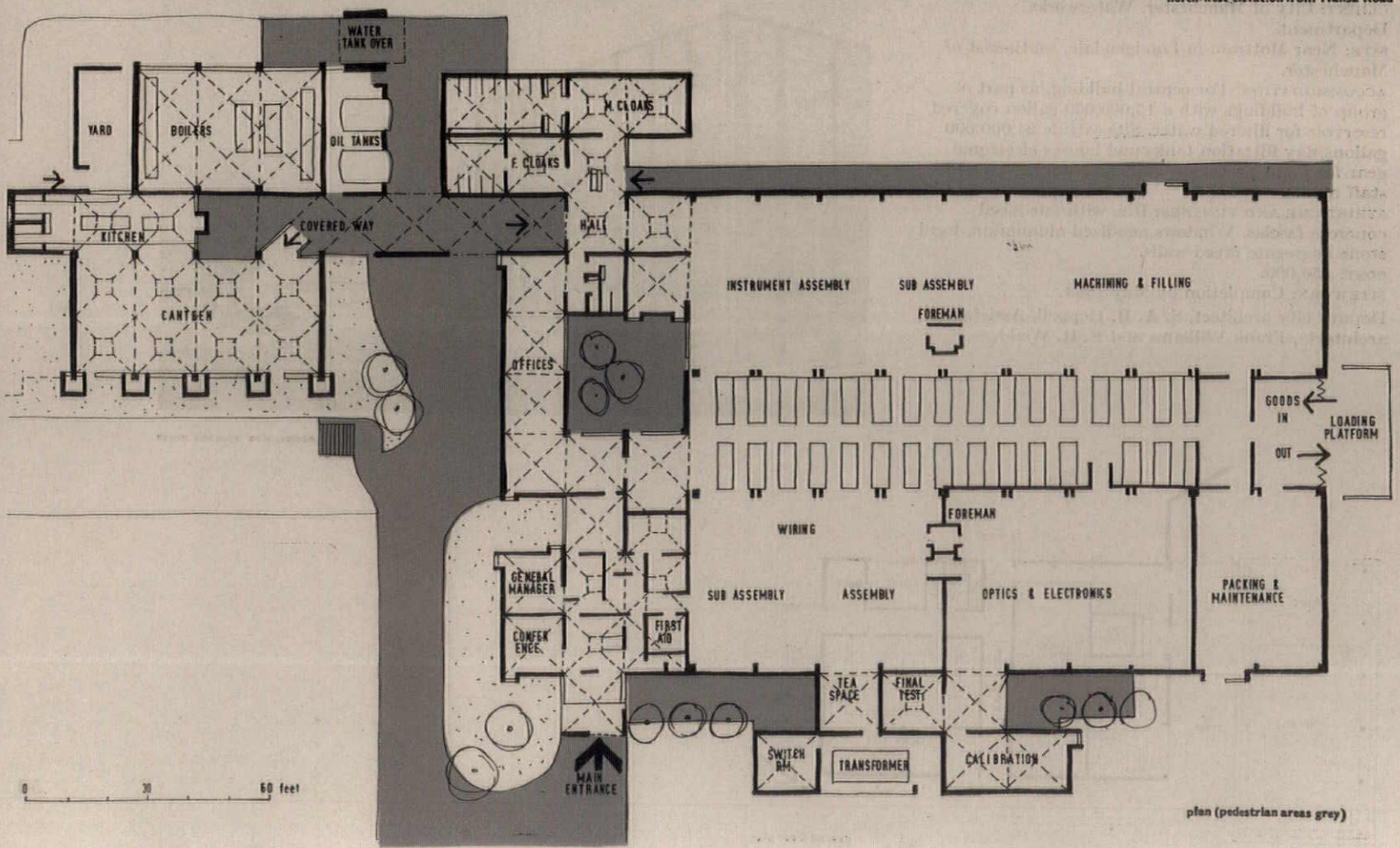


site plan (pedestrian areas grey)


north-east elevation of offices from section through the covered way


south-west elevation of boiler house and canteen from section through the covered way


north-west elevation from Hansa Road

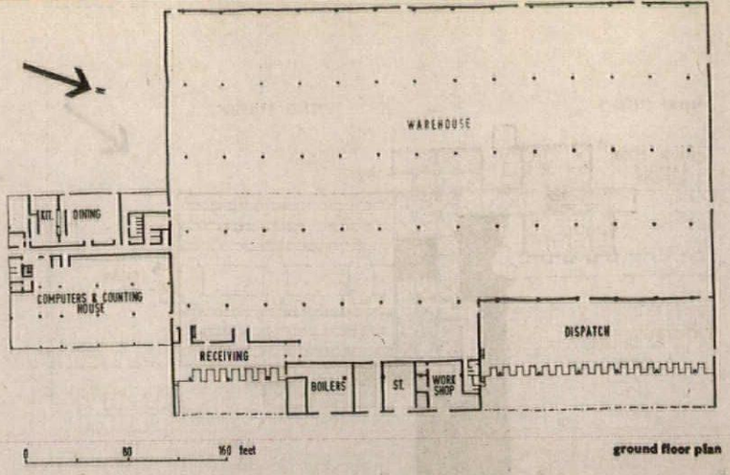


plan (pedestrian areas grey)

Warehouse, Stevenage

Yorke, Rosenberg & Mardall

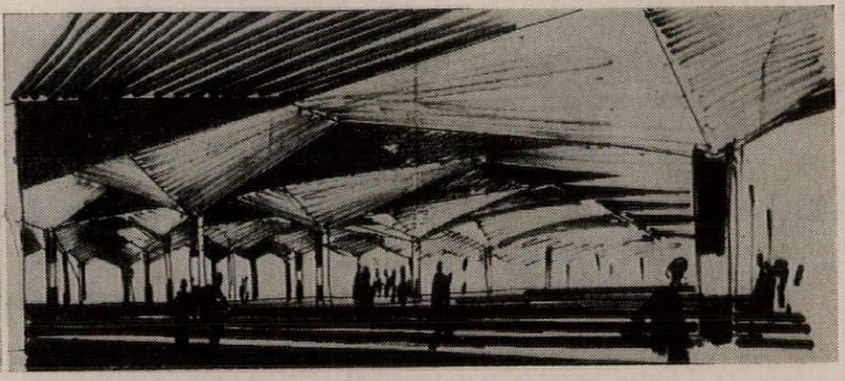
CLIENT: John Lewis & Co. Ltd.
SITE: Approximately 9 acres. Diagonal fall of 17 ft.
ACCOMMODATION: Warehouse 145,000 sq. ft., offices 16,000 sq. ft., including canteen, lavatories, etc., housing computor and data processing machinery.
STRUCTURE AND FINISHES: R.c. inverted umbrellas in 60 ft. by 31 ft. bays.
SERVICES: Oil-fired boilers, unit heaters to warehouse, computor and allied rooms air-conditioned.
COST: £448,000 excluding equipment.
SITEWORK: Started 1962, completion by April 1963.
Associate in charge, J. S. S. Snell. Job architect, G. Goldfader. Structural consultants, Clarke, Nicholls & Marcel, in collaboration with Felix Candela. Quantity surveyors, electrical and mechanical consultants, Directorate of Building, John Lewis & Co. Ltd.



ground floor plan

Below left, the dispatch area: below right, internal view of the warehouse

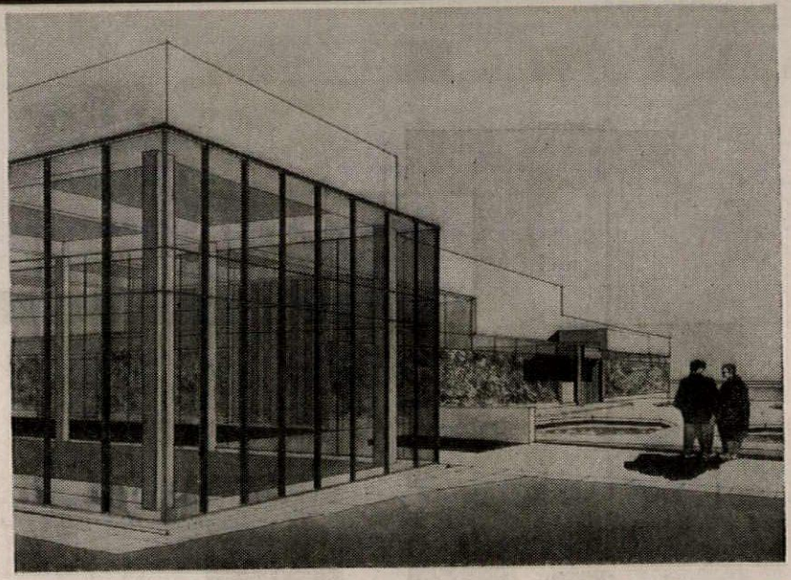




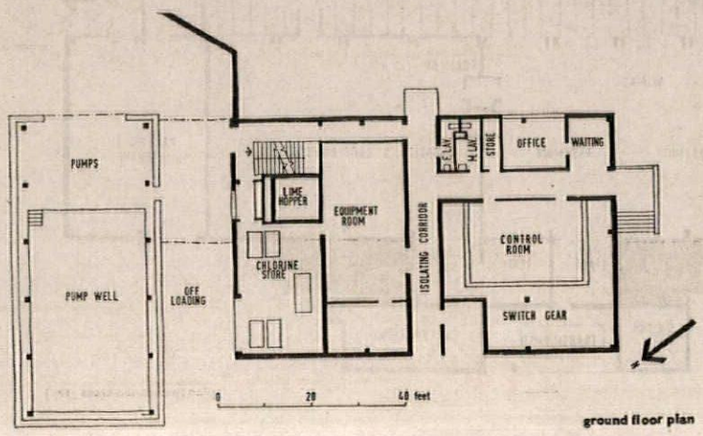
Filtration Plant, near Manchester

S. G. Besant Roberts, City Architect

CLIENT: City of Manchester, Waterworks Department.
SITE: Near Mottram-in-Londgendale, south-east of Manchester.
ACCOMMODATION: For central building, as part of group of buildings with a 15,000,000-gallon covered reservoir for filtered water. Sits astride 24,000,000 gallons/day filtration tanks and houses electronic gear for plant processes, basement workshops and staff rooms.
STRUCTURE AND FINISHES: R.c. with fair-faced concrete fascias. Windows anodized aluminium, local stone aggregate faced walls.
COST: £50,000.
SITEWORK: Completion by May 1963.
Deputy city architect, S. A. B. Heppell. Assistant architects, Frank Williams and F. R. Weild.



Above, view from the north

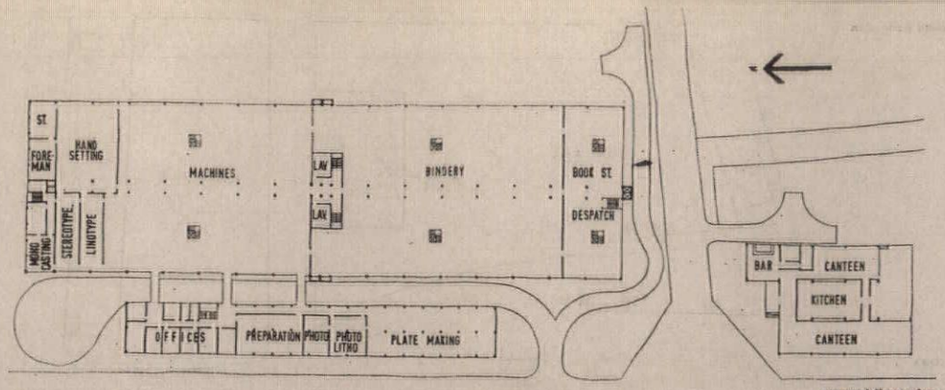


ground floor plan

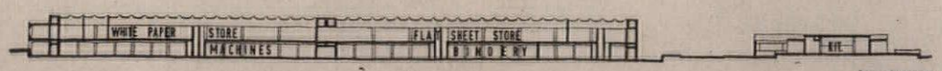
Printing Works, near Milan

Richard Matthews

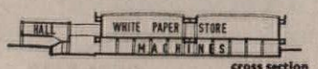
CLIENT: Aldo Garzanti Editori S.A.S.
SITE: 37,000 sq. metres, on Strada Provinciale at Cernusco sul Naviglio 17 Km. from Milan.
ACCOMMODATION: For three printing processes with ample storage below in semi-basement. Delivery and dispatch by means of ramp between offices and main building. Offices linked to latter by bridges and ground floor is open. All employees use main entrance. Canteen, on adjacent site to give separate environment, screened by trees.
STRUCTURE AND FINISHES: R.c. with fairface externally. Main building has Silberkuhl hyperboloid precast prestressed units 2.5 m. wide spanning 20 m. 50 cm. gaps between have translucent sheets. Offices, black anodized aluminium curtain wall.
SERVICES: Offices, preparation areas and white paper stores air-conditioned with ducts around building and on axes. Oil-fired heating to all areas.
COST: £400,000.
SITEWORK: Starts March 1963.
In association with Sergio Cobolli Gigli and Giorgio Monico.



ground floor plan

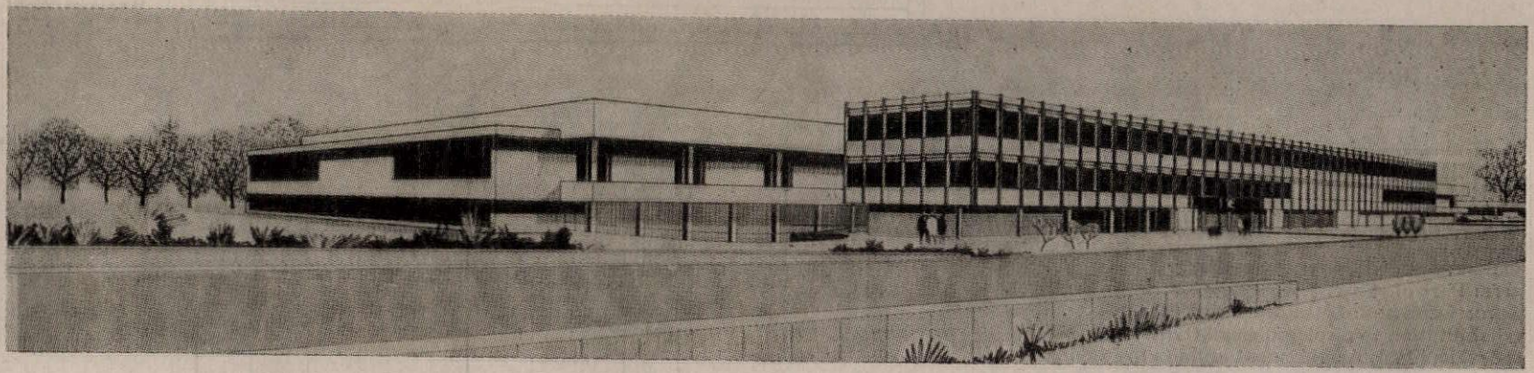


long section



cross section

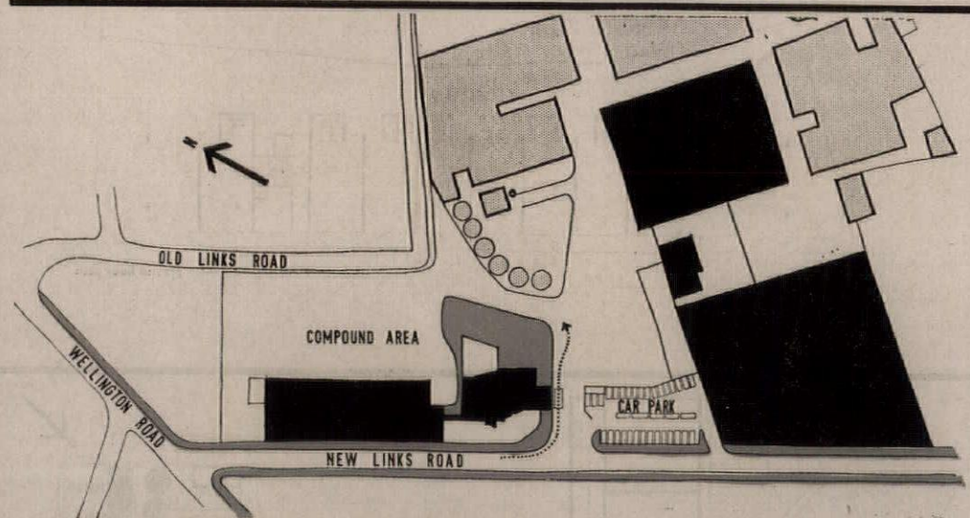
Below, looking south-east along La Strada Provinciale



Fertilizer Factory, Aberdeen

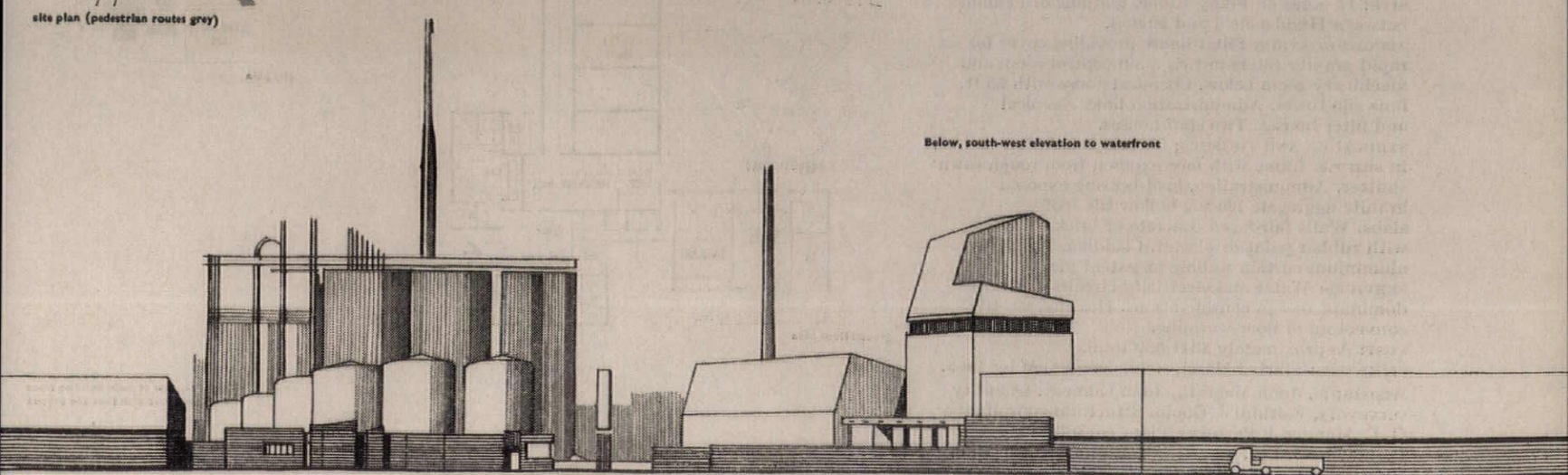
George Trew & Dunn

CLIENT: Scottish Agricultural Industries Ltd.
SITE: 200 ft. frontage to sea.
ACCOMMODATION: Workshops, canteen, bagged material store, bulk handling and bagging plant and bulk compound stores.
STRUCTURE AND FINISHES: Steel or r.c. frames clad in white painted flat asbestos sheeting or natural asbestos. Base of industrial buildings faced with dark grey concrete blocks. Amenity block and entrance, granite and split concrete block facing.
SERVICES: Bagging plant; humidity control, heating by radiant panels. Rest of heating by hot water.
COST: Approximately £475,000 for frontage buildings.
SITEWORK: Started 1962, completion by late 1963.
Quantity surveyors, John Dansken & Purdie.
Structural consultants, F. A. Macdonald & Partners.



site plan (pedestrian routes grey)

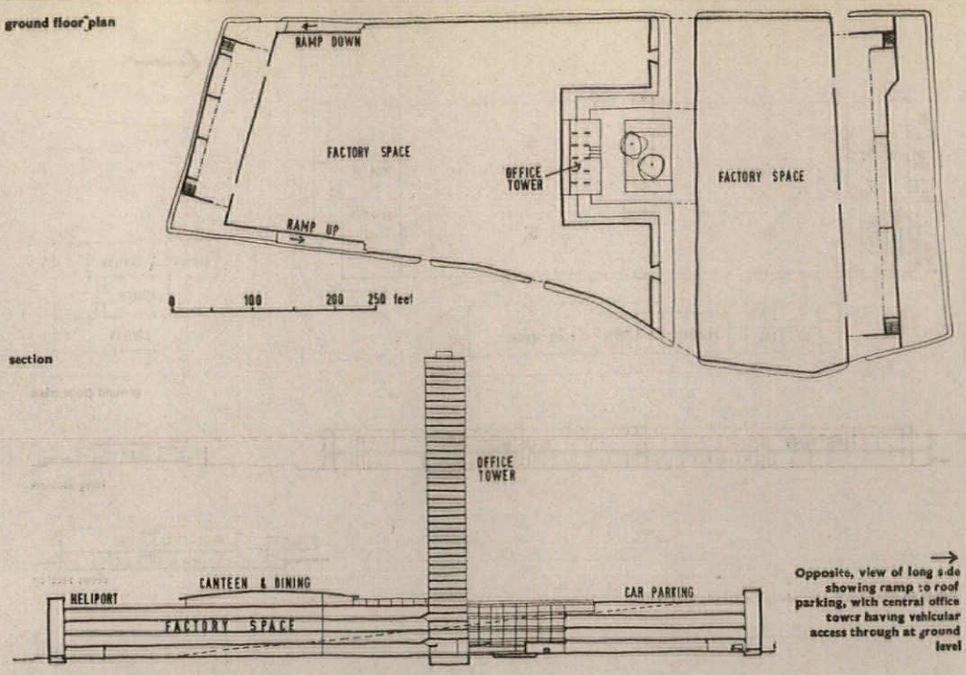
Below, south-west elevation to waterfront



Factory, Bristol

Raymond Moxley

SITE: Close to proposed inner ring road and present Bath and Well roads. Flat and easily accessible on all sides. Present properties mostly slums and poor quality warehouses.
ACCOMMODATION: Four storeys of factory space with 15 ft. floor to floor height, 864,000 sq. ft. Central tower, 33 floors lettable office space, 100,000 sq. ft. Canteen on main factory roof with provision for car parking and heliport. Ramps up to each factory floor on south and north sides for access and egress respectively.
STRUCTURE AND FINISHES: R.c. in 30 ft. by 30 ft. bays with large coffers. Main factory area is concrete from the rough board shuttering. Externally, precast concrete cill walls. Polyurethane-coated steel windows.
COST: Approx. £2,336,000, including external works. Quantity surveyors, Gleeds. Structural consultants, Clarke, Nicholls & Marcel.

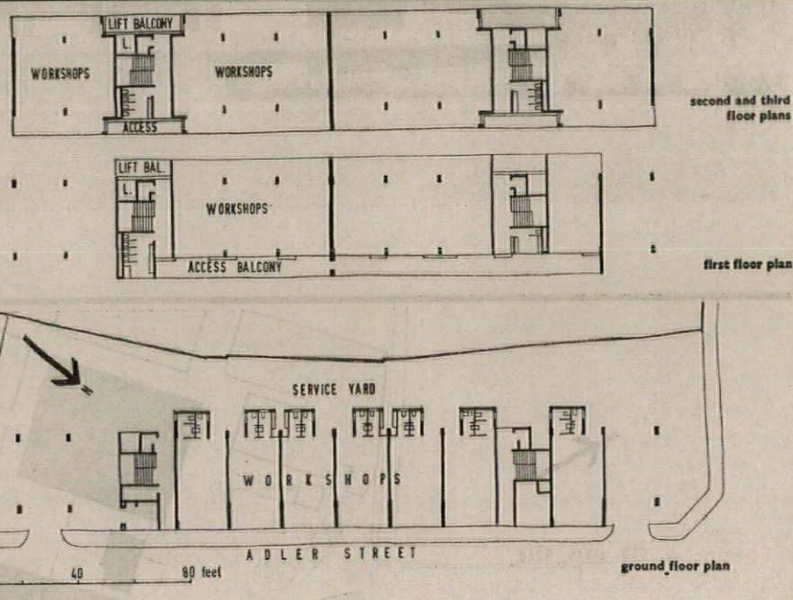


Opposite, view of long side showing ramp to roof parking, with central office tower having vehicular access through at ground level

Unit Workshops, Stepney

Yorke, Rosenberg & Mardall

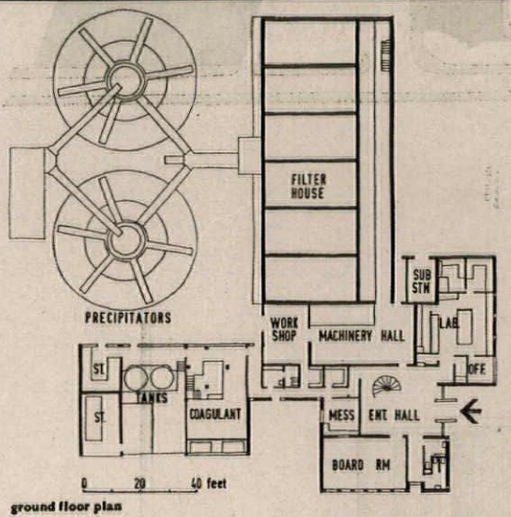
CLIENT: London County Council.
SITE: Part of east end redevelopment in Adler Street.
ACCOMMODATION: Lettable space offering rehabilitation to displaced small traders affected by redevelopment. Arrangement of units to provide maximum flexibility. Parking for 17 cars.
STRUCTURE AND FINISHES: R.c. frame with cantilevered areas for inclusion of access balconies and galleries to smaller units on first and fourth floors. Concrete, fair-faced. Infill panels, brick.
COST: £120,000.
SITEWORK: Starts March 1963, completion by June 1964.
Assistants, Beryl Hope, Irving Brauer. Quantity surveyors, Young & Brown. Structural consultants, Clarke, Nicholls & Marcel. Electrical consultant, Chief Electrical Engineer, LCC.

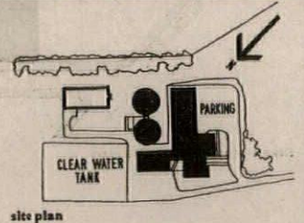


Water Treatment Works, Fixby

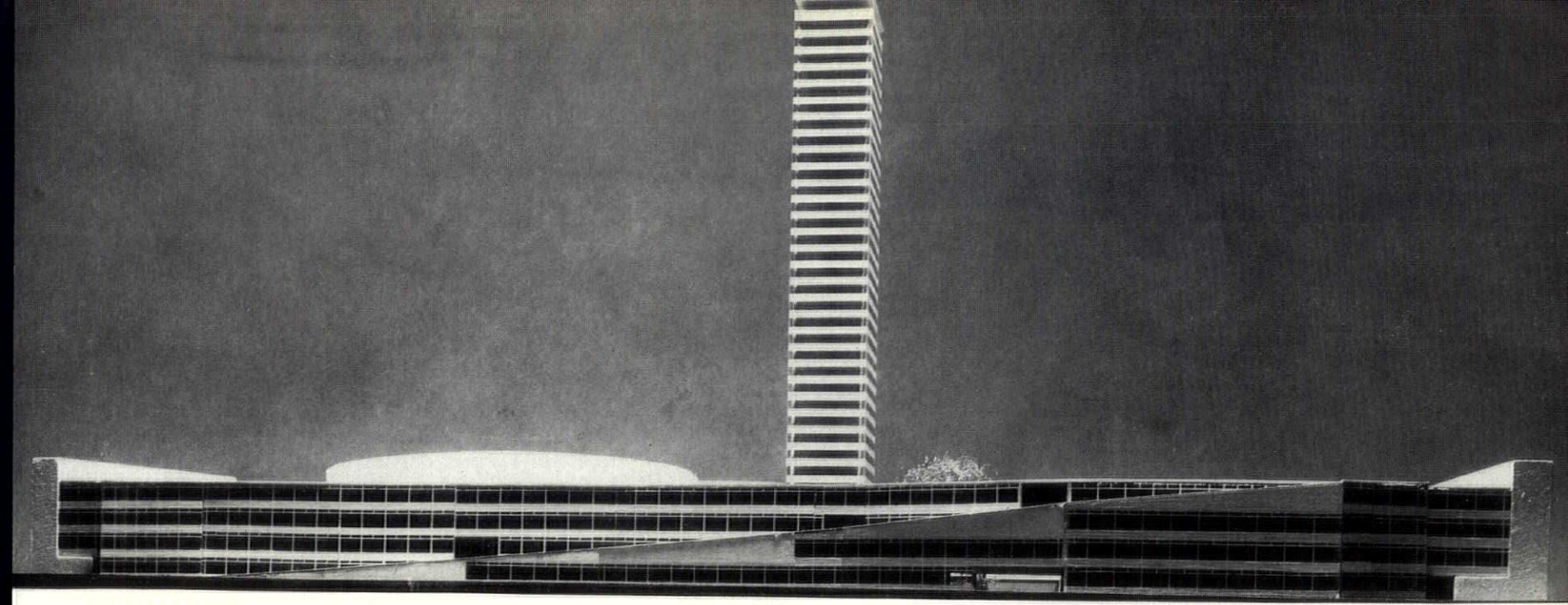
Whicheloe & Macfarlane

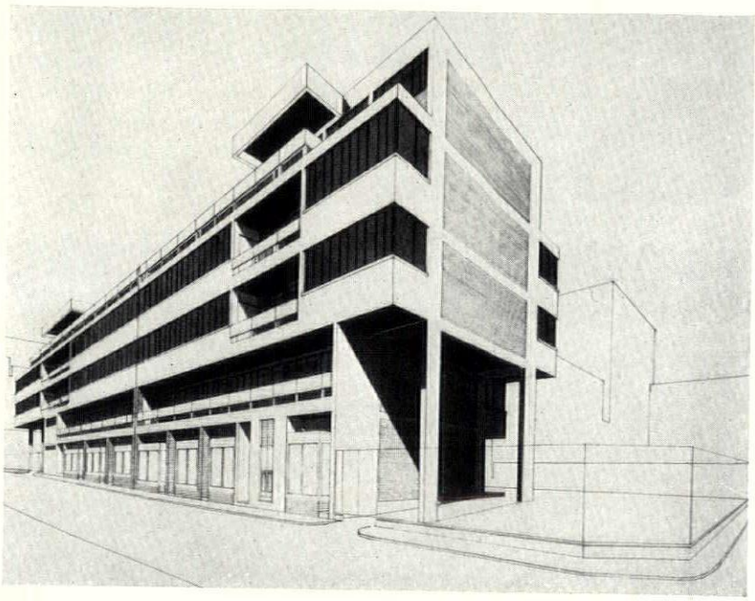
CLIENT: Wakefield & District Water Board.
SITE: 15 acres on Fixby Ridge, foothills of Pennines between Huddersfield and Elland.
ACCOMMODATION: Filter house providing cover for six rapid gravity filters in r.c., main control room and machinery room below. Chemical house with 55 ft. lime silo tower. Administration links chemical and filter houses. Two staff houses.
STRUCTURE AND FINISHES: Chemical and filter houses, in situ r.c. frame with face exposed from rough sawn shutter. Administration, load-bearing exposed granite aggregate blocks, hollow tile roof slabs. Walls fair-faced concrete or brick with rubber paint or plaster. Cladding, anodized aluminium curtain walling or patent glazing.
SERVICES: Water and electricity circuits were dominant design considerations. Heating, electric convectors or floor warming.
COST: Approximately £341,000 total.
SITEWORK: Started March 1962, completion by 1963.
Assistants, John Magrath, John Gilmour. Quantity surveyors, Faithful & Gould. Structural consultants, G. C. Mander & Partners. Plant consultant, Permutit Co. Ltd. Electrical consultants, Yorkshire Electricity Board.



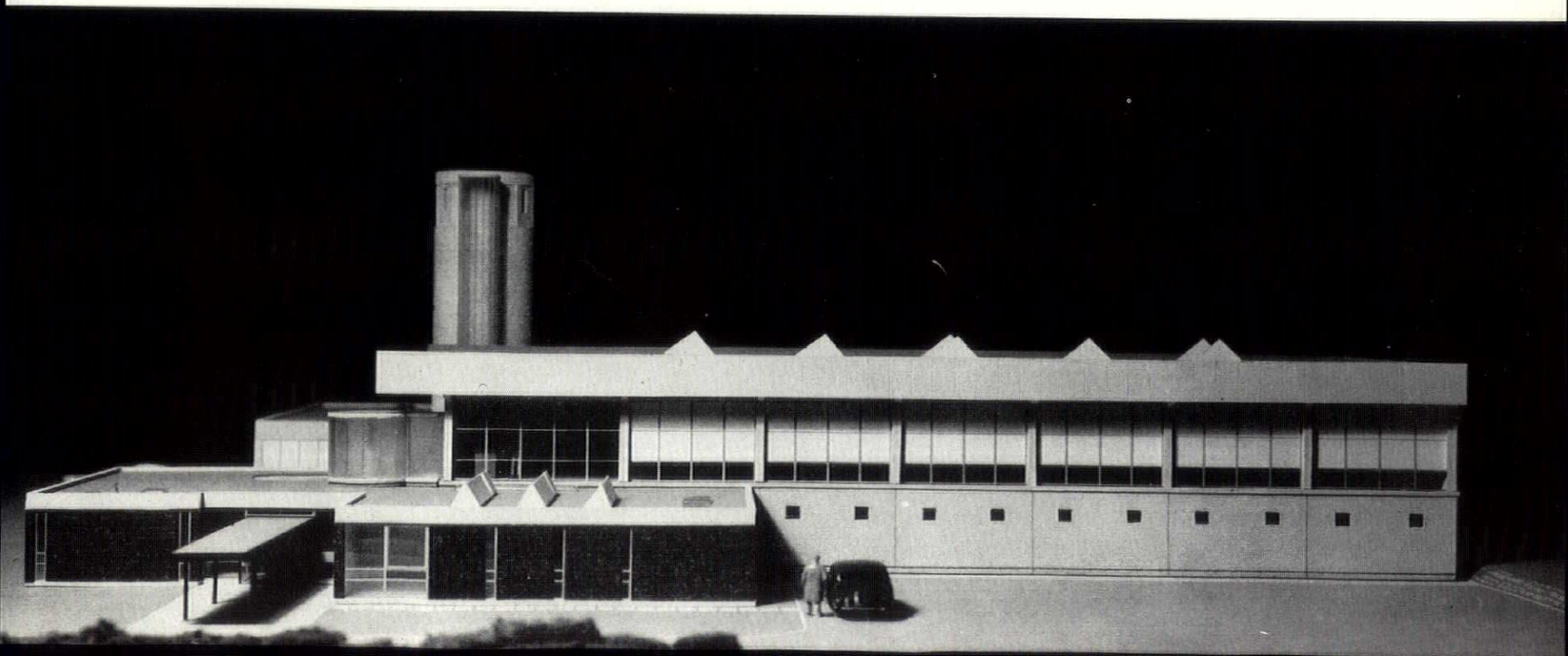


Opposite, view of main building from the south-west with lime silo beyond

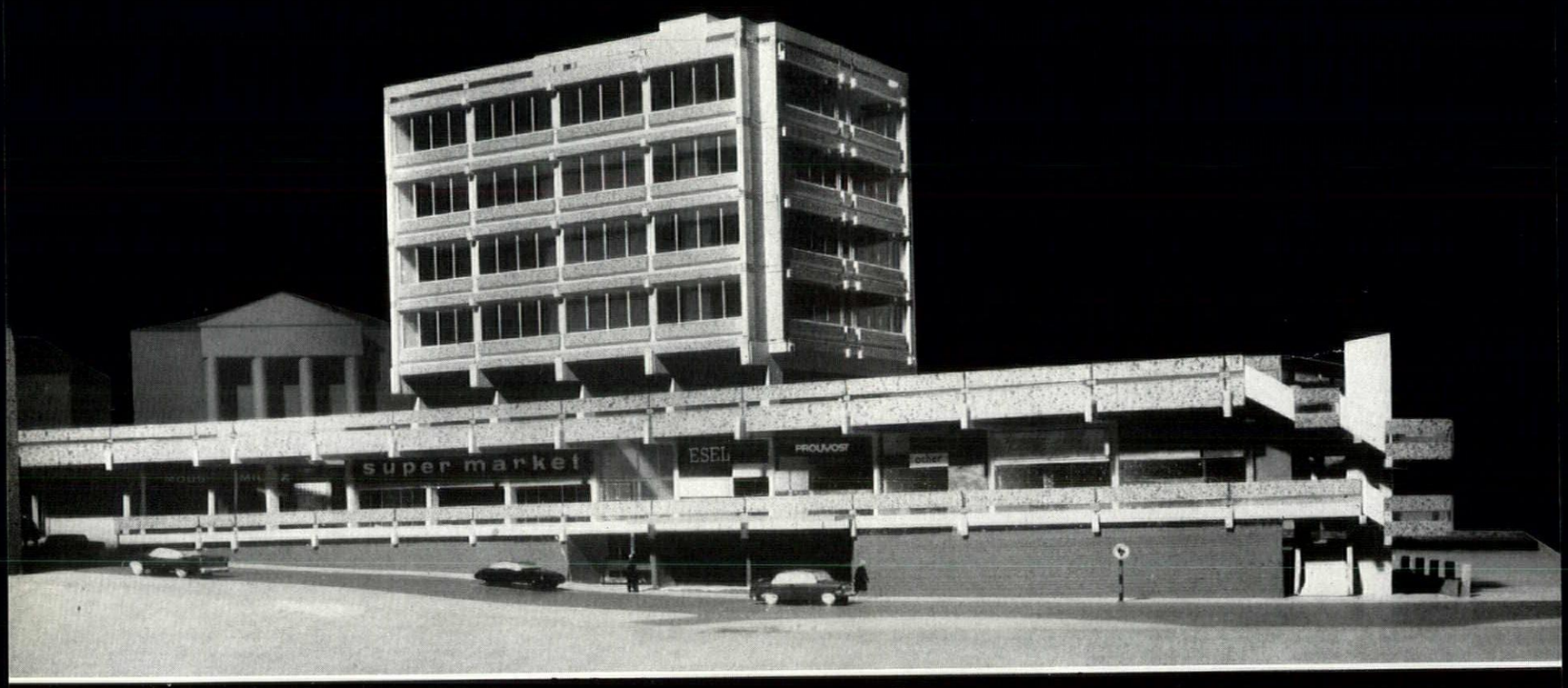




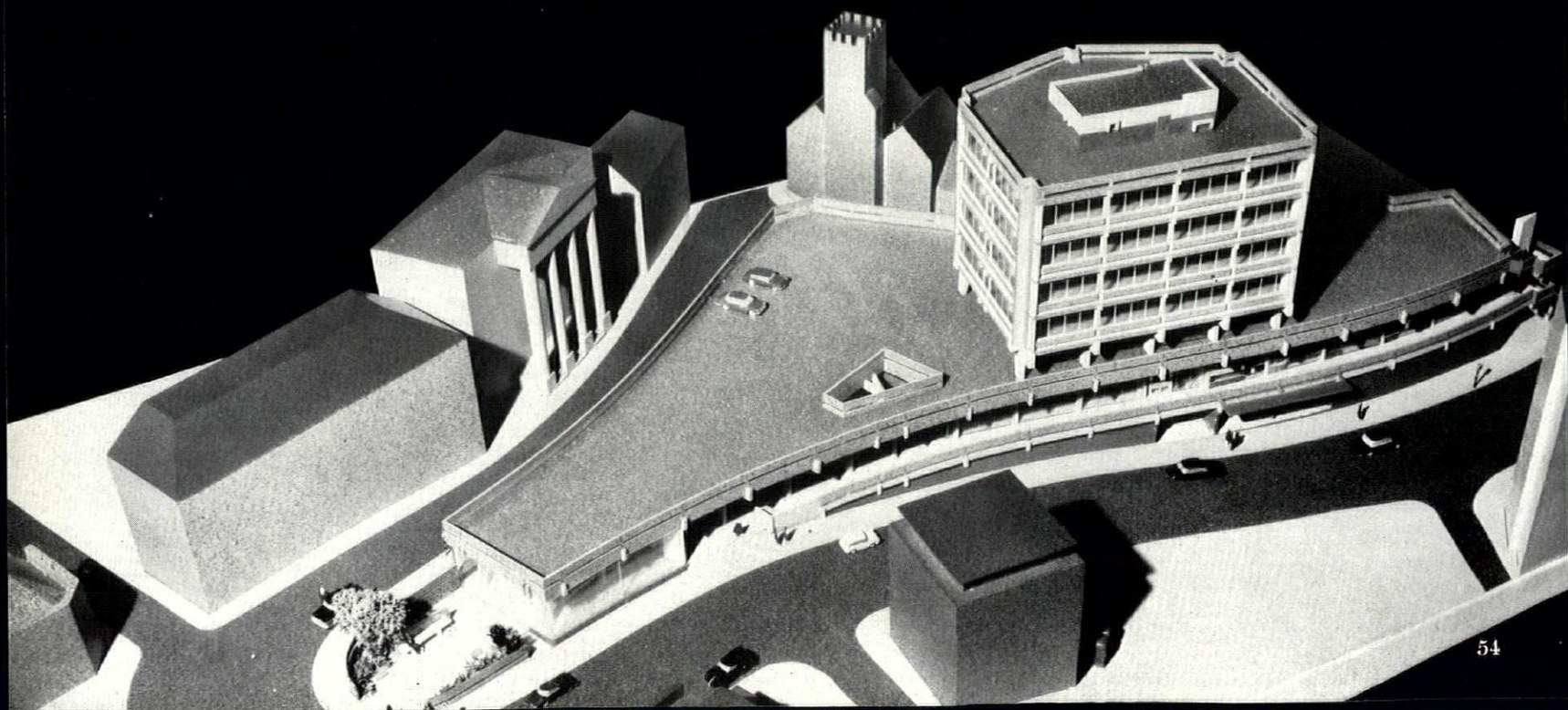
Unit Workshops, Stepney:
left, looking along
Adler Street



COMMERCIAL



Shops and Offices, York: above, looking along Stonebow; below, air-view from the south-west

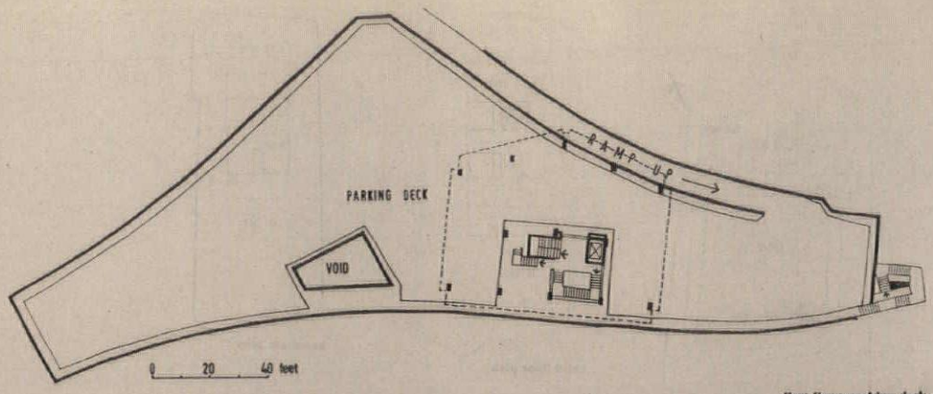


Shops and Offices, York

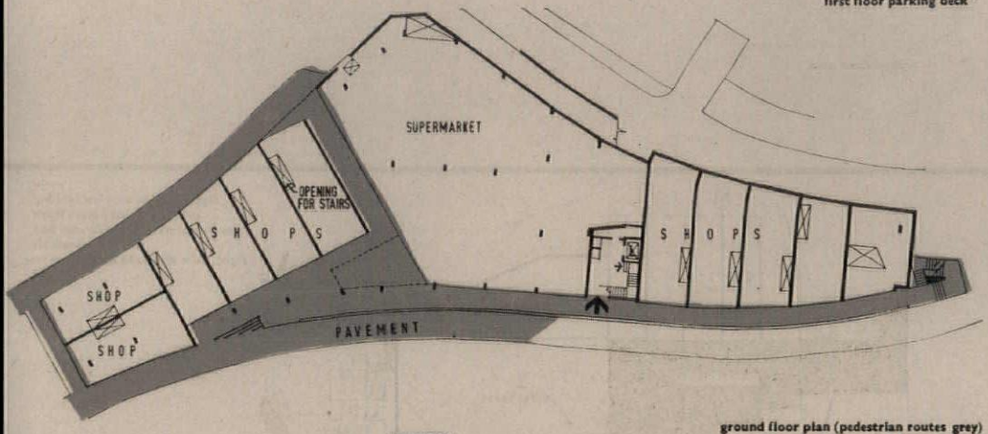
Hartry, Grover & Halter (formerly Wells, Hickman & Partners)

CLIENT: County & District Properties Ltd.
SITE: Island car park in central area, previously occupied by houses. Slope of 15 ft.
ACCOMMODATION: Supermarket and 11 shops with storage/extra sales below having access at basement level. 14,000 sq. ft. office space in four-storey tower. Parking for 100 cars on roof of shops with ramp access. Building arranged to create a central space and to relate it to three churches fronting the site.
STRUCTURE AND FINISHES: Mainly precast r.c. Main beams and columns, fair-faced board finish, remainder aggregate faced. Character to express assembled structure and fit in with the solid but elegant old stone buildings.
SERVICES: Office ceilings to take partitions trunking and/or lighting on every 4 ft. grid line. Rain water disposal; moisture collected wherever it penetrates, rather than careful weatherproofing, and discharged into integral gutters at each floor level feeding down pipes in external columns.
COST: Approximately £200,000.
SITEWORK: Started September 1961, completion by early 1963.

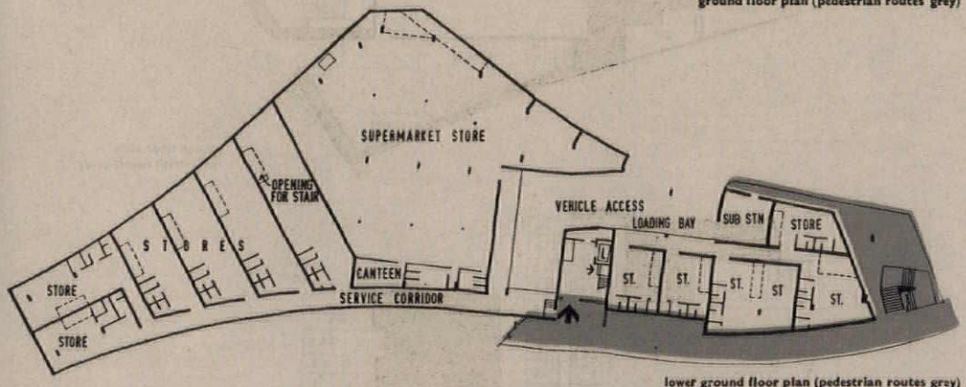
Assistant, M. B. Caroe. Quantity surveyors, Colin Wheeler & Partners. Structural engineer, J. R. Richards of Concrete Services Ltd.



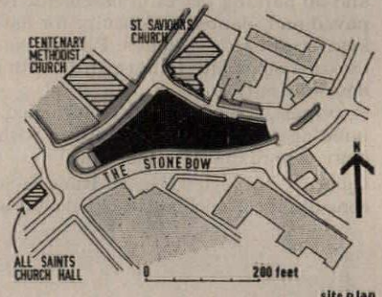
first floor parking deck



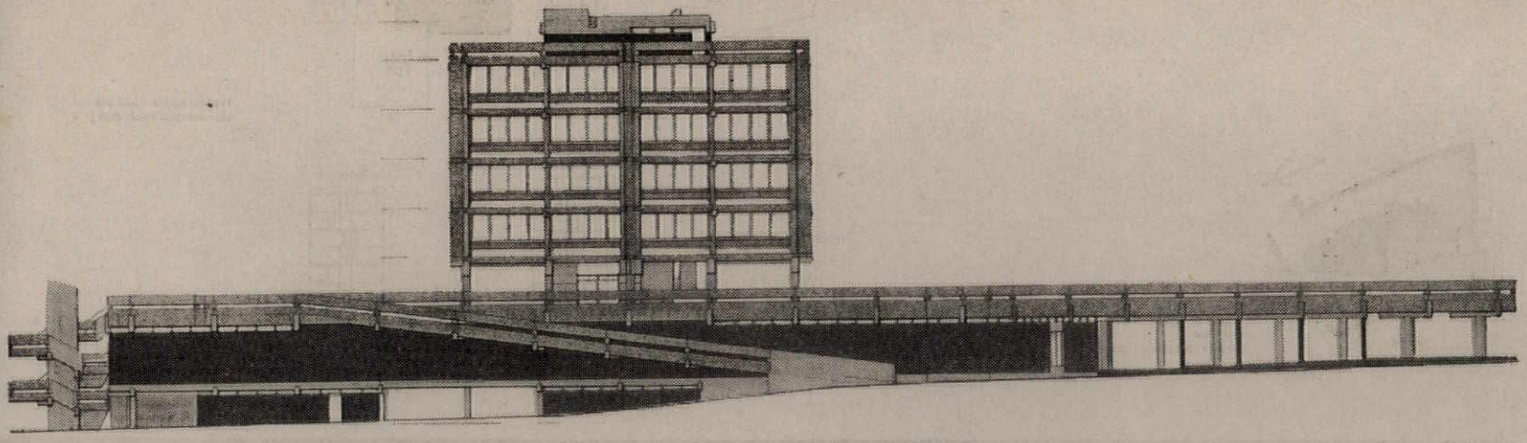
ground floor plan (pedestrian routes grey)



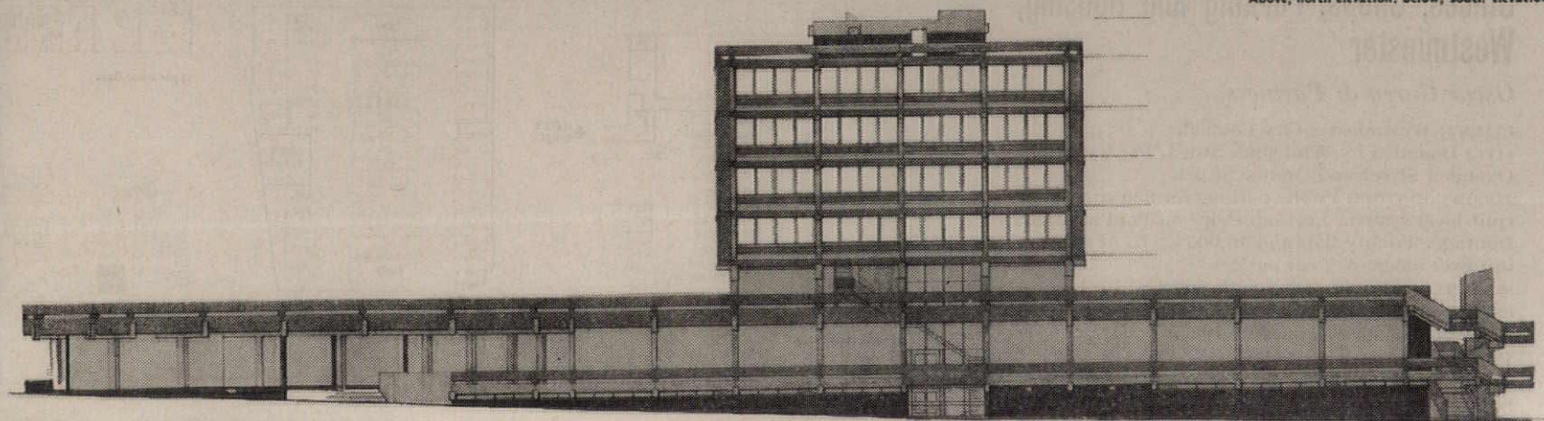
lower ground floor plan (pedestrian routes grey)



site plan



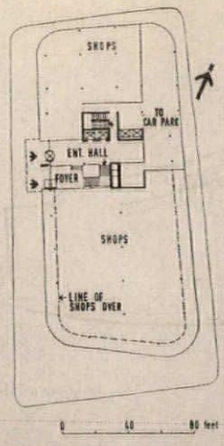
Above, north elevation; below, south elevation



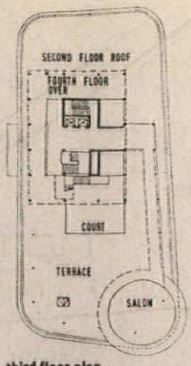
Swiss Centre, Westminster

David du R. Aberdeen & Partners

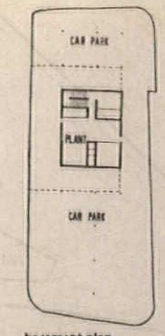
CLIENT: A Swiss Consortium.
SITE: Old Stagg & Russell building off Leicester Square. Bounded by New Coventry Street, Wardour Street, Leicester Street and Lisle Street.
ACCOMMODATION: High quality shops dealing in Swiss commodities. Shops and offices for Swiss travel, air and banking companies. Maximum upper floor office space for various Swiss concerns with international connections. First class Swiss restaurant with exhibition foyers for displays of goods obtainable in the shops. Assembly/entertainment rooms, library and reading room, small private cinema, conference, lecture and dining rooms, cultural exhibition and showrooms, fashion show facilities, etc. Lower floors house shops, exhibition and display areas with a roof terrace/garden over for outdoor displays. Sectionally rotating advertisement mast springs from latter level.
SITEWORK: Started late 1962.



ground floor plan



third floor plan



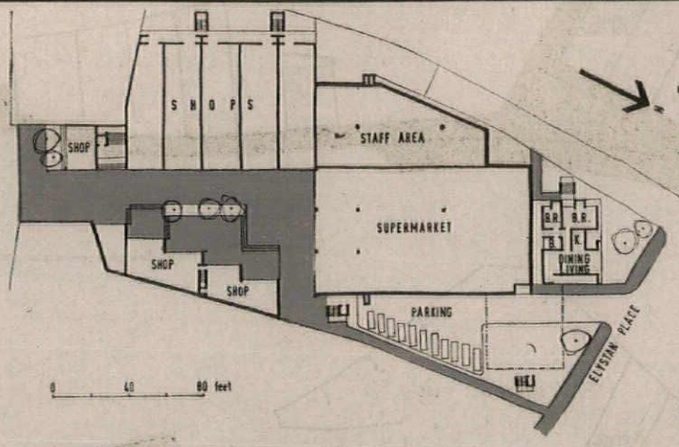
basement plan

Shops and Flats, Chelsea

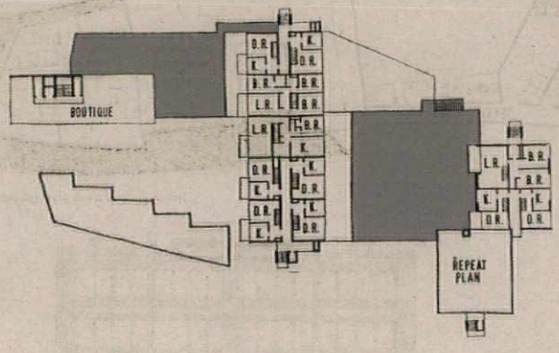
Scott, Brownrigg & Turner

CLIENT: Cheyne Investments Ltd.
SITE: Approximately 1 acre on north-east end of Royal Hospital axis. Land now occupied by works between Kings Road and Elystan Place.
ACCOMMODATION: 35 luxury flats and 4 penthouses. Density just under 136 persons/acre. Large self-service food store, 9 shops arranged around pedestrian piazza which forms a route through the site. Service access and 50 parking places in basement. Roofs of shops paved and planted as amenity for flats.
STRUCTURE AND FINISHES: Precast concrete with exposed aggregate to harmonize with surrounding development.
SERVICES: Food store, air-conditioned. Other buildings, low pressure hot water with convectors.
COST: Approximately £500,000.
Quantity surveyors, Henry Riley & Son. Structural consultants, Kenchington, Little & Partners.

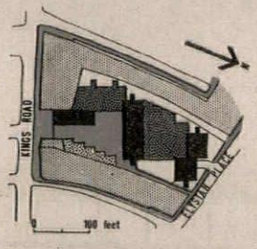
Opposite left, air-view looking into pedestrian piazza from south-east over Royal Avenue and Chelsea Hospital: right, view of piazza with offices to the left



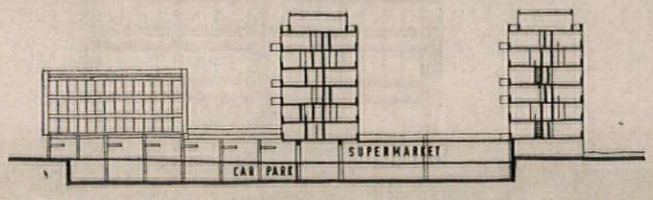
ground floor plan (pedestrian routes grey)



typical upper floor plan (landscaped roofs grey)



site plan (pedestrian routes grey)

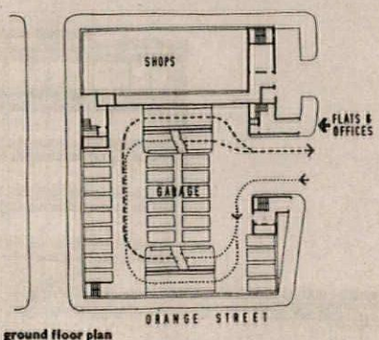


section

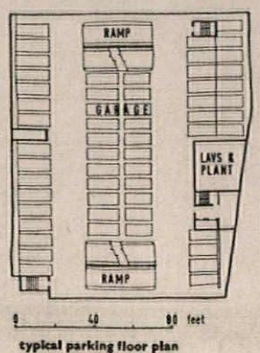
Offices, Shops, Parking and Housing, Westminster

Oscar Garry & Partners

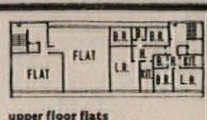
CLIENT: Westminster City Council.
SITE: Bounded by Whitcomb Street, Panton Street, Oxenden Street and Orange Street.
ACCOMMODATION: Public parking for 330 cars on split-level system. Lock-up shops on Panton Street frontage. Twenty flats and 10,000 sq. ft. of office space in tower block over car park.
STRUCTURE: R.c. flat slab with floors and columns expressed on all elevations.
SITEWORK: Expected to start 1963.
Partner in charge, G. J. Hawkins. Quantity surveyors, A. E. Thornton Firkin & Partners. Structural consultants, W. V. Zinn & Associates.



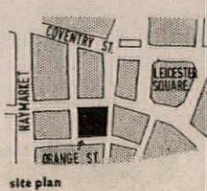
ground floor plan



typical parking floor plan

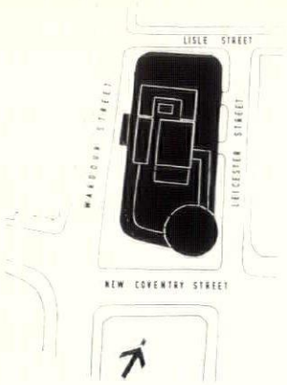


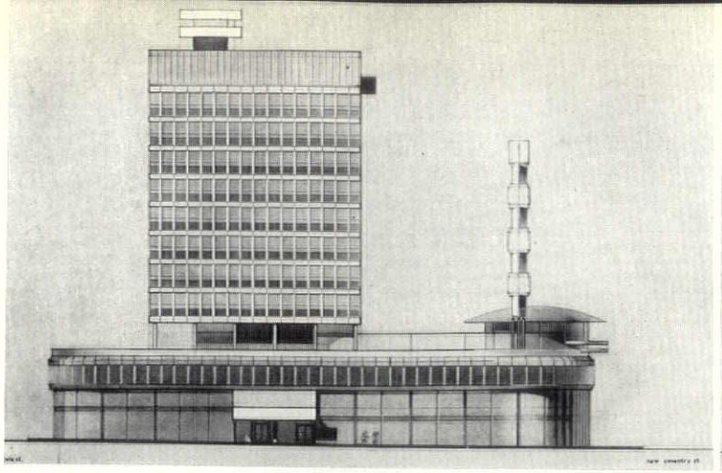
upper floor flats

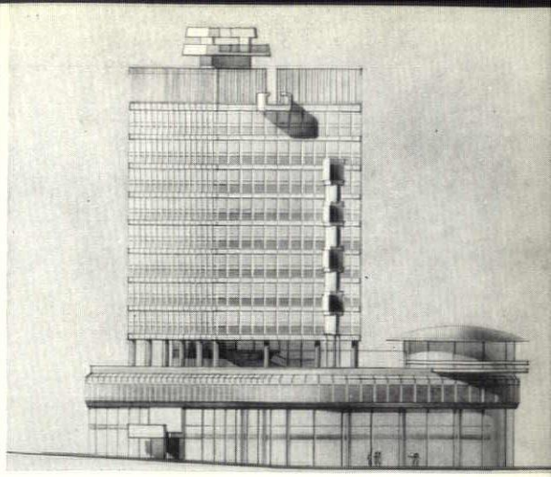


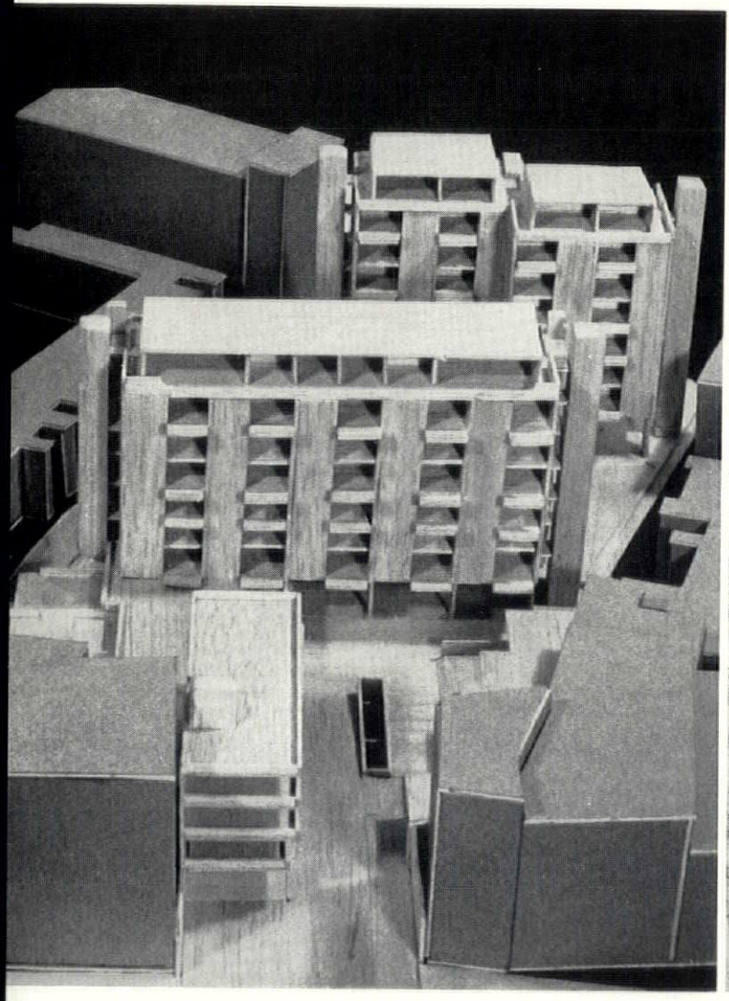
site plan

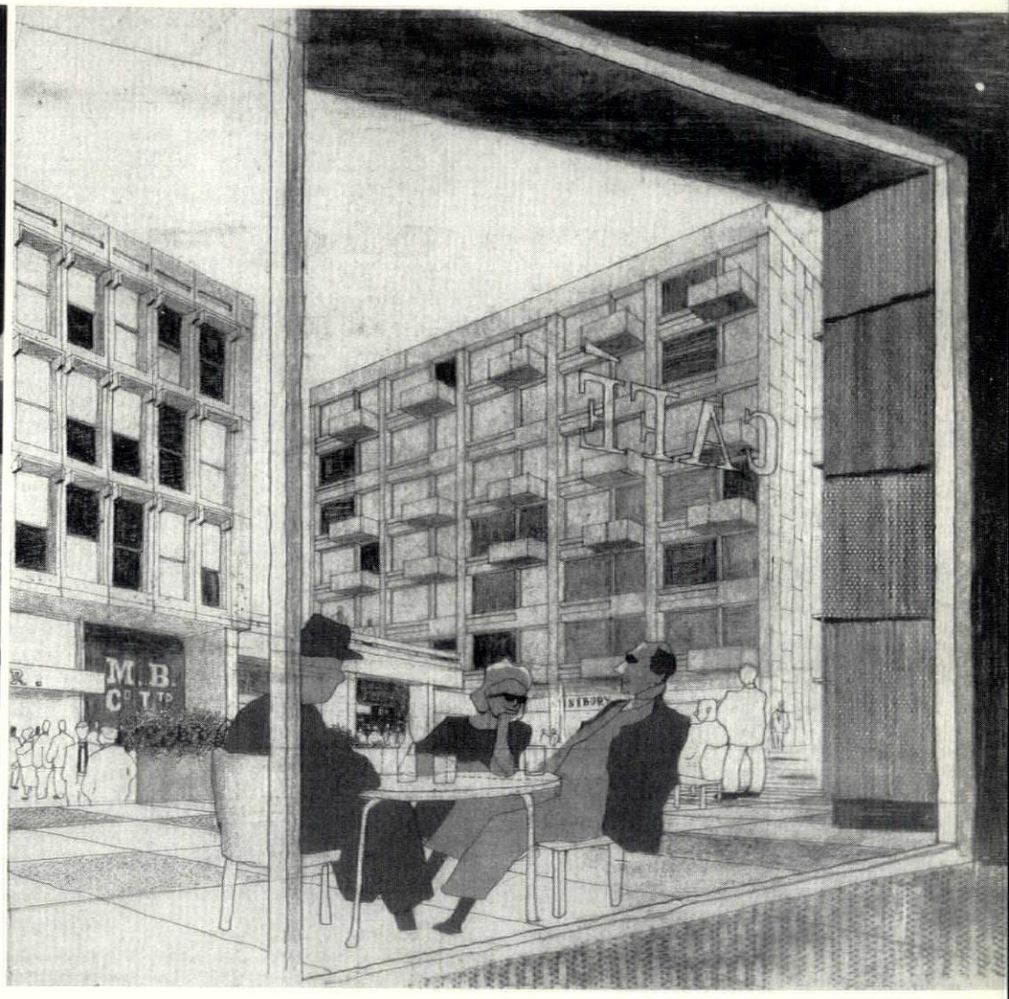
Swiss Centre, Westminster: extreme right, elevation to New Coventry Street: right, elevation to Wardour Street: below, site plan



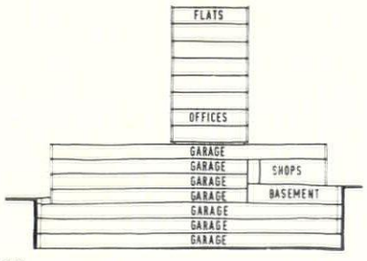




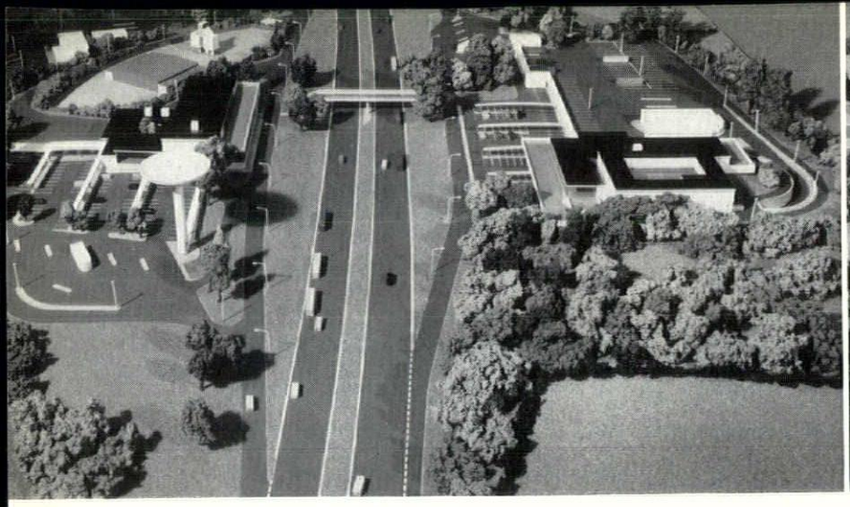


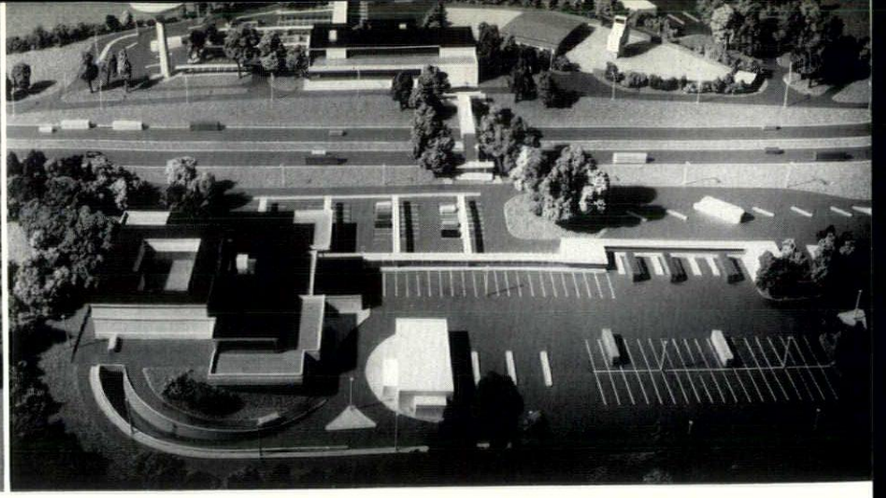


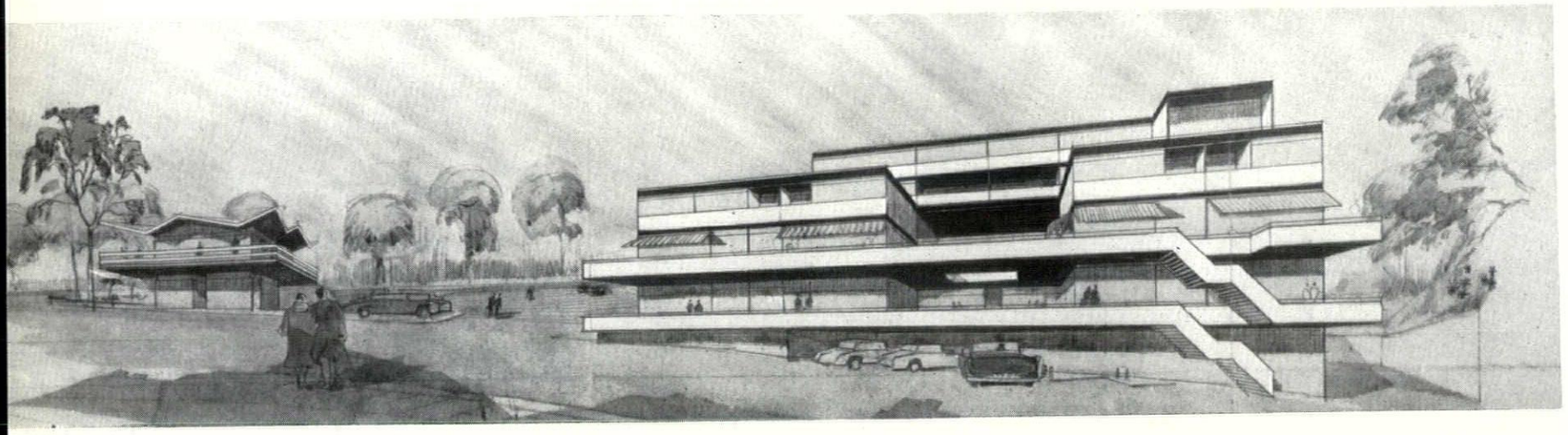
Offices, Shops, Parking and Housing, Westminster: right, looking south-east at the corner of Panton Street and Oxendon Street; below, section

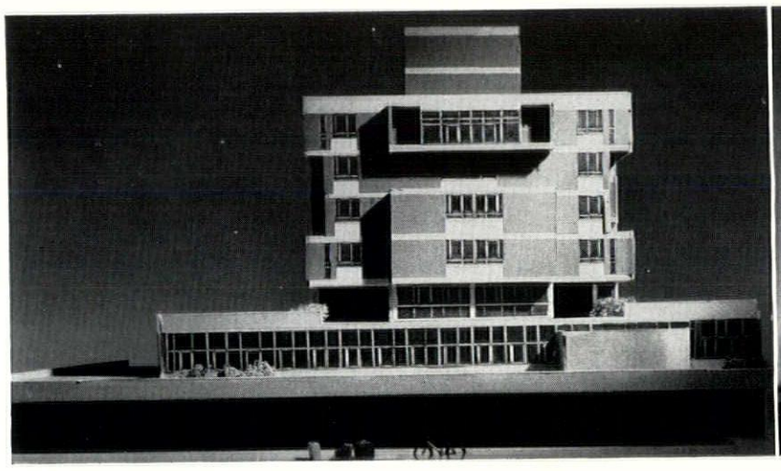




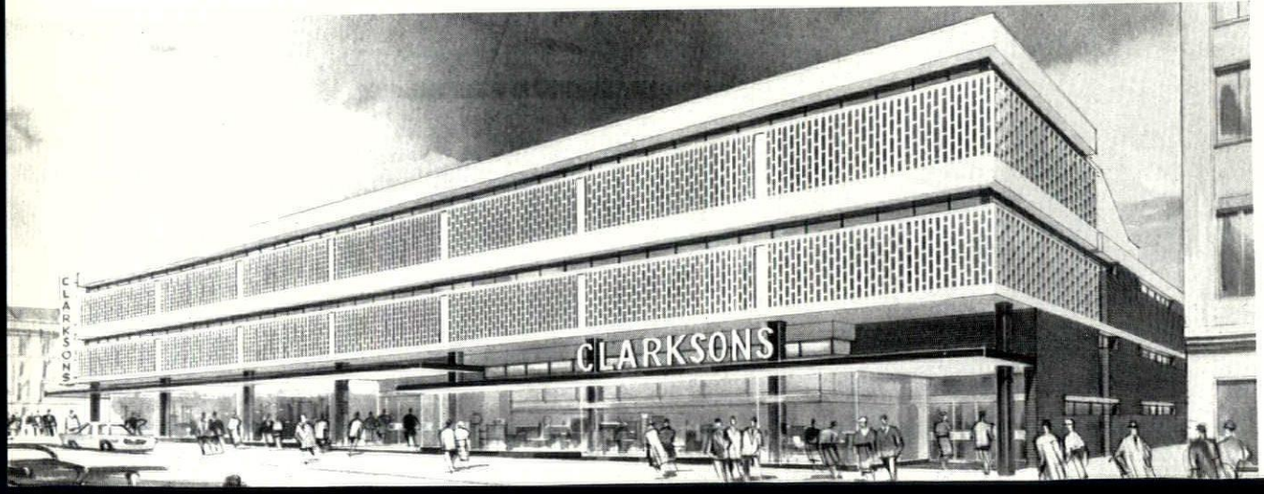










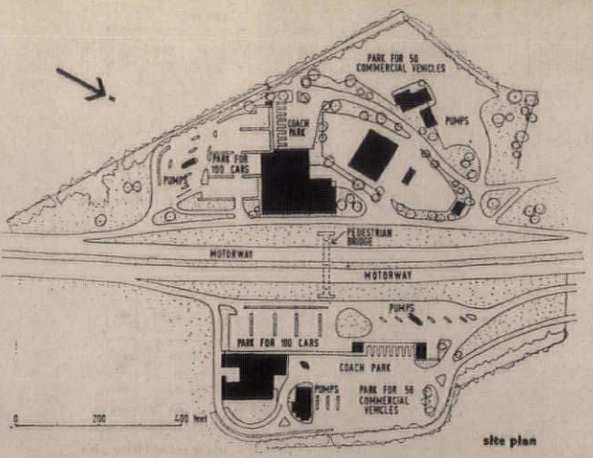


Furn'ture Store, Wolverhampton: left, looking south-west along Snow Hill

Motorway Service Area, Toddington

C. H. Elsom & Partners

CLIENT: Granada Ltd.
SITE: 15 acres on each side of M1 near Toddington. Existing maintenance compound on west side.
ACCOMMODATION: Duplicated on each half. Restaurant, cafeteria, transport and coach café, kitchens, etc. Parking for 100 cars, 60 lorries and 8 coaches, 30 commercial and private petrol pumps.
SERVICES: Air-conditioning to restaurants and cafeterias.
COST: Between £400,000 and £500,000 for buildings.
SITEWORK: Starts January 1963, completion by 1964.
Partner in charge, R. L. Nicholls, Quantity surveyors, Cyril Sweett & Partners. Structural consultants, Ove Arup & Partners. Landscape architect, Ministry of Transport landscape consultant, R. Porter.



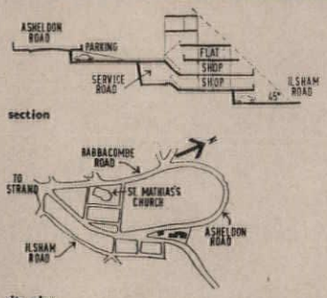
site plan

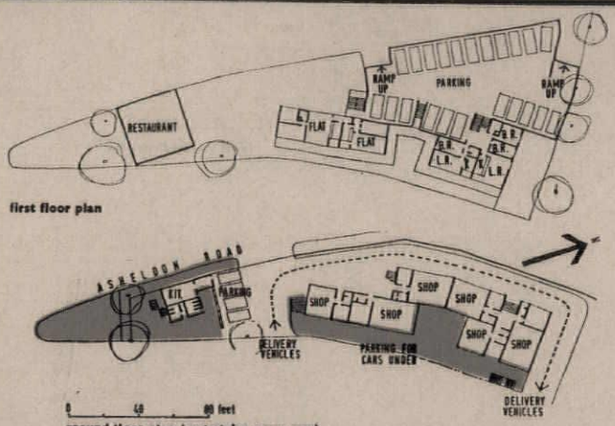
← Opposite left, air-view from the south: right, air-view from the east

Shops and Housing, Torquay

Charles Blake

CLIENT: A public property investment company.
SITE: 1 acre in Wellswood, neighbourhood shopping centre, prestige residential area adjoining well-known beauty spots and summer beaches. At a road junction with varying levels giving steep slopes.
ACCOMMODATION: 12 shops at two levels with private store and rear trades exits, restaurant for 50, three four-bedroom maisonettes, two two-bedroom flats, two one-bedroom flats. Parking for 50 cars.
STRUCTURE AND FINISHES: Precast r.c. frame, lightweight panel infill, textured townscape.
SITEWORK: Starts summer 1963.





← Opposite, view from the east

Hotel, Corby

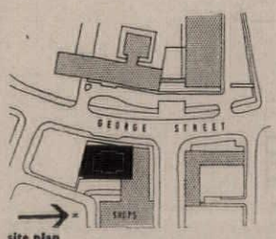
Enrico De Pierro

CLIENT: Scottish Brewers.
SITE: 2/5 acre at junction of Corporation and George Streets. Opposite new Civic Centre.
ACCOMMODATION: 25 single- and double-bedrooms with bath or shower, dining rooms, kitchen, public and private bars, cloakroom, manager's flat and staff rooms.
STRUCTURE AND FINISHES: R.c. frame left fair-faced. Walls; brick facing externally, plaster internally. Windows, wood and metal. Floors tiled or carpeted.
COST: £130,000 unfurnished.
SITEWORK: Starts Spring 1963.
Assistants, Philip Bell, Brian Alexander. Quantity surveyors, D. B. Connal & Partners. Structural consultants, Charles Weiss & Partners.

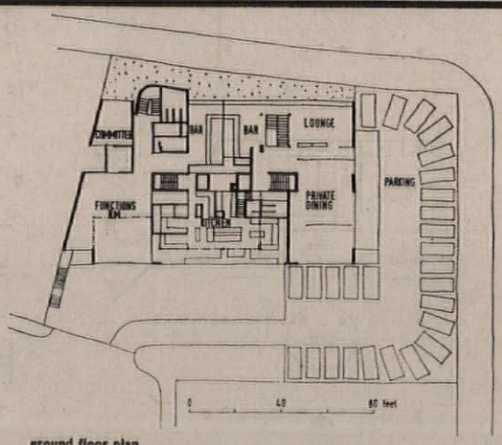
← Opposite left, from George Street: right, from the service yard with ramps up to first floor parking on the right



upper floor plan



site plan

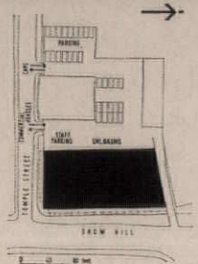


ground floor plan

Furniture Store, Wolverhampton

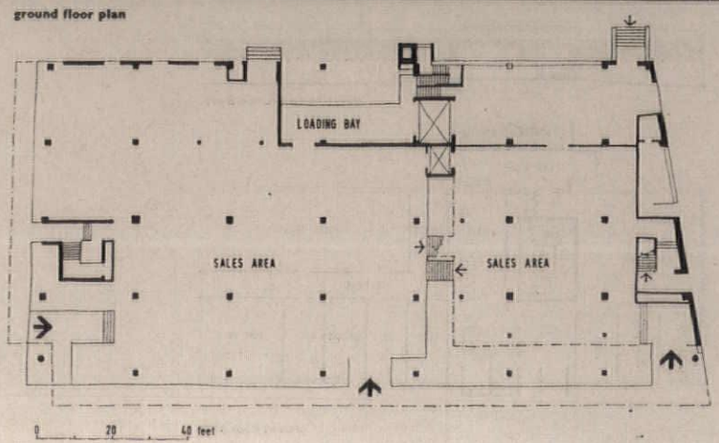
C. H. Elsom & Partners

CLIENT: Thos. Clarkson & Sons Ltd., in association with the Army & Navy Stores Ltd.
ACCOMMODATION: Approximately 42,000 sq. ft. of which 26,000 sq. ft. will be sales space.
STRUCTURE AND FINISHES: R.c. frame. Externally; exposed aggregate string courses and perforated block-work, brick on flank walls, rear elevation dark grey.
COST: Approximately £270,000.
SITEWORK: Started July 1962, Stage 1, completion by July 1963. Stage 2 follows, completion by July 1964.
Partner in charge, A. F. Roberts. Assistant architects, T. de P. Davies, D. A. Curtis. Quantity surveyors, Cyril Sweett & Partners. Structural consultants, Clarke, Nicholls & Marcel. Heating consultants, R. W. Gregory & Partners.



site plan

ground floor plan

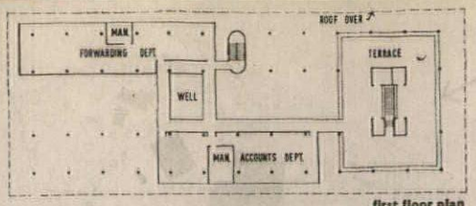


Shipping Offices, Tema, Ghana

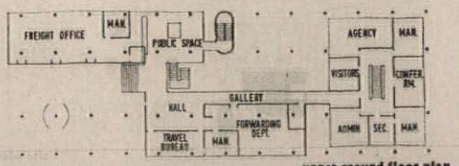
Kenneth Scott & Associates

CLIENT: Palm Line Agencies Ltd.
SITE: 2 acres with slope towards harbour.
ACCOMMODATION: Executive suite, three departments requiring public access and entrance hall on upper ground floor level. Offices and staff recreation with covered terrace on first floor. Staff entrance, toilets, and parking on lower floor.
STRUCTURE AND FINISHES: In situ r.c. frame left exposed from formwork. Plastered and painted coffered floor slabs. Roof, corrugated aluminium on timber sub-frames, open jointed soffit boarding to ventilate roof space. External walls; upper floors reinforced concrete, lower floors rough hewn stone facing. Internal walls concrete block and aluminium framed demountable partitions. Windows, fixed glazing in varnished mahogany frames in air-conditioned areas. East side, vertically fixed aluminium louvres. North and south sides, shaded by 4 ft. structural projections. Floors, vinyl asbestos tiles and terrazzo.
SERVICES: Air-conditioning to executive suite distributed above suspended ceiling.
COST: £82,000.

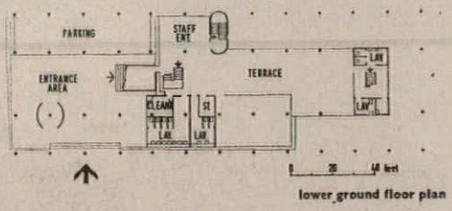
Partner in charge, Michael Willis. Assistants, Cyril Burrell, Michael Coote, Geoff Hackman. Quantity surveyors, Widnell Trollope. Structural consultants, Ove Arup & Partners. Mechanical consultant, Kenneth Stead.



first floor plan

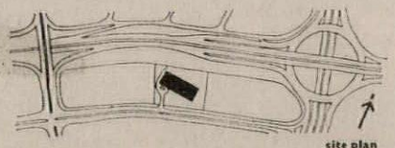


upper ground floor plan



lower ground floor plan

Opposite above, from main road to north-east
Opposite below, from the south

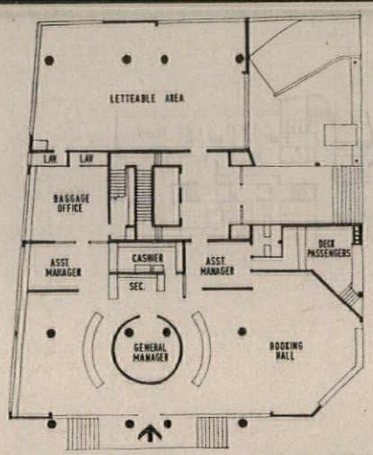

site plan

Shipping Offices, Lagos

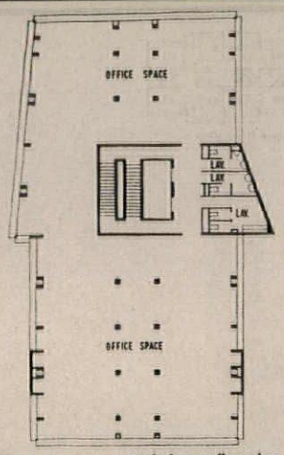
James Cubitt & Partners

CLIENT: Elder Dempster Agencies Ltd.
SITE: Restricted. Extremely bad soil. Faces main harbour lagoon.
ACCOMMODATION: Booking hall and offices on ground and first floors. Upper floors, lettable office space.
STRUCTURE AND FINISHES: Foundation, cellular raft 17 ft. below ground containing water tanks and sewage disposal plant. Upper floor; glazed walls, steel fixed louvres with colours forming giant geometric abstractions on elevations.
SERVICES: Fully air-conditioned. Air handling equipment and cooling towers on roof.

Quantity surveyor, W. J. F. Tillyard. Structural consultants, Ove Arup & Partners. Mechanical consultants, J. Roger Preston & Partners.



ground floor plan



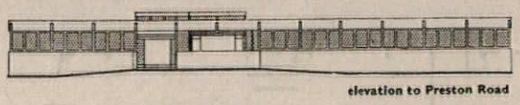
typical upper floor plan

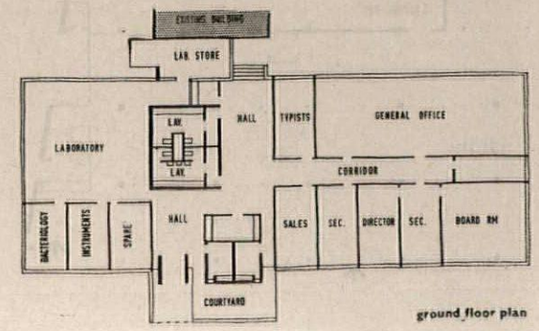
Offices, Lytham, Lancashire

William Cowburn & Partners

CLIENT: W. C. Evans (Eccles) Ltd.
SITE: On main Lytham to Preston Road.
ACCOMMODATION: Divided into three groups; entrance hall, laboratory area, office space. Planned on 3 ft. 4 in. grid for flexibility of partitioning.
STRUCTURE AND FINISHES: Laminated timber beams on steel box columns. Stressed plywood roof planks. Bituminous felt covering. Concrete floor. Windows, top hung pre-glazed aluminium.
SERVICES: Low pressure hot water heating.
COST: £25,000.
SITEWORK: Starts January 1963.

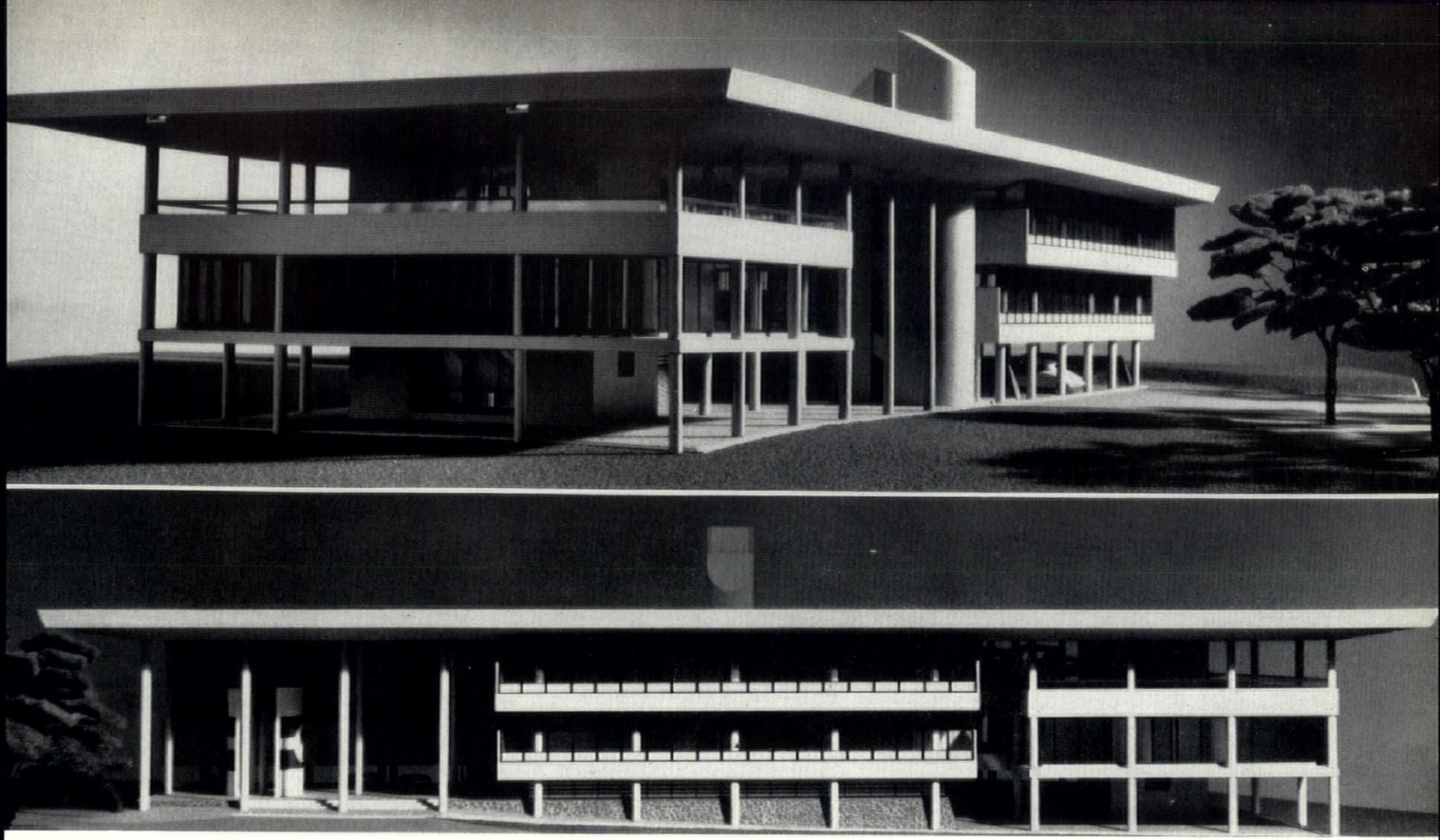
Partner in charge, William Cowburn. Quantity surveyor, T. Lucas. Structural consultants, Helena-Ericson Ltd.

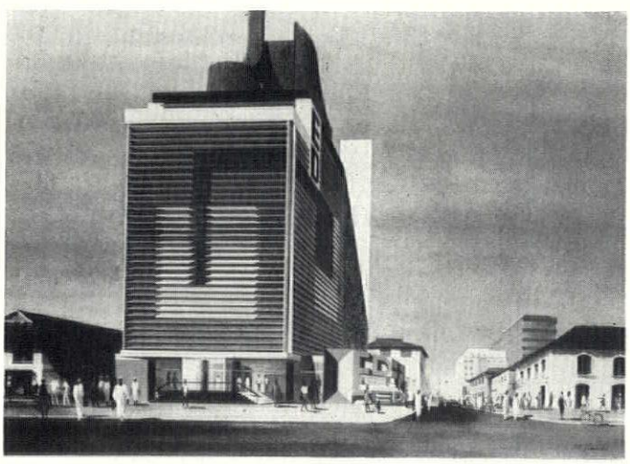

elevation to Preston Road



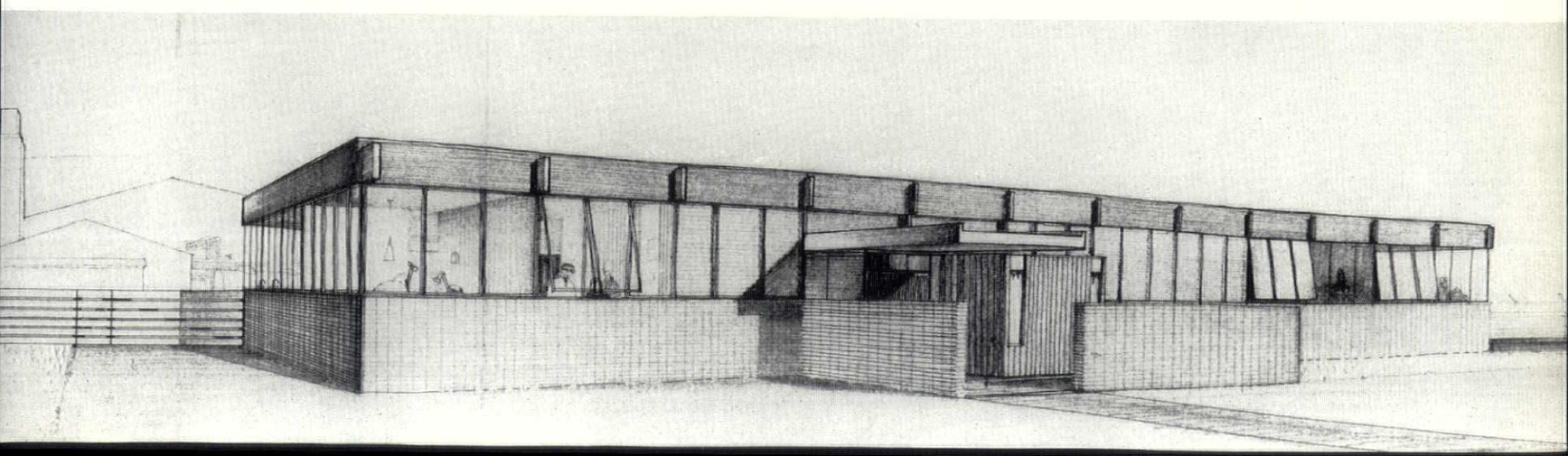
ground floor plan

Opposite, from the north showing main entrance facing on to Preston Road with existing factory beyond



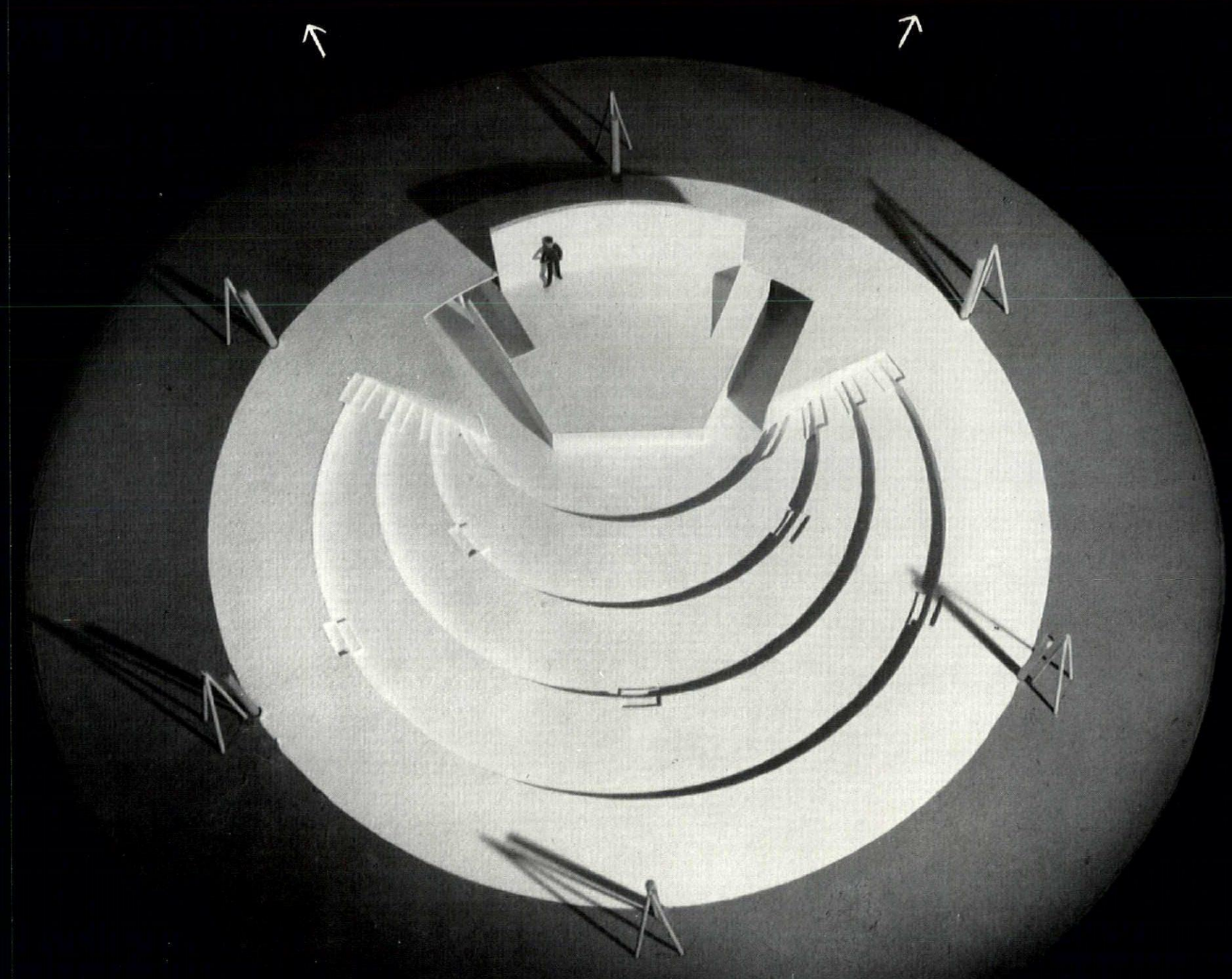


Shipping Offices, Lagos: left, main entrance side facing on to Marina



PUBLIC

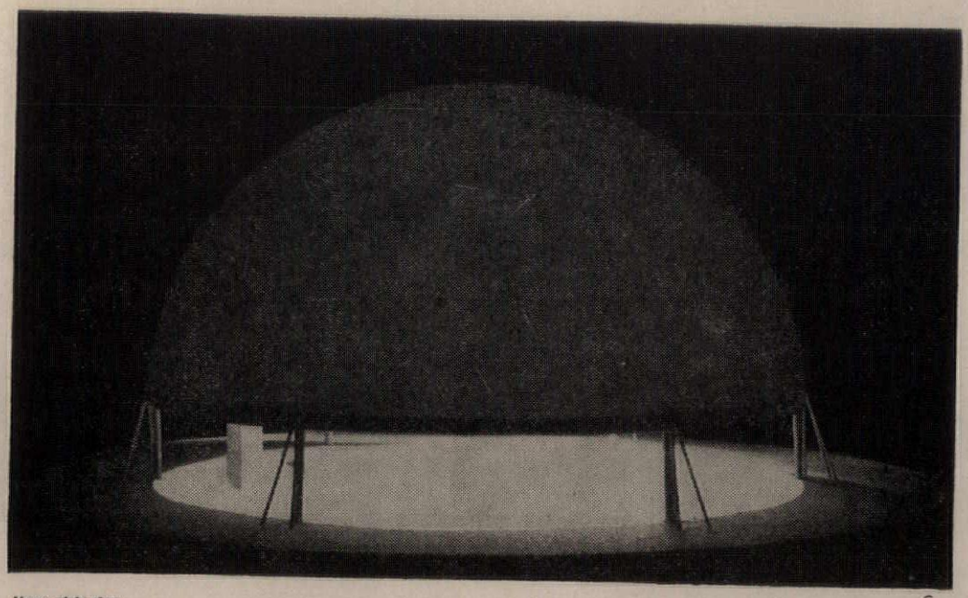
Auditorium, Bath: air-view of concrete base showing the six jack positions around the periphery and the stage at the top of the picture with fire escape routes on each side



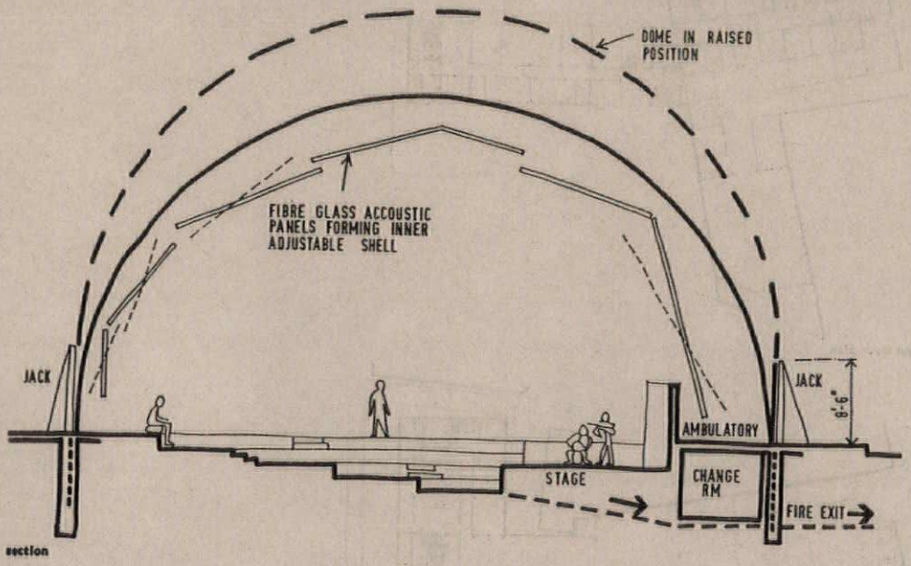
Auditorium, Claverton, near Bath

Cedric Price

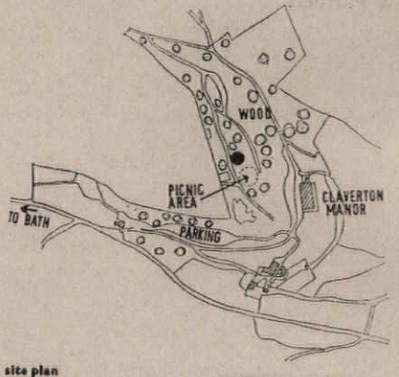
CLIENT: American Museum in Britain.
SITE: Thickly wooded area, mainly beech and yew trees, on brow of steep hill 100 yards from and above entrance side of Claverton Manor. A track leads to public car park and this will be used for delivery of instruments, screens, exhibits, etc.
ACCOMMODATION: For chamber music, recitals and lectures, also for exhibitions. Open air picnic area adjacent. Auditorium may be approached from any direction, with perimeter ambulatory giving access to the seating or exhibition area. Emergency exits are positioned each side of stage leading directly out through the hillside.
STRUCTURE AND FINISHES: Hemispherical radome (Buckminster Fuller design) in resin bonded structural fibre glass panels. Supported by six hydraulic jacks which lift it to a height of 8 ft. 6 in. for public access and when exhibits are displayed. During concerts or lectures, the dome is lowered to ground level and raised only at the end of the performance. Adjustable fibreglass acoustic panels, some perforated, are suspended from the dome and may be set from the control board. Folding cushion seats which clip over the concrete steps are provided for each performance. Entire superstructure can be dismantled and re-erected elsewhere.
Quantity surveyors, Douglas Smith & Ruddle. Structural consultant, Frank Newby of Felix J. Samuely & Partners. Acoustics consultants, Associated Architects & Consultants.



Above, night view

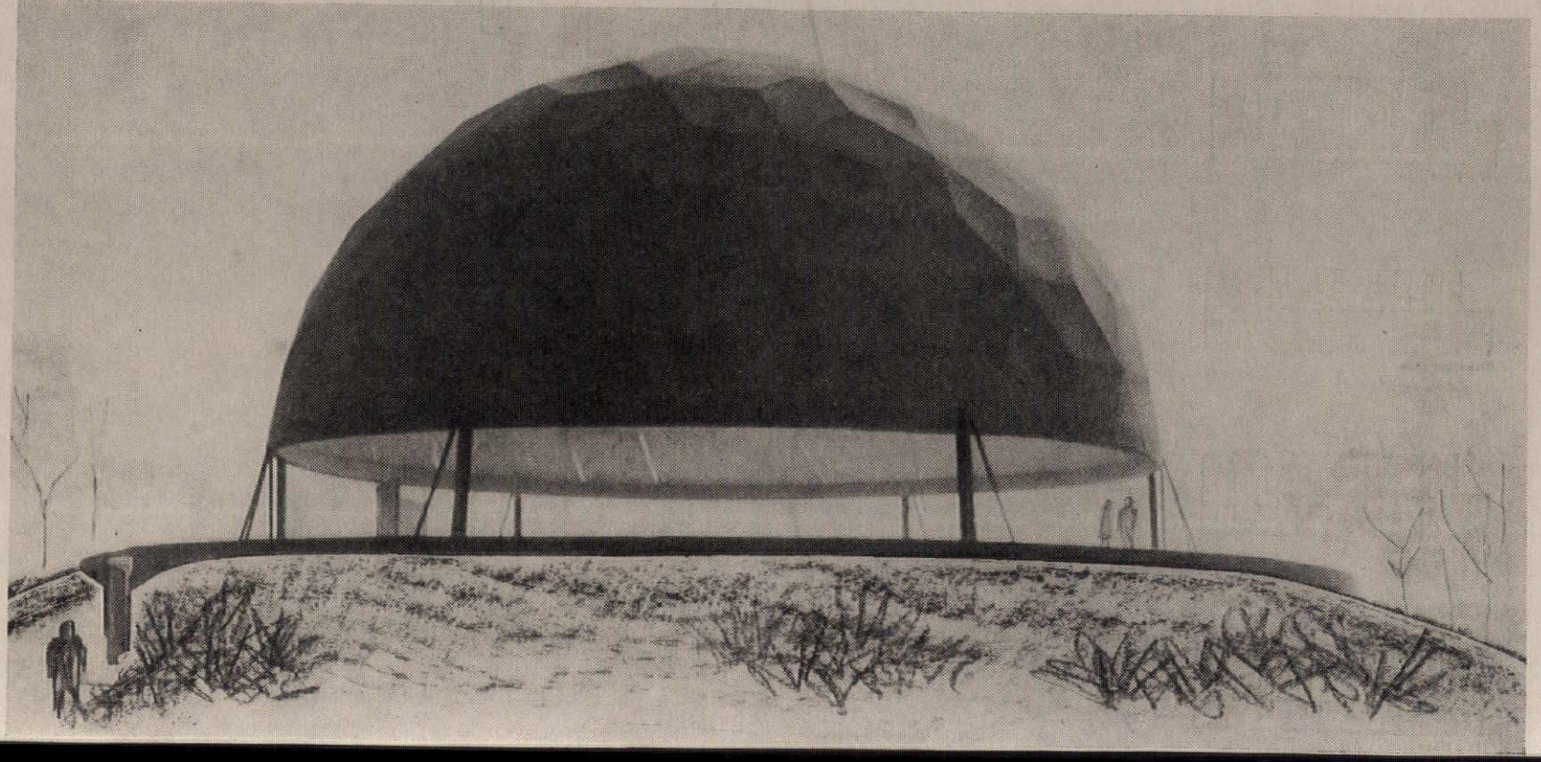


section



site plan

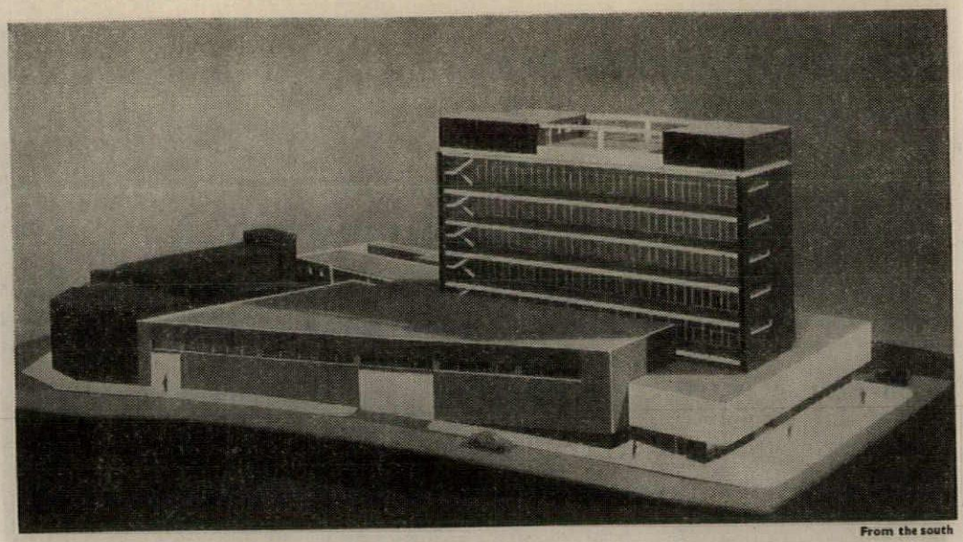
Below, the dome in the raised position with the fire exit emerging on the left



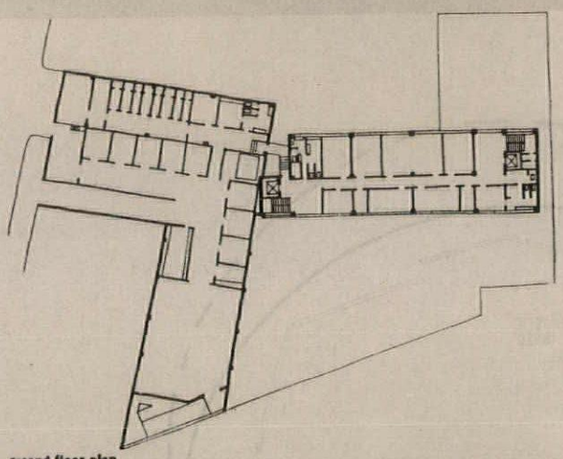
Divisional Police Headquarters, Sheffield

J. L. Womersley, City Architect

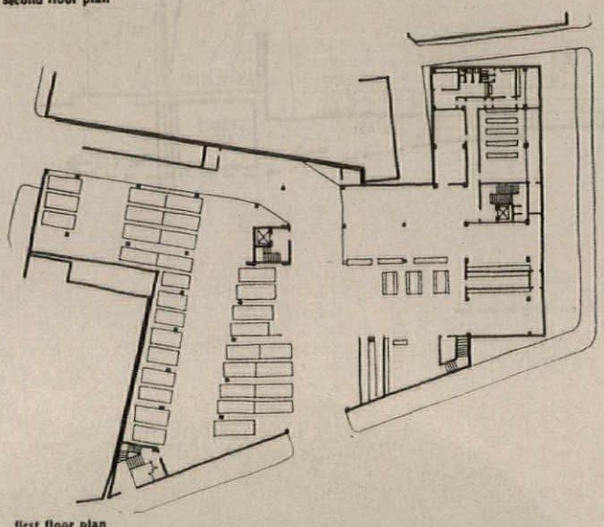
CLIENT: City of Sheffield Watch Committee.
SITE: 0.9 acre at West Bar Green close to city centre. 15 ft. slope from north to south-east. Area scheduled for redevelopment.
ACCOMMODATION: Semi-basement private parking. Police vehicle car park, with one-way circulation for rapid egress, and workshops over, both entered from road level. Police horses and dogs on mezzanine reached by easy ramp from road. Tower contains offices, recreation, lecture rooms and has top floor with heating chamber, tank rooms and roof garden.
STRUCTURE AND FINISHES: Lower floors, r.c. tower, steel framed with prestressed precast floors and roof, aluminium curtain walling, blue brick end walls, marble and mosaic to remainder. Demountable partitions for flexibility of office floors.
SERVICES: Heated suspended ceilings in tower and public parts. Remainder has radiant panels. Mechanical ventilation to parking areas. Oil-fired boiler.
COST: £400,000.
SITEWORK: Started November 1962, completion by November 1964.
Deputy city architect, W. L. Clunie. Assistant city architect, A. J. Groves. Project architect, A. Ibrahim. Assistant architects, J. M. Sowerby, A. J. Strong. Chief quantity surveyor, A. W. Lancaster. Assistant quantity surveyor, K. Walker. Chief structural engineer, H. G. Newbold. Structural engineer, V. D. Dixon. Mechanical and electrical consultants, Ian Hunter & Partners.



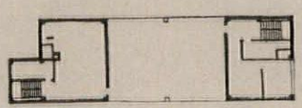
From the south



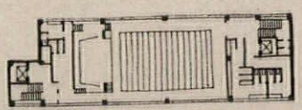
second floor plan



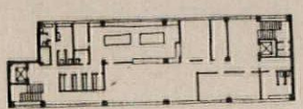
first floor plan



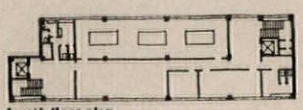
seventh floor plan



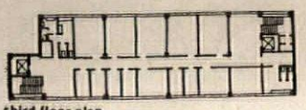
sixth floor plan



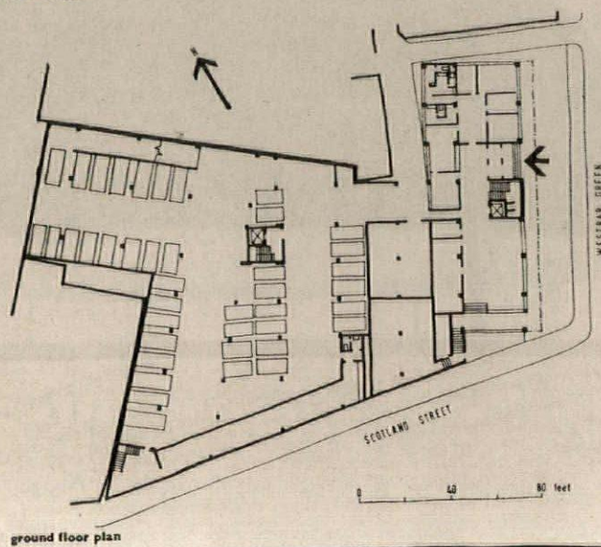
fifth floor plan



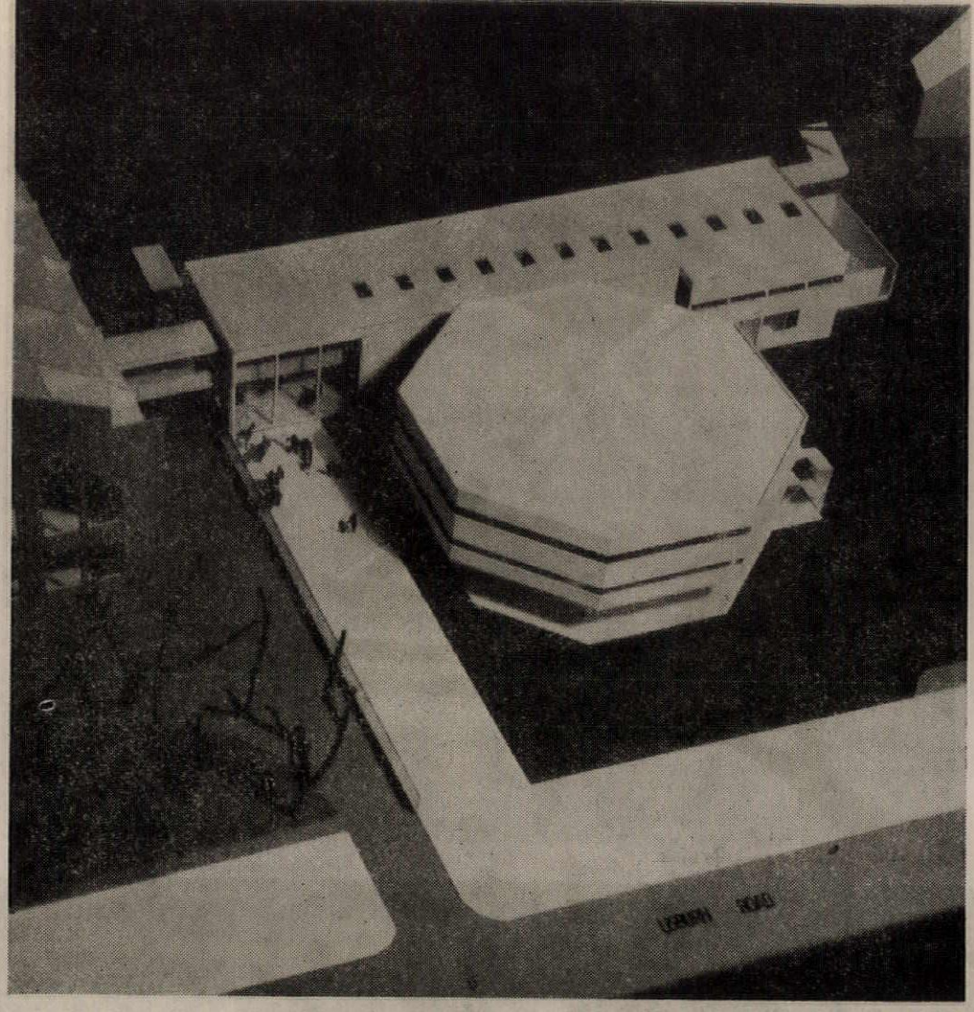
fourth floor plan



third floor plan



ground floor plan

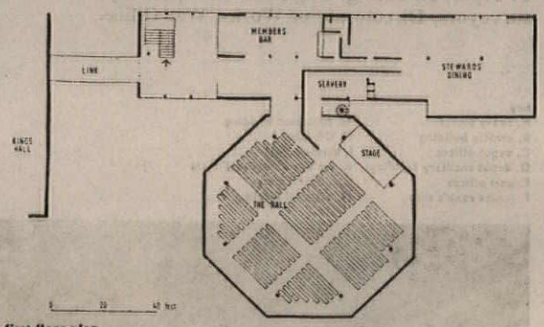


Society Rooms, Belfast

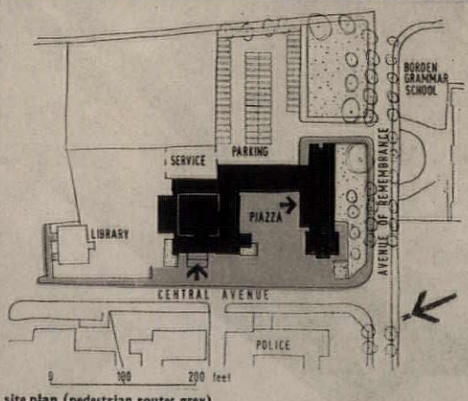
R. Ferguson & S. McIlveen

CLIENT: Royal Ulster Agricultural Society.
SITE: Existing car park beside King's Hall, built 1934. 2/3 acre on principal route into Belfast from south.
ACCOMMODATION: 16,000 sq. ft. for members, principally at annual May show. Hall seats 450 for dining, 650 for recitals, lectures, etc., and will be used for exhibitions. Linked to King's Hall at first floor for use in conjunction with gallery of latter.
STRUCTURE AND FINISHES: R.c. frame exposed and part rendered. Roof and hall floor coffered. R.c. bridge link running through entrance hall. External facings; grey brick, coloured asbestos. Internally, largely timber.
SERVICES: Heating, electrical. Mechanical ventilation to hall.
SITEWORK: Starts June 1963.
Partner in charge, Hugh McIlveen. Quantity surveyors, McCarthy & Lilburn. Mechanical and electrical consultant, J. R. W. Murland.

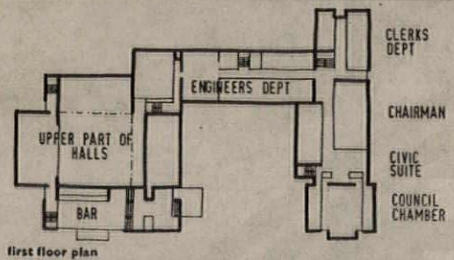
Left, air-view with the hall in foreground and King's Hall left



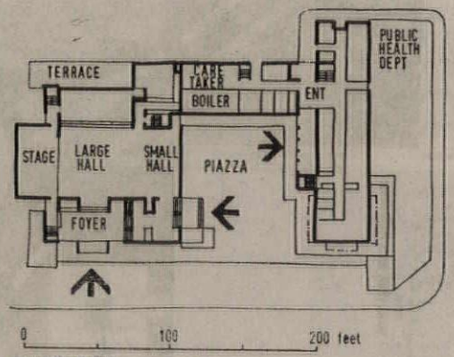
first floor plan



site plan (pedestrian routes grey)



first floor plan



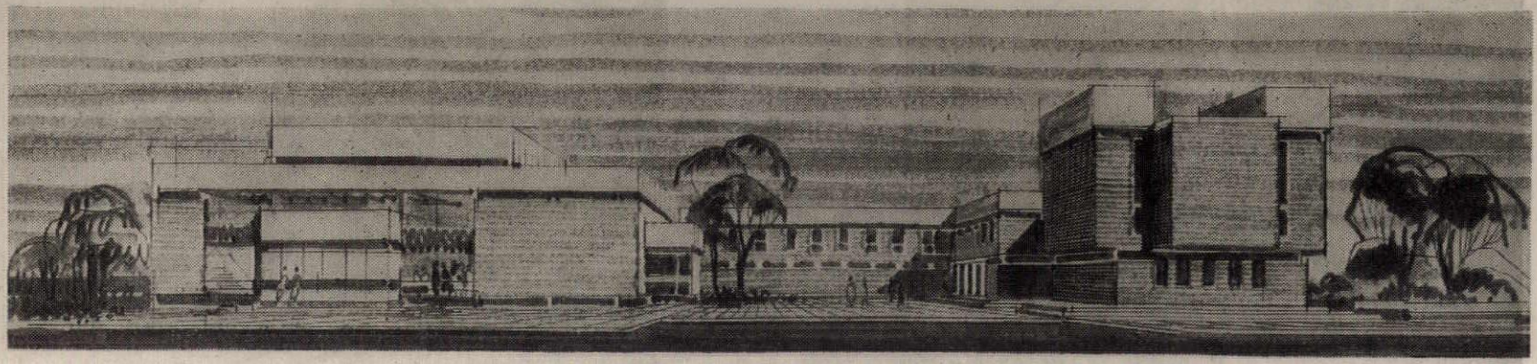
ground floor plan

Civic Centre, Sittingbourne

Clifford Culpin & Partners

CLIENT: Sittingbourne and Milton Urban District Council.
SITE: Approximately 2¼ acres. Central position just off High Street, south of main shopping area. Adjacent Library, Post Office and Inland Revenue offices already built.
ACCOMMODATION: Offices on two floors, civic suite with chamber for 24 members, two halls with larger one seating 275 for banquets. Parking for 60 cars.
STRUCTURE AND FINISHES: Load-bearing brickwork, concrete slab floors. Halls and chamber r.c. frame. Portland stone fascia and quartzite facings.
COST: £260,000.
SITEWORK: Starts 1963, completion by 1965.
Quantity surveyors, Dearle & Henderson.

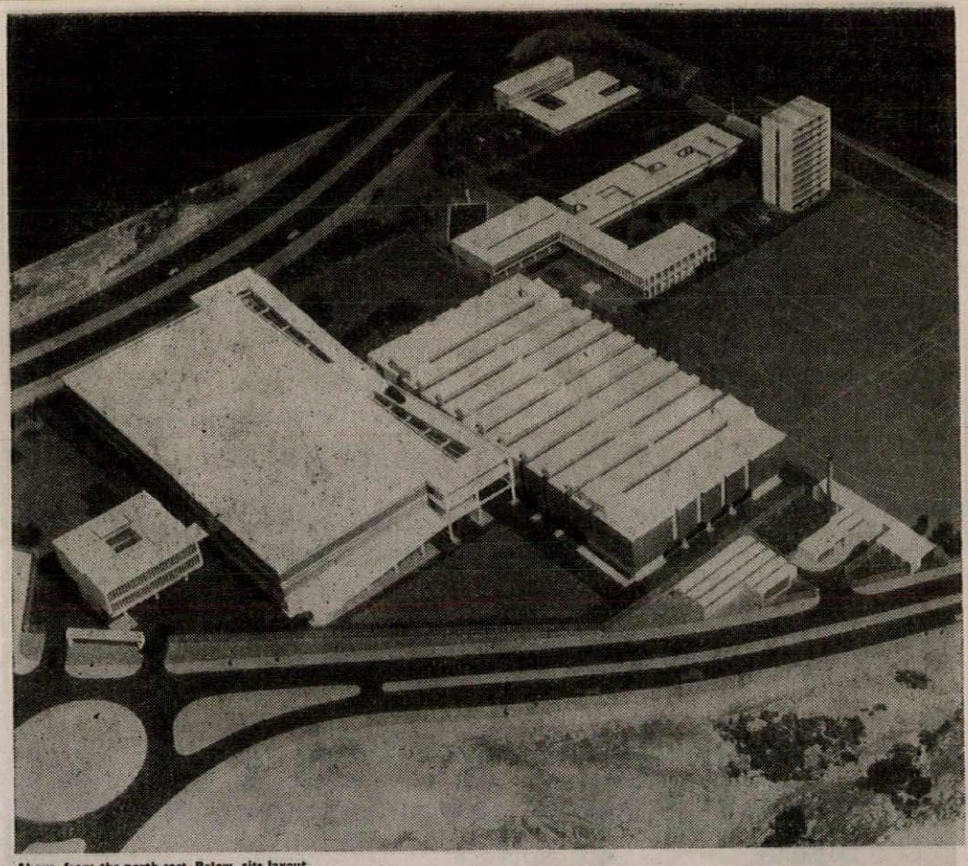
Below, from Central Avenue



Composite Ordnance Depot, Hong Kong

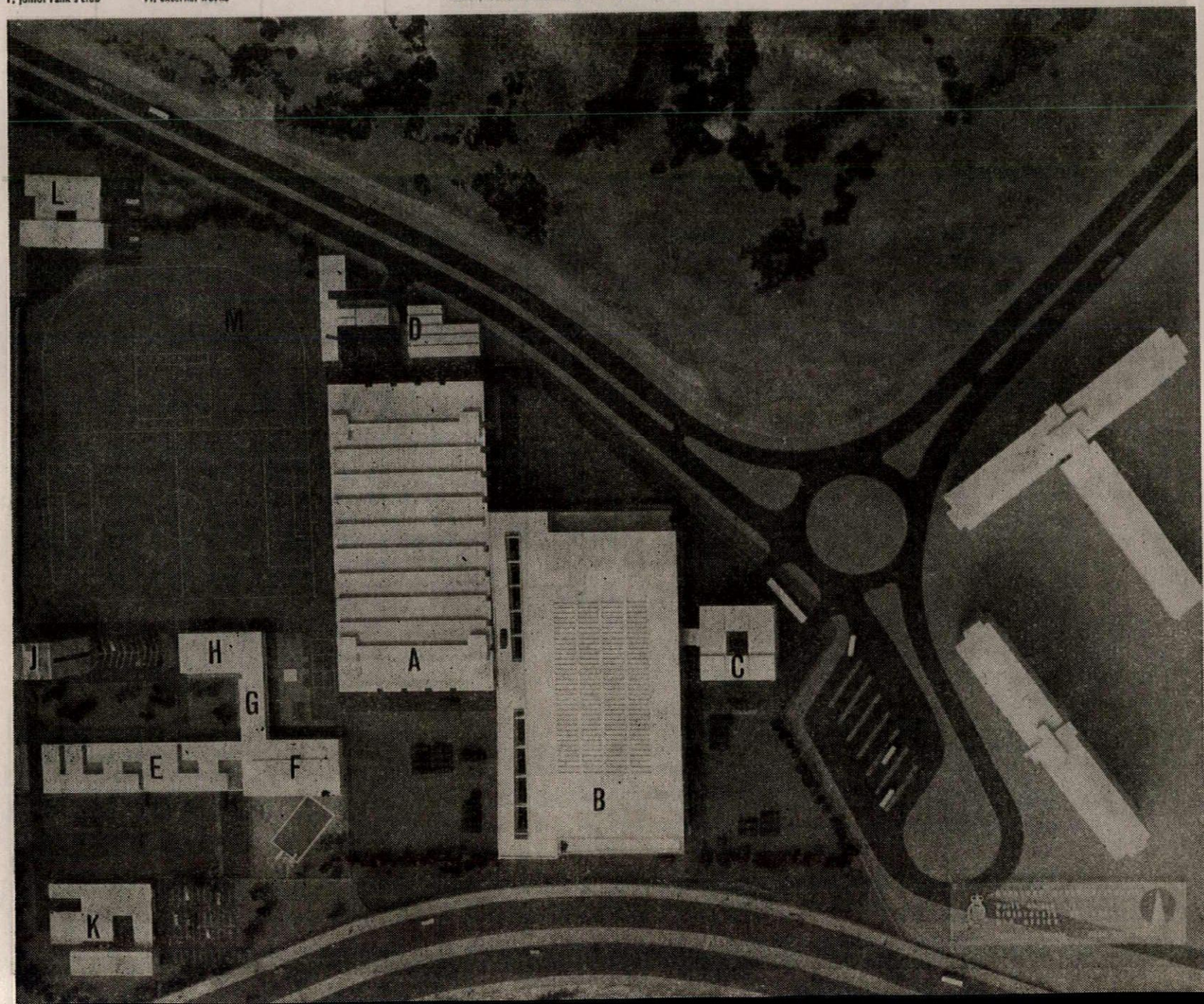
Directorate of Works, War Office

CLIENT: War Office.
SITE: 18 acres of reclaimed land, partially grassed, situated on the edge of Kai Tak airport.
ACCOMMODATION: Depot; three-storey heavy stores and vehicle building, offices, canteen, etc., essentially industrial in character, is a contained security area. Living area; messes, barracks, unit offices, educational and recreational facilities. Area is defined but left open and buildings designed for cross ventilation and protection against the sun.
STRUCTURE AND FINISHES: In situ r.c. on deep piles. Stores; aluminium cladding, rough cast frame. Living accommodation; externally, white and black Shanghai plaster, washed grano, panels of textured tiles and mosaics. Internal finishes, plaster and hardwoods. Metal windows throughout. Roofs, generally asphalt protected by solar tiles or pots.
SERVICES: Lifts in stores and barracks. Cooking by gas. Electric water heating. Salt water for wc flushing.
SITEWORK: Starts January 1963, completion by 1965.
Works abroad team; senior architect, R. Adams. Job architects; A. A. Corvin, W. H. Lewis. Team; W. Cortis, C. Higgins, M. Harrison, L. Herbert, T. Piper, R. Einsig. Engineers and quantity surveyors, Directorate of Works, War Office.

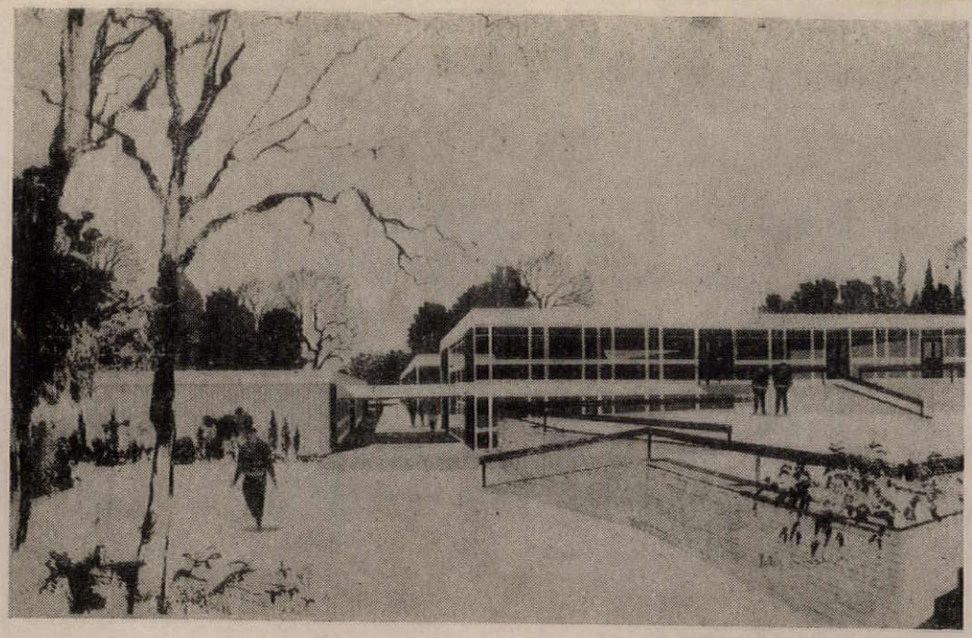


key
A, heavy stores
B, vehicle building
C, depot offices
D, depot ancillary buildings
E, unit offices
F, junior rank's club
G, education building
H, OR mess
J, barrack block
K, wo's and sergeants' mess
L, officers' mess
M, external works

Above, from the north-east. Below, site layout.



PUBLIC



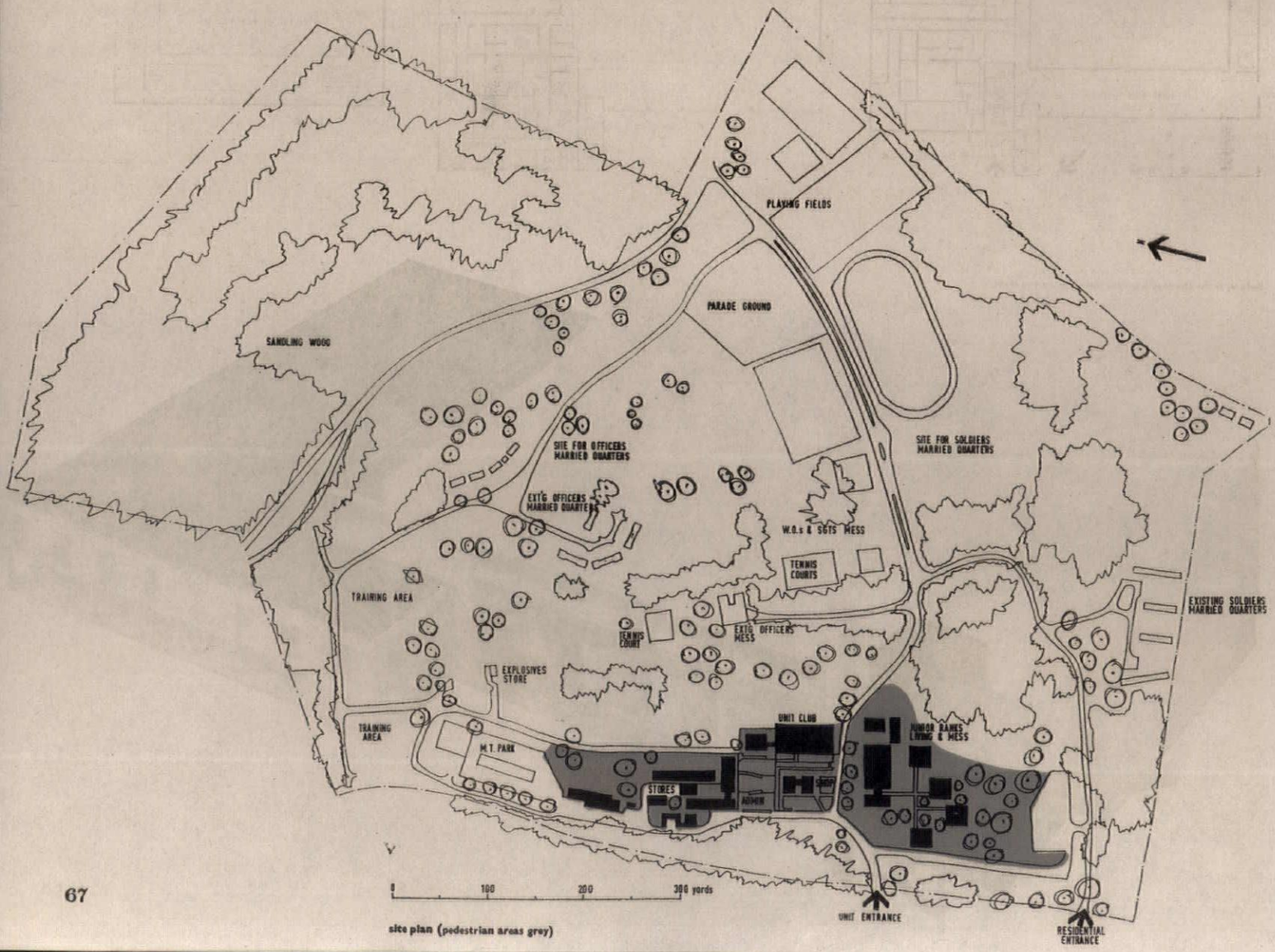
View of the unit centre

Barracks, Maidstone

Directorate of Works, War Office

CLIENT: War Office for 36 Corps Engineer Regiment.
SITE: 120 acres, well planted, on main Chatham Road, to the north of Maidstone.
PURPOSE: Development project to create a new kind of environment for major unit by providing specially designed and separate accommodation, for working and living requirements, including improved conditions for single soldiers.
ACCOMMODATION: Three- and four-storey 4-man/room barrack blocks. Officers', sergeants' and junior ranks' messes. Offices, Q.M. stores, guard rooms, M.T. garages. Unit centre with assembly and meeting rooms, games courts, classrooms, studies, gymnasium and swimming pool. This centre will be used during the day for official instructional and recreational purposes and in the evening for non-rank social functions. It will form the focus of the community. 200 houses for soldiers and officers.
STRUCTURE AND FINISHES: Stages one and two in CLASP. Stages three and four in NENK, a building system being specially developed to meet wider and generally higher performance standards of army buildings, as well as achieving 4 in. planning flexibility. Housing traditional construction.
COST: Approximately £1,000,000.
SITEWORK: Started August 1962, completion by October 1964.

Senior architect, development group team, Ralph Iredale. Job architects, C. A. K. Pain, A. K. W. Morgan, J. Parsons. Landscape architects, C. R. V. Tandy, J. A. C. Higgins. Housing, Clifford Culpin & Partners. Officers' Mess, Christopher Gotch & Associates. Quantity surveyors and engineers, War Office.



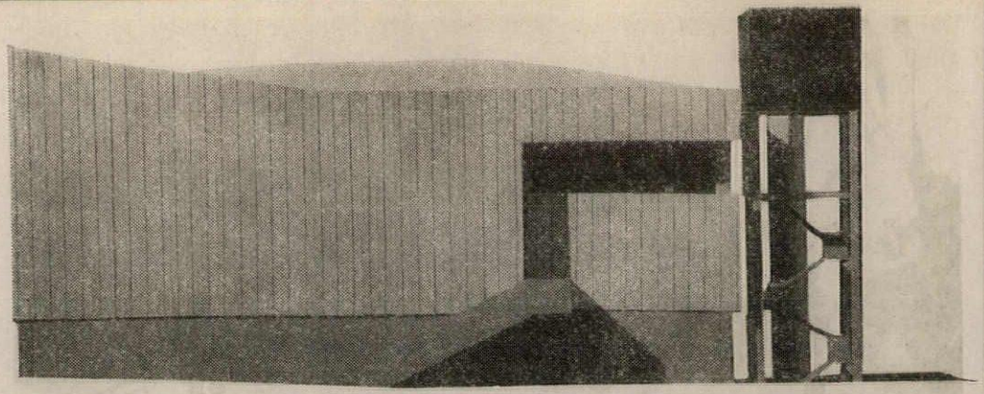
site plan (pedestrian areas grey)

PUBLIC

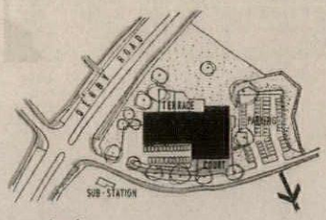
Swimming Pool, Beeston, near Nottingham

Architects Design Group (John Attenborough, Robert Cullen, Gordon Graham, John Pike and Rex Savidge)

CLIENT: Beeston and Stapleford Urban District Council.
SITE: 3 acres at west end of public park, 5 miles from Nottingham.
ACCOMMODATION: Main pool 110 ft. by 42 ft., with access to sun terrace, and 3 metre spring boards. Spectators' gallery for 300, with cafeteria. Teaching pool 41 ft. by 24 ft. Separate changing for school children. Cubicles may be used by either sex at peak periods. Central clothes store to reduce staff to minimum during slack periods. Covered area externally at lower level for marshalling school children.
STRUCTURE AND FINISHES: R.c. folded slab roof for main pool with sprayed asbestos internally. R.c. roof for teaching pool. Other areas load-bearing brickwork. Floors, non-slip tiles; walls, tiled. Ceilings, asbestos. Double glazing to pool halls.
SERVICES: Oil-fired heating with warm air system. Filtration plant below gallery.
COST: £184,000.
SITEWORK: Starts 1963.
In collaboration with F. Hayes, architect to the council. Partner in charge, Rex Savidge. Quantity surveyors, Gleeds. Mechanical consultants, R. W. Gregory & Partners.

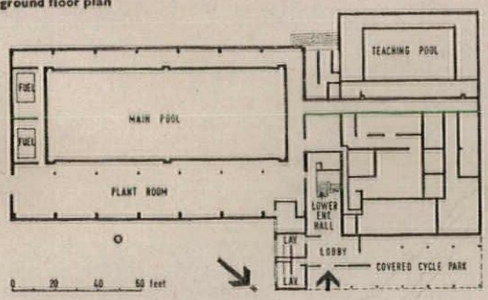


south-east side

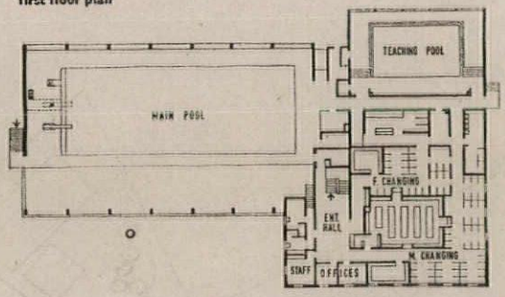


site plan

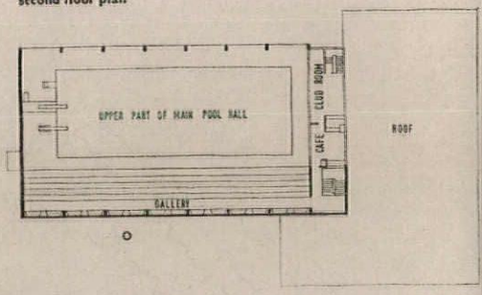
ground floor plan



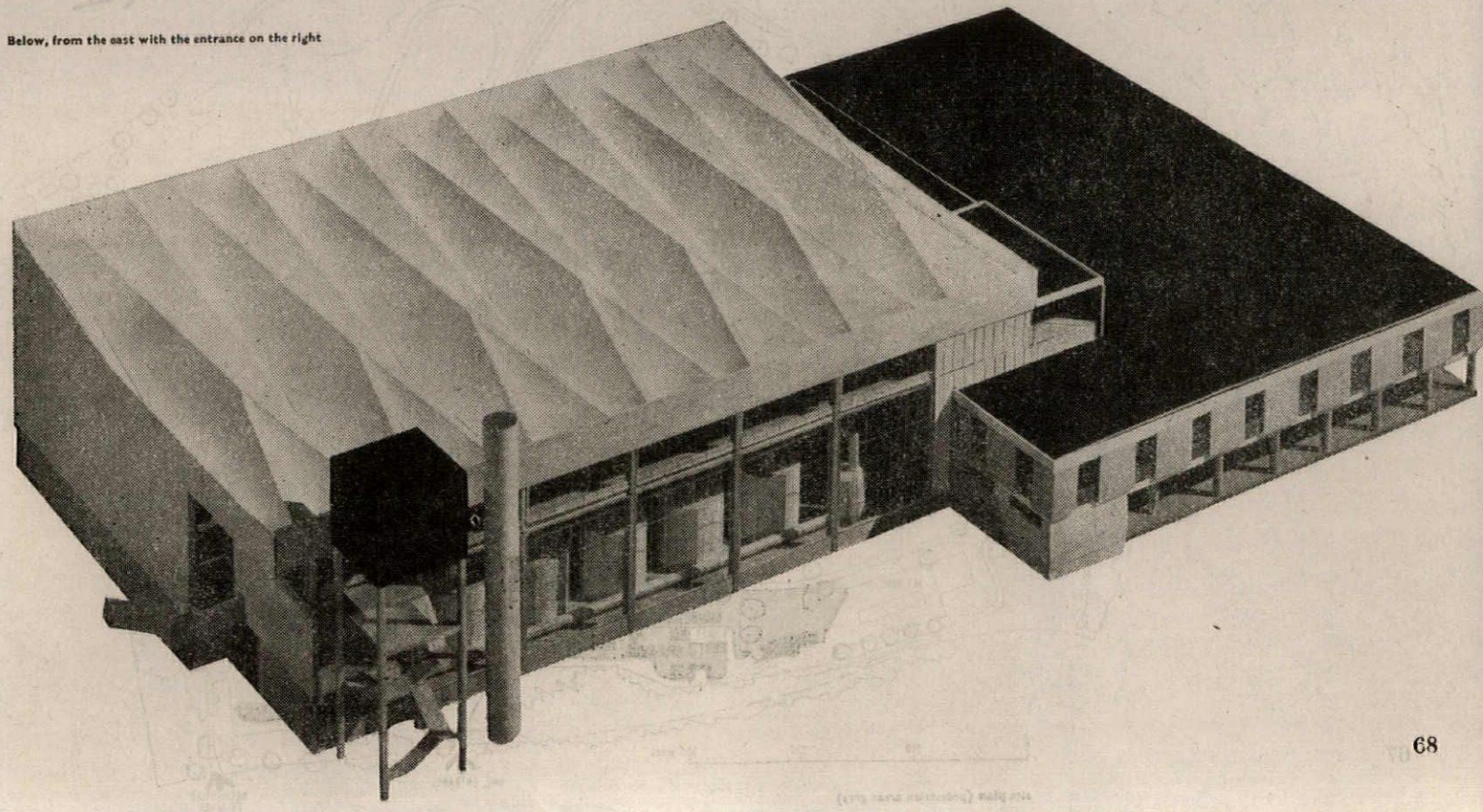
first floor plan



second floor plan



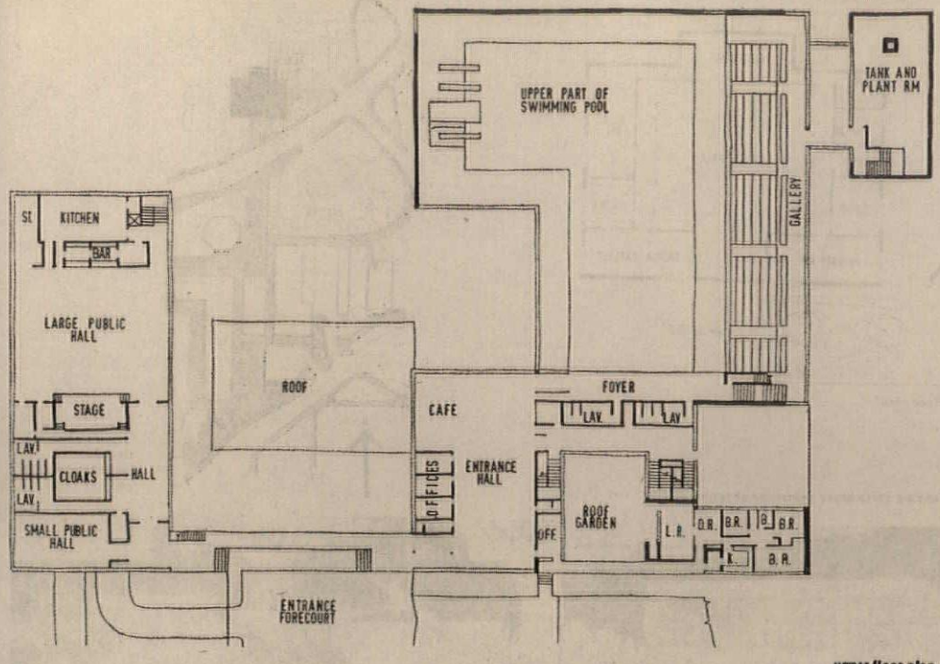
Below, from the east with the entrance on the right



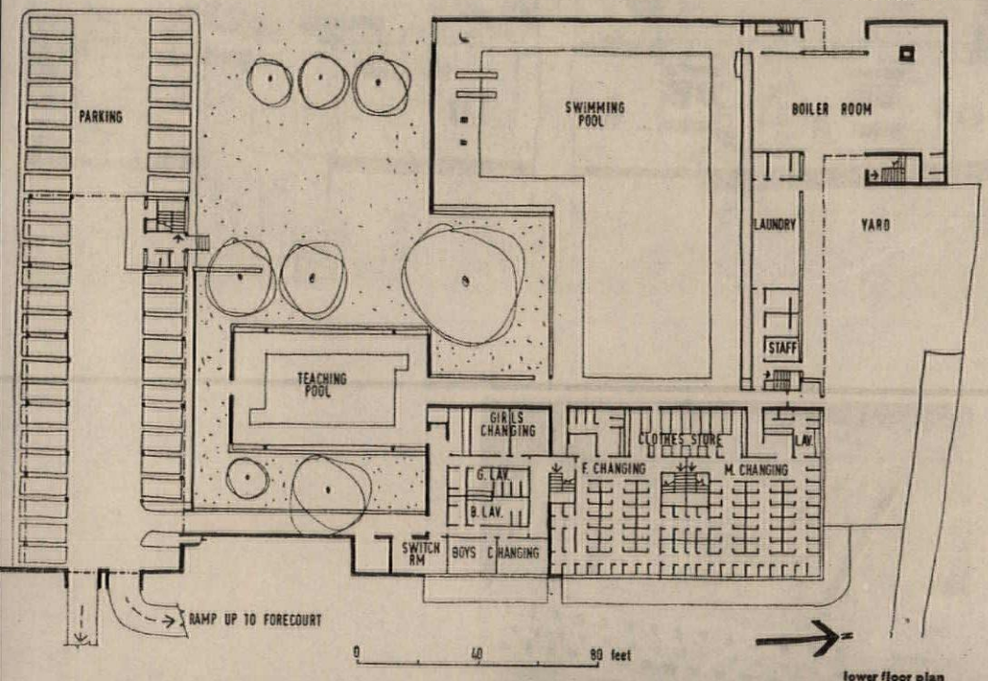
Public Baths, Putney

Powell & Moya

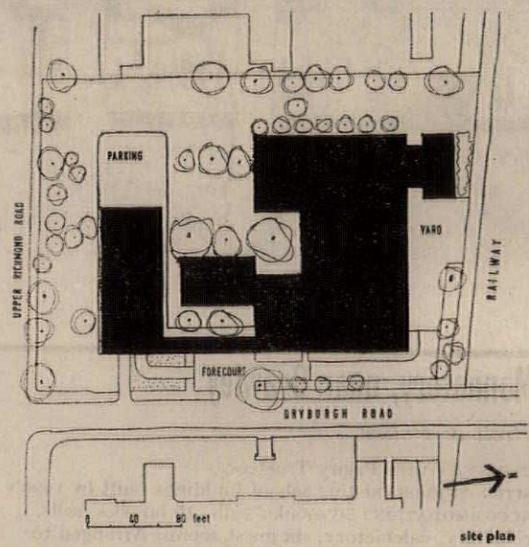
CLIENT: Wandsworth Borough Council.
SITE: 2¼ acres on Upper Richmond Road at the junction with Dryburgh Road.
ACCOMMODATION: Entrance hall for 100 persons awaiting admission. Main pool 110 ft. by 42 ft. Teaching pool 42 ft. by 24 ft. Changing for 100. Seating for 392 spectators. Large hall for 200 people, small hall for 60 people.
STRUCTURE AND FINISHES: R.c. with folded slab roof over main pool, exposed members have white cement and calcined flint aggregate bush hammered. External walls light colour faïence tiles. Internal floors, non-slip ceramic tiles. Upper part of walls, sound absorbent finish.
SERVICES: Oil-fired low pressure hot water. Water filtration and sterilization plant for pools. Mechanical ventilation to pool halls, changing and large hall. Emergency lighting, fire alarm and public address systems.
COST: Approximately £440,000.
SITEWORK: Expected to start 1963-64, completion after 2½ years.
Quantity surveyors, Davis, Belfield & Everest. Structural consultants, Charles Weiss & Partners. Mechanical and electrical consultants, A. J. Smith (Consultants) Ltd.



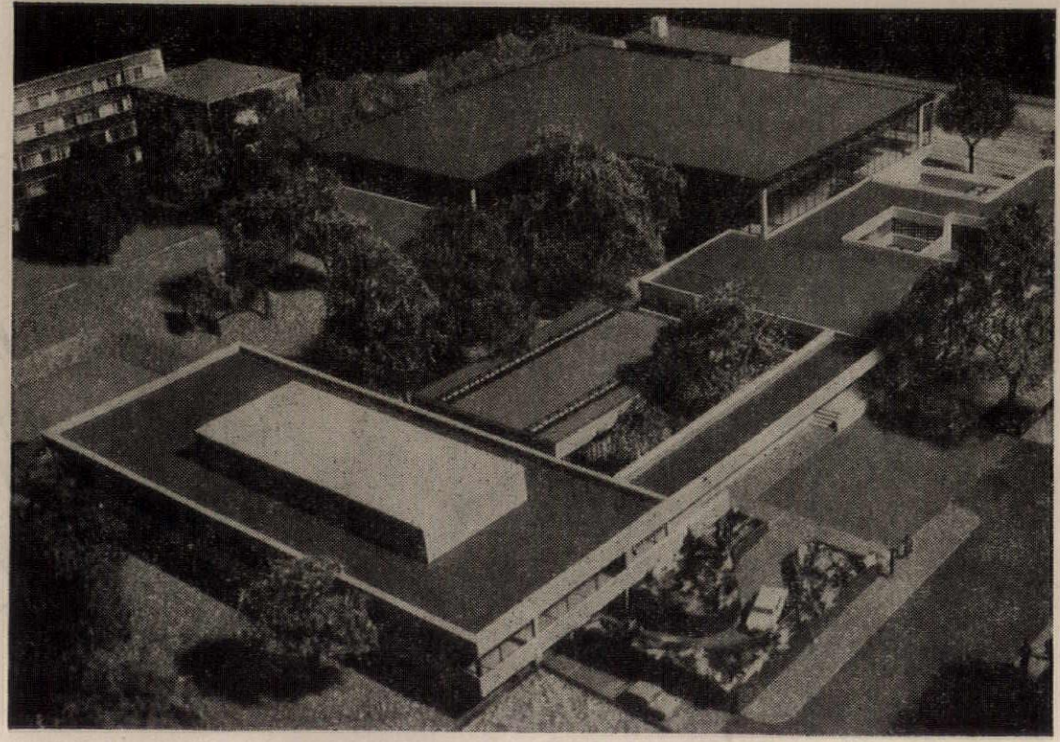
upper floor plan



lower floor plan



site plan

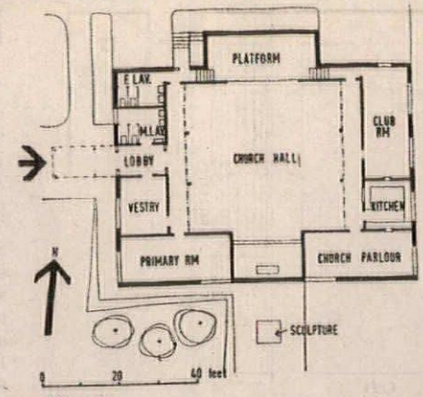


Right, air-view from the south-east

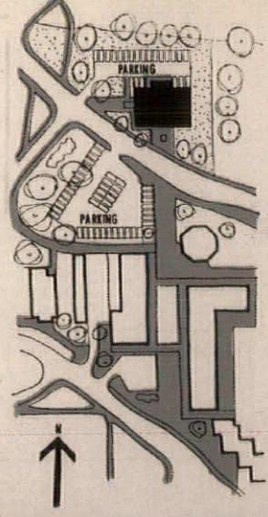
Church, Chesterfield

Edward D. Mills & Partners

CLIENT: Methodist Church.
SITE: ¾ acre on main axis of new Loundsley Green Centre.
ACCOMMODATION: For 200, in dual-purpose room. Ancillary rooms for weekday activities.
STRUCTURE AND FINISHES: Concrete foundations due to mine workings. Light steel frame roof, woodwool slabs with roofing felt. Patent glazing and slate hanging all round. Lower areas, timber roofs with woodwool and roofing felt. Walls, load-bearing brickwork with timber framed storey-height panels. Internally, plaster and plywood panelling.
SERVICES: Electric convectors and radiant heaters.
COST: £20,000.
SITEWORK: Started Autumn 1962.
Quantity surveyors, Leslie W. Clark & Partners.
Structural consultants, Kaylor & Pick.

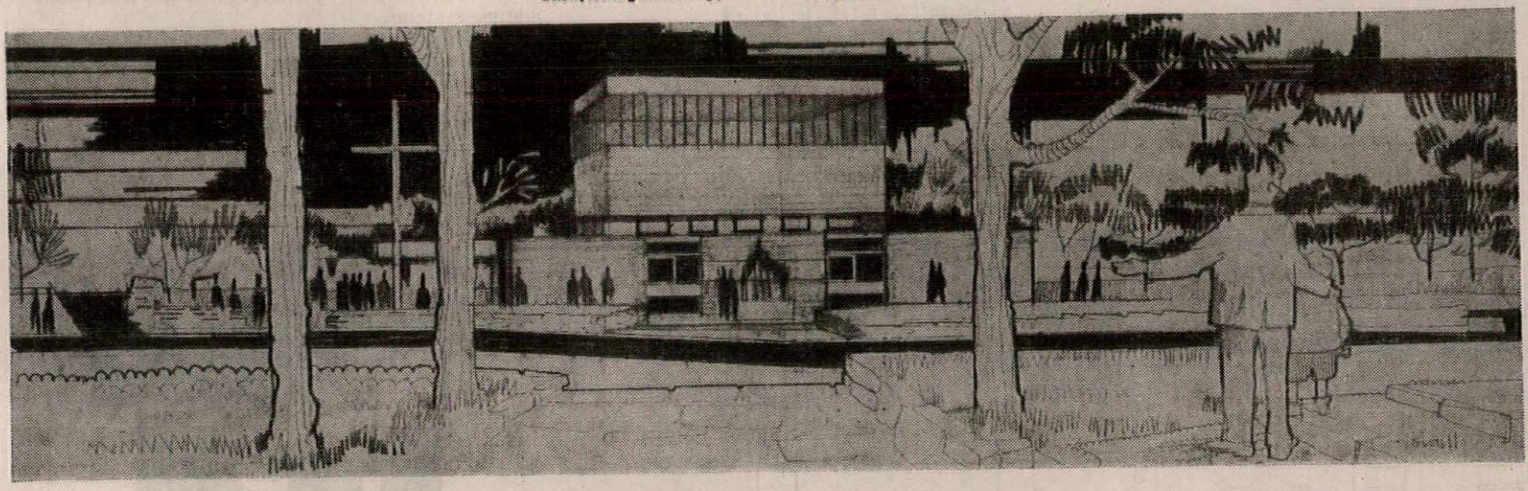


ground floor plan



site plan (pedestrian routes grey)

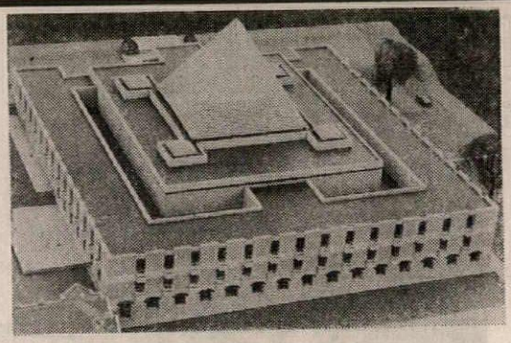
Below, looking north along pedestrian shopping precinct

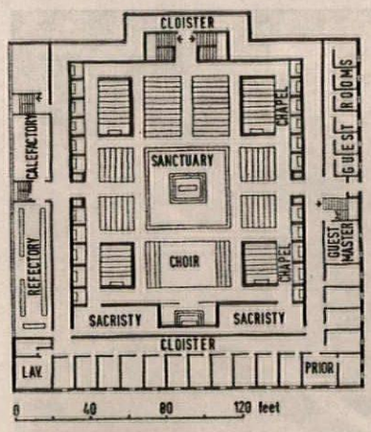


Monastery, near Crawley

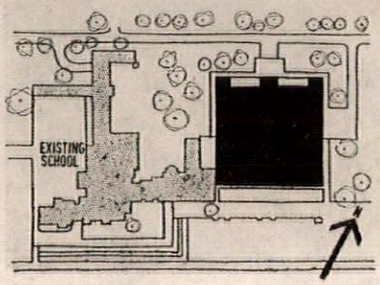
Brett & Pollen

CLIENT: Worth Priory Trustees.
SITE: Adjoins existing school buildings built in 1890's.
ACCOMMODATION: 50 monks' cells, 10 novices' cells, refectory, calefactory, six guest rooms. Arranged to surround the central church on three sides.
STRUCTURE AND FINISHES: R.c. frame. Brick facings with exposed concrete edge beams. Plaster internally.

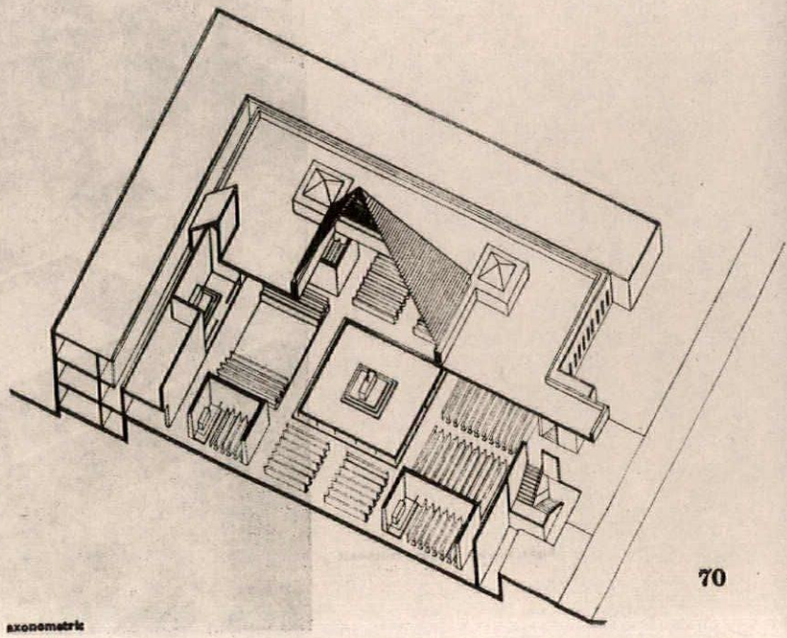

air-view from south



main floor plan



site plan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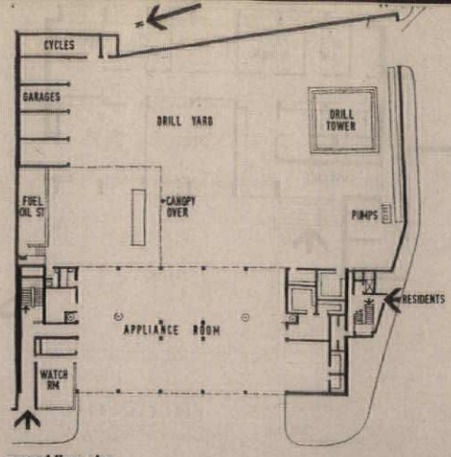
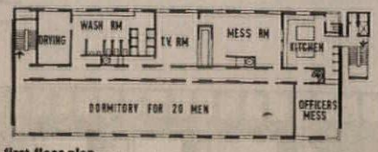
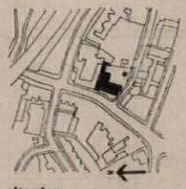


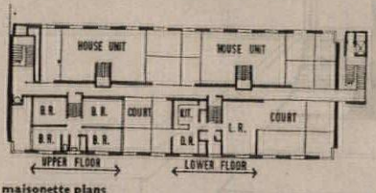
ground floor plan



first floor plan



site plan



maisonette plans

Fire Station, Lewisham

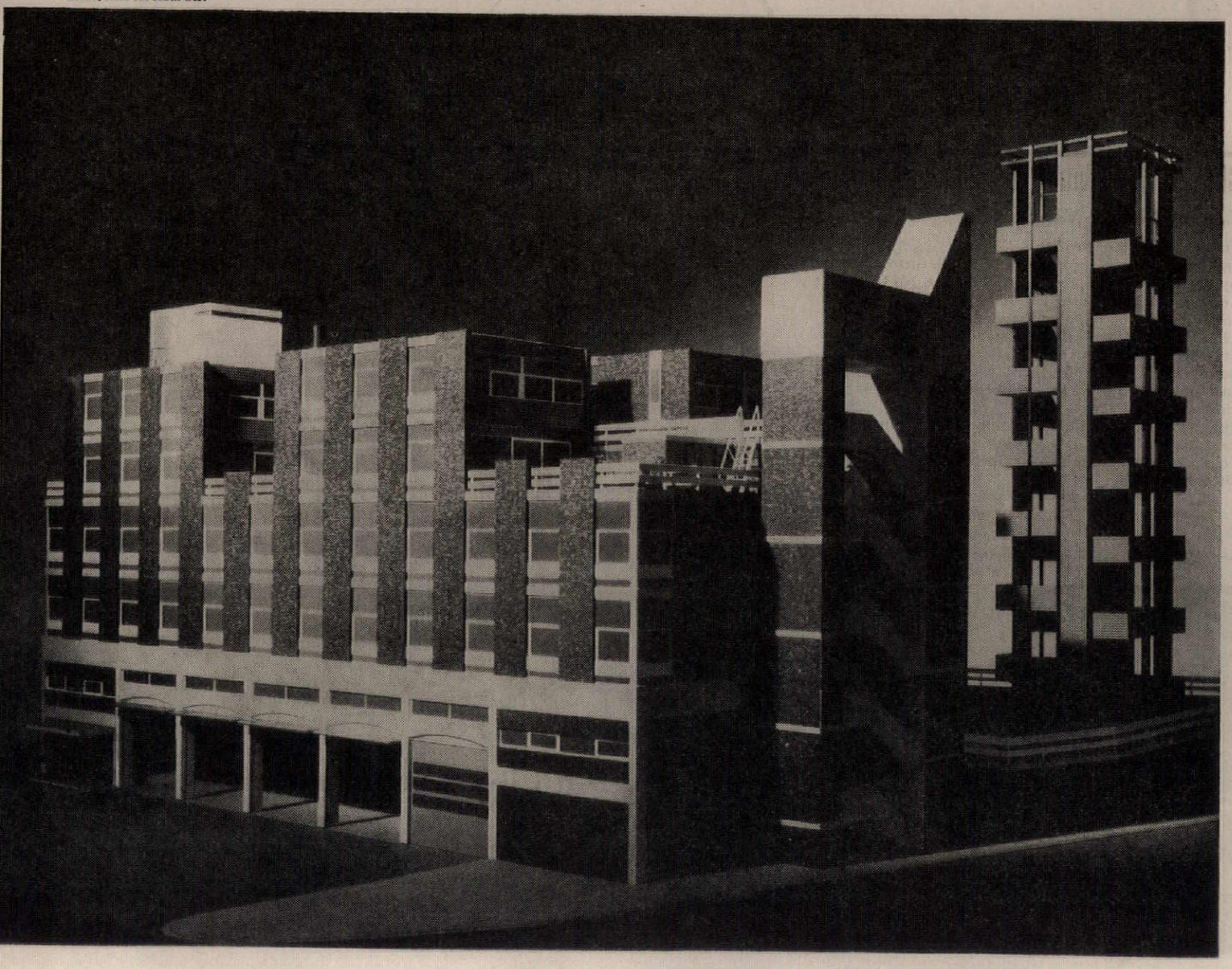
Hubert Bennett, Architect, London County Council

CLIENT: London County Council.
SITE: Restricted area on Lewisham High Street.
ACCOMMODATION: Appliance room and turn out for vehicles with watch and uniform rooms, breathing apparatus workshop and stores adjacent. First floor; messrooms, canteen, kitchen, washroom, drying room, and dormitories with slide pole access to appliance room. Second floor; recreation rooms, divisional and AFS offices. Third floor; four senior staff four-bedroom maisonettes with separate staircase access and raised walkway to entrances at half landing level with storage under. Eight-storey drill tower in yard disposed to give maximum vehicular movement around.
STRUCTURE AND FINISHES: Up to first floor, r.c. frame with two main spine beams. Load-bearing brick over, fair-faced along external part of building and internal walls of corridors. Concrete floors span between edge and spine beams giving maximum flexibility of standard timber partition units. Windows between brick piers, cedar sashes.
SERVICES: Low pressure hot water heating. Boiler GPO and electrical intake rooms in basement.
COST: Estimated, £196,026.
SITEWORK: Expected to start late 1963, completion after 20 months.

Deputy architect, F. G. West. Senior architect, special works division, Geoffrey F. Horsfall. Assistant architect, special works division, J. G. Cairns, Group leader, T. M. Williams, Assistant, C. K. Kirton. Principal quantity surveyor, M. F. Rice. Senior structural engineer, J. H. Humphreys. Heating and electrical consultant, F. M. Fuller, chief engineer, LCC.

PUBLIC

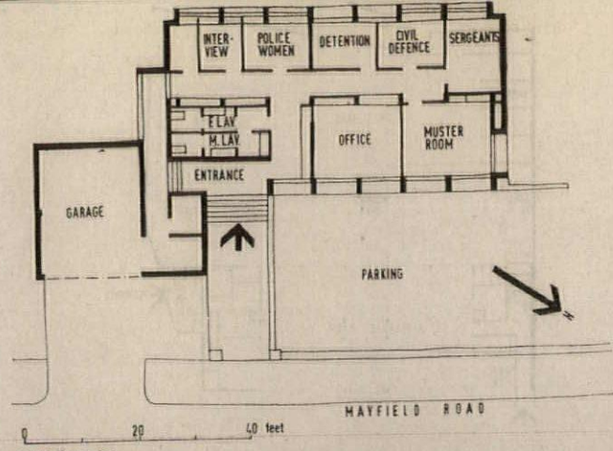
Below, from the south-west



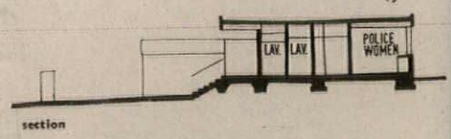
Police Station, Edinburgh

Morris & Steedman

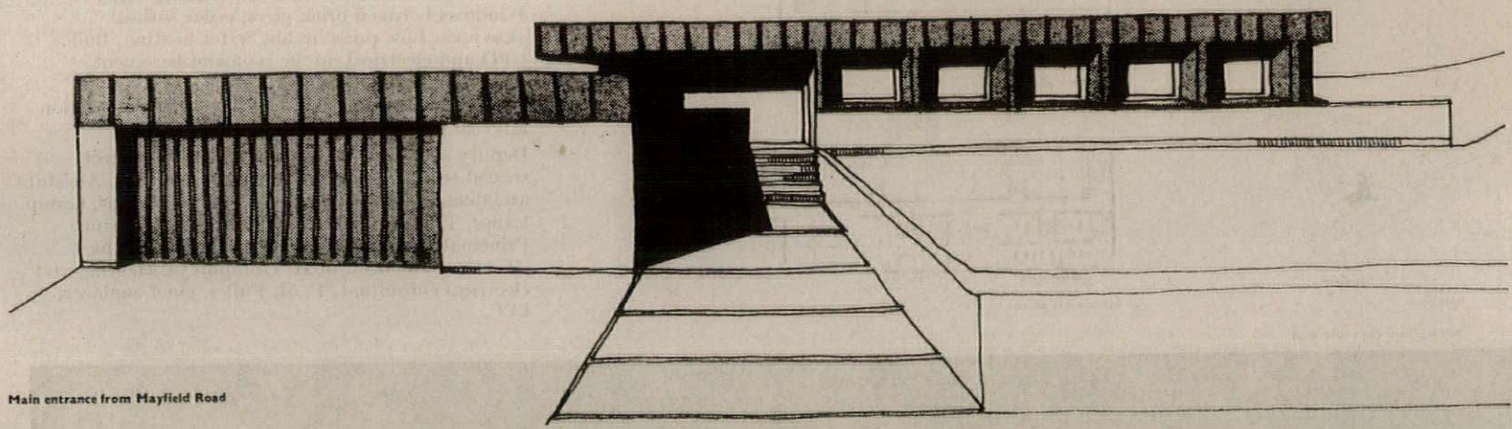
CLIENT: Edinburgh Corporation.
SITE: At Liberton Dams. Confined, slopes north-south, steep embankment to west.
ACCOMMODATION: Main entrance to public counter, screened access from double garage up ramp to charge counter and detention room. Muster room with kitchen unit and offices for police use. Store for civil defence. First of series of stations to facilitate mobility in divisional group.
STRUCTURE AND FINISHES: Redwood beams on brick piers. Roof, fascia, window reveals and cills copper faced. Walls, buff facing brick. Floors, quarry tiled.
SERVICES: Electric underfloor heating.
COST: £11,000.
SITEWORK: Started autumn 1962, completion by spring 1963.
Job architect, Jeremy Wilson. Quantity surveyors, Thomas & Adamson.



ground floor plan



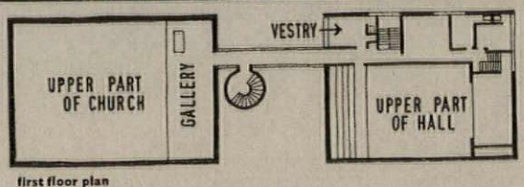
section


Main entrance from Mayfield Road

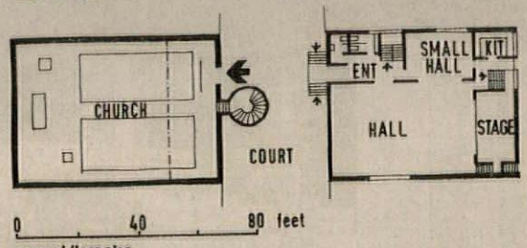
Church, Blackburn, Nr. Edinburgh

Law & Dunbar Nasmith

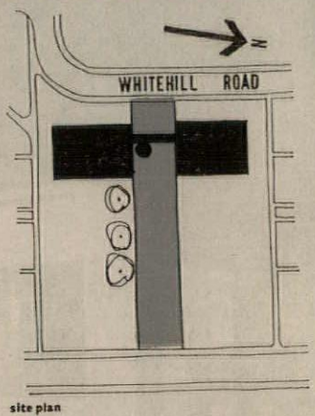
CLIENT: Church of Scotland.
SITE: West Green approximately 1 acre surrounded by flat roofed steel prefabricated houses. No trees.
ACCOMMODATION: Large hall for 300 to 350 people, small hall for 60 to 70 and session room for 40. Church to seat 550 will be in stage 2.
STRUCTURE AND FINISHES: Walls, load-bearing brick painted white, reinforced with concrete columns on east side roof, proprietary timber decking. Floors, timber joists.
SERVICES: Either oil-fired heating or local infra-red heaters.
COST: Approximately £15,500 including seating and site work and fees.



first floor plan

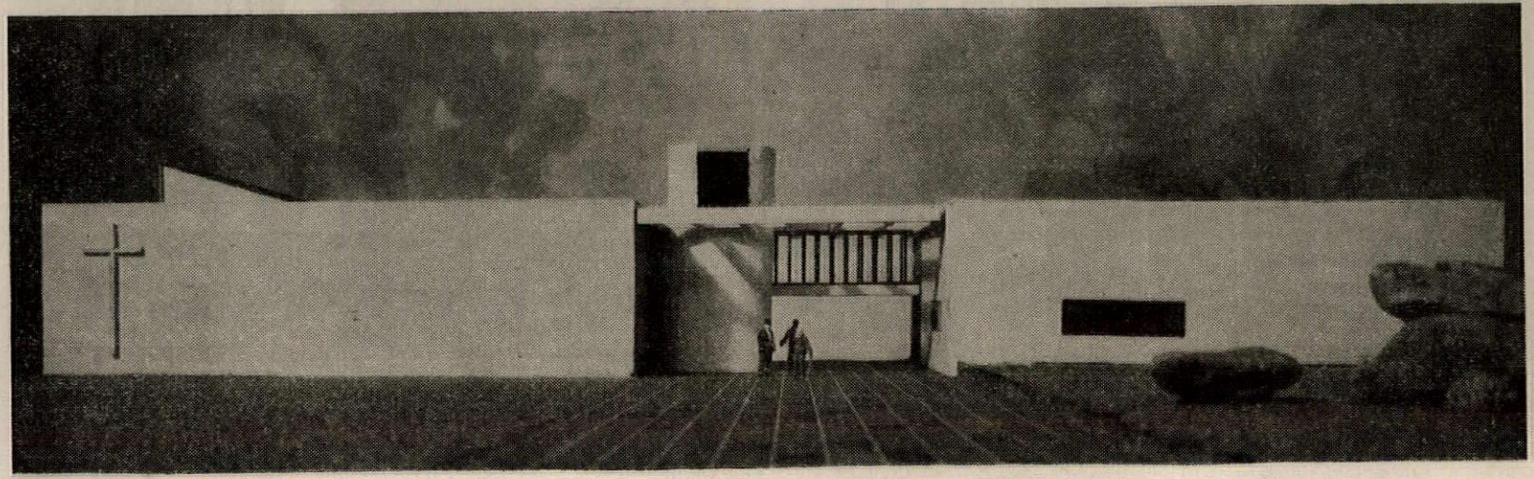


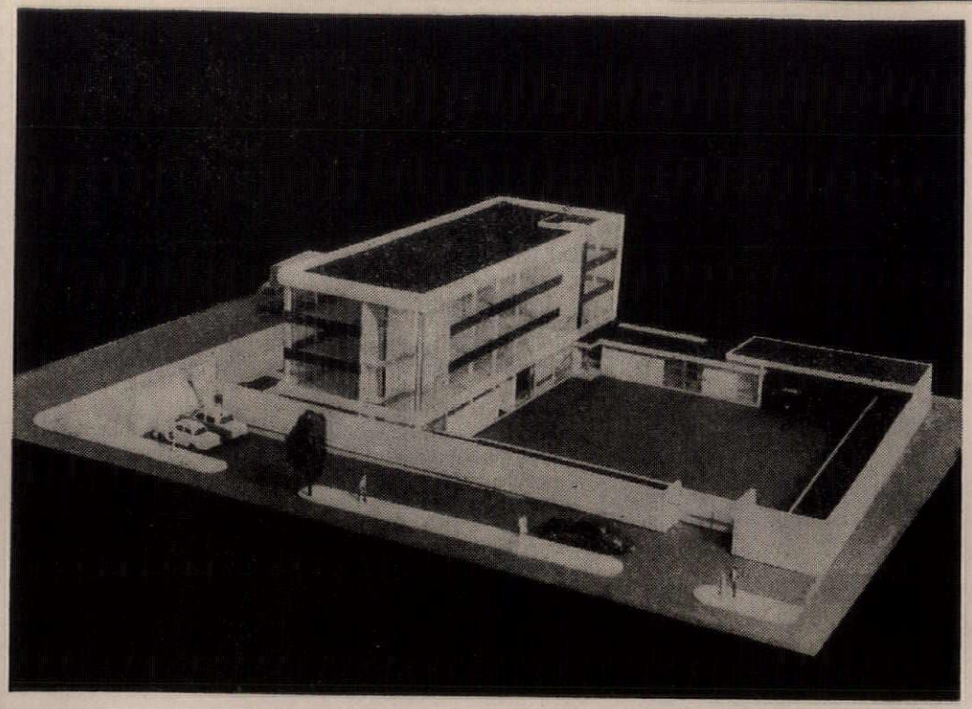
ground floor plan



site plan

Looking along pedestrian access with the church left and the hall right





Above, air-view from east

Police Station, Hendon

J. Innes Elliott, Chief Architect and Surveyor, Metropolitan Police

CLIENT: Receiver for the Metropolitan Police District.

SITE: Almost level, with 150 ft. main frontage at corner of West Hendon Broadway and Brent Park Road. Major road improvements are proposed. Factory development allocated to north-west.

ACCOMMODATION: Sub-divisional station administration, officers' rooms and recreational facilities, vehicular maintenance and garages.

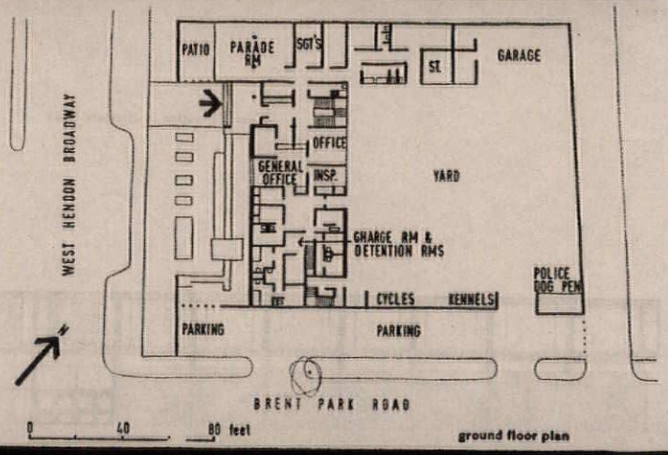
STRUCTURE AND FINISHES: In situ r.c. frame. 13 ft. 4 in. grid, 3 ft. 4 in. component module. Externally, precast concrete units on ground floor, aluminium curtain walling above. Exposed frame faced with white mosaic.

SERVICES: Oil-fired boilers. Radiant panels.

COST: Approximately £130,000.

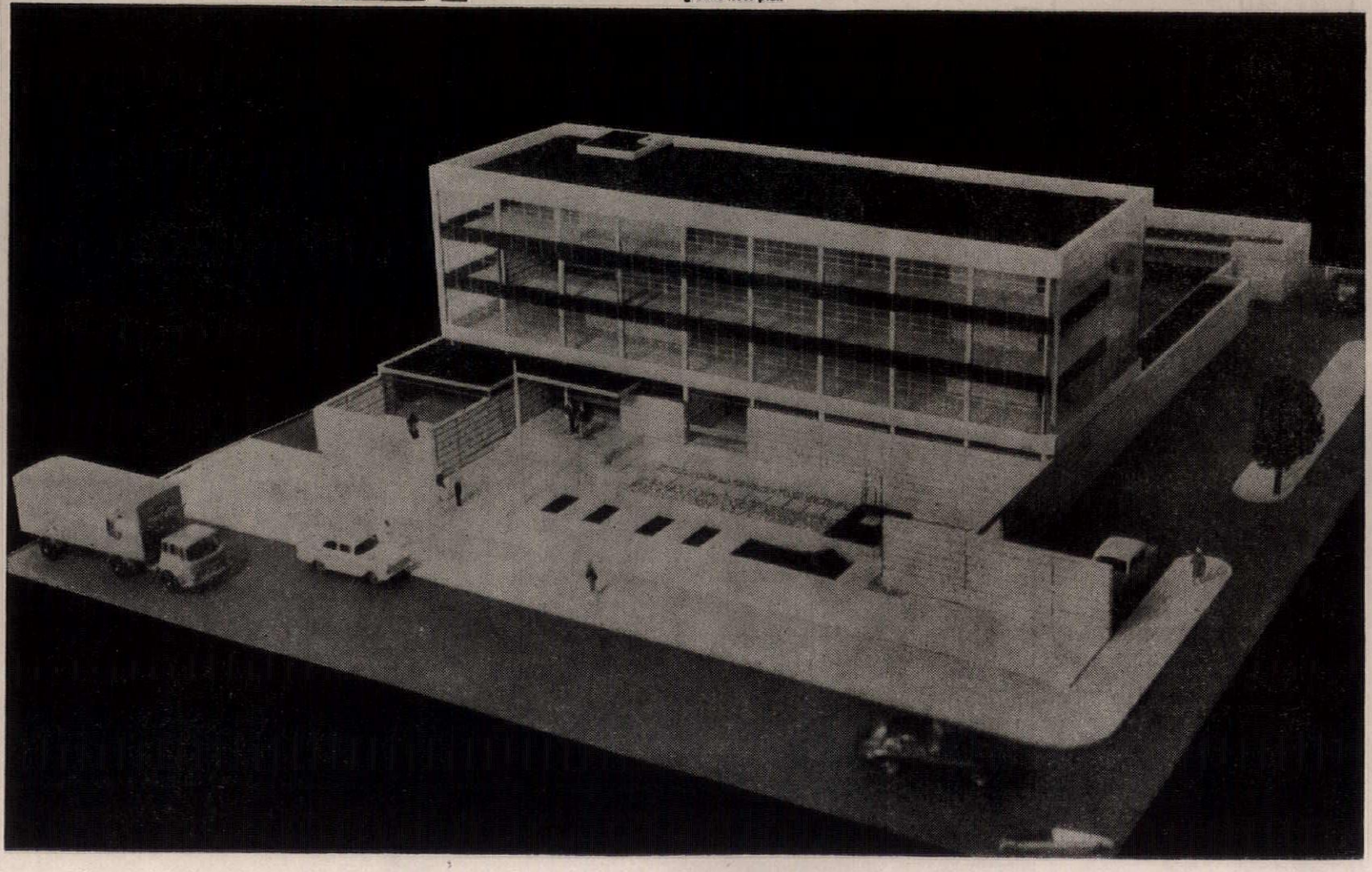
SITEWORK: Starts July 1963, completion by December 1964.

Deputy chief architect, D. T. Edwards. Senior architect, S. J. Hanchet. Architect, A. J. Gasson. Assistant architect, K. F. J. Humphreys. Architectural assistant, E. T. Cale. Quantity surveyors, Thurgood, Son & Chidgey. Structural consultants, Maurice Nachshan & Partners.



ground floor plan

Below, air-view from south



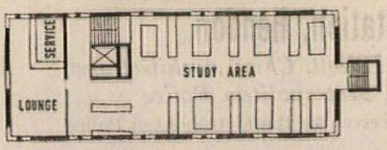
PUBLIC

PUBLIC

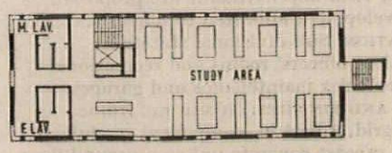
Library, Hulme, Manchester

S. G. Besant Roberts, City Architect

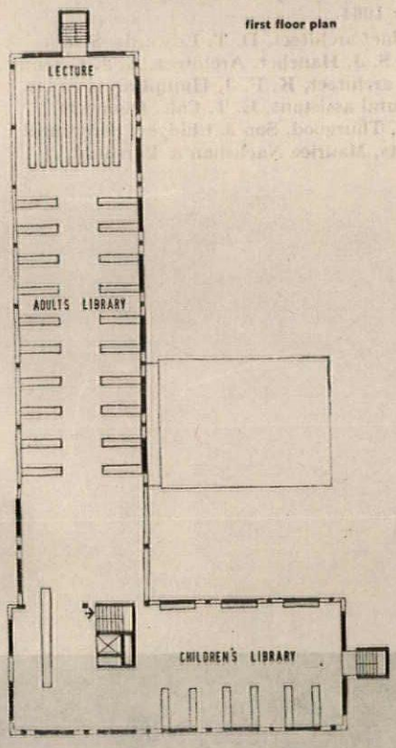
CLIENT: City of Manchester Libraries Committee.
SITE: Of old Town Hall and Library on Stretford Road. In extensive slum clearance area. Near University, industrial and densely populated areas.
ACCOMMODATION: Ground floor; entrance with exhibition space, staff rooms, travelling library, stack of 10,000 books, work rooms and garages for mobile libraries. First floor; adult lending library with 14,000 books equipped with lecture and display area, children's library of 8,000 books in separate wing, main control counter at the junction of these two libraries. Upper floors; study areas for 112 readers and with 11,000 books, cloakrooms, staff work area and coffee lounge.
STRUCTURE AND FINISHES: R.c. black bush-hammered. Brickwork expressing bookcase or reading bay module, white or blue brick externally and fairfaced internally. Windows, bronze. Internal fittings, hardwood with oiled finish.
SERVICES: Central core provides ventilation and electrical ducts to ceilings at each level.
SITEWORK: Starts April 1963, completion by April 1965.
Deputy City Architect, S. A. B. Heppell. Senior group leader, Frank Robinson. Project architect, David Gosling.



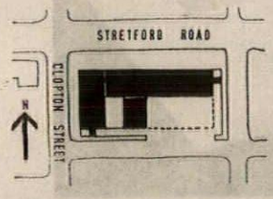
third floor plan



second floor plan

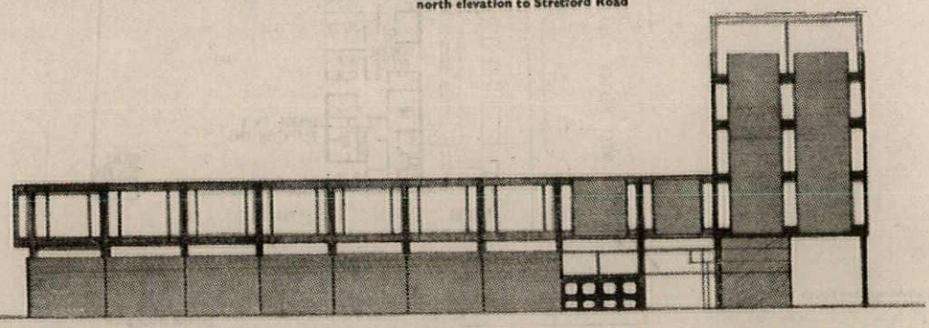


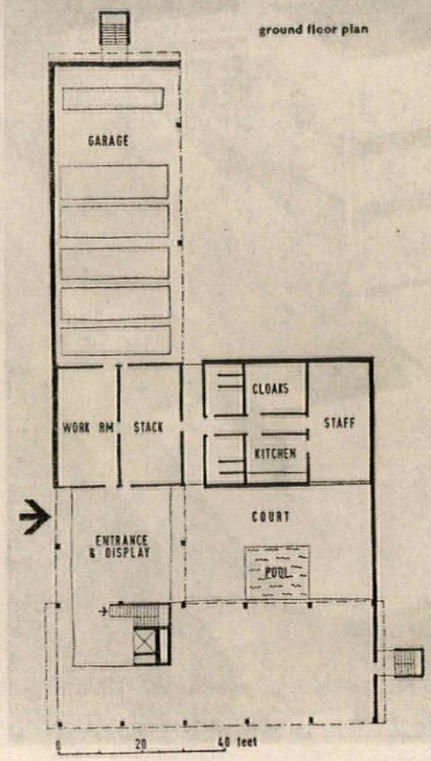
first floor plan



site plan

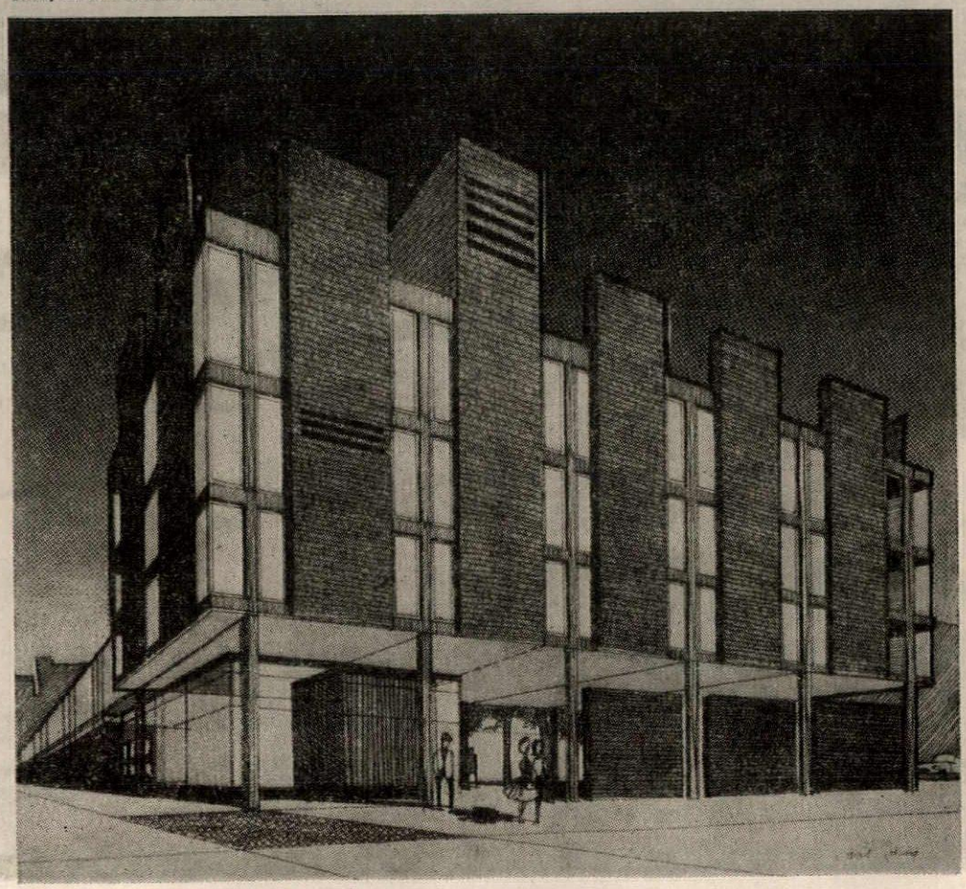
north elevation to Stretford Road





ground floor plan

Below, view from Stretford Road looking south-east



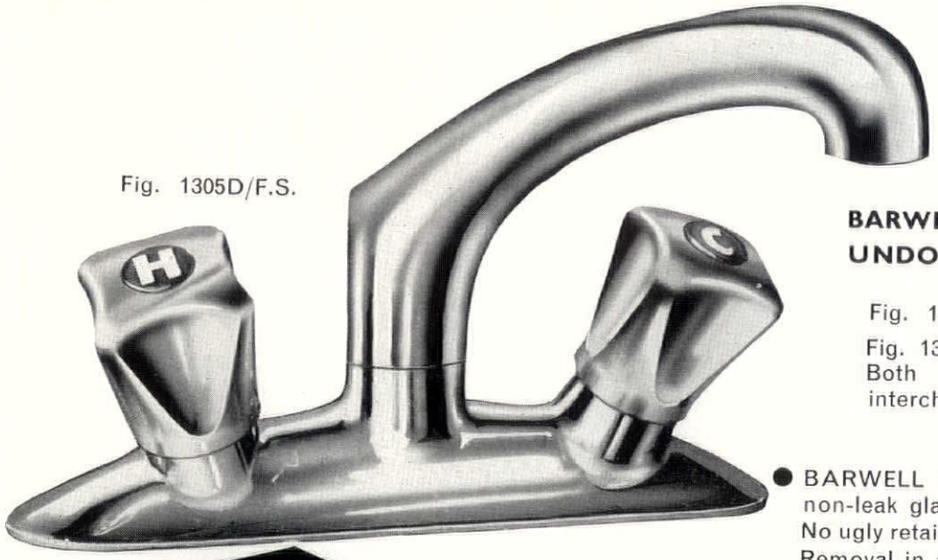


Fig. 1305D/F.S.

BARWELL SINK FITTINGS
UNDOUBTEDLY THE FINEST OF ALL!

Fig. 1305D/F.S. with Diecast Nozzle
Fig. 1305T/F.S. with Tubular Nozzle.
Both with separate waterways, both interchangeable.

SUPREMACY IN DECK SINK FITTINGS

- BARWELL Patent Swivel Nozzles have non-leak glands.
  No ugly retaining nut holding Nozzle to Body.
  Removal in a matter of seconds without tools.
- Minimum projection of Body above Sink Top.
  Easiest of all to clean.
  Superbly Diecast in finest brass.
  Skilfully polished and heavily chrome plated.
- Taps inclined forwards and outwards for simplicity of control.
  They almost put themselves into your hands !
- Beautifully designed streamlined heads with coloured and lettered indices.
- BARWELL "Long-Life" Washers fitted, as standard.
  Rewashering almost a thing of the past!
- To B.S.1010 of course, and tested and approved for direct connection to mains supply.

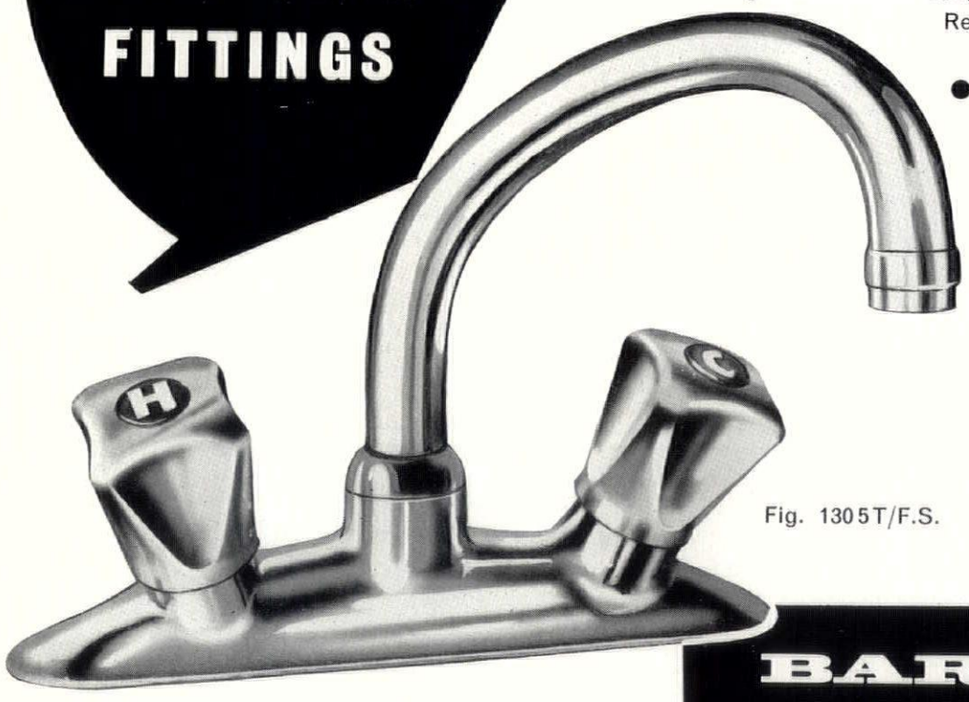


Fig. 1305T/F.S.

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Ibstock FACING BRICKS and modern Crematoria



The recently completed CANFORD CREMATORIUM, Westbury-on-Trym, BRISTOL

was built to meet the increasing demand for cremation in this country. Ibstock Facing Bricks were specified for their appearance and durability from the large range available—as they are for every type of building to-day.

Architects: For the Bristol Corporation City Architect's Dept. Architect-in-Charge A. R. Mackness, F.R.I.B.A.

Merchants: J. W. Truman.

Builders: John Knox (Bristol) Ltd.

Bricks: 2¾" Buff Multi Rustics.

Most machine made bricks are readily available—but handmade bricks are in short supply and all orders should be placed as far ahead as ever possible. We are, of course, anxious to receive enquiries for future deliveries and shall be happy to make reservations against architects' specifications.

Send for full details and sample

Ibstock FACING BRICKS

THE IBSTOCK BRICK & TILE COMPANY LIMITED, near Leicester. Telephone: Ibstock 531

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Sliding windows

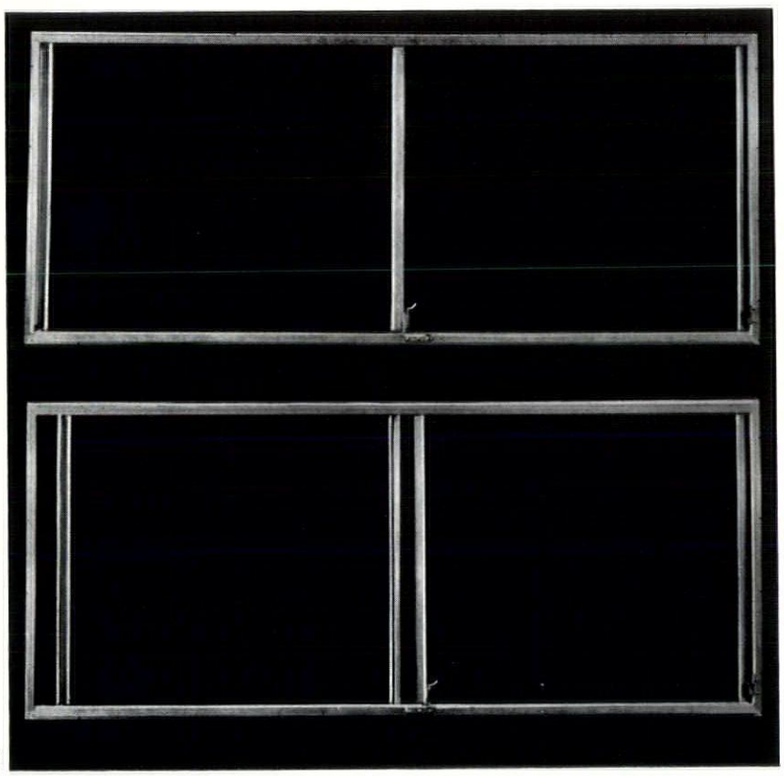
The Alumin Panoramic sliding window would appear to be a most useful addition to the range of multi-purpose window units available today.

Although designed basically as a window the manufacturers claim possible uses as movable screens, glazed partition doors, etc. As an example they say that with the frames assembled from heavy duty extrusions it is possible to fabricate a sliding door unit, 6 ft. 6 in. high and 8 ft. wide with $\frac{3}{16}$ in. sheet glass.

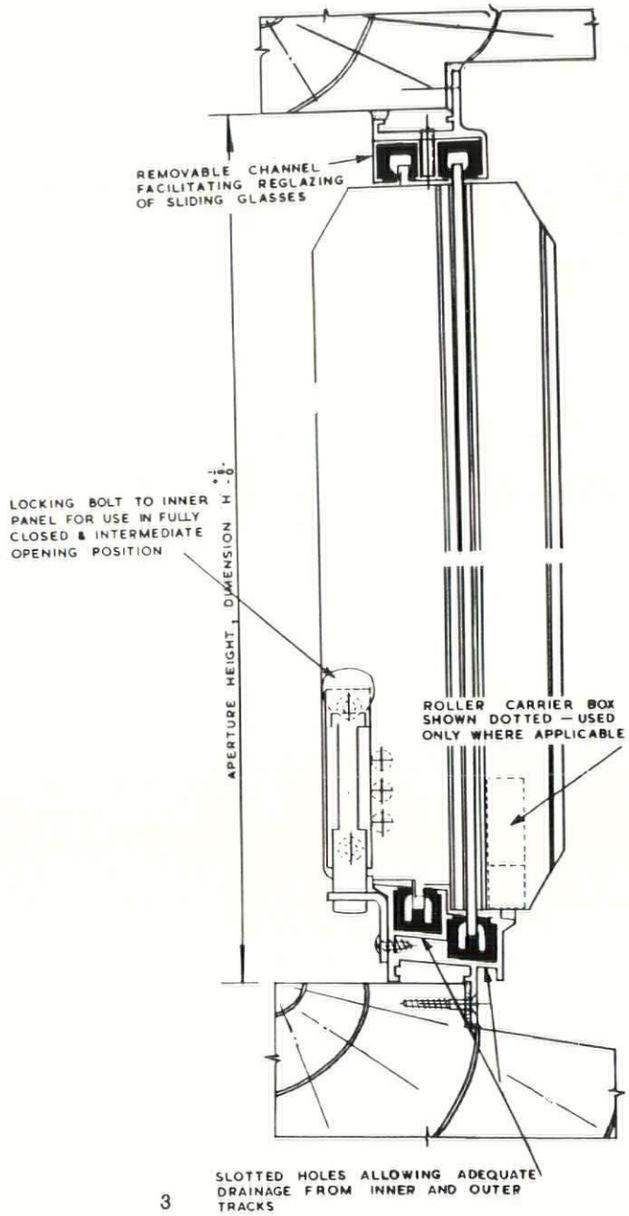
The window is constructed as a self-contained unit glazed with 32 oz. glass. The unit consists of two sliding panels framed only on the vertical edges with extruded aluminium styles, both panels are contained in a frame, the corners of which are mechanically jointed using epoxy resin cement for complete weather-proofing.

Weathering at the meeting styles is ensured by double p.v.c. weather-seals housed in each style engaging with the wedge-shaped profile of the opposite style. The end styles of the sliding panels engage with lipped p.v.c. weatherseals housed in the jambs of the surround frame. The upper and lower edges of glass run in p.v.c. channels housed in the head and cill of the surround frame and profiled to prevent ingress of water.

Clear or obscure glass as specified and agreed is supplied and fixed to the styles with a p.v.c. glazing tape that is resistant to solar heat and atmospheric conditions. The window is normally delivered to building sites factory-glazed.

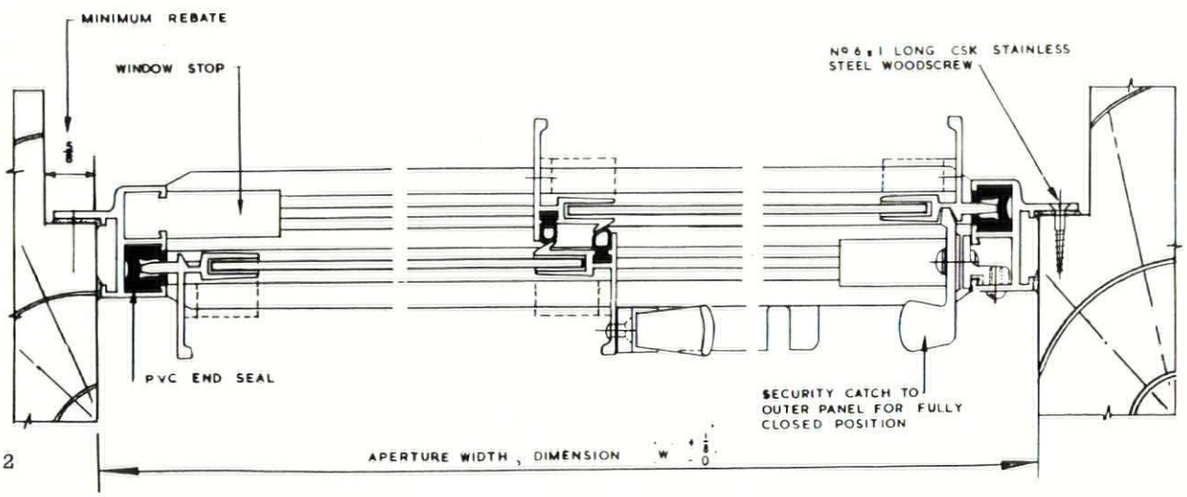


1



3

1, the Alumin Panoramic sliding window shown in the fully closed position, locked at centre and right (top), and centre locked in the normal ventilation position (bottom). 2, horizontal section through window and, 3, vertical.



2

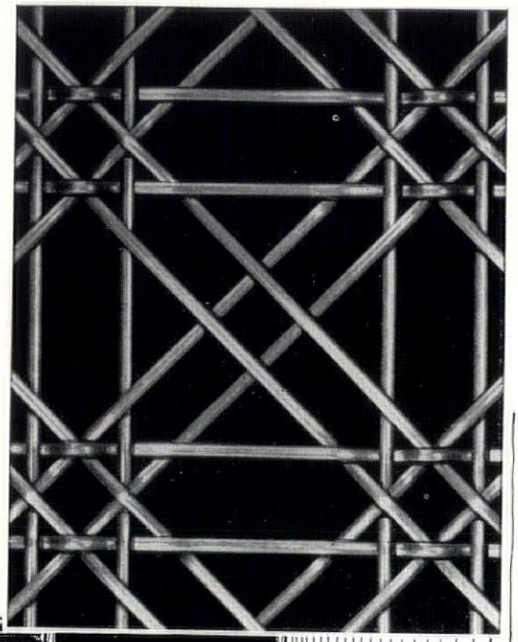
Security catches, mounted to or engaging with the styles, provide a lock in the fully closed and partly opened positions.

Nylon rollers mounted in aluminium castings can be incorporated and are fixed to the base of the styles. The glass is then cut to provide clearance from the lower p.v.c. run so that the weight of the glass is borne by the rollers which run on flanges on the cill member.

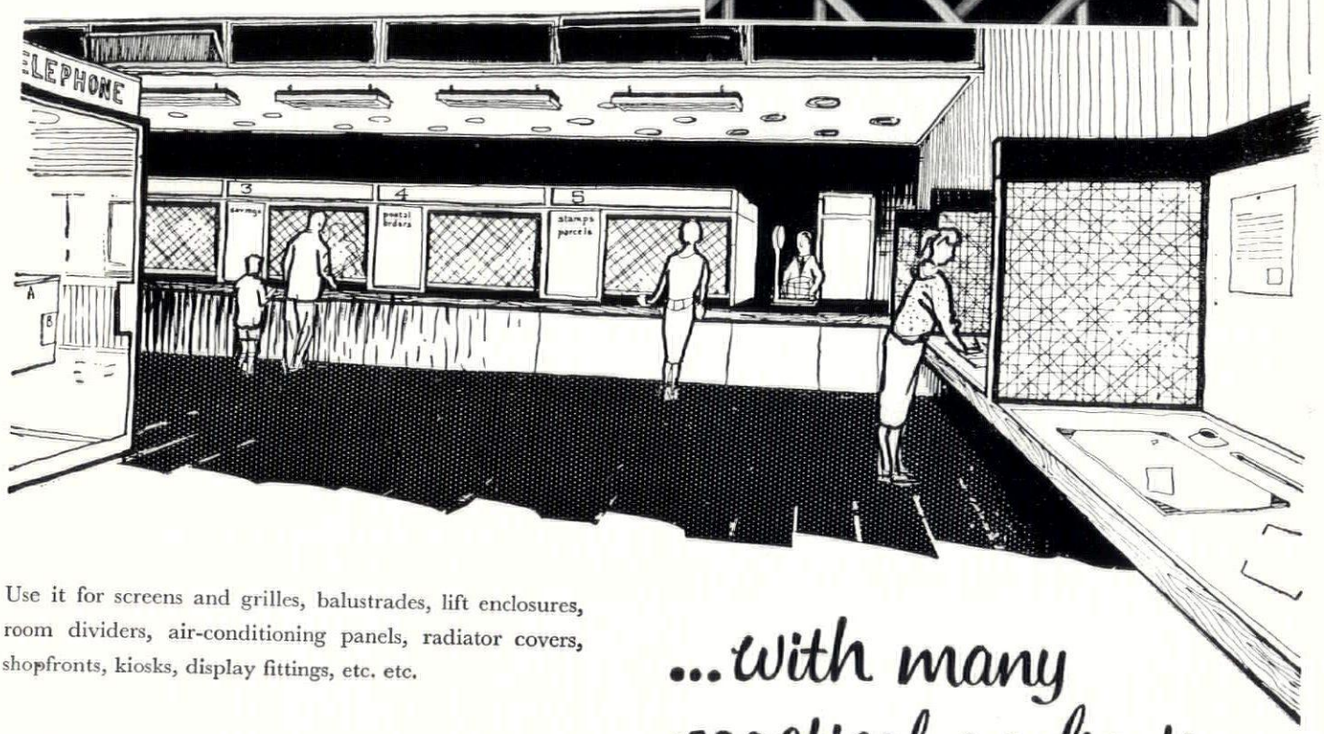
The principal factor determining the maximum size to which this window can be supplied is the accepted maximum limitation of 32 oz. glass and the British Standard Code of Practice CP 3, Chapter V, *Loading*. Assuming a maximum area of 18 sq. ft. for 32 oz. substance sheet glass this allows a total area for a horizontal sliding window unit with glass of that substance of 36 sq. ft., that is a window 4 ft. high by 9 ft.

[continued on page 80

A highly decorative material...



Decorative certainly, but even more remarkable is the extraordinary strength and rigidity of Harvey Metalace. An exclusive method of weaving ensures that all the strands interlock, and although Metalace has an appearance of lightness it can be and in fact often is used to provide a high degree of security. Available in various patterns and a range of attractive finishes.



Use it for screens and grilles, balustrades, lift enclosures, room dividers, air-conditioning panels, radiator covers, shopfronts, kiosks, display fittings, etc. etc.



...with many practical applications

DECORATIVE METALWORK

Fully illustrated literature, giving detailed information on Harvey Metalace, Ribbon Wirework and Perforated Metal, is available. Refer to Barbour Index file No. 96 or ask for Brochure 1076/79.

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wide or variations in height and width to the same area.

Unless otherwise specified, nylon rollers are fitted only on windows where the frame height is equal to or greater than the frame width, or where the total window area exceeds 28 sq. ft.
Alumin Building Components Ltd., Weston-super-Mare.

Entrance door mats

An important item in any entrance is the mat with its basic function of trapping dirt entering the building on the feet of the occupants or visitors. A new form has recently come on the market under the name of Matador Cavity Mat.

This consists of strips of rubber 1 in. wide corrugated in their length and held between plane strips of timber or aluminium. Since only the edge of the rubber strips, ⅛ in. thick, is presented as a wearing surface to the foot, only a very small proportion of the surface area is actually capable of holding dirt and most will be trapped in the spaces. The mat is easily cleaned, recommendations being daily by vacuum with monthly washing.

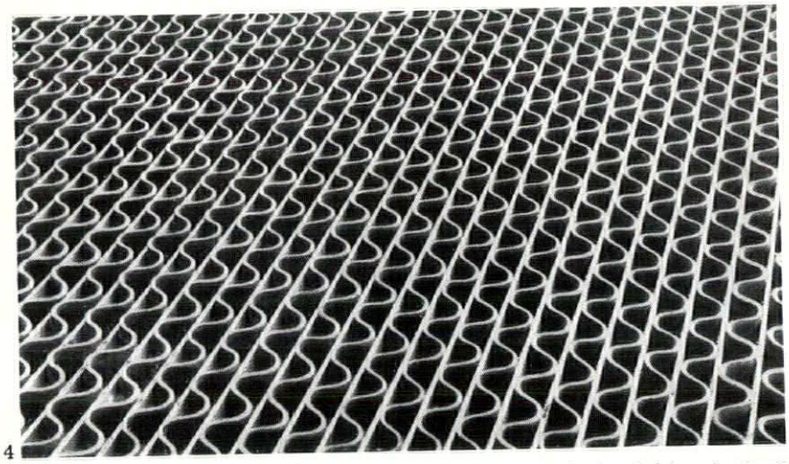
The mats are available in three forms: (*a*) to fit within a mat well; (*b*) with front and rear aluminium or timber trim and ramped sides; (*c*) completely framed.

Any length or width can be supplied and special shapes to fit obstructions such as floor springs can be accommodated.

If it is required to withstand chemical attack when used as duckboarding or at work benches, Neoprene can be used.
Cimex Ltd., Cray Avenue, Orpington, Kent.

Wood flooring

Wood as a floor finish has much to commend it. Warmth and natural colour are but two of the factors. Recently wood floors have been suffering along with many other materials from the ravages of fashion in the form of stiletto heels. There are few floors which can withstand the fantastic pressure and punching effect of these and evidence of their damage can be seen all round. If wood is required as a finish it is obvious that the normal wood block cannot withstand this wear which begins to approach that of the roughest industrial floor. An obvious answer is to use end-grain wood block, but in the normal commercial building this tends to be uneconomic. Now Wood Mosaic Floors Ltd. have produced a possible answer in the form of En-Grain wood mosaic. This is made from blocks 1½ in. square and ¼ in. thick mounted by adhesive on a wide mesh hessian web backing and supplied in flexible panels 12 in. square. Woods available are oak, mahogany, walnut and agba and the cost of plain panels, supply only, varies from 45s. to 55s. per sq. yd. A certain number of basic patterns are available at an extra cost of 10 per cent and special patterns in standard or special timbers can be supplied to design, quotations for which can be obtained.
Wood Mosaic Floors Ltd., Neville House, 42–46 Hagley Road, Birmingham, 16, Warwickshire.

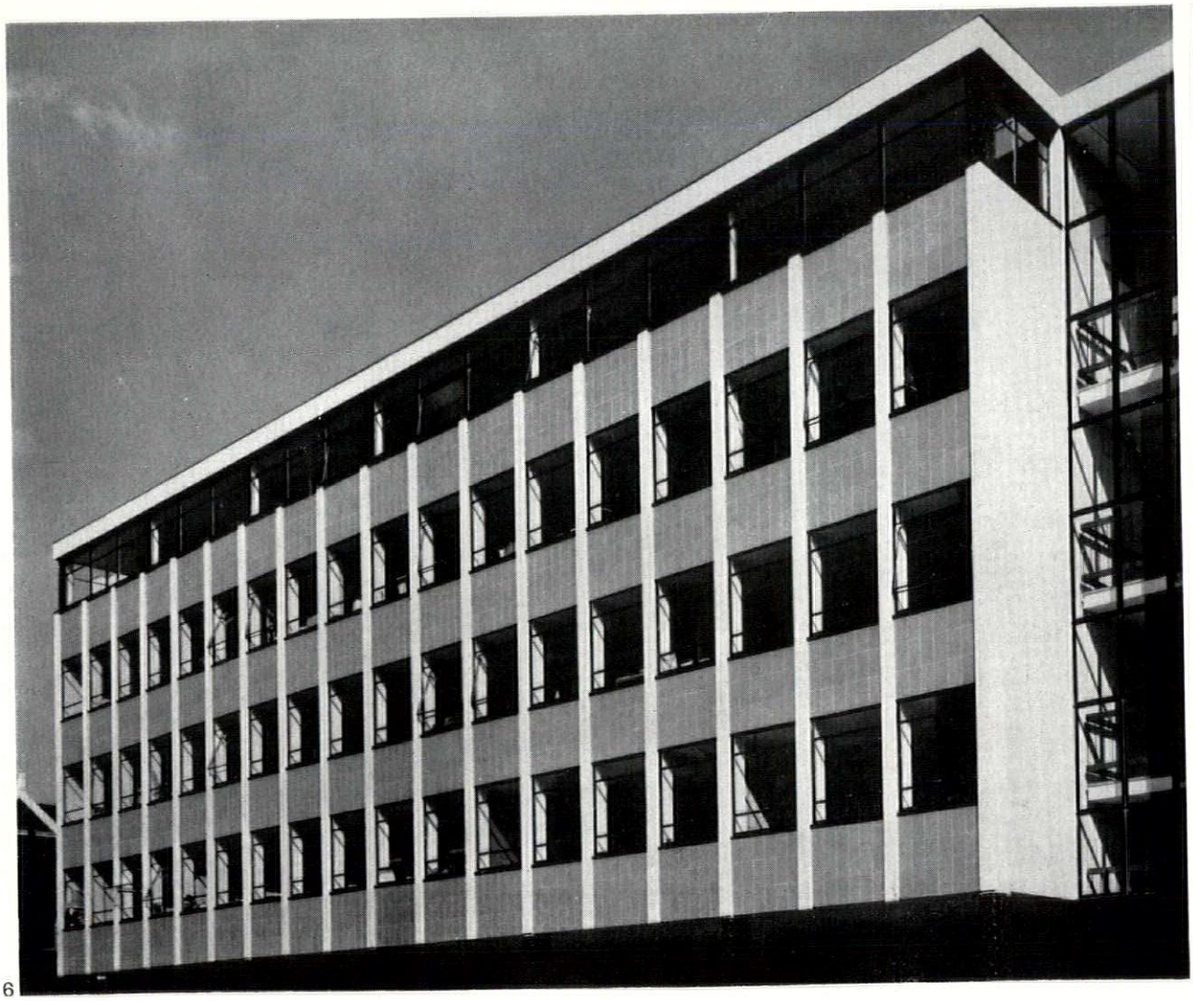


4



5

4, the Matador Cavity Mat by Cimex Ltd. 5, En-Grain wood mosaic flooring. 6, faience-faced wall panels by Shaws Glazed Brick Co., used on a building at Hammersmith.



6

Faience-faced wall panels

Of course everyone knows that the building industry has to become industrialized to achieve the productivity expected of it over the next decade. But loose thinking and even looser talking has clouded the issue. Industrialization means 'dry' techniques and with 'dry' techniques go thoughts of prefabrication.

And, of course, for many architects particularly prefabrication is a downright dirty word. But pre-

[continued on page 82

...**Got our plans** passed for converting the west wing. Flats! Every one a mod. con. stately home–all done with **Paramount Dry Partition. Marvellous idea!** Double-sided walls in panel form, ready for decoration immediately they're erected. Dry, quick to fix, lightweight and fire-resistant. Economical too. Makes a real snug job. *What's that?* I've been reading the literature? Course I have! Wouldn't hurt you to read it too ...

Phone or write for full details and sample of **Paramount Dry Partition** for interior wall construction.



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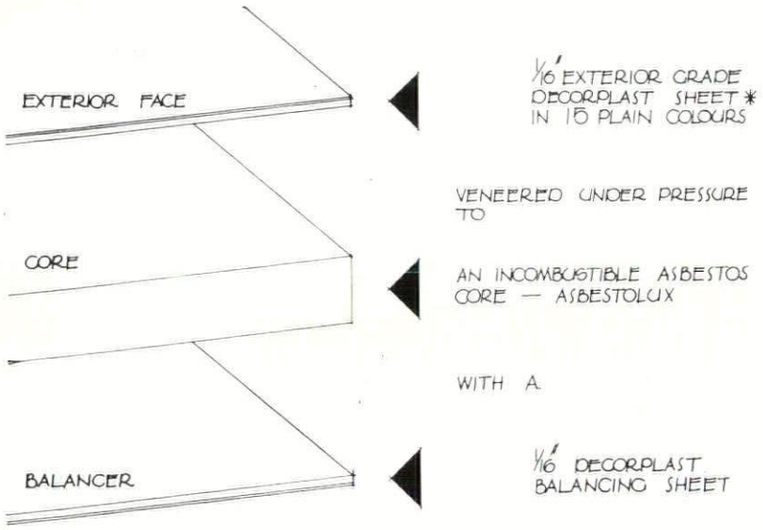
7



8 * SPECIAL WEATHER AND FADE RESISTING QUALITY OF MELAMINE RESIN FACED HIGH PRESSURE LAMINATE

7, Decorclad infill panels used on a building and, 8, details of the construction of the panels.

continued from page 80]

fabrication has something to offer in the sense of component industrialization, a branch which has had little or no real development applied to it. If and when some form of modular or dimensional co-ordination gains general approval, the Shaw Hathernware Group should be well qualified to open up in a branch of the component field, viz. prefabricated wall panels.

They have developed in recent years wall panels consisting of faience tiles, fixed permanently to a backing of vibrated concrete reinforced by BRC mesh to which each tile is further secured by copper cramps. The grooved backs of the tiles also add to the total adhesion obtained and the slabs have a final weight of roughly 300 lb./sq. yd. The result is a 'dry' method of applying faience facing with resulting economies in time, labour and materials. The photograph, 6, shows the panels used on a building in Hammersmith. At present panels are purpose made for a particular project, but it is obviously only one step further to produce panels to modular or preferred dimensions.

Shaws Glazed Brick Co. Ltd., Darwen, Lancashire.

Decorplast for external use

Holoplast, part of the Reed Paper Group, have developed a new panel using melamine laminate sheeting for external infill panels in curtain walls. The new sheet, Decorclad, consists of a facing of $\frac{1}{16}$ in. exterior grade Decorplast veneered to a $\frac{7}{16}$ in. Asbestolux core and backed by the $\frac{1}{16}$ in. Decorplast balancing veneer.

The external facing has been developed as a special weather resisting melamine sheet available in 15 colours. Panel sizes are up to 10 ft. by 4 ft. and the total weight of the sandwich is only $2\frac{1}{2}$ lb./sq. ft. with a quoted U value of 0.5 to 0.6. Price, dependent on quantity, varies from 7s. per sq. ft. and the panels are available as separate infill units or as part of a Holoplast curtain walling system.

Holoplast Ltd., 2 Caxton Street, London, S.W.1.

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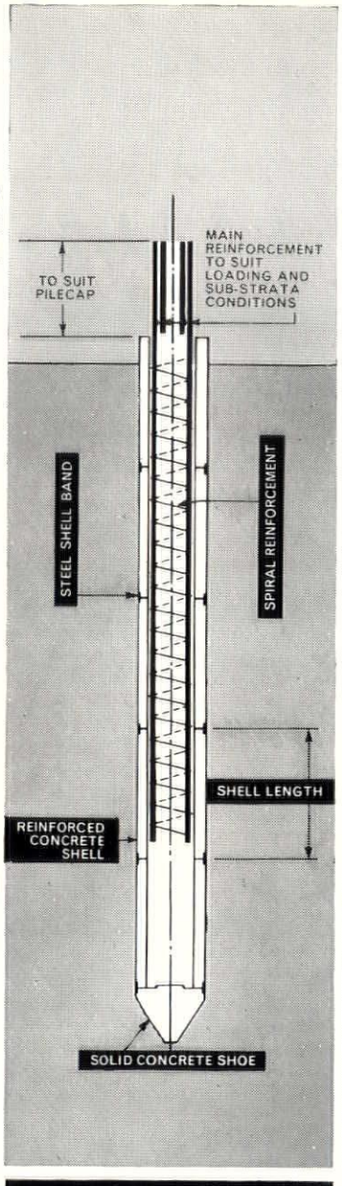

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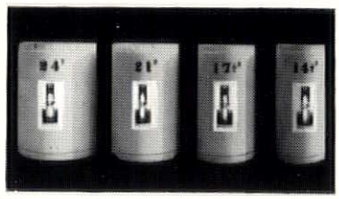

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Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment to Her Majesty the Queen, Printers, Kingston-on-Thames.
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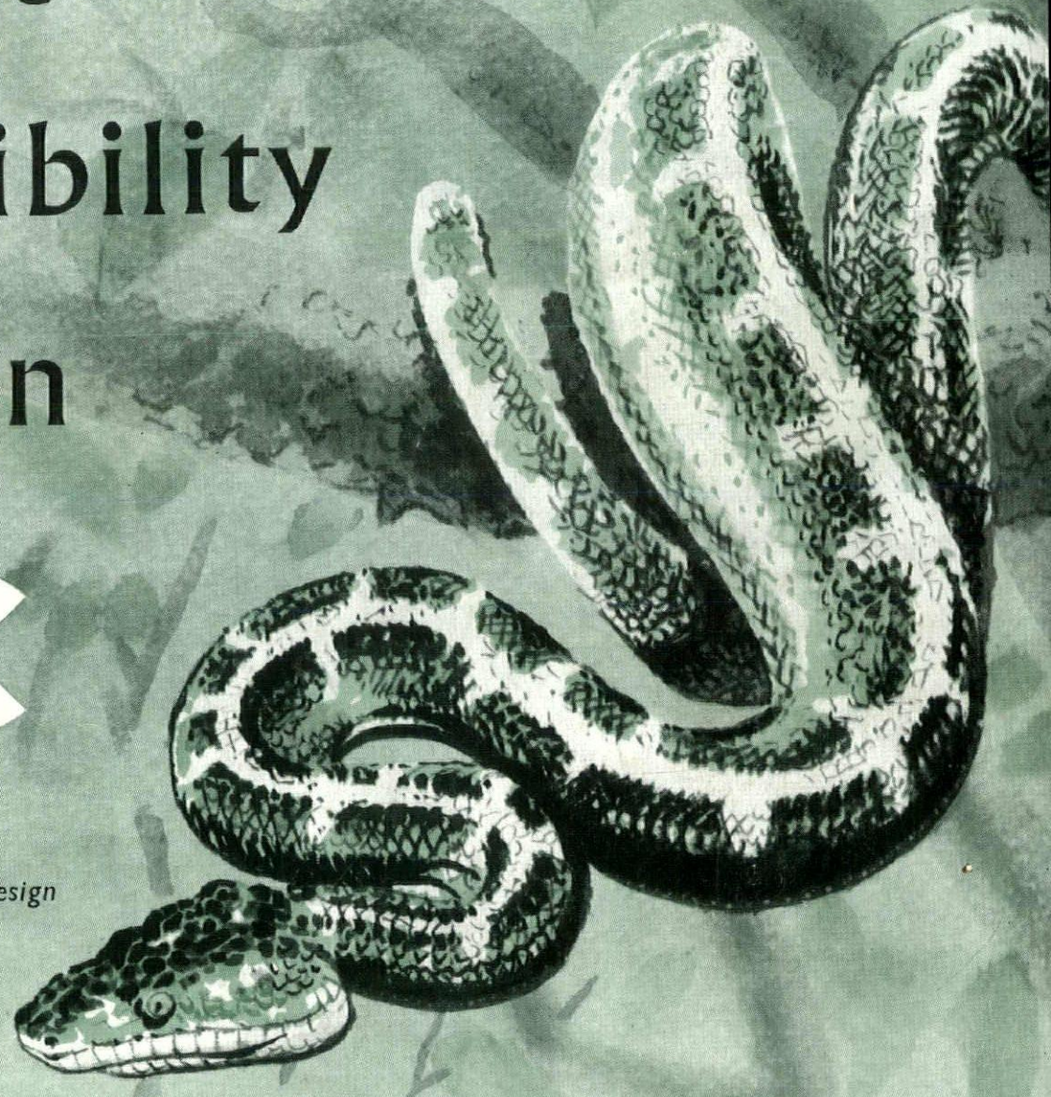

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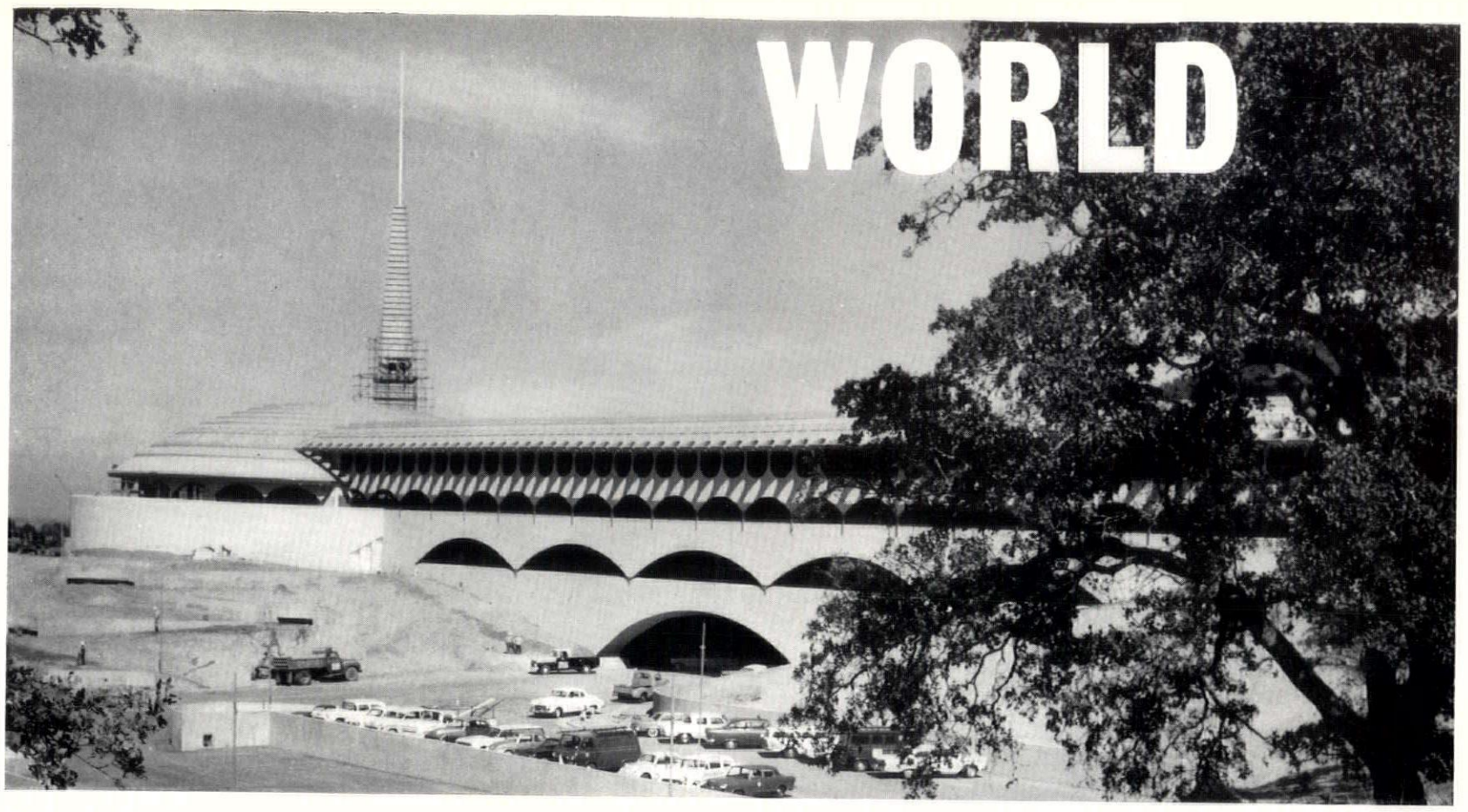


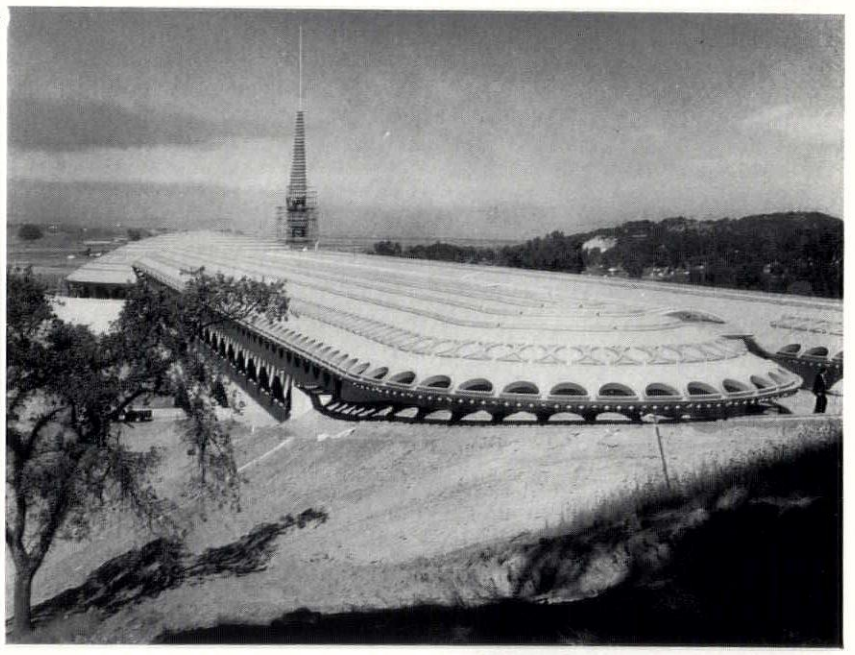
1

MARIN CENTRE

Frank Lloyd Wright's Last Work?

Among significantly true words uttered in jest must be ranked the phrase 'Frank Lloyd Wright's posthumous career,' which has been current ever since his death. That career, from the Guggenheim museum onwards, has included some of his most strikingly original works, of which the latest to reach completion is the Marin County administrative centre, 1, near San Francisco. Part of a larger project for a complex of civic buildings, whose construction is still under debate, even this completed part was held up for some time by a local economy lobby, but then resumed because of popular pressure—and bids fair to become his most popular and well-regarded work. In plan, a pair of parallel office blocks united by a central communications spine, 3, with three superimposed decks of corridor penetrated by light-wells, 2, the building expresses itself externally as two long rounded roofs, 4, united only at the dome adjoining the tower at the north end. Its elevations consist of runs of arches expressing the manner in which the whole structure bridges between two low hills, though the lowest arch of all, 5, serves also as a service entrance for trucks. At the highest floor level, the arcading becomes circular and resumes the theme of the perforated eaves, 6, which in its turn is an extension of the 'pie-crust' patterning of the roof. Completed under the direction of two of the Taliesin Associated Architects, William Wesley Peters and Aaron G. Green, the finished structure exhibits the full repertoire of colour and decoration intended for it by Frank Lloyd Wright himself—but, if one may judge from some guarded remarks in *Architectural Forum* (Nov. 1962) some people wish that it didn't bear this particular thumb-print of the Master: 'A year ago, with the shell completed, the building stood strong and dignified. The colours and ornamentation applied since then have moved it perilously close to the realm of fantasy. . . .'

4



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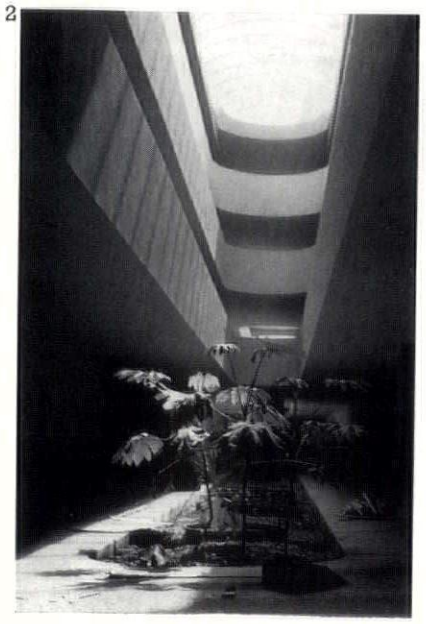

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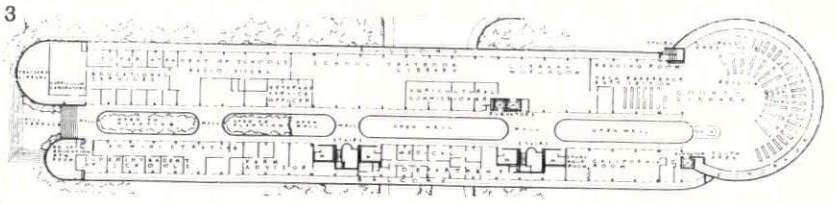

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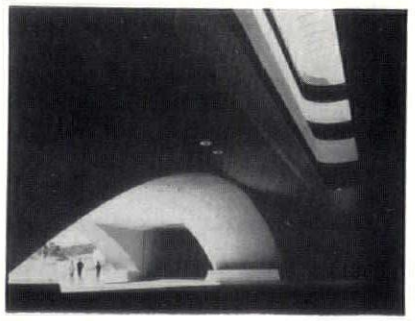

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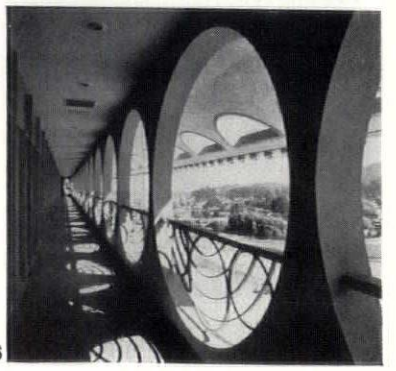
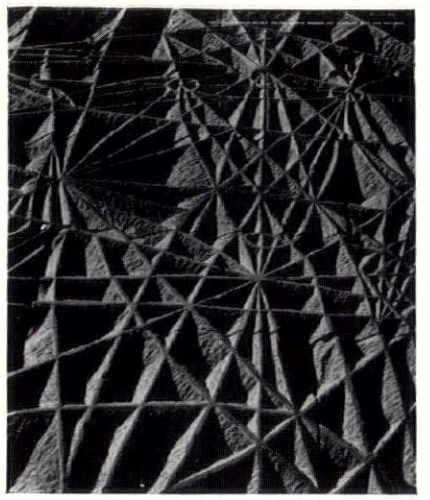


ACKNOWLEDGMENTS

WORLD, pages 83–86: 1, 2, 4, R. E. Enthoven; 5, 6, *Architectural Forum*; 7–16, *Arkitektur*; 17, *Kontur*; 18–20, *Casabella*; 26–30, *Arkkitehti-Arkitekten*; 31–33, *Charrette*. OFFICE BUILDING, SOUTH-EAST LONDON, pages 94–101: Galwey Arphot. CRITICISM, pages 102–107: John Donat. THE LIBERTY METALWORK VENTURE, pages 108–111: 2, 3, Peter Parkinson. NEW STOCKHOLM LANDMARKS, page 112: centre, Lennart Olson; bottom, Ateljé Sundahl. 1, NEWSPAPER OFFICES, pages 113–114: Ateljé Sundahl. 2, INTERNATIONAL SCIENCE CENTRE, pages 115–117: 1, 2, 5, H. Sanner; 3, Essette; 4, Jan Olsson; 6, Lennart Olson. 3, RADIO BUILDING, pages 117–118: Ateljé Sundahl. EXPLORING EYE, pages 119–121: Eric de Maré. BANK HEADQUARTERS IN BUENOS AIRES, page 122, Henk Snoek; page 123, Sameer Makarius. INTERIOR DESIGN, pages 125–130: Galwey Arphot. BEVERLEY'S LIFELINE, pages 131–134: Nairn Arphot. ARCHITECTS' OWN HOUSE, TISBURY, WILTS, pages 135–136: Galwey Arphot. APE HOUSE, DUDLEY ZOO, WORCS, pages 136–137: Lewis & Randall. MULTI-STOREY FACTORY AT BRIGHTON, page 138: Peter Pitt. MISCELLANY, pages 139–145: Exhibitions, 1, 3, R. B. Fleming & Co.; 2, 4, James Mortimer. Shrubs, 1, John Brooks; 2–4, J. E. Downward. Architecture, Strüwig. SKILL, pages 146–154: 1, Robert Gibb Photography; 5, Millar & Harris; 14, CoID.



This month's cover *is a close-up of a sculpture wall, designed by Professor A. H. Gerrard, of the Slade School, and commissioned by the LCC. For a full description and further illustrations see* **Marginalia,** *page* 87.

THE ARCHITECTURAL REVIEW

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

VOLUME 133 NUMBER 792
FEBRUARY 1963

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, Milano; Librerie Dedalo, Via Barberini 75-77, Roma. An index is issued half-yearly and is published as a supplement to the REVIEW.*

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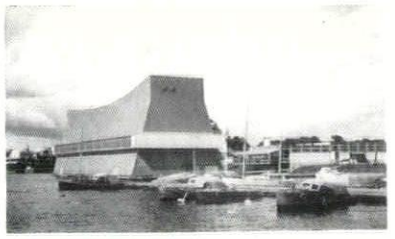
A SWEDISH MUSEOGRAPHY

Issue 9/1962 of the Swedish magazine *Arkitektur* was practically a monograph on new museums in Sweden. It showed the Wasa museum completed, 7, and the famous old hulk's timbers half hidden in the haze of its steaming interior, 8. Bjorn



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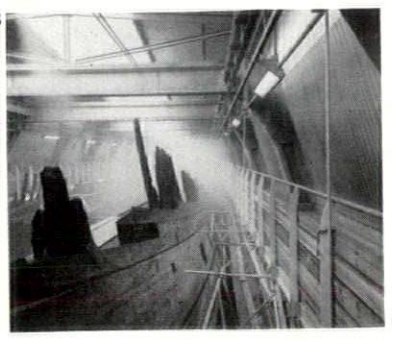
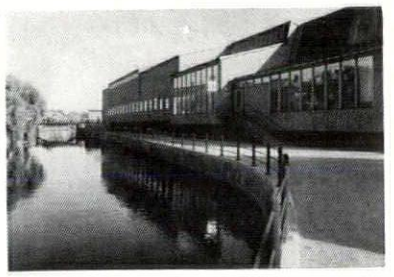


8

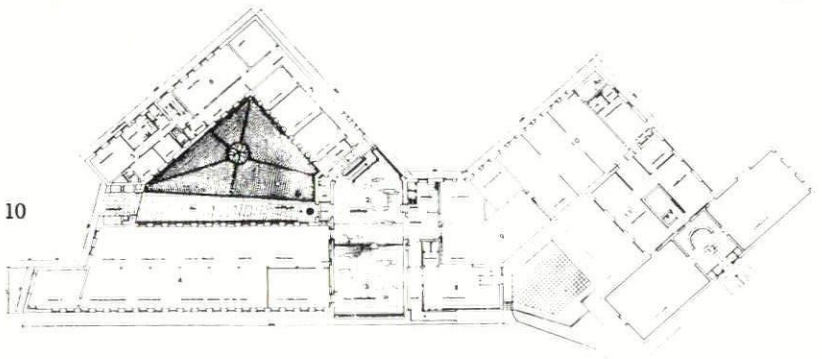
Howander and Hans Ackerblad's choice of a mixed light-metal and prestressed concrete structure to contain this damp and corrosion-causing environment may seem surprising, but it should be remembered that this is only a provisional installation, maximum life seven years, while attempts are made to ascertain the conditions under which the woodwork of this extraordinary relic can be permanently preserved.

The provincial museum at Falun, 9, is more like the commonly accepted image of this kind of institution



9

in Sweden, though its apparently picturesque exterior derives largely from peculiar difficulties of the site, 10, where Hakon Ahlberg had to bring visitors in from the best possible entrance point (at left on plan) to a central hall which could serve as a common entrance to both the new wing (lower part of plan) and the existing library/art-gallery complex (upper part of plan). His solution gives, effectively, a processional approach, 11, under an arch from the main road and across one side of a triangular court. A rather different problem of the use of existing structures arose with the Uppland museum in Uppsala,



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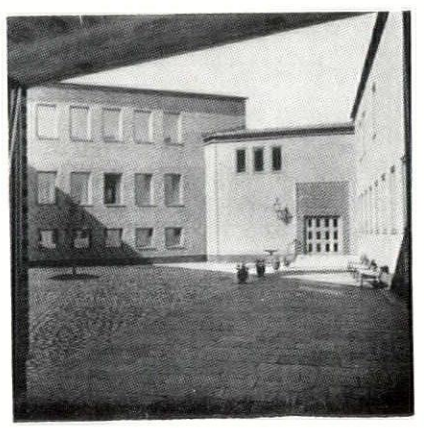

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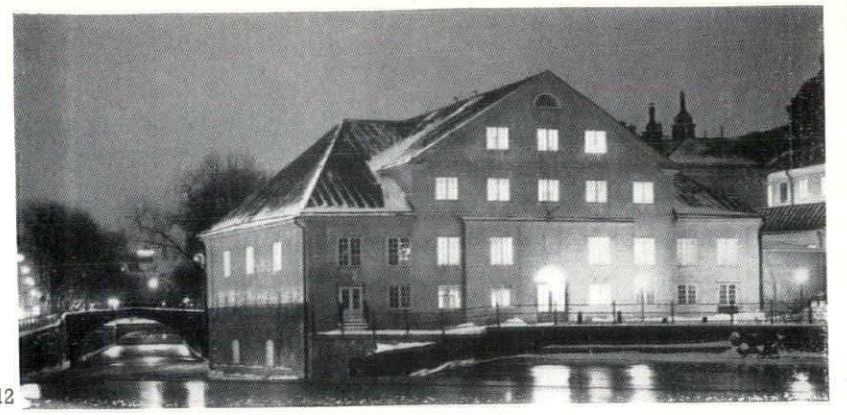
where Ake Porne was presented with a classic Swedish water-mill, 12, as the basis of his design. Here, a symmetrical solution around a central spiral staircase, 13, answers the nature of the building and yet gives an



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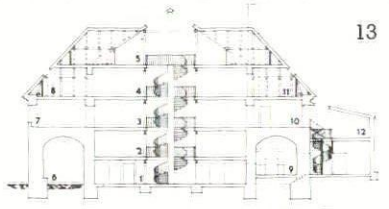

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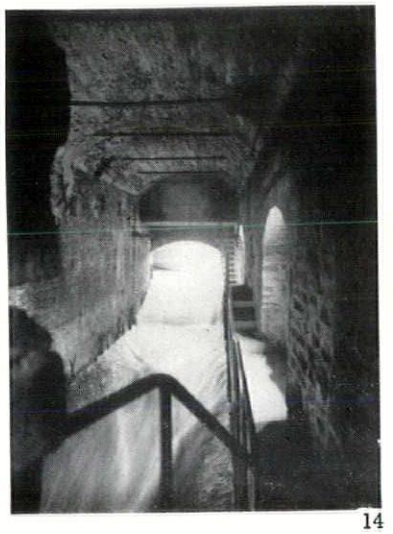
unforced order to the exhibition floors, while the preservation of the mill-race, 14, maintains the original relationship to the surrounding areas of water and makes this a *musée vivante* in a rather special sense.

The most remarkable of all the



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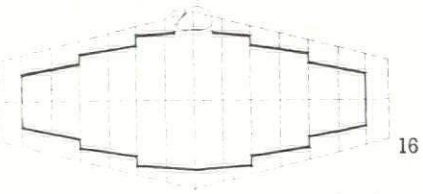
museums illustrated, in terms of location and purpose, is Jan Gezelius's bird-migration museum on Oland, 15. Under the shelter of the light-house on the southern tip of this long, thin, offshore island there had long been an ornithological research station, which suffered in some ways from being too handy for access from the mainland. In order to get the tourists out of the hair of the ornithologists, it was decided to erect this museum and a refreshment stand, outside the field in which the lighthouse stands, and under the shelter of a stone wall. Nevertheless, the blue and white museum structure stands up boldly above the alarmingly flat and windswept landscape, and both its plan, 16, and the execution of its interior, 17, in bold tones of indigo and lemon yellow,



15



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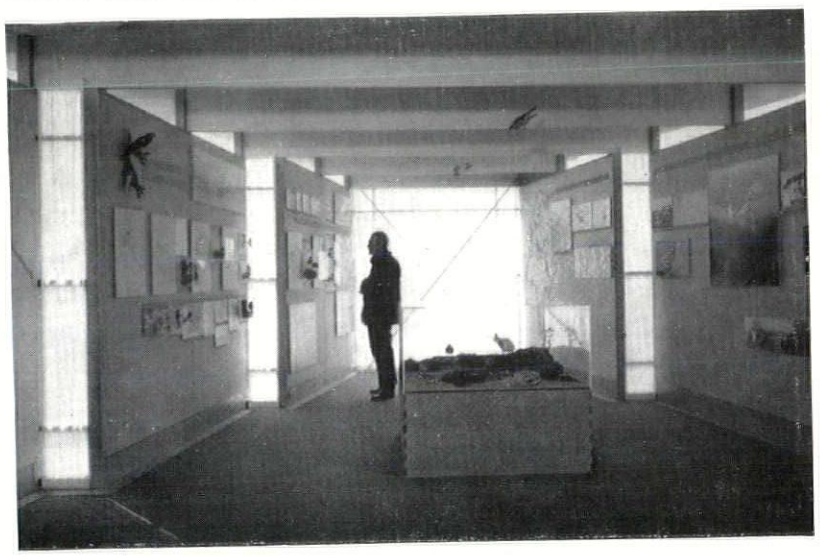
strike a note of sophistication that is unusual in buildings for such purposes in locations such as this.



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THE CONSCIENCE OF MILAN

A combination of circumstances has made *Casabella* 268 (October, 1962) an important document of *autocritique*, an examination of architectural conscience. It opens with consideration by the editor, Ernesto Rogers, of the part played by architects in Italian culture during the twenty years of Fascism. Since it has often been said that the present state of Italian architecture can only be understood in the light of those two decades, this is a document of prime interest for all students of Italian architecture, especially as it is supported by half-size facsimile reprints from *Casabellas* of the period, including the justly-celebrated last article 'La Nostra Posizione' by that great enthusiast and man of ideas, Giuseppe Pagano, who in the end was to prove himself, tragically, a man of action as well, dying in Mauthausen for his part in the Italian Resistance. By anybody's standards it was an heroic chapter in the history of architecture, and one too easily overlooked by non-Italian critics.

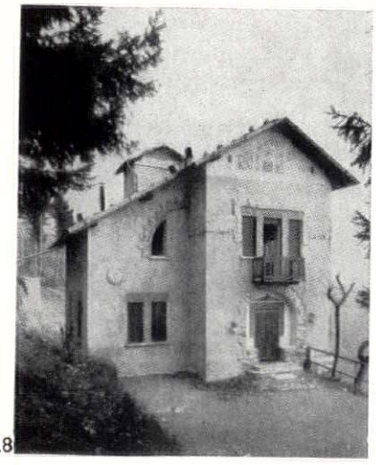
Yet it is knowledge of this heroism and determination that makes some, at least, of the critics of *Casabella's* present position uneasy, and thus makes the rest of the contents of no. 268 the object of even closer scrutiny, in case there should be some clue to the current malaise. Francesco Tentori contributes a broadly-based survey of the Stop-Go Architectural Scene (*Stasi e Dinamica nel Panorama Italiano* 1962) in which an unusual note of pragmatism and acceptance appears.

MILAN

Thus he accepts the fact that curtain-walled buildings have appeared in great numbers and 'they may be as bad as we say they are, but there they are.' And then there are the buildings influenced by Alvar Aalto; 'architectural works in this idiom have all been rather successful.' Now this is no way to conduct a Milanese polemic of the type to which recent years and *Superfici* have accustomed us; a note of welcome uncertainty runs through Tentori's survey—technical progress in catching up with north America has left the Milanese 'disoriented and stunned,' the AGIP economic miracle has been 'confusedly' witnessed, and for this reason among others it would be dangerous to 'abandon oneself to the euphoria of dreaming of a more or less science-fiction future,' there are more immediately urgent tasks at hand.

Yet the article ends with the words 'Una prospettiva aperta verso il futuro,' and there are numerous illustrations of new industrial plant recently erected in various parts of Italy and projects for large civil engineering works. In this light, may one dare to hope that when an Italian critic like Tentori calls for 'not only technical but social progress' he now recognizes that there *is* such a thing as technical progress (doubtful four years ago) or even that technical progress can be part of social progress. Certainly, it would be a great improvement if Italian polemics were not disfigured by the use of the words *domestic appliance* as a term of contempt, or by attempts to equate refrigerators with Nazi gas ovens.

Some Italian rethinking about Futurism might be illuminating on this matter, but it seems not to be coming yet. In this same issue of *Casabella* there is an extended account (also by Tentori) of the newly established permanent exhibition of Sant'Elia at the villa Olmo, just up the lake from Como. From this emerges one new thing, an early work, 18, that was actually built—a



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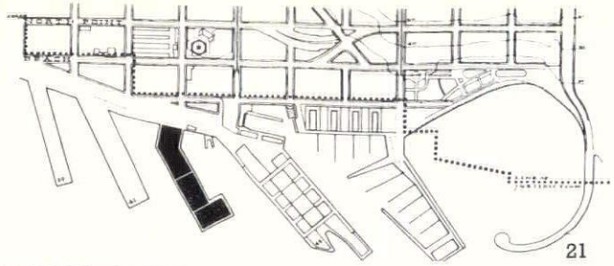
villa at San Maurizio, completed in 1911. Otherwise, the selection of projects and drawings shows the usual bias towards his early, Art Nouveau, designs (which are still regarded as 'International') and away from his later, mechanistic designs (which are regarded as 'Futurist' and therefore provincial).

On or around this last point, one may note that there is one project



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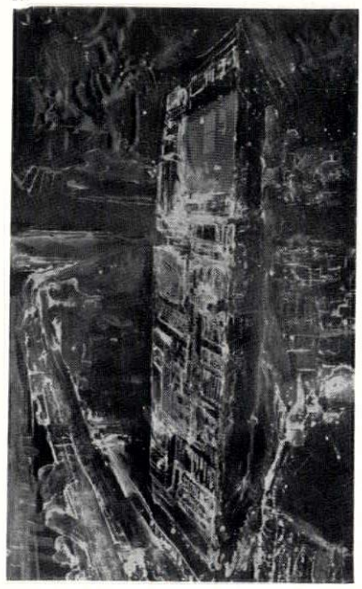
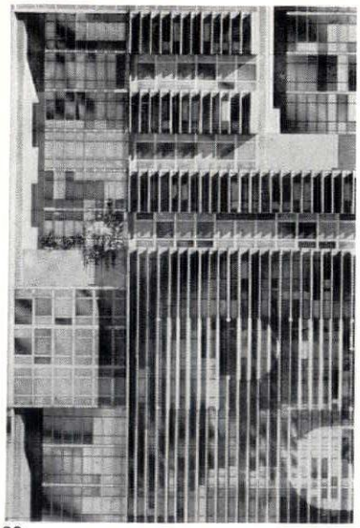
illustrated in *Casabella* 268 which comes close to fulfilling Sant'Elia's demand for a building 'active, mobile and everywhere dynamic.' This was Maurizio Sacripanti's entry (the only Italian one to get within sight of a prize) for the Peugeot competition (World, Sept. 1962). Seen here in a wildly expressionist perspective and a detail of the facade, 19 and 20,

19





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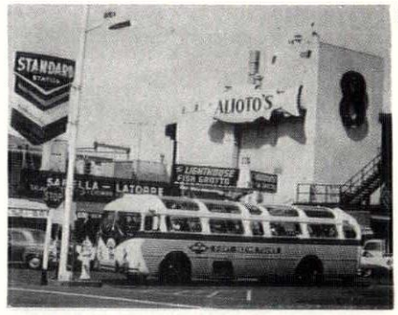
Sacripanti's scheme called for complete interchangeability of interior functions and consequential adjustment of the exterior treatment to accommodate the ebb and flow of tides of office or domestic accommodation. Sacripanti got only the fourth honourable mention; other Italian entries were nowhere. After a decade of almost unquestioned world leadership, this seems to suggest that Italian architecture has good grounds for self-critical analysis.

FISHERMAN'S WHARF

Quayside Rehabilitation in San Francisco

Fisherman's wharf, San Francisco, is an area of public resort, both to watch the boats and to eat the catch, and has become a traditional part of the city's way of life in the relatively short period (for a tradition) of sixty years—indeed the restaurants have mostly been there for less than half that time, taking over buildings originally intended for commercial uses. In other words, an area of changing land-use and consequential mess, 22. In an attempt to bring the right kind of order into this picturesque



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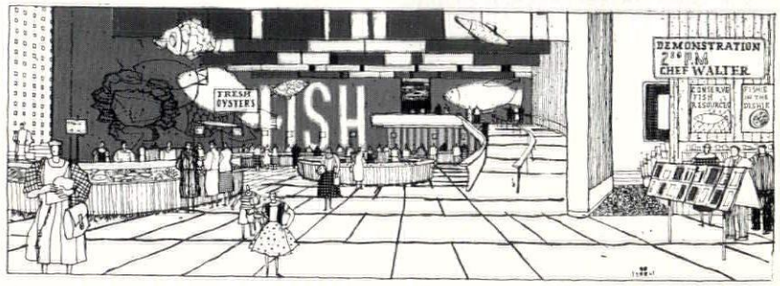

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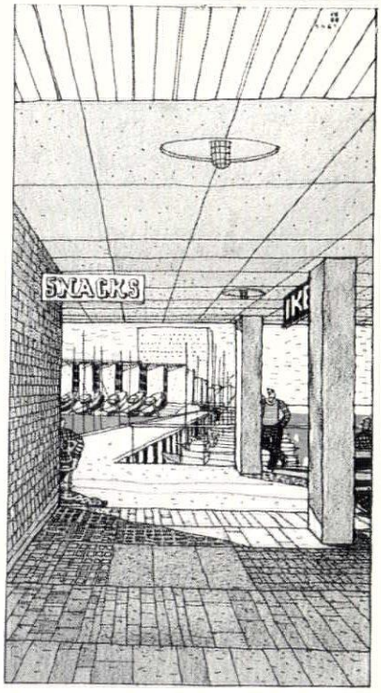
chaos, the San Francisco Port Authority commissioned John S. Bolles and Ernest Born to prepare a plan for the area—a plan which, though published in 1961, has not yet received its due as a model of its kind. Leaving on one side the technicalities, such as parking provisions, the great virtue of the scheme is that it proposes to enhance the character of the area by emphasizing and dramatizing its use. 'Scheme D,' for the relocation of the fishing industry, involves creating a new Fish Pier (black on plan, 21) containing wholesale fish markets, and a retail *Palazzo del Pesce* where the new pier joins the main Wharf, intended not only to sell the product but also, as the interior perspective shows, 23, to increase public awareness and sophistication about the fruits of the sea, by means of lectures, demonstrations and so forth. At the same time it is intended to create a network of pedestrian ways running through the area and coming down to the Wharf, 24, *under* the restaurants, which would be raised on stilts, 25, so



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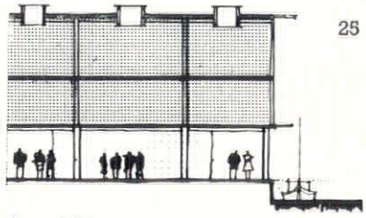

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that visiting tourists would be able to see through to the water and thus orient themselves. This extremely imaginative scheme is supported by a bibliography that is evidence of exhaustive homework, ranging from T. S. Eliot to the Outboard Boating Club of America, but making—surprisingly enough—no reference to Gordon Cullen's Townscape studies in the AR.

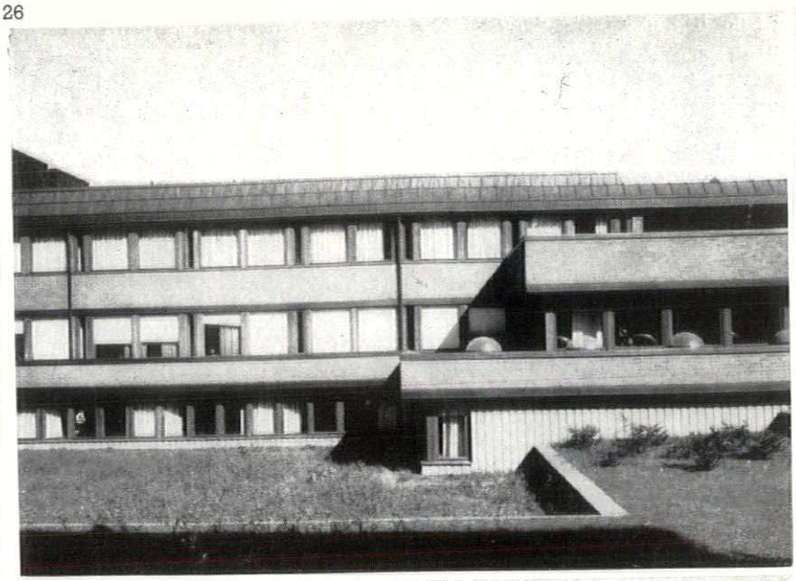
TOOLO ANNEXE

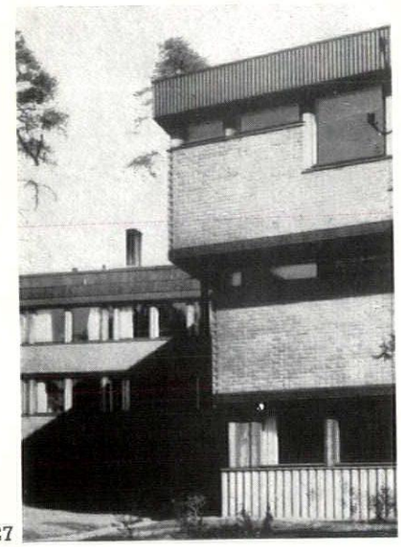
An extension to an existing sub-classical hospital in a routine Finnish setting of birchwoods but the part is greater than the whole, the sheer detailed competence of Veli Petaala's seemingly routine Finnish architecture transcends the purely local interest. At first and general sight, 26, nothing that one would not be tempted to

Toolo

dismiss, enviously, as 'School of Aalto.' At closer sight, 27, the handling of brick, wood and metal forces one to recognize that even if this were mere imitation of Aalto (which it is not) such a copy could still make rings round most of the original-type architecture being designed today. The picturesque massing, 28, may deceive English eyes, but there is nothing loose about the plan, 29, and both inside, 30, and out, there is a practised cunning and austerity in the use of materials and structure that would command respect anywhere.

26





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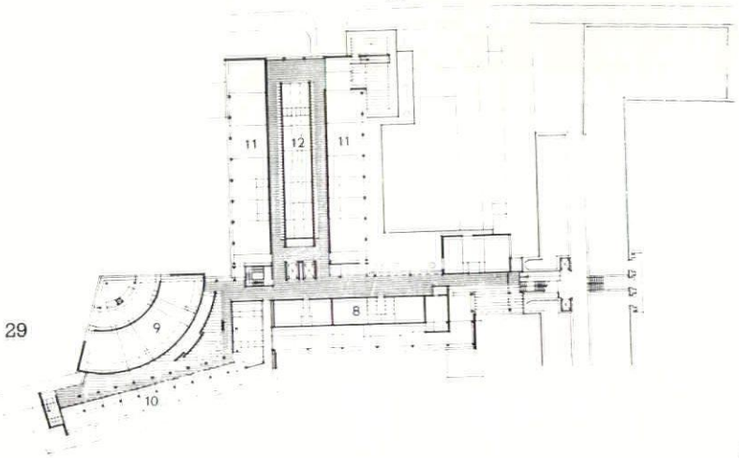

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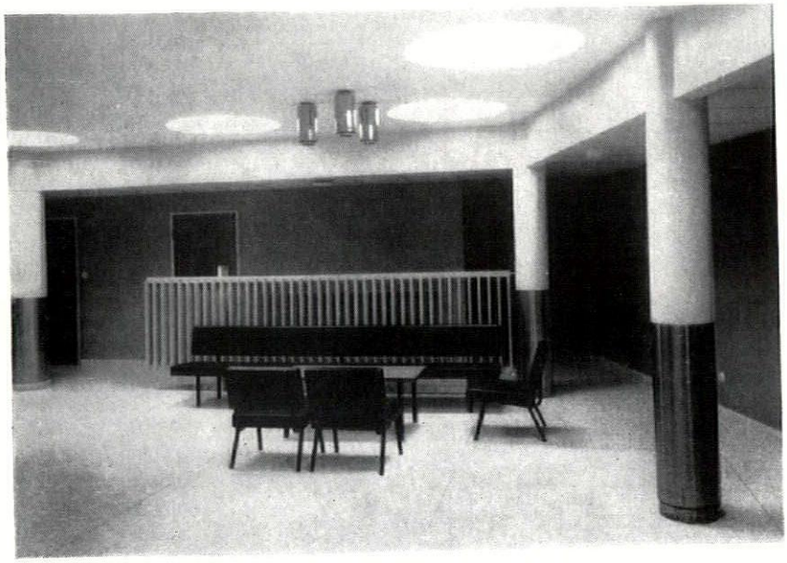

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l'Année Dernière à Pittsburgh

The celebrated and portentous opening phrases of that portentous but extremely architectural film, *l'Année Dernière à Marienbad* have made their first appearance in architectural criticism in a local-interest periodical which deserves to be better known—but will be, if it continues its present standard of excellence. With the words 'Une fois de plus——, je m'avance une fois de plus, le long de ces couloirs . . . dans cette construction . . . cet hôtel immense' James D. van Trump begins his review of the Pittsburgh Hilton Hotel, 31, in the November 1962 issue of *Charette*, the journal of the Pittsburgh Architectural Club. *Charette* is one of the new wave of local architectural magazines (another is *The Potomac Valley Architect*) that have come to the top on the strength of the current prosperity of the building industry and the rising standard of architectural sophistication throughout the US. But it is not a new publication—it is already into its forty-second volume. What is new is the standard of presentation and contents, which, under van Trump's editorial direction, begins to acquire a far-from-provincial air, aptly summed up by the title of his hotel article, *The Palace, the Loft and the Tower*, which neatly puts to work the phrasing of Vincent Scully's *The Earth, the Temple and the Gods*.

And, to be fair to *Charette's* editor, what he has really done in this article is to use William Tabler's new Hilton as the occasion for an historical enquiry into the typology of Pittsburg's hotels since the very beginning of the railway age. Thus, the palace and the tower of his title will represent hotel types that are familiar to Europeans, the most extraordinary of the palatial towers being the Penn-Sheraton (1916-1929) built in two



32

phases by Janssen and Abbot and by Janssen and Cocken, 32. The loft type will be unfamiliar both in name and functional organisation to non-Americans however, though van Trump's prime example, the Hotel Duquesne, 33, by James T. Sheen, will make clear

33



what is involved. The hotel is conceived as a modification of the routine shop/warehouse structure of the period,with the public rooms occupying the place of the shop proper at the front of the ground floor, and the rest of the accommodation housed in the upper part, which in a shop would be the 'loft' or storage space.

views and reviews

MARGINALIA

MPBW

When the news of the setting-up of a Ministry of Public Building and Works first broke, it was received rather cautiously by the architectural profession in Britain, and fears were expressed that the absorption of Sir Donald Gibson's newly-fledged design team at the War Office into this 'new monster' might have the effect of dragging it down to the level of some of the less inspired building departments that were also to form part of the empire of the Minister, Mr. Geoffrey Rippon. When, however, it was seen that the Minister intended to appoint a Director General of Research and Development, responsible for co-ordinating all government building, the atmosphere warmed somewhat, because this was seen to be a tremendous opportunity for the right man—if he could be found.

The most obviously right candidate was, in fact, Sir Donald, who was already inside the new Ministry, but it was not until the middle of November, almost three weeks after the establishment of the Ministry that it was confirmed that he would be the first Director General, with responsibility for co-ordinating and extending research, taking direct charge of the Ministry's various Development Groups, encouraging new and more rapid building techniques, standardizing components, and securing the dissemination of the best modern practices in design and construction.

Although marginal obscurities about his relationship to existing research bodies remain, the appointment is to be wholeheartedly welcomed as an earnest of a more enlightened and responsible government attitude in this field, comparable with the setting-up of Colin Buchanan's traffic-planning team in the field of transportation. Sir Donald will need no introduction to those who have followed the history of Development Groups, for he has been in the thick of the action since the early days of CLASP in Nottingham. His hand has been strengthened by the appointment, as Deputy Director, of Roger Walters, who comes from a different line of Development Group work, with Eastern Region of British Railways, but subsequently joined Sir Donald's team at the War Office. Together, and given effective Ministerial support, they should be able to extract full value from a promising and unprecedented situation.

THE STUDENT ARCHITECT

The first issue of *D: the student architect* has appeared after some months of preparation—the latest of a series of projects for international student magazines of architecture, but one of the few to actually reach print. The aim is to provide an international medium for student discussion because 'in a world so drastically reduced in scale that isolationism is virtually impossible, it is essential that students have a broader outlook.' The first issue is, in practice, predominantly English in content, which is hardly surprising in a publication emanating from the College of Technology in Oxford, but it has a cover-design by Jean Cocteau and there are Indian, Mexican, Spanish and Italian contributions, while the presence on the masthead of correspondents in Hungary and East Germany promises a view of the word 'international' that is not inhibited by routine political divisions.

A LITTLE-KNOWN WEBB

The statutory lists of buildings of special architectural or historic interest are now being extended to cover the works of the major nineteenth-century architects. This is a timely move, but listing will mean very little unless the Minister is prepared to follow it up by applying firm and



1

continuous pressure on the local authorities upon whom the preservation of listed buildings depends.

A Middlesbrough councillor, on hearing of the recent listing of Philip Webb's office building for Bell Brothers, 1, is quoted as having 'wanted to know if the council was required to be impressed by the architecture of a building just because somebody said it ought to be.' This reaction is not altogether unexpected, but the advice of the town-planning officer, reported in the same paper, is distinctly ominous. He is stated to have said that 'he had not known a case where if a local authority did not want to make a preservation order the Ministry insisted on it. The Ministry would accept photographic records in a case like this, he advised.' A considerable amount of education and some degree of coercion may be needed before councillors and their official advisers are persuaded to revalue buildings that they have until now regarded as expendable.

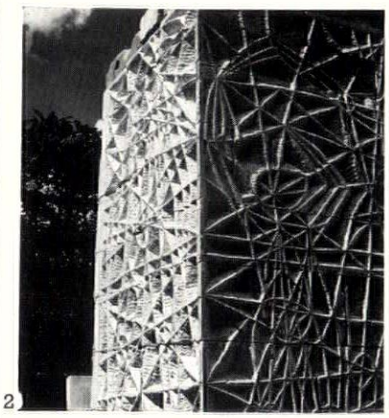
There is no doubt of the strength of the case for preserving this building. All too few of Philip Webb's works survive. The Middlesbrough one, an office building in Zetland Road, begun in 1889, was designed for the brothers Bell, ironmasters, who were among Webb's earliest patrons. He built Rounton Grange near Northallerton for Sir Lowthian Bell in the early 1870's; William Morris decorated it inside. This house has already been demolished, but Red Barns at Coatham near Redcar, began in 1868 for Hugh Bell (and therefore the childhood home of Gertrude Bell), survives as part of a grammar-school. A third house for the family, Great Smeaton, built in 1877 for Sir Lowthian's daughter, has been reduced in size and mutilated. The Zetland Road offices are given additional importance by the rarity of town buildings by Webb. They are also unusual in having external features of classical character.

SOCIAL ACCOUNTANCY

Something of a breakthrough in social and town-planning methods of thought was marked by the publication, in as influential a place as the leader page of *The Times*, of C. D. Foster's two-part study of the *Balance-Sheet of Social Returns* to be expected to accrue from the construction of the new south-west to north-east underground railway in London—the so-called Victoria Line. In the first part, the author (who is Senior Research Fellow in the Economics of Transport at Jesus College, Oxford) argued 'that it would improve the rationality of urban transport policy to calculate social returns on investment' and that it was impossible to make sense of the clash of opposing interests without it.

The proposition is of the greatest importance, because social gains are normally written off as imponderables too imprecise to permit of quantification, let alone calculation—an impression that is normally of the greatest comfort to both sides in the average town-planning argument as it leaves the opposing interests free to argue from pure emotion and unqualified prejudice. But, since 'time is money' it is possible to form some sort of quantitative estimate of the value of saved time; equally, the fuel consumed by a vehicle waiting in a traffic jam can be measured, its unremunerative depreciation during that time can be calculated. Some estimate of the money value of comfort and lack of crowding can be formed from the study of commuters' preferences for fast-crowded or slow-empty trains, and the same tests give some measure of the value that train-users attach to their time as well.

Such techniques and subjects for research do not, of course, exhaust the sum of social benefits, some of which will probably remain for ever proof against quantification, but even these relatively simple headings enabled the second part of Mr. Foster's study to offer an accounting of social benefits that showed a return of over eleven per cent on investment in the first full year of operation of the Victoria Line, and a social return of over fifteen per cent in the fiftieth year if the assumptions of trends are justified. These figures will, no doubt, be energetically challenged in some quarters, but the existence of an accounting technique that can produce figures of social benefit of any sort is to be welcomed, and refinements of the technique should ultimately produce figures that are beyond challenge.



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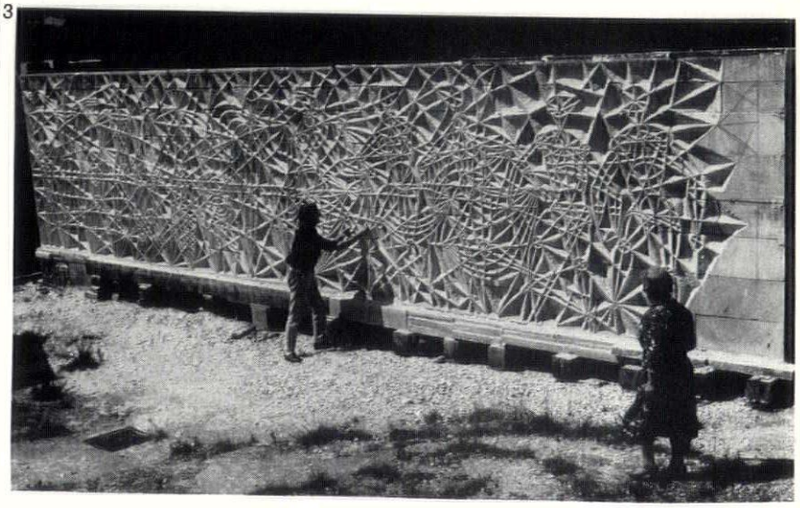
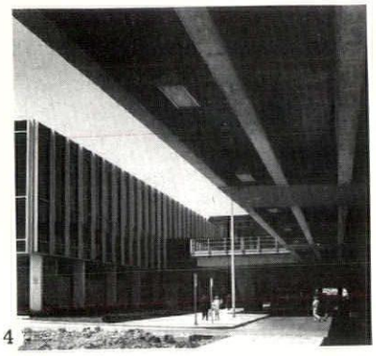
The London County Council recently commissioned this carved wall from Professor A. H. Gerrard, professor of sculpture at the Slade School of Art. It is to be used to embellish one of the Council's schools—which one has not yet been decided. The wall is shown in these two photographs, 2, 3, on the point of completion in the garden outside Professor Gerrard's country studio. A close-up view provides the cover of this issue. The wall, of sawn Portland stone 7 in. thick, is L-shaped, with the longer leg 36 ft. 7 in. long and the shorter leg 4 ft. 7 in. It is 8 ft. 6 in. high. The stone courses vary from 9 in. to 15 in. and the stones are in random lengths. Professor Gerrard has called the structure 'Delight.'



3

O'HARE AIRPORT

When this photograph, 4, of the O'Hare international airport building at Chicago was published in the November, 1962, AR, the architects were given as Skidmore, Owings and Merrill. The architects were in fact C. F. Murphy Associates, of Chicago.



4

The photograph shows the bus underpass. The building was described in the AR article as distinguished and beautifully detailed.

STOP PRESS

LET WIMBORNE BE ITSELF

To be ten miles away from Bournemouth is a bad proposition for an old and reserved country town. Bournemouth techniques of improvement tend to be transplanted, and the alternate opening-out and making cosy which works so well amongst the chines is disastrous if applied to somewhere much more subtle and delicate.

The town is Wimborne Minster, and what makes it particularly susceptible is that its charm is unpretentious and fugitive. Unlike the next town, Blandford, it has no firm architectural framework which can be expressed as Grades One and Two, amenable to legal interpretation. Instead, it is just a very nice place; and much of its niceness is the chastened striptease which the town conducts with its Minster, long, low and relaxed. One can never see all of it at a time. Instead, parts appear, as a come-on, enough to intrigue but not to display until the viewer is up to the churchyard.

The best of these is the view from the market place down Church Street, over the cottages in Cook Row. These the Council wish to remove in order 'to give a better view of the Minster.' The cottages are condemned as housing but could be used as offices, and in fact a prospective user has already been found. Ironically, the demolition would put an unlovely lavatory plumb in view; the Council, as the area is scheduled as an open space, intend 'to build a wall and plant shrubs to make it look as attractive as possible.'

This, however well-intentioned, is deplorable and purblind—Bournemouth's solution applied to Wimborne's problem. The essence of Wimborne is shy half-revealings rather than a fulsome display; and the local advisory panel of architects sum up the situation perfectly when they say that Wimborne is 'a small and compact town whose charm and interest lies in the glimpsed views obtained down narrow streets, and through small pedestrian ways between cottages.'

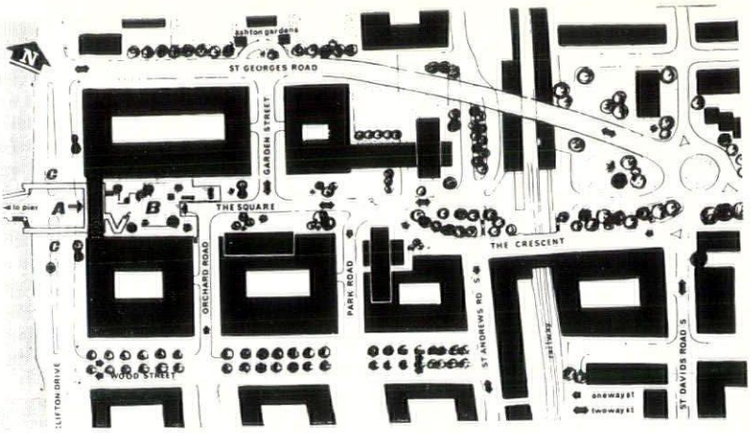
I.N.

LYTHAM ST. ANNES

In a praiseworthy effort to curb piecemeal development and to show how the small Lancashire seaside resort of Lytham St. Annes might be improved, its lively amenity society, the Lytham St. Annes Society, has published a plan, 6, proposing a new shopping centre in St. Anne's Square. This scheme, backed by the Civic Trust and designed by the architectural and planning group of the society as part of a 20-year master-plan for the town, shows the west end of the square, at present windswept and treeless, 7, closed by a two- to three-storey linking block (A) which acts as a windbreak and shelters a new paved pedestrian square (B) behind it. 8 shows how the square will look.

A continuous colonnade will run round the three built-up sides of the square giving undercover shopping, and there will be a pool, a clock tower with viewing platform, an open-air café and trees, which at present cannot survive the wind and sand. Below the square will be a car park with alternative entrances from the seafront and the square itself. Though blocking the seaward end of the square is essential both to give a sense of enclosure and to shelter shoppers from the prevailing wind, it is considered important to retain the present visual link with the pier, symmetrically placed beyond. To achieve this the linking building, which may contain a restaurant and an art gallery, will be kept as transparent as possible. Also, to ensure easy access to the pier and seafront from the square, a ramp will lead up from the latter to pedestrian bridges, C, across Clifton Drive. The scheme includes a new one-way traffic system, shown by arrows on the plan. Since the whole central area has been acquired by one property company which is in favour of the scheme, there seems a good chance that it will materialize.

K.B.



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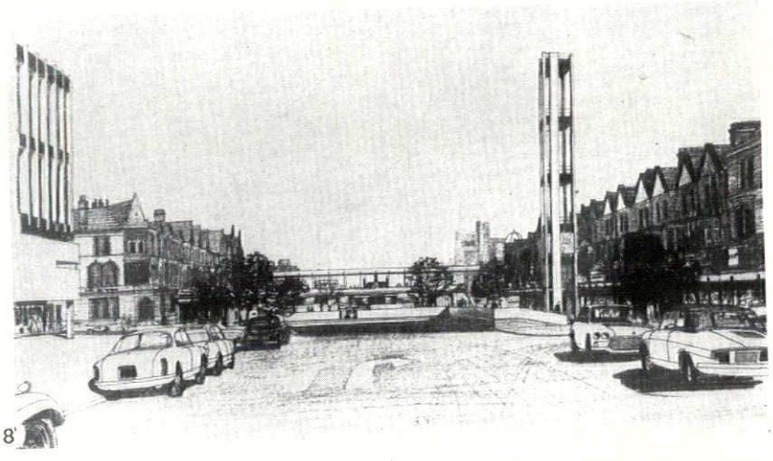

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6, plan for a new shopping centre in St. Anne's Square, Lytham St. Annes. 7, the west end of the square as it is now. 8, how it will look if the plan is adopted.



5

5, cottages in Cook Row, Wimborne, seen from the Minster churchyard.

CORRESPONDENCE

PARALLAX

To the Editors.

SIRS,—As an architectural photographer I have become particularly aware of Parallax, the subject of Peter Collins's stimulating article in your December number. The better the spatial handling of a building, or complex of buildings, the easier it is to produce a set of photographs, each of which has its own pictorial value. But because you cannot fully convey the encircling spaces of a building pictorially, parallax effects cannot be called 'four-dimensional' in any sense of the term. Are they not aspects of the Picturesque—or Sharawaggi, to revive a word of endearment?

All that parallax (or its pictorial expression in paintings, drawings or photographs) can do is to *suggest* spatial relationships. It provides only static, 'external' views (even in in-

teriors). When much glass is used, some 'solids' will be needed both for structural support and for articulating spaces; thus 'external,' pictorial views can never fully convey roving, muscular, 'internal' experience.

As Mr. Collins hints, this 'four dimension' talk is mystical nonsense. Surely architecture of any period can be enjoyed in three overlapping ways: 1, in wall or facade (so-called two dimensions); 2, sculptural form seen from a single, static, *external* position, or from a series of such positions, that is by pictorial parallax (so-called three dimensions); 3, sculptural form seen from a flowing series of positions produced by *internal* roving (so-called four dimensions). In all three cases you are, in fact, looking at three dimensions, while time, in its mysterious and inexorable way, is passing, whether you are standing still and looking straight in front or whether you are roaming around and turning your eyes and head. Even the apparently flat wall is not two- but three-dimensional, for its visual value depends on modelling and texture. 3 differs from the others because it cannot be expressed in pictures on the flat but only by direct, biological experience.

Perhaps this new, so-called four-dimensional attitude, which is certainly an exciting development, is due to the Enlightenment (and before that the Renaissance, Copernicus, etc.)—to the symbolic expression of the restless, questing scepticism—partly social-economic and partly philosophical in origin—which has replaced the old, static, dogmatic monotheism. What's behind the Milky Way, the electron and that pretty reredos? Let's not just sit here praying; let's go and find out.

Yours, etc.,

ERIC DE MARE.

London, W.11.

BOOK REVIEWS

GARDEN PLANNER

THE EDUCATION OF A GARDENER. *By Russell Page. Collins.* 45*s.*

It can be given to few authors to combine what is in effect an autobiography, with an informative work on a technical subject and an enjoyable book into which the layman can dip with pleasure at any time, but this is what Mr. Russell Page has managed to achieve. Though no doubt the book will be most widely read for its evocative descriptions of lavish gardens—and what could be more pleasantly escapist on a cold winter night for the English back-yard gardener than the perusal of seductive planting lists of aromatic silver shrubs for millionaire villas on the Mediterranean?—this is simply the gilding on the pill. For a pill, and a singularly distasteful one at that, it always seems to be for the average English garden maker to submit his horticultural dreams to the discipline of thinking first in terms of style and planning. But it is precisely by his emphasis on these two vital points, and his description of the mental processes by which they are achieved, that Mr. Russell Page renders the reader his greatest service.

The author himself is in no doubt as to where he learnt these valuable lessons—'measure and clarity,' he says, 'are essential to the French garden scene,' and it was in France, he considers, that he 'acquired a discipline for my rather shapeless jungle of a mind, apt to become overfurnished with purely horticultural images and associations.' Although much of Mr. Page's working life has been spent in France, he is not blind to the failings of French gardens, particularly their aridity and 'lack of mystery and imagination,' and he acknowledges the debt he owes to his early partnership with Geoffrey Jellicoe as an expert in formal garden design. Since then the author has visited gardens in places as far apart as Ceylon and Scandinavia, and has designed them for sites and climates so dissimilar as Persia and the eastern United States.

The conclusions drawn from these thirty years and more of wide experience are embodied in three chapters devoted to style, composition and the use of sites, which are invaluable to anyone setting out to design, remodel or simply to replant a garden. The author is at pains to differentiate between style and fashion, and to stress how the design of a garden must not only be adapted to the site, but also to the uses to which it will be put and the scale upon which its owners live; these are indeed the permanent values that have dictated all good garden design since time immemorial, as any student of garden authors from Vitruvius and Pietro de'Crescenzi to the great Renaissance treatise writers is aware. But where most contemporary gardeners will find the book particularly valuable is in the suggested treatments for dull and awkward sites, the planting of difficult soils and the layout of small gardens; also what Mr. Russell Page calls a 'sketch' or a suggestion of a style or theme for labour-saving gardens.

It is perhaps in his chapter on the treatment of water that the author is least successful. One rather gets the impression that this is a pleasure mainly reserved for those who can employ it on a lordly scale; whereas many an old Italian garden will provide an object lesson of what can be achieved with the greatest economy of means in this respect. But from his description of the origins of Italian Renaissance gardens 'as an imaginative reconstruction of a classic grove' (when available evidence goes to show that they began as strictly domesticated extensions of the house), and his assertion that the Villa Borghese has 'changed little from its Renaissance origins as a private garden' (compare Falda's seventeenth-century view with a modern map), one gets the impression that Mr. Page does not know the classic gardens of Italy as he does those of France. It is perhaps ungenerous to make yet another criticism of such an excellent book, but the author's own photographs are so attractive, and illustrate so aptly many of his points, that one wishes he had been a bit more generous with page references relating them to the text, so as to avoid continually searching through the whole book in order to find again the illustration of what one is reading about.

These photographs, however, make it evident that Mr. Russell Page's gardens have principally been designed for the limited number of people in the world today who can afford to lay out and plant a garden in the grand manner. But it is the measure of the success with which he has interpreted the basic principles underlying the good design of gardens great and small, and described the imaginative use of detail, that at the end of the book one feels stimulated to further efforts rather than depressed by the paucity of the means one may have at one's own disposal. For an old kitchen garden converted into a lime grove carpeted with wild strawberries, or a nut walk planted with anemones and hellebores call for originality rather than riches, so does a small garden loggia with a log fire, opening on to a whitewashed courtyard filled with blue flowers. Nevertheless it is refreshing to know that even in our subtopian age there exists a swimming pool near Turin, where the paved surround is also heated like a *heliocaminus* in the villa of Pliny the younger or one of the Roman emperors.

Georgina Masson

LETTERING FOR BUILDINGS

APPLIED LETTERING. *By Maurice Ward. Ward and Co.* 21*s.*

This book consists of specimens of twenty-five alphabets, shown in various sizes representing letters from four to eighteen inches high on a scale of ½ in. to 1 ft. (so that they can be traced on to scale drawings). With each alphabet is a photograph of the letter in actual use, classified according to suitable spacing and effect ('classical,' 'bold' and 'festive'), and a paragraph of comment. The book is produced by Messrs. Ward who make all sorts of applied letters, some varieties of which are shown in the photographs, and the alphabets are presumably available in various materials, colours and surfaces, though these are not listed.

This is a step in the right direction; I should prefer however a good many steps further. Both in his photographs and in his comments Mr. Ward does envisage a real three-dimensional letter, but his space is mainly occupied with reproductions of flat black alphabets so that possible differences due to depth of return, methods of fixing, raised outline or rounded edge, as well as material differences, which in use can be much more important than differences in letter-design, are largely left to the imagination.

The author includes six alphabets specially designed by himself for applied lettering. These he has wisely based on traditional (type) designs. His *Doric Vertical* and *Egyptian Vertical* are both good and interesting designs; there are details which I might criticize, but their character, strong, with a certain squaring of the curves, and heavy but relieved by variation in line-width, and with slight brackets to the Egyptian serifs, is contemporary and thoroughly architectural.

Otherwise, apart from a *Trajan*, the alphabets are all type-designs. Some of these I should like to see deleted: *Chisel*—what possible point is there in a three-dimensional form of an imitation three-dimensional letter?—*Playbill*—out of date as well as unsuitable—*Ultra-Bodoni*, and script letters. There are also too many italics. The more I see italic on buildings, and it is to be seen everywhere, the more pointless it appears to me—except in particular circumstances such as for vertical or subordinate lettering. I dislike the idea of type-face designs, which are so different in conception, used for applied lettering. Still Mr. Ward is wise to start from carefully designed letters and avoid half-baked novelties. He has chosen suitable designs on the whole, including *Venus*, *Grot.* 9, *Fortune*, *Annonce* and, almost more important, he has chosen good weights of the various designs. Where a type has been adapted, as with *Alberta*, it is quite well done.

Nicolete Gray

SHORTER NOTICES

SOLUTIONS

ARCHITECTS' WORKING DETAILS VOLUME 9. *Edited by D.A.C.A. Boyne and Lance Wright. The Architectural Press.* 25*s.*

The aim of the Architects' Working Detail series is to show some interesting solutions to everyday detailing. These examples are not intended to represent ultimate solutions, but rather to give information on advances in techniques which may help the architect to develop more satisfactory answers to his own problems. This volume contains details from recent British buildings and shows both high standards of design and finish obtained within a limited budget and also glazed walls for 'prestige' office buildings. Included too is some highly original detailing such as a design for a fireplace under a window. The earlier volumes have proved valuable as a source of new ideas and current practice and this volume is a worthy addition to the series.

G.M.D.

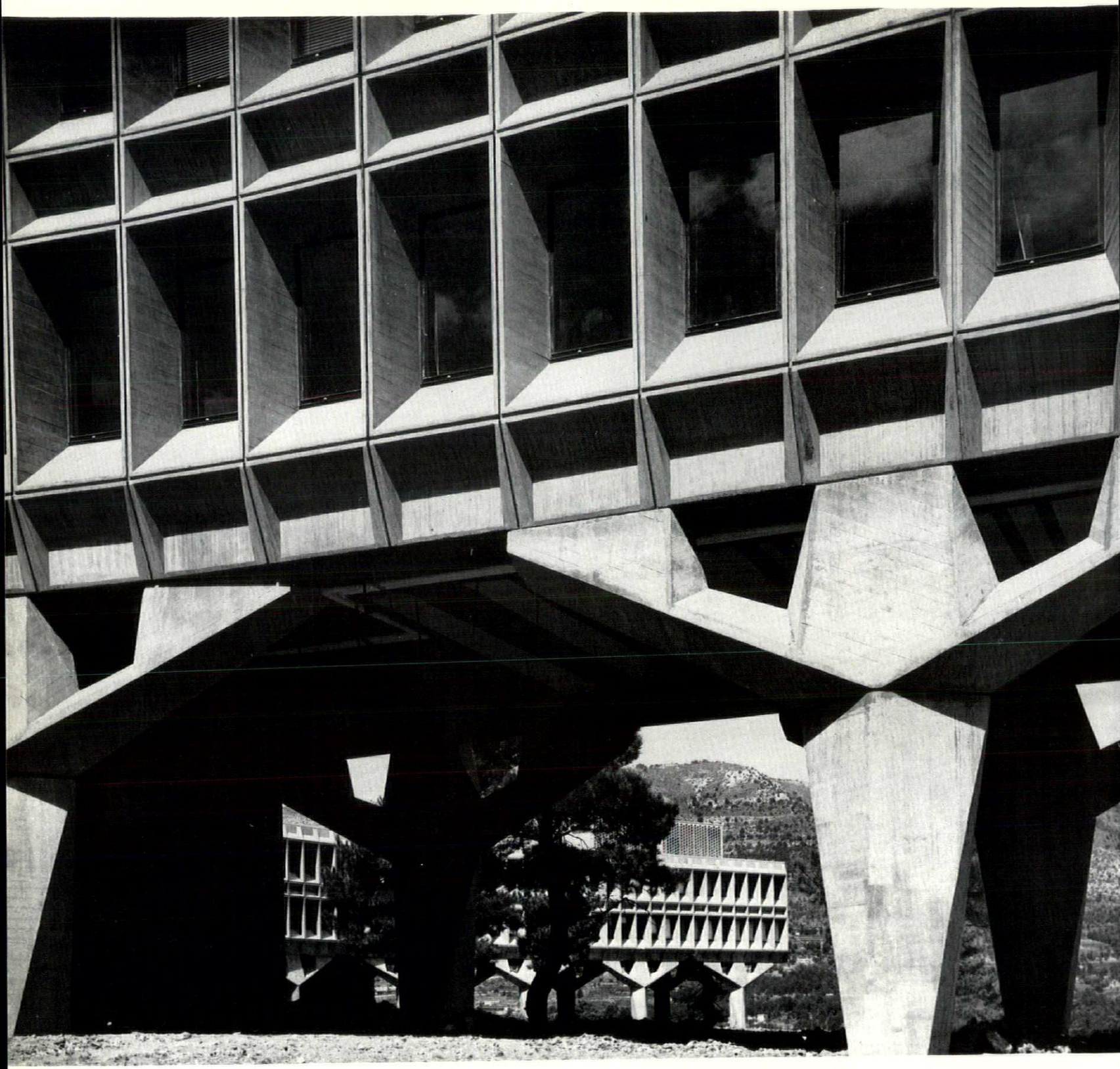
STORY OF THE HOUSE

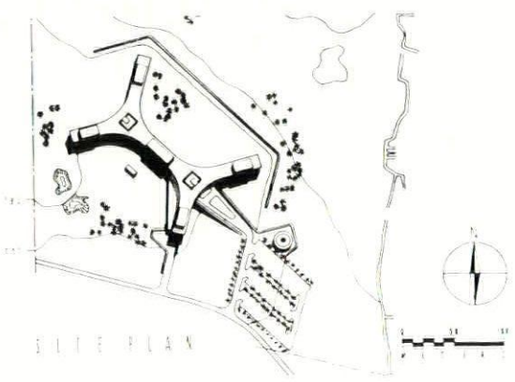
DESIGNED TO LIVE IN. *By Elisabeth Beazley. George Allen & Unwin.* 32*s.*

A book on houses and housing, designed for non-architects. It is a pity that for them it is a little too expensive because it contains some useful information and ideas not so conveniently available elsewhere, especially the last section, addressed to clients, which describes the process of designing a house in consultation with the architect. This shows an unusually clear understanding of the many pitfalls and potential misconceptions.

The earlier sections, which architects themselves should not despise, are largely historical and have the merit of dealing with houses not as isolated structures but in relation to their setting. The thirty-two pages of photographs are well chosen but insufficiently captioned to explain their significance to an unprofessional reader.

In the review of Mr. Kidder Smith's book, *The New Architecture of Europe*, which appeared in the REVIEW for November, 1962, complaint was made that no dates were given in the descriptions of buildings. The REVIEW'S attention has been drawn to the fact that the dates are however given in the index.





The **IBM** centre outside Nice is a substantial addition to the achievement of **Marcel Breuer**. The deeply modelled facade of pre-cast concrete units is, in effect, a *brise soleil*, the faceted and bracketed sub-structure collects distributed loads and transmits them *via* fair-face concrete pilotis directly to an irregular terrain below. There is no currently fashionable classical podium, no axial approach (as the plan, left, shows, the entrance side is asymmetrical), no block-like symmetry of plan—this design, announced late in **1960**, is unaffected by the upheaval in **US** architectural taste. **Breuer's** career exhibits a consistency of development that has carried through from the **UNESCO** building in **Paris**, and **Saint John's Abbey** at **Collegeville** (**AR**, **July 1954**) which was completed last year, and now culminates in this, the most original of all exurban office-blocks.

Ivor de Wolfe

THE DEATH AND LIFE OF GREAT AMERICAN CITIZENS

From Plato to Mumford citizens of the world have taken a good deal of time out dispensing enjoyable hot-air about town-planning. To the genial climate so created THE ARCHITECTURAL REVIEW has made its own contribution by turning the heat on townscape. Now comes a warm but high wind across the Atlantic and (one hopes and believes) a hot handshake for the Ian Nairns, Gordon Cullens and Kenneth Brownes of this continent in the shape of a book which is a *must* for all who believe the urban consequences of those odd bedfellows, Ebenezer Howard and le Corbusier, to be the spawn of the devil working through his chosen vessels.*

The hand and the high wind are both feminine and belong to Jane Jacobs, wife (of an architect), mother, journalist, and associate editor of *The Architectural Forum*. Egged admirably on by Douglas Haskell, the *Forum's* editor, Mrs. Jacobs has taken the lid off many honoured modern conventions and made a fool of the planners, prairie, airy, and fairy, with a courage which is stimulating and a disingenuity which is startling. Startling because by means of exaggeration and false emphasis, if not downright prevarication, she contrives to come at the truth in a way that makes the truth seem truer than it usually does.

Let me give one example, more surprising perhaps to British than American ears; a candidate this for the charge of false emphasis on grounds of position alone, being the sole matter for discussion in the first chapter of the book. From the title, *The Uses of Sidewalks: Safety*, the reader assumes as a matter of course what the subject of that discussion is, and since the road-accident rate in New York is no doubt as spectacular as its other statistical incidence, he starts reading with some interest, only to discover that for Mrs. Jacobs getting clobbered is a much more pressing danger than getting knocked down by a car. For her, it seems, the first thing the sidewalk user has to think about is how to avoid what is known in the States as a mugging; that is, being stood up in some dark corner and relieved of one's wallet by a cove with a club.

A certain difference in temperature does admittedly make British cities more secure than American—the murder rate of the City of New York alone is more than twice as high as that in the whole of Britain, including Scotland, Wales and Northern Ireland (one murder every fifty-eight minutes is the current rate, they tell us, for the US)—but even so it is hard to believe that all American citizens go in fear of their life. Except, of course, in that text-book example of prairie planning L.A., where the cops warn you for your own

**The Death and Life of Great American Cities.* By Jane Jacobs (Jonathan Cape, 30s.)—a far more important work than Lewis Mumford's portentious *The City in History: its Origins, its Transformations and its Prospects.*

safety to keep to your car at night, as though the town were a Central African wild animal reserve.

Nevertheless, as Mrs. Jacobs gets into her stride the possibility of being mugged behind some privet hedge or rhododendron bush on a dark night in a 'border vacuum' or lonely suburban street does become every moment more real. The truth is she's right, and all at once one sees how right she is. The madding crowd is by definition a dangerous thing—particularly when it isn't there. Even in the most stick-in-the-mud English city the air of urbanity is only skin-deep. Any weakening of supervision will encourage gangster and hoodlum to start stropping their razors. She puts her finger on the cause. Cities are examples of the gregarious impulse, but, unlike towns, the human souls they pile one on top of another are *strangers*. And always will be. Though use deadens the sense of crisis such a set-up must of its own nature present a perpetual element of peril. Strangers are strangers and, as Mrs. Jacobs puts it, not all of them are nice.

Thus concerning the very thing the author is determined you shall be convinced of conviction grows. And grows again into another conviction, also of a surprising kind, that though parks, point-blocks, radiant cities, even garden-suburban sprawl, may have a corner in Utopia, all such urban or rather anti-urban developments encourage the muggers in their muggings, the rapists in their rapes, the kidnappers in their napping of kids. The city of tradition on the other hand, offers, she maintains, a marvellous order for preserving the freedom of the citizen,the essence of which is not an efficient police force, important as that is, but intricacy of side-walk use, implying a constant vigilance of eyes. The ultimate guarantee of public safety depends upon the number of effective eyes on the street, and eyes breed eyes—people attract people—a thing, as Mrs. Jacobs says, 'city planners and architectural designers seem to find incomprehensible.'

'They [the planners] operate on the principle that city people seek the sight of emptiness, obvious order and quiet. Nothing could be less true. Reformers have long observed city people loitering on busy corners, hanging around in candy stores and bars and drinking soda pop on stoops, and have passed a judgement, the gist of which is: "This is deplorable! If these people had decent homes and a more private or bosky outdoor place, they wouldn't be on the street!" This judgement represents a profound misunderstanding of cities. The trust of a city street is formed over time from many little public sidewalk contacts. It grows out of people stopping by at the bar for a beer, getting advice from the grocer and giving advice to the newstand man, comparing opinions with other customers at the bakery and nodding hello to the two boys drinking pop on the stoop, eyeing the girls while waiting to be called for dinner, admonishing the children, hearing about a job from the hardware man and borrowing a dollar from the druggist, admiring the new babies and sympathizing over the way a coat faded. Customs vary: in some neighbourhoods people compare notes on their dogs; in others they compare notes on their landlords. Most of it is ostensibly utterly trivial, but the sum is not trivial at all. The sum of such casual, public contact at a local level—most of it fortuitous, most of it associated with errands, all of it metred out by the person concerned and not thrust upon him by anyone—is a feeling for the public identity of people, a web of public respect and trust, and a resource in time of personal or neighbourhood need. The absence of this trust is a disaster to a city street.'

How well she argues her case this quotation shows. It also shows, I hope, to what town-planning principle her arguments are leading: *multiple use*. And the argument for multiple use comes down inexorably in the end to a plea for a new philosophy of *the street*, as against blocks in parks, pedestrian segregation and 'cities of to-morrow,' for though these other concepts answer specific purposes, you can't, she holds, build out of them the kind of city which offers the supreme advantages of intricacy of urban use.

So far so good. To anyone who believes the city to be a product of the gregarious impulse her arguments are surely unanswerable. To readers of THE ARCHITECTURAL REVIEW, which invented the concept of multiple use* and has plugged it for many years, they are no doubt extremely sympathetic. Certain consequences follow, however, the first of which is that when the street comes back into its own as the natural unit of the city something else is bound to come too, internal combustion. Vehicular traffic can no more be banished from day-to-day urban life than human beings can be permanently barred from the traffic stream. The effect of the argument is thus to reinstate not merely 'the street' but the vehicular street as the normal urban unit (with various kinds of segregation as the exceptions), which means that pavement- or sidewalk-life (the eyes) becomes once again the field of battle of the citizens. One says field of battle advisedly, for that's precisely what it normally is, a war between the two main protagonists, depending for victory on the ability of the heavier armour to lure the infantry on to the roadway and accomplish the maximum slaughter in the minimum time. The war costs this country 349,767 casualties a year (the English figure for 1961); the US losses are presumably much higher.

Cars, of course, accomplish other kinds of destruction, including the disembowelling of the urban anatomy, but whatever destruction they cause, and it is colossal, boils down to the effort to satisfy two needs, the billeting of the static armour (parking) and the requirement of offensive attack (circulation). Mrs. Jacobs brilliantly describes the destruction wrought by this mobile armour, but beyond making a plea for a smaller striking force she offers no solution to the real problem that arises when you reinstate the traditional street, which, at its simplest, boils down to the issue, child *v.* tank. Nor for that matter does anyone else, and this is where her case, which is, as I see it, otherwise as tight as a tax, faces the accusation of prevarication; for though the prospect of a mugging is not inviting and though the parking problem will still remain to be tackled when others are solved, *this*, the issue of death or disabling on the roads at the hands of law-abiding citizens carelessly handling a dangerous weapon, the car, remains the quintessential argument against sidewalk or pavement life. Bootless really to plug the sidewalk as the ideal play-area for children (which it is and which she does)so long as even one rogue automobile is liable to turn the corner and start an attack.

Yet there is a solution, a solution so radical and yet so simple that no one, so far as I know, has yet dared seriously to suggest it to a motorized race. What it is I propose to discuss now in the hope of adding another argument to Mrs. Jacobs's case. It will seem incredible,

*For the record the phrase was first coined by Lionel Brett in an article 'Attitudes to Landscape' in the AR for June 1949.—The Editor.

I suggest, to those of our children who manage to survive the current massacre on the roads that no planner in the first half-century of motoring put forward the principle of graduated speed limits. But then our children will probably be ignorant of the functional limitations of the early (1900–1950) car, whose ability to do 20, 30, 60, 80, 100, 120, 150 m.p.h. has obscured for more than fifty years its inability to do—without infinite lamentation—2, 3, 6, 8, 10, 12, 15. Both economically and psychologically 'bottom' is not a way of life any mobile citizen is likely to demand of any other mobile citizen so long as neither uses his feet to move, and until the present decade, 'top' on all cars that matter—the four-cylinder mass-production jobs—was always in difficulties, real or potential, at anything under 30. Except amongst racing drivers for whom it is the sign manual of their craft, the change-down normally involves loss of status in both car and owner, and rather than suffer that indignity a driver will, even to-day, whip his speed up to 50 or 60 at the sight of a hill. Hills do not always bedevil cities, but if for that hazard one substitutes the hazard 'citizen' the nature of the arbitrament becomes plain. Every citizen you as a motorist are weak enough to give way to, involves not only loss of time, money, juice, but loss of status for yourself and car (the gear-change), and while 30 is the practicable minimum as well as the permissible maximum, normal drivers will endeavour to approximate to it even when within inches of a pedestrian doing 3. They will do more—banking on the possession of the heavier armour, they will do their damnedest to intimidate the pedestrian into giving them everywhere at all times the undisputed right of way.

Notice the speed: 30. Am I suggesting 30 is too high? I am suggesting exactly that. *Ten times* too high in some cases. To the principle of *graduation of speed* we need now to add another: *approximation of speeds*. Where multiple use involves a free-for-all (and only then) ordinary common sense suggests that the speed of the faster heavier armour must *approximate* to that of the slower, lighter. In practice, since it is difficult to kill a child or old woman at such speeds, this means pedestrians at 3, vehicles at 5 to 12 m.p.h., depending on the conditions. 12 m.p.h. is the speed-limit in Battersea Park, London, and unless by a motorist evading it I doubt whether any foot-slogger has ever been run down and injured, though the place is encircled by a roadway which a pedestrian entering the park has to cross. In Battersea Park 12 m.p.h. seems enormously fast—try it and see—and it is indeed 1.3 m.p.h. faster than you can travel on average through London to-day. Edinburgh you can do at 13, Newcastle at 9, Glasgow at 8 m.p.h. Despite the enormous improvement in car efficiency, traffic in the great cities goes slower now than it did thirty years ago, so 30 m.p.h. is a pipe-dream anyway—which doesn't mean it is a pipe-dream a driver can afford to indulge in in a crowded—or even an empty—street. It is in fact about the speed at which the Derby is run, and our legislators might just as well fill the roadway with runaway race-horses ridden by jockeys using their whips as encourage motorists to imitate them. A permanent *Palio* doesn't offer the ideal conditions for urban living, yet that's what we've conditioned ourselves to treating as the norm.

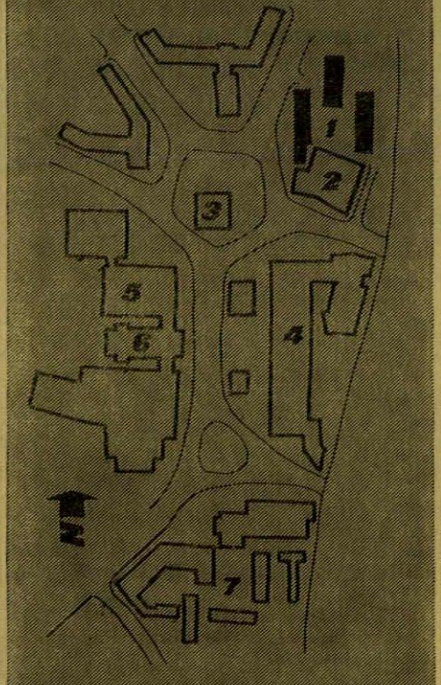
So what? Where lies the solution? The solution, like so many others, may lie in one small but enormously significant device, automatic transmission, an invention which could effect overnight a revolution in motoring manners as well as street casualties such as has not been conceived since men in ear-flaps gave up stalking in front with a red flag.

To begin with, for status purposes, automatic transmission reverses the existing taboos by substituting for an ideal of speed an ideal of slowness. By means of this delectable invention, while enjoying the luxuries of Dunlopillo, air-conditioning and soft music you can travel at half-a-mile-an-hour while pedestrians, cursing you for a goddamn obstruction, overtake at 3 and disappear into the haze ahead. And ½ m.p.h. is a very civilized speed at which to operate provided the street is wide enough to allow road-hogs doing 12 to disappear into the haze too.

The implications are obvious. In both directions. In place of a uniform street system served by a uniform speed limit of 30, it would be feasible now to work for a vastly greater diversity of pattern, in which the urban motorways already envisaged by the Ministry of Transport could encourage a 40–80 flow at one end and, at the other, multiple-users could mingle together on pavement and roadway at speeds of 3–12, or even, greatly daring, 15. With every useful variation in-between. By this simple device the sidewalk life of our cities and towns so lyrically celebrated by Jane Jacobs, could (where such a life is justified), be delivered from the threat to its existence offered by the automobile even to the point where it would be feasible to allow children to play where they ought to play and always have, on the street. Graduation from one speed limit to another could be effected by means of the pattern or materials of the road-surface itself, which, as zebras have shown, is capable of telling its own story without a lot of silly signs.

As to where such limits would apply, the answer is obvious. The lower ones to all domestic streets. Also to those urban enclaves or neighbourhoods where pedestrian priority should obviously be enforced (Soho in London, the City, Edinburgh's Georgian squares, the streets that adjoin or bisect Coventry's pedestrian network). The higher ones, to the main traffic arteries. Let any reasonable person consider, if he has children as well as a car or a dog, or even just the peripatetic habit, what a colossal lightening of the burden, what a lessening of stress complaints, would follow the simple realization that he, his wife, dog, cat, kids, old folk, were not to be infallibly mown down and maimed or slaughtered by a single act of absence-of-mind such as leaving the front door open or stepping off the pavement while thinking what to get for dinner. Nor is there anything whatever to stop this long overdue revolution except the anti-social desire of shop-keepers, works-managers and other employers of vans and trucks to save money by encouraging their drivers to save time. Public transport would be easy to control. As for the private motorists few, surely, would grudge idling upon certain streets, avenues, lanes, and alleys were the reward safety on their own home-front combined with a burn up where racing speeds can be properly deployed.

ELEPHANT & CASTLE



site plan

key
1. Alexander Fleming House (illustrated herewith)
2. Trocadero Cinema (to be replaced)
3. Faraday Memorial (transformer station)
4. covered shopping centre
5. LCC College of Printing
6. Metropolitan Tabernacle
7. LCC Draper St. development (flats, offices and shops)

The layout of the Elephant and Castle area, the important south-London traffic intersection which is being almost wholly rebuilt after war-damage, has been improved considerably since the London County Council first published its plan in 1956. Perimeter development all round the central traffic-space has been replaced by a freer disposition of buildings conceived in three dimensions rather than two. The traffic-space itself, the responsibility of the engineers rather than the LCC architects, still represents a lost opportunity; an earlier multi-level scheme, which would not have driven pedestrians so ignominiously underground, was abandoned owing to Ministry of Transport opposition.

This long-drawn-out rebuilding project is now reaching the stage when it can be apprehended as architecture as well as layout, and the most substantial buildings to be completed, the triple block of offices at the north-east corner, designed by Mr. Ernö Goldfinger and illustrated on the following pages, sets a standard of clarity and vigour that it is hoped the buildings that are to fill the still empty nearby sites will live up to. The other buildings already completed—or nearly so—are disappointing, except for the first stage of the LCC's own housing and shopping area at Draper Street at the extreme southern end* which has the competence and precision of the best work of the LCC architect's department.

The same department (but another division of it) is responsible for the London College of Printing nearing completion on the west side. This consists of a tall square curtain-walled block (unexceptional in its conventional way, though its pale blue wall panelling is unattractive) and a low block faced with mosaic which is more industrial in character (though none the worse for that) but is crudely designed, both in its wall treatment and fenestration, and is quite unworthy of its important position in the scheme. This same frontage adjoins, and indeed buts on to, the restored Metropolitan Tabernacle, only the classical portico of which survived the bombing. It was a constructive idea to incorporate this relic in the otherwise wholly modern range of buildings, but the rebuilding behind and alongside the portico is unimaginative; moreover it neither allows the significant shape of the tabernacle to tell nor makes the most of the townscape opportunities this juxtaposition of old and new presented.

The somewhat experimental covered shopping centre on the eastern side—forming, that is, one side of the stalk of the dumb-bell shaped traffic-space—is about to begin construction. Much will depend both on its functional success and its architectural quality. Meanwhile the three parallel blocks of Mr. Goldfinger's building dominate the area. They firmly establish the direction of the main axis of the Elephant and Castle in relation to surrounding areas. This is one of London's more distinguished recent office buildings and shows how effectively exposed reinforced concrete can be used in areas where daintier or more sophisticated finishing materials are not demanded by existing scale and character; also how a potentially overpowering pile of building, composed of identical cellular spaces, can be given modulation and variety by somewhat arbitrary, though not completely unfunctional, modelling of surfaces by means of recessed balconies and bay-windows.

The site on which the buildings illustrated stand also contains the Trocadero Cinema, which it was intended to retain when the architect made his design. It has since been decided to demolish it, and Mr. Goldfinger has designed two other office blocks and a smaller cinema to replace it, on which work will begin shortly. The plan on page 96 shows the ground floor of the whole scheme as it will then appear.

J.M.R.

*The whole Draper Street development was included in the AR Preview issue, January, 1960.

OFFICE BUILDING, SOUTH-EAST LONDON

ARCHITECT: ERNÖ GOLDFINGER

1, Alexander Fleming House from the south-west, showing the nineteen-storey central block (Block B) rising beyond the eight-storey western block (Block A).



These three connected office blocks, built by a private developer for the Ministry of Health, occupy one of the several sites round the Elephant and Castle traffic centre that are now being rebuilt—see the facing page. They stand at the corner of Newington Causeway and are to be known collectively as Alexander Fleming House.

The general disposition of the buildings was discussed with the LCC architects, and consideration was given to the rest of the sites and buildings comprising the Elephant and Castle scheme, especially the shopping centre alongside. To avoid the monotony of a continuous unbroken façade, it was decided to develop the site in three blocks, interspersed with open spaces to be planted and form recreational areas for the people working in the offices. The blocks have been oriented roughly parallel to the main axis of the whole Elephant and Castle scheme and parallel to the shopping centre. The eastern façade of Block A, the southern façade of Block B and the western façade of Block C in conjunction with the northern façade of the Trocadero Cinema (to be replaced later), define a piazza, which is for pedestrians only though service access is allowed alongside the cinema to serve the rear of Block A. All three blocks are designed with two service cores, between which is open office space that can be flexibly sub-divided. The planning grid is 2ft. 9in. and the structural grid six times this, all proportions being based on it by use of the Golden Section.



2

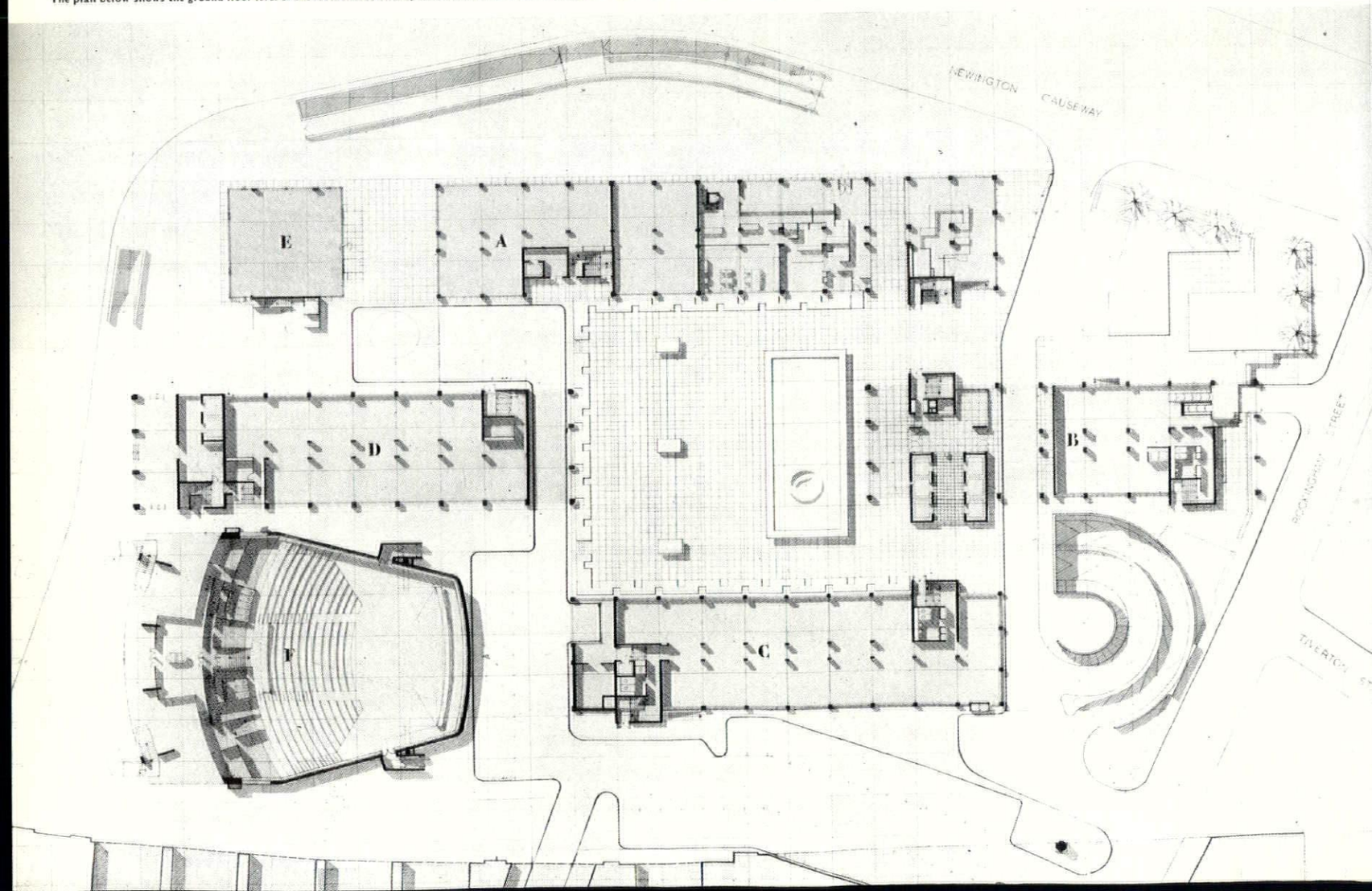


3

OFFICE BUILDING, SOUTH-EAST LONDON

2, Alexander Fleming House from the south-west. In the foreground is the transformer station on the island at the northern end of the Elephant and Castle traffic complex, which has been designed by the L.C.C. as a memorial to Faraday. 3, night view from the north-west. 4 (facing page), also from the north-west, looking across Newington Causeway with the tallest block (B) on the left and Block A (right) linked to it by a glazed bridge.

The plan below shows the ground floor level of the three blocks already constructed and of the two smaller blocks and cinema which will be built when the present Trocadero Cinema has been demolished—see page 94.





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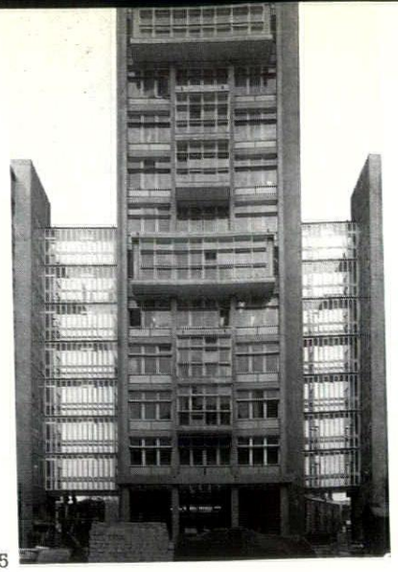

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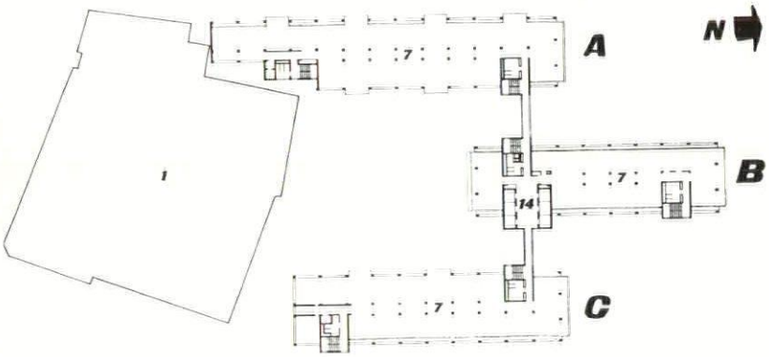
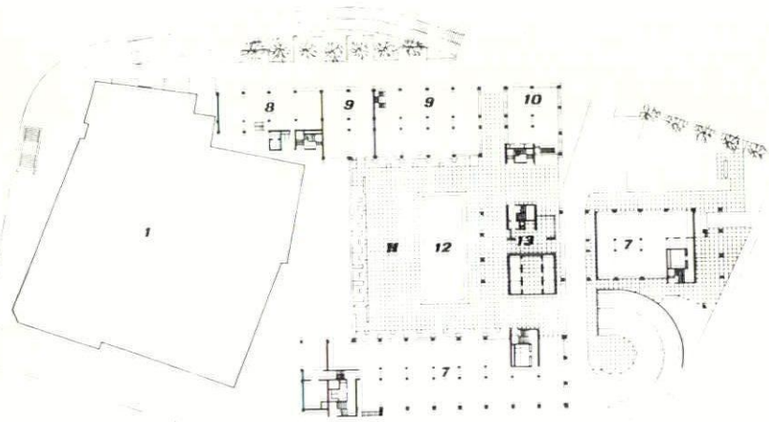
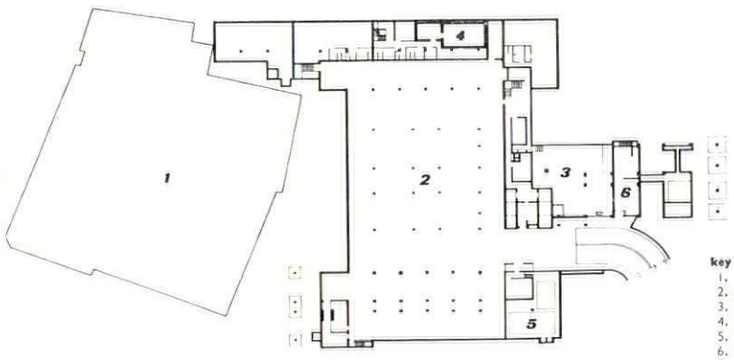


fifth floor plan



ground floor plan



basement plan

key
1. Trocadero Cinema
2. garage
3. boiler room
4. bank strong room
5. oil storage tanks
6. transformer rooms
7. office space
8. public house
9. bank
10. shop
11. piazza
12. pool
13. entrance hall
14. lift lobby

5, the end elevation of Block B, seen from the piazza which the three blocks enclose.
6 (facing page), close-up showing façade treatment: modelling given by windows projecting in the form of bays or recessed behind balconies.
7, looking down from Block B at the ramp leading down to the basement garage. The ramp has underfloor electric heating.

OFFICE BUILDING, SOUTH-EAST LONDON

Block A, fronting on Newington Causeway, is approximately 216ft. long, 45ft. 6in. wide and 92ft. high and consists of basement, ground floor and seven upper office floors. The ground floor contains four shops or branch banks (not yet completed) and the first floor a library. Block B lies behind Block A and is staggered, with its western façade facing over a garden on to Newington Causeway It is approximately 150ft. long, 50ft. wide and 184ft. 6in. high and consists of ground floor and seventeen upper storeys, all designed as offices. The main access to the buildings is in this block. It consists of a plate glass box approached from the vehicular access under the building on the north and from the pia za on the south. At the north end of Block B is a postal loading dock with horizontal conveyors serving post rooms, from which begins an automatic vertical conveyor system. There are conference rooms on the top floor and a ministerial suite on the twelfth and thirteenth floors. Block C lies behind Block B and is also staggered so that it overlooks the piazza. This block consists of upper and lower ground floor and seven upper floors. On the top floor are canteen and kitchen. At the foot of the block is a loading dock for canteen and furniture handling.

The three buildings, though in fact all in one occupation, were designed so that they could be used separately, and have their own entrances, lifts, staircases and lavatories. The heating system is shared and provides for future development. They are joined by glazed bridges. The boiler house is in the basement between blocks A and B. The basement is shared by all the buildings and includes a garage for seventy cars reached by a spiral ramp. Construction is reinforced concrete frame with structural members clearly expressed and treated either in bush-hammered concrete or left raw from the shuttering. Some of the soffits (as in the basement garage, entrance hall and canteen) are poured over concave fibre-glass shuttering, which is left unplastered. Other soffits are flush and plastered, so as to allow partitions to be erected anywhere. These contain door frames of full ceiling height with an electric conduit connected with a ceiling duct. On the external walls the structural bays are filled with glass or with a specially designed unit incorporating, besides the windows (four per bay), a photobolic screen to control and distribute light. Under the window cill is a vitreous enamel panel, insulated at the back, in a galvanized steel tray provided with a vapour barrier. Behind this is a heating convector. At skirting level is a horizontal duct for telephones and electrical wiring.

Client, Fortpost Investments Ltd. Chief assistant architect, Jack Blacker. Structural engineers, Ove Arup and Partners. Heating engineers, J. Roger Preston and Partners. Electrical engineer, T. Szidon. Quantity surveyors, Davis, Belfield and Everest.

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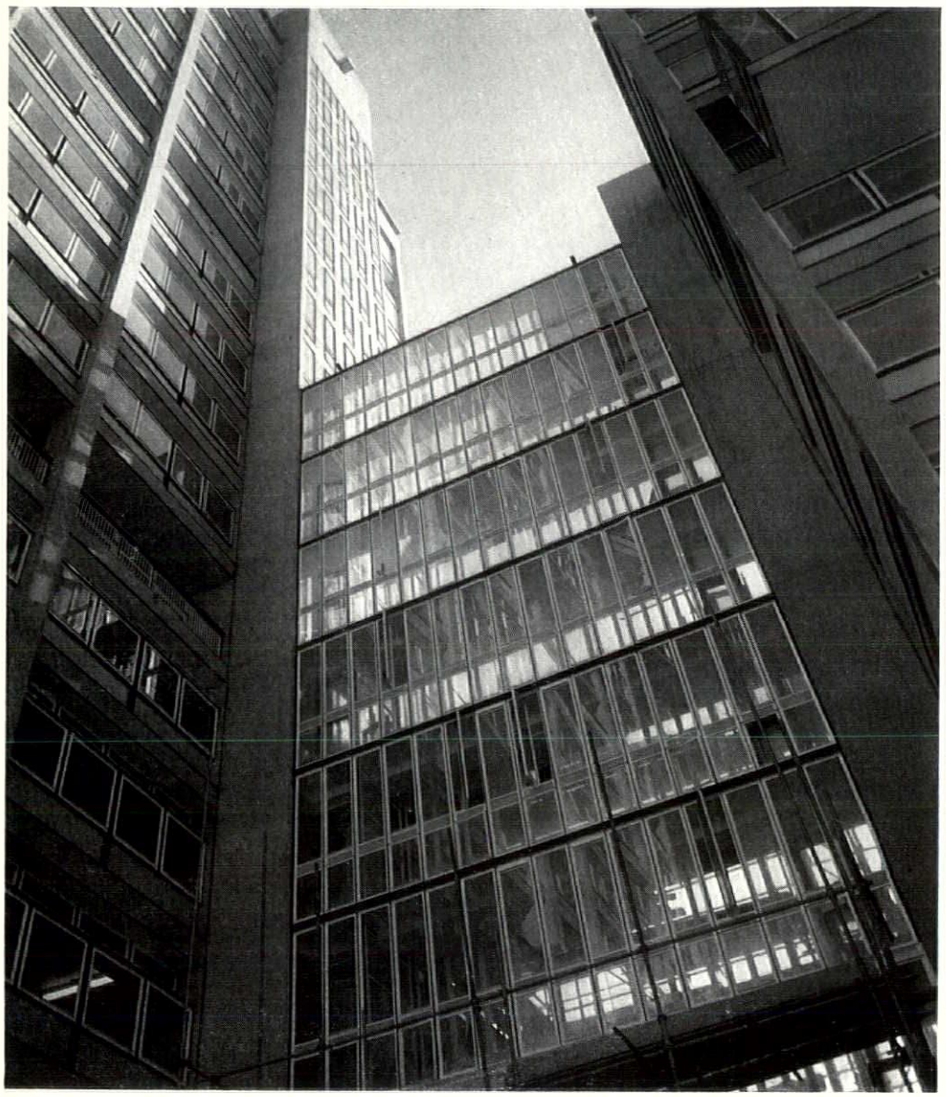
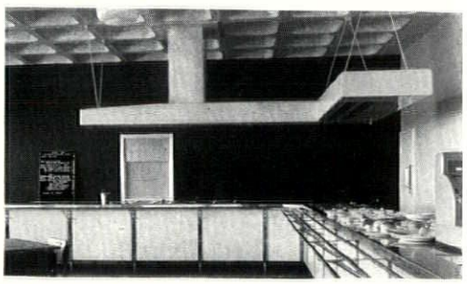


8, one of the glazed bridges which link Block B with Blocks A and C on either side. They have underfloor electric heating.
9, an office interior, showing the extra sense of space created by the projecting bay windows.
10, the service end of the canteen on the top floor of Block C. This, the entrance hall (see below) and the basement garage have coffered ceilings formed by leaving exposed the concave fibre-glass shuttering units over which the floors have been poured.
11, the lift lobby in the ground floor entrance hall of Block B (numbered 13 on the ground floor plan, page 98). The lifts are all controlled from the pedestal in the foreground. The flooring is white marble. At the far end is a window of white marble terrazzo precast units, later to be filled with coloured glass.



9

12 (facing page), the same main entrance hall seen from outside with, on the left, the driveway beneath Block B.
13, corner of an office showing the convection heating units that form part of the infill panels beneath the windows. The skirting is a duct for telephone and electrical wiring.
14, a typical staircase, with radiators forming part of the stairwell structure. The newel post round which the handrail turns, and which supports it, is also the pipe supplying the radiator with hot water.



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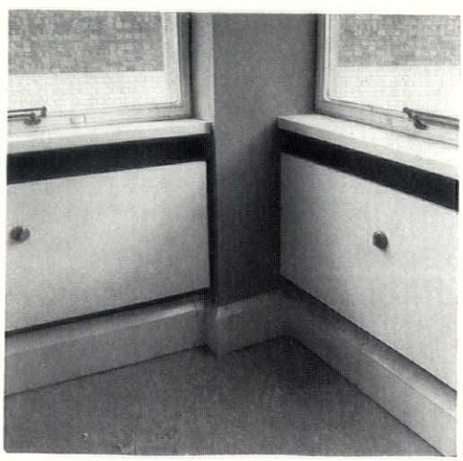
11



12

photographs by H. de Burgh Galwey



13



14



criticism

R Furneaux Jordan

Architects, Michael Scott and Associates

Television Centre, Dublin

In any broad consideration of modern architecture, Ireland—it will be generally agreed—is not the first country to spring to mind. This is inevitable, but a pity. Ireland always was, and always will be, a land of contradictions as well as of charm. The philistine and Teutonic English will always despise the Celtic Irish because the Irish retain a peasantry and do not partake of English materialism. Moreover, they do not seem to mind. The English will always hate the Irish because every Irishman is a natural poet, whereas every poet is an unnatural Englishman. At the same time it must be admitted that there is no taste so ghastly as the ghastly good taste of Ireland.

If Ireland's industrial revolution—starting only now, two hundred years after ours, and still contained within two tiny areas around Shannon and Dublin—is to move apace, as well it may, then the Irish are quite unfitted to cope with it. They might, in town-planning, in road planning and in architecture, learn by England's terrible blunders. But, of course, they won't. Instead, they will be merely enchanted by the more glamorous American architecture—the glamour of single isolated buildings—and remain, as we did, unaware of the necessity of either social or physical planning until it is too late. Ireland's population may well, alas, triple or quadruple itself in the next hundred years, as England's did in the Victorian era, but the Irish will remain unable to cope with the purely problematical situation. That is their charm. They are too busy enjoying life. There is no 'rat-race' in Dublin.

Meanwhile, they may produce a glamorous off-shoot of the great American Renaissance—a bit of Wright, a bit of Saarinen or a bit of Mies. First swallows of a rather dubious Irish summer? Dubious? After all the number of architects in Ireland who could make even this sort of worthwhile contribution—even if the chance were there—could be counted on rather less than the fingers of one hand. Should one ask more of an agricultural island with only three million people. Perhaps not. If the England of Queen Anne was comparable, then it might be said that Ireland too did rather better in the time of Queen Anne. On the other hand there are little agricultural countries in Eastern Europe whose architecture one *can* remember. . . . It is all very difficult.

Of those two or three modern Irish architects the only one that most of us can really remember is Michael Scott. The Dublin Bus Station of nearly ten years ago was almost a monument of its decade. The new Abbey Theatre, with site changes, has been on the drawing-board too long; it promises great things. And there is to be a little chapel in the wilds of Connemara. However, the first real glamorous Irish off-shoot of the great American Renaissance—actually rather more glamorous than anything comparable in England—is Michael Scott's new Radio Eireann Television Centre at Donnybrook, in suburban Dublin.

All architecture starts, at esquisse stage, on the wrong or the right road. The first throw of the dice—siting—is almost everything. Whatever the style, Frank Lloyd Wright's 'organic' concept will always matter. 'The building is not *on* a hill, it grows from a hill.' This is always true in

The newly completed television centre for Radio Eireann at Donnybrook, a suburb of Dublin, is the subject of the article beginning on this page. As the photographs opposite show, it is a two-storey building with a colonnade that continues round the whole perimeter of the ground floor. At this level are the studios, scene-dock and workshops. The offices are on the first floor, surrounding the upper part of the studios, which appear as a windowless second floor in the centre part of the building. 1 *(top), from the west, showing the whole frontage except for the last few feet of the northernmost bay.* 2 *(bottom), close-up of part of the south front, showing the doors beneath the colonnade leading into the main entrance hall. This contains an oval staircase leading up to a reception area* (9 *on page* 106) *at first-floor level.*

some form. It is specially true with some rarefied Miesian building. Pure geometric forms set in . . . in what? There can be two answers, but there can be no compromise between them. The site can be a foil to the geometry, as when the rigid nudity of the Farnsworth House is buried in rich foliage patterns. Or the site can be a naked plateau. In this latter case the site is not a foil, not even a setting; it is part of the architecture; it partakes of the naked geometry of the building itself . . . cubes and rectangles very precisely arranged and related to each other on a flat board of like nature. The site is one more geometric plane in the total concept.

Michael Scott's Television Centre belongs to the latter category. The Donnybrook site is rectangular and flat and, although enclosed by trees, is not in itself well wooded. This site the architect has exploited. The building is a large but uncompromising box—or, rather, two interpenetrating boxes. Nothing has been allowed to detract from or to mitigate this simplicity. The concept, however, is not an aesthetic whim, or even the product of a theory. It derives directly from function, from the solution of the problem. Small things, it is true, have to be ruthlessly subordinated to the main idea, but the big box does stand magnificently bleak in the centre of its plain site; it also solves the basic problem of a television centre . . . as perhaps the BBC television centre at Shepherds Bush does not. Flexibility and growth are the essence of that problem.

Any television building consists, of course, of two main elements—studios and adjuncts. The adjuncts add up to quite a lot—administration, control rooms, workshops, dressing-rooms, scene-docks, etc.—and these adjuncts must run parallel to and be, in the main, in juxtaposition to the studios. Central studios, however, literally encircled by adjuncts, are wrong. A circle is a finite and closed form. Scott's building, on the contrary, is a concertina. It can expand in two directions, not four, but as studios come to be added at either end and the concertina moves outwards, the adjuncts also expand parallel to the studios. They are the extendable aisles of an extendable nave. This is the basis of the design. The perimeter colonnade, giving universal access at any desired point, is easily removable on two sides. For all the plan's flexibility, it is aesthetically complete at any one moment. The perimeter colonnade assures that. After four months of use extension is, in fact, already envisaged.

Besides flexibility, an essential quality in a television building is the proper handling of the acoustics. The acoustic problem is twofold. First is the need to

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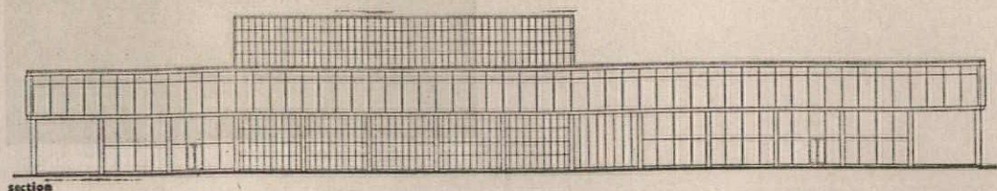
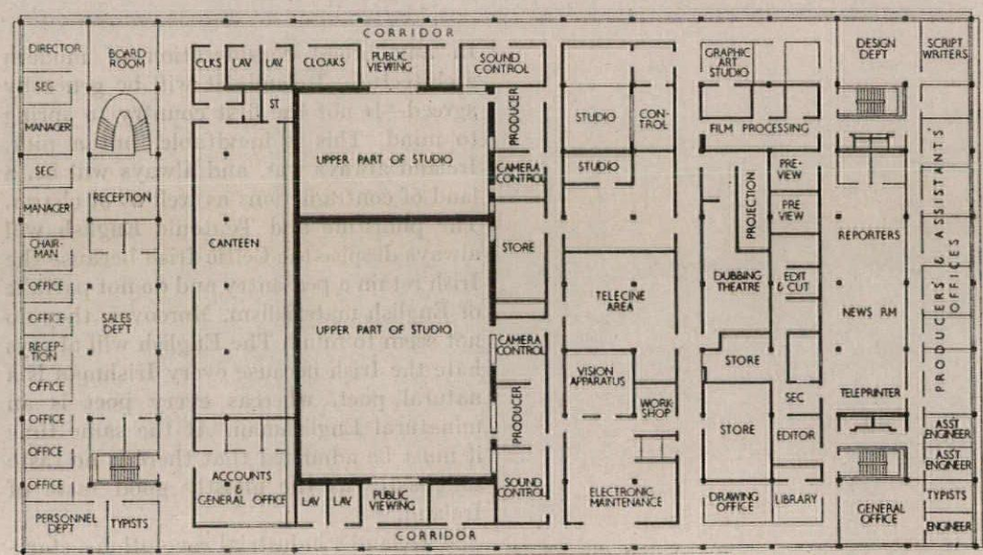


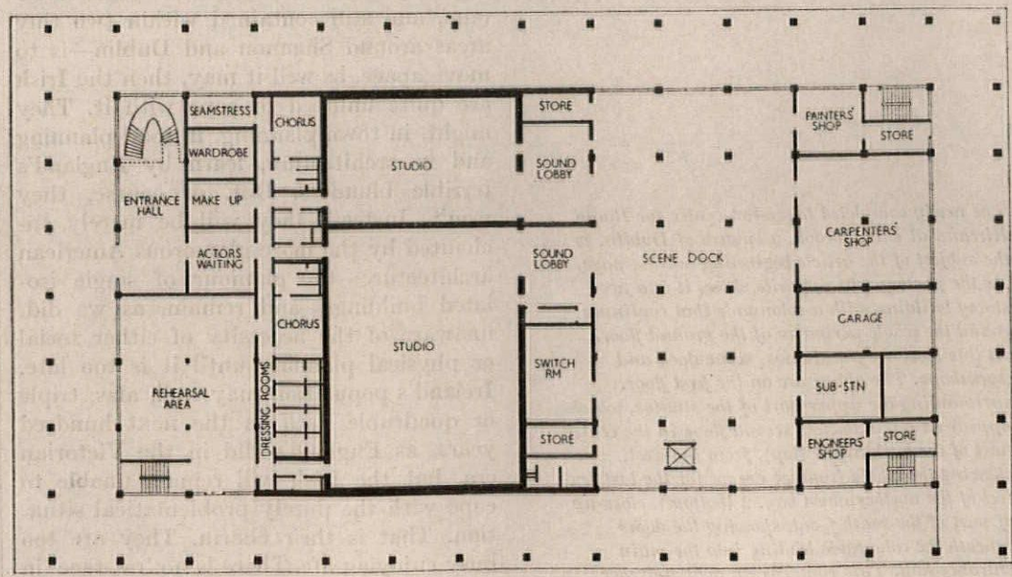
section

Television Centre, Dublin

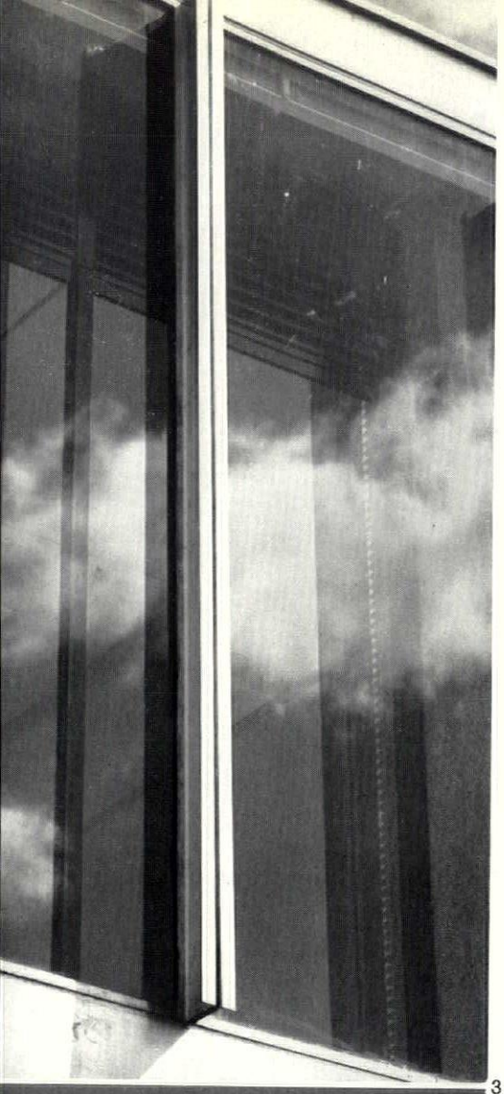
The photographs opposite illustrate what Mr. Furneaux Jordan calls the Miesian spirit in which the Dublin Television centre is conceived and detailed. 3 and 4, two external details: the fin-like projecting mullion, in aluminium, that subdivides the window wall on the first floor—these mullions are 5 ft. apart, which is the module on which the whole building is planned—and the treatment, 4, of external corners, where the aluminium window framing is returned at the end of each facade against a concrete corner post continuing upwards the line of the corner column. The columns are precast and have an exposed aggregate of Kilquade stone. They are seen again in 5, a corner of the building, showing the office floor carried over the colonnade that provides covered access to the studios and workshops. 6, looking down the length of one colonnade.



first floor plan



ground floor plan



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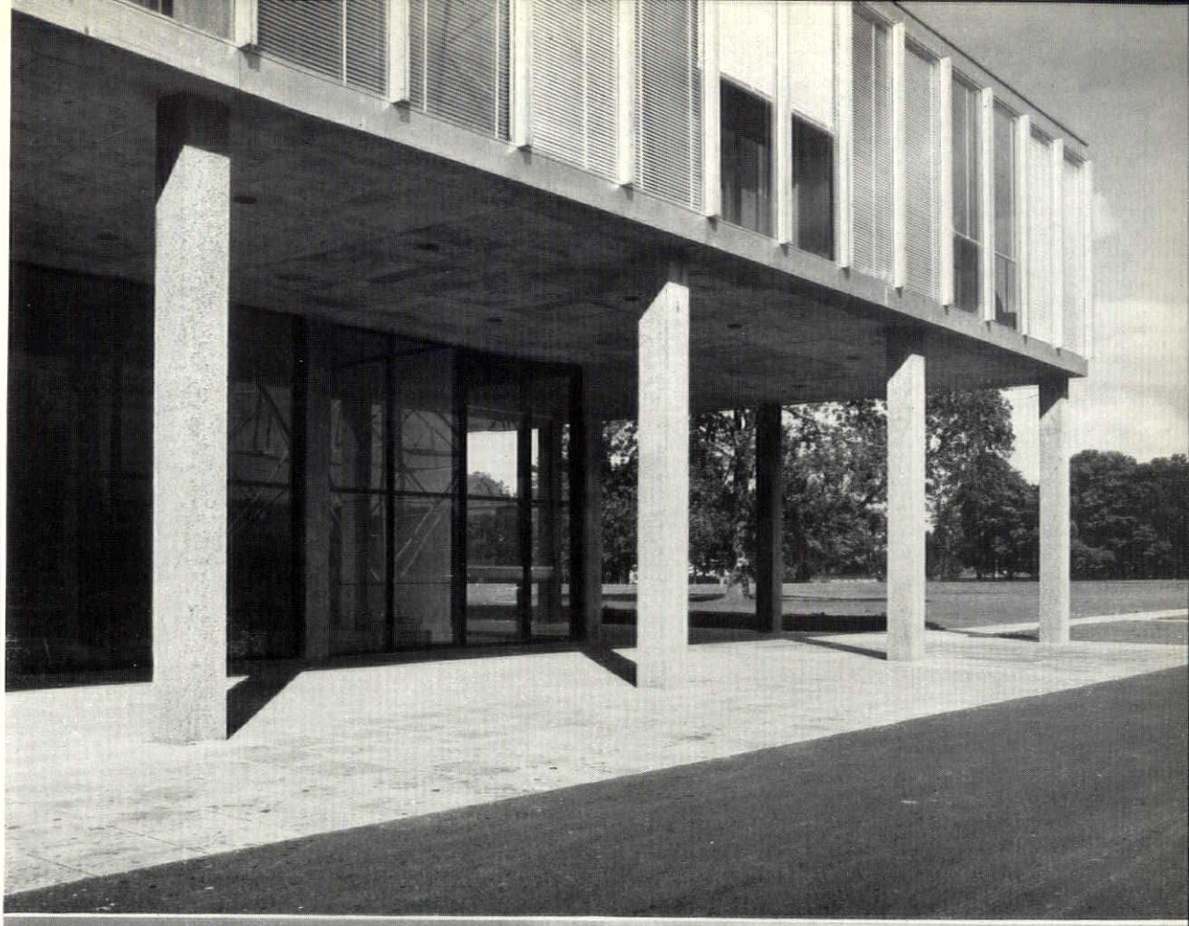

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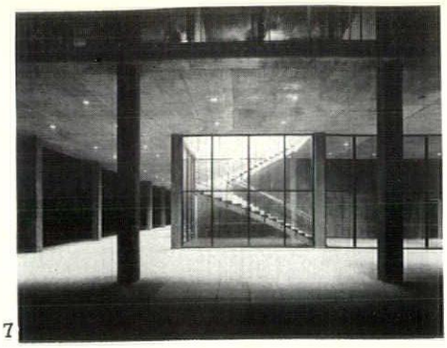
Television Centre, Dublin

photographs by John Donat

7



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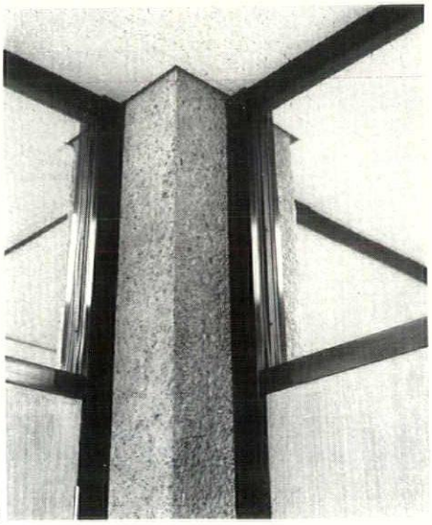

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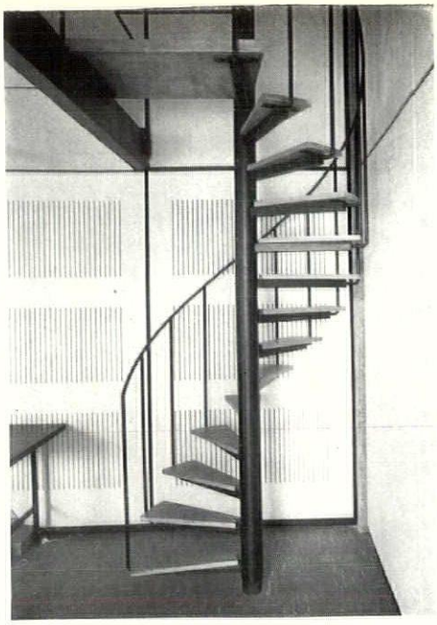
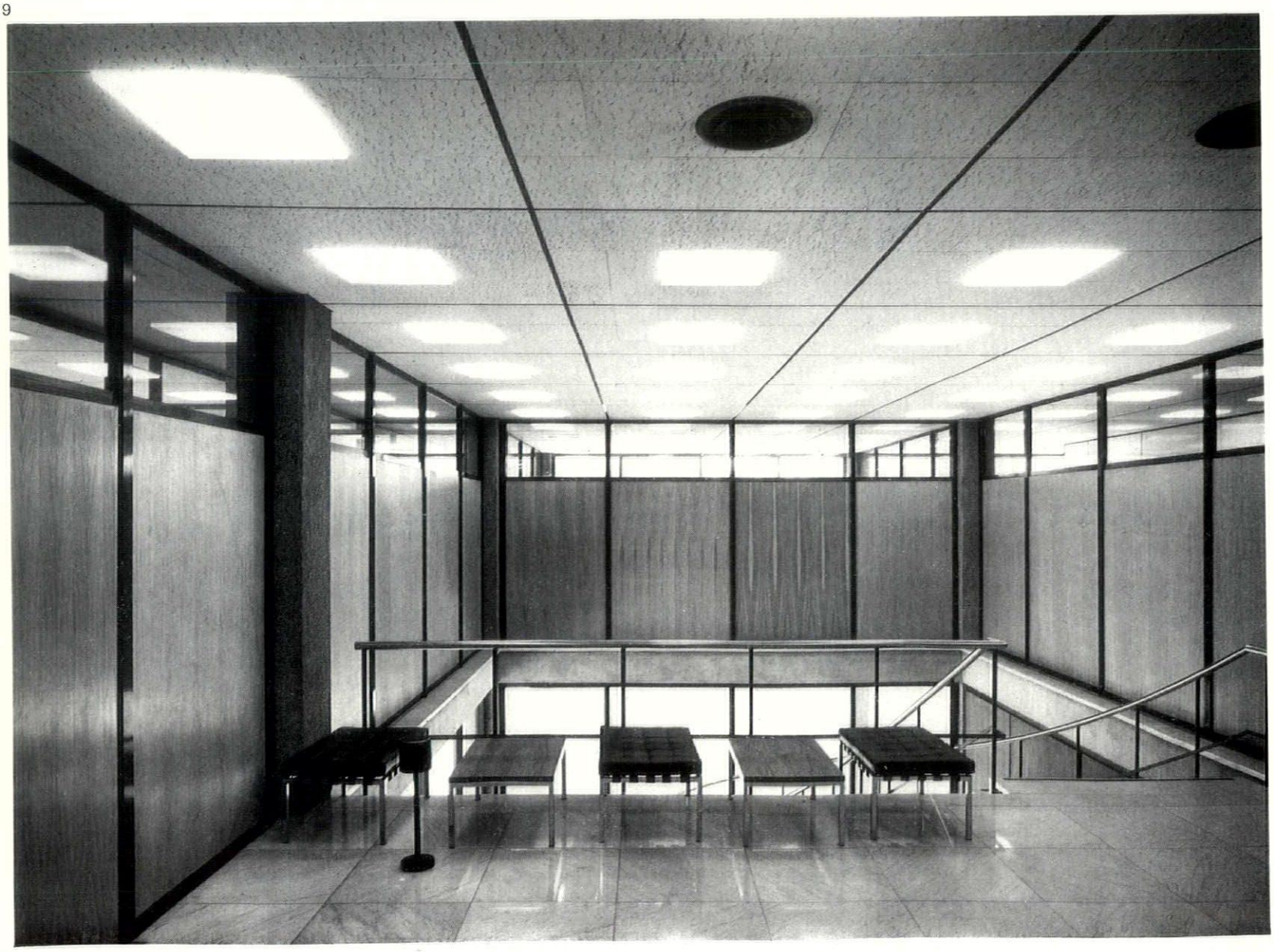


7, a night view looking across part of the colonnade into the glass-walled entrance-hall. 8, detail of the internal partitioning system, of demountable steel sections with chip-board panels and aluminium trim. The concrete columns have the same exposed aggregate inside as out. 9, the reception area at the top of the main stairs. Ceiling panels and partitioning conform to the standard 5 ft. planning module. 10, staircase from studio floor to gallery.

9

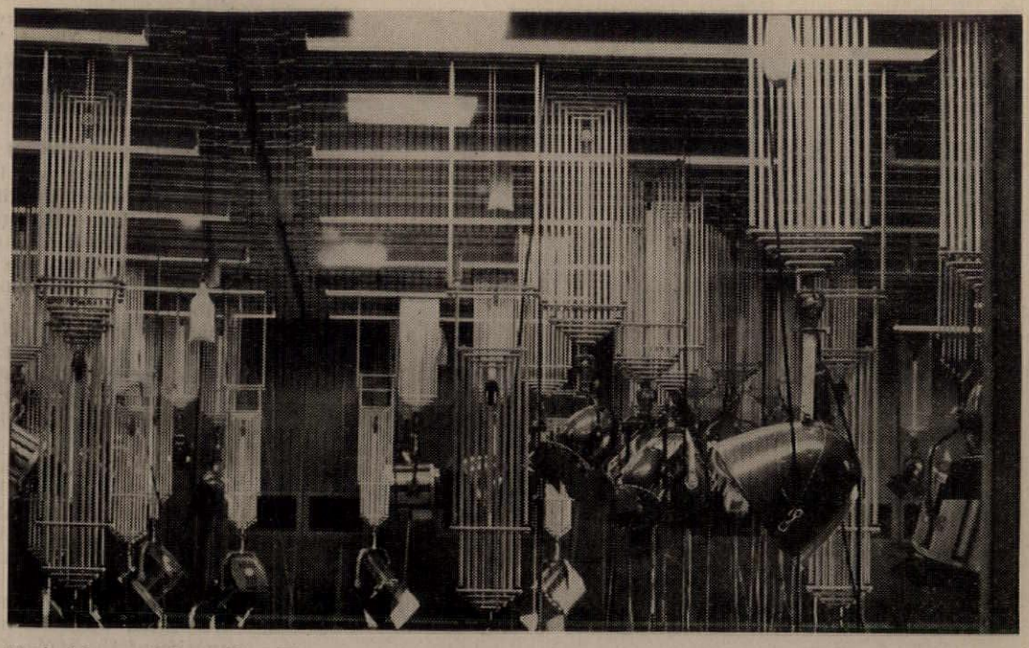


continued from page 104

ensure independent functioning of all rooms without mutual interference. The second is the need for proper acoustic conditions inside all rooms, particularly, of course, the studios. Protection from noise for the two main studios is provided in this instance by the massive concrete structure surrounding them. The walls are of cavity construction having two leaves, one 10 in. and one 8 in. thick, enclosing a 1-in. cavity. The cavity runs the full height of the building and provides complete sound insulation for the studio core. Some other rooms needing very good insulation also had to be formed outside the studio core.

This posed special problems: combinations of cavity construction and block walls, none of which could be very heavy. The mounting of linings on resilient support systems was used. For control of acoustics in the large studios, two kinds of sound absorbent were used. One in the form of felt-loaded hardboard panels provides absorption at the low frequencies. The other absorbent is 1½-in. mineral wool spaced about 2 in. from the wall. This provides absorption for the middle and high frequencies, as do the unplastered wood wool slabs used for the ceiling. To give a uniform flush appearance to the studio interior the whole of the wall below the lighting grid was masked with ¼-in. specially perforated hardboard, having a free area of about 12 per cent. A similar design was used in the small studios except that the masking was done by special slotted chipboard panels.

As it is at present the building consists of two large studios—one approximately 4,100 feet super, the other 2,200 feet super, and each about 40 ft. high, including the 'flys' for arc lights, etc. These two studios make up the central block or tower—i.e. the solid box rising out of the transparent one. This latter is made up of the adjuncts and of the completely glazed perimeter



11, *inside one of the studios. The pre-setting of lighting takes place at first floor level and all lamps can be moved from one studio to another at this level by an extension of the lighting-grid racks between the two studios.*

corridor giving access at any desired point. It is all ruthlessly simple, architecturally successful—because unified—and yet, like all successful simplicity, actually very complex. If more studios are added they will merely pull out the concertina; they will be an extension of the present studio block, with the additional adjuncts extended in parallel. The building is complete as it stands but theoretically capable of indefinite extension within the limits of the site. It is a beautifully detailed building; as far as economy permits it is detailed in the true Miesian spirit.

The Miesian spirit means perhaps no more than that the material and the form derived therefrom—in this case, steel, glass and related rectangles—are something to be welcomed, exploited, played upon, something to be regarded as the very essence and theme of the building. In such a building the last nostalgic regret that the building is not, after all, stone, has been purged from the architect's subconscious. This purging—a necessary prerequisite of a true Miesian style—is not so universal as one might, superficially, suppose. Moreover, the Miesian spirit does *not* merely mean that the design and arrangement of special-made steel casements is well-handled; it means the grouping and massing of the building, the interpenetration of masses; it means that the whole building reflects the whole aura of that simplicity and subtlety which also pervades a single casement. It is a Greek spirit — starkness redeemed by purity. Michael Scott is human; he could not, any more than Mies himself, really rise to a Periclean level. Who could? He has shown however that he really understands the 'style' in which he is working, and that he can handle it consistently in big things and small.

THE LIBERTY METALWORK VENTURE

Shirley Bury

In 1959, the firm of Liberty & Co., of Regent Street, presented to the Victoria and Albert Museum file copies of their catalogues dating from the early 1880's onwards. These catalogues have been an invaluable source of information about the range of silver and jewellery which was launched by Liberty's under the title of 'Cymric' in 1899—the name being chosen in recognition of the Celtic inspiration which was claimed for many of the designs. In fact, Liberty silver was strongly influenced by the English Arts and Crafts and Continental Art Nouveau, both interpreted in terms of commercial production, which makes it a particularly intriguing study.

Few other firms at this time attempted anything but a cheap mass-produced imitation of the Art Nouveau. This was true of many Birmingham manufacturers in search of novelty, who turned out stamped wares in thin silver decorated with the most popular motifs of the style, female heads set in a waving surround of hair, plants with stems conforming to the whiplash curve, and so on. Liberty's, however, and to an appreciable extent the London workshop of the Sheffield firm of William Hutton & Sons, which under the direction of C. W. Blackman produced some fine silver in the Art Nouveau manner from 1897 until about 1907, aimed at producing modish wares showing something of the concern for craftsmanship which characterized the English Arts and Crafts Movement.

It is ironic, of course, that the impact of Art Nouveau should have been felt in this country mainly on the level of commercial production, while the Arts and Crafts Movement remained comparatively unaffected by stylistic developments abroad. William Morris had helped, by his work and writings, to spark off all the activity on the Continent, but his followers, in metalwork as in the other decorative arts, managed to insulate themselves against any counter-influence with a high degree of success. C. R. Ashbee was one of the few English Arts and Crafts metalworkers of the time who, possibly as a result of taking part in exhibitions on the Continent, modified his style slightly in the late 1890's under the influence of Art Nouveau. Even then, the modification was made unconsciously; for Ashbee continued to profess his dislike of the style because of what he considered to be its unforgivable mannerisms. Nevertheless, the enhanced grace and lightness of Ashbee's designs for silver and jewellery after 1898, and particularly his use of multiple wire threads separating at their ends in tendril fashion, which appeared as the structure of his jewellery, and as the handles of his bowls and cups, show how well the influence had been absorbed and transmuted into English form.

The 'Cymric' wares were comparatively late entrants in the field. The firm entered their first mark for silver (L^{Y} & Co) at Goldsmiths' Hall in February, 1894, probably with the sole intention at first of using it for the Japanese and other foreign silver which they imported as part of their stock-in-trade.[1] Under an Act of 1842, all such silver offered for sale had first to be assayed in this country. In April, 1899, as the 'Cymric' scheme got under way, another version of the mark was registered, and towards the end of the year the range was launched in earnest. Several pieces were shown at the Arts and Crafts Exhibition, which took place in November and December, and the firm's Christmas catalogue devotes five pages to illustrations of 'this new school of silver-work . . . conceived and produced under the immediate direction of Messrs. Liberty and Co.'

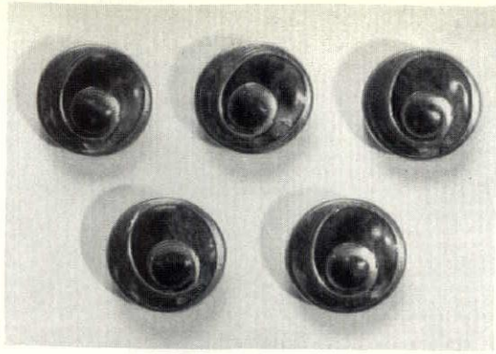
The marks of 1894, 1899 and a third of 1900 were entered on behalf of the firm by A. W. Howe, the Managing Director and Secretary of Liberty's when the firm became a limited liability company in 1894. It was acknowledged, however, that the prime mover in the scheme was Arthur Lasenby Liberty, the founder and Chairman of the firm. At the age of nineteen, Liberty had been appointed manager of the Oriental Warehouse of Farmer & Rogers in Regent Street, one of the favourite haunts of Rossetti and his circle, who came to buy blue and white porcelain. When the warehouse closed down in 1874 and Liberty in the following year opened a similar concern in the same street, his clientele followed him. Liberty soon sought fresh fields to conquer. Inspired by the Japanese brocades that he imported, he started a range of 'Art Fabrics,' with richly textured surfaces and glowing colours which won them an enthusiastic following in this country and on the Continent: *Stile Liberty*, the Italian term for the Art Nouveau, shows what an immense impression these fabrics made in Italy.

Liberty had already embarked on production in other fields of the applied arts when he came to silver and jewellery in 1899.[2] Two or three years afterwards, he was to add the range of 'Tudric' pewter to his enterprises. Fortunately his explanation for this move still exists, in the text of a paper on pewter which he read to the Royal Society of Arts in

[*continued on page* 111

[1] The firm may have made a small beginning as manufacturers of jewellery and silver wares as early as 1894, for when they registered as a Limited Liability Company in November of that year they described themselves as '. . . jewellers, goldsmiths and silversmiths, dealers in gold, silver, precious stones, curios and articles of virtu,' etc. Company file 42342, now at Public Record Office. The files of the firms registering under the Companies Acts of 1862 onwards are an invaluable and hitherto almost completely neglected source of information about Victorian manufactures.

[2] Liberty had also been one of the few people whom Christopher Dresser was able to persuade to take out shares in the avant-garde but short-lived Art Furnishers' Alliance in 1882. Company file 14236, Public Record Office.



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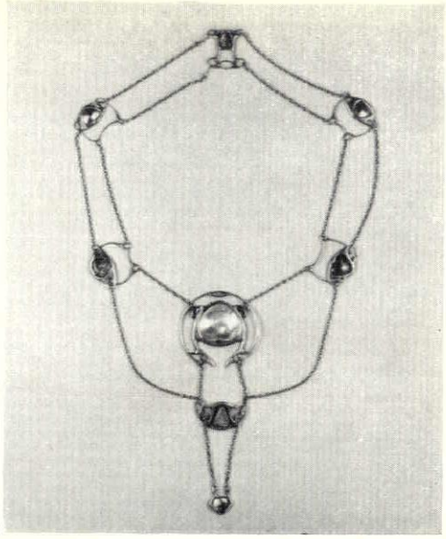

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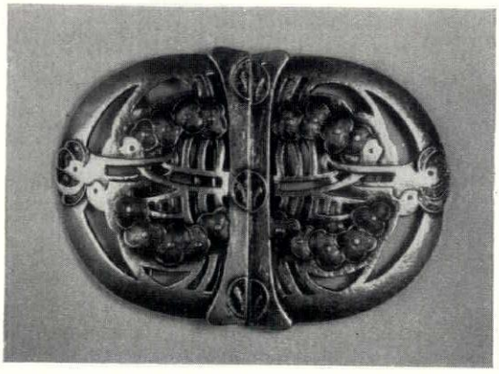
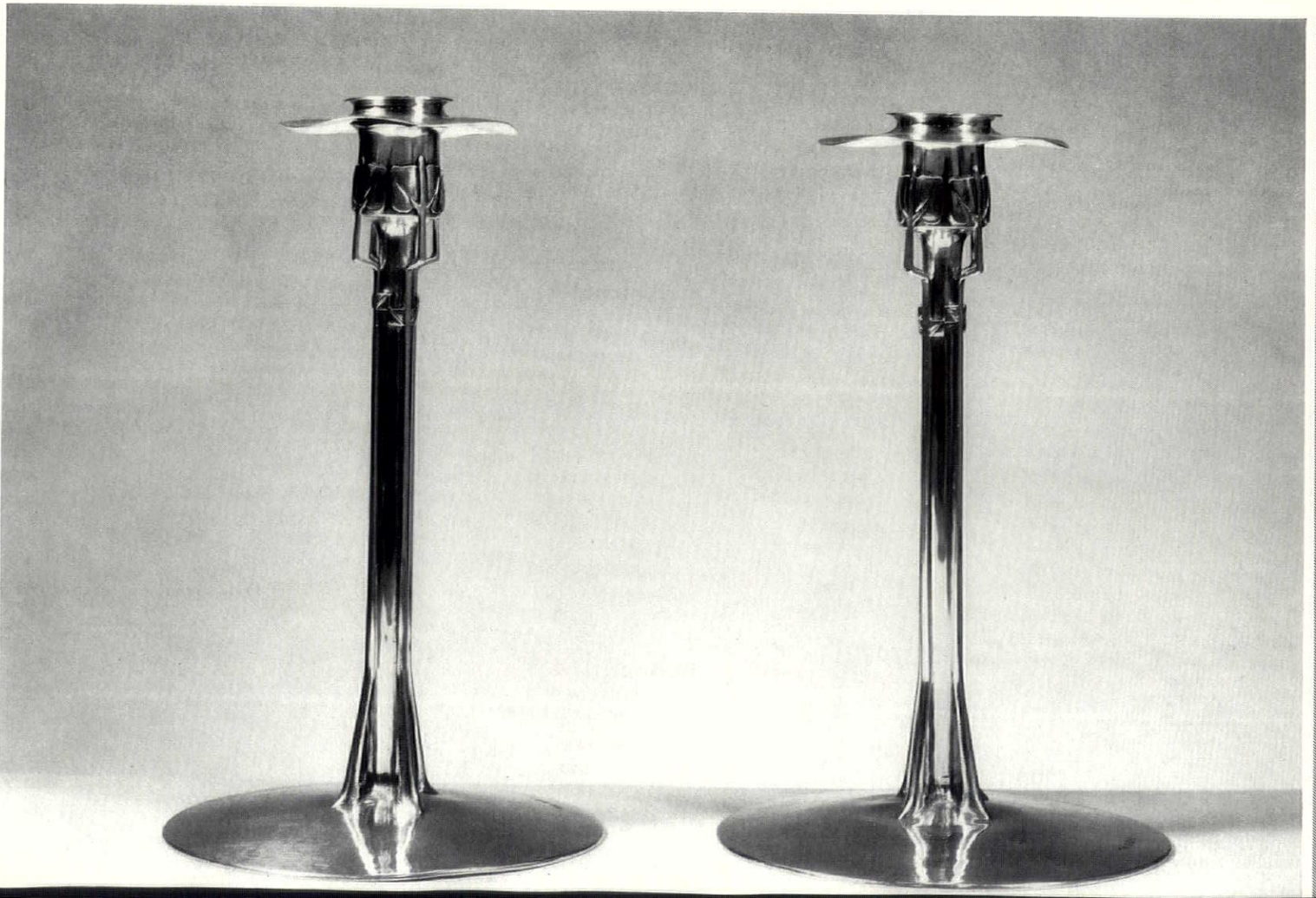
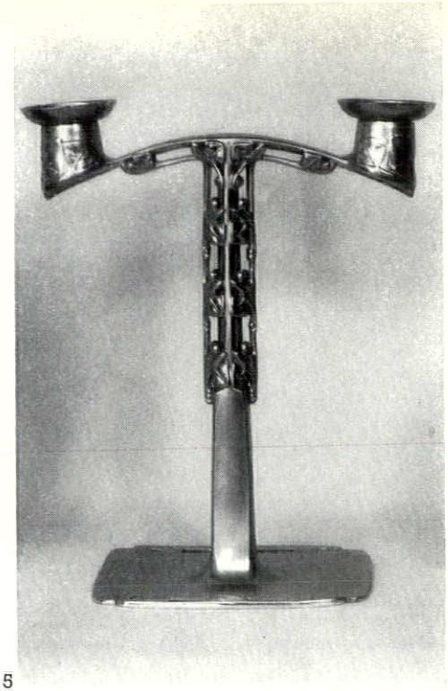


3

1, *silver buttons with enamelled decoration in blue and red, made by* **W. H. Haseler**, 1907. 2, *necklace of gold, opals and mother-of-pearl, made by* **Liberty & Co. (Cymric) Ltd.** *about* 1903. 3, *silver and enamelled buckle, designed by* **Jessie M. King**, 1905. 4, *silver candlesticks, designed by* **Rex Silver**, 1905.

4





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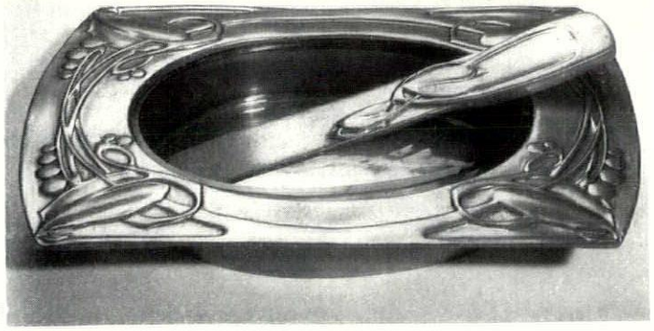

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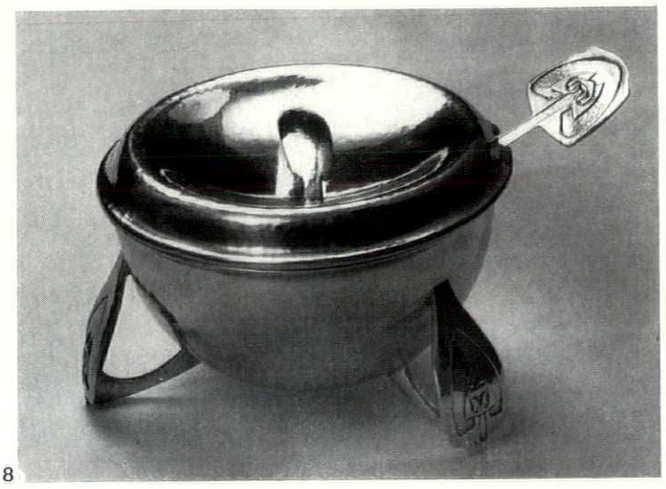


8

5, electro-plated pewter candlestick, probably designed by Archibald Knox about 1904. *6, pewter flower bowl, designed by Rex Silver,* 1905. *7, pewter butter dish and knife with green glass liner, probably designed by Knox about* 1905. *8, silver sugar bowl and spoon, also probably designed by Knox,* 1904.

6



continued from page 108]

May, 1904.[3] Some years since, he stated, his firm had 'adopted for designs, in silver plate and jewellery, the *motif* and lines of ancient Celtic ornament. The results proving fairly satisfactory, the question arose, "Why not apply the like forms and designs to the manufacture of pewter?" Thus, rightly or wrongly, the pioneers of the revival of Celtic ornament decided to work in pewter on somewhat parallel lines with silver, and came to the conclusion that nothing is produced by the silversmith which may not, as occasion arises, be made in pewter, but with the distinct proviso, that any attempt to imitate the precious metal should be avoided.'

This statement, more ingenious than ingenuous, immediately raises a number of questions. Did Liberty's, for example, really sponsor the vogue for Celtic forms at this time? The answer is that they did not. Without going into the complicated background of the Celtic Revival, it remains true that Alexander Fisher, the silversmith and enameller, who was never noted for his avant-garde designs, and indeed, never claimed this particular distinction for himself, was decorating his silver with Celtic interlacing as early as 1896. Moreover, the Liberty designs were not entirely Celtic in inspiration. It is clear from the firm's published catalogues that there were many other influences less openly acknowledged: traces of the Japanese in some of the buckles and other items of jewellery, of Henri van de Velde's angular functionalism in cravat pins and brooches, of the *Jugendstil* in certain of the emphatic lines of the bowls and cups. Nearer home, there are silver-mounted claret jugs so reminiscent of some of the most beautiful designs of Ashbee's Guild of Handicraft that it is at first difficult to see any difference between them. The resemblance was not missed by the people associated with the Guild, which was always on the verge of bankruptcy. In 1903, Janet Ashbee was provoked to a despairing entry in the joint journal that she kept with her husband. Citing the thousands of pounds sunk by Liberty's in this one venture, she asked whether the Guild was justified in its struggle to earn the few hundred pounds necessary for its continuance.[4] Four years later the Guild was in dissolution, less, it must be confessed, as a result of outside competition than of the impossibility of functioning as an oasis of hand-craftsmanship in a machine age.

Liberty's, on the other hand, geared their production to both the hand and the machine. The uneven hammered surface of their silver, to which the firm drew particular attention, was achieved by hand, as was the practice of setting silver articles with semi-precious stones, but it is probable, as the designs were mass-produced, that these refinements were the final gloss, put on to forms which were sometimes shaped initially by machine. The names of the workshops which made the Liberty pieces for the first two years after the introduction of the range in 1899 are, unhappily, unknown at the moment. These workshops were probably in London, because of the London mark registered by the firm; and at one time or other included a small concern run in Soho by a man called Myer, whose son sold up the business a few years ago, together with some jewellery which for some reason or other had never been delivered to Liberty's. Very early on, however, the firm established a connection with Birmingham. Most of the pieces which were exhibited by the firm at the sixth exhibition of the Arts and Crafts Exhibition Society late in 1899 were either designed by or made by Birmingham artist-craftsmen. A case in point was a silver bowl designed by Oliver Baker (1856–1939), a painter and etcher educated at the Birmingham School of Art, and made by Jessie and A. H. Jones, whose work had been exhibited by the same school at the Society's fifth exhibition in 1896. Another was a silver spoon, ornamented with gold and turquoise, designed and made by Bernard Cuzner (1877–1936), who was just at the end of his training at the Birmingham Art School. These and other pieces must have been prototypes, for the School certainly had no facilities for mass-production, nor would this have been allowed by the local authorities; and Cuzner, for instance, boasted that he himself had never duplicated a piece in his life.

While a number of London workshops probably went on turning out small quantities of work for Liberty's, the great bulk of production was undertaken from mid-1901 by the Birmingham firm of W. H. Haseler, founded by William Hair Haseler in 1870 and from 1896 directed by William Rabone Haseler and Frank Haseler. A new firm was formed for this purpose, known as Liberty and Co. (Cymric) Ltd. and registered at the Board of Trade on May 17, 1901.[5] Arthur Lasenby Liberty and W. H. Haseler appeared on the list of subscribers; the directors were Howe and John Llewellyn, of Liberty and Co., and W. R. and Frank Haseler. The actual financial basis of the firm is made clear in an agreement dated May 22, 1901, whereby Haseler's undertook to sell to Liberty's the lease of their premises in Hylton Street, together with their plant and tools, in return for £2,000 in the form of shares in the new company. Liberty's held shares to the value of £3,000.

After the arrangements for the new company were settled, a mark for L & Co. was entered at the Birmingham Assay Office, and more designs for silver and jewellery were commissioned. A little later, the 'Tudric' pewter range was launched. As before, a careful and economic balance was struck between hand work and machine aids; some of the silver was spun, and the pewter was cast. The factory maintained a high output, but a curious feature of the whole arrangement is that it not only enabled Haseler's to continue with their own work, but to mark a proportion of the Liberty designs as their own. This is apparent, for example, in the enamelled buttons, 1, of 1907, which bear the maker's mark of W.H.H. although they appear in a number of Liberty catalogues. Moreover, Haseler's issued their own catalogues illustrating without any reference to Liberty's designs from the 'Cymric' and 'Tudric' ranges.

The question of the identity of the Liberty designers has yet to be solved fully. We do not yet know, for example, who designed the delicate gold, pearl and opal necklace, 2, which appears in a Liberty catalogue of about 1903–4. The design policy of the firm favoured complete anonymity, and the names of designers are omitted from the catalogues. Indeed, but for the fact that the firm contributed occasional pieces to Arts and Crafts Society exhibitions, and were bound by the rules of the Society to give details of design and manufacture; and that other pieces were illustrated in periodicals such as *The Studio*, which likewise gave details of their designers, tracking down the artists concerned would be even more difficult than it is. The cost books of the firm, which could have provided this information, were destroyed only a few years ago, while Haseler's, having changed hands, have kept almost nothing in the way of written records. The earliest designers, who began working in 1899, include Oliver Baker, who although known as a painter had never before attempted anything in this genre, A. H. Jones, who later became an independent metalworker, Bernard Cuzner, afterwards one of the most outstanding silversmiths and jewellers of his generation, and Reginald (Rex) Silver (b. 1879), who after training at two art schools was then working in his father's design studio in London. Arthur Gaskin (1862–1928), who was on the staff of the Birmingham School of Art before his appointment as Principal of the Vittoria Street School of Jewellers and Silversmiths in 1902, did some jewellery designs for the firm in the early 1900's. At about the same time, Archibald Knox, a young teacher at an art school in Surrey, began a long career as a Liberty metalwork designer. In 1905 or thereabouts, Jessie M. King (1876–1949), a member of the Glasgow School, was recruited to design both silver and jewellery. Her approach to design is typified by the charming silver and enamelled buckle, 3, with its stylized bird and flower motifs.

The astonishing thing about these artists is their youth. Baker and Gaskin were both older, but Baker was new to the field of silver and jewellery, while Gaskin had only been concerned with metalwork since 1898. Baker brought a kind of Renaissance bragadoccio to his work, decorating his silver with elaborate cartouches and elaborately scrolled feet rather in the manner of Alfred Gilbert's work in silver of a decade earlier. Gaskin was content to produce a muted version of his usual style of jewellery design. It was the younger ones, however, particularly Rex Silver and Archibald Knox, who provided the dash and brought the whole venture up to date. Silver was only twenty-one when he designed the pair of candlesticks, 4, which were chosen for illustration in *The Studio* of that year. The squared-off motifs that he favoured evoke some contemporary Austrian designs, and occur again in the pewter candlestick, 5, of about 1904, which was probably designed by Knox. Silver's vigour is apparent again in the pewter flower bowl, 6, of 1905, the bowl itself cradled in a pair of simple handles, each end extended to form a foot. Silver's jewellery designs were also influenced by work on the Continent: some of his pieces are in the manner of van de Velde, whose jewellery was illustrated in the *Magazine of Art* in 1900. Archibald Knox worked in a similar bold manner: it is likely that the pewter butter dish, 7, of 1905 and the silver sugar bowl, 8, of 1904 were designed by him.[6] They are all in the Liberty tradition of uncompromising shape and strong ornament.

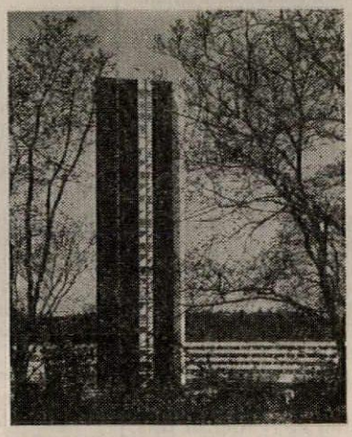
Given the very fact of their modishness, it is remarkable that these designs stayed in production for so long. Some of the Art Nouveau pieces continued to be issued throughout the 1920's and even, exceptionally, in the early 1930's, although the original Liberty-Haseler agreement came to an end in 1926. Liberty & Co. (Cymric) Ltd. was wound up in 1927. Haseler's continued to work for Liberty's, but the connection was now much less close than before. The break became more or less complete with the war years, when all but four of the pewter moulds disappeared into the war effort. The last member of the Haseler family to be connected with the firm sold up his interests over a decade ago, and the firm now work only occasionally for Liberty's. Of the designers who were associated with the venture in its early years, only Rex Silver is still alive, and he has most kindly helped to identify some of his own work.

[3] *Society of Arts Journal*, LII, 1903-4, p. 626.
[4] Ashbee *Memoirs*, Vol. II, p. 135. (Typescript, Victoria & Albert Museum.)
[5] Company file 70230, Public Record Office.
[6] Silver. Knox (who came from the Isle of Man) and Jessie King all submitted their designs to the firm in London. They were in no way concerned with the practical details of the manufacture in Birmingham, according to Rex Silver.

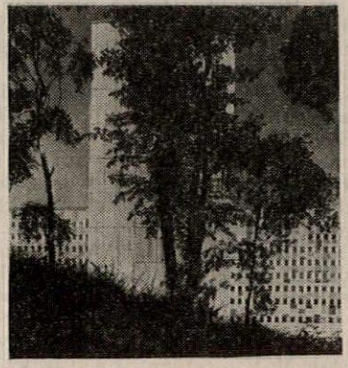
NEW STOCKHOLM LANDMARKS



Newspaper offices



International science centre



Radio and television centre

For some while attention has been almost exclusively focused on only two aspects of the Stockholm architectural scene, both more significant as groups of buildings than in terms of individual works of architecture: the satellite towns just within the city boundaries (Vällingby, Farsta, etc.) and the redeveloped Hötorget area in the centre with its five parallel office slabs, its pedestrian shopping streets and its multi-level circulation (AR, August, 1961). The last year or two, however, has seen the construction of at least three individual buildings of some public importance, whose architectural form has made them landmarks on the fringe of the central area. These are illustrated on the following pages.

The first, a newspaper building by Mr. Anders Tengböm, is a direct result of redevelopment in the centre, because this has involved the demolition of the traditional newspaper quarter. The new building stands up handsomely near the northern head of the high-level bridge, Västerbron, which spans the end of Lake Mäleren and links the northern and southern parts of the city at its western edge. The offices are in a brick tower, tapered at the ends, and set at right-angles to the road, which embodies the virtues we have come to expect from modern Swedish architecture: the sensitive handling of traditional materials like brick; a quiet distinction which relies mainly on good craftsmanship, on simple geometrical contrasts and on a restrained use of pattern within the framework this geometry establishes.

The other two buildings, both by Professor Lindström, have it in common with the Hötorget development that they employ curtain-walling, and in this sense they are foreign to the usual pattern of modern Swedish architecture to which Mr. Tengböm's newspaper building largely conforms. At Hötorget the curtain-walled slabs are straightforwardly treated and acceptably impersonal, since they act as a foil to the busy development at their base; at the Wenner-Gren centre, the first of Professor Lindström's buildings, whose tower is seen from the centre of Stockholm on the axis of Sveavägen, looking north, the same material has been somewhat forced into a consciously decorative mould. The glass wall which clothes the steel frame (a form of construction, incidentally, unusual in Sweden) of the tower block is composed of variously coloured panels arranged to form an abstract pattern, and this—together with the tapered profile and the rhomboid shape that have been given to the tower in plan, with acute angles designed to enhance the impression of verticality (a refinement that must greatly have increased the cost)—give the tower, effective though it is as a landmark, a fanciful character whose suitability to an international scientific institution may be questioned. The conception of an administrative tower with living quarters circling its base is an interesting one, the chief weakness in execution being the lack of relationship, in scale or architectural handling, between the metal tower with its reflecting surfaces and the concrete surfaced circular range of flats whose relative heaviness is emphasized by the way each floor is set back, the parallel rings of balcony fronts giving, as a result, a sloping section to the concave, or inner, facade.

Professor Lindström's other building, the first instalment of an ambitious new radio and television headquarters, achieves its effect more calmly. The treatment of the office building with its long curtain-walled facade is dull, but it cannot be fairly assessed until the rest of the scheme has been completed. The visual relationship between the present block and those still to come is, in particular, not yet clear. If unity is to be achieved it will however be as much a matter of landscaping as of architecture, and promising use is already being made of some of the eighteenth-century buildings on the site to create the variety of scale that the large bulk of the new buildings requires.

J.M.R.

1 NEWSPAPER OFFICES

ARCHITECT | **ANDERS TENGBÖM**



1, from the main road; on the left the tower containing administrative offices; on the right, a row of shops with the printing departments behind and the editorial offices above.

NEWSPAPER OFFICES, STOCKHOLM

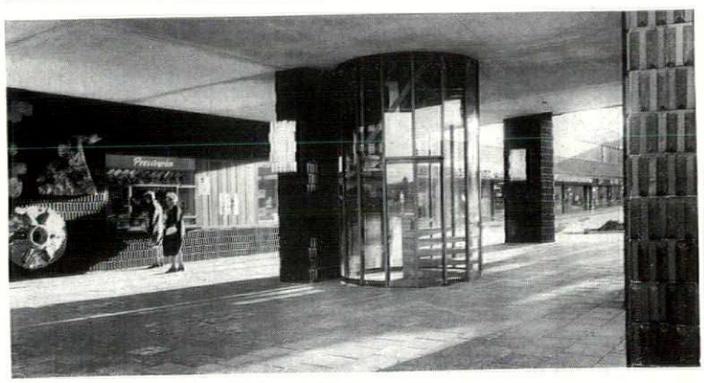
New offices for the *Svenska Dagbladet*, one of Sweden's leading newspapers, necessitated by the rebuilding of the old newspaper quarter of Klara in the business centre. The site of the new building is near the Västerbron, the high-level road bridge west of the city.

The site was large enough to allow all the printing and other technical departments, and the despatch department, to be planned on one floor. Above this is a floor containing the main editorial offices, giving them a simple direct vertical connection with the printing department. The newspaper's administrative offices are in a fourteen-storey tower, of which the top storeys are regarded as space for future expansion, being temporarily let to outside tenants. The main entrance is from a portico beneath one end of the tower block. At the other end is a public restaurant, and along the road frontage of the lower block are shops, a travel agency and a bank.

The office tower has a double central corridor with unlighted service core between. It is slightly tapered at either end to reduce the apparent bulk, and the windows are staggered on alternate floors to give a more interesting façade pattern—especially when illuminated at night, a condition important in a newspaper office with its late hours of work. Construction is a reinforced concrete frame with brick facing, which is still regarded in Sweden as the cheapest method of achieving maintenance-free cladding. The window area is calculated so as to give adequate lighting without being so large as to necessitate special screening or cooling arrangements.

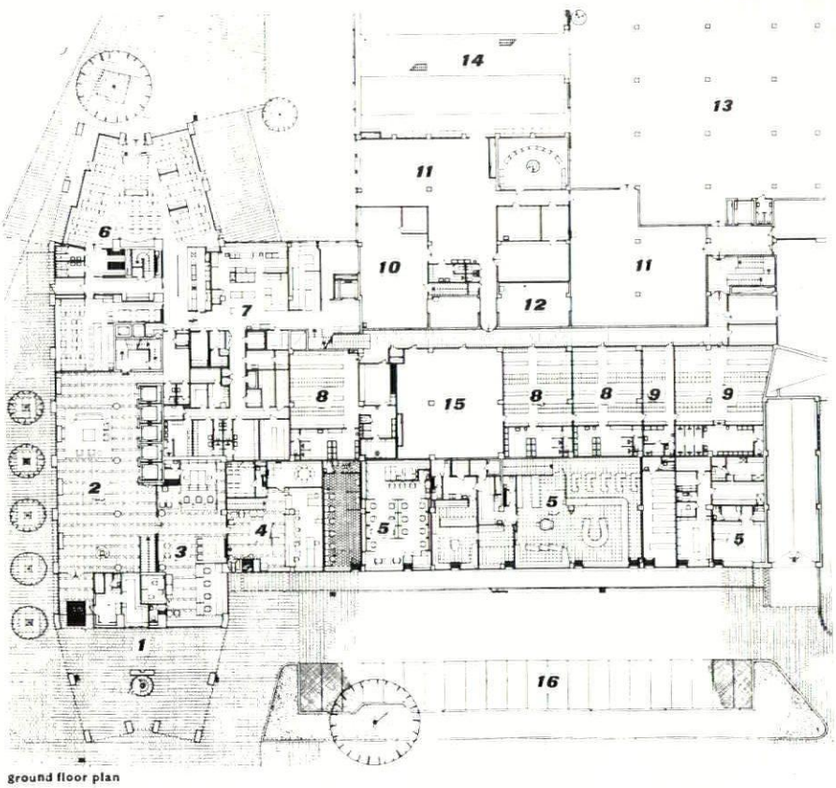


2

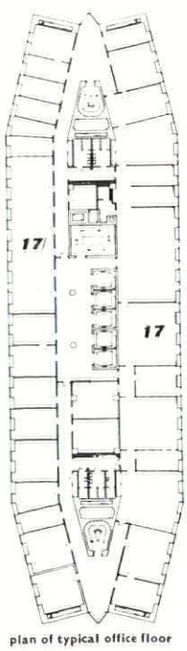


3

2, the office tower from above the printing departments, which are lit by the roof-lights seen in the foreground. 3 inside the portico formed beneath the projecting end of the office tower.



ground floor plan



plan of typical office floor

key
1. portico
2. entrance
3. travel agency
4. bank
5. shops
6. public restaurant
7. kitchens
8. locker room (men's)
9. locker room (women's)
10. workshop
11. machine rooms
12. foundry
13. paper store
14. presses
15. spare
16. parking
17. offices

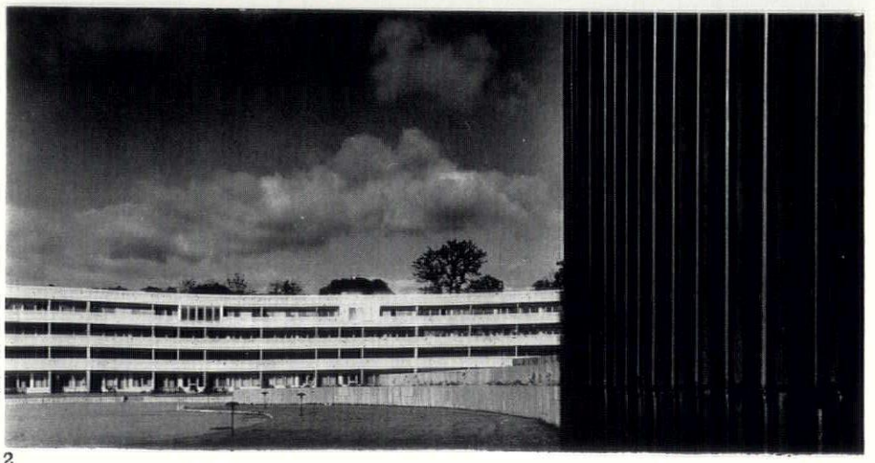
? INTERNATIONAL SCIENCE CENTRE

CHITECTS | ***SUNE LINDSTRÖM and ALF BYDÉN***



1, the centre at night, looking past the foot of the tower to the inward-curving residential block. 2, a section of the residential block with the tower on the right.

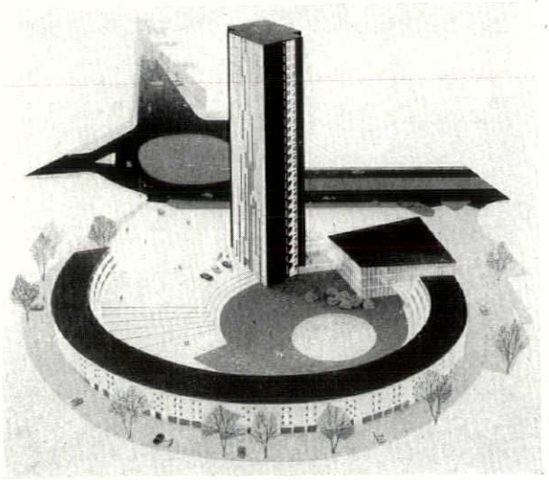
is an international research centre, known as the ner-Gren centre, the purpose of which is to ide office accommodation and meeting rooms for tific institutions and living accommodation for ing scientists. The site, in the northern part of the at the termination of Sveavägen, was donated by Swedish government after the philanthropist after m the centre is named had given over half a million ds to establish it. A limited competition was then and two out of the three buildings of which the



2

centre will be composed have now been completed. These two, illustrated herewith, are a 25-storey administration tower and a four-storey residential block, circular in plan. The third building will contain auditoria, a library, shops, a restaurant and club rooms.

The tower has 23 office floors, with shops at ground level and heating plant and book storage in two basements and a club occupying the top floors. It is



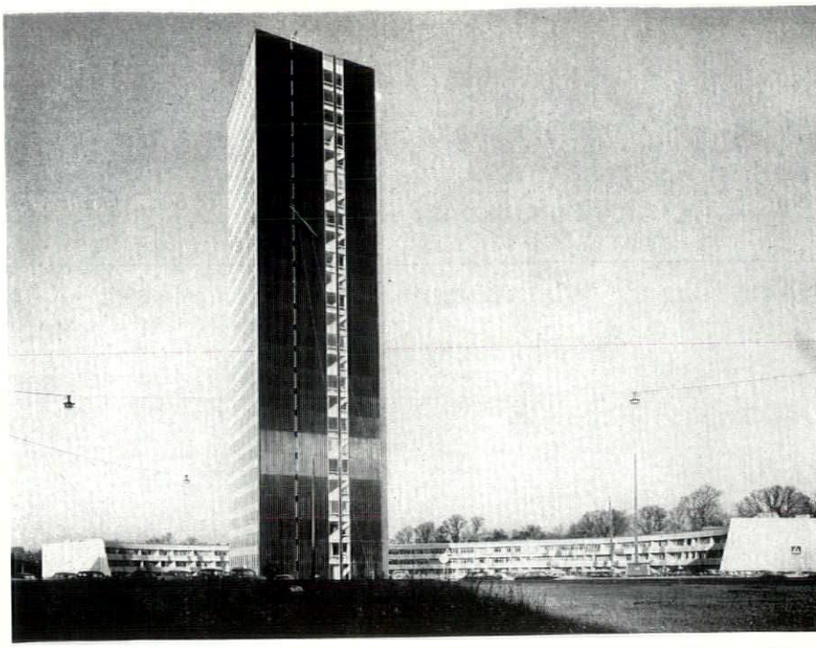
3, sketch of the complete scheme, looking over the flats, past the tower, down Sveavägen. To the right of the tower is the auditorium block, not yet built.

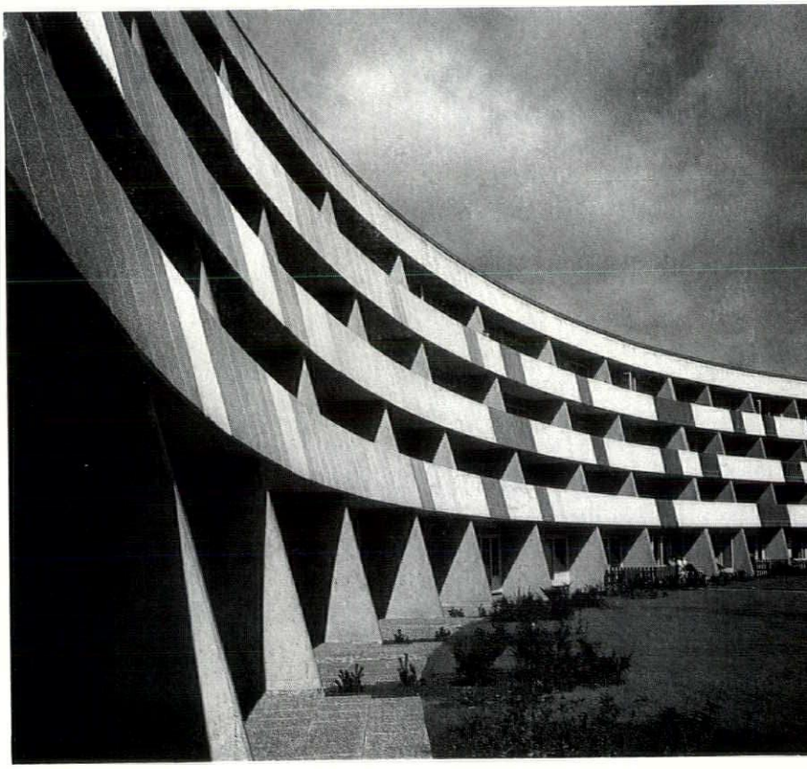
rhomboid in plan and slightly tapered vertically. A central core, containing lifts, lavatories, kitchens, service ducts and some conference rooms, is surrounded by a corridor, serving a ring of 16ft. deep offices.

The tower is of steel frame construction, which is rarely used in Sweden but was chosen in this instance to economize weight in the superstructure and to increase the speed of building. Floor slabs are of cellular steel units with a 4in. concrete topping which is part of the structure. The channels in the steel decking contain ventilation and electrical services. The outside walls are double, the inner skin being lightweight concrete and the outer skin aluminium curtain-walling, anchored to the structural steelwork by stainless steel lugs on the long elevations and storey-high corrugated aluminium trays, porcelain-enamelled, on the end walls. The glass façades have an abstract pattern of pink, green, black and white panels. Heating is by hot water, the supply risers being at diagonally opposite corners of the building and serving radiators at cill level.

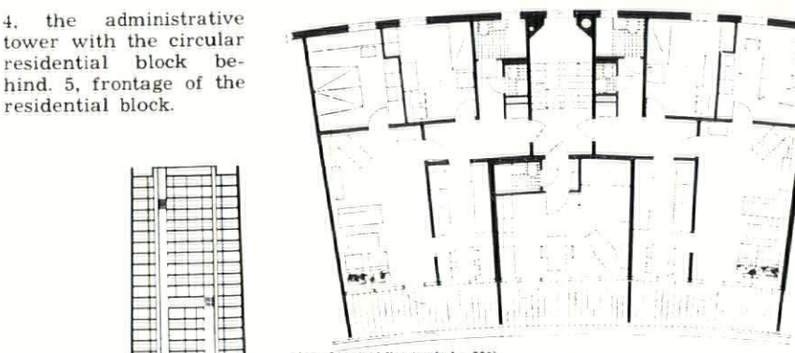
The residential block contains 140 flats, ranging in size from one to six rooms. All have south-facing balconies. The flats are reached by staircases and a ground-floor corridor running the length of the circular building. The corridor has thirteen entrances connecting it both with the garden and tower block on the south and a service road on the north. On this also are garages, steam bath, kindergarten, workshops and storage.

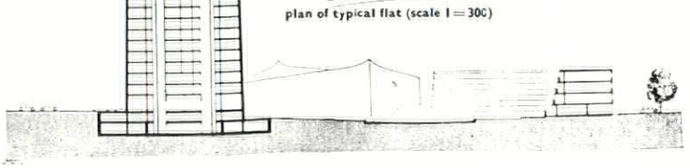
Concrete floors span between radial reinforced concrete cross-walls, made with steel shuttering. The north wall is of lightweight concrete, rendered. Balcony fronts are of prefabricated concrete units, with an open aluminium screen in front of living-room windows. The walls behind the balconies are timber framed with double glazing. Flat interiors are by Malene Bjorn and Bruno Mathsson.





4, the administrative tower with the circular residential block behind. 5, frontage of the residential block.







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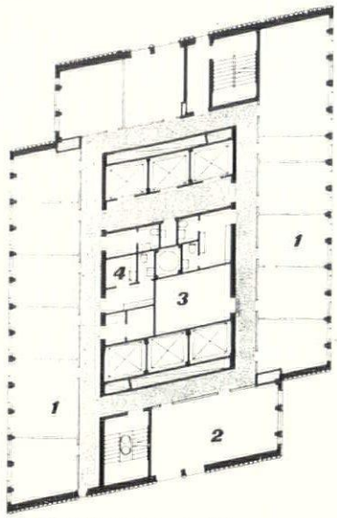


typical floor of tower (scale: 1 = 450)

6 (on left), inside the library of the club which occupies the top floor of the tower. Through the door in the background is the bar. The stairs have a balustrade composed of vertical posts crowned with glass door-handles.

INTERNATIONAL SCIENCE CENTRE, STOCKHOLM

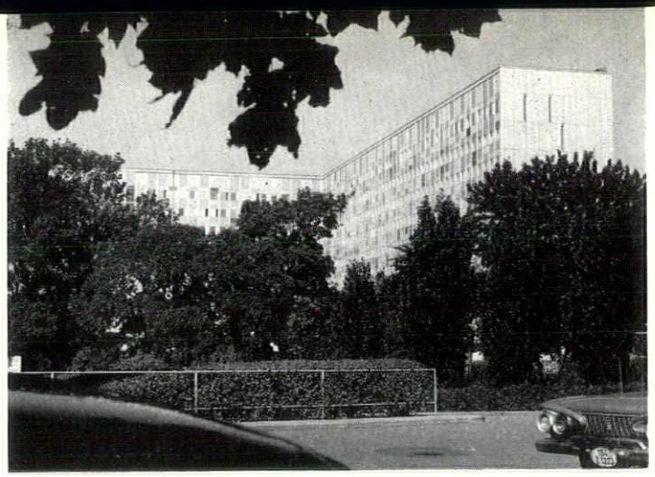
key
1. offices
2. director's office
3. conference room
4. lavatories, etc.

3 RADIO BUILDING

ARCHITECTS | ***SUNE LINDSTRÖM and ERIK AHNBORG***

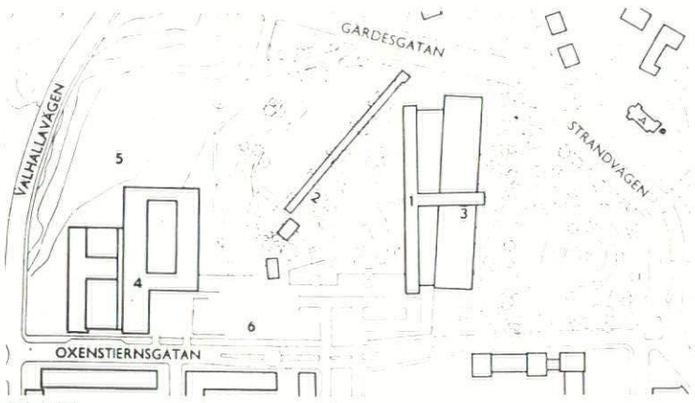
1 (on right), the south front of the office block which faces the old military buildings and the site of the future television building—see layout plan on next page.





2

RADIO BUILDING, STOCKHOLM



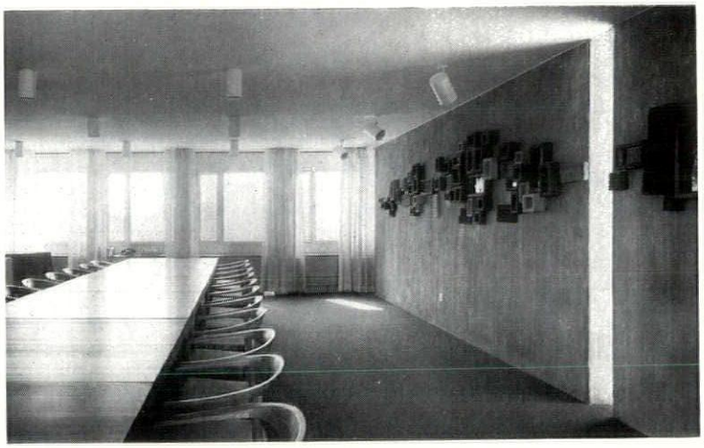
layout plan

This is the first instalment of a group of headquarters buildings for the Swedish broadcasting corporation. They are planned on a large undulating site on the north-eastern edge of the city previously in military occupation. Among the military buildings were three dating from the eighteenth century. These are being preserved, and one has already been restored for use as a staff restaurant. Following the office block illustrated here (and marked 1 on the site plan), the next new building will be a range of sound studios alongside, though not quite parallel to, the offices, linked to them at ground and basement level and with two courtyards between. This studio block is marked 3. The following two stages, marked 4 and 5, will be a television building and its extension. These will be linked to the offices, and to the concert hall which forms part of the sound studio block, by a two-storey underground passage, 6. Between the two blocks of new buildings lie the restored old buildings, 2. The whole project is due to be completed by 1966.

The T-shaped office block is about 500ft. long, with eight storeys above ground and three below. It houses 1,000 people. The short arm of the building, running north and south, is used for the storage of musical stores, gramophone records, etc. The upper floors contain office space laid out on either side of a central corridor.

Construction is a reinforced concrete frame with flat slab floors. The end walls are in-situ concrete faced with precast concrete slabs with a vertically ribbed surface. The curtain-walling is timber with double-glazed windows. The spandrel panels are glass in four shades of grey, framed in aluminium.

2, office block with storage wing at north. 3, a conference room—stoneware relief by Gunilla Palmstierna. 4, the main staircase.



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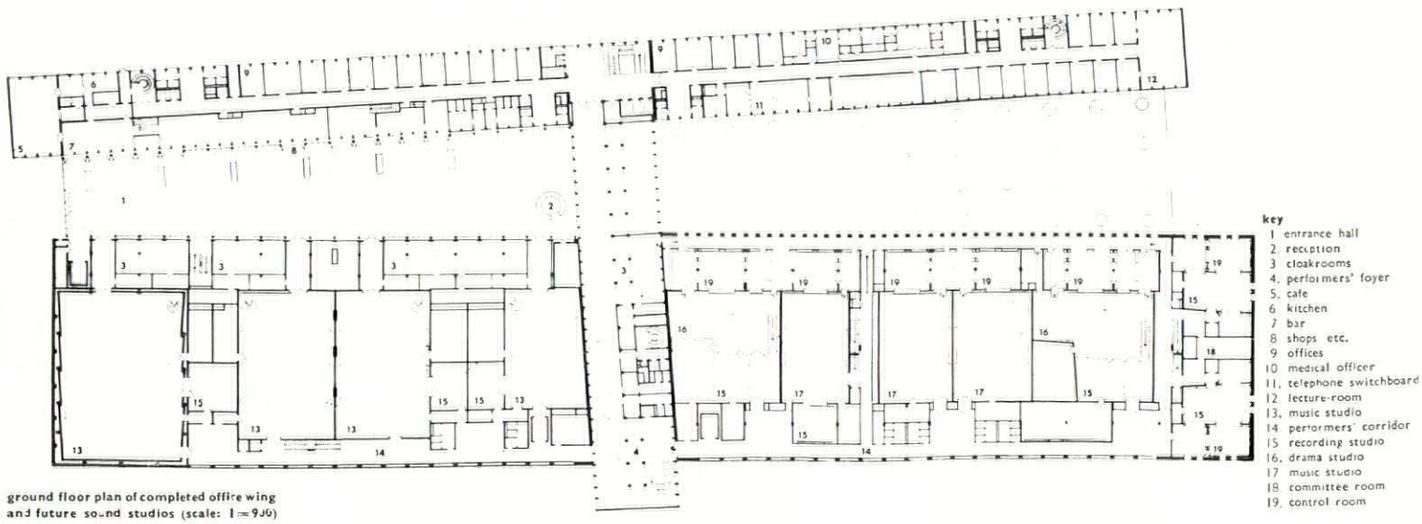
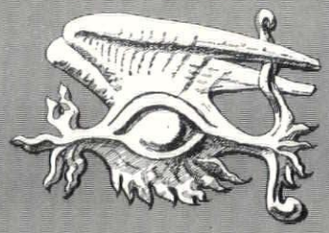
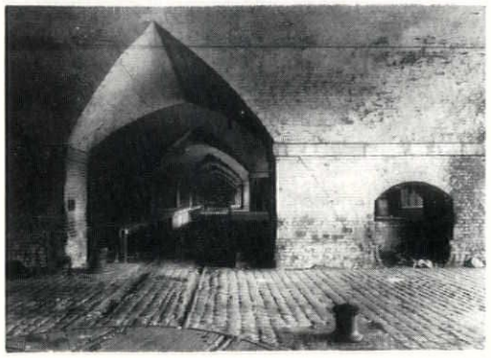


key
1 entrance hall
2 reception
3 cloakrooms
4 performers' foyer
5 cafe
6 kitchen
7 bar
8 shops etc.
9 offices
10 medical officer
11 telephone switchboard
12 lecture-room
13 music studio
14 performers' corridor
15 recording studio
16 drama studio
17 music studio
18 committee room
19 control room

ground floor plan of completed office wing and future sound studios (scale: 1=96)



the exploring eye



1, *looking along one of the underground passages in the Manchester Central Station undercroft. The author wishes to acknowledge the help of the British Transport Commission and the School of Architecture at Manchester University in compiling this feature.*

Manchester is unusual in having all its railways elevated: as a result every station there is at 'first-floor' level. Even Liverpool Road (1830), the oldest railway station in the world, has this distinction. Central Station—the subject of this note—was the largest station built by the Cheshire Lines Committee; it was opened in July, 1880, and is now controlled by the Midland Region of British Railways. All its nine platforms and fifteen roads, and the concourse area serving them, are raised on a magnificent brick undercroft. The station roof with its bow-string truss is 210 ft. wide and rises to a height of 92 ft. above rail level. It is thus the widest span in the country outside London now that New Street, Birmingham, has had its 211-foot roof dismantled. Only St. Pancras with its 243-foot span exceeds it.

The question arises who designed this impressive structure. No architect's name has been recorded, but a tradition survived that there was a list of names of people associated with the building inscribed in the cupola over the station clock. This proved to be true and the list was found to include the name 'John Fowler, Engineer'; so the designer turns out to be the great Sir John Fowler who built the Forth Bridge in collaboration with Sir Benjamin Baker.

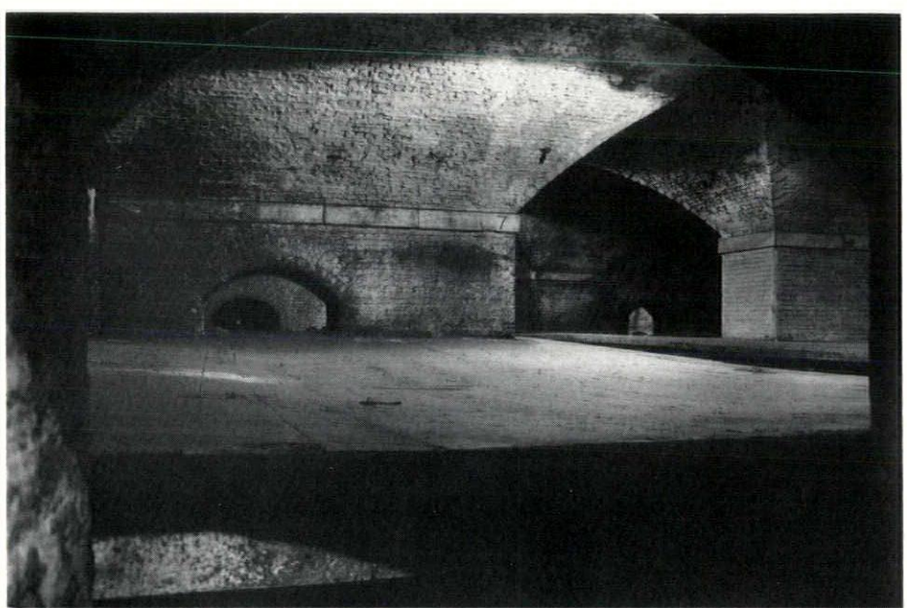
Both Manchester Central and Liverpool Central stations (also by Sir John Fowler) are singled out by Prof. Meeks in his book 'The Railway Station' as particular English examples which make the train shed their dominant feature. At Manchester the booking office, waiting room and the rest of the station front are temporary timber buildings which it was planned should be replaced by a permanent masonry facade—a project which was never carried out.

Without doubt, however, the outstanding feature of Manchester Central Station is the undercroft. It consists of a gridiron of intersecting tunnel vaults built on a curve so that from many points one can see no daylight at all and the whole effect is one of Piranesi-like dungeon architecture. One gets an impression of an equal distribution of solids and voids as in Wren's crypt at St. Paul's. The passages of the undercroft were designed for storage, and a lift was installed for conveying goods trucks down from the station level; at undercroft level they were shunted along the passages which were provided at each intersection with a rail turntable. Worth noticing here are the splendid textural qualities of the brickwork, the worn, sturdy timber platforms and the glossy iron turntable bollards. Altogether the whole station, now over eighty years old, is a happy hunting ground for the student of industrial archaeology.

MICHAEL M. RIX



3



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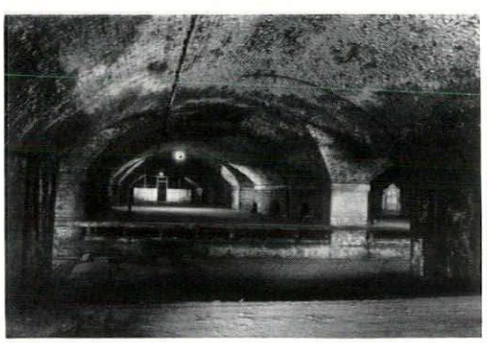
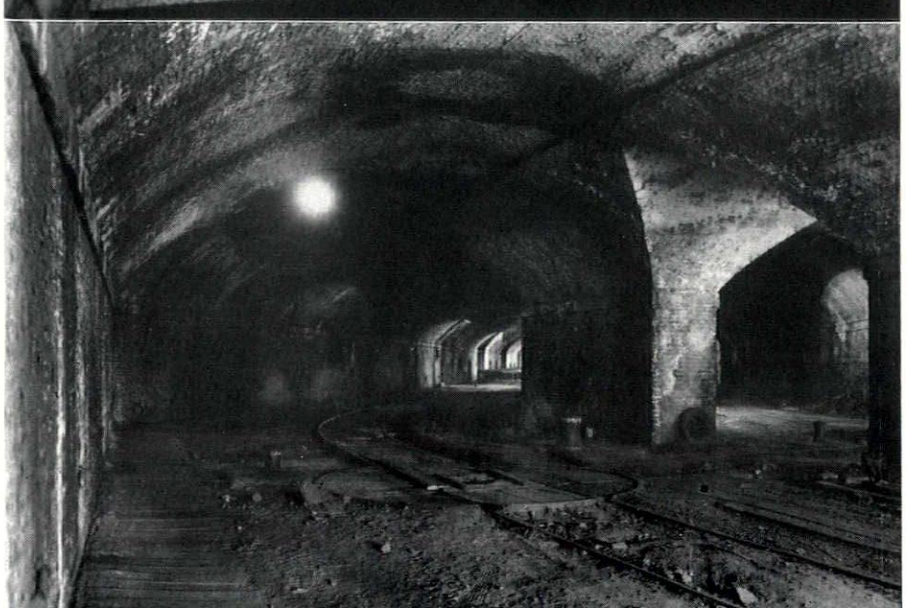


6

2–6, views along and across the network of tunnel vaults in the undercroft at Manchester Central Station; in the foreground of 2 is one of the turntables at a tunnel intersection. 7, exit staircase with, on the right, the hoist with which trucks were lowered into the undercroft.

photographs by Eric de Maré



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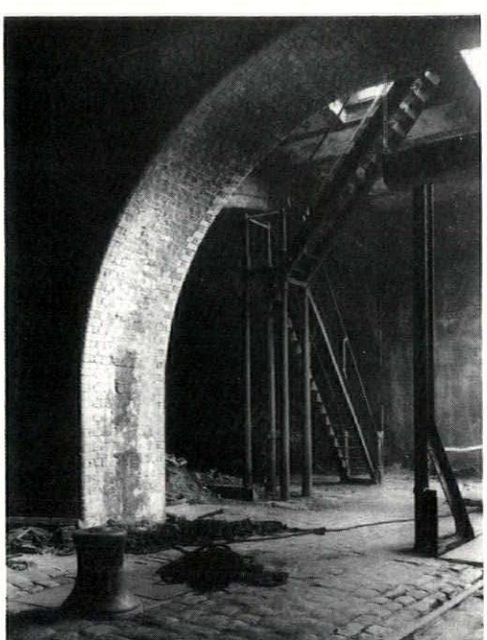

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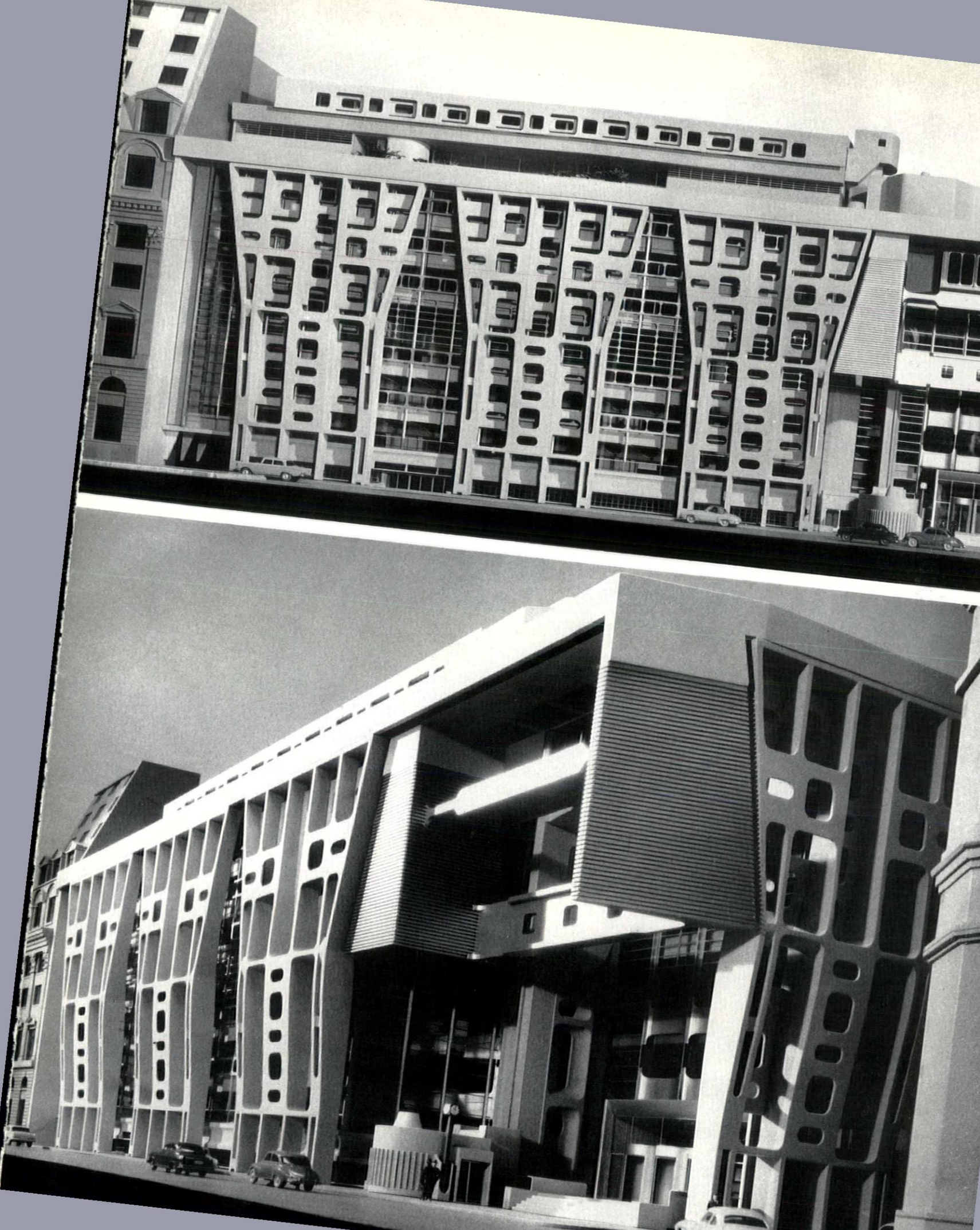




LUCI-NATALE

While most of Europe's great capital cities celebrated Christmas with street illuminations that combined pomposity and ill-disguised commercialism, Milan contrived to pay a graceful compliment to the season, while being unobtrusively frank about the commercial backing, 1. The *Parata Luci-Natale* was a city-wide operation under the direction of Giuseppe Orlando, supported by a commission that included such well-known names as Luigi Figini, Vittoriano Viganó and Bruno Munari, while the execution of the detailed schemes for the various streets and piazzas involved most of the available design-talent in the city. In some cases, the means were elaborate but justified by the end—a great deal of tubular scaffolding went into the structure designed by the Commission themselves, but the result was a delectable tower of lights, 2, that afforded some compensation to the ancient stones of the Duomo for the unsightly excavations for the *metropolitana* that crowd up to its doors.

In other cases the elegance of the means was as striking as the result, as in the Piazza della Scala, simply illuminated by four giant puff-balls of light, 3, and a minimum of fuss, to the designs of Massimo Vignelli. Not all were as successful as this—the Piazza Cavour was not greatly improved by James Dobrodzek's thin but frantic graphics, 4, and some of the other variations on the theme proved to be rather hackneyed—but the total effect has been voted a major European success, and some compensation for the bad news about the 1963 Triennale (abandoned till 1964 at the earliest) which rather blighted the festive scene for designers.


3



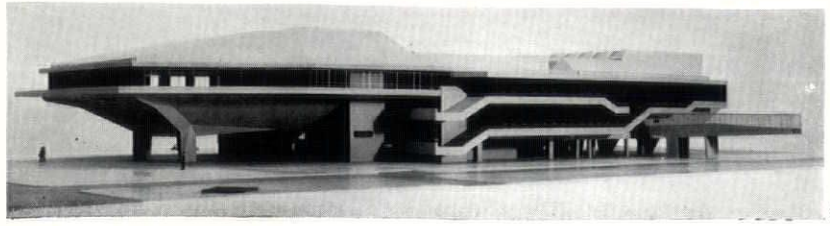
4



PRIZEMEN

The completion of van den Broeck and Bakema's postal building in the Hague, 5, is a suitable, if not too belated, occasion to congratulate the partnership on the award of the Dutch *Prix de la Critique* for 1962, and the exhibition in due celebration of the prize that followed later in the year. The exhibition-catalogue *Bouwen voor een open samenleving* must be one of the most exhaustive documentations of any living European architect(s) since the schemes exhibited, beginning from 1926, produced over 1,300 catalogue-entries, and were backed by an equally thorough bibliography. Of all the


5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This month's cover was designed by Philip Thompson

THE ARCHITECTURAL REVIEW

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

VOLUME 133 NUMBER 793
MARCH 1963

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. Subscribers may have their copies bound in half-yearly volumes at the price of 27s. 6d. Postage 2s. 9d. extra on the completed volume.*

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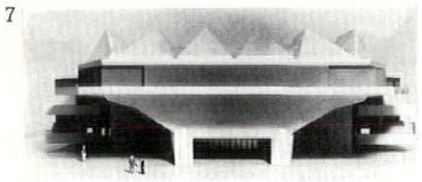
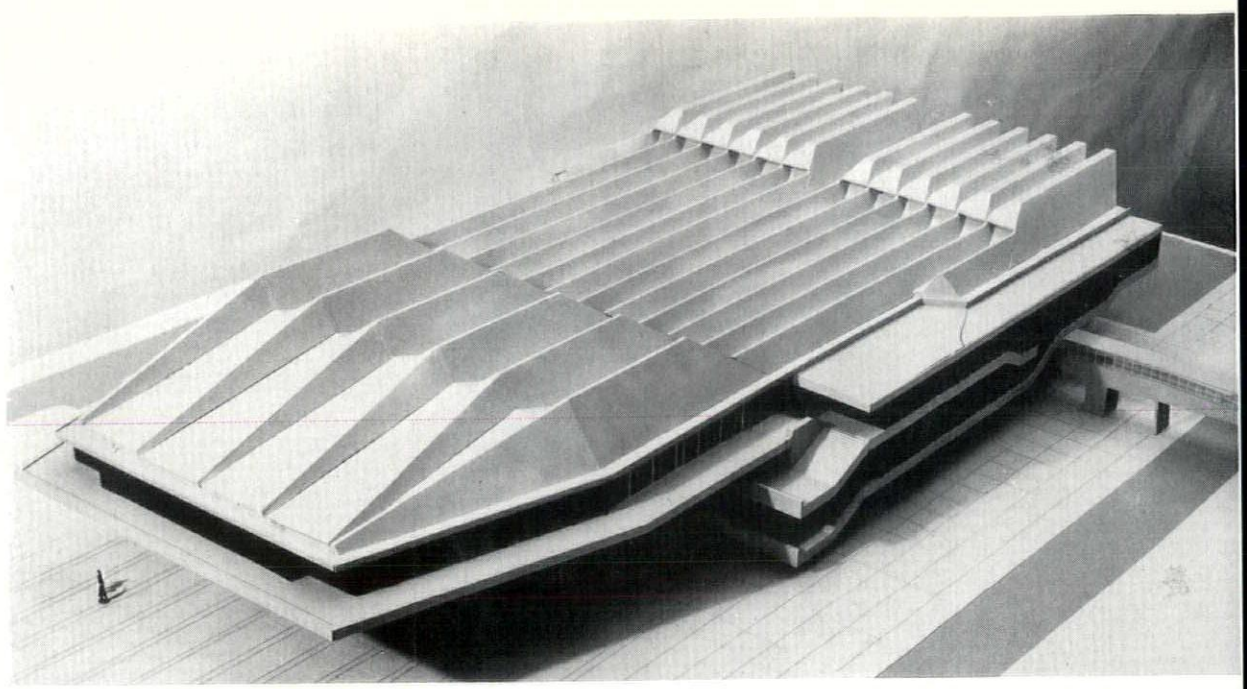
Prizemen

exhibits, none seems to have attracted so much attention as the project, 6, for the auditorium complex, 7 and 8, for the Technical College at Delft, which promises to be one of the most striking uses of folded-plate construction in Europe to date.

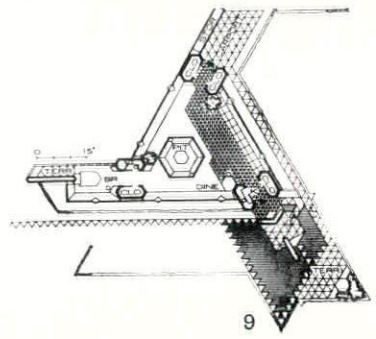
One may note, in passing, that any national chapter of the Association Internationale des Critiques d'Art may award such a prize (which is apt to be more honorific than financial) to an architect if it wishes, and it is therefore a point of curiosity to know why the British section has never done so, to date, even in years when it has not felt any artist worthy.

7





GOFF RIDES AGAIN



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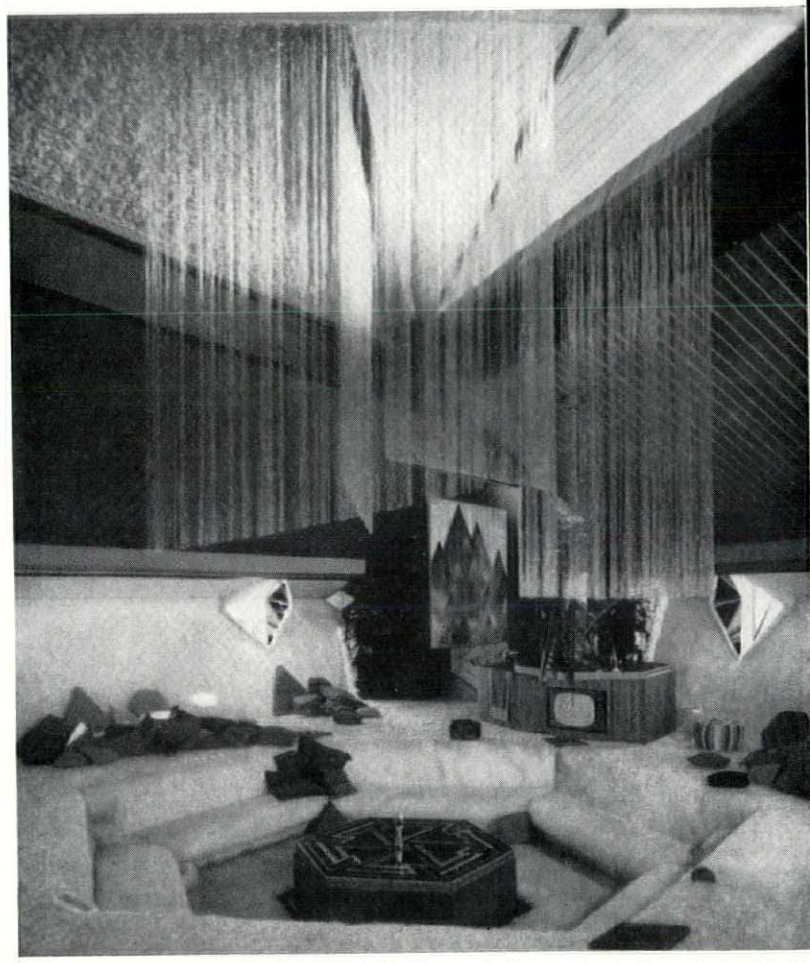
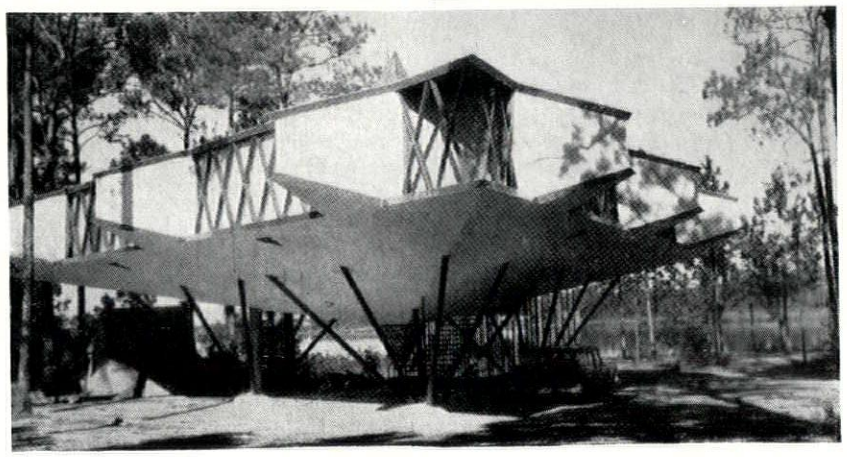


The reputation of Bruce Goff fluctuates as does that of no other living architect—almost completely missing from the literature and the periodicals for the last five years, he has just come bustling back under the most distinguished auspices. Of all people, Alan Pryce-Jones, the very epitome of European culture in all those parts of the USA where the *Times Literary Supplement* has penetrated, singled out Goff in the *Listener* (Jan. 10, 1963) as an example of a specially praiseworthy type of US provincial-by-choice 'He has been written about at home and abroad: architectural journals all over the world are likely to devote attention to his work. But he is content to live in a small section of a tower designed by Lloyd Wright, in a small town community cut off from much chance of worldly success. He is a kind of latter-day William Morris, devoting the most loving attention to a handful of clients, and designing houses of a stamp so personal that it is hard to describe them without making them sound eccentric . . . their point is always that they are designed to meet a particular human need and never to advance fame or fortune.'

The literary culture of academic England could hardly bestow a more generous accolade, but Goff's fellow-professionals had forestalled it—in December 1962, *Progressive Architecture* gave him the cover-treatment and some twenty editorial pages, including a longish statement by the man himself, full—as ever—of allusions to Debussy and Wright, and forward-looking paradoxes: 'Architecture is for people and not only an abstraction, but it is an art and not only a commercial commodity. Architects must learn more of the mechanics of design, of their media, and must develop their technics. Debussy gave music freedom from outworn formulas, who will give it to Architecture? We must continue as part of the continuous present. If we stop moving we are dead.' All of which is, at least, a refreshing change from the neo-Academicism and historical preoccupations of the East Coast architects who have been taking up so much space in *P/A* of late.

Of the recent works illustrated in conjunction with this statement are too many that have become well-known through the non-specialist press (a tribute to Goff's success in the Pop media) and the major unpublished work, a bachelor dream-house that outdoes anything invented by *Playboy* magazine, is in some ways disappointingly Wrightian, both in plan, 9, and internal atmospherics, 10. The most typically extreme structural solution is that of the stilted-up Gutmar House, 11, at Gulfport, Miss., and the most characteristically surrealist use of materials-out-of-context is seen in the concrete drain pipes that colum up the roof of the Garvey House a Urbana, Ill., 12.

Yet one of the most interestin



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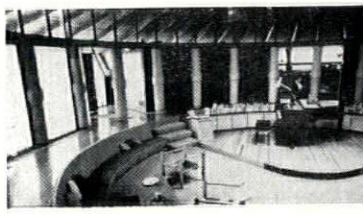


BANK HEADQUARTERS IN BUENOS AIRES

ARCHITECTS | **SANCHEZ ELIA, PERALTA RAMOS, AGOSTINI AND CLORINDO TESTA**

The building, just starting construction, is the outcome of a limited competition initiated in 1960. It will provide the Bank of London and South America with a new administrative headquarters for Argentina and Paraguay and new accommodation for the bank's principal branch in Buenos Aires. It will house a staff of 1,500. Completion is expected early in 1965. The building will cost approximately £2 million.

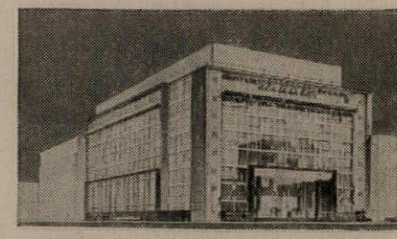
The site is that of the bank's existing central office, which the bank has occupied since a few years after its foundation in 1862. It lies in the main banking district of the city, only a block away from the Plaza de Mayo. A seven-storey department-store nearby has been bought by the bank to house its various departments while the rebuilding is taking place.

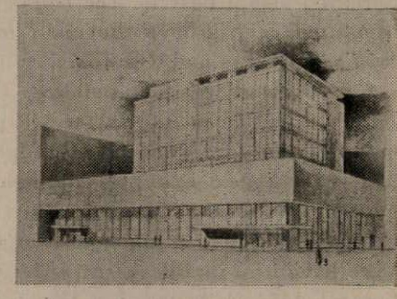
The competition was organized by Mr. Gerald Wakeham, staff architect to the Bank of London and South America, and it was decided to limit it to architects practising in Argentina. Four firms were invited to compete, and a comprehensive brief was prepared based on an appraisal of future trends in local banking operations and in particular on the peculiar requirements of Argentinian banks resulting from the custom of payments by cash rather than by cheque. The remarkable number of 133 cashiers' positions had to be provided in this one branch, necessitating an unusually generous allocation of public space and circulation.

The winning design, by Sanchez Elia, Peralta Ramos, Agostini and Clorindo Testa, accepted the challenge offered by this brief to break away from the accepted pattern of bank design and made no concession to the conservatism of commercial architecture in Argentina, as compared with other South American countries. The basic idea in the winning design was to obtain the cohesion required between departments, as well as the necessary intercommunication, by placing them all within one enclosing envelope. The entire volume of the building, covering an area of 35,000 sq. ft. and rising to a height of 75 ft., has been treated as one banking hall. Within it there are no intermediate floors in the conventional sense, but a series of interconnected levels, facilitating communication between departments and incidentally creating unusual interior vistas. The three upper levels are suspended from the roof, and the two levels immediately above the ground floor are cantilevered in a form of bridge construction, giving an interior largely free of supporting columns. The upper suspended levels are capable of future extension by means of precast slabs.

There are two main vertical circulation systems, one for the public and one for bank employees. They are planned round lift-shaft structures that also contribute to the support of the main roof slab from which the upper levels are suspended. The ground floor, which is raised above street level, is linked by escalators with the two levels immediately above it and with the first basement. These are the areas in which public traffic is heaviest.

The roof slab, in addition to the support it obtains from the lift structures, is carried on the party walls and on the external concrete columns with their linking membranes. The latter also serve as *brise-soleil*, since behind them the building is encased in a complete wall of glass. The main entrance is at the corner of the site and is marked by a deep recess. Within this recess is a small independent structure housing the entrance to the safe-deposit, which operates outside banking hours. There are three basements, extending to a depth of 40 ft. below ground. These contain an underground security area, allowing customers undertaking large cash transactions to drive their own cars into the

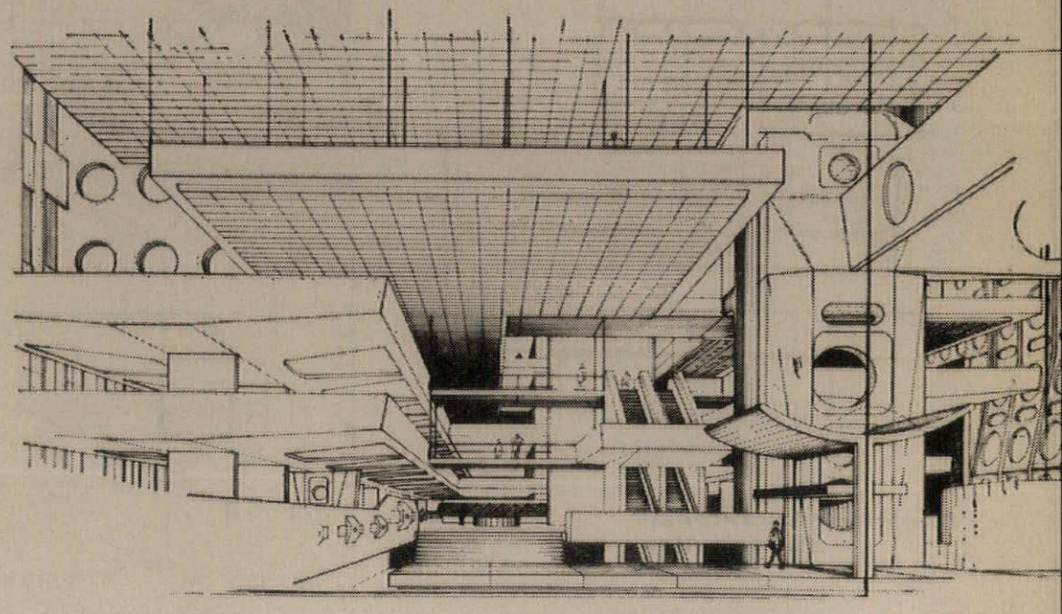




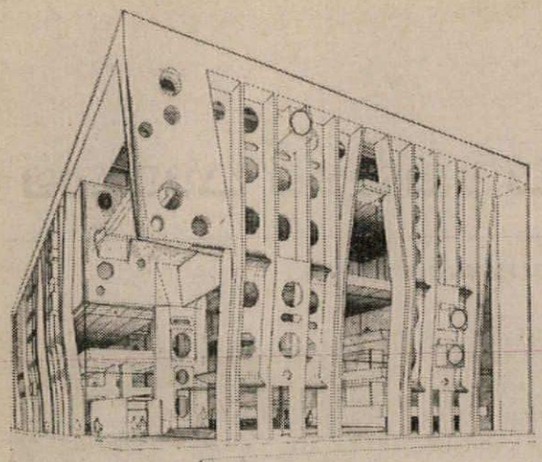


The other three designs entered in the competition: top, by A. L. Jacobs and A. J. Falomir; centre, by S. G. Follett & Follett in association with Dodds & Cattaneo; bottom, by de la Maria Prins & Olivera.

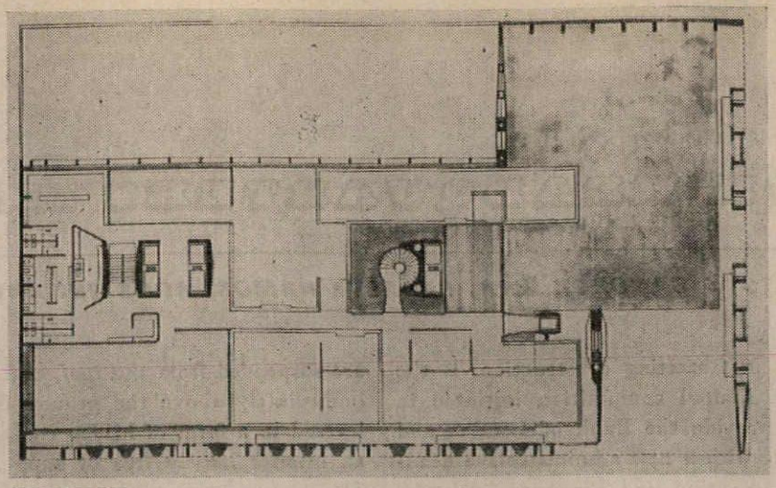
Perspective of the interior showing the suspended upper levels.



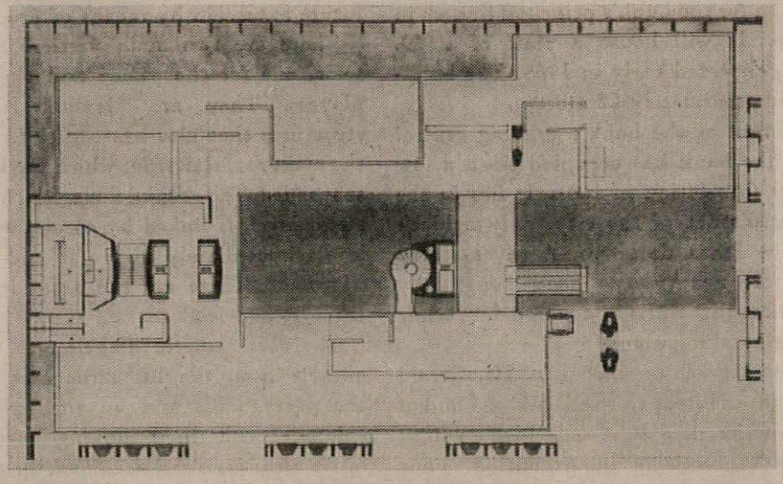
Facing page: top, the main elevation; bottom, the south-west corner showing the main entrance and the separate 'pill-box' entrance to the safe deposit.



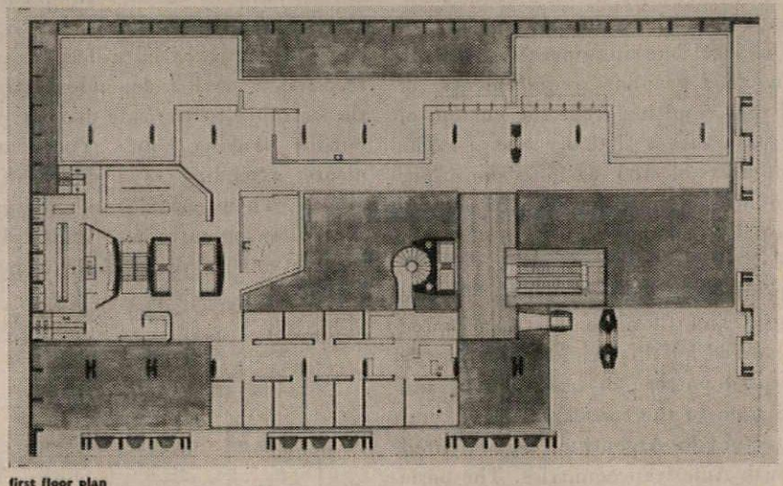
Perspective of the south-west corner.



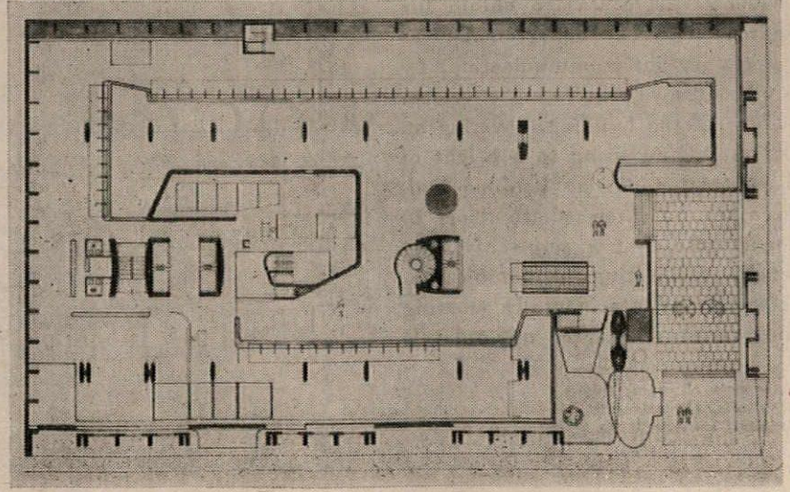
fourth floor plan



second floor plan



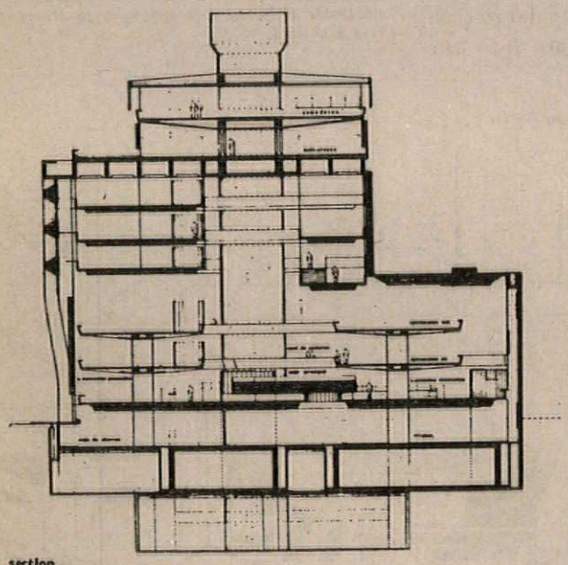
first floor plan



ground floor plan

building; also a base for the bank's own fleet of armoured cars. Above the main roof level are staff restaurants and club-rooms.

Construction of the building is reinforced concrete, with concrete surfaces exposed on the outside, the formwork being of plastic sheets. The unorthodox external expression caused a good deal of local controversy when the result of the competition was announced and the designs were exhibited in Buenos Aires by the Sociedad Central de Arquitectos, but the designs, having been promptly accepted by the promoters of the competition, were subsequently accepted by the local planning authorities and the version now being executed differs only in minor respects from the competition design.



section

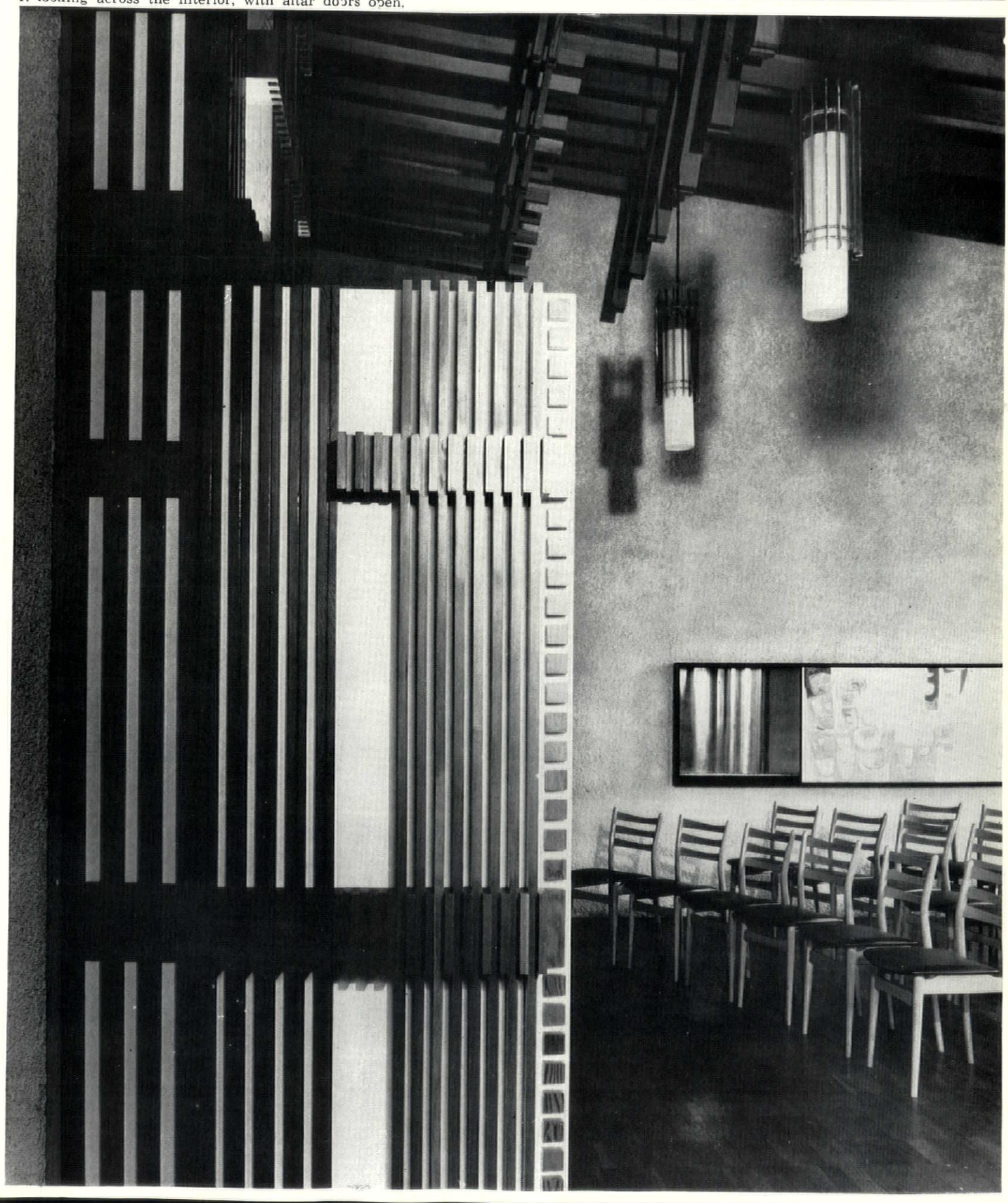
Bank Headquarters, Buenos Aires

Chapel in Yorkshire

ID
a monthly review of interior design

architect: Derek Walker
(in association with Duncan Biggin)

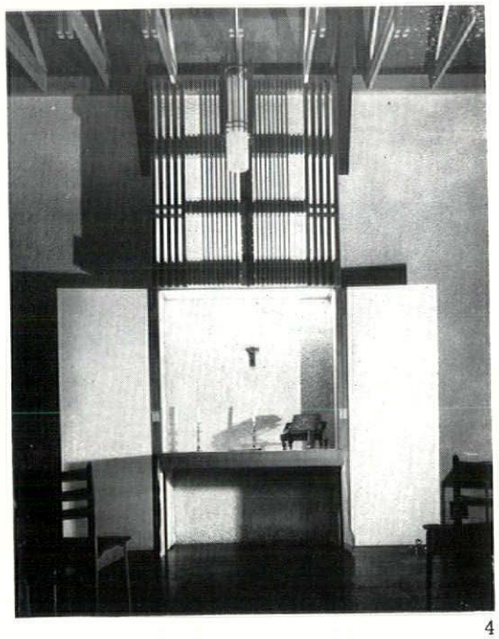
1. looking across the interior, with altar doors open.



Converted from a Congregational Hall in Green Hammerton, this Roman Catholic chapel to seat a congregation of up to eighty can still be used as a hall for normal parochial functions when the altar doors are closed. The altar, within its triptych-cupboard, is situated in the middle of the long side of the hall so that chairs may be arranged in a semi-circular formation around it, giving something of a liturgical plan for the celebration of the Mass, even within the restricted space available.



2



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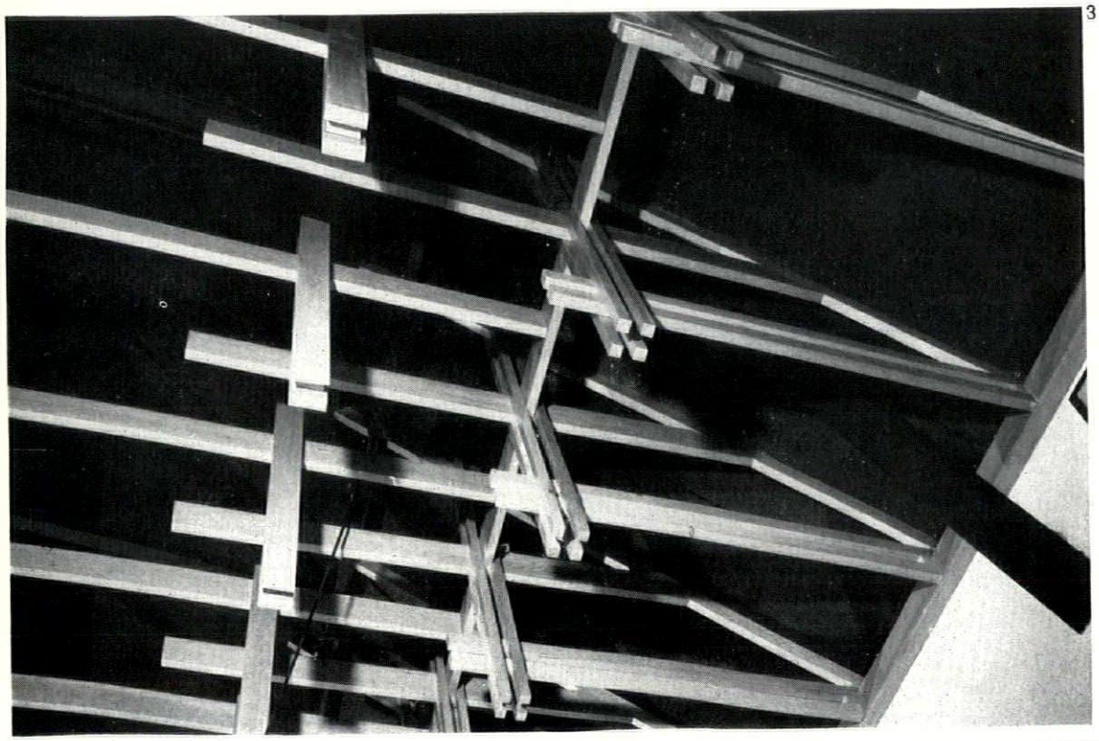


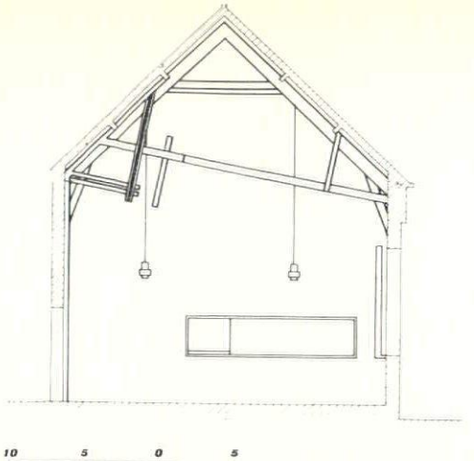
3

chapel in Yorkshire

2, a general view of the altar wall, with the altar doors closed. The walls are finished in rough tyrolean plaster and the sacristy doors (of which one is seen at the far end of the wall) are faced in raw silk. The lights were designed by the architect.

3, a detail of the open suspended ceiling hung below the original roof-structure (see section, opposite), built up from planks and battens of Douglas fir. This structure rises, and becomes more elaborate as it approaches the altar wall, thus directing attention to that side of the chapel.

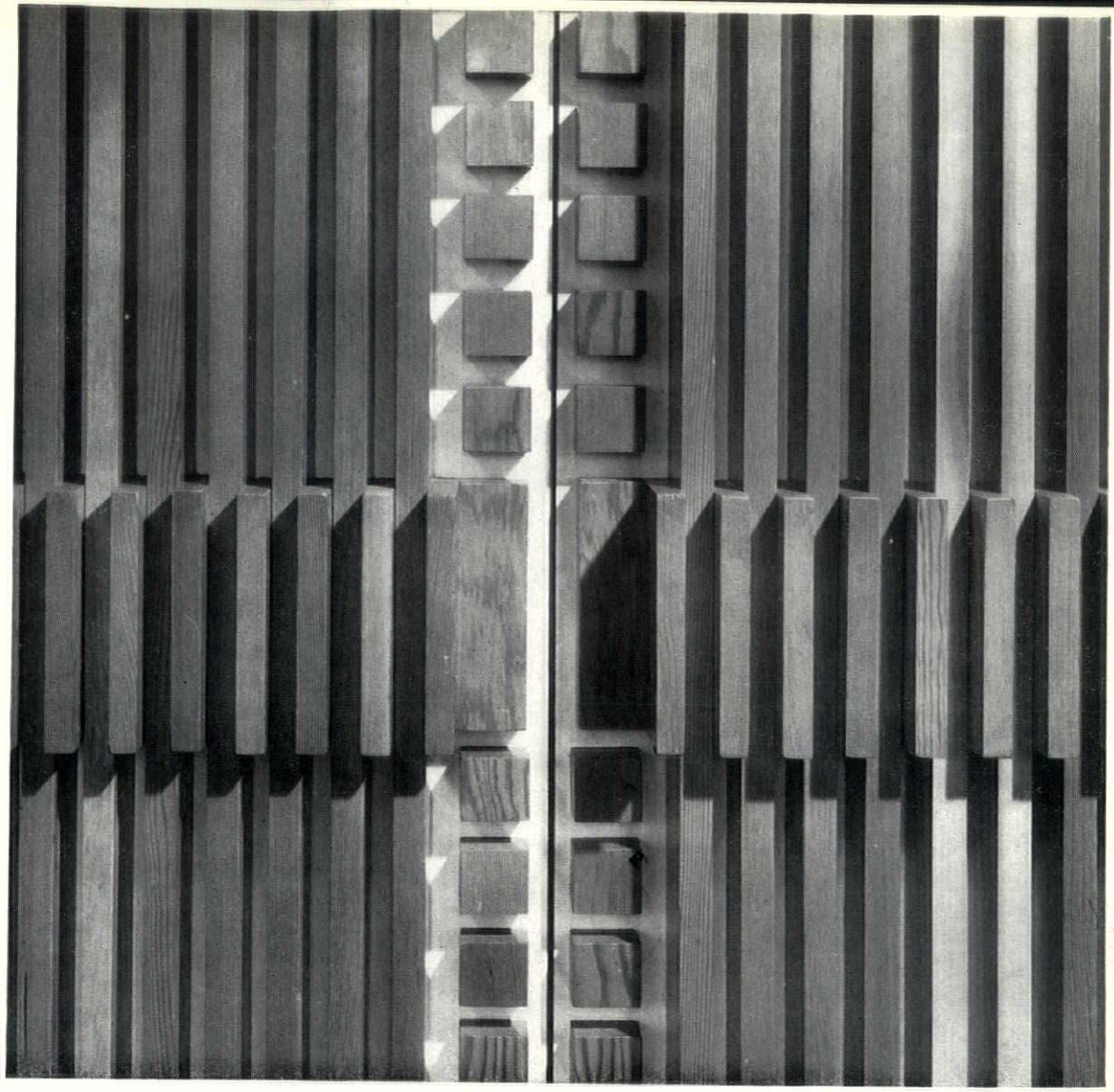
4, the altar, with doors opened and folded back.



section through the chapel, showing new ceiling suspended beneath original roof structure.

5, detail of the decorative timbering on the altar doors.

6, light baffles in front of windows on the wall facing the altar. Work had begun on repairing the windows, as a do-it-yourself operation, before the architect was called in. Below the transom the stained glass is made by applying coloured glass to a clear glass backing.



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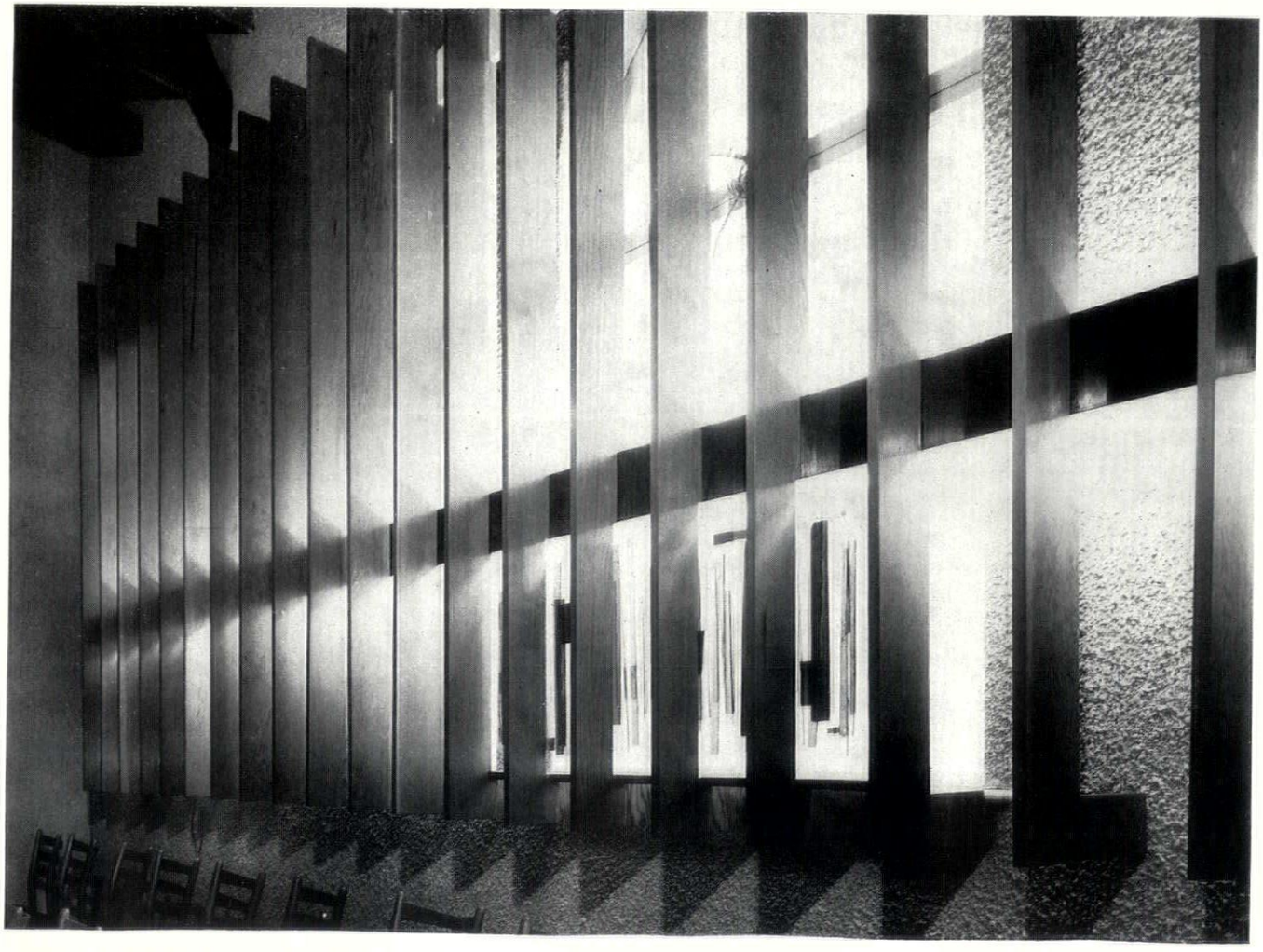
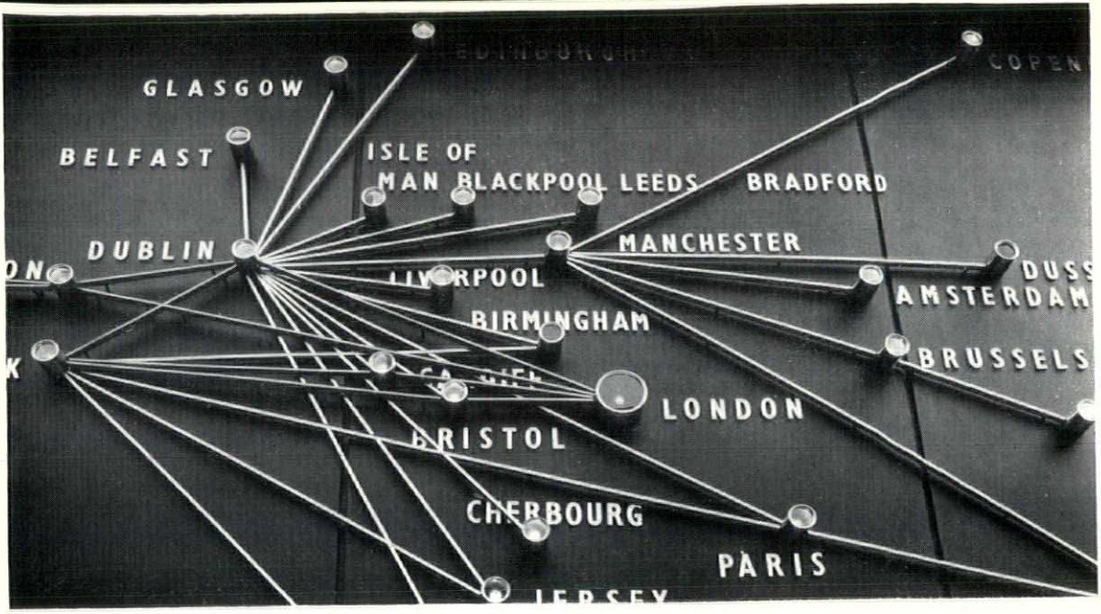


Air Line Offices Regent Street W.1

architects: Cruickshank and Seward

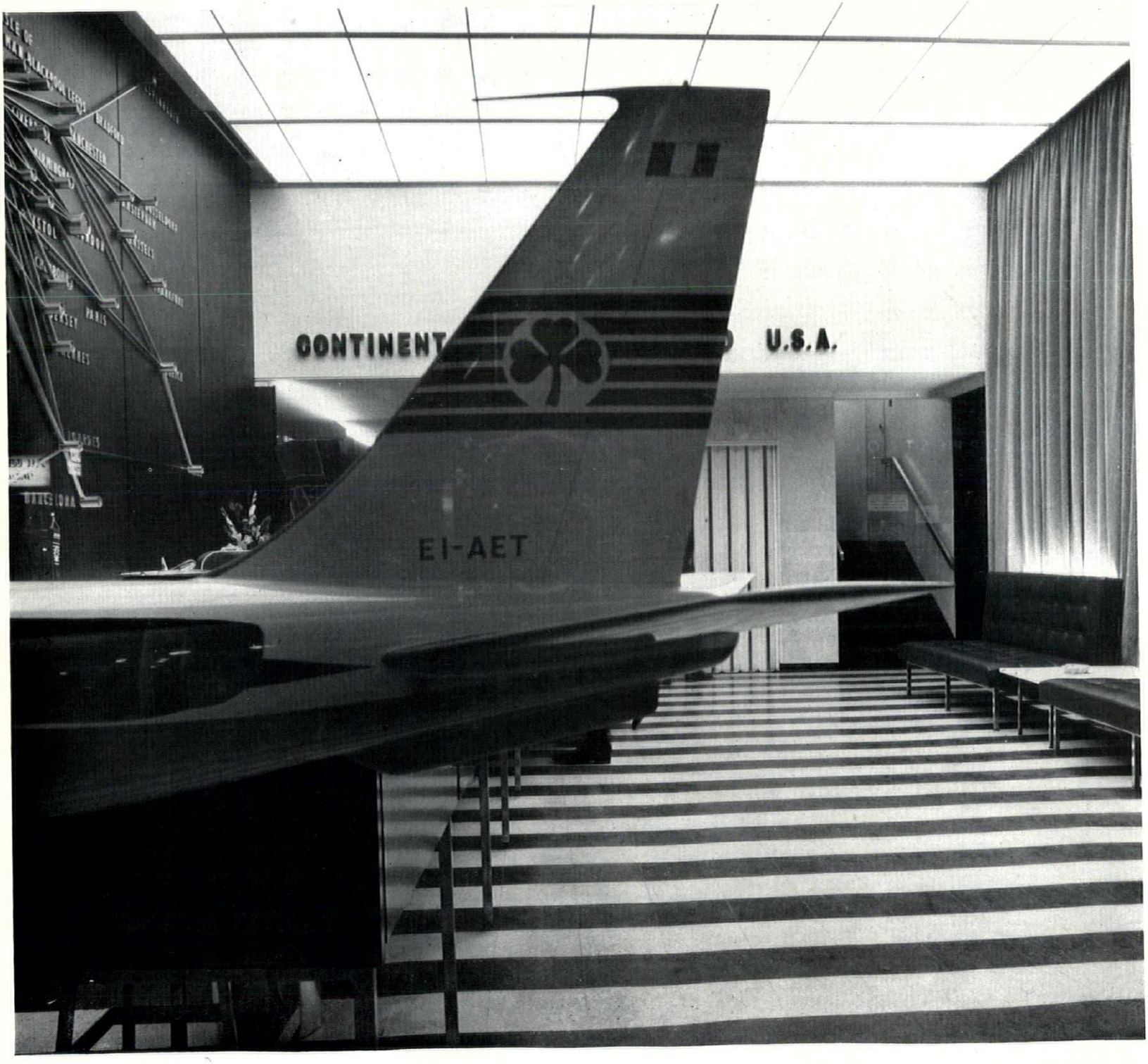


7, detail of decorative route-map on wall behind booking-counter—stainless steel on black plastic, with illuminated destination-marks.

8, general view of interior from street, with tail of display-model aircraft masking end of booking counter.

7

8



A determined attempt so far to get away from the travel-bazaar image (trophies of winter-sports kit, stuffed tigers, shoji-screens, etc.), the remodelled Aer Lingus office in London is one of the most severe and architectonic of recent interiors for its function. It occupies a rectangular room with a mezzanine across the back, and a lift placed almost centrally under it with stairs on one side and a small office annexe for transatlantic bookings on the other. The street frontage is entirely glazed.

ID

9



10

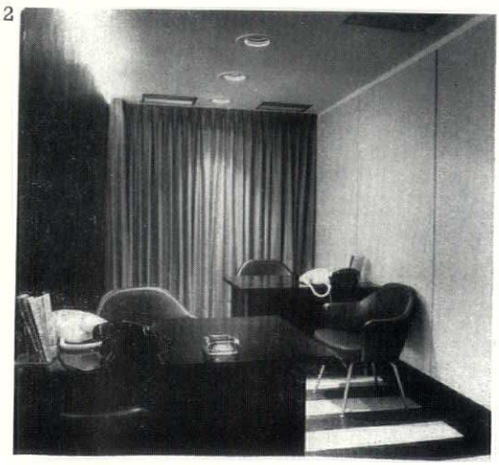


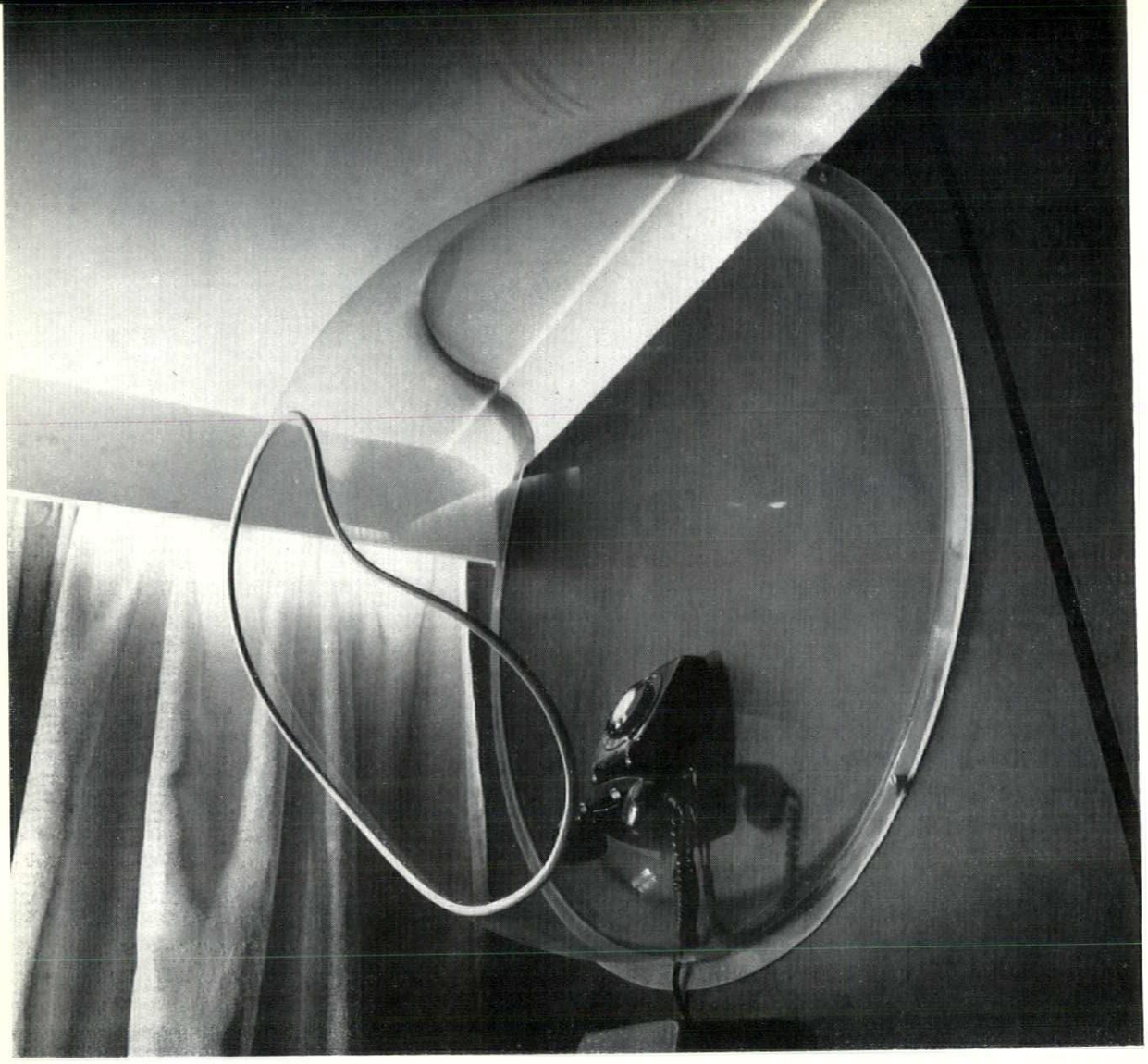
11



9, night view from the street.
10, work-stations at the booking counter—black wood and black leather, with stainless steel metal-work and white telephones following the dominant colour-scheme of the interior.
11, tables and upholstered benches continue the disciplined colour-scheme, as does the black-and-white of the linoleum floor, but the curtains covering the entire wall introduce a golden tone on a black ground.
12, the transatlantic bookings annexe—black plastic wall facing a mushroom coloured wall, and a gold-on-red curtain.

12





13

Air Line Offices, Regent St., W.1

13, transparent plastic quiet-booth (by Cox of Tring) over the public telephone in the mezzanine. Restricted headroom and an existing coved cornice required the cutting away of a segment of the hemispherical dome, but the resulting linear trace against the white plaster is a compliment to both old and new.

14, general view of the mezzanine waiting-area, showing installation of STD coin box and directory-rack for phone, and curtains—here of white woven-glass material—continuing the simple colour-discipline.



14

BEVERLEY'S LIFELINE

Ian Nairn

To drive a road diagonally across Regent's Park would be unthinkable, because it would rip across the organic patterns of an area which is sufficiently widely known to be recognized and valued. To drive a road across Christchurch Meadows at Oxford is thinkable and has been thought because there is a kind of organic logic to it. Park-and-terraces are indivisible. Colleges-and-river are not.

In those two cases, the stakes are very high—or more accurately, both high and well known so that some basic thinking is done. In less fashionable parts of the country, inorganic road planning blunders on. The worst example I know, the inner ring road at Nottingham, went through almost without a murmur. By a refinement in betrayal it is now called Maid Marion Way.

A similar threat is on the files for Beverley, which in terms of public awareness must be about halfway up in the scale between Nottingham and Oxford. Because it is a long-term thing it is worth trying to fight it the true way, which is the long way round, by establishing Beverley's organic pattern as a whole, rather than by trying to argue over a few feet of alignment or some fifteenth-century timbers.

And in fact the pattern is incredibly powerful and as vivid as anywhere in England. The main part runs north-south like the trunk of a tree, from fields-to-fields, and takes in every element of the town: Minster, shopping streets, market places, St. Mary's, and the medieval gate. In places it is spoilt or blurred, but it is not broken—yet. Westwards from it, branches stretch out towards the gentle slopes of the Wolds until they meet the fields there also, each in a different way. On the eastern side there is one pleasant street (Norwood), then the railway, and then the twentieth-century's apology for a suburb, dropping down into fens at a place which is well called Swine Moor. It could go on for ten miles as either moor or housing estate and still not affect the essential bits of Beverley.

The threat, in the form of an inner relief road, bores through the trunk and lops all of the branches. But first, let's see if the tree is worth preserving:

THE TRUNK

Beverley starts with a bang at the borough boundary, with an avenue of mature trees behind which the houses can develop as they want. Any kind of style could be built here, because the continuity of the street is already assured. The trees stop when the

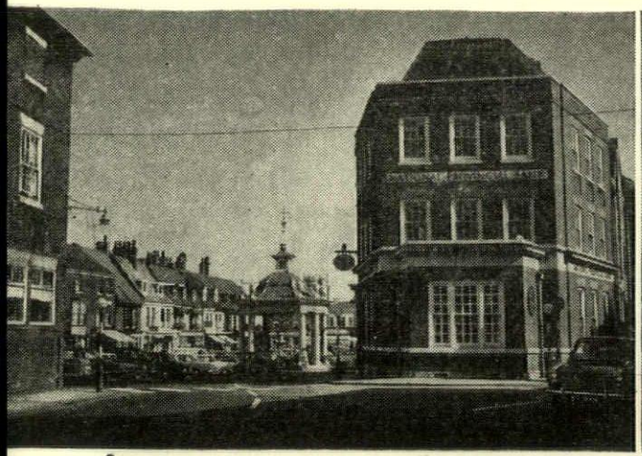


1



2

Beverley in sequence from north to south: 1, *the grand approach, with the wide and urbane North Bar Without leading to the Bar itself. The enclosure at the end must never be breached.* 2, *inside the Bar; St. Mary's on the left, the Minster far away at the end of the road. But in front, at what is obviously the commercial centre of Beverley, is the Market Cross—see overleaf.*



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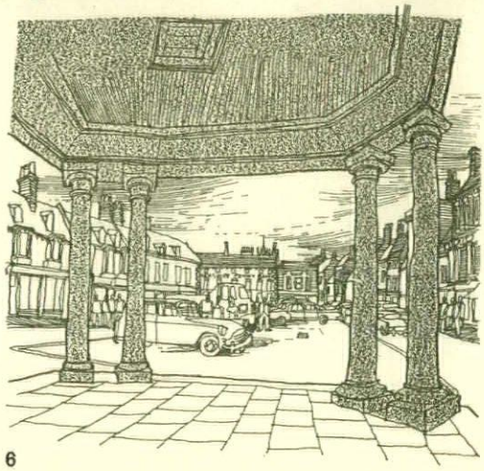


6

3, the Market Cross. It plays several parts; as a focus, 4, as a skyline, 5, as a ready-made picture frame, 6

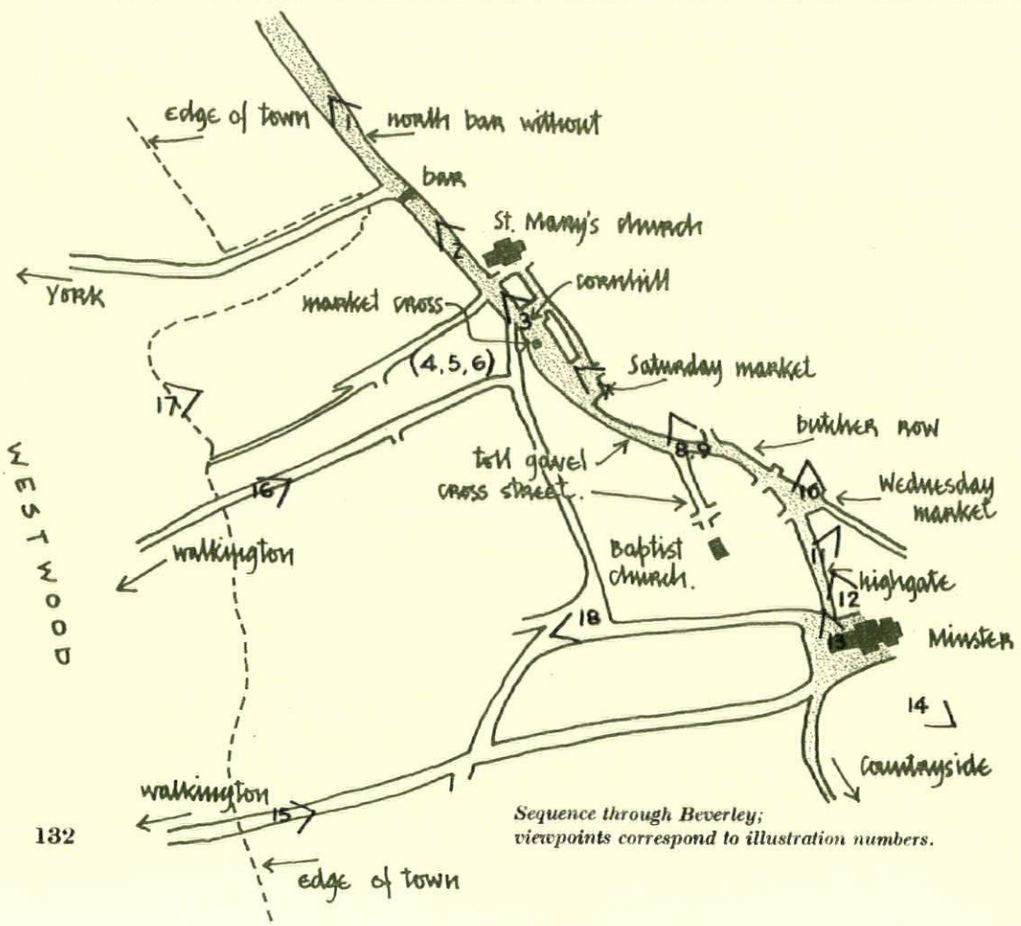
houses have collected themselves together to become uniform, first on the west side, then on the east. New Walk becomes North Bar, with the Bar itself at the end of the street, 1, closing the view off-centre. But before this, three hundred yards out, comes the first glimpse of two out of the three main elements of the lifeline, the Minster and St. Mary's, both showing as a cluster of pinnacles.

The Minster has two towers, St. Mary only one, but that one has altogether sixteen spikes on it. Nearer the Bar they disappear; once through, and inside the town, they rearrange in a completely different way. St. Mary's is in the foreground, 2, represented not by the tower but by a pair of Western pinnacles like outsize feet. The Minster is clearly a long way away; and in front of it is the third element, the Market Cross, in which is equally clearly the commercial centre of Beverley, 3. This is the basic tension that gives the main street its identity: that the Minster, the expected centre, is not in the middle of the town but out at one end.

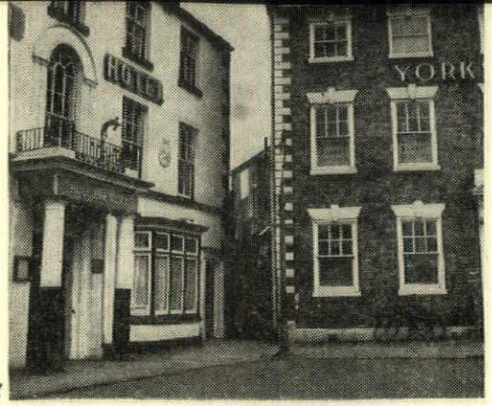
The Market Cross was built in 1714 in the middle of an irregular open space, Cornhill and Saturday Market. It is an enchanting building, acting several roles at once. It is beacon, and focus, 4, and skyline, 5. From inside it you can trap any part of the square between the columns, 6. All the townscape lines of force in Beverley are knotted through it.

The Minster has disappeared behind buildings now; but the foreground keeps up the pressure. The market place is closed splendidly on the south side by the King's Head and the Yorkshire Penny Bank. Between them is what looks like a narrow exit, 7. It is in fact blocked, one of Beverley's few missed tricks. If it were opened into a footpath it would come out directly in front of a bulgy Wesleyan chapel, which is just about the town's centre of gravity, and make this part of the sequence richer and stronger. At the moment the route runs down Toll Gavel, busy and narrow, and the interest narrows down to shopfronts and occasional courtyards. At the end of it the Minster is back in the view again, and the road apparently swings right to reach it. But at the junction there is a non-sequitur: the apparent road runs straight out of the town centre to laurel hedges and the Baptist church, 8. Here, where the space-sequence flags, is the place for a third square, 9, midway between Wednesday and Saturday Markets. Such a thing would be practicable, because the buildings on the west side are all owned by the Co-op; and it would be common sense, because the Guildhall and the main post office are just around the corner.

So the lifeline must swing off left along the narrower Butcher Row, apparently going away from its goal. A pub at the end, the Angel, acts as a fulcrum and turns the road back to the Wednesday Market, 10, small and triangular. At last the Minster is clearly seen beyond: first the crossing, and then, a few steps later, the western towers. Today, Wednesday Market is too full of cars and street furniture, and has the worst new building in Beverley along one side of it:



Sequence through Beverley; viewpoints correspond to illustration numbers.



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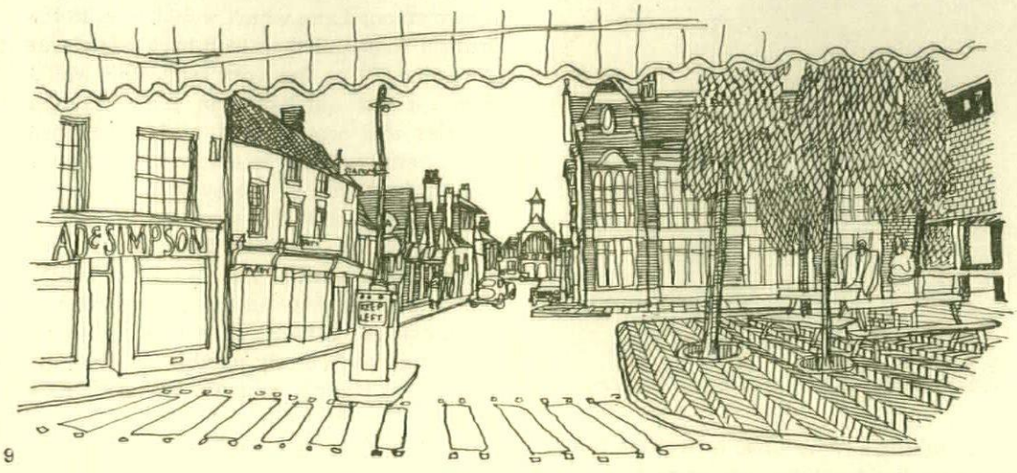

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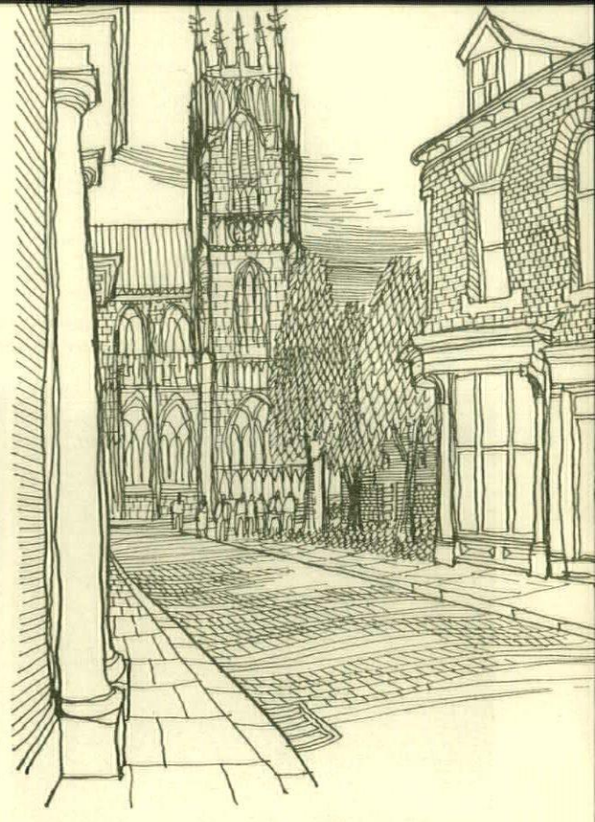


12

drawings by Richard Reid

this part should be made pedestrian, or at least given pedestrian priority.

The home straight now: Highgate, pointed directly at the Minster, which is close enough to dominate. It is just as well, for Highgate is in a bad way. There is one gap half-way down which needs building back to the streetline, 11, and the very end is a jumble of asphalt and wire netting. No need for complications, with so much drama closing the view, but some need for trees and seats and unfussy paving, 12.

This seems to be the end. It is not, and in fact the biggest surprise of all is just round the corner. The Minster seems at first to have a demure English close opposite the west end. Two sides of it are in fact sober two-storey Georgian: but the third, bang, is straight out into fields, 13; fields which continue, 14, all the way to Hull; fields which the proposed road would intersect a few yards away from the Minster itself. A few houses were built on them before the war. There must not be any more, and there is a real case for demolishing and rebuilding a few yards away, to let Minster and countryside speak to each other quite directly as in the drawing. The pattern is so deep and so moving that it is worth all the trouble to get it exactly right. And, undoubtedly, Beverley's face is its fortune.

THE BRANCHES

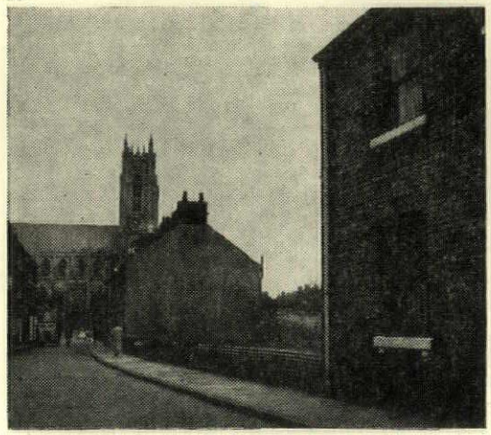
Beverley reaches out westward to its countryside in a dozen ways. They have got smeared over but not obliterated, for the Westwood has always put a firm barrier on expansion—even now, in fact, the land

7, the south-east corner of the Market Place, where an alley ought to run through and doesn't. The lifeline continues south and apparently tails off. 8, this point is potentially the site of another square, 9. In fact the true axis swings left to the Wednesday Market, 10, with the Minster at last in view. Highgate, the 'home straight', needs building up, 11.

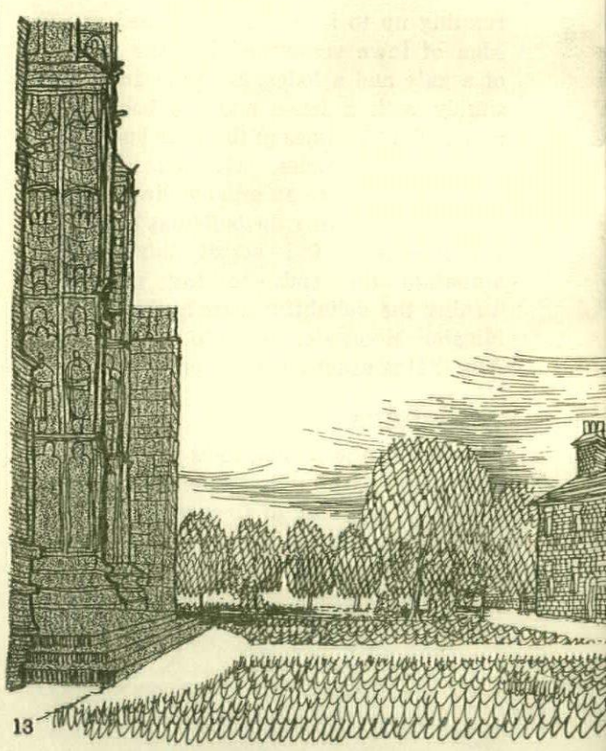


10

11



Tree-planting is needed at the end, 12. Beyond, instead of a close, is open country, 13, with astonishing backward views of the Minster, 14.



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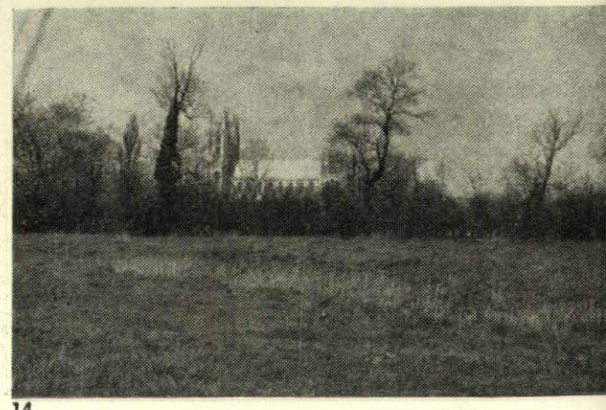

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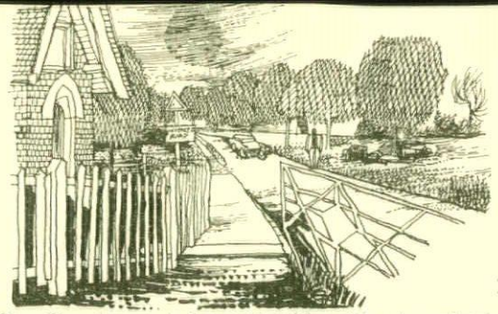

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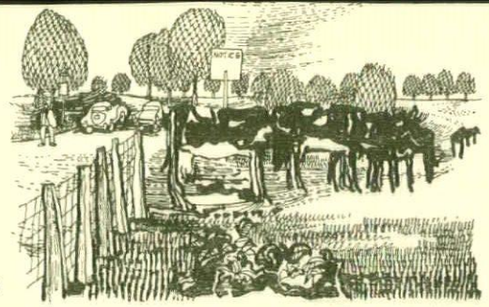
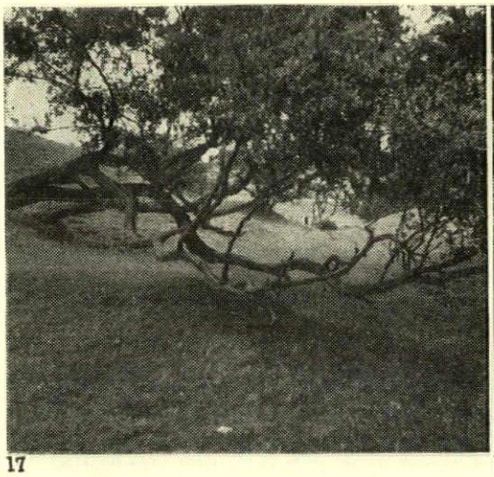


16

How Beverley meets its countryside; with a formal gate, 15, or a simple fence, 16, or in the intricacy of disused quarries, 17. 18, a square at the end of Minster Moorgate which the proposed road will make into a roundabout.



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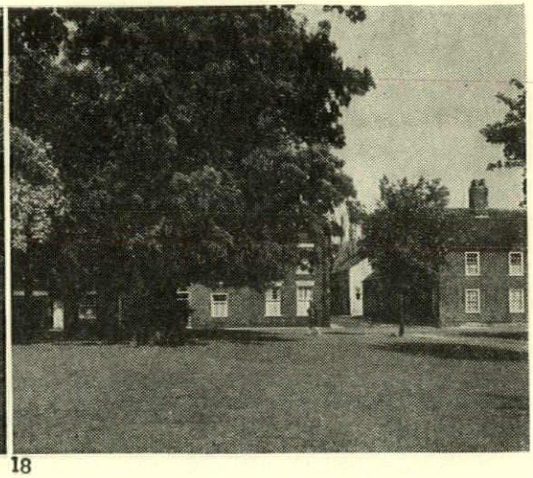


18

running up to it is not quite filled up. The edge of town sometimes has the formality of a gate and a lodge, 15, sometimes meets simply with a fence and the backsides of cows, 16, sometimes in the eerie bushiness of overgrown quarries, 17. All the roads leading there have an organic direction, west to east, even when the buildings lining them are mediocre. Cut across this and you amputate the ends—to say nothing of turning the delightful space at the end of the Minster Moorgate, 18, into a roundabout. And that is exactly what is proposed.

THE THREAT

As some of the photographs show, Beverley has a lot of through traffic that does not belong to it. Most of it goes from Hull to York, making a right-angle turn in the town. Except at holiday time, the main N-S road to Driffield is not very busy. Similarly the west to east (York to Hornsea) and south to east (Hull to Hornsea) roads are crammed on a few days in the year only.

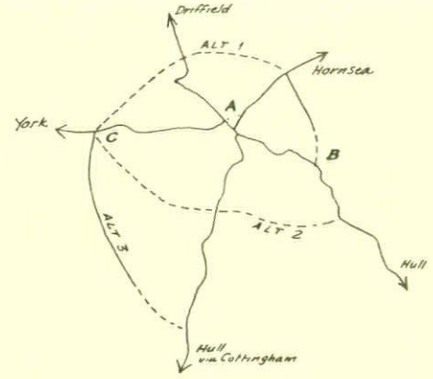
The threat is an 'inner relief road' on the west side of Beverley, cutting the trunk from its roots by passing south of the Minster, lopping each of the branches in turn, and boring through the trunk again with a spur connection back to Hornsea. No hope here of realignments and compromises. The whole thing is wrong and should be scrapped.

The only natural point where any new road can be dovetailed into the trunk is just beyond the Bar, because there it is organically intelligible and in fact can be used to reinforce the sense of inner and outer town. This is already being done locally, and will drain off the York to Hornsea traffic (A on the plan below).

A connection of a few yards beyond the south end of the town would provide an effective channel for the Hull—Hornsea traffic, for it links directly with a boulevard (Swinemoor Lane) which is the present boundary of Beverley beyond-the-tracks (B). That leaves the main problem, the through traffic from Hull to York. There are three alternatives.

1. Go east of the town, by a continuation of Swinemoor Lane which would cross to the Driffield road and then loop back westwards to a point (C) on the York road. This would be longer but quicker than going through Beverley and would need to be combined with carefully angled junctions to encourage through traffic on to the by-pass.

2. Go sufficiently far west of the town to keep intact the unity of Beverley and the surrounding country. This means at least a mile away, i.e., leaving the present road at Woodmansey, running due west to somewhere near the County mental hospital, and then turning north to meet the York road at the same point (C) as in the first alternative.



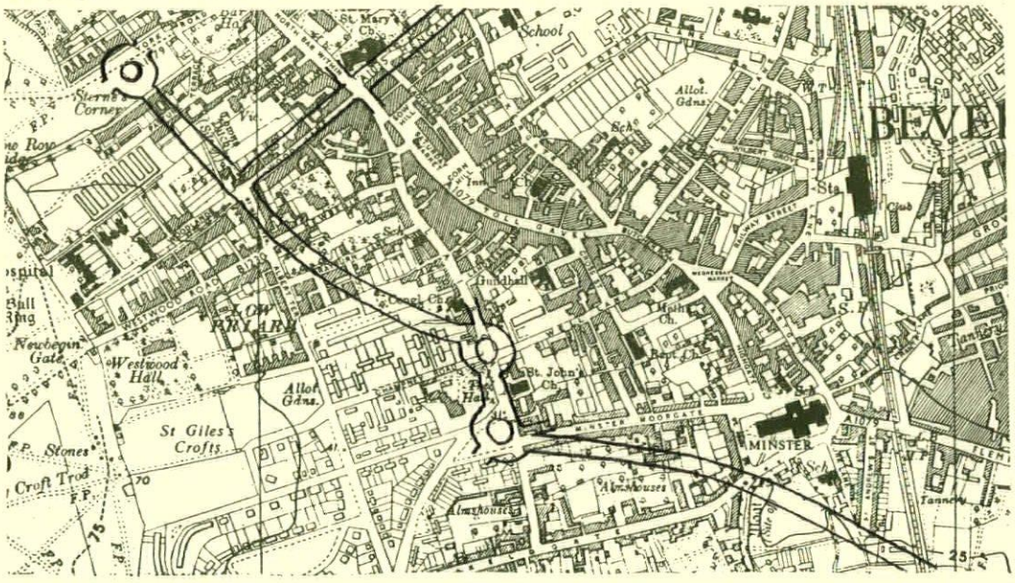
Alternative road proposals.

3. Change the trunk classification entirely to route A163 through Newland, then by-pass Cottingham and use the existing wide lane, already a signposted diversion, from Bentley to the same point on the York road as 1 and 2.

These are large-scale alternatives, but nothing less will do. Beverley is as good as that. One of the three will have to come in the end anyway, as the traffic volume grows, because the present proposal can only be a stop-gap. The best eventual solution is probably 3, combined with enough of 1 to provide a north-south by-pass.

Whether they cost more really is beside the point in this case. The whole pattern of Beverley is as precious and as indivisible as the Minster itself.

The proposed 'inner relief road.'



Beverley was, by pure coincidence, the subject of an intelligent and sensitive study by the students of the Department of Architecture at the Kingston School of Art. The results of this were displayed at the Building Centre in December, 1962, and were a long way from the callow arrogance of many student projects.

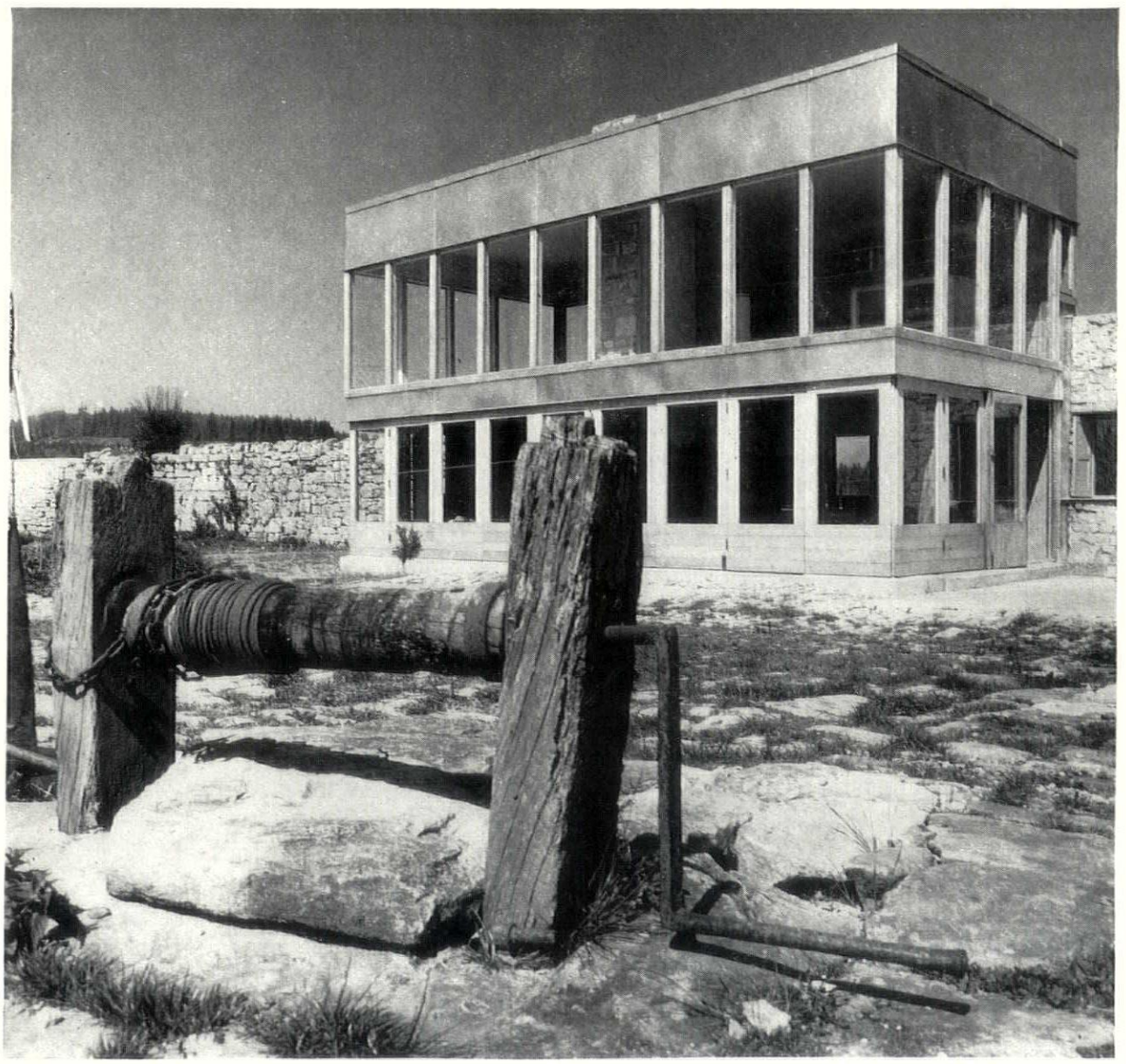
ARCHITECTS' OWN HOUSE, TISBURY, WILTSHIRE

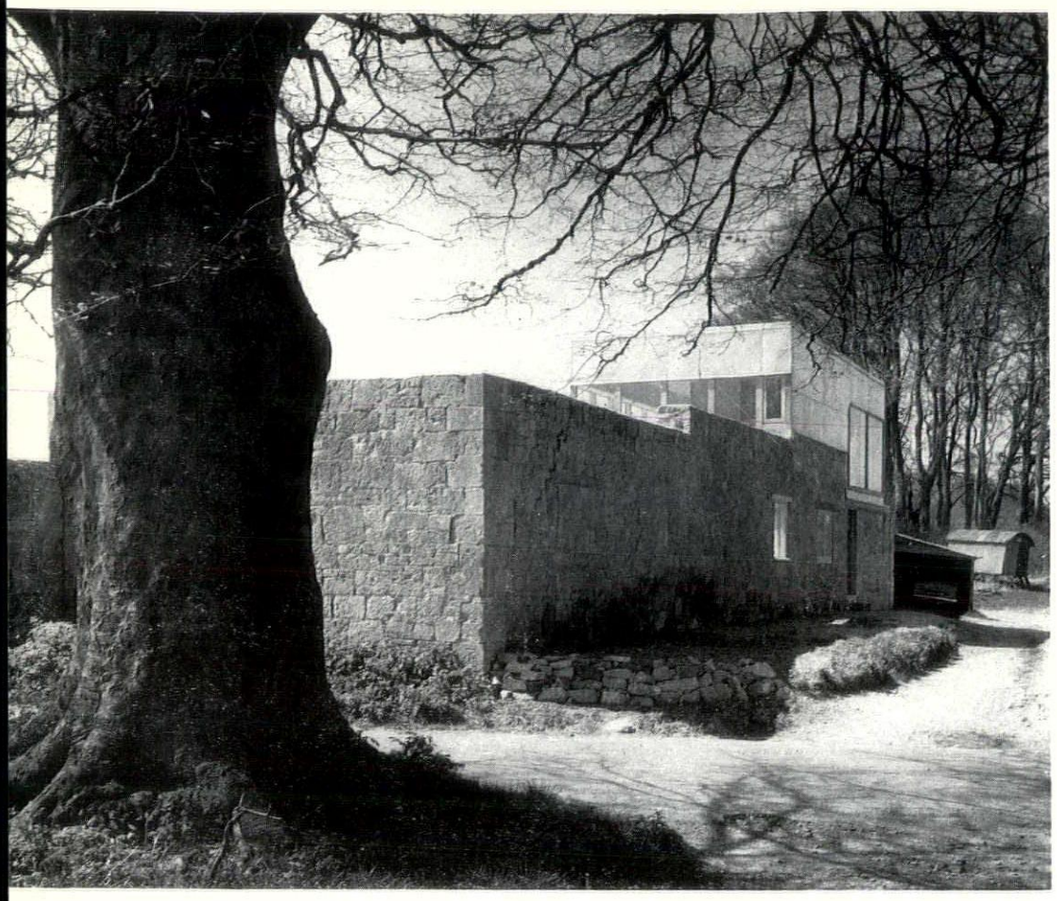
ARCHITECTS: ALISON AND PETER SMITHSON

1, *from the south-east.*

This is to some extent an experimental building, designed to discover whether, in a house presenting glass walls to the south, east and west, enough solar heat can be obtained through most of the year and its build-up can offset heat losses; also to try out certain assemblies of materials—see below.

The site was already walled, having previously belonged to a stone cottage, now demolished. The highest walls

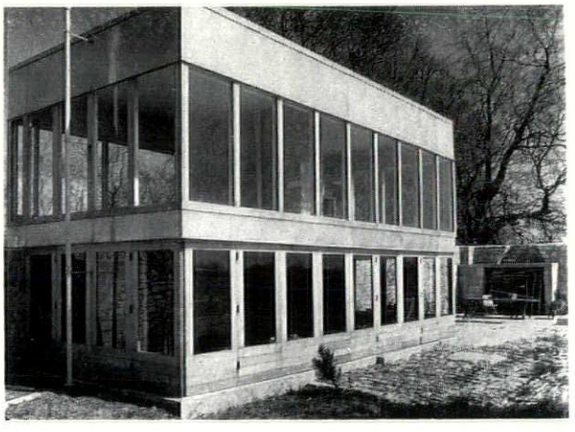




2

2, *from the east.* 3, *from the south-west.*

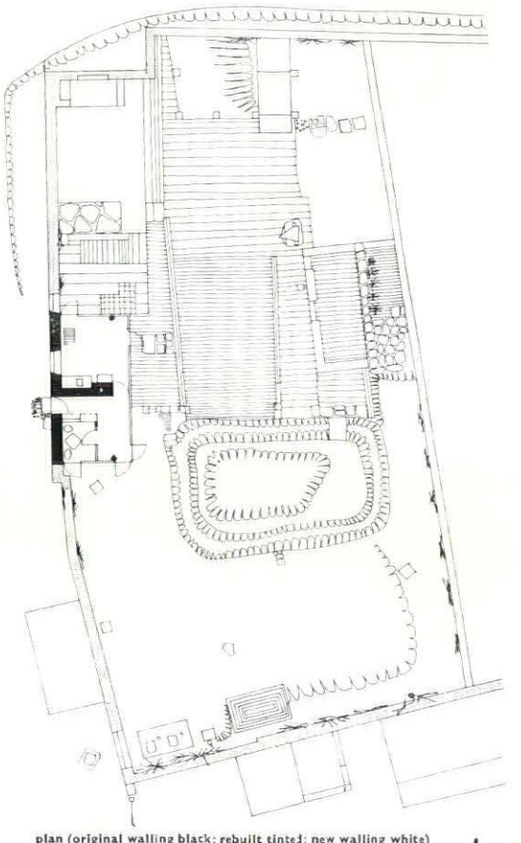
Architects' Own House, Tisbury



3

were to the north, where the chimney gable of the old cottage has been left standing at right angles to the wall, and the new building has been placed astride these. There are views to the north and west over the Fonthill woods and to the east and south of the Wardour woods against the skyline of the Downs. The ground floor of the house, which is mostly service area, can be opened up either on to the old paved areas or the garden.

Construction is a modified balloon frame, resting at the north on the existing stone wall and gaining lateral stability by being bolted to the chimney gable. The south face is cantilevered from a concrete beam bedded centrally in the chimney wall and supported by concrete posts at either end. Wood finishes are pine and teak outside, the first-floor glazing being bedded from the inside against the teak cover-strips. Surfaces are covered with aluminium sheet.



plan (original walling black; rebuilt tinted; new walling white)

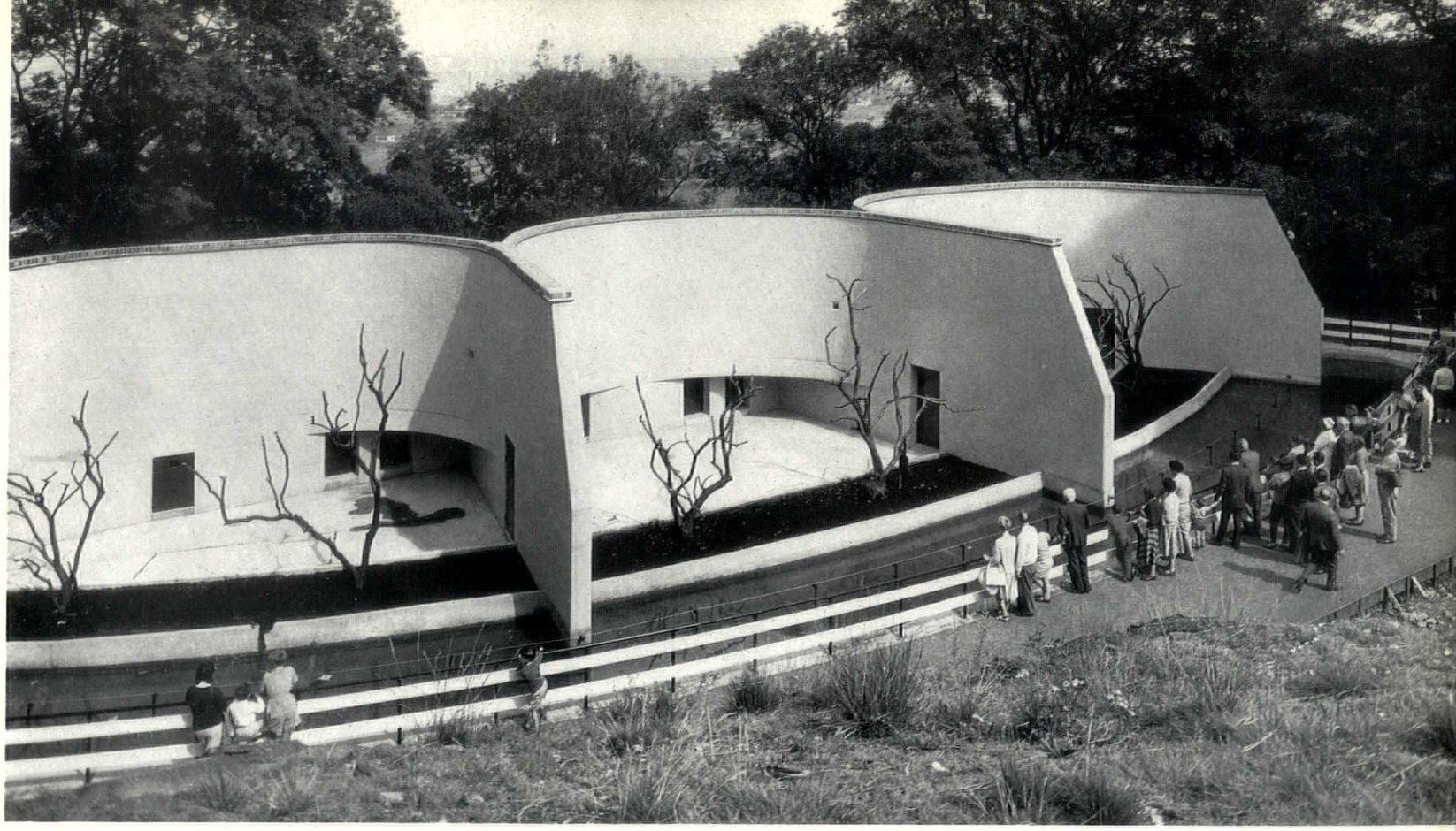
N

APE HOUSE, DUDLEY ZOO, WORCESTERSHIRE

ARCHITECTS: PHILIP SKELCHER & PARTNERS

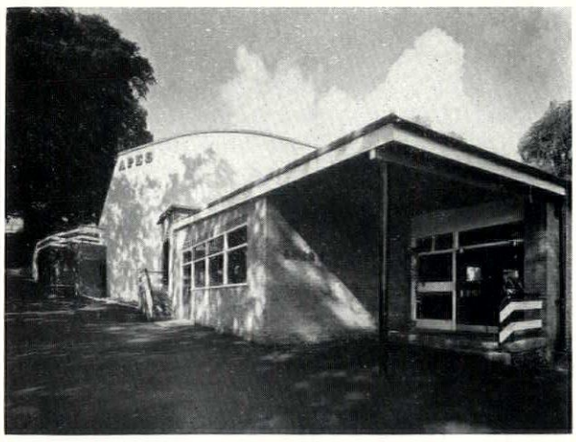
This is also an experimental building in the sense that it departs from the usual type of cage which interposes bars between the animals and the spectators. Apes—especially gorillas—are very strong and bars therefore have to be very large. Another requirement is that spectators have to be kept at a distance because apes are susceptible to infection.

This design allows the animals to be seen without the intervention of bars by taking advantage of the fact that apes cannot swim. In front of the outdoor enclosures, which face south towards a slope crowned by the remains of Dudley Castle, is a moat or water barrier. At the front edge the water is quite shallow so that if an animal should accidentally drop over it can scramble back. The moat then slopes gently to a submerged iron fence which would prevent an animal sliding into deep water; beyond the fence the water shelves steeply and, as a final measure of security on the spectators' side of the moat, is a single-



1

1, *the out-door runs and public terrace.* 2, *the entrance.* 3, *the indoor public gallery.*



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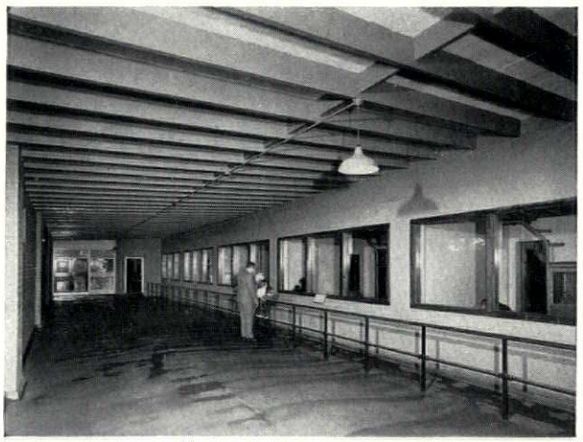
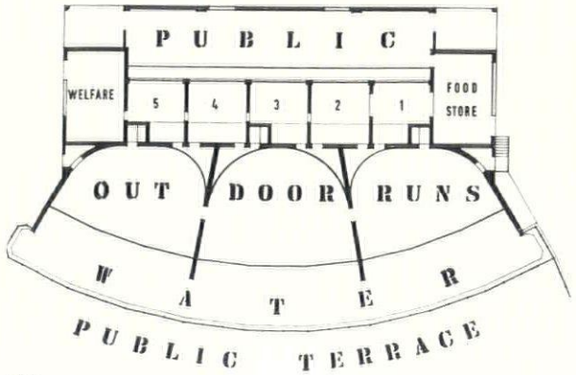


3

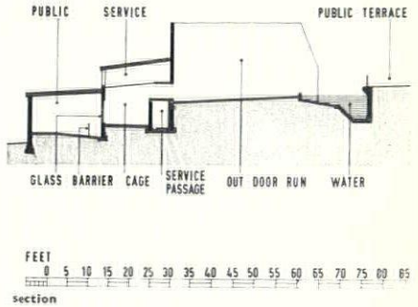
strand cattle fence with a gentle electrical impulse. The spectators' pathway is raised, and behind it a viewing amphitheatre may later be provided in the slope of the hill.

The curved walls of the outdoor enclosures have small sheltered spaces in the corners, since apes normally live largely in the shade. The indoor enclosures are at a lower level, and spectators can also look into these from a gallery along the back, through panels of armour-plate glass, which is strong enough to withstand the animals and has the advantage of keeping out the smell. When the animals, which are young at present, attain their adult strength it may be necessary to add a second sheet of glass. This will also make the panels sound-proof, and a public address system may be installed to enable the noises the animals make to be heard.

There are service passages between the outdoor and indoor enclosures and above the latter (see section). These have steel safety gates and glass spyholes so as to ensure complete control as well as accessibility. Materials are brick and concrete. The cages have floor heating, supplemented by infra-red heaters, both thermostatically controlled.



plan



section

Ape House, Dudley Zoo

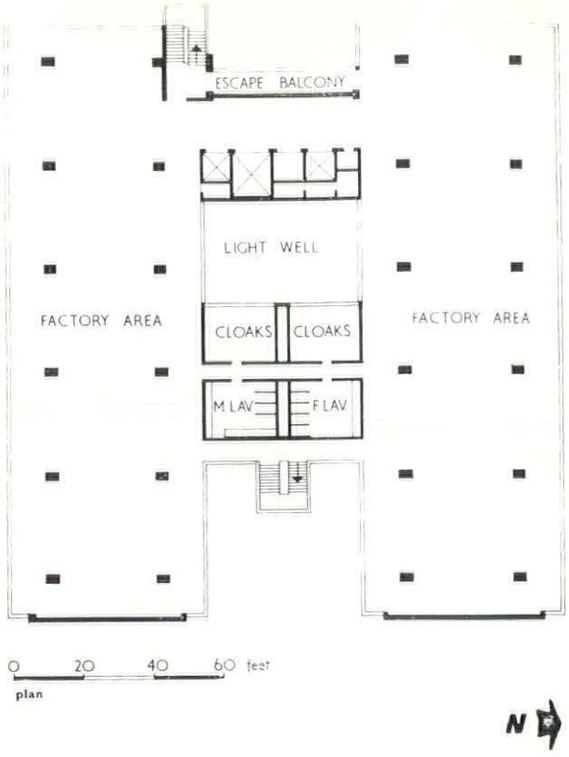
MULTI-STOREY FACTORY, BRIGHTON

ARCHITECT: P. BILLINGTON (Chief Architect, Borough Surveyor's Department, Brighton Corporation)

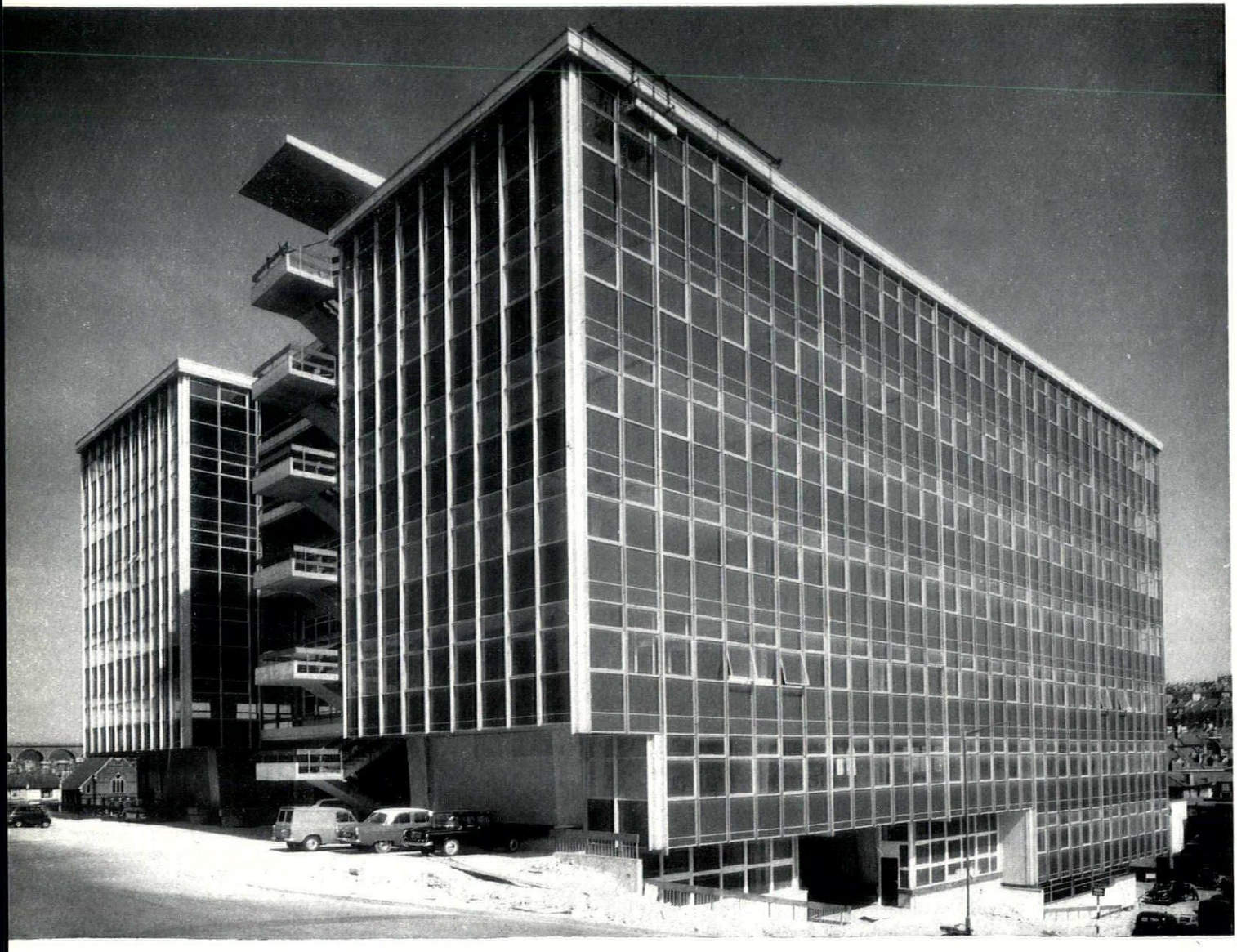
This eight-storey flatted factory, part of Brighton Corporation's Boston Street development, is designed to provide flexible areas of factory space, with all services, for small firms who have been moved from redevelopment areas in the town or from areas where industry is no longer desired. There are two wings, each with natural light on three-quarters of its periphery, with only twelve structural columns. Each floor of each wing, providing 9,000 sq. ft. of space, is designed and equipped to serve as a complete factory, though the floors can be subdivided into bays of approximately 1,250 sq. ft. to make smaller units sharing toilet accommodation. The lower three floors have direct loading-bay access to adjacent streets. The upper floors are served by lifts.

Construction is in-situ reinforced concrete with precast, prestressed floor beams spanning between the main in-situ beam. External cladding is aluminium curtain walling with coloured glass spandrel panels. Services are run in false ceilings beneath each floor. Twelve lock-up storerooms on the roof are for inflammable liquids.

Architect in charge, H. Hayler. Consulting engineers, Dixon Hurst & Partner.



1, *from the south-west.*



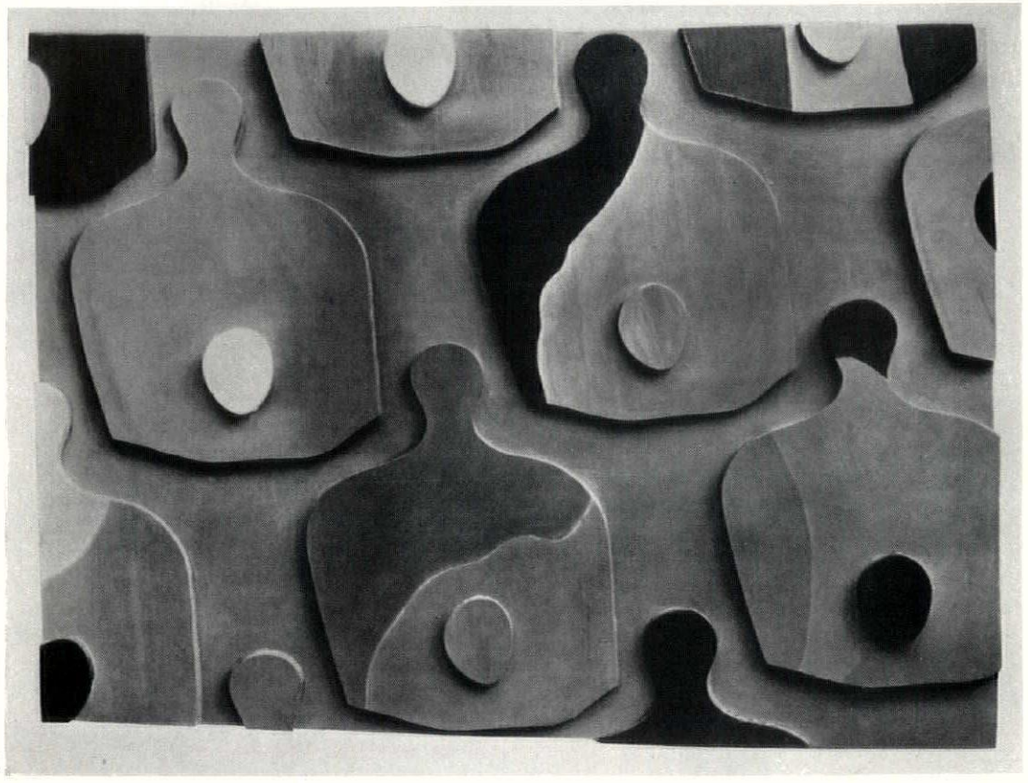
EXHIBITIONS

PAINTING AND SCULPTURE

Now seventy-five years old, Arp is one of the grand old men of the modern movement; as the most prominent of the Zurich Dadaists he is assured of a place in art history, and the works that he produces in his old age are as thoroughly involved in his present high international reputation as his Dada pieces. But the package retrospective which came to the Tate after travelling round Europe was not well received here.

The harshness of much of the criticism was in striking contrast to the fulsome praise accorded to the Kokoschka retrospective: in the case of Kokoschka one had the impression that the praise was not simply for his own paintings, but for the kind of art his paintings represented, and that the critics were expressing their solidarity with Kokoschka in his reaction against the modern movement. On the face of it, the scornful dismissal of Arp would seem to be evidence of the same critical tendency. But it's not necessarily so. Only in one or two instances was the rejection of Arp as total as the acceptance of Kokoschka. For the most part, criticism was concentrated on the sculpture in the round, and was well-founded; the idea of comparing it with the sculpture of Brancusi occurred to several critics and with such deadly effect that if the Arp sculptures could have overheard what was said about them they would have been sagging on their pedestals like spent balloons.

The painted reliefs are another matter. At their best they are as funny and beautiful as if they contained the accumulated wisdom of a tribe of gentle savages. Arp's work has never been violent or destructive; even in the days of his Dadaist activities his protest against celebrities and masterpieces was supported by an art intended, like pastoral festivals of invocation or thanksgiving, to put mankind in good relations with the universe, and it was in the Dada period that he invented his clairvoyant board games played with simple counters standing for seeds, stars, navels, commas, full stops, moustaches, mountains, people and floating leaves. The egg-board carved and painted in 1922, 1, is, as its Dada title suggests, a bat-and-ball game to be played with eggs—a game, incidentally, which requires great skill and finesse, since the first and only rule is that the eggs must not be broken. The board itself is a wall of the catacombs, and the



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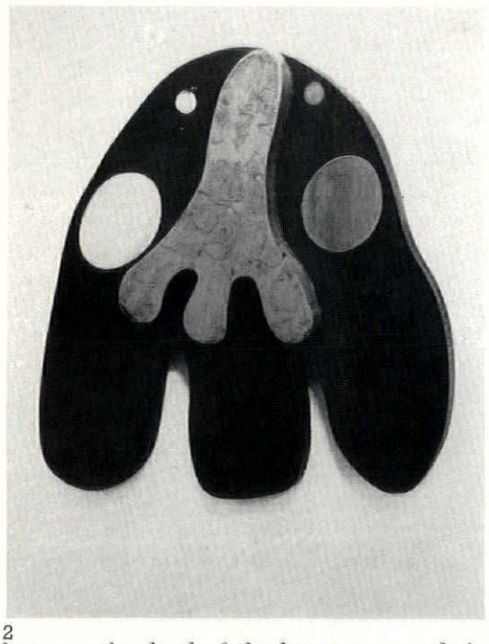
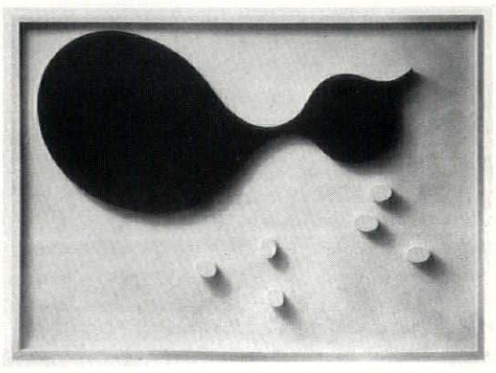


2

bats are the dead of the human race; their navels are as big as their heads to remind us that we do not descend from Human Reason. The head with a green nose, 2, carved and painted a year later, is one of the few 'primitive' masks made by twentieth-century man that rivals tribal invention; this is because it has not been made for purely formal reasons, and is intended to convey 'otherness.' It is probably designed to be worn when playing one of the board games, to ensure a proper modesty and anonymity in the player.

The board games achieved their most mysterious effects round about 1929, when the scale of the counters in relation to the board and the intervals between the counters created a sense of infinity and enabled Arp to discourse about first causes and man's place in the universe. His 'Infinite Amphora' which was not included in the retrospective, but of which there is a colour plate in Carola Giedion-Welcker's book on Arp published by Thames and Hudson, is probably the most sublimely simple and poetic account of the origin of the universe in the whole history of art.

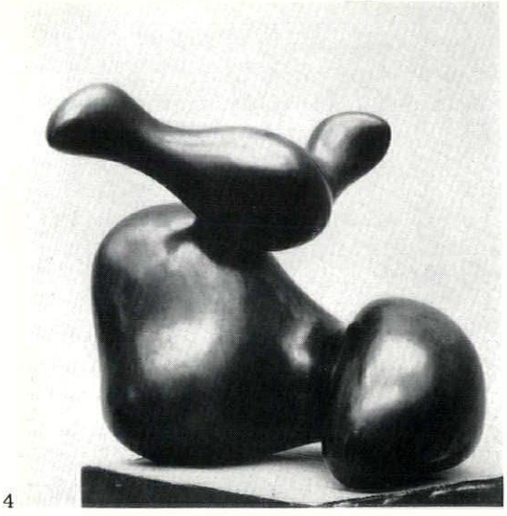
The board games never again reached out to this overwhelming comprehension of the vastness of the universe and the mystery of creation. In fact the painted reliefs soon afterwards ceased to convey the sense of a magic game, although Arp has never lost his feeling for the intervals between forms. The relief called 'Arrow Cloud,' 3, made in



3

1932, has the typical look of carefree inevitability, and it's still present in the 'constellations' of 1961. Arp attributes this sense of placing to his docility towards the laws of chance, and it's as good an explanation as any, since it obviously operates somewhere below the level of thought.

I am not worried by what Alan Bowness calls his 'somewhat limited range.' His elementary forms touch lightly on themes which would only burn the fingers of artists with a broader range. He turned to sculpture in the round in an attempt to broaden his range, but his sculpture marks a blind spot in his sensibility. I sometimes think that he must have been tricked by his own words, for the sculptures look like unimaginative illustrations of his most famous saying; the one that begins 'Art is a fruit that grows in man, like a fruit on a plant, or a child in its mother's womb.' It would pass as a poetic image for the painted reliefs, for there is no sign in them that he is trying to imitate the appearance of things that are the issue of organic processes, but in the role of modeller and carver he suddenly and absurdly takes his image literally, and with aggravating placidity has persisted in producing forms that look like genetical mishaps, as in the thing like a monument to a freak potato, 4, which he calls a human concretion.



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In the introduction to the catalogue, Alan Bowness refers to the Arp murals in the Aubette dance hall at Strasbourg, which were executed in close collaboration with van Doesburg and Sophie Tauber, and he reproduces the well-known photograph of part of the interior, where the wall painting appears to be composed of huge wobbly blow-ups of some of the signs in Arp's small collages. The dance hall was destroyed soon after it was built, so there's no means of knowing whether the murals would have stood the test of time, but the photograph leaves one with the impression that 'the wisdom and clairvoyance' of the board games didn't operate on that scale. There's no doubt, however, that a very serious attempt was made in the Aubette experiment to achieve, as Bowness says, a true synthesis of painting and architecture and create a complete environment.

Since that time, many avant-garde artists have attempted to turn painting itself into an environment, usually by making the canvas a substitute for a painted wall. An experiment recently carried out at Gallery One was a curious attempt not only to create a complete environment but to influence the conduct of the visitors by tempting them to play little games calculated to give all their actions and gestures a symbolic significance. The nine young men who devised the show intended it to create an atmosphere in which the average gallery-goer would 'enjoy a happy non-specialized fantasy.' It was a peculiarly distressing failure because the spectacle achieved neither vitality nor beauty.

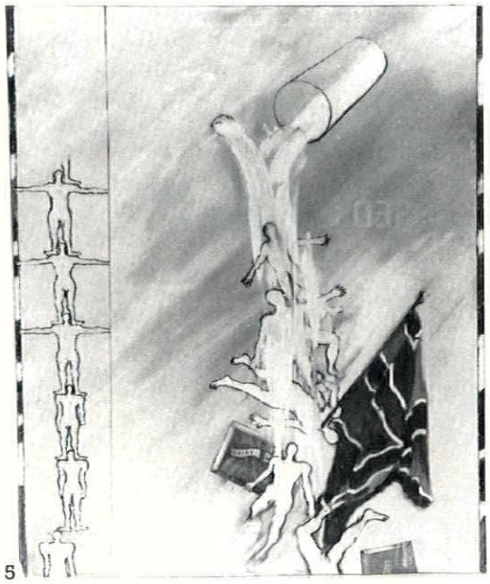
It was called a 'Festival of Misfits,' and it managed to be both insipid and ugly. It contained enough evidence of a knowledge of the principal ideas that govern the art of our time to make it, in theory, a suitable show for a serious modern gallery, but the organizers evidently believe that a child repressed into doltishness lurks in every adult, for it was a perfidious caricature of the nursery, and I'm sorry that the invitation to visitors to meddle with the toys did not go unheeded.

For an entrance fee of half-a-crown, one could pull rusty levers that produced pinging or twanging noises, drive nails into reproductions of well-known paintings, step bravely down a staircase strewn with mirrors (passing on the way some open bags of powder colour which one critic was trapped into calling 'the element of colour harmony in its purest form'), measure oneself in numbers of seed-packets, *Evening Standards* or thumb-prints, knock over huge skittles with huge balls from a distance of six feet, add to a Universal Poem with rubber stamps (tethered like the pencils in a polling booth to prevent pilfering!) and admire the swags of bunting made of newspapers and magazines torn into tiny pieces.

The oddest thing of all about this 'manifestation' was that the organizers really did succeed in controlling the conduct of the visitors, for although they dutifully played skittles and drove nails into the reproductions, no one thought of flinging the bags of powder colour at the walls. But perhaps the slackness of the show found its match in our inertia. It somehow reminded me of the way we go on giving money to those cynical little boys who stuff a shapeless bundle of old clothes into a perambulator and without even bothering to give it a mask go out collecting for the 'guy.'

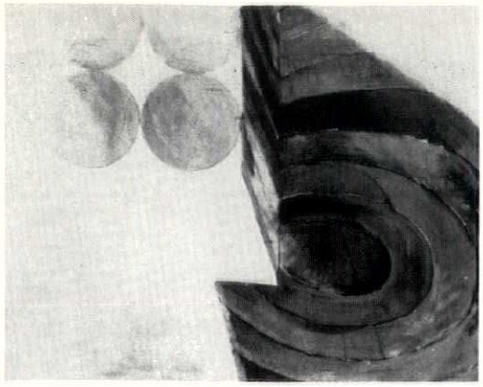
The idea that the work of commercial designers discloses more evidence of creative vitality than that of the painters and sculptors is now in full circulation, and in a recent issue of *Ark*, Misha Black made a slashing attack on the young artists who borrow pop material for their paintings. He accuses them of recoiling from 'the reality of existence' and says that they 'find their peace only in the fag-end of a dying epoch. Desperately writhing,' he explains, 'to avoid being sucked into involvement with the emergent present, they cling to what is left of the past, the sediment of the café and violence in the back street, the cinema poster and the tangle of local shops battling for a miserable individuality.' I would have had more sympathy with his point of view if his attack had been levelled at the frowsy peep-show held at Gallery One, where we were confronted at every turn by degenerate objects. It's true that the young painters he has in mind are only attracted to the more vulgar aspects of commercial design, and they may well recoil from an 'emergent present' of which the signs, according to Professor Black, are 'the well-kempt paths of a New Town and the sensible efficiency of the latest litter-bin,' but their work is more spirited, more purposeful and more poetic than that of any other English painters who have emerged since the war.

In the exhibition at the new RCA building in Kensington Gore which was held in order to remind us of the remarkable contribution which the College has made to the Fine Arts during the last ten years, the paintings of Hockney, Boshier and Phillips were outstanding, and Boshier's imagina-



5

tive transmutation of a milk-chocolate advertisement, 5, discovers a new, cool, deceptively off-hand way of referring to the



6

vastness of the universe and the mystery of creation which I find wholly admirable.

Richard Smith, who contributed a moderate defence of the pop artists to the same issue of *Ark* in which Misha Black confessed his distaste for them, was recently given a one-man show at the ICA. He is a very intelligent painter and is much more conscientiously concerned with the 'problems' of modern painting than the pop artists. In his present work he appears to be going into the possibilities of a synthesis of abstract expressionism and pop, and it's curious to find a painter who has always shown a great respect for the 'integrity of the picture plane' introducing an element of linear perspective. The painting he calls 'Package,' 6, is something of a hybrid, but one of his most powerful pictures to date.

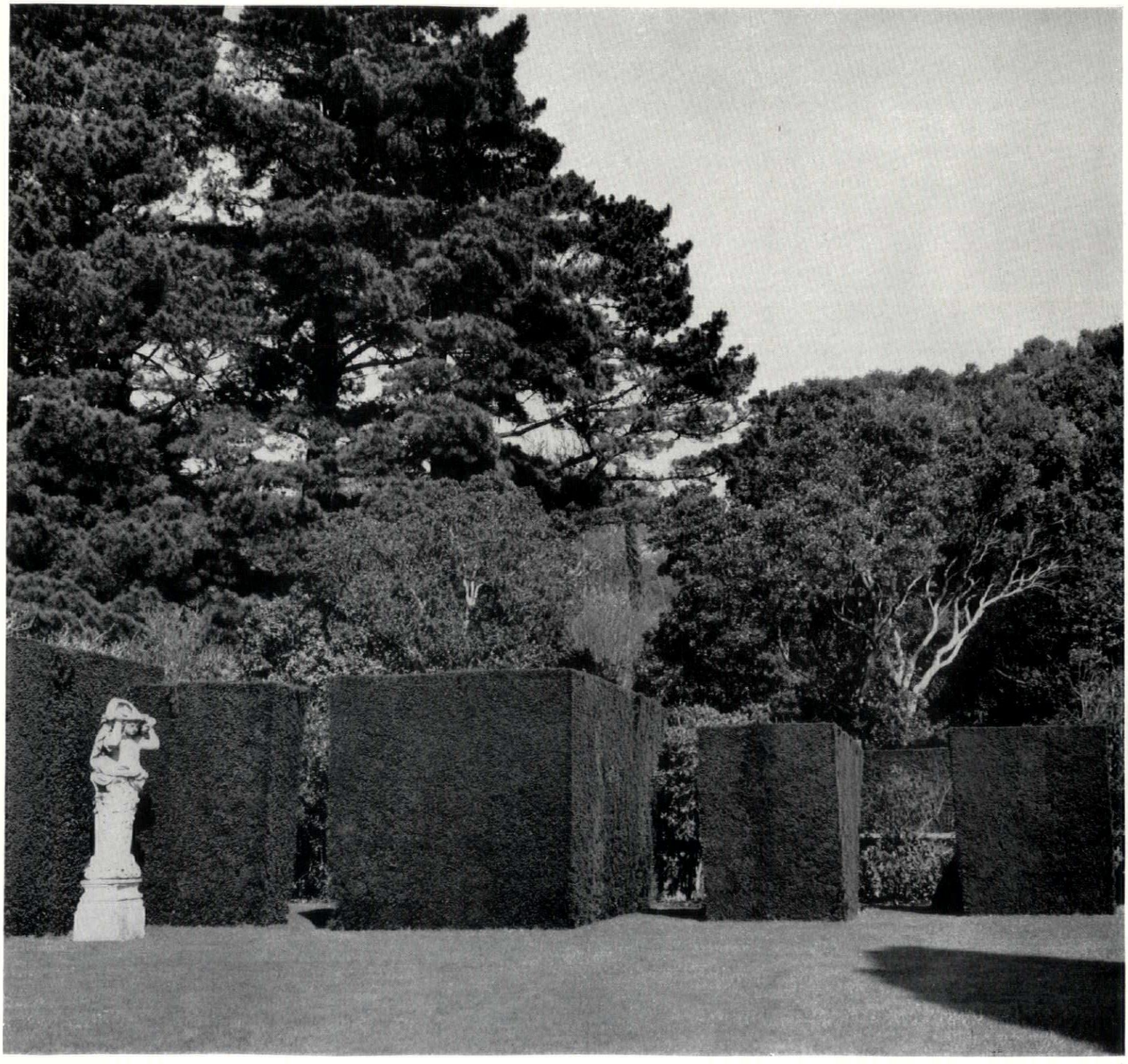
Robert Melville

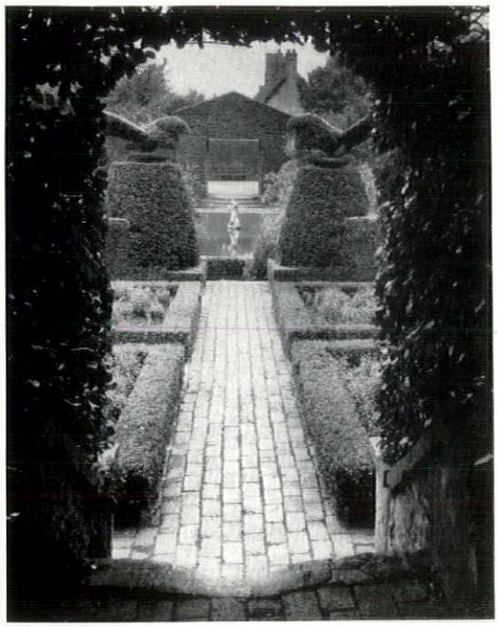
SHRUBS

EVERGREEN ARCHITECTURE

For hundreds of years hedges and formallyclipped trees of various types were considered the principal means of linking a building to its surroundings. Now that labour saving machinery is available to reduce the problem of

1, *clipped yew blocks contrasted with free-growing shrubs and trees.*





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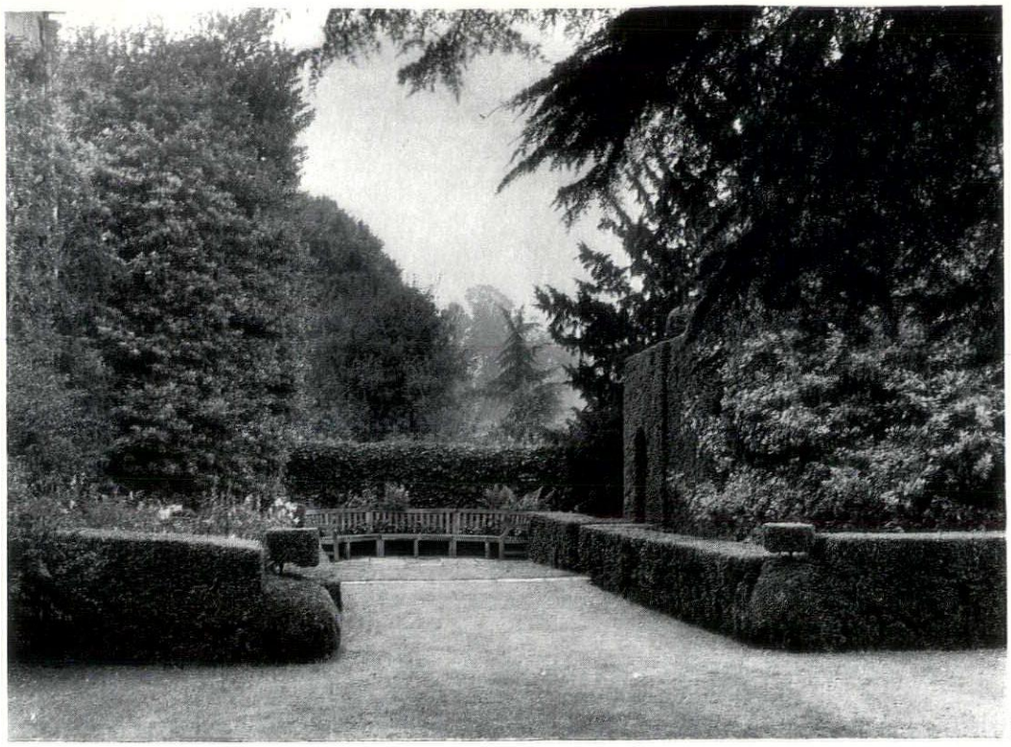

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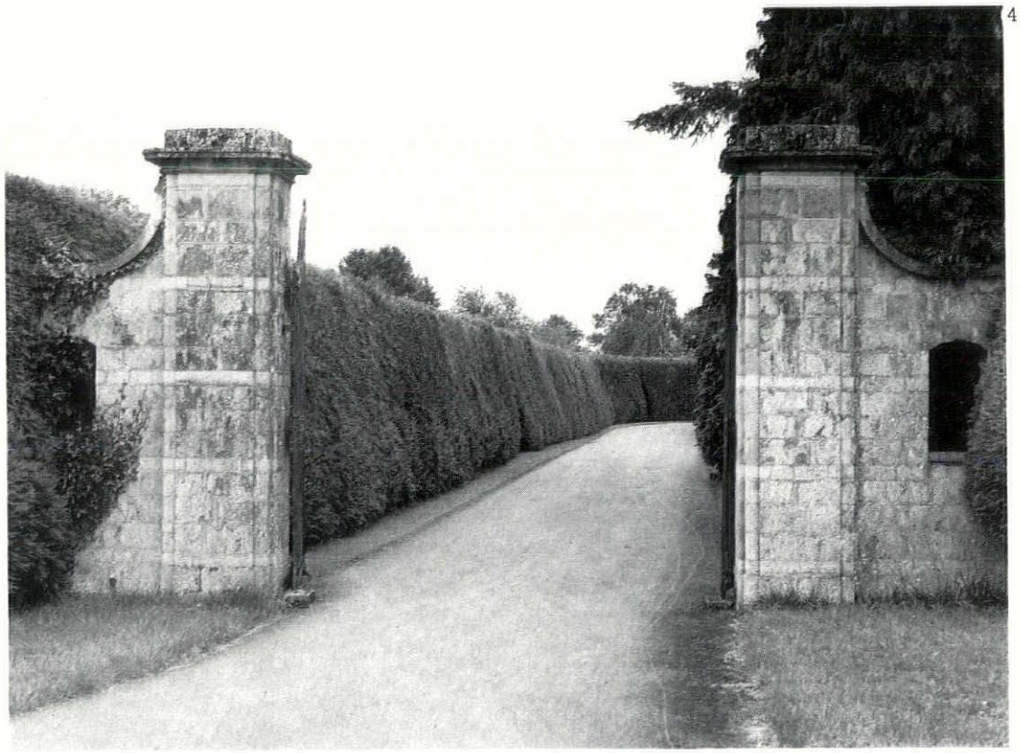


4

2, a formal pattern of beds edged with dwarf box in the foreground (yew hedges and topiary beyond) and, 3, low box hedges—both photographed at Hidcote Manor, Gloucestershire. 4, Cupressus *hedge at Barrington Court, Somerset.*

maintenance, more use can again be made of green architecture, both as a projection of buildings into the landscape, and as a satisfying background to gardening of all kinds.

Unfortunately the modern tendency to give everything a dual function has resulted in a flood of thoughtless advice to plant flowering hedges, with the idea that they should at once be both useful and beautiful. To treat hedges in this way is to misunderstand their purpose, which is to give an architectural character to certain open spaces by means of living walls, and to provide a restful and unobtrusive background to whatever incidents of flower and foliage are put in front of them. These two functions give a strong indication of the characteristics of a good hedge plant: a quiet, preferably matt texture when clipped, without disturbing character of leaf or flower, an ability to be trained and clipped neatly to a desired form, hardiness to withstand wind and frost, combined with a reasonable rate of growth and, in the case of boundary hedges, some additional defence in the form of spines or prickles.

Of all hedging plants probably the most satisfactory in general effect is yew, *Taxus baccata*. The initial cost of plants is high, but they can be spaced two feet apart and if well fed and looked after are not nearly as slow in growth as people think. The close texture of the clipped surface and the dark colour provide an ideal foil to garden flowers or the smooth pale green of mown grass, and the old topiary gardens bear witness to the plant's willingness to be trained and trimmed to any desired shape. Yew must not, however, be used as a boundary hedge as the leaves are poisonous to horses and cattle.

For rather smaller evergreen hedges box, *Buxus sempervirens*, is supreme. It has most of the virtues of yew with the added attraction of the delightful, elusive scent given off by the leaves on warm summer days. The very dwarf variety, *suffruticosa*, is useful where a firm outline to beds is desired as part of some formal scheme in which ground patterning is a feature. Now that clipping is no longer such a problem, there is a case for returning to the seventeenth-century practice of using three-dimensional patterns of clipped box against a background of gravel, perhaps with the addition of one or two foliage plants, as a decorative feature in association with certain types of buildings.

The desire for a quick screen often leads to the planting of quite large conifers, some of which can be effective, either planted two feet apart as a hedge or further apart and allowed to grow up as a taller barrier. The best known, and most generally useful, are *Cupressus lawsoniana* and *Thuya plicata*, although there are now quite a few newer varieties which may prove even more effective when fully tried out. When planting conifers, including yew, one must remember not to cut the leading shoot until the hedge has reached the desired

height, otherwise it will expend its energy growing sideways and take much longer to grow up. Deciduous hedges are treated in exactly the opposite way, and should be kept cut back from the start to ensure a bushy and well furnished base.

A. du Gard Pasley

HISTORY

HOUSE OF BONES

In County Armagh and in the grounds of Caledon there is a house of bones which once gave rise to many ghoulish speculations. The story was spread that the building was constructed from human bones gathered after slaughter on a battlefield. Later critics found something sinister, too, in the way the Bone House is sited by the slackly flowing river which now separates Ulster from Eire, and Caledon House from the demesne of Sir Shane Leslie.

The scene is of heartfelt loveliness and midges; but unfortunately for the romantics, the true tale of this curious folly is in *The Orrery Papers*. The relevant entry appears under the date of 24th of June, 1747:

> We came to a resolution of building a bonery, to strike the Caledonians with wonder and amazement by fixing an Ivory Palace before their view. We have already gathered a great number of bones, and our friends the butchers and tanners have promised to increase their number.

Contemporary locals will assure enquirers that the Bone House no longer exists, and there is no photograph of it in any of the Ulster archives; but the truth is that five pillars still stand amid a thicket of undergrowth, 1, and the knuckle bones present a dazzlingly intricate pattern on a sunny day.

Oswell Blakeston

THE MORMON COMMUNITY

There have been great events and chains of them in the colonies, the territories, the states of the American Union, but none has been as characteristically American as the (significant and) tragic story of the Latter Day Saints. The prophet, Joseph Smith, and Brigham Young were as native as native can be. Their faith—that from American soil may spring a renewal of this world at a later date that would fulfil all preceding revelations—was an indigenous faith.

The community of settlers had been self-styled and unskilled, sometimes reckless to the site, since the landing of Plymouth Rock. A few times the government of the mother country had sent splendidly gifted planners and architects, as those who laid out Savannah for the imported captive audience and population which Admiral Oglethorpe brought to Georgia at the start of the eighteenth century.

Apart from such shipped-in inserts in the native landscape, Americans under the pressure of, first, pioneering and, later, the sharp rush of utilitarianism, have almost always lived in comparative amorphousness. This has been noticed by foreign travellers, even those who came with much readiness to admire the hard-won institutions of American self-government.

Joseph Smith is the first, inspired, self-taught *community builder,** full of a tireless glowing enthusiasm to create a human social setting. Mormon communities, one after the other, rose from the wilderness with a loving understanding of site and with an empathy in what makes human beings feel warm, protected, mutually stimulated to goodness and to truly human productivity.

Articulated, by deep psychological insight, in face-to-face wards, and in stakes,



1, *the Kirtland Temple, Ohio; dedicated March* 20, 1836.

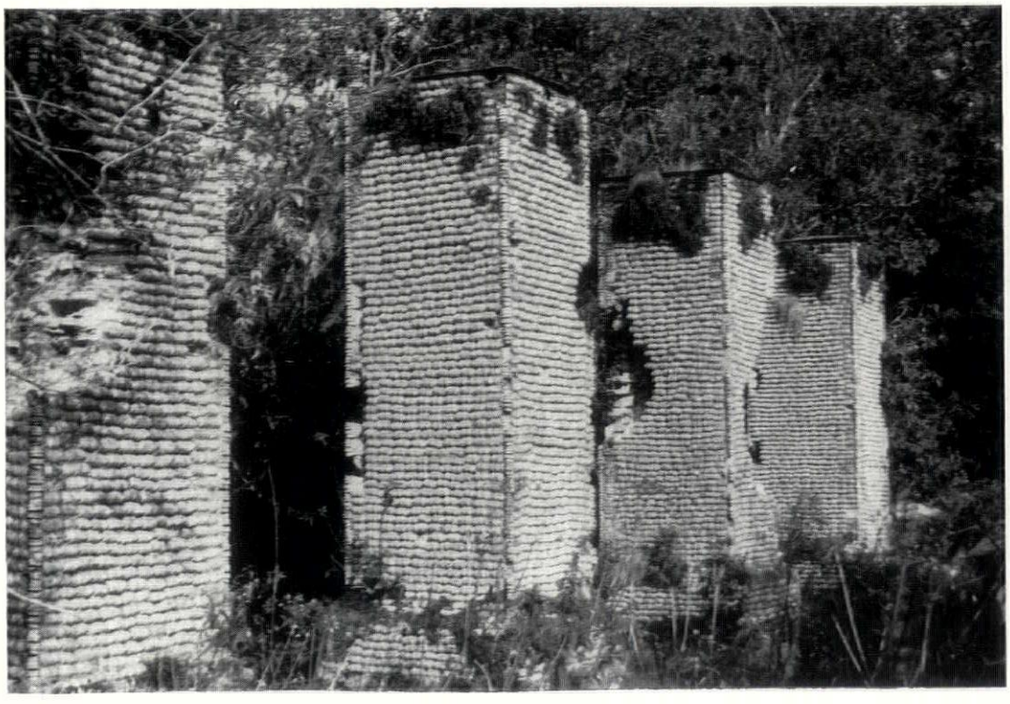
with a temple, 1, 2, in the nucleus of this entity designed for communal cohesion, these unprecedented, planned American townships grew up in record time, hardly comparable with anything that had happened elsewhere, and physical and social creation prospered to cut across American machine politics, perhaps somewhat like Adriano Olivetti's 'Communità.' No wonder there was enmity, hatred and envy. One cannot think of any greater challenging contrast than that between the Mormon foundations and what surrounded them in the makeshift disorder of pioneering days, the shapelessness of unskilled design, only here and there mitigated by thoughtless importation.

I have again and again admired Brigham Young's almost miraculous continuation of this tradition after a revival from disaster, but a vision has always made me imagine one thing with all its fantastic consequences.

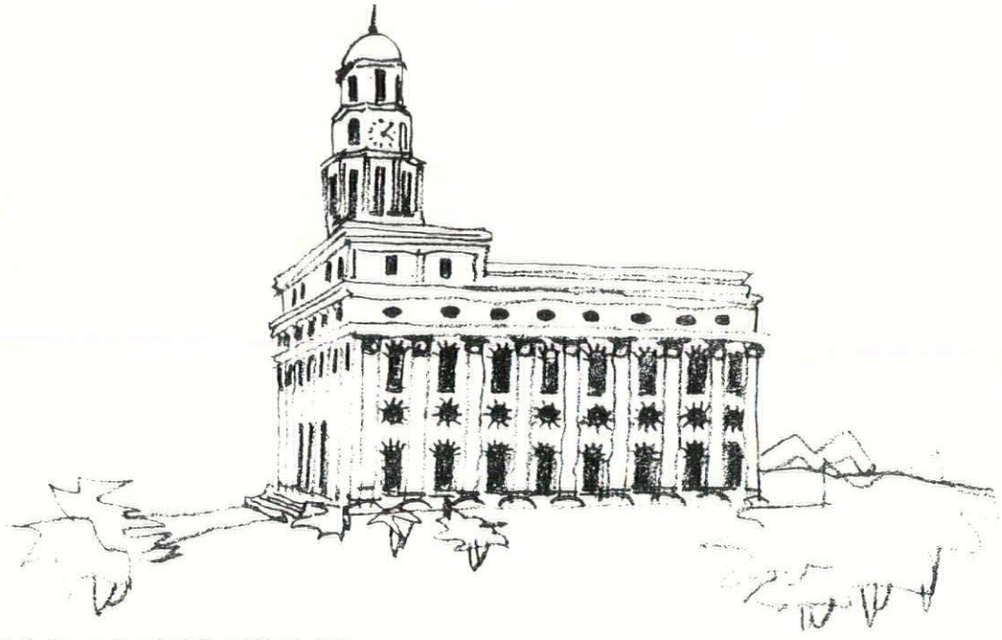
What I tried to visualize for myself was what would have happened with this rich, but in so many parts grimly neglected, country of ours, if Joseph Smith had not been murdered in a dastardly way, but his apostles had won for him the American vote for the presidency. What could have one single, inspired, enlightened administration more than a hundred years ago brought into existence for all of us who look for the American example?

Not even George Washington, although

1



* It was Dr. Pevsner's observations on Rudolf Steiner as the founder of a religion as well as the architect of its temple (AR, September 1961, page 153) that prompted Mr. Neutra to draw attention to Joseph Smith's rather similar role.



2, *the Nauvoo Temple; dedicated May* 1, 1846.

he used L'Enfant for a pitifully brief nine months, to leave some impression of planning in this country, compares with the indigenous, originally creative community design gifts of Joseph Smith and Brigham Young, who, in fact, stand lonely in the far flung American scene, where no native, non-colonial, non-imported community expression has ever been found again.

Today the convincing Mormon missionarism by the young, and a most impressive Mormon educational effort, go on to represent the best of a social conscience-imbued community life that America has been able to produce. Perhaps this is slated to have a decisive role in a world of mass transactions where indifferent planlessness and fitful, fast-superseded imports, old and new, will not readily match the ideology of powerful mass regimentation elsewhere on this globe.

Penetration must be prophetic, intuitive but also systematically skilled to realize what is a spontaneously acceptable community, what is its ordered beauty without anti-organic rigidity, what is inspired humanism in a neighbourhood, a ward, a campus of a college, or an entire township.

Richard J. Neutra

ARCHITECTURE

A PORTA

The constructive, as opposed to the reconstructive, approach to the maintenance of period atmosphere, is imaginatively epitomized in Erik Moller's drastic but sympathetic modifications to the à Porta *restaurant.* The old building on the Kongens Nytorv, 1, was a landmark in Copenhagen's townscape and social life; the rebuilt version, 2, looks at first as if it were no more than a Civic Trust face-lift, yet is several feet narrower than it was, and has



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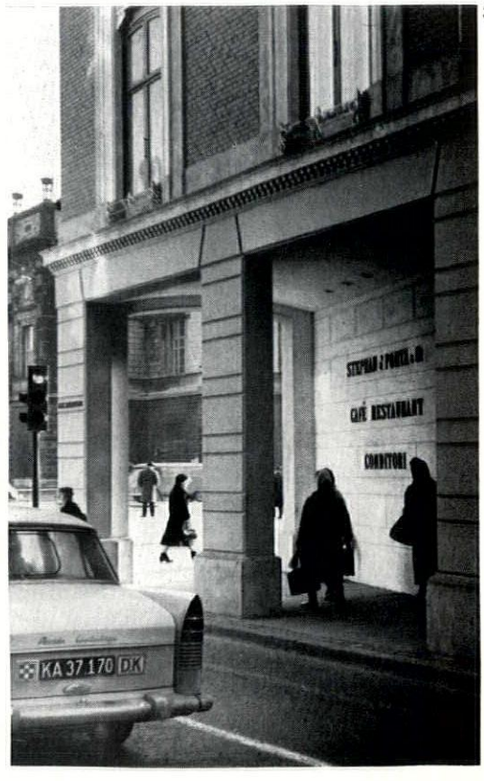

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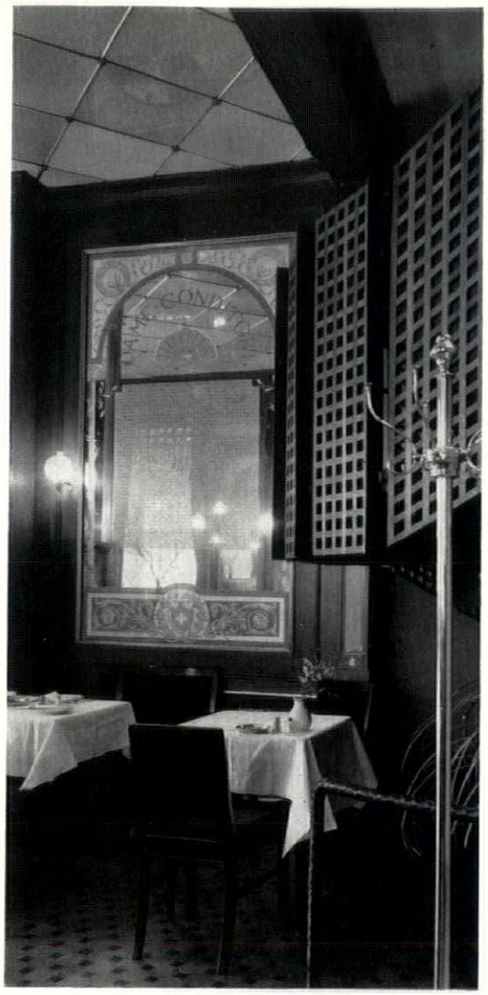

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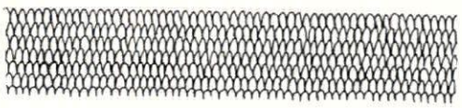

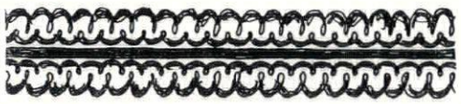

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a pedestrian arcade cut into it, 3, both of them as consequences of the street-widenings that also involved Moller in the rebuilding of the Magasin du Nord which flanks à Porta on both sides (see AR World, January 1961).

Between the reshaping of the exterior and the rehabilitation of the interior, there is a direct connection, for the narrowing and arcading deprived the cafe of some external window-openings, and therefore threatened to deprive it also of some classic engraved window glass. Moller's solution was to re-use them as mirrors, 4, in a part of the interior where the existing decor was unsatisfactory. Even more salutary was his solution of the lighting problem thrown up by the fact that the original gasoliers of the eighteen-sixties had been electrified without a proper solution to the shading of the electric bulbs being worked out. An acceptable approximation to the original quality of illumination was finally achieved by experimenting, on a spare gasolier in Moller's drawing office, with what are effectively scribble-patterns, 5, on specially made glass globes, 6, until the required illumination was achieved. The result is completely convincing in the setting without being in any way period-pastiche, any more than are the simple chairs or the pattern on the carpet, and the whole interior will stand up to comparison with views of à Porta, 7, made during *la belle époque*—a tribute to the combination of imagination and sympathetic research with which Moller's office approached a tricky task.

Hugh Wykeham

6



SKILL

HOSPITAL WARD SANITARY FITTINGS

Following the recent articles on hospital equipment, Anthony Wylson has conducted a survey of ward washing facilities which he presents in this article.*

Two trends in the arrangement of washing facilities in hospital wards have an influence upon the selection or design of sanitary fittings. The first one is to locate a bathroom adjacent to each nursing unit, to allow for flexibility of use of rooms within the total ward unit. Thus a small nursing unit with direct access to bathroom facilities can be used for either male patients, female patients or patients requiring special treatment.

The second arrangement allows for wash basins in the wards, but groups bath and lavatory accommodation in a position accessible to the nursing units. The ward unit itself is divided up by demountable partitioning into nursing units thus giving planning flexibility to the area devoted to the patients.

In the first, the degree of flexibility exists within the repetition of small self-contained units that can be used for a variety of purposes, whereas the flexibility of the second exists in the relatively unobstructed floor space that can be re-arranged as required.

However, the statement that a plan is as flexible as its services is particularly relevant to present-day plumbing and draining, where gravity drainage and methods of anti-syphoning control the relative positions of fittings and ducts. Furthermore, conventional methods of supporting fittings clear of the floor are unsuitable where light metal partitions are adopted. Either it is necessary to introduce a metal or concrete frame partition unit that can withstand bracket loading, or it is necessary to support sanitary fittings directly on the floor itself.

Both easy replacement and the possible interchange of fittings are important from the aspect of fitting. If the user requirements change (i.e. from adults to children, or to wheel-chair-bound disabled) suitable sanitary fittings must be installed. This requires that, not only should an installation permit a variety of levels, but fixing dimensions should permit easy replacement of one unit by another.

Design criteria

Sanitary fittings, whether bracketed or self-supporting, must be hygienic in design. There has been a diversity of opinion as to whether a hand basin should be built into the wall (to make a clean junction into the wall tiles) or whether it should be located a few inches away from the wall (in order that the wall surface and basin can be cleaned down individually). In most cases where a wall is sufficiently substantial to support a basin, the built-in unit is in favour. This avoids small sections of exposed bracket that are difficult to clean. The built-in unit can also provide a sealed junction between basin and wall. Where the unit is self-supporting, adjacent to a light-weight partition, a clearance should be provided for cleaning purposes. However, hygienic methods of fixing require careful study in relation to the problems both of interchangeability and support for sanitary fittings.

Materials and construction

A variety of materials are used for sanitary fittings: vitreous enamel, vitreous china, fireclay, earthenware, stainless steel, plastic. Vitreous china, stainless steel and plastic are mainly used for the smaller fittings. Fireclay is used for the larger units which require careful support. It provides a hard-wearing finish, unaffected by normal range of temperatures. The manufacturing process leads to a need for tolerances in fixing.

In advocating Perspex acrylic sheet for sanitary ware, ICI have set out to disprove two apparent failings of this material. The first is the possibility that, as Perspex slowly absorbs water to the extent of approximately 2 per cent, whether articles of Perspex in contact with solutions contaminated with potential bacteria would absorb the latter, and so protect them from chemical disinfection. The outcome of their test states: 'Although Perspex is known to absorb or lose water slowly depending upon the conditions under which it is situated, it is clear that no similar passage of bacteria occurs.'

The second investigation is concerned with the surface quality of Perspex. Perspex was compared with three other materials (vitreous enamel, stainless steel and glazed earthenware), with the object of determining whether the use of abrasive cleaning materials would increase the risk of contamination. The 'results on glazed earthenware were not consistent, and the effect of surface treatment with various abrasive materials does not follow the trend

*Previous articles were published in July, August, and September, 1962.

shown by Perspex, stainless steel and vitreous enamelled steel. Detailed examination of the surface of glazed earthenware showed very considerable variations in smoothness, and it was not possible to arrive at average results.'

'The use of a coarse scouring powder on stainless steel slightly improves the original surface, probably due to its action of removing the peaks of the grinding and polishing marks. With Perspex, a coarse scouring powder reduces the surface to about the same condition as that of stainless steel after cleaning with the same scouring powder. The results obtained with the hospital scouring powder, which was considerably less abrasive than that used in the previous test, show a similar trend . . .'

'When Perspex is treated with steel wool a matt surface is produced. This is the first part of the treatment which may be used for renovation of the surface of Perspex, and leaves a finely abraded surface which can be restored to its original gloss by established polishing techniques.'

The article concludes:

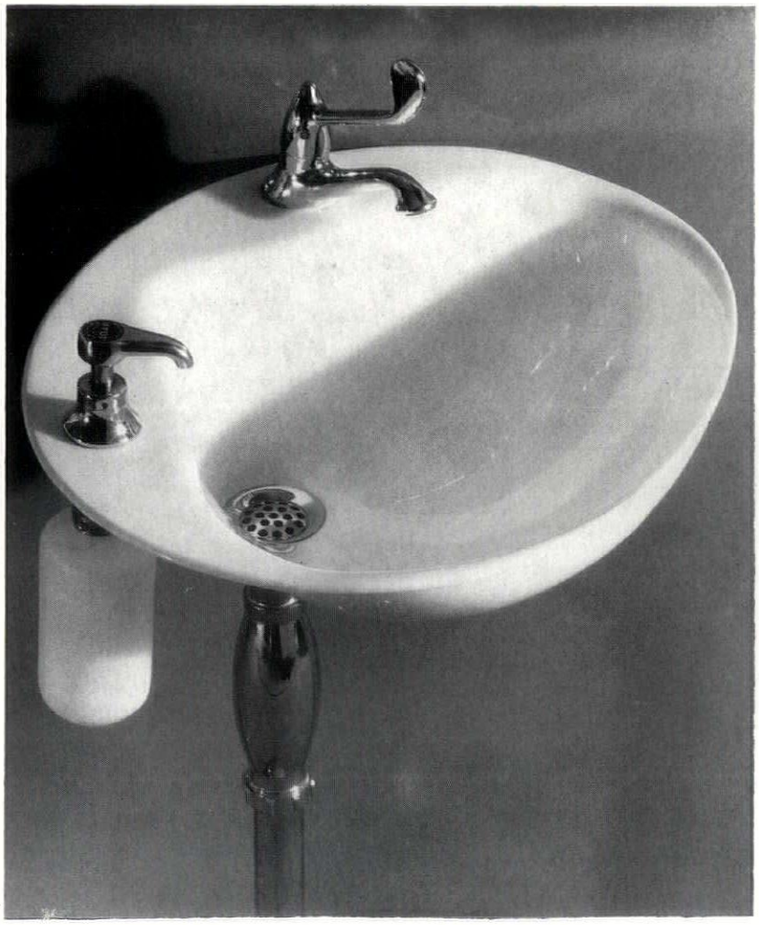
'The principal materials for manufacturing hospital and catering establishment sink/drainer units are Perspex and stainless steel. In comparing the effects of abrasive cleaning substances on these two materials, the use of coarse powders results in a reduction of the high gloss surface of Perspex but the overall surface quality after prolonged abrasion remains marginally superior to that of stainless steel. When fine scouring powders are used the surface quality of Perspex remains superior to that of both stainless steel and vitreous enamel. It should be noted that whereas prolonged scouring of vitreous enamel will expose the metal and it will be become unsightly, with Perspex the material is coloured throughout the mass and so its original colour is retained.'

The range of sanitary ware in Perspex includes baths, urinals, sinks drainers, and vanitory units. The material provides a wide range in colours and the colour penetrates through the material. It is easy to clean and neither rusts nor chips. It is light in weight. In the case of baths, it helps to maintain the water temperature. At the same time, it is a thermostatic material and will be affected by temperatures in excess of 120°C. Thus it is not suitable in the vicinity of very hot utensils.

P. & S. Plastics Ltd., Love Lane Estate, Cirencester, Glos.; Henry Robinson (Fibres) Ltd., Stewkins Foundry, Stewkins Road, Nr. Stourbridge, Worcs.; Thermo Plastics Ltd., Luton Road, Dunstable, Beds.; Moto Plastics Ltd., Ponteland, Newcastle-on-Tyne, Northumberland; and Troman Bros. Ltd., Highlands Road, Shirley, Solihull, Warwicks., manufacture baths in Perspex.

Troman Bros. Ltd. also manufacture a Perspex lavatory basin to match their 'Crelene' baths.

Harold Moore & Son Ltd., Bailey Works, Bailey Street, Sheffield 1, Yorks.; Graceline Units Ltd., Horton Bridge Road, West Drayton, Middx.



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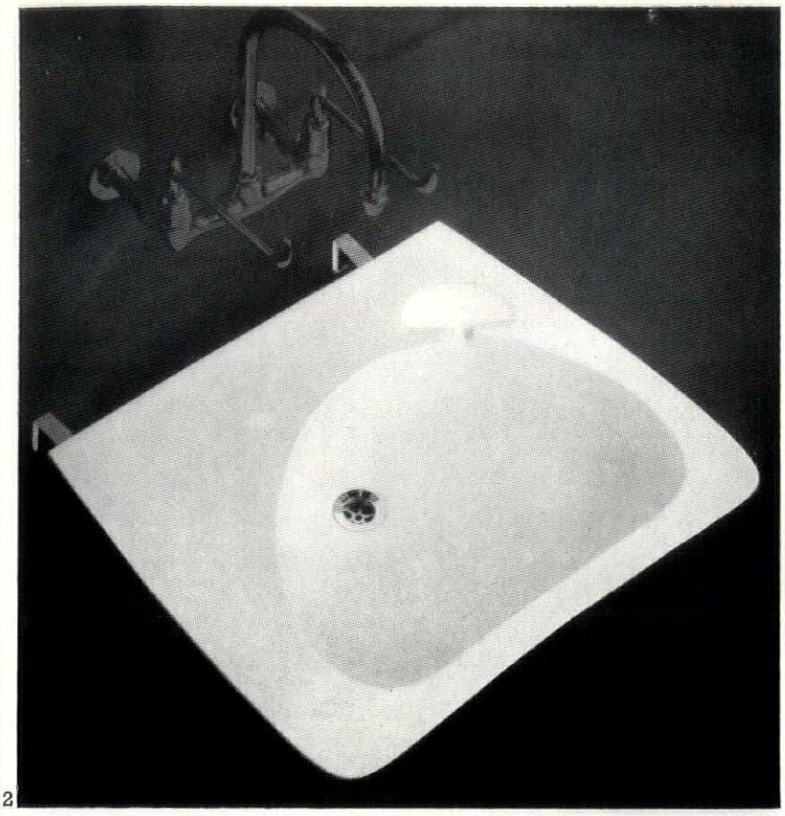

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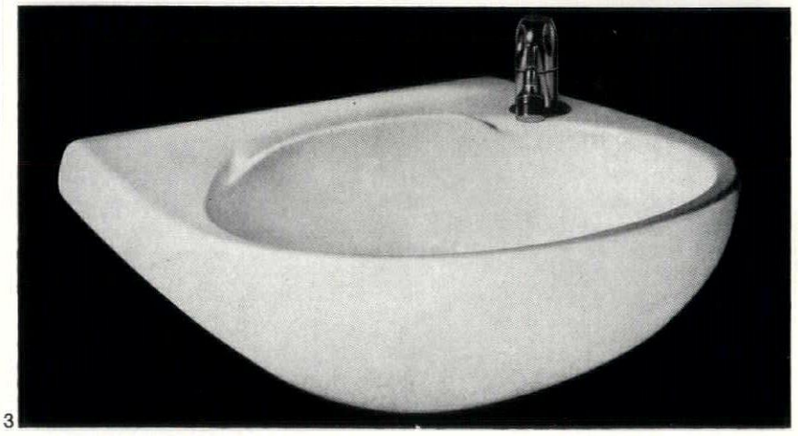

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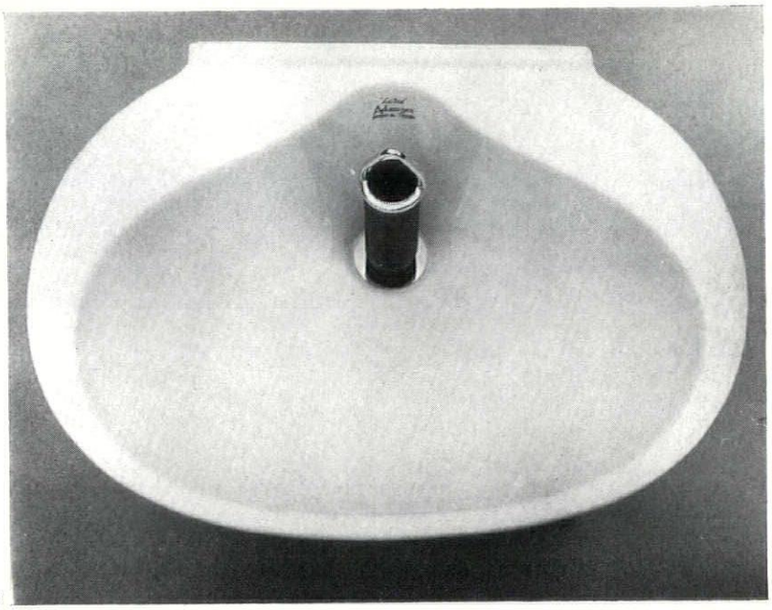
1, Adamsez plastic 'Lotus' basin, waste pipe support and integrated bottle trap, spray tap and soap dispenser. 2, 'Cygnet V' hospital basin by Alfred Goslett and Co. Ltd. 3, 'Curlew' wash basin by SGB (Dudley) Ltd. 4, Shaw Knight babies' bath with provision for mixing box with front control.



5, *Doulton no. 1068 surgeons' lavatory basin.*

6, *Adamsez 'Lotus' basin without tapholes and overflow.*
7, *Adamsez 'Lotus' Alcove basin.*



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Troman Bros. Ltd., and V.C. Panels Ltd., Leybourne Wharf, Horton Bridge Road, West Drayton, Middx. manufacture Perspex wash basin toilet tables; Alfred Goslett & Co. Ltd., 127-131 Charing Cross Road, London, W.C.1, manufacture a Perspex free standing shower enclosure. A multi-wash basin unit is manufactured by Arrow Plastics Ltd., Arrow Works, Hampden Road, Kingston-on-Thames, Surrey.

There are few other plastic materials used for sanitary ware. Poly-glas, 11 South Road, Morecambe, Lancs., manufacture mobile baths and mobile bins.

There is also a limited range of light metal fittings, Edward Curran Engineering Ltd., Cardiff, manufacture pressed metal baths of 14 gauge vitreous enamelled steel. Associated Metal Works, Glasgow E.1 and the Stainless Steel Sink Co. Ltd., Ring Road, Lower Wortley, Leeds 12, make a wide range of equipment in stainless steel, including lavatory basins. However, these are of a conventional and domestic character.

Most manufacturers of fireclay and vitreous china fittings are aware of hospital requirements. Domestic fittings have been adapted and special units have been designed with an emphasis on hygiene and ease of cleaning. In some cases, standard units are manufactured without top holes or overflow to allow for wall mounted valves (wrist or elbow action taps) and standing waste and overflow.

The 18 in. by 16 in. wash basin manufactured by SGB (Dudley) Ltd., Blowers Green, Dudley, Worcestershire, in white vitreously fused ceramic glazed fireclay, is designed either without overflow or captive chain fixing for use with one spray tap, or with overflow and chain fixing for two normal flow pillar taps. The wash basin can also be supplied without tapholes for use with wall mounted valves. It is supported by means of a galvanized steel plate and two expanding bolts which fix into the wall.

The 'Cygnet' hand basin by Alfred Goslett & Co. Ltd., has been designed for domestic and hospital use. It can be supplied with or without tapholes, standing waste, overflows, etc. It is made of vitreous china and measures 24 in. by 20 in. It can be either supported on porcelain enamelled iron brackets giving 3 in. clearance from the wall, on brackets against the wall, on legs to the floor, or in a matching pedestal. A white basin with brackets and waste costs £11.

Shaw Knight & Co. Ltd., Enamel Stove Works, Bishop Auckland, County Durham, present an extensive range of fittings designed for hospital use. 'Lista,' 'Zeta,' 'Lancet,' 'Portia,' basins and the 'Vega' and 'Venus' surgeons' basins are all designed without overflows and the last two without tapholes. Both the 'Vega' and the 'Venus' incorporate wide shelves. Shaw Knight also manufacture a babies' bath, with a waste chamber, free standing waste fitting and provision for a mixing bowl and front control. The flat underside of this unit and the position of the controls would appear to be particularly suitable for use as a lavatory basin by wheelchair patients. The overall size is 36 in. by 20 in. by 6 in. or 30 in. by 20 in. by 6 in. The units are supported on cantilevered brackets and chromium plated front legs.

The same company also make w.c.s particularly suitable for easy cleaning. The No. 347 Panel closet has a back and base coved to wall and floor. Vertical inlet and side panels facilitate drain fixing. The overall height of this closet is 16 in., 14 in. or 12 in. The No. 343 is a bracketed closet low level suite giving an unobstructed floor surface for cleaning.

The No. 1068 white vitreous china surgeons' lavatory basin 26½ in. by 18½ in. made by Doulton Sanitary Potteries Ltd., Doulton House, Albert Embankment, Lambeth, S.E.1, is designed with or without tapholes and recessed outlet. It is supported by cast iron brackets screwed to the wall. The unit can be supplied with (No. 2755) recessed foot control in place of wrist action lever taps, with a swan-neck supply either mounted on the wall or fitted through the basins on the right-hand side.

The Dent & Hellyer Nuffield Basin (30 in. by 17 in.) gives a wide shelf on one side. It is designed with a standing waste and overflow and elbow action supply valves wall mounted. The unit is supported flush against the wall. Dent & Hellyer Ltd., 11-18 Emerald Street, W.C.1, who make a wide range of hospital equipment, also manufacture the 'Windsor' surgeons' white glazed vitreous china lavatory basin—a bowl shape fitting, with standing waste and overflow, 22 in. by 16 in.

The 'Medicus' vitreous china basins by Ideal-Standard Ltd., Hull, Yorks., are supported free of the wall on brackets. The basin has either a standing waste and overflow in conjunction with the wall mounted fitting with wrist or elbow action levers and can include a knee action plug waste. The 'Medicus' EB3931 has a ½ in. foot-operated non-scalding mixing valve with vertical riser, with knee action plug waste. The arrangement would avoid any contact by hand.

J. & R. Howie Ltd., Hurtford Works, P.O. Box 13, Kilmarnock, Ayrshire, Scotland, manufacture a wide range of hospital sanitary ware, including the 'Saluta' white glazed fireclay basin 24 in. by 18 in. This has wall mounted anti-scalding mixing valve with elbow action lever and knee action waste. Bracket fixing supports the basin 2 in. clear of the wall.

Shanks & Co. Ltd., Tubal Works, Barrhead, Scotland, manufacture two basins for hospital use—the 'Akron' and the 'Neon.' They are both of vitreous china and have wall mounted elbow action 'Orplex' mixing fittings and a Vulcanite Standing waste and overflow.

Twyfords Ltd., Stoke-on-Trent, Staffs., also make a range of basins suitable for hospital use, in particular the Ceramant No. 2674/1 wash-basin, and a vitreous china wall hung w.c. (No. 2595). The latter is supported by a cast iron supporting chair which is concealed on wall and floor.

Adamsez Ltd., 75 Victoria Street, S.W.1, manufacture 'Lotus' fittings without tapholes and overflow to be used in conjunction with wall mounted valves and standing waste and overflow. The 'Lotus' alcove basin has wide shelves either side. Adamsez also manufacture a bracketed closet which gives a clear floor for cleaning purposes. They are investigating the possibility of plastic basins.

The arrangements at the IUA building where the Adamsez fireclay basins were supported on the waste gives an interesting solution where partitions are unsuitable for supporting sanitary ware. A bottle trap that appears as a swelling in the waste has also been devised. The tubular supporting stack, bottle trap and lightweight basin could provide a three-piece unit demountable for cleaning and replacement. It is an interesting deviation from the heavy built-in concept for sanitary ware.

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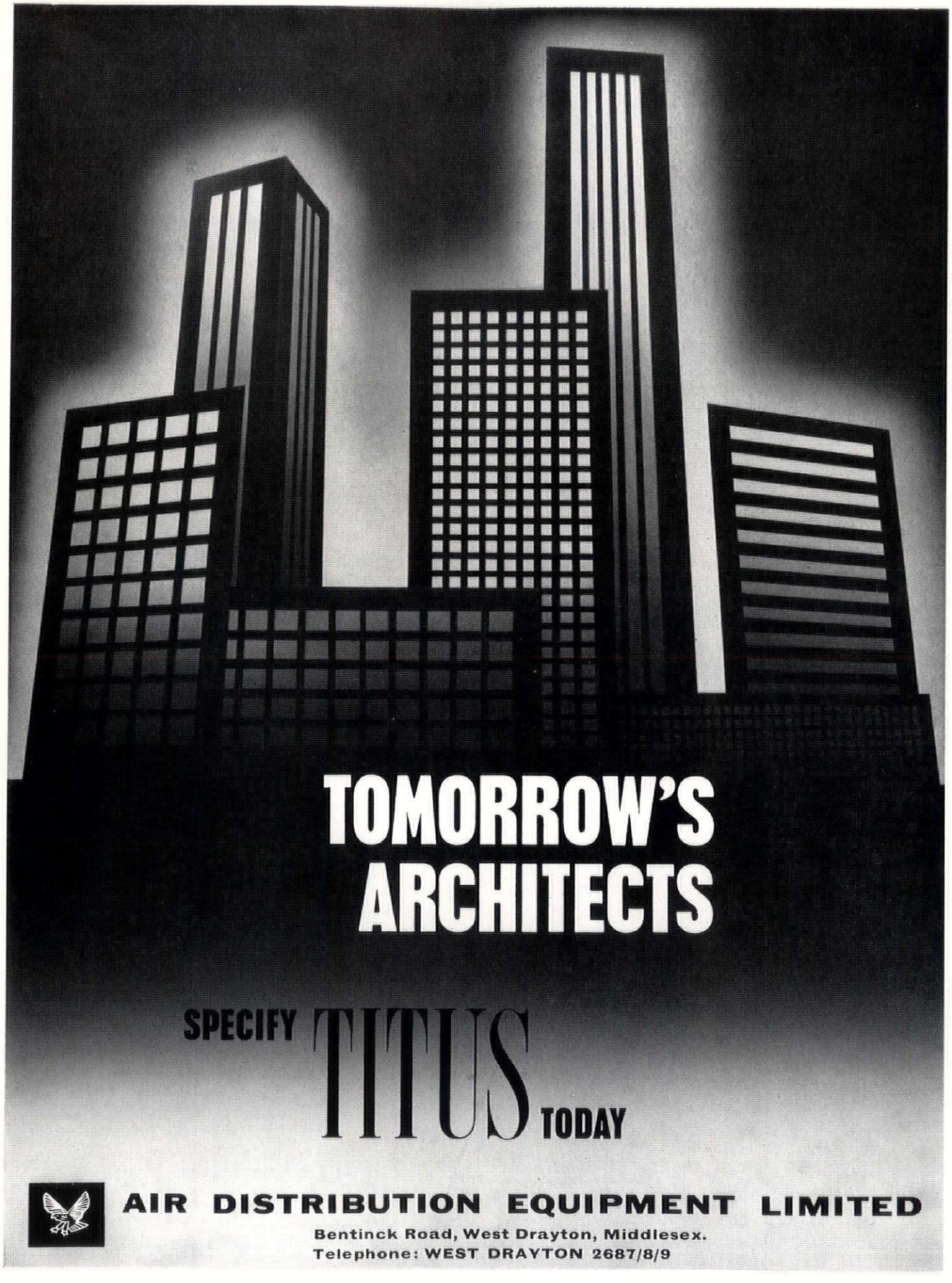
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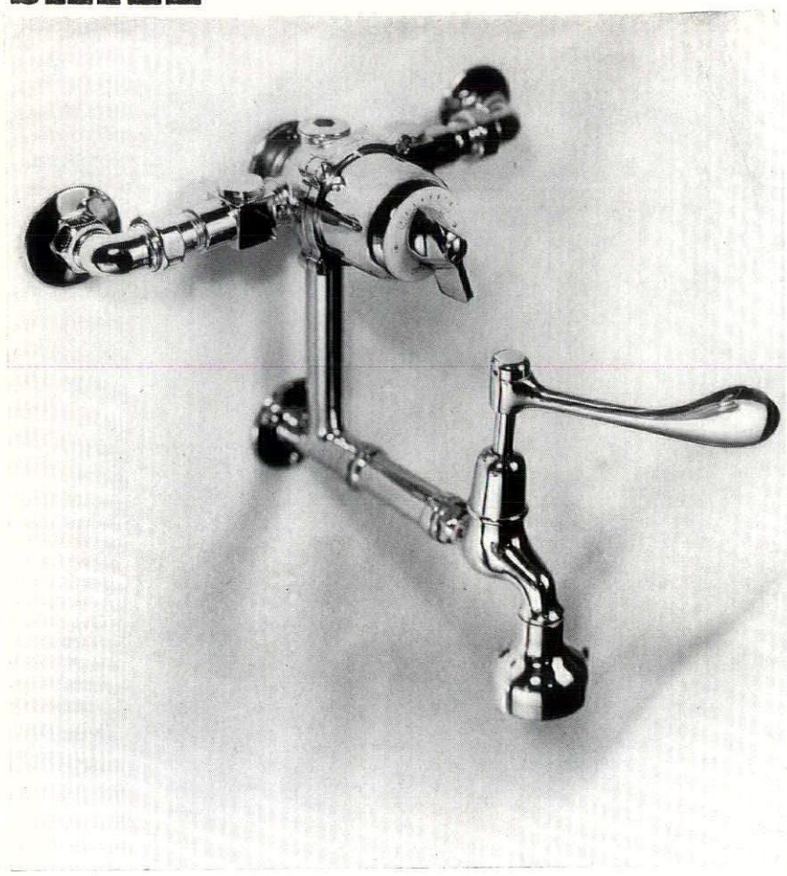

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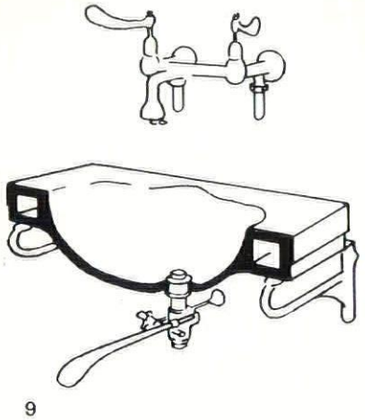
8, *Leonard 2M thermostatic mixing valve with surgeon's elbow tap control.* 9, *cut view of the 'Medicus' lavatory basin by Ideal-Standard with wall-mounted mixer fitting.* 10, *with foot-operated mixer fitting.*



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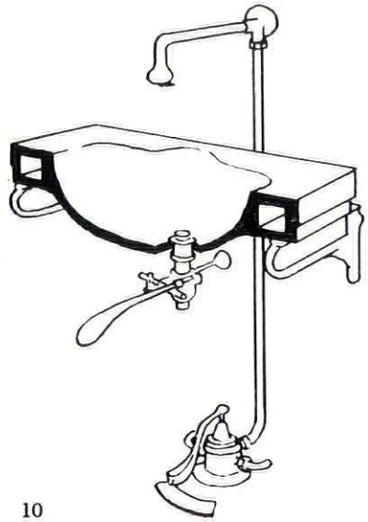

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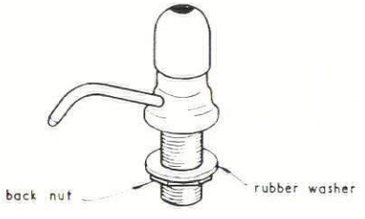

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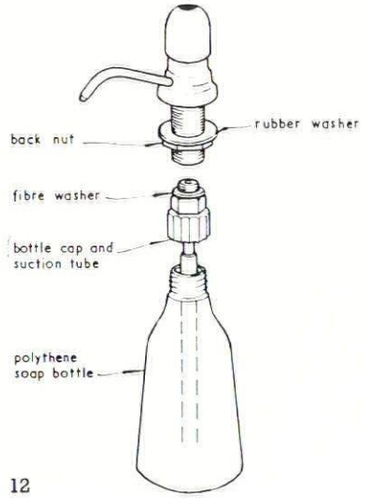

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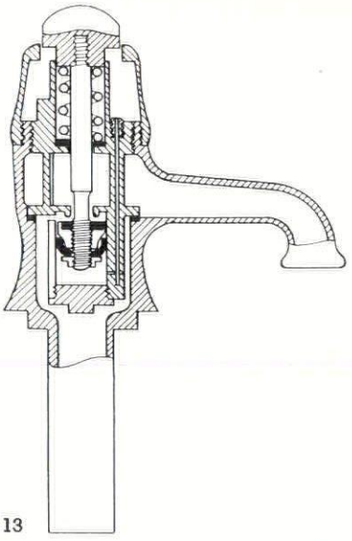

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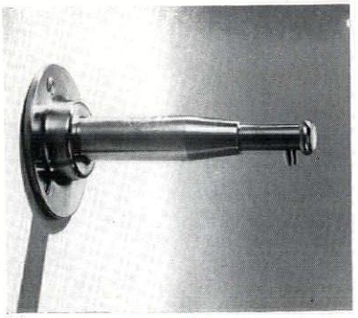

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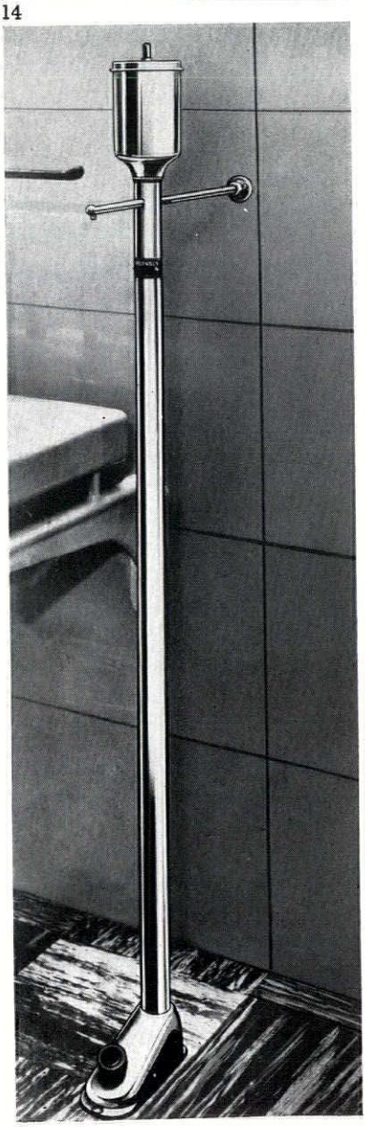

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Taps and accessories

The standard of hygiene required in respect to contact with taps, waste, etc. depends upon the use of the basin. Facilities range from the ordinary taps integrated into the basins (or one tap and a soap dispenser) to a complicated elbow action controlled wall mounted mixer with knee action plug waste. In most cases a bottle trap which can be unscrewed is adopted both for purposes of cleaning and retrieving needles, etc.

However, fittings for hospital lavatory basins are generally shown with wrist and elbow action taps. Quarter-turn taps are not greatly favoured by the Water Boards because of possible wear (and thus wastage of water) and concussive action. Edward Barber & Co. Ltd., Paxton Road, Tottenham,

[continued on page 152

13, *sectional view of the 'Paxton' non-concussive valve by Edward Barber and Co. Ltd.* 14, *'Lathurvalv' liquid soap dispensing head.* 15, *foot-action 'Lathurn' liquid soap dispenser.* 16, *the 'Poly-Econa' Mark VI plunger-operated soap dispenser.* 17, *Sierex 'No-Touch' flush-mounted soap dispenser.*



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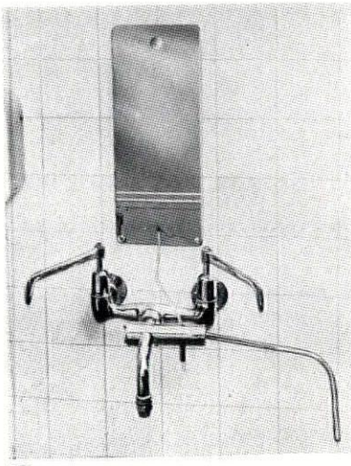
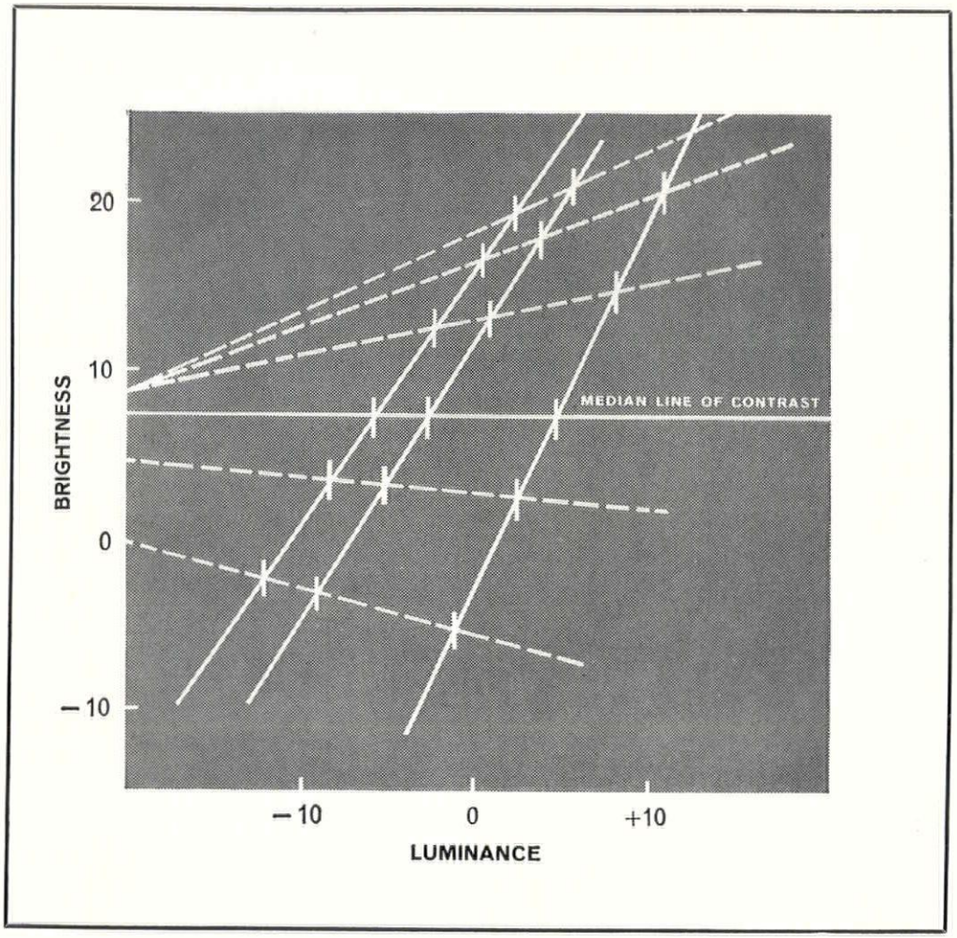


17

SERIES III

THE LOGICAL USE OF PAINT



No. 2 Brightness and Contrast

It is well known that a high illuminance, or to put it in another way, a high standard of lighting either daylight or artificial enhances the contrast of the decoration of a room. Similarly the reduction of the illuminance depresses the contrasts of decoration.

The graph above illustrates the opponent change in brightness of objects illuminated at different levels. Each slanting line corresponds to a given overall illuminance, whilst the dashed line corresponds to the object perceived. It will be seen above the median line of contrast increase in illuminance increases contrasts whilst below that line, decreasing illuminance decreases contrasts. The median line of contrast shows the condition of least change.

This graph illustrates the fact that in choosing colours for decoration, both the level of illumination and the spectral distribution of the light source must be taken in account.

This is one of a series by Goodlass Wall and Co. Ltd., paint specialists since 1840 and manufacturers of the famous Combinol and Valspar paints — who will be pleased to give free advice on colour schemes and painting specifications

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continued from page 150]

N.17, manufacture a quarter-turn non-concussive pillar tap with arm or wrist action lever. This is designed to be easily adjusted when fixed and under pressure, to suit any head of water.

Some soap dispensing equipment is outlined in the schedule. The actual dispensers range from a tap-like fitting to a wall mounted reservoir. The liquid soaps vary in quality and viscosity and must be selected for the dispenser and purpose required.

Where the basin is used by other people besides a patient (who would have his personal towel on a locker rail), two towelling systems have become particularly favoured—dispensable paper towels and the continuous roll towel.

Paper towels are either accommodated in a cabinet folded so that by removing one the next is exposed for use, or accommodated as a roll with perforations for tearing. Both systems require a bin for used towels. The alternative is a linen roll towel that lets out predetermined lengths at each use. The latter equipment can be either bought or hired from a laundry company who maintain the supply of towelling. The disadvantage of this system is that, should it run out, it remains a bedraggled wet rag for use by everyone. Both paper and linen towel systems require careful supervision to see that facilities are maintained.

The schedule shows metal containers for paper towels. Recently the Wessex Hospital Board has developed an interesting idea with Carter Tiles Ltd. for a ceramic paper towel dispenser. This works on principle like a large flat-pack toilet paper holder. It is designed to take a paper towel manufactured by Cresco Ltd., Brougham Road Works, Worthing.

Conclusions

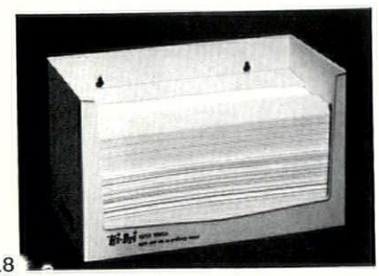
The degree of flexibility in the basic plan will be reflected in the design and selection of sanitary ware. In a services area of a permanent arrangement, the conventional built-in fitting becomes integrated with the wall surface or adjacent furniture. Thus it must be selected for a particular patient type (adults, wheelchair-borne, children, etc.). The unit suitable for a flexible plan presents an interesting problem. It could consist of a combination of components that form a self-supporting unit, detached or detachable from the plumbing. The components would be interchangeable to adapt the facility to a wide range of patients (i.e. a simple alteration of height if the ward is occupied by children instead of adults).

The aspect of hygiene (the use of non-absorbent materials, avoiding inaccessible crevices, washable surfaces, etc.) should influence the detailing of junctions and contours.

[continued on page 154

Table 1: Soap dispensers

Trade Name and Manufacturer	*Dispenser*
Homacol Sapus Visidus or Viscous Toilet Soap The Horton Manufacturing Co. Ltd., Homacol House, Rickmansworth, Herts.	Viscous or cream soap, which can be used through Horton's 'Rigid' dispensers or Homacol 'Pluto' pipe-line systems and valves. 1. Poly-Econa dispenser, consists of polythene bowl and anodized aluminium metal parts. 2. The 'Econa' basin dispenser which provides liquid soap or cream either by gravity feed or from under basin reservoir. The dispenser is fitted in place of a water tap and either can be used with mixing taps or be fitted as a third tap if ordinary hot and cold taps are employed. 3. The 'Savon' dispenser glass bowl—dispenses soap by tipping. 4. The 'Popular' dispenser glass bowl—dispenses soap by tipping. 5. The 'Rigid' type dispenser using 'Pluto' automatic dispensing valves for liquid or cream soaps. 6. The 'Pluto' pipe-line system. A single container of liquid soap supplies individual basin dispensers.
LYPTOSOPE Economy Dispenser London Soap & Chemical Co. Ltd., Lyptol Works, Richardson Street, London, S.E.1	1. Perspex bowl with stainless steel fittings. Tipping action to dispense soap. 2. All metal type, cream enamelled. Tipping action to dispense soap. Lyptosope is available in several grades including antiseptic type.
LORCO The London Oil Refining Co. Ltd., Lorco Works, Thames Side, Reading, Berks.	1. Nesthill dispenser for use with Lorvisco and Lorgel and more viscous type of soaps. Push-button dispenser, 1 quart capacity, finished in cream enamel. 2. Lathervalv pipe-line soap dispensing equipment for liquid soap. Enamelled steel tank with indicator and locking top. Valves and pipe-lines manufactured in stainless steel. 3. Lorco liquid soap dispenser. Tip-up unit in black bakelite, polythene bowl and nylon coated bracket, or all metal, green enamel finish. or stainless steel and glass bowl. or all stainless steel. Lorco liquid soaps include three grades (premier, super and concentrated), neutral liquid detergent and disinfectant.
BRIGHTWELL Brightwell Dispensers Ltd., Spenser Works, Railway Road, Newhaven, Sussex	1. Foot-operated dispensers for antiseptic obstetric and bacteriocidal washing creams. Foot operation to control shots of cream into the hand without fear of contamination. Container flap of aluminium alloy gravity die castings. Dispensing valve is machined in nylon 66 and stainless steel. 2. Plunger-operated dispensers, diecast in aluminium alloy and finished in stove-enamel.
PED-O-FLO Schuco International London Ltd., 46 Ravensdale Avenue, London, N.12	1. 'Ped-o-Flow' foot-operated liquid soap dispenser controlled by rubber foot pump. Outlet tube in stainless steel. Models 101, 202 and 303 and office master unit.
BORAXO Borax Consolidated Ltd., Borax House, Carlisle Place, London, S.W.1	Plunger type dispenser made from deep drawn sheet steel finished in white vitreous enamel, with chromium top and plunger.
NO TOUCH Soap Dispenser Sierex Ltd., 15/18 Clipstone Street, London, W.1	'No-Touch' soap dispenser with soap store flush mounted or surface mounted. The surface mounted model can be adapted for use in conjunction with elbow taps and water mixers. Dispenser unit controlled by pressure from elbow or forearm.
LATHURVALV and LATHURN Equipment Valbania Ltd., Cavendish Works, Wyvil Road, London, S.W.8	1. Lathurvalv liquid soap dispensing equipment consisting of stainless steel valves and pipe-lines and porcelain enamelled tanks. Plunger dispenses creamy lather. Alternatively, pillar 'Lathurvalv' stainless steel head in place of tap. 2. Lathurn patent liquid soap dispenser which dispenses liquid soap as a creamy lather. (*a*) The 'Lathurn' with soap level visible through slot in body of container. Dispenser anodically treated with satin silver finish. (*b*) Foot action 'Lathurn.' (*c*) Pillar 'Lathurn' with stainless steel head to fit in place of tap with under basin soap container.



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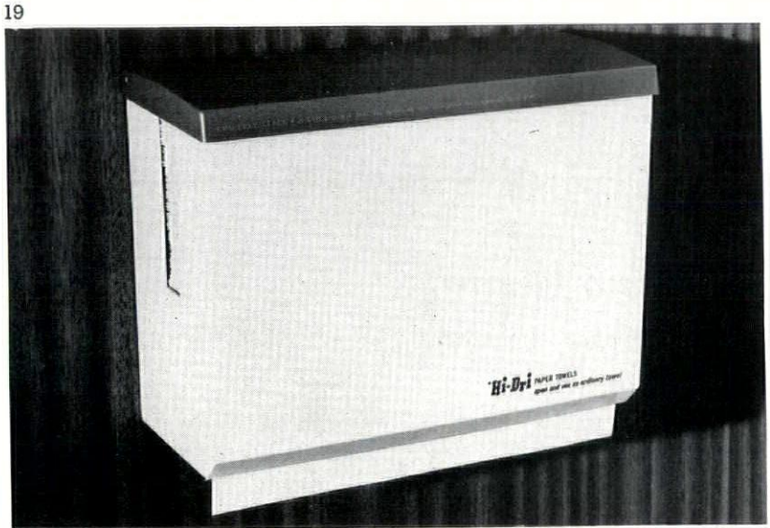

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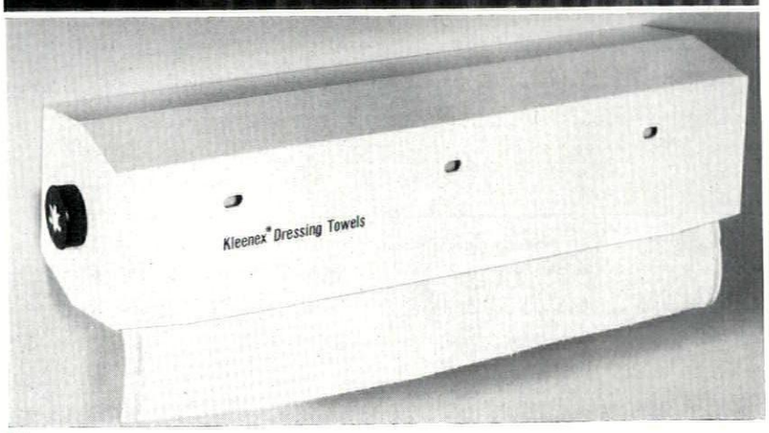

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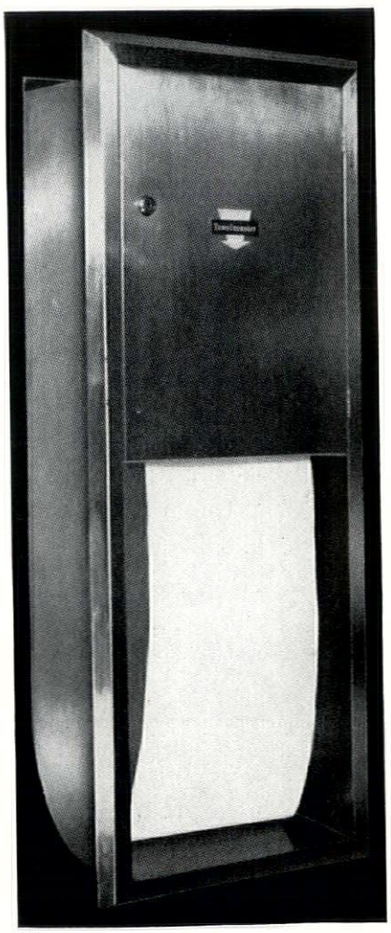


21

18, *open-fronted plastic cabinet for 'Hi-Dri' paper towels.* 19, *enclosed plastic dispenser cabinet for 'Hi-Dri' paper towels.* 20, 20 *in. 'Kleenex' dressing towel dispenser.* 21, *the Advance recessed 'Towelmaster' roller towel dispenser.*



for showers: flow control and thermostatic control of the water temperature are now combined in one compact, elegant, and recessible unit. This valve is called the Leonard 72 and is manufactured by Walker Crosweller & Company Limited, Cheltenham.

continued from page 152]

The method and extent of cleaning must be clearly established. This is particularly important when normal domestic fittings are chosen for use in hospitals.

The wrist-action tap has a wide range of use other than counteracting cross infection. Disabled people with limited manual control would find a lever handle easier to operate than the conventional tap. The non-concussive unit, acceptable to the Water Board is important in this respect.

Soap and towel dispensing require systematic organization which is synonymous with hospital life. Paper towels present a problem of disposal. A bin of used tissues is not the most sanitary object. A chute or incinerator would be a more hygienic solution. Continuous roller-towels need careful supervision if a cleaning mechanism is not an integral part of the unit.

However, the flexibility and efficiency of sanitary fittings and accessories depends upon the available power incorporated in the installation. Pumped drainage and flexible tubing could liberate the position of sanitary fittings from falls and stack plumbing. Hand-drying facilities for communal use, if decided upon at an early stage, could be designed as part of the mechanical installation to avoid unnecessary attendance.

Table 2: Towe lsystems

Trade Name and Manufacturer	*Dispenser*
Bronco Ltd., Hackney Wick, London, E.9	The 'Onliwon' paper towel cabinet system. 150 towels to each cabinet, 11½ in. ×11 in. ×3½ in.
Advance Linen Services Ltd., Stratton House, Piccadilly, London, W.1	Advanced Recessed 'Towelmaster,' constructed of 22 gauge stainless steel with satin finish, contains 45 yds. of towelling, providing 200 clean spaces . . . size is 15 in. wide ×8¼ in. deep ×41¼ in. tall. Towelmaster service includes free installation and maintenance. The cost is limited to an inclusive charge for each roll used subject to a minimum of one roll per cabinet per week.
Cresco Ltd., Brougham Road Works, Worthing	Cresco service provides paper towels manufactured from sterilized cellulose fibre. Interleaved towels feed automatically from enamelled dispensing cabinets and are available in two sizes. Cabinets are supplied on loan. Cresco roll towels, 9 in., 15 in. or 18 in. wide, are manufactured in lengths suitable for the specific purpose, withdrawn from enamelled cabinets supplied free on loan. Also, Cresco 'Dryall' towelling for use as tea and dish cloths and swabs. Cresco also manufacture waste receptacles.
Universal Towel Co., Ltd. 166 Anerley Road, London, S.E.20	'Supa-matic' Mark 4 cabinet for roll towel, with automatic stop pre-measures 8 in. of towel. Cabinet 14 in. ×14¾ in. × 11 in. Unit constructed of zinc-coated sheet steel finished in white enamel. The cabinet will take towelling of different qualities. The capacity is 45 yd. Price ex works is £9 18s. 6d. 'Supa-matic' Junior similar but with 22½ yd. capacity. Price ex works £7 15s. 0d.
Southern Automatic Towel Co., Ltd., 46, Quebec Street, Brighton 7, Sussex	'Towel King' cabinets (Model 4LM), dimensions 1 ft. 2 in. ×1 ft. 5½ in. ×8¾ in. 45 yd. and 50 yd. capacity and finished enamelled white. One model (3LM) has a mirror.
Kimberly Clark Ltd., Larkfield, Maidstone, Kent	1. Lightweight plastic cabinet dispenser for 'Hi-Dri' paper towels. Cabinet finished in cream or grey and holds 250 individual towels. 2. Unit measuring 9¾ in. long 4½ in. wide and 5¾ in. high with open front, holding 175 towels. 3. 'Kleenex' dressing towel, a 10 in.-wide towel for hand drying. Unit made of white plastic and holds a roll of 100 10 in. ×15 in. sheets, perforated for tearing. 4. Receptacles for disposal of paper towels.
Bowater-Scott Corporation Ltd., Industrial Division, Bowater House, Knightsbridge, London, S.W.1	1. Recessed Bowater-Scott towel cabinet constructed in stainless steel and is available with stainless steel waste receptacle. Towel compartment is designed to dispense individual folded towels. Total unit fits in recess 13 in. wide, 72 in. high and 7½ in. deep. 2. Cabinet (Code No. 991113) to dispense individual towel, constructed of non-rust steel with white stove enamel finish. Capacity 300 towels. 3. Cabinet (Code No.'s 991111 and 991112) for dispensing 9 in. and 18 in. wide paper towel. Constructed of steel with white stove enamel finish. 4. Towel disposal units including white stove enamelled steel bin 24 in. ×18 in.

THE INDUSTRY

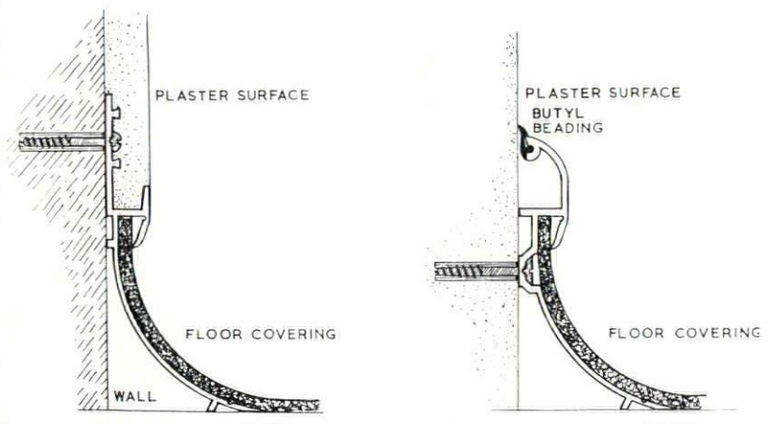
Aluminium cove skirting

An aluminium cove skirting system has been developed by the Building Products Division of James Booth Aluminium Ltd. This enables a floor covering to be laid and to curve upwards at the wall-to-floor junction, terminating above floor level. Ease of cleaning obtained in this way is a factor of great importance in buildings where a high standard of cleanliness and hygiene must be maintained.

This extrusion known as the Hygenacove is obtainable in two different types both based on a 2 in. radius cove. The first type is designed for use in new buildings or for flush mounting with a plaster finish. The second is intended for use in finished building or where no plaster is used. Both employ a tapered edge at the junction with the floor and a recessed channel to accept the top edge of the floor finish at the wall joint. The material is held by crimping the outer edge of this channel.

Type II carries a butyl rubber beading along its top edge which forms a seal between extrusion and wall surface when the cove is fixed in position.

In both types the metal is roughly 0.08 in. thick and weighs slightly over ½ lb. per foot. Standard stock lengths are 16 ft. and cost is 2s. 2½d. per foot for Type I and 2s. per foot for Type II.
James Booth Aluminium Ltd., Kitts Green, Birmingham 33.



1 2

Hygenacove skirting: 1, for flush mounting with a plaster finish; 2, with a butyl rubber beading.

Precast casing units

One of the recurrent problems on any steel framed building is the provision of shuttering for casing. Carpenters always seem to be at a premium. Work is slow. Everything stands still for the curing period and then more delays while the shuttering is struck.

An attempt to rationalize this process has been made by Centron Casings Limited with the production of precast casing units. These are lightweight concrete precast sections designed to give minimum 2 in. cover to structural steelwork as normally required for fire protection under the byelaws. The units clipped to the steel member by steel hook devices act as permanent shuttering for the concrete filling. Because of their light weight the units are easily handled, a 3 ft. by 10 in. unit weighing roughly 24 lb.

Sizes are in lengths of 3 ft. mainly, with 2 ft. lengths and specials available to make up any required overall dimension. In 1 are shown typical bottom and side units and 2 shows how these are fixed to the steel member before pouring. The stirrups on to which the side units are hooked are inserted through holes in the joist web which should, of course, preferably be pre-drilled.

The recommended concrete filling is standard 1 : 2 : 4 mix with the

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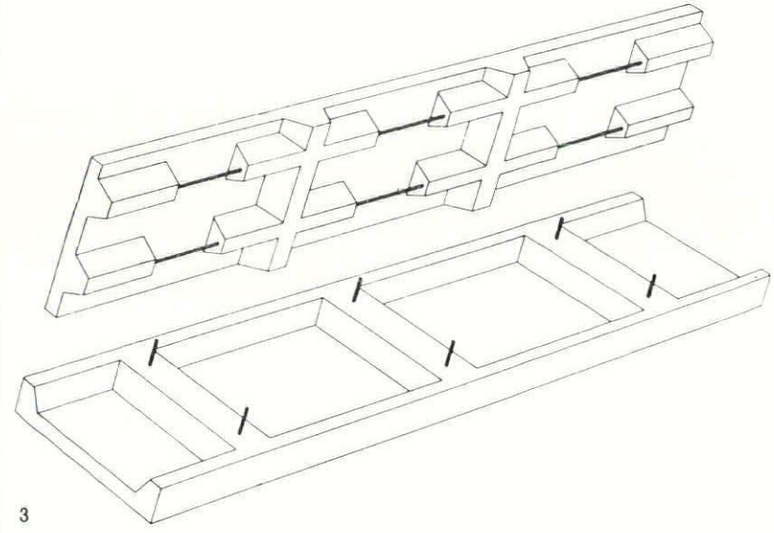

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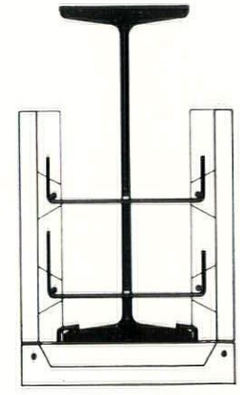

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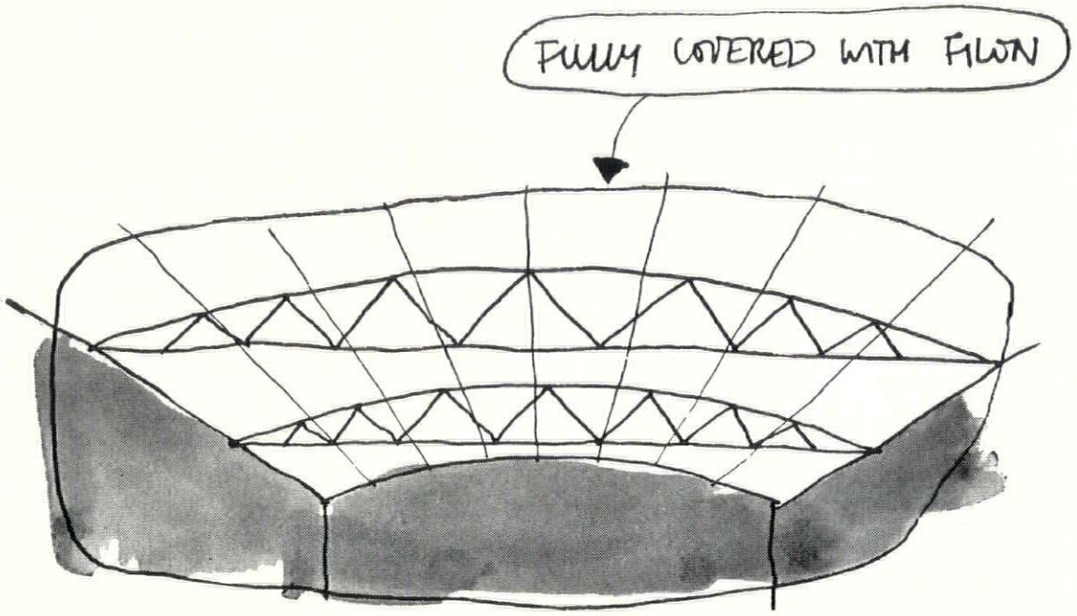
Centron precast casing units: 3, typical bottom and side units; 4, cross section of completed casing prior to filling.



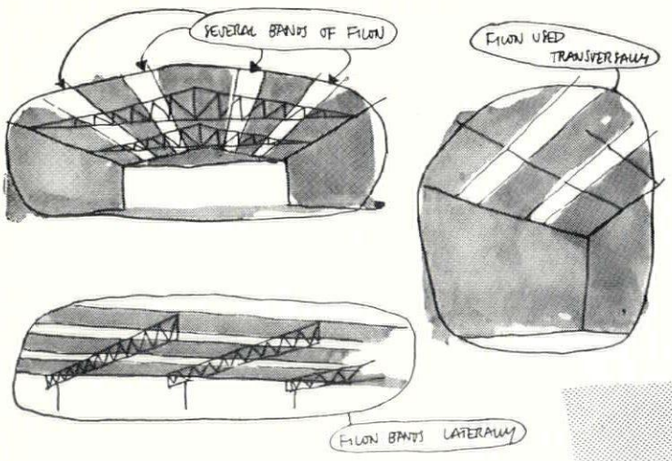
Pages from an Architect's Notebook

3. Daylight from Above

FILON translucent sheets, which pass up to 85% of light, make excellent rooflights for the many industrial and institutional buildings requiring a good standard of lighting. Available in flat sheet or standard profiles to match corrugated iron, aluminium or asbestos; FILON can also be used by itself, with the lightest of supports, to form the entire roof. FILON will not break under heavy impact, vibration or sudden temperature change, and requires practically no maintenance.

FILON is approved by the War Office, Air Ministry, L.C.C., J.F.R.O.

S.E. Grade (Self Extinguishing) classified EXT.S.AA. under B.S. 476, Part 3, 1958, is also available.



Continuous lengths

Filon polyester resin/glass fibre sheets are made by a continuous process and can be supplied in any length, subject only to handling and transport facilities. Thickness, translucency and strength are uniform throughout.

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Barbour Index File No. 308
Gorco Bureau File No. 16/8

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coarse aggregate not exceeding ⅜ in.

No claim is made that these units in any way increase the structural strength of the cased steel. The advantages are purely on the practical level. Fixing and filling of the casing can proceed as soon as the steel is erected and floor construction can follow almost immediately. Since the units can be quickly fixed, for full advantage to be gained from the possible time saving, a closely aligned programme of steel and casing unit delivery must be made.

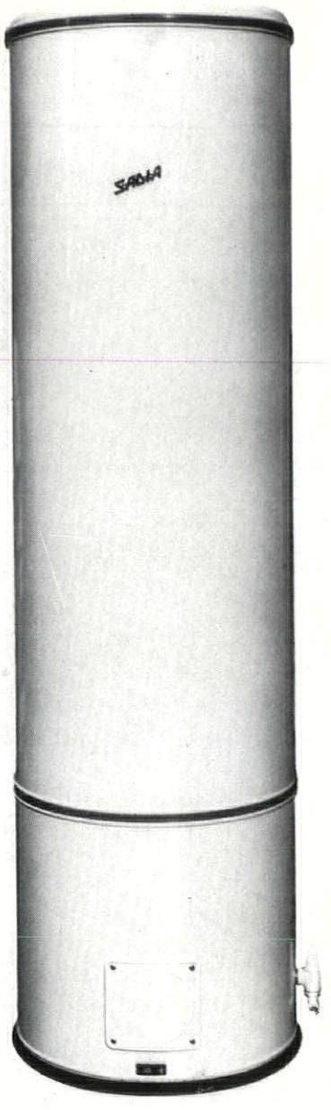
Centron Casings Limited, Headway Construction Ltd., Gateway House, Welwyn Garden City, Hertfordshire.

Off peak water heating

The principle of using off peak electric power is basically to store the energy in some usable form when the supply is available for use later when direct supply would be more expensive. This principle is employed in heating equipment by converting the power to heat and storing in suitable media. In the case of underfloor heating the storage material is the fabric of the floor itself.

The generating and supply sides of the electricity supply industry have been promoting the idea of off peak loading for some time now. The advantage is obvious since it enables equipment to operate for the supply of power at an economic level throughout the 24 hours and reduces the problems associated with shut down and restart.

An obvious use of off peak power is in the storage of hot water but problems arise in containing the heat, reducing losses when the power is off and in ascertaining the economic quantity of water to be heated to cater for all possible requirements in the draw off period. These were the problems which Sadia set out to solve. The first problem is obviously one of insulation and this was relatively easy. They have a great deal of experience in the field since insulation problems have little bearing on whether the power is applied off peak or in normal peak load hours.



5

The second question, that of quantity, is much more difficult. They claim, however, that the new Sadia N-50 has solved this problem in the domestic field. It is a low pressure heater of 50 gallons capacity with a loading of 2½ kW in two elements which are mounted horizontally at the base of the water container. One reason quoted for this positioning is the fact that by doing so surface temperature of the elements is kept low and hence scale formation is minimized.

Research into hot water consumption by the average family showed that households using electricity for heating used an average of about 180 gallons per week, while those with solid fuel boilers running more or less continuously used between 200 and 250 gallons per week. One explanation offered for this difference was that, with electricity, people were more conscious of the direct relationship between fuel used and hot water consumed and hence tended to be more discriminating in use. On this basis, however, it was felt safe to assume that 180 gallons per week was a good working average on which to work.

The problem does not resolve itself completely on this basis. Hot water is not used at the same rate every day so some means must be found for calculating the maximum demand in any one day. For this it was assumed that the traditional washday would provide this figure; but, before proceeding, calculations of the numerous possible draw off patterns were made and tested. From these, three possibilities emerged as maximum demand patterns. A minimum capacity of 45 gallons at a useful temperature, i.e. over 135 deg. F. was found to be necessary. Obviously when more than 45 gallons are drawn from the nominal 50 mixing with incoming cold water will completely upset the stratification and cause a sharp drop in delivery temperature.

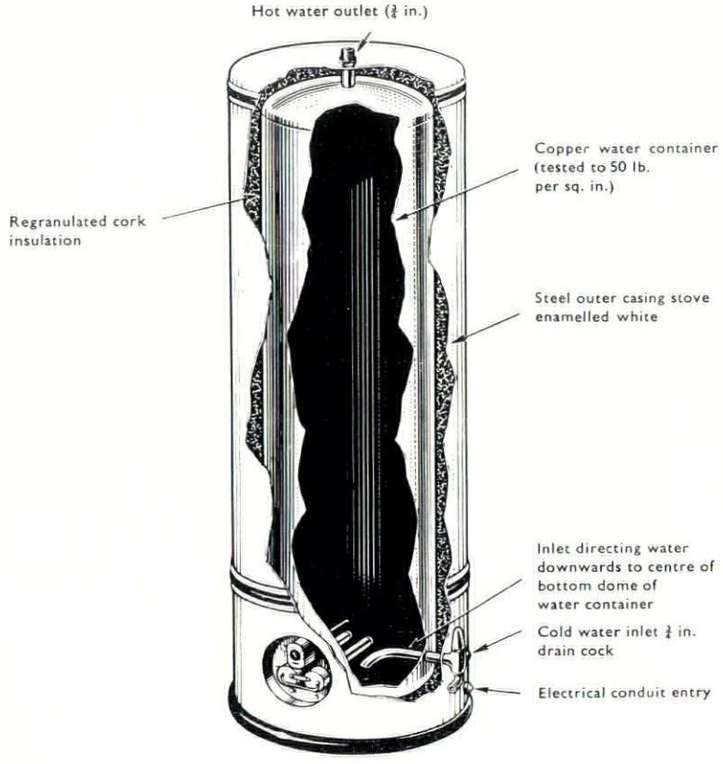
Most electric water heaters are designed to provide some 80 per cent of the nominal capacity at useful temperature, but this heater has been fashioned to raise this figure to 90 per cent to give the capacity to meet the maximum demand draw off patterns.

In estimating the running cost of this heat an allowance of 1s. per week must be made for time switch rental. Off peak rates are variable but, taking an average unit price of ¾d. and allowing for radiation losses and an average consumption of 200 gallons per week, it is estimated that the total cost will be in the region of 7s. per week. Even assuming the use of the total capacity of 45 gallons each day of the week, running cost should be a maximum of 9s. 6d.

Sadia Water Heaters Limited, Sadia Works, Rowdell Road, Northolt, Greenford, Middlesex.

5, the Sadia N-50 water heater. 6, cut-away drawing showing interior.

6



CONTRACTORS etc

Office Building, South-East London. *Architect:* Ernö Goldfinger. *General contractor:* Tersons Ltd. *Sub-contractors: Felt roofing:* Amalgamated Asphalte Co. *Granite facing:* Anselm Odling & Co. *Oak Flooring:* S Bennett & Sons (Flooring) Ltd *Landscape:* J. Burley & Sons Ltd. *Sewage pumps:* Burn Brothers Ltd. *Piling:* The Cementation Co. *Glazing:* James Clark & Eaton. *Catering equipment:* Gardiner & Gulland Ltd. *Shopfitting:* Garmack & Co. *Heating:* G. N. Haden & Sons Ltd. *Steel doors:* Haskel Robertson Ltd. *Doors and shutters:* Haywards Ltd. *Illuminated signs:* Knight Electrics (Neon) Ltd. *Lino tile flooring:* Lino Tile Co. *Steel sections:* Lindsays Paddington Ironworks Ltd. *Skirting:* Marley Tile Co. *Rolling shutters:* Mather & Platt Ltd. *Ceilings:* May Acoustics Ltd. *Asphalte tanking:* Neuchatel Asphalte (Contractors) Ltd. *Lifts:* Otis Elevator Co., Penrose Lifts Ltd. *Pumps:* G. C. Pillinger & Co. *Collapsible gates:* Potter Rax Ltd. *Paramount partitions:* Roof and Lining Construction Ltd. *Waterproof rendering:* Sealers (London) Ltd. *Document conveyor:* T. & T. Works Ltd. *Lift panelling:* William Verry Ltd. *Metalwork:* The Wessex Guild Ltd. *Metal windows, doorframes, blind boxes and permavents:* Williams & Williams Ltd., *Safes:* Chatwood-Milner Ltd. Chubb & Son. *Nameplates:* Cobb & Co. (Engravers) Ltd. *Light fittings:* General Electric Co. *Precast concrete:* Girlings Ferro Concrete Co. *Aluminium gargoyles:* High Duty Alloys Ltd. *W.c. partitions:* William Mallinson & Sons Ltd. *Fire hydrants:* Minamax Ltd. *Door mats:* National Institute for the Blind. *Woodwork:* John Sadd & Sons Ltd. *Precast concreting:* Stent Precast Concrete Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd.

Television Centre, Dublin. *Architects:* Michael Scott & Associates. *General contractor:* E. Stone & Sons Ltd.

Chapel in Yorkshire. *Architect:* Derek Walker. *General contractor:* Pickerings Shopfitters Ltd. *Sub-contractors: Builders:* George Meek. *Flooring:* J. A. Hewetsons. *Light fittings:* Beta (Shipley), Ltd. *Decorative metal:* A. H. Guise. *Tyrolean plaster:* G. T. Earls Ltd.

Air Line Offices, Regent Street. *Architects:* Cruickshank & Seward, in association with Oscar Farmer. *General contractors:* Harris & Sheldon Ltd. *Sub-contractors: Heating and ventilating engineers:* Young, Austen & Young Ltd. *Furniture:* Harris & Sheldon Ltd., Andrew Thompson Ltd. *Illuminated fascia sign:* Hawesigns Ltd.

Architects' Own House, Tisbury, Wiltshire. *Architects:* Alison and Peter Smithson. *General contractor:* R. Butcher & Son.

Ape House, Dudley Zoo, Worcestershire. *Architects:* Philip Skelcher & Partners. *General contractor:* Alfred Wright & Sons (Blackheath) Ltd. *Sub-contractors: Felt roof covering:* General Asphalte Co. *Overhead door closers:* Wm. Newman & Son Ltd. *Ironmongery:* N. F. Ramsay & Co. *Notice boards:* Mattias Watts & Co. *Facing bricks:* J. Jackson & Sons (Bricks) Ltd. *Special wall coverings:* Prodorite Ltd. *Thermostats:* The Pullin Group Ltd. *Underfloor heating cable:* Volex Electrical Products Ltd.

Multi-storey Factory, Brighton. *Architect:* P. Billington (Chief Architect, Borough Surveyor's Department, Brighton Corporation). *General contractor:* Token Construction Ltd. *Sub-contractors: Piling:* Wests Piling & Construction Co. *Asphalte tanking and roofing:* Amasco Ltd. *Curtain walling:* Williams & Williams Ltd. *Lifts:* Otis Elevator Co. *Precast panels:* Modular Concrete Co.

Multalum is the new system for seating in great comfort to preside, decide, transcribe or just wait. Elegant variations on a theme in aluminium by George Kasparian in Los Angeles for public rooms, and reception rooms, offices and conference rooms. The answer to a planner's dream. Multalum is a modular structural system from which this handsome seat can multiply into and and and or permute with interchangeable tables (useful for using corners) and available without arms and and and and where inches are precious. Back-to-back in rows as well. Multalum seats with high backs or low backs permute with a range of swivel bases and , with matching chairs for visitors of course. To complete the range Multalum includes a blending group of fully upholstered pieces:-



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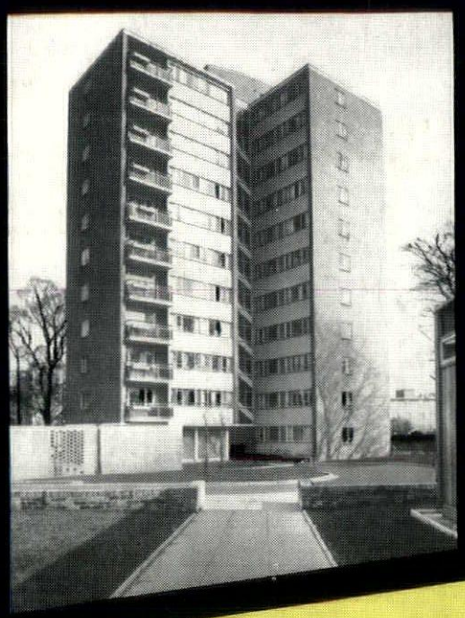
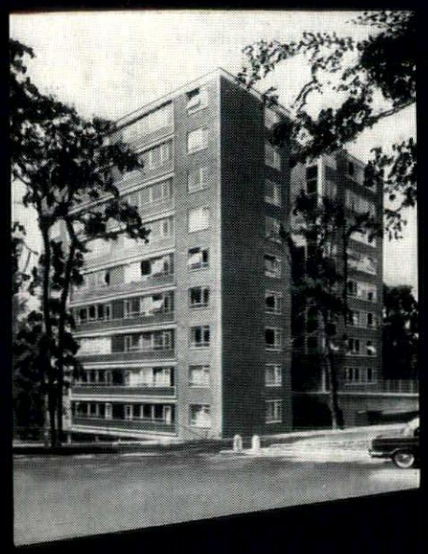
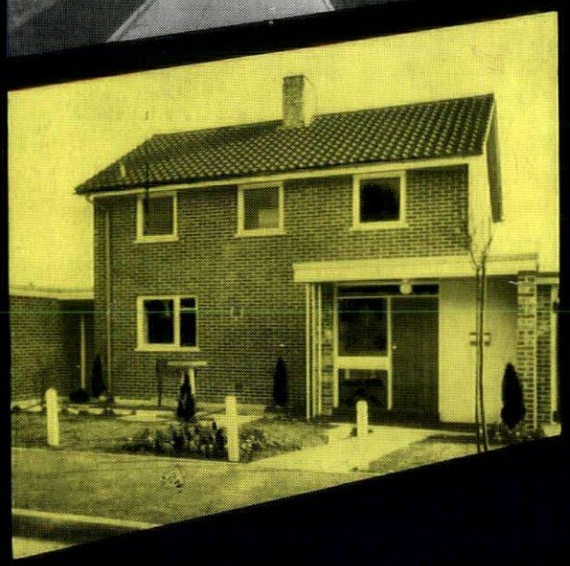
Editorial illustrations engraved by The Engravers Guild Ltd., Windsor House, 23/26, Cursitor Street, London, E.C.4.
Entered in the New York Post Office as Second Class Matter







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WATES BUILT HOMES LTD. installed Gas warm air heating and clothes drying in nearly 300 flats in Dulwich, designed by Austin Vernon & Partners.

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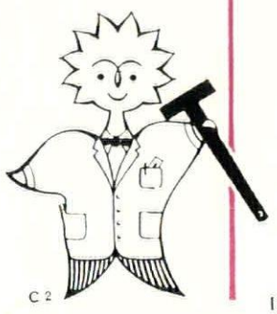
Gas—THE PERFECT FUEL



C 2

BARBOUR INDEX FILE NO. 360

Illustrations

Top Left
L.C.C. FLATS, ACKROYDEN ESTATE

Top Right
WATES FLATS, DULWICH

Bottom
PRIZE WINNING HOUSE, WINDSOR

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ARCHITECTURAL REVIEW VOLUME OXXXIII NUMBER 793 MARCH 1963 FIVE SHILLINGS


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The New Standard Aluminium

SOUND-PROOF WINDOW

by SOUND CONTROL

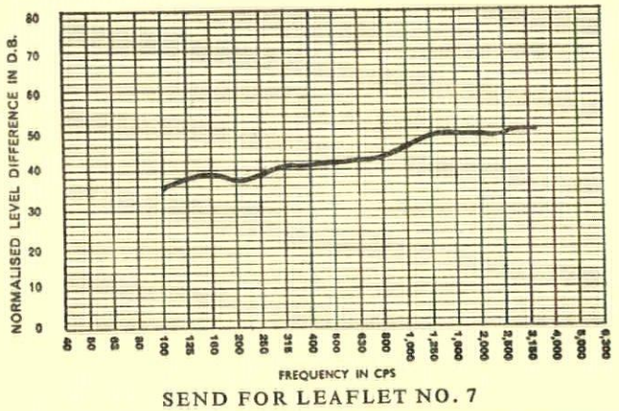
The external walls of the average building normally offer excellent protection to the occupants against the penetration of extraneous noise, but much of this advantage can be lost again by the inefficiency of the ordinary window as a barrier to sound. Acoustically designed windows by SOUND CONTROL will provide a sound reduction index far superior to that of any ordinary window and approaching much more closely to that of the external walls themselves. The overall improvement in sound insulation thus obtained should ensure the occupants complete freedom from disturbance by outdoor noise.

★ **SOUND-PROOF WINDOWS by SOUND CONTROL are of standard design and are constructed of extruded aluminium throughout. All the usual finishes for aluminium are available.**

★ **They are supplied as single-glazed units for interior installation to existing windows, or as complete double-glazed units for erection in new buildings.**

★ **They are manufactured to any size, area of glazing being the only limiting factor.**

The graph below shows the normalised level difference achieved by an isolated double-glazed sound-resistant aluminium window of standard construction, and indicates the overall degree of sound insulation which can be obtained when a window size 61 ins × 50 ins is installed in the structural wall of a normally furnished room 20 ft × 17 ft 9 ins × 10 ft high. This spectrum is based on sound reduction index measurements carried out by THE ACOUSTICAL INVESTIGATION AND RESEARCH ORGANISATION LIMITED



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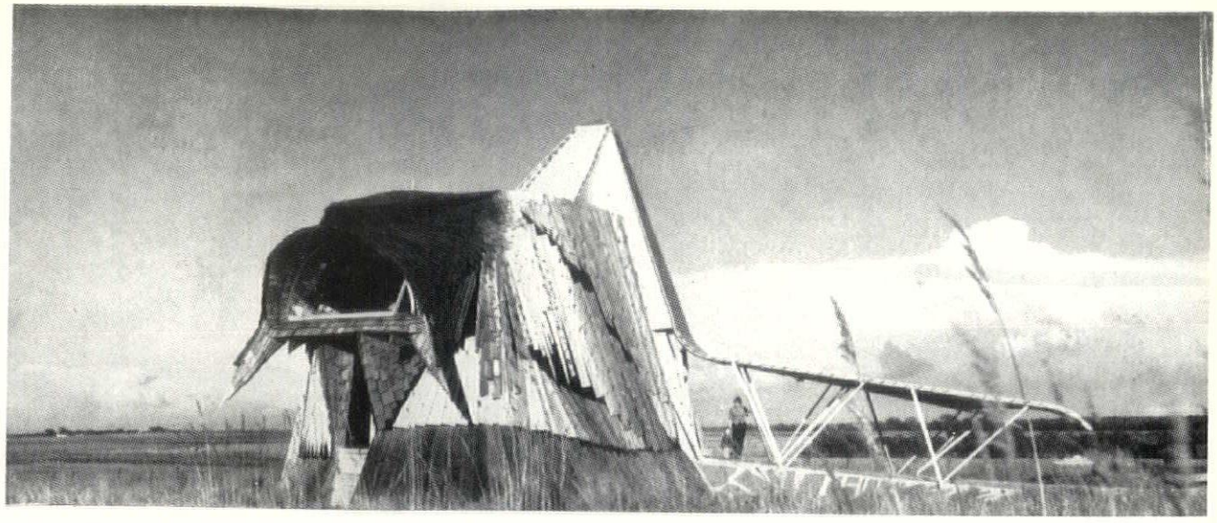
GOFF/SHINGLE

aspects of Goff at the present moment is to speculate about his connection with what appears to be a new, free-form, shingle-style which seems to be emerging in the States. In one case, Goff's parentage can be taken pretty well for granted—Herb Green's wounded buffalo, 13, of a house on the prairie (its fame has already spread as far as Germany—see *Bauwelt*, 51/52, 1962) is located at Norman, Oklahoma, in the very heart of the Goff-belt. In its obsessive use of shingles outside and in, 14, it seems to go beyond



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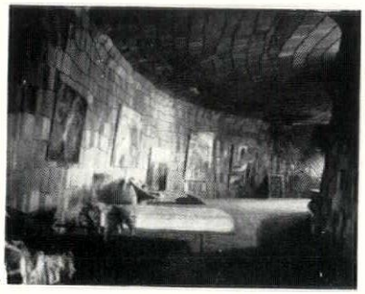

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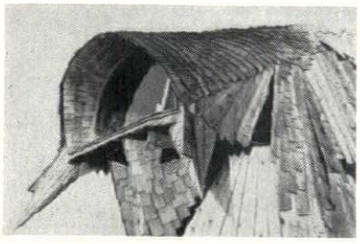
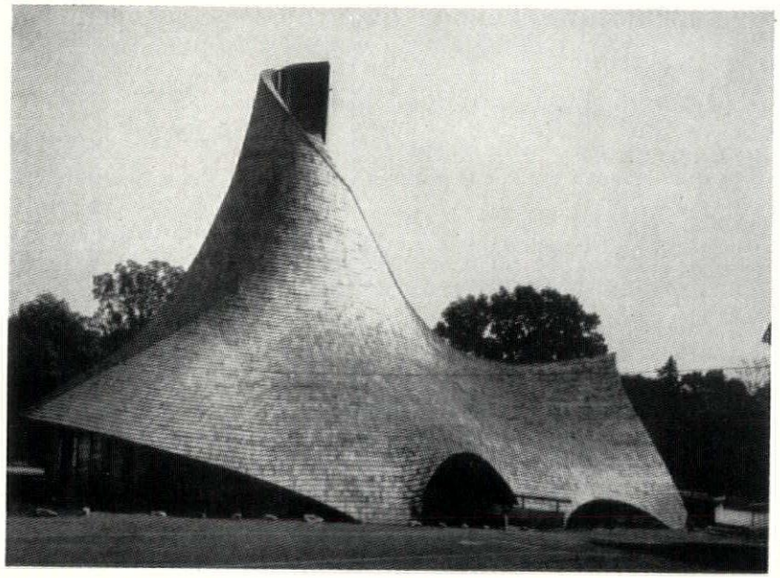
anything that Goff has done to date, and the detailing has an improvised collagist quality, 15, that tempts one



15

to equate it with the lashed-up pictures of Rauschenberg and the New American Dreamers.

Further from this much-sung-about Territory, neo-Shingulism becomes a rather more formal affair. In Rowayton, Conn., a wild-looking twist of shingled surface by Joseph Salerno, 16, covers a rather formal and symmetrical church plan, and at Westhampton Beach, on Long Island, Whittlesey and Conklin have shingled over forms, 17, that might have made an equally satisfactory beach club had they been executed in reinforced concrete instead of elegantly braced woodwork. Nevertheless, be the shapes formal or wild, the shingle's stature as a weatherproofing for surfaces, twist how they will, is as reliable as its place in American grass-roots mythology, and the combination of such an elementary material with an extreme geometry has long been due for extension beyond Buckminster Fuller's bamboo or lathing domes.



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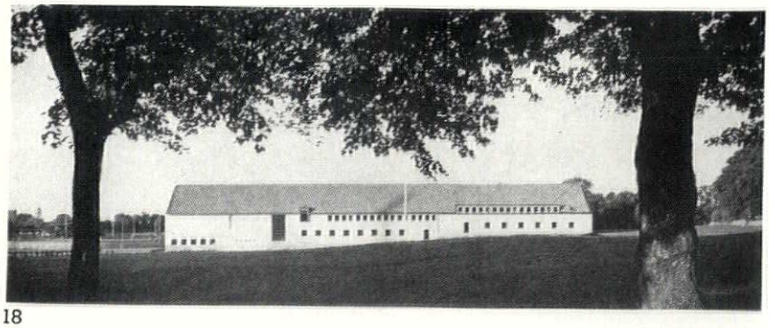

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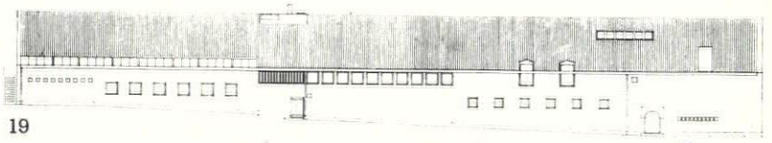

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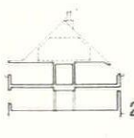

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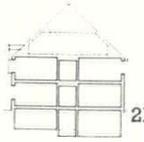

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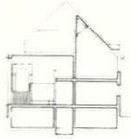

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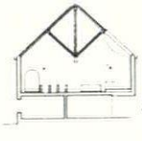
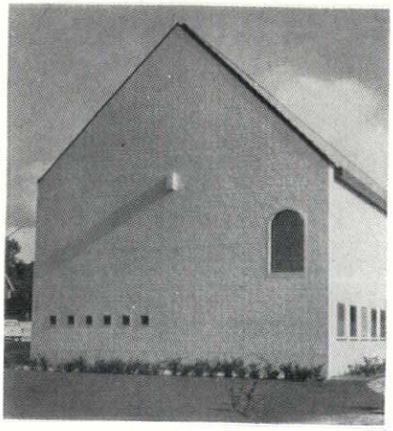


23

TINGSHUS

Law Courts on Visby

A building of 1962 that deserves to be recorded before it is forgotten and has to be rescued from oblivion fifty years hence by historians, is the Tingshus (effectively, the law Courts) at Visby, 18, by Lennart Lungstrom and the architectural group known fashionably and formally as 'a4.' The form and detailing of the building raise again all those embarrassing old questions about the morality of Swedish Neo-Empiricism, but, as Jan Gezelius implies in his commentary to the finished work in *Arkitektur* 10, 1962, the client was very determined to use local materials and local island craftsmen, and under these circumstances a natural justification for perpetuating local forms arises—though it is interesting to speculate on what a determined innovator could have done with traditional brick structure and broached limestone dressings. In any case, what has been done exhibits exemplary reticence and style, 24, and an almost Alpine ingenuity in exploiting the possibilities of a falling site, 19, and the spaces under the long roof to vary the section, 20, 21, 22 and 23, and thus provide widely different spaces, 25 and 26,



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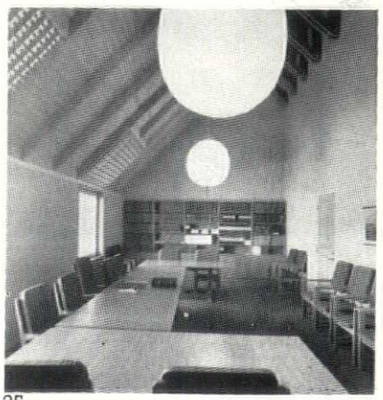

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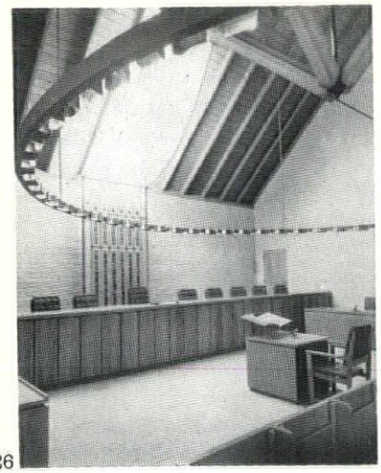


26

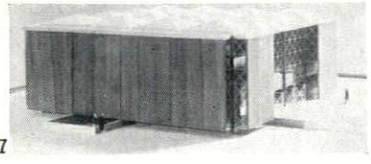
Tingshus

within an extremely regular building envelope. Not a building to set the Baltic on fire, but a timely reminder of the unexploited possibilities remaining in traditional materials and methods.

VENEZUELAN PAVILION

Disputed Competition

The world seems to be passing through one of those phases when every major architectural competition threatens to turn into a moral disaster. One of the most interesting recent outbursts of recrimination has been stirred by the competition for a Venezuelan pavilion at the New York World's Fair 1964-5. At face value, an innocent enough proposition—an uninteresting site, a decent set of regulations, a respectable jury of assessors, and a sensible winning scheme, 27 and 28, by Edmundo



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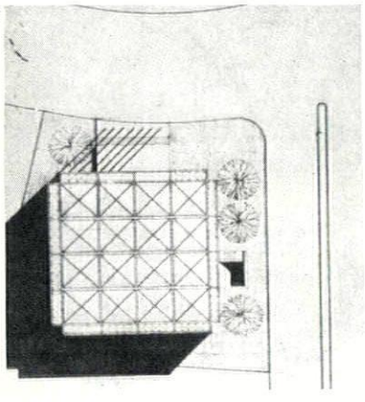
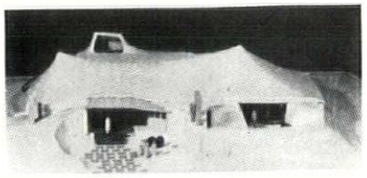
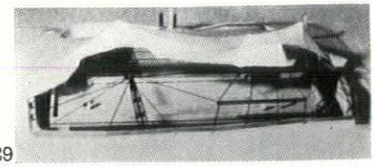


28

Diquez and Oscar Gonzales. There seems to have been no quarrel with the winning design, which is admired for its simplicity, the way it exploits the possibilities of demountability (required in the programme) and for a certain reticent neutrality—in contrast to some other entries, such as Mario Bemergui's variation on a theme of Frei Otto, 29, or the jungle stockade, 30, by Luis Ramirez, Guido Guazzo and Carlos Brando.





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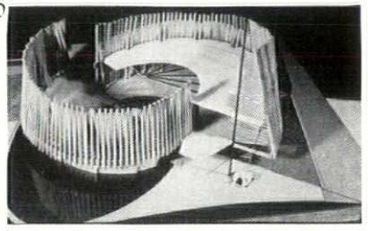
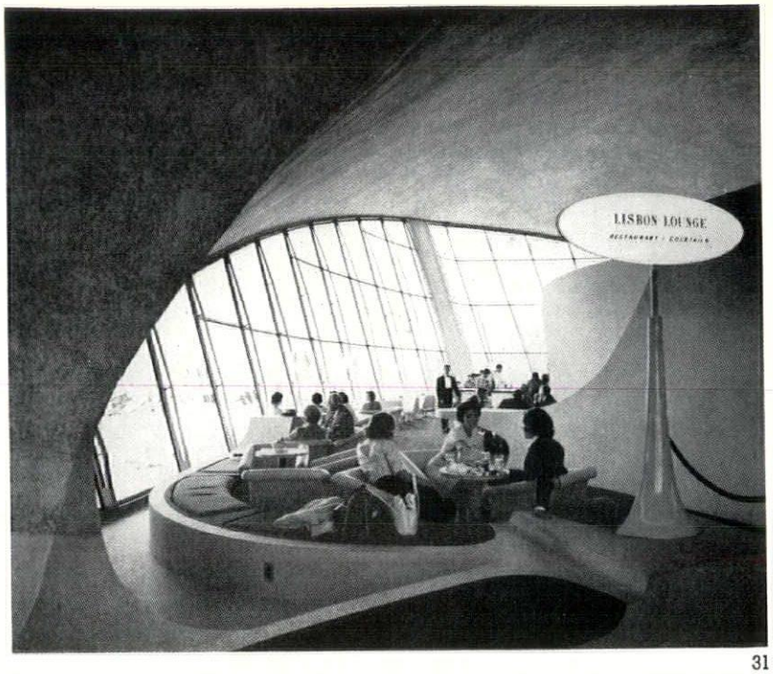


30

Where protest was lodged, and in firm and categorical terms, was against the regulations—decent enough at first sight, but inadequate, perhaps, when considered further. In issue 7, 1962, of *Revista S V A*, Juan Pedro Posani subjects the whole competition to some close scrutiny. Was it the time, or the occasion, for such a building, when Venezuela was racked by internal crisis and economic difficulties? Did tourism, commerce or even prestige require the construction of an expensive pavilion to compete with wealthier nations 'with bigger interests to defend?' (a nice point, but without the smaller nations a fair of this sort is surely apt to degenerate into a Russo-American slogging match). Above all, there was missing from the regulations any concept of the image of Venezuela that was to be projected, so that competitors were deprived of guidance at the point where they needed it most.

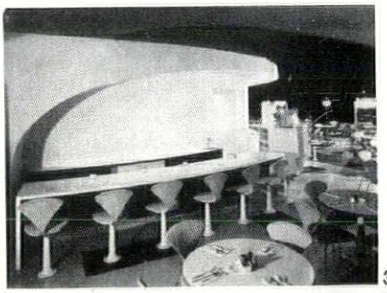
This point is particularly well taken. What the regulations actually offered was an old-fashioned programme of accommodation—a room for this, a room for that, an entrance hall, etc.—in which an exhibition of anything from canned pork products to action painting could have taken place. One sees the sense of this if the building is to be recoverable and re-usable elsewhere (but was this, in fact, how the Crystal Palace and the Spanish exhibit at Brussels came to be designed?) This is Professor Posani's most telling point—in all the greatest exhibition pavilions, notably Mies's at Barcelona and Aalto's at the previous New York Fair, the structure is inseparable from the image to be projected; there was no nonsense at either about creating a neutral box in which exhibits, unspecified at the time of commissioning the design, could later be placed. Each was a total unity conceived all of a piece by a single mind, in which form and content were indivisible. The regulations for the Venezuelan pavilion gave no guidance about the theme and thus made such an integration impossible. One has the impression that the Professor thinks that Venezuela was lucky to get a good design.



31

INSIDE THE BIRD

The interiors of Saarinen's TWA terminal at Idlewild have already been the subject of much comment, *pro* and *contra* (World, November 1962) but only in connection with Saarinen himself. Now, *Interiors* (also November 1962) has published three interiors that are not by Saarinen but are inside the concrete bird. These are the three restaurants by Raymond Loewy—the Lisbon Lounge, 31, the Paris cafe, 32, and the London Club, 33. Curiously enough it is not the shapes of Saarinen's interior space that appear to have been Loewy's worst problem—it is strong enough to stand aloof from anything as small in relative scale as furniture and interior decoration—but the contrast between the inward and outward views in each restaurant space: inwardly, a cluttered and busy scene; outwardly, in the same lounge, 34, a wild change of scale and forms with the enormous glazing canting out over the jet-strewn apron. One other problem that Loewy seems not to have licked—the design and siting of the TV information-screens, which are apt to be left on ledges like afterthoughts.



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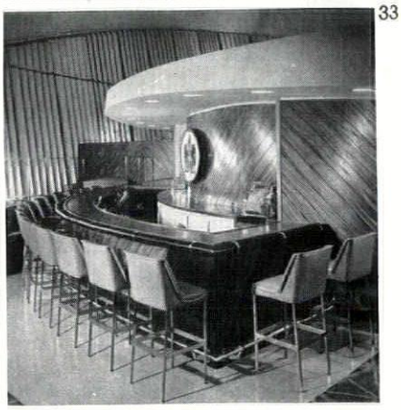

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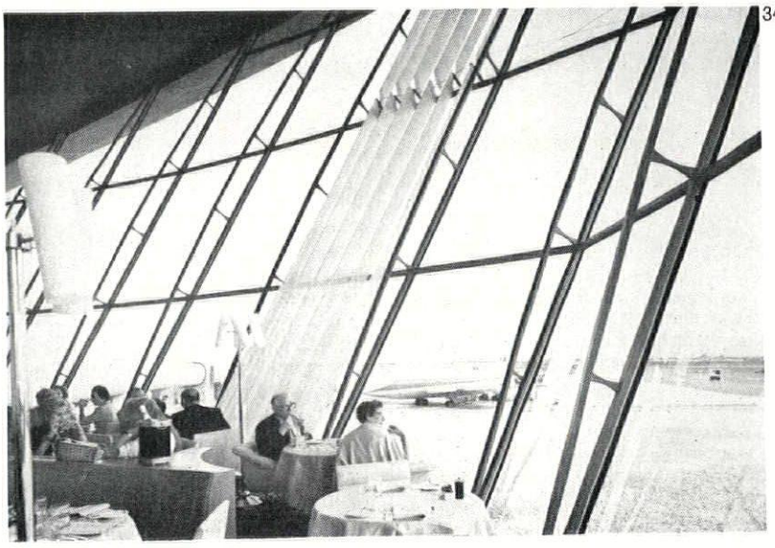


34

views and reviews

MARGINALIA

ADVERTISING CODE

Lord Luke's consultative committee on the Code of Standards for Advertising on Business Premises is the Advertising Association's instrument for setting its own house in order voluntarily and thus forestalling restrictive town-planning legislation on the display of signs, etc., on shops and similar premises. Its working committee of advertisers has just made its report on the first two years of the scheme's operation and, in particular, the 1961–62 campaign to reduce clutter in rural areas and small towns (under 50,000 population) by the removal and re-siting of signs.

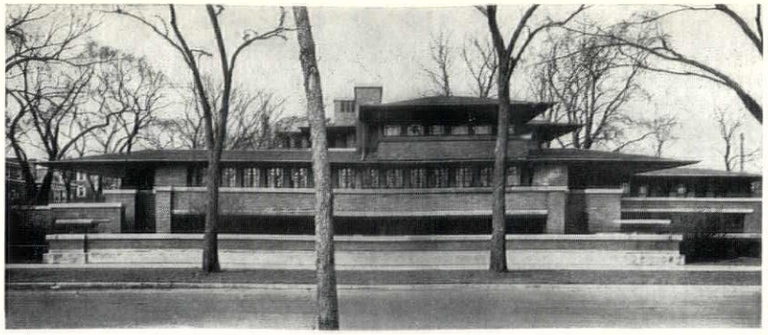
The amount of money expended in removing over 30,000 signs and the re-siting of 5,500 others is impressive and, even if the results are not always as visually gratifying as one might wish, it must be recalled that the committee has to work by persuasion and suggestion, without the force of law, and has therefore suffered on occasions from what it describes as the 'intransigeance of the shopkeeper concerned.' Nevertheless, the campaign must be a matter for congratulation and, indeed, gratitude on the part of the general public, who could help to make it more effective by ensuring that particularly bad cases of ill-advised siting and clutter are brought to the committee's notice, either through their town-planning authorities or direct to the Advertisers' Working Committee at 45 Hertford Street, London, W.1.

The next phase of operations will be in larger towns and, although glaring examples will probably be more readily recognized there than in small and isolated communities, the active co-operation of Outrage-Spotters will be none the less helpful.

CONSERVATION CONTINUED

The battle for the preservation of key monuments of America's architectural past continues unevenly—and the unevenness is accentuated by the fact that some of these monuments belong not only to the history of US architecture, but to that of the world.

Thus the disappearance of nos. 66 to 88 Worth Street, New York, is an architectural loss primarily for New Yorkers, though these classic (and literally classical) cast-iron fronts, now just under a century old, had been duly noted in the expert literature and discussed twice in the REVIEW—the last time, illustrated, in Ada Louise Huxtable's article, 'Preservation in New York,' of August 1962. The loss is particularly New York's because these iron fronts formed a substantial group, amounting to almost a block on the south side of Worth, with offshoot on Thomas Street, so that what is being removed is not only architecture of quality, but also a sizeable piece of the New York scene. The site will be occupied, one need hardly add, by a parking lot.



1

From Chicago, more encouraging news; the Robie House, 1, a masterpiece of world standing and probably Frank Lloyd Wright's most influential building, which has survived to date through the enlightened self-interest of William Zeckendorff, will have been transferred to the University of Chicago by the time this note appears in print. However, the University does not dispose of the funds available to Mr. Zeckendorff's real estate company, Webb and Knapp, and a Robie House Committee has therefore been formed to raise a cool quarter of a million dollars for restoration, making good and generally bringing the house up to the standard of presentation expected of a major monument. The appeal is internationally based, and enquiries should be addressed to Ira J. Bach, Robie House Restoration Fund of the University of Chicago, Room 1006, City Hall, Chicago 2, Illinois.

TWENTIETH-CENTURY FURNITURE

Mr. W. H. Russell has pointed out that the furniture made by Gordon Russell for the Paris Exhibition of 1937 and the Sudeley side-boards, illustrated in the December AR, were designed by him and not by R. D. Russell.

CORRESPONDENCE

MACKINTOSH AND THOMSON

To the Editors.

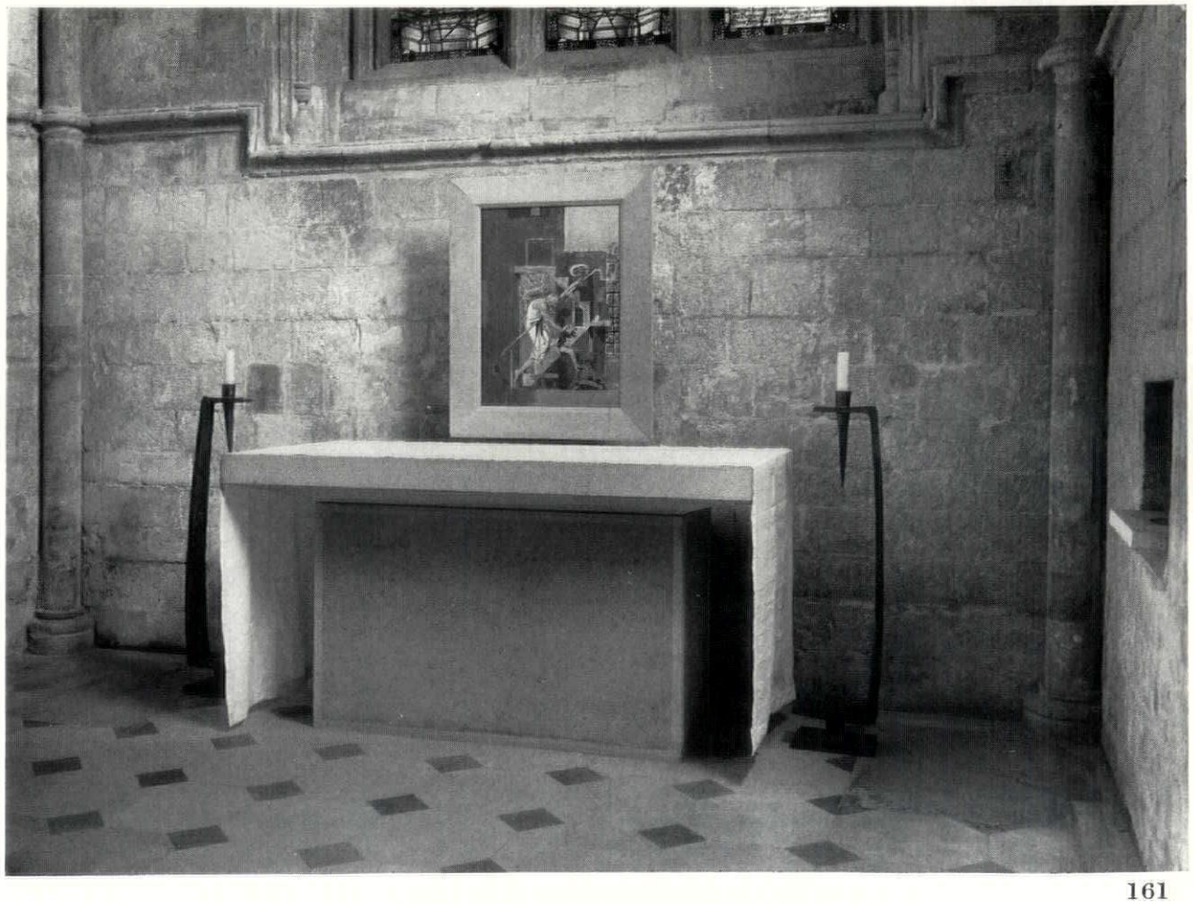
SIRS,—The buildings of Charles Rennie Mackintosh and Alexander (Greek) Thomson could only have happened in Glasgow, so it is odd that this should be the only place where their international importance is not recognized. We are in danger of losing an important work by each of these idiosyncratic architects through official drift and indecision.

Thomson's Caledonia Road (formerly United Presbyterian) church, 3, and flanking tenements in the same style (built 1855-7) still stand on their flatiron pattern site just apart from the wholesale reconstruction in the Gorbals. On November 11 the congregation met within the church for their last service; now they have dispersed. The fabric, which is in poor condition following thefts of lead and long neglect of the stone-work, belongs to the Church of Scotland who seem unlikely to take effective action (will the tenants of the new Gorbals-



3

The refurnishing of the Chapel of St. Mary Magdalene at Chichester Cathedral, 2, is an advance not only in cathedral furnishing but also in the career of enlightened ecclesiastical patronage of Dean Hussey. As Canon Hussey he was responsible for the installation of the Virgin and Child *by Henry Moore, and Graham Sutherland's* Crucifixion *at St. Matthew's, Northampton. Now at Chichester he has had the architect Robert Potter busy on the re-erection of the pulpitum which was moved in the last century, and on the chapel above, which has been stripped of second-rate Victorian furnishings and given, instead, a new altar, designed by the architect,* a Noli me tangere *by Graham Sutherland, and rails and candlesticks, in cast aluminium, by Geoffrey Clarke.*



2

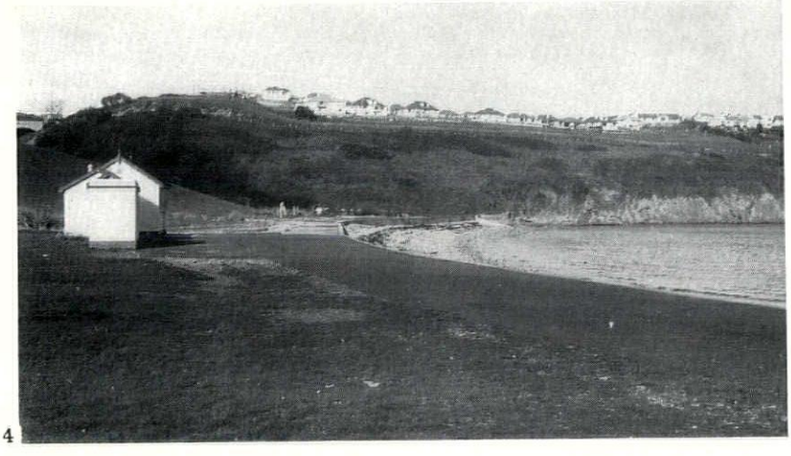
Hutchesontown development be entirely Godless?). Glasgow Corporation, who are negotiating keenly for the preservation of Thomson's other great church—a very different building on a different site crowning the hump of St. Vincent Street—are well disposed towards Caledonia Road church, but naturally wish a use to be found for it. It is up to them as planning authority and as developers of the neighbouring area, to take the initiative in this.

The Mackintosh work now in the balance is the famous Ingram Street tearoom. A year ago, the National Trust for Scotland commissioned from me a report on the present state of this architect's work in Glasgow. It does not make very cheerful reading. The School of Art is not much changed, nor the early *Glasgow Herald* building in which Mackintosh had a part. The Queen's Cross Church has been heavily altered inside. Of the two schools, that at Scotland Street is probably to be transplanted by the Corporation and the University have similar plans for the interior of Mackintosh's own house in South Park Avenue. Other houses have been variously mauled. Of the four tearooms for Miss Cranston, two have disappeared without trace and fragments of another are carefully guarded by the conscientious manager of Daly's store in Sauchiehall Street, where they are buried amid adaptation work by a designer who seems to have been unaware of their existence.

The Ingram Street rooms (1900-11) occupy two floors and the basement of an undisturbed earlier tenement. They were bought in 1950 by the Corporation, acting for Glasgow. After an unsuccessful attempt to continue them as a tearoom, they were leased to a wholesale dealer in souvenirs and novelties; he can hardly be accused of indifference to his surroundings for he has always been proud to show them off to casual visitors and has done little real damage to the interiors considering the fragility of the decoration. However, he has recently advanced into the Oak Room, the most important and previously untouched. It is to be opened with new tartan carpet (Mackintosh of course) and acoustic-tiled ceiling, as the 'Rennie Mackintosh Gift House Limited.' The oak fittings are being modified, painted and then grained *to represent oak*.

This is possibly all we deserve. The tenant can hardly be blamed for cashing in on this absurd situation. Indeed, he may expect praise for lip-service to Mackintosh. The Corporation have acted for the best in acquiring the place complete with White, Chinese, Moorish and Oak Rooms, the hopelessly obsolete kitchen and a large collection of furnishings and equipment stored elsewhere. But in doing so they have surely taken on the full responsibility for their survival *in situ* or elsewhere, or for their slow and certain loss if the present trend continues.

Yours, etc.,
JAMES MACAULAY.
Hillhead, Glasgow.



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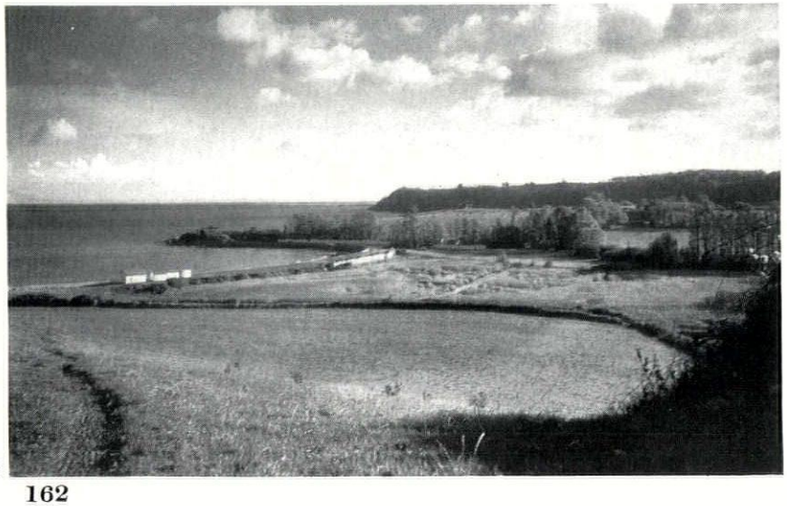


5

4, new housing at Torbay, overlooking Broadsands beach. 5, another view of Broadsands showing the marsh behind the beach huts which is to be filled in to make a car park—see the letter 'Torbay Threatened'.

TORBAY THREATENED

To the Editors.

SIRS,—The recent AA/RIBA Conference on our coastline comes at a crucial time when many of our natural amenities are being destroyed. Here, in Torbay, we have a case in point. Subtopian development is now spread nearly the whole way round the bay, and threatens to engulf completely the Broadsands area between Paignton and Brixham. Behind Broadsands beach lies the marsh, shown in the accompanying photographs, 4, 5. It is now the last marsh left in Torbay, a habitat for several species of marsh birds. But this natural feature will not be here much longer, as it is now in the process of being filled in—to be covered by an expanse of asphalt, to make yet another car park.

The local council are filling it in with earth from a car park they are digging out elsewhere, and the marsh makes a good dump. This 'tidying up' of natural features typifies, to me, the alienation of modern man from his environment. Instead of the fascinating irregularities and accidents of nature being a welcome (and how welcome, considering the deadly dull effect of subtopia) foil and counterpoint to the man-made environment, all must be tidied up in, they say, the interests of progress. The reeds, swaying in the breezes, diffusing the low morning and evening sunlight, a habitat for birds—all this must make way for an expanse of asphalt, nature being banished for ever in the interests of the summer tourist trade and its cars.

Speculators and developers object to the cars being left in a field near their building sites and, naturally enough, inhabitants of the new housing estates don't like the visitors leaving their cars along the road during the three months of summer holidaying. The existing park (taken some time ago from the marsh) is not large enough, but I believe that the extra cars to be parked could have been accommodated at the edge of a field some distance away, and no more conspicuously than in this scheme, which will completely destroy the whole expanse of marsh. We have here now a continuous spread of subtopian development, with no urban environment at suitable nodes. A rash of the usual run-of-the-mill house-forms, with unthought-out negative space between, where nature is banished, instead of what could be clusters of housing units, compact and perhaps high, with nature let in. This alternative has been built at Torquay, e.g. the Kilmorie Flats and other high blocks with nature left intact, and at Brixham, terrace housing designed by Mervyn Seal. But perhaps it is too late to hope that these alternatives will be used in the other spec sites around Torbay. Those who believe they are going to live in the countryside destroy it in the process, so there is now little left to come and see in Torbay.

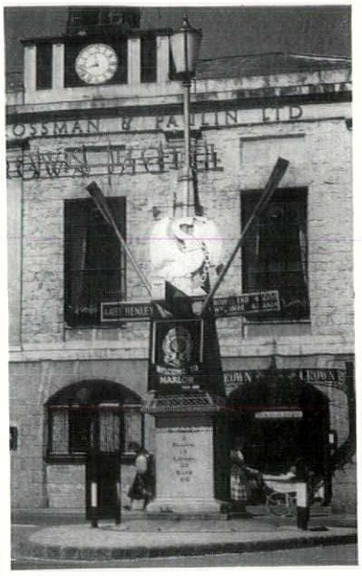
Yours, etc.,
DAVID TREVOR HICKS.
Brixham, Devon.

AN OBELISK OBSCURED

To the Editors.

SIRS,—I think you may be interested in the enclosed photograph, 6, showing what civic pride and the Ministry of Transport plus the lighting engineer can do to a rather simple obelisk at the junction of the High Street and West Street in Marlow, Bucks.

Apparently the 'cut-out' swan, welcome sign from the National Chamber of Trade and the 'oars' are seasonal appendages fixed for the



6

duration of the Regatta.

The obelisk is at a T-junction, at which it is not necessary to halt, a point where a finger post only causes congestion. The direction sign should be placed before the junction. The light serves no useful function except to show there is an obelisk in the road.

Yours, etc.,
H. TEGGIN.
March Baldon,
Oxon.

BOOK REVIEWS

AMERICAN SAGA

THE ARCHITECTURE OF AMERICA: A SOCIAL AND CULTURAL HISTORY. *By John Burchard and Albert Bush-Brown. Atlantic Monthly Press.* $15.00.

The half-million word saga in the manner of *Gone with the Wind* or *From Here to Eternity* has become accepted as a specifically American form of the novel. The vast canvas, dominated by the titanic elements of place, against which the puny characters play their parts, provides a singularly appropriate medium for portraying the American scene. It can capture something of the scale of the country and of the incredible odds which face the individual in conflict with the land, the city, or the established forces of society. There is also something specifically American in the sheer bulk of such works; an echo perhaps of a belief that in itself bigness can be equated with greatness—or very nearly so.

In this sense *The Architecture of America: a Social and Cultural History* is characteristically American. It is a work of substantial bulk—approaching a quarter of a million words in length—and it has about it something of the sense of scale of the fiction saga. As its title suggests, the book is concerned with relating the architecture of the United States, particularly that of the last hundred years, to its social and cultural background. The intention is worthy of the highest commendation and the authors are to be congratulated

for bringing together a truly impressive, indeed almost overpowering, array of facts and figures concerning buildings and social and political events. Unfortunately, however, the collection of facts does not in itself produce a useful or readable book; digestion and reflection are necessary. The significant must be differentiated from the otherwise; trends must be analysed and followed consistently, and a constantly objective standpoint maintained. Regrettably, one is left with the impression that the pressure of time in preparing this book for the press—a mammoth task accomplished apparently in little more than four years—did not allow for a period of gestation adequate for the scope of the study. In parts the book tends to become something of a catalogue, although its language lacks the crispness of the catalogue.

Literary self-consciousness is without doubt the least pleasing feature of the book. Skyscrapers 'vault' to the skies; 'the Ca d'Oro flirts with the canals of Venice'; and 'dramatic shells leap across spaces with some of the enthusiasm the air traveller might expect.' The reader—at least this reader—finds himself wondering about phrases like 'vigorous, uncouth striplings, the bald working machines of commerce' (a reference to the John Shillito Company store at Cincinnati) and the information that 'a verandaless house is different from one with a veranda.' Perhaps one is not meant to wonder, to pause and think, but to relax the intellect and allow one's emotions to move in union with the Whitmanesque flood. But was the Parthenon really built 'to stand on brown hills, to go with anemones and olives, aloes and conifers'? It presents a charming picture, evocative of early Keats, but it has nothing to do with the Parthenon in terms of meaning or intention.

It may be that books about architecture written in this way serve a useful purpose. For myself, however, architectural books fall into two categories; there are those which I read and there are those which I keep on my shelf for reference.

The Architecture of America does not fit comfortably into either category. On the one hand, it is too even in texture, and too lacking in emphasis to be placed in the first. The structure is too complex and there is not nearly enough sense of direction for the book to provide a readily comprehensible narrative, explaining American architecture in terms of a developing culture and society. On the other hand, while the book is literally crammed with fascinating and frequently important facts which could be of very great value to anyone concerned with the socio-architectural scene of the United States, it tends to be too subjective and 'literary' to be completely acceptable as a reference work. Can one, for instance, as an historian dismiss Chicago's Tribune Tower as 'totally retrogressive as a work of architecture,' or sit in judgment on buildings completed within the last decade? As the protagonist of a particular critical attitude one can; but not as an historian.

One is left therefore in something of a quandary as to whom the book is directed. A foreword explains that it was commissioned by the American Institute of Architects, that it is a 'by-product' of the celebration of the Institute's centenary in 1957, and expresses the hope that it 'will . . . prove to be *the* major work on American architecture of the past century.'

One assumes, however, that the book is not directed to the specialist, for there is a long 'prologue' explaining in didactic and rather flamboyant terms 'The Nature of Architecture.' While this might be interesting and even stimulating to the layman, architects and architectural historians will find themselves questioning a number of its assertions and may regard others as too obvious to require restatement. Nor can one believe that the book is intended for the architecturally uninitiated, for its material is so complex and its marshalling of facts so intricate. Nevertheless, those who have sufficient patience to contend with the language and organization of the book will find in it intriguing information. They will be helped by five indices and seventy excellent photographs of American buildings.

Frank Jenkins

PLANNING REFERENCE

SITE PLANNING. *By Kevin Lynch. The MIT Press, Cambridge, Massachusetts.* 1962. $8.00.

The book-jacket with this down-to-earth title superimposed on a sunlit piazza gives a fair idea of the contents: a quantity of meaty but digestible information about the planning of towns and the sites within them written by someone who evidently cares above all things what the result will be like to live in and look at.

The first few chapters introduce the subject broadly and make it particularly useful reading for planning students and enlightened clients; the last will tell you about the computation of pipe sizes, earth works, sun angles, sizes of steps in outdoor flights and much else that is often difficult to turn up quickly, thus making it a useful reference book for any planning office. But between these extremes there is also much for mere browsers; how satisfactory for the non-classical scholar to learn that the word 'climate' derives from the Greek word for slope. Many of us while lazing in the sun may have realized that the 'maximum direct radiation is received by the surface which is perpendicular to the sun' without knowing that 'a 10 per cent slope to the south will receive as much direct radiation (and to that extent have the same climate) as flat land 6 degrees closer to the equator.' This, according to my calculation, means that other things being equal, sites around Penzance and Venice could have a similar climate.

In a few places one wishes that the visual result of certain types of planning was put more strongly. If the excellent chapter on Visual Form came even earlier in the book much in it would be automatically read into all that follows; e.g. such sentences as 'A city . . . can in fact be looked upon primarily as a communication net made up of roads, paths, rails, pipes and wires' would not shock. In the section on housing some particularly solid potential slums are described among 'new possibilities' and in The Design of Streets and Ways one wishes that the visual implications of the only street cross-section shown, with its narrow verges (services under), were mentioned in the very full description which follows.

But these are small details in a most readable, well presented book which has an admirable system of cross-referencing both within the book itself and to other publications.

Elisabeth Beazley

PRINTING ANTHOLOGY

PRINTED EPHEMERA. *By John Lewis. Faber and Faber on behalf of W. S. Cowell Ltd., Ipswich.* 5 gns.

A rich and remarkable pictorial anthology of proclamations, certificates, official notices, travel tickets, trade cards, indulgencies, sporting posters, menus, licences, wanted notices, funeral announcements, order forms, book plates, wedding invitations, billheads, election notices, bills of lading, for sale notices, almanacks, wine lists, grocery labels, cloakroom tickets, regatta programmes and many other items. The greater part are nineteenth-century and most of these are either beautiful or ingenious or both. Collecting them must have been an enormous task. The weak part of the book is the modern examples, which show only a conventional good taste and omit the vigorous modern equivalents of the designs that give so much pleasure when looked at a century afterwards.

BOOKS RECEIVED

THE GREATER ANGLO-SAXON CHURCHES: *An Architectural-Historical Study. By E. A. Fisher. Faber & Faber. Price* 168*s.*

ENGLISH ART 1553/1625. *By Eric Mercer. The Oxford History of English Art. Oxford University Press. Price* 55*s.*

MUSIC, ACOUSTICS AND ARCHITECTURE. *By Leo L. Beranek. John Wiley & Sons. Price* 126*s.*

CEMENT CHEMISTRY AND PHYSICS FOR CIVIL ENGINEERS. *By W. Czernin. Crosby Lockwood & Son. Price* 25*s.*

ORLANDO JEWITT. *By Harry Carter. Oxford University Press. Price* 21*s.*

THE MODERN USE OF SOLID FUEL. *By Kathleen V. Bradbury. Published for the Women's Advisory Council on Solid Fuel by Educational Productions Ltd. Price* 18*s.*



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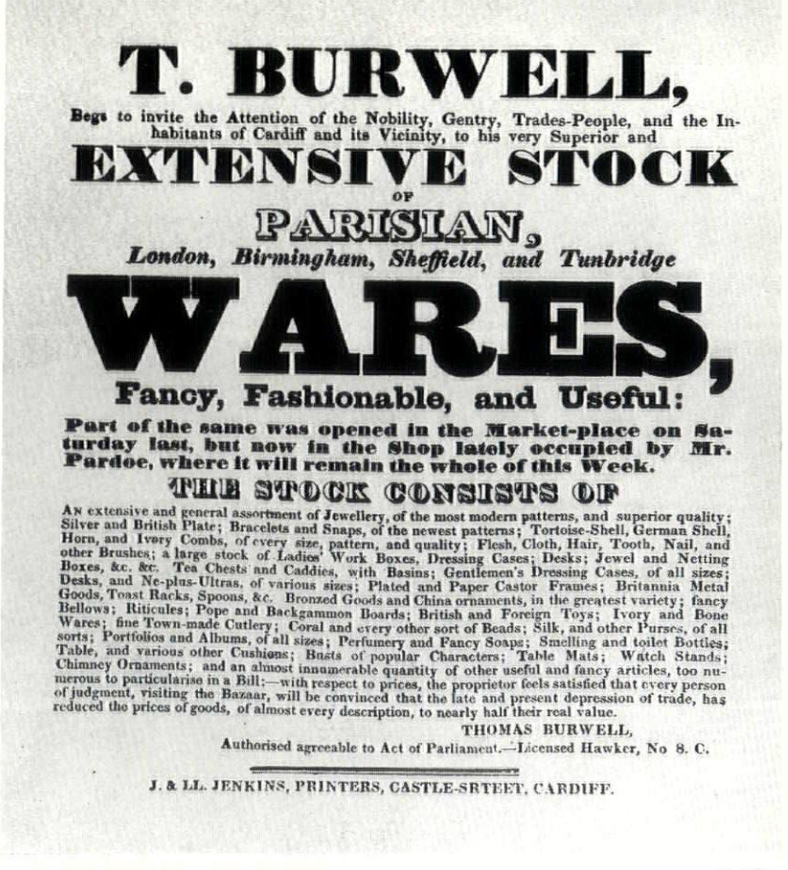
Three illustrations from Printed Ephemera, *reviewed on this page; 7, stout label, c. 1840; 8, grocer's billhead, c. 1800; 9, poster, c. 1830, by J. and Ll. Jenkins, Cardiff.*



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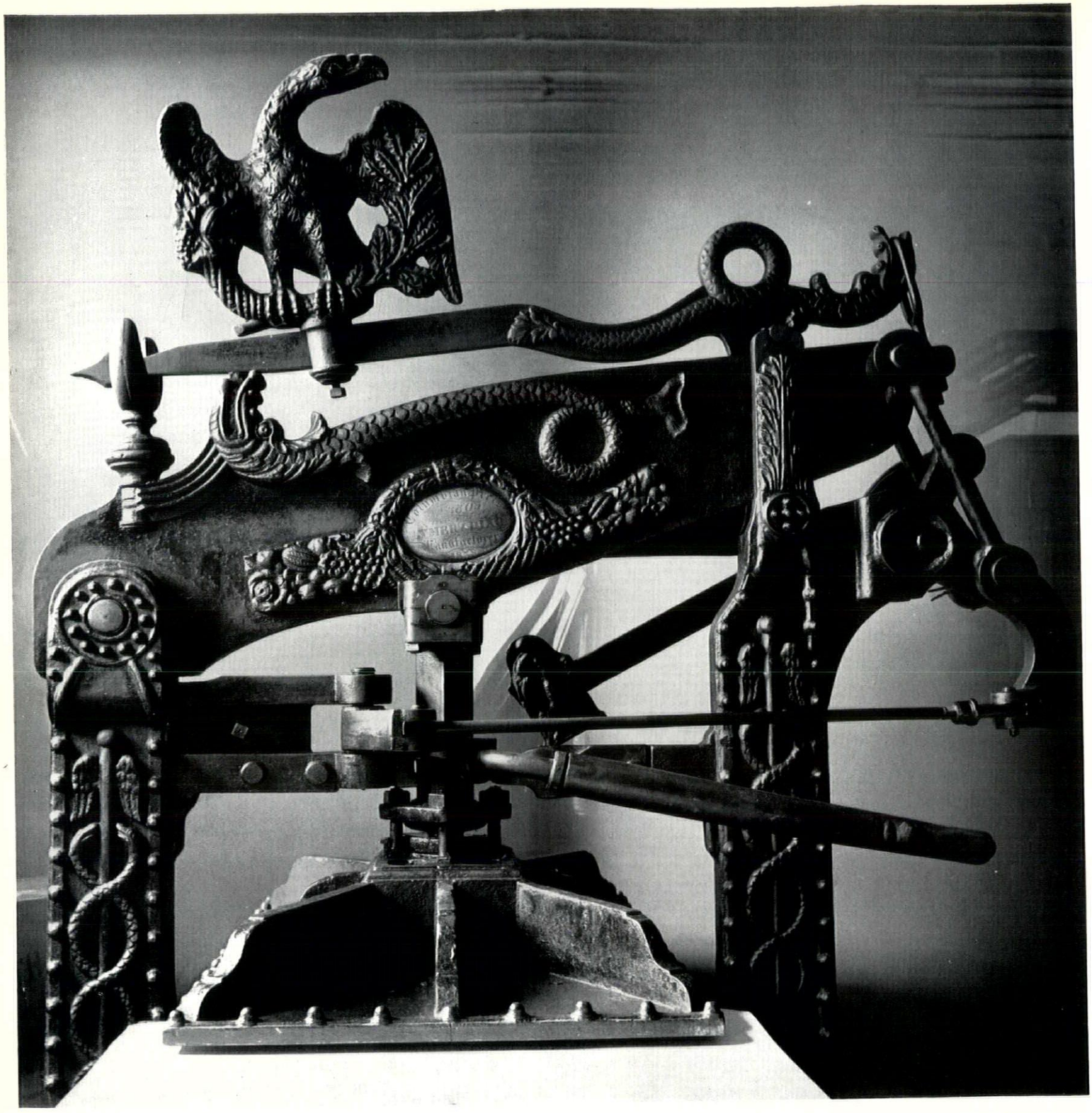


As striking an anthology of early industrial ornament as one might ever hope to see, this *Columbian Press*, built by Clymer and Dixon, dated 1838 and numbered 805, is to be seen in the Regional College of Art in Manchester. But it is not to be seen as an exhibit—like many another early iron-framed handpress currently preserved by art schools up and down the country, it works for its living, making impressions of wood blocks and lino-cuts, and, like many another of its kind, was acquired by the school quite recently from a jobbing printer in the country. Such presses constitute an invaluable record of the industrial art of their time and many of them would repay photographic study as close and sympathetic as this detail by Ralph Marshall (a student at the school), for we have outgrown the polemical circumstances that made it obligatory to sneer at, say, a stationary steam engine with Doric columns, and can now regard such exercises in iron styling as evidence of an area of taste that is not well recorded in the text-books or the museums—or we may even be able to value them as works of popular art in their own right.

Nikolaus Pevsner

GROPIUS AND VAN DE VELDE

The clash between Muthesius and van de Velde at the annual meeting of the Werkbund in 1914 is familiar. Muthesius said: 'Architecture and with it all economic creativity presses towards standardization and can only by standardization recover the importance it possessed in times of harmonious culture. Only by standardization can a universally valid, self-confident taste be recovered. As long as there is no generally high level of taste, German craft and design (*Kunstgewerbe*) cannot count on effective penetration into foreign countries.' Van de Velde, so we are told in his recently published autobiography,* spent the best part of a night with his friends, among them Obrist, Endell and Taut, drafting a reply. He wrote it—in French, as ought to be noted and pondered—and had it translated, and the next morning it was ready: 'As long as there are artists in the Werkbund, they are bound to protest against any proposed canons or any standardization. The artist in his innermost essence is a burning individualist, a free spontaneous creator; of his own will he never submits to a discipline imposing on him a type, a canon. Instinctively he distrusts anything which could sterilize his actions and anybody who preaches rules to him or who tries to drive him into a universally valid form which to him must be no more than a mask.'

And so on. In the end votes were taken and the Muthesius memorandum was withdrawn. For many years afterwards it was considered a matter of course that van de Velde stood for the Art Nouveau past, Muthesius for the Modern Movement future. Now, the younger generation may well read van de Velde's theses with greater pleasure and approval than Muthesius's. We are hearing much once more of sterility and masks, when the International Modern is considered, and of spontaneous creation and burning individualism as the only worthwhile ideals. Yet Muthesius was objectively right in 1914; for this was the Werkbund, an association not of artists, but of architects, designers, craftsmen and industrialists. To plead in such an association for standardization means no more than to recognize what are the unchanging conditions of quantity production of parts or wholes.

In spite of this militant attitude of van de Velde, however, he comes out in his autobiography by no means as an enemy of industry and Werkbund principles. The two moments when his story meets that of the Bauhaus show this spectacularly. Neither had up to now been known or at least fully understood. One of them indeed van de Velde forgot to put down, when, a very old man, he wrote his memoirs. He would be a hundred this year, had he not died in 1957. His last ten years or more were almost entirely devoted to this big writing job, a job not fully done at the time of his death. Dr. Curjel must have had a gruelling task in compiling the composite volume which is now out in German and ought to come out in English as well—doubly gruelling, because van de

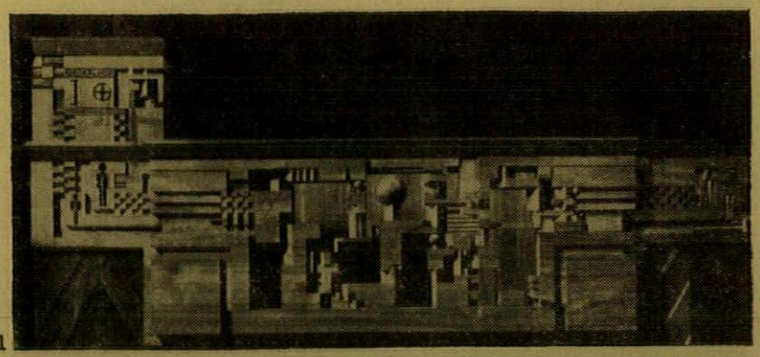
**Geschichte meines Lebens.* By Henry van de Velde. Edited by Hans Curjel. R. Piper & Co., Munich. DM. 44.

Velde even in his younger years had been a biased and, for one reason or another, an unreliable recorder. Dr. Curjel tactfully leaves it open whether in any individual case the reason was one or the other. At any rate it is a fact that van de Velde did forget even things of importance, and even things entirely to his credit.

Gropius never forgets and indeed can't forget, because he seems to keep a dauntingly complete private archive, carbon copies of everything. This private archive is now public; for he transferred it to the Bauhaus Archive, a public body financed by the city of Darmstadt, the *Land* (Hessen) and the *Bund* (Bonn). It was started in 1960 in the Ernst Ludwig Haus on the Mathildenhöhe at Darmstadt, the first model estate ever, built in 1901–8, as a very personal enterprise of the young Grand-Duke Ernst Ludwig, to demonstrate a new style, the new style then being Art Nouveau. So here the van de Velde style and the Muthesius style, or Art Nouveau and the twentieth century meet again, and in this case amicably. The Ernst Ludwig Haus by Olbrich, Peter Behrens's own house and some details of others come out well in companionship with the Bauhaus. But the young Behrens and the Viennese Olbrich were not Art Nouveau in the most florid sense, and the Bauhaus on the other hand has not always been as rational, either, as its image today makes people think. This must be patent to anybody who cares to look at the new monumental tome* by Herr Wingler, director of the Bauhaus Archive—a book largely of documents, as objective as van de Velde's is subjective.

A comparison between the two brings out strange things. However much van de Velde preached and wrote about rational beauty, his early designs and interior jobs are wilful and aggressively expressive. Yet, when he was called to Weimar in the year of the Darmstadt Mathildenhöhe to serve a grand-duke much less sympathetic than Ernst Ludwig, he was called as an adviser to the local trades and crafts and at once started something he misleadingly introduces as a Seminar, but which was in fact meant to be a meeting ground for the artist-designer, the craftsman and the industrialist. Laboratory is his other term and this is an excellent one. He is not far out when he says that here was the earliest stirring of Werkbund ideas, and he might also have said, what now comes out in the Bauhaus book, that one of Gropius's first memoranda for Weimar, written when he was still in the war, suggested just this, as if it had never existed before: the foundation of a teaching place as a place for consultation between industry, trade and the crafts. That was in 1916.

In 1915 he had been appointed to be van de Velde's successor as director of the Weimar School of Arts and Crafts. The appointment was entirely due to van de Velde—yet there is not a word about it in the van de Velde memoirs. It is left to Dr. Curjel to print in his appendix of copious notes the operative letter and to Herr Wingler to print the same and a second more detailed letter. The recommendation is most remarkable; for at the Werkbund Exhibition of 1914 in Cologne, one would think Gropius's model factory would have struck van de Velde as totally embodying Muthesius's criteria. Yet even in retrospect he couples his theatre (with its rounded corners and curved roofs) with Gropius's factory as 'a milestone in the development of the new architecture.' That he is generous to his own work and thought is a well-known fact. He registers for instance his great indebtedness to Morris and Ruskin, but speaks of them in one place as 'my precursors.' He also regards himself as a precursor of the Bauhaus, in so far as he built up



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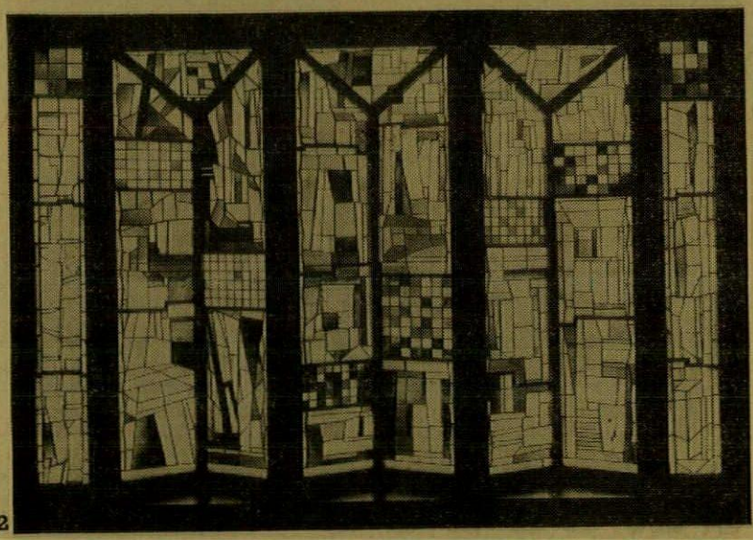

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3

Unexpected Bauhaus: the prevalent Expressionist style of before 1922–3.
1, *staircase balustrade by Joost Schmidt in Adolf Sommerfeld's house at Dahlem, near Berlin,* 1921–22.
2, *stained glass by Josef Albers in the staircase hall of Adolf Sommerfeld's house.* 1922.
3, Thistles *by Joost Schmidt; done in Itten's Basic Course.*

**Das Bauhaus, 1919-33, Weimar, Dessau, Berlin.* By Hans M. Wingler. Verlag Gebr. Rasch & Co., Braunsche. £13 13s.

workshop teaching instead of atelier teaching in the Weimar School of Arts and Crafts, when he had finally been put in charge of it. For, according to him, his were the earliest teaching workshops ever. That is, of course, not so. Pankok at Stuttgart and Poelzig at Breslau had been earlier, and in any case the idea came from Lethaby and London, presumably via Muthesius.

However that may be, van de Velde here once again places his accents unwisely. That Gropius would think in terms of making instead of drawing was by 1916 and 1919 a foregone conclusion; but that the school into which he moved and which van de Velde had designed in 1906 was indeed perfectly suited for the Bauhaus, being (just for once) really of a rational beauty, would have deserved emphasis. In fact, van de Velde looking back on his life was quite aware that there had been a danger in his sudden cosmopolitan success in Berlin about 1900. In the bracing air of Berlin his enthusiasm, he calls it his apostolate, carried away clients and critics, as it was going to carry away some, though fewer, later. One senses throughout his book the disciples on the one hand, plenty of ferocious enemies on the other. It is all a little like Frank Lloyd Wright, the variety, the brilliance, the fixed conviction always to have been treated badly.

If only one could be sure of his details, the stories of van de Velde's Weimar sound entirely credible and would justify his exasperation. This was still a world of Lord Chamberlains, of hanging on the lips and nods of the ruler, of challenges to duels, of being off to manoeuvres. Gropius's Weimar was different, yet to us neither less improbable nor less inhibiting. The background to the early Bauhaus years was inflation, revolution, the military marching into the town, a search warrant against Gropius: 'Sir' he writes, 'yesterday morning at half-past ten I was called by a soldier from my office to my house, because there was a search warrant. The house was searched by an officer and six men in a sensational manner. The order can only have been given on the strength of a malicious, irresponsible denunciation which was not checked. . . .'

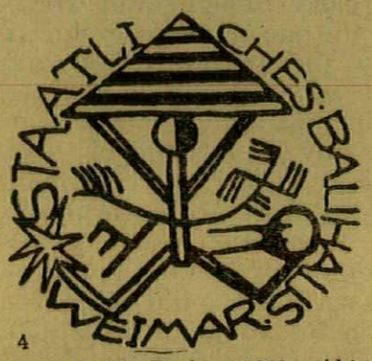
There was more danger in Gropius's than in van de Velde's great years, more danger from Nazis than from a philistine court, and those who went all the way with Gropius as well as those who parted company early seem to agree that he stood up marvellously to the strains of creating the school and at the same time defending it. The tone of his admirers is somehow different from that of Frank Lloyd Wright's and van de Velde's. Lothar Schreyer for instance, passionate expressionist and hence one of the first to leave the Bauhaus—actually in the same year (1923) in which the search of Gropius's house was made—yet writes in his *Memoirs*, published in 1956 and not sufficiently used by Herr Wingler, of Gropius's 'enchanting, sympathetic attitude especially to the young generation' and of his 'genuine tolerance for other opinions' and ends by saying: 'The survivors of the Bauhaus speak of him with veneration and admiration.' Feininger also, whose letters to his wife are one of the major surprises and pleasures of the Bauhaus book, writes in 1919: 'a faithful, sincere man and a great idealist, whether creative or not' (an interesting remark), and then in 1923: 'He works till three in the morning, hardly sleeps, and when he looks at you, his eyes are like stars. I'm sorry for anyone who can't gather strength from him.'

And yet Feininger, in the crucial late Weimar years, i.e. in 1922–24, was not on Gropius's side. The Bauhaus, it must be remembered, was not started in the spirit of Gropius's own early thought and work. His first memorandum ever, the one on mass-produced housing, drawn up in 1910 and published by THE ARCHITECTURAL REVIEW *in toto* for the first time (Herr Wingler apparently did not know of this or it came too late for his book: July, 1961), and his first major building, the Fagus factory, are rational, functional and highly conscious of the social responsibilities of the architect. The foundation document of the Bauhaus, all listed and commented on in the Wingler tome, exclaims: 'Let us form a new guild of craftsmen . . . and together create the *Bau* of the future which shall be all in one: architecture and sculpture and painting, and which, made by millions of craftsmen's hands, shall one day rise to heaven a crystalline symbol of a new faith.' That does not sound like Fagus, nor does what the Bauhaus did truly together as 'the first great testimony of total work' (Schreyer) look like Fagus. The house of the Napoleonic timber manufacturer Adolf Sommerfeld, built at Dahlem, near Berlin, in 1921–22, was a log house, and its interior was a most intriguing cross between Expressionism, Frank Lloyd Wright and today. Exactly the same is true of work produced at the same time in Johannes Itten's Basic Course, except that for Wright one must read, say, Kubin. It is all very weird—the van de Velde of Art Nouveau furnishings starting a laboratory to advise industry, the Gropius of Fagus an Expressionist guild. If the interiors of the Sommerfeld house are not 'free spontaneous creation' as against standardization, what is?

Yet the great battle at the Bauhaus almost immediately after was between the spontaneous creators on the one side and Gropius on the other, wanting once again what he had wanted in 1910, in 1914, in 1916. The Bauhaus volume throws new light on the vicissitudes of 1922–24. First there is the extremely illuminating letter of Feininger's on van Doesburg who had settled down at Weimar in 1922 as a private individual to spread his *De Stijl* gospel of constructivism. Feininger writes in September, 1922: 'For the majority of the Bauhaus the unsentimental Doesburg, even if totally lacking in genius, forms a kind of support among all these restless and contradictory convictions; something fixed and clear. . . . But why this voluntary submission to the tyranny of Doesburg and this complete obstreperousness against all measures taken by the Bauhaus? . . . I don't think one can do anything against it. Either the principles of the Bauhaus are strong enough to overcome resistance inside and outside, or the whole thing will collapse, because there are in fact too few today who can unambiguously and purposefully stand for a cause. We are going from danger to danger, and the reason is that the Bauhaus imposes a responsibility, van Doesburging does not. . . . Of course it is gross sabotage of all that the Bauhaus sets as its goal. . . . If (on the other hand) Doesburg were a master at the Bauhaus, he

would be useful rather than do damage, because he represents the opposite pole to some outrageous romanticism.'

But the turn to rectangularity and technics was evidently not only a matter of seditious students. It began within the Bauhaus already in the same year 1922. Take for instance its *signet* in 1919 and 1922.



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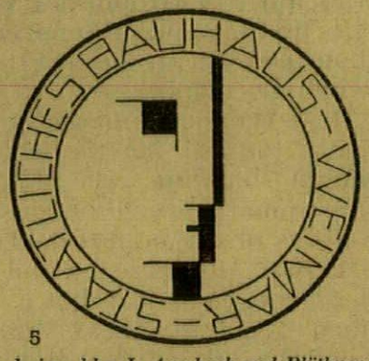

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4, signet of the Bauhaus, 1919; said to be designed by J. Auerbach and Blüthner.
5, signet of the Bauhaus, 1922, designed by Oscar Schlemmer.

Or take Feininger once more, writing in October about the projected exhibition which did indeed take place in 1923: 'If we can't win over the industrialists, our expectation of survival is low. Our aim must be to earn, to organize production, to work for quantity production. . . . I see a new Gropi.' In 1923 the ceramics department did indeed provide models for production by the Velten Vordamm manufactory and Gropius spoke of 'Art and Technics, a new unity.' And soon Moholy Nagy was to replace Itten. Eminently characteristically his photo in the book shows him in overalls, Itten on his appears with shaven head and in medievalizing fancy apparel. And with Moholy, new young masters started to teach—Breuer, Albers and a few others—and with the move to Dessau and the new buildings the Bauhaus settled down for a short time to establish that image which is still ours.*

But even then not completely. Hannes Meyer who, on Gropius's own suggestion, took over at Dessau when Gropius left early in 1928, comes out of the Bauhaus volume a very interesting character. It is without doubt true that some at least of the later Bauhaus influence is an influence of Hannes Meyer's rather than Gropius's work at Dessau. First of all the Bauhaus, in spite of its name, had no architectural department at all till 1927, and when Gropius started it, he put Hannes Meyer in charge. Secondly in the two years in which Hannes Meyer was head of the whole school he introduced a closely thought-out, systematic course in architecture, stressed social responsibilities, a scientific approach to industrial production and also town-planning. That he was a communist may in the end have cost him his job, but the formulation of his thesis in the Bauhaus journal in 1928 and his apologia in *Das Tagebuch* after his dismissal are so hysterical and aggressive that they alone would prove him not to have been the most suitable head of a school. Yet it is from Hannes Meyer's Bauhaus and not from Gropius's that Ulm must be understood. Max Bill after all was a student at that time and not before.*

The greatness of the Bauhaus will one day no doubt be recognized to have lain in its harbouring at one and the same moment Moholy, Breuer and Albers and yet Feininger, Klee and Kandinsky. That Gropius was the great educationist he was is due to his extreme catholicity of programme and to his sympathy for, and understanding of, both sides, the Expressionist and the rational, that is his own in 1919 and his own in 1910 and 1925. An assessment of van de Velde's greatness is harder to come by. He regarded Muthesius as an out and out chauvinist, wrongly no doubt. But Muthesius was a German as is Gropius and neither would ever have had any doubt about it; van de Velde was cosmopolitan, and what might, with success accruing, have been a great asset to him, turned out to be his undoing. With his Flemish name and French mother-tongue and his sustained success in Germany, he could not really anywhere be anything but himself. Hence his unhappy years of exile or ambiguous co-operation and resistance in two world wars, and hence the waning of his international potential already during the first. Work from 1920 onwards is no longer undiluted van de Velde. It is School of Amsterdam at first and then a good general modern, delightful in the spatial effects of the Kröller-Müller Museum, but not because of those dynamographic qualities (his word) which were the life of his ornament and then his architecture between 1892 and 1914. Gropius was an exile too, and England can't have made him happier than Switzerland did van de Velde, but once he set foot in America he could relax, expand and get ready for the elder statesmanship to which his character fits him so perfectly.

*Much of this story is of course contained in Dr. Banham's *Theory and Design*, though the publication of the new documents will mean modification of certain facts and stresses.

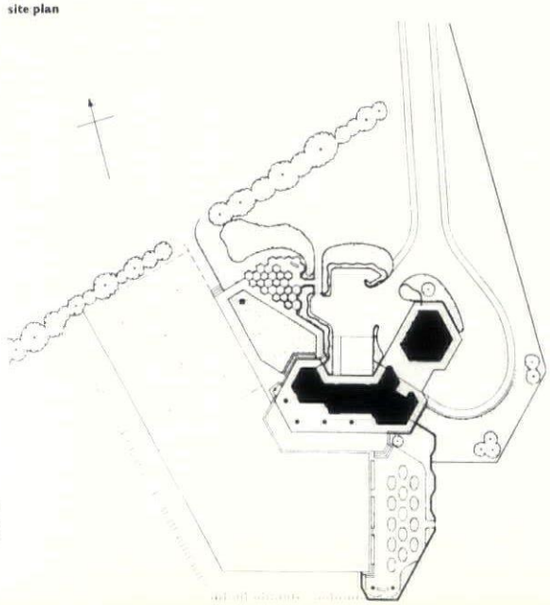
*So was Howard Dearstyne, one of the two Americans who have published some Bauhaus memories, Howard Dearstyne in the *Journal of Architectural Education*, now edited by Marcus Whiffen (xvii, Oct. 1962). The other is Hin Bredendieck who has written in the *Art Journal* (xxii, Autumn 1962). Both names appear in Herr Wingler's lists of matriculations, the latter under 1927, the former under 1928-29.

COUNTRY HOUSE NEAR GODALMING

ARCHITECT: PATRICK GWYNNE

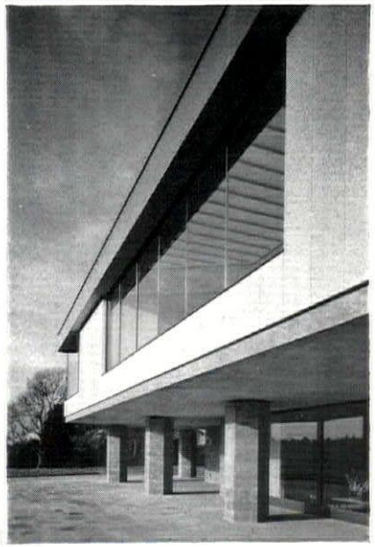
The low spreading country house, spaciously planned, which has long been an English speciality, has for economic reasons been rare in recent decades. In this example the traditional close connection, both visual and functional, between house and landscape (the fields it stands in are all farmed by the owner, the farm office being part of the ground-floor accommodation) is combined with a modern sophistication of form and technique and with a lavish use of power-operated equipment.

site plan



1, from the south. The stone wall encloses a rose-garden and a lawn, serving to extend the house into the landscape from which the lawn is only separated by a ha-ha—see site plan on left.





2

2, looking along the south-facing terrace, partly sheltered by the overhang of the building. The wide window is that of the sun-room.
3, distant view across the surrounding farmland, with the elevated main rooms visible over the crown of the hill.
4, south-west angle of the living-room, showing how the corner windows, and the elevated position, command the distant views.
5 (facing page), the south front, with terrace below and sun-room and sitting-room windows above. On the right, the bedroom wing with rose-garden in front. Beyond the stone wall is the entrance drive-way which passes underneath the bedroom wing.

photographs by Wainwright

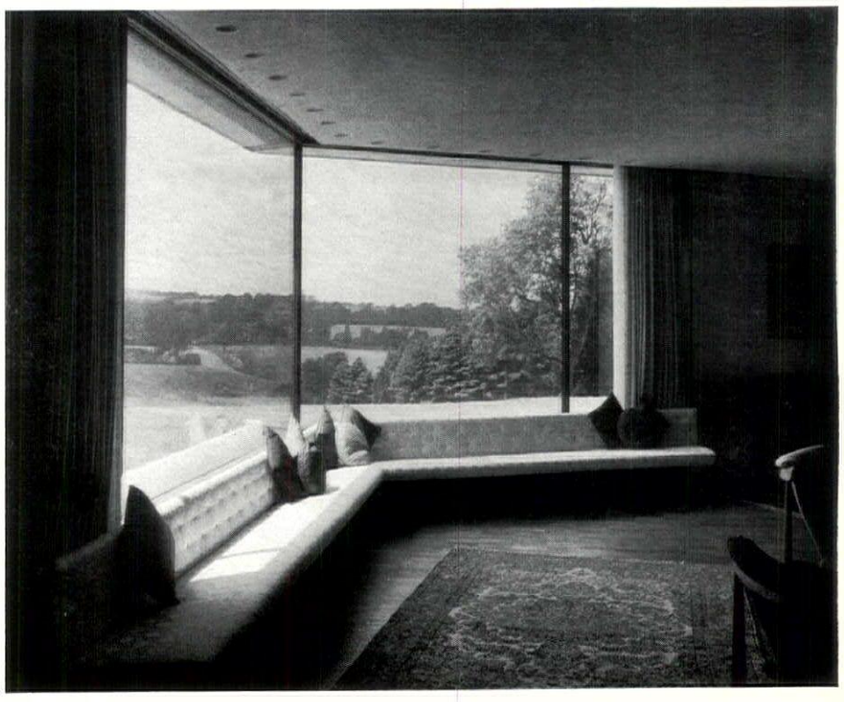
The site, at Witley Park, is on high ground in the centre of farmed parkland with splendid views in all directions. It is approached by a long private drive from east and north and has been placed on open ground in front of a large copse, which acts as a background without interrupting the views. The accommodation required by the clients, Mr. and Mrs. Gerald Bentall, comprised large living and dining-rooms, master bedroom suite with dressing-rooms and private sitting-room, four further family and guest bedrooms, staff flat and an office, all to be fairly spacious and with ample bathrooms, kitchen and other service spaces. A sun-room for summer use was also a definite requirement; a garage for three cars and various stores were to be incorporated in the house.

The bulk of the accommodation has been placed at first floor level. This helped to take full advantage of the views both because of the higher viewing position (at ground floor level some of the best scenery is truncated) and because rooms could be placed to look out in all directions, entry being from below and up a centrally placed staircase. The all-round and diverse views, coupled with the relatively bare foreground, made it clear that the best effect would be obtained by framing the various views in different rooms, rather than by the use of glass walls and this determined the plan. This treatment was aided by using a hexagonal plan form with corner windows. The plan is basic: bedrooms east—for morning sun; sun-room south—for longest and strongest sun, and also to act as a connecting link between owners' rooms; living-room south and west—taking in the richest view; dining-room west and north—for summer sunsets; kitchen north; staff flat west—for evening sun. All bathrooms are internal with top lighting. The ground floor is left free for entrances, garage, covered terraces, farm office, laundry and storage spaces.

The ground floor sub-structure is of reinforced concrete piers and part-walls, carrying a 13in. thick first-floor slab which thins to 9in. at the edges. The first floor is constructed of steel posts and perimeter



3



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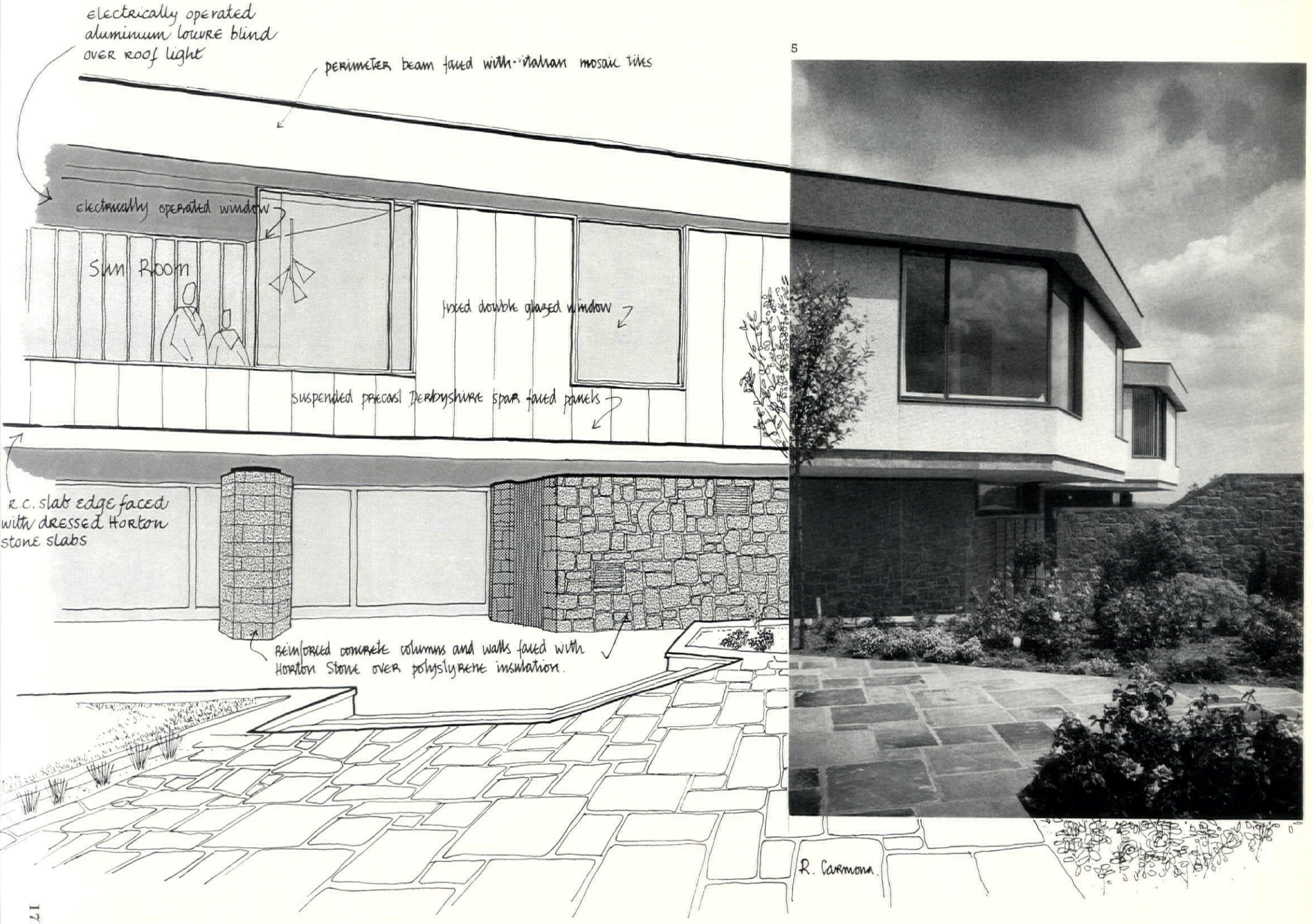
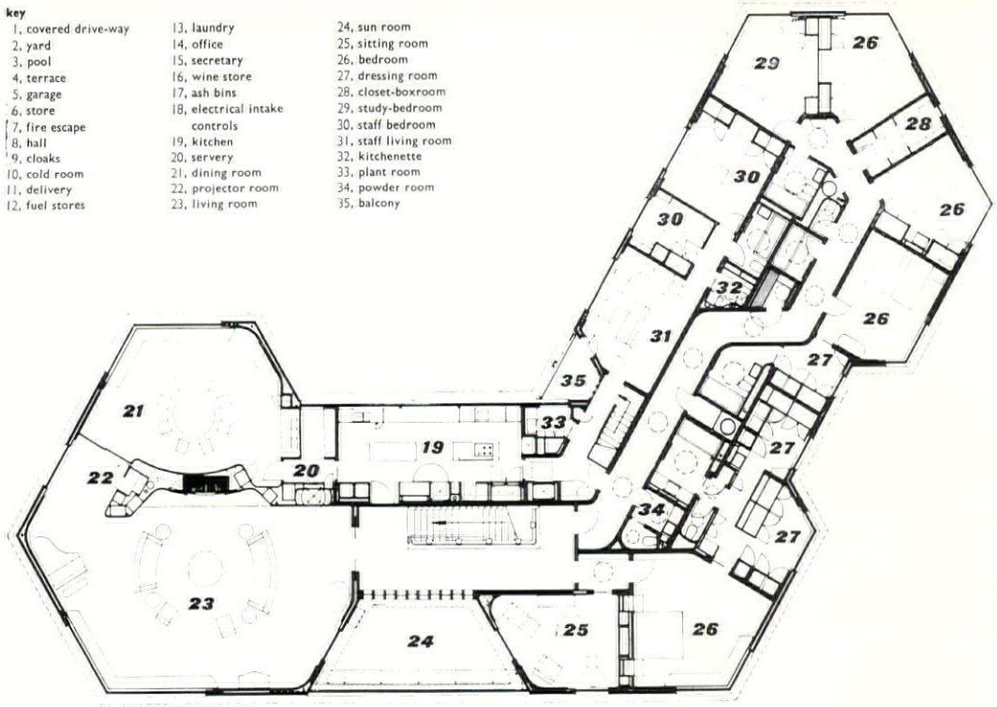
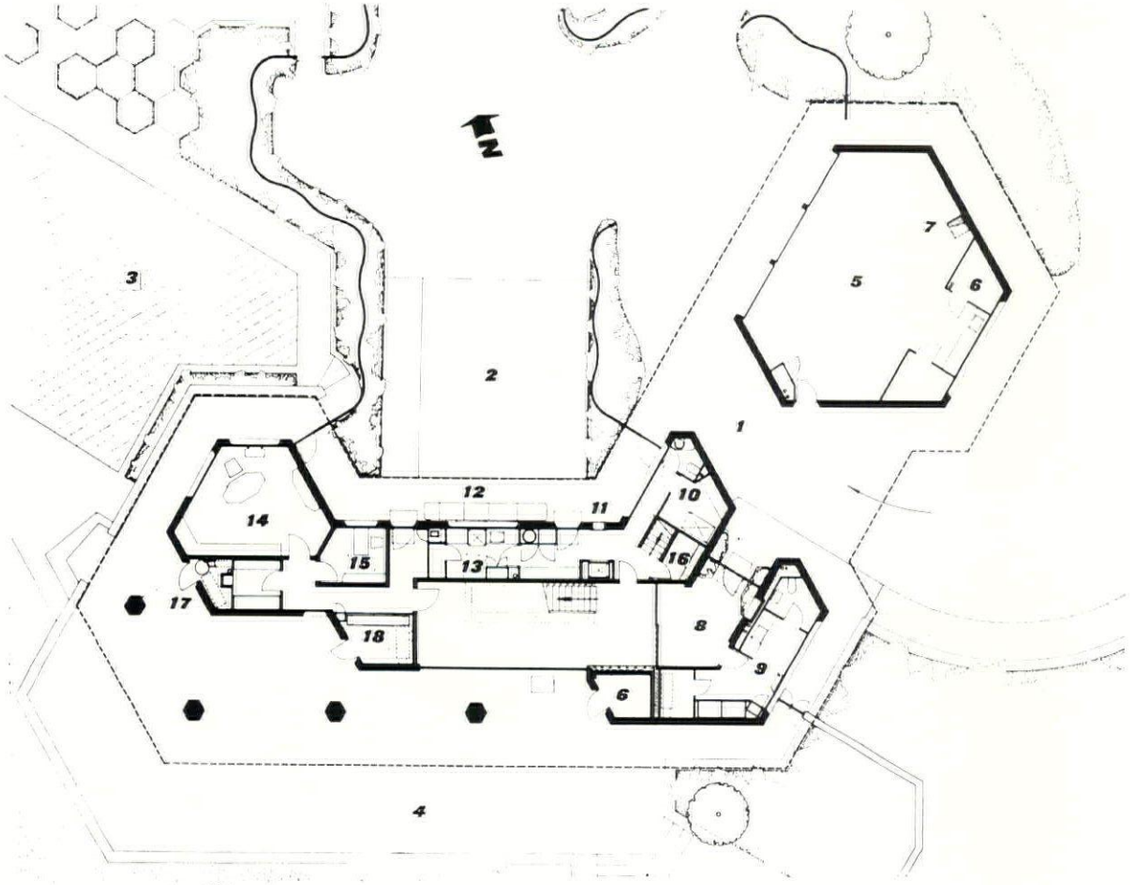

electrically operated aluminium louvre blind over roof light
perimeter beam faced with Italian mosaic tiles
electrically operated window
Sun Room
fixed double glazed window
suspended precast Derbyshire spar faced panels
R.C. slab edge faced with dressed Horton stone slabs
reinforced concrete columns and walls faced with Horton Stone over polystyrene insulation.
R. Carmona.

key
1, covered drive-way
2, yard
3, pool
4, terrace
5, garage
6, store
7, fire escape
8, hall
9, cloaks
10, cold room
11, delivery
12, fuel stores
13, laundry
14, office
15, secretary
16, wine store
17, ash bins
18, electrical intake controls
19, kitchen
20, servery
21, dining room
22, projector room
23, living room
24, sun room
25, sitting room
26, bedroom
27, dressing room
28, closet-boxroom
29, study-bedroom
30, staff bedroom
31, staff living room
32, kitchenette
33, plant room
34, powder room
35, balcony



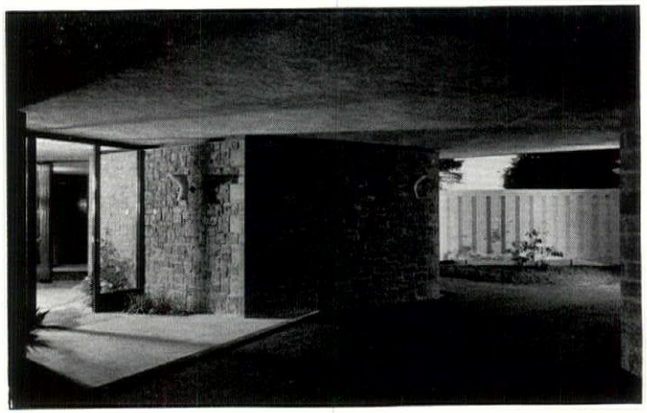
first floor plan



ground floor plan (scale 1 in. : 24 ft.)

beams and load-bearing block walls, which carry the timber joist flat roof and the external cladding, suspended from the beams. Ground floor external walls and piers are faced with Horton stone, over polystyrene insulation. First floor external walling is formed of suspended precast Derbyshire Spa faced panels, on an 18in. lay-out, which determines plan dimensions. The slab edge is faced with dressed Horton stone slabs and the fascia with Italian mosaic tiles. The roof is covered with woodwool slabs and finished with chippings.

Windows are mainly fixed double-glazed, with ½in. thick plate glass ventilating side-units, sliding into



6, the drive-way beneath the bedroom wing, looking towards the service yard. On the left, the main entrance to the house.

cavities by means of winding handles. Sun-room glazing is electrically operated. Louvre windows with remote control operation are used on the ground floor and in the kitchen. External doors are frameless toughened glass in black plastic-faced frames. Garage doors, of roller type, are electrically operated. All windows are fitted with horizontally moving louvre blinds, electrically operated from remote positions in the main rooms. The sun-room is equipped with an aluminium louvre blind over the roof light controlled by an electric motor; a vertical pinoleum blind, also with motor control, can be used to cut the sun from the main windows and also to enclose the space at night.

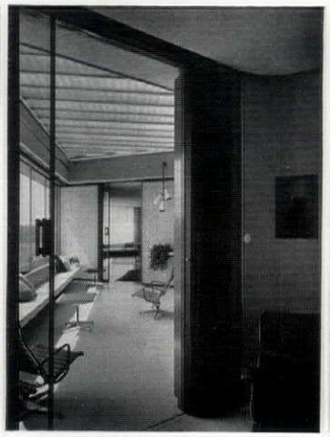
There is electric floor-heating on both floors, supplemented in the living-room, hall and master bedroom suite by electric blower heaters, fed from external air. Bathrooms are mechanically ventilated and fans are fitted to kitchen, living-room and dining-room. Lighting is mainly by means of built-in spot lights set into the ceiling above the windows. In the living-room



7



8, 9





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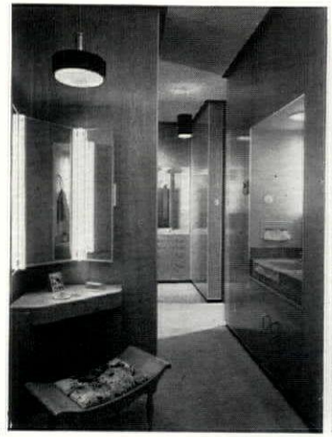

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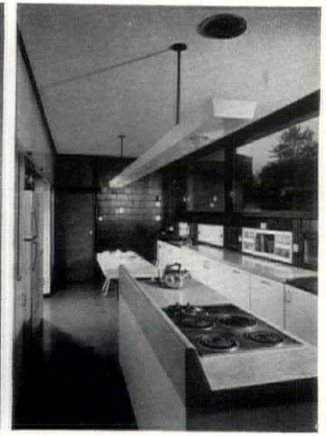

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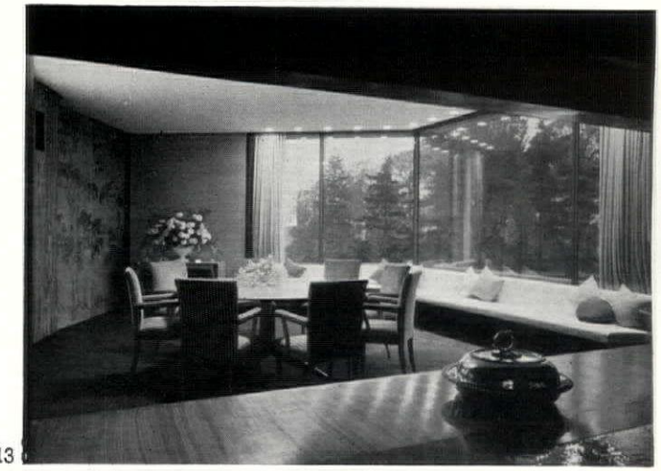
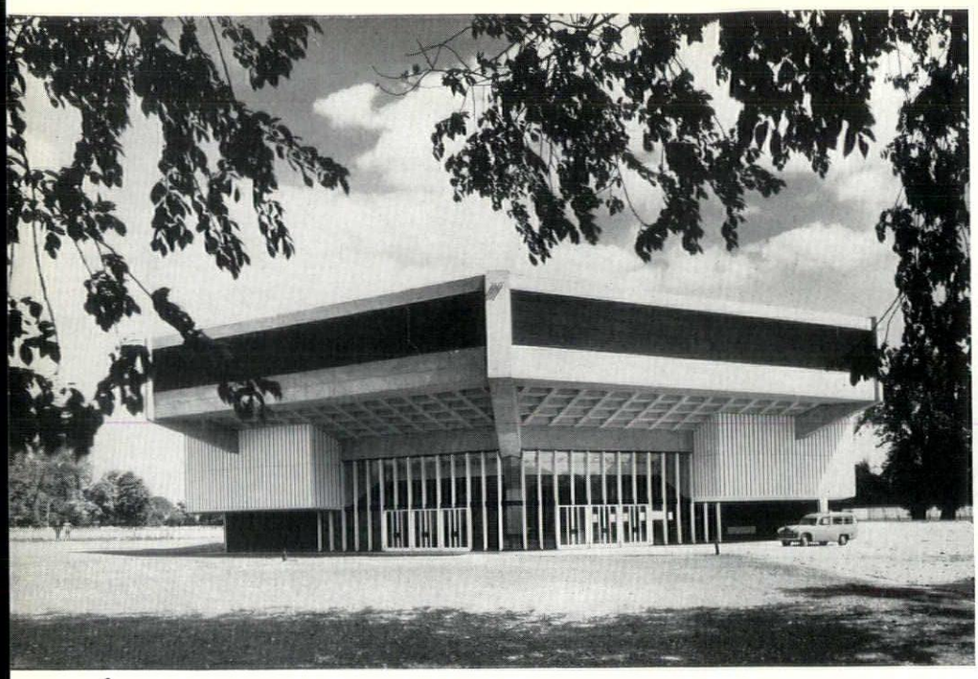


13

7, the staircase hall, looking towards the main entrance. The walls are lined with ash boarding. The cantilevered stairs are of precast terrazzo, incorporating hidden lighting at the wall end. The handrail, which has only one point of support, is of teak with a steel core.
8, at the top of the stairs, looking towards the bedrooms. Beyond the glazed screen on the right is the sun-room.
9, looking into the sun-room from the sitting-room. It has a roof-light with power-operated louvre blind.
10, the living-room from the door, with the curtains (left) drawn and (on right) the built-in fitment described on this page.
11, dressing-room suite. The built-in wardrobes contain purpose-made fibre-glass trays.
12, the kitchen, showing free-standing cooker and, on the right, sink unit above which are high-level windows overlooking the service yard. These are supplemented by small glazed openings at table-top level giving a downward view.
13, the dining-room from the servery hatch. The window gives a north-westerly view across a pool towards a copse.

it is supplemented by flood lights, incorporated in a fitment and arranged to play on the domed ceiling. These are equipped with dimmer control. A large dividing unit between living-room and dining-room contains a fireplace with built-in fireguard, flue and draught control, and ash chute to ground floor—radio and gramophone compartments—stereophonic loudspeakers—television compartment—projection room (cinema screen built-in over window)—revolving drink cupboard with refrigerator and serviceable from servery at rear—flood lights for living-room ceiling—sliding door housing—wine chambering cupboard—various display recesses and storage spaces and electric control panel.



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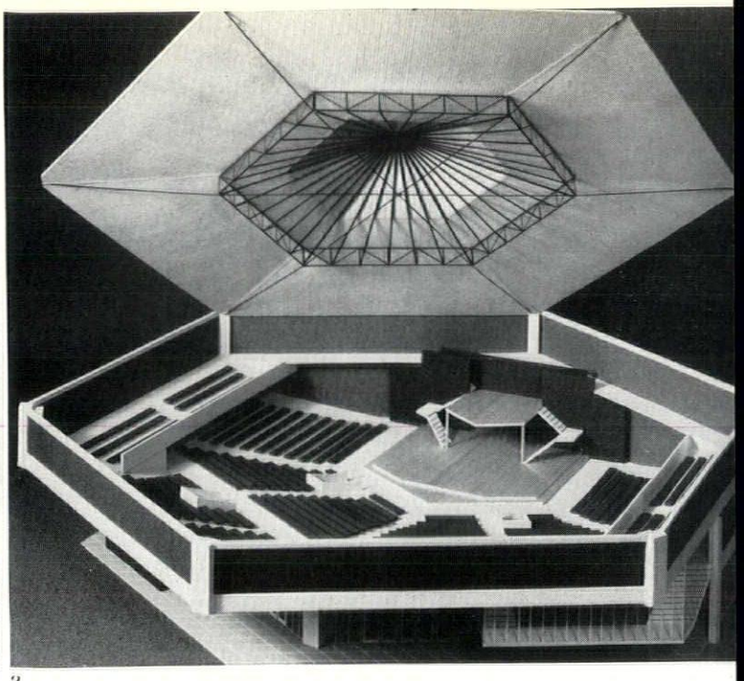


2

3

Peter Jay

1, 2, 3, The Festival Theatre, Chichester, is the most discussed and most consequential recent theatre in Britain. Though it is not a civic theatre of the type discussed in Peter Jay's article which begins below, the peninsular relationship of stage to auditorium (see model, 2), which appears at Chichester for the first time in a purpose-designed English building, is one that is likely to be used for economic reasons in civic projects, and the experience gained here by the architects, Powell and Moya, will be directly relevant to the design of municipally sponsored theatres.

THEATRES

STAGE & AUDITORIUM

With the coming of the cinema the old commercial theatre began to decline, and this process was accelerated by the introduction of television. During the last thirty years few new theatres have been built while many have closed and been pulled down or converted to other uses.

Although each closure has been vigorously opposed by those who love the theatre, it is becoming clear that a new pattern of organization is emerging in which, outside London and the largest cities, commercial interests will have little part. However it may be abroad, in the British Isles the requirement for *popular* (in the sense of moneymaking) entertainment is largely met by other forms, and the live theatre must be thought of as something for a cultivated minority, although one may hope a substantial minority, and must be subsidized. The greater part of the Arts Council's money is spent on opera and ballet in London so that theatre companies in the provinces must rely largely on subsidies from the local authority, who are empowered to levy up to a 6d. rate for purposes of this type. Few of the theatre buildings erected during the heyday of the old stock companies are suitable and there are therefore several schemes projected or under way for the construction of civic theatres.

Another source of support comes from the universities, which have long studied the drama as a branch of literature but only recently begun to think it necessary to study plays in performance. In all universities there is a movement of some kind to provide a theatre building both as a laboratory for the English faculty, and sometimes a special sub-faculty of drama, in addition to its use for performances by university societies with members drawn from all faculties. Where there is a university theatre in or near a town it can sometimes be used during vacations to fulfil the need for a civic theatre.

Although the National Theatre and an opera house for the Edinburgh Festival are under discussion, these are for special purposes and will be constructed for national or international needs. Civic and university theatres, to which this article is devoted, form an entirely different category.

The nature of commissioning bodies

The idea of the theatre as a social or educational necessity, like a library, is relatively new in this country and many people come to think of it in this way only after they have been deprived of a commercial theatre. Groups such as town councils or governing bodies of universities have no experience of managing a theatre company or commissioning the building for it, and even after deciding to do so (usually under pressure from an enthusiastic minority) have little idea of what they want or of the implications of any particular decision. Some may visualize a civic theatre on the lines of the *Staatsoper* which would be found as a matter of course in any German town of moderate size, but the most casual inspection of cost figures disposes of the idea immediately. Such a theatre would cost up to three million pounds to erect and after that an annual subsidy of about one pound per head of population. We are so far away from this sort of thinking that German practice is of no help at all, and may even be a hindrance as it tends to develop a sense of hopeless frustration. Even if buildings of this kind were erected here there would be no staff to run them and no audiences to fill them—the theatres we need must be related to the state of the theatre in our time and not to the propaganda of a pressure group with fixed ideas of what the ideal theatre ought to be.

The function of theatres

A civic theatre is likely to be required primarily to accommodate a resident company of moderate size presenting plays. Exchanges with companies from other towns might be arranged and occasional visits from touring productions, but the needs of the resident company should be paramount. Again, although it should preferably be possible to present small 'chamber' opera and ballet companies, and at least to provide musical accompaniment for a Christmas show, it is unlikely that the theatre will be visited by the major opera and ballet companies which spend most of their time in London, touring a few weeks each year only to the largest cities. Other expensive forms of entertainment such as musical comedy and operetta are also unlikely for very similar reasons.

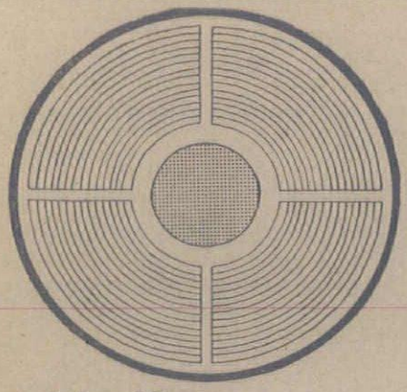
It follows that the prime requirement is for a resident company of actors, and for this purpose an acting area of about 900 square feet will be necessary, with adequate dressing-room accommodation for some thirty to fifty, workshops, wardrobe and scene storage. A university theatre is likely to need an acting area of similar size, with rather reduced dressing-room accommodation but wardrobe and workshop space at least as great.

Seating capacity

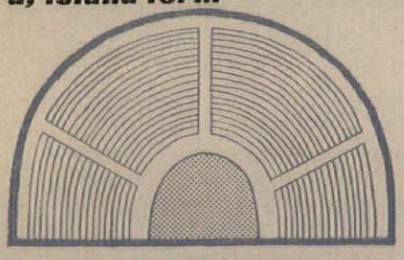
It will be found that in most cases a company of twenty to thirty actors in a town of about 300,000 inhabitants presenting a new play every fortnight will need a seating capacity of the order of 1,000 if it is to cover running expenses solely from box-office receipts. The theatre need not be full at all performances, but a large auditorium does enable a successful production to pay for a flop and permits high takings on Friday and Saturday nights.

As will be shown later, it is extremely difficult to design a proscenium theatre to modern standards with a seating capacity of 1,000 if any sense of intimacy is to be preserved. The practical limit for this form is about 750 seats, and after this the introduction of each extra row presents acute problems of sight-lines and distance. This, and capital cost, may result in strong pressure to keep to a seating capacity which will either force the public to alter their theatre-going habits, at present so largely confined to the weekends, or necessitate a large annual subsidy.

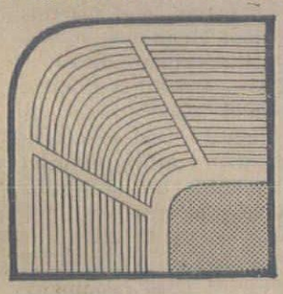
It is assumed that any civic theatre will receive some subsidy, if only in a lease on the building at a nominal rent and the loan of poster sites; but with a capacity of 750 seats there is likely to be need for a running subsidy as well. Compared with the sums spent on other civic amenities, little money is required and people's attitude must depend on their approach to public patronage of the arts, as any town could afford it if the will were there. The author's view is that it is healthy to subsidize a theatre company sufficiently to give it security and enable it to keep a little ahead of public taste, but not to the extent that it can ignore the box-office altogether.



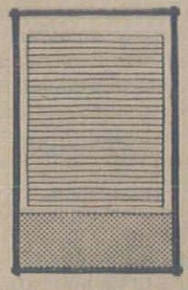
a, island form



b, peninsular form

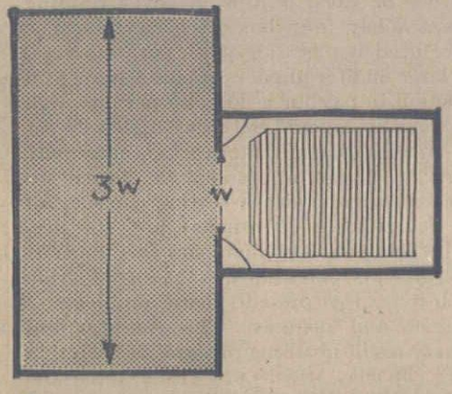


c, wide fan

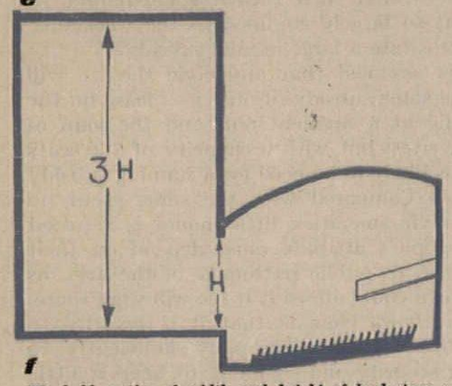


d, end form

Basic types of non-proscenium stage.



e



f

Workable ratios of width and height of back-stage space to proscenium opening.

The directorship of a civic theatre is likely to be regarded as a stepping-stone to higher things in London, and some young directors would rather have a rave notice in the Sunday Press than a full house. While there is something to be said for this attitude, the director must also pay some attention to the tastes of his immediate public, and the financial arrangements should take account of this. In the remainder of this article, however, it will be assumed that the best size for a civic theatre is between 700 and 900 seats.

University theatres have rather different requirements, and unless the building is needed for degree ceremonies and the like, a capacity of about 400 seats will in most cases be sufficient. In fact, we think that a university should have one large hall for ceremonial, which can also be used for major public lectures and concerts, while the theatre should be something entirely separate.

Size of auditorium

A great singer or dancer can project his personality for a distance of several hundred feet, while a great tragic actor of the classic school can often do as well. However, it is unreasonable to expect even a good actor of the first class to establish contact with spectators sitting more than about one hundred feet away, and supporting players, especially when appearing in modern plays, cannot project even so far as this.

This has nothing to do with the acoustics of the building, its sight-lines or lighting. Obviously, all these things should be arranged as well as possible, but we are discussing the ability of the performer to establish some *rapport* with the spectator, and however well he can be seen and heard it is impossible for him to come over *as a personality* unless he is reasonably close to his audience. Admitting that it is very difficult to put figures to intangibles of this kind, most people who have studied the question agree that the distance between the middle of the stage and the farthest member of the audience should never exceed 80 ft., and if at all possible, should not exceed 60 ft.

In a civic theatre the problem is therefore to accommodate at least 700 people within 60 ft. of the middle of a stage of area 900 square feet. The solution could be applied even more easily to a university theatre seating only 400, although in the latter case there may be other problems which will be discussed later.

In the Elizabethan age, when the popular theatre so eagerly awaited by *avant garde* writers and critics seems actually to have existed, very large numbers of people were crammed into a confined space in conditions which any modern audience would find intolerable. Nowadays the regulations prescribe a minimum width for each seat without arms of 1 ft. 6 in., and 2 ft. 6 in. between rows. Even these dimensions are too small for real comfort, and a width of 1 ft. 9 in. for each seat with arms and 2 ft. 9 in. to 3 ft. between rows is the practical minimum. The regulations also require that no seat shall be more than 70 ft. from an exit nor more than 15 ft. from an aisle, although where the spacing between rows is greater than the minimum the figures may be relaxed a little. It must be emphasized that these measures are no more than are required to ensure the safety and comfort of the public and it is extremely foolish to gain a short-term advantage in capital cost by reducing them.

Form of theatre

The most fundamental problem of all is the form of the theatre and the relationship between the acting area and the auditorium. For more than two hundred years the proscenium or picture-frame stage has been the ruling form and until the first World War its advantages were rarely questioned. Nowadays it is fashionable to speak of the 'limitations' of the proscenium and to canvass the advantages of other types.

The terms used are not yet standardized and we shall define them before considering each in detail. We must first distinguish between the *acting area*, the space on which the actors move, and a stage—a platform raised above the floor level of the auditorium. In some ways the simplest plan is theatre-in-the-round or the *island form* where the acting area is entirely surrounded by the audience, diagram a. The next is the *peninsular form*, b, in which the audience are seated on three sides of the acting area. Next is the *wide fan*, c, in which the audience sit, in effect, on two adjacent sides of the acting area and finally the *end form*, d, in which the audience sit all on one side. There are one or two variants such as the *transverse form* in which the audience sit on two opposite sides, but the first four are the principal types.

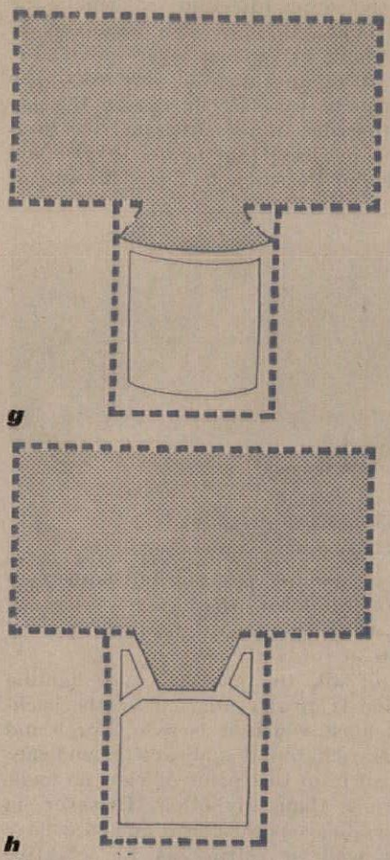
The plan shown in d does not necessarily involve a proscenium and the general term for all theatres in which the audience and acting area are contained within the same space is *open stage*. Proscenium theatres essentially involve placing the acting area and auditorium in separate spaces divided by a wall, the proscenium wall, which is pierced by the *proscenium opening* through which the spectators look at the action. The basic plan and section of a proscenium theatre are shown in e and f, which should be compared critically with d. Backstage in a true proscenium theatre the wall to wall width should not be less than double that of the opening, while if waggons are to be used it should be three times the opening. The height from stage floor to the grid, from which scenery may be suspended, should never be less than three times that of the opening.

Even in a proscenium theatre it is not essential that the whole of the acting area lies behind the proscenium wall, and there can be an *apron* jutting out in front of it. The apron is normally at the same level as the acting area, and may either run from wall to wall of the auditorium, g, or taper, leaving space on either side, h. In the latter case seats may be placed at the sides, which are often supposed to give the effect of the peninsular form, but it is doubtful whether a few seats in these positions can alter the presentation in any important way.

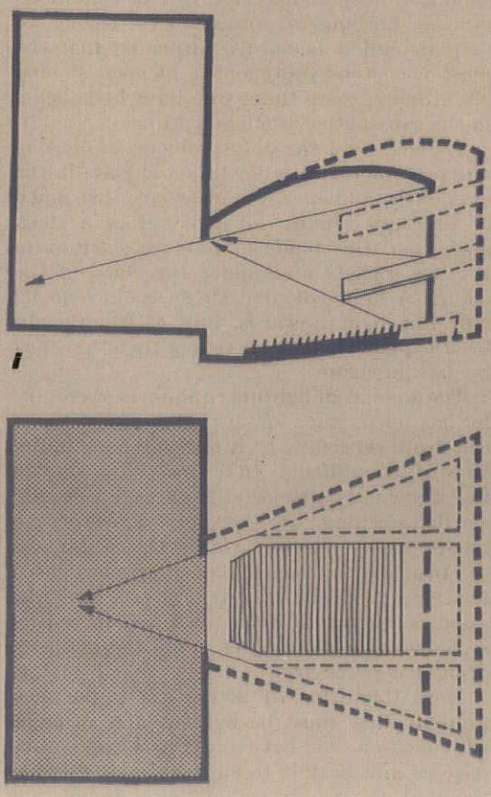
The form shown in g can be provided with proscenium doors giving direct access to the apron from behind the proscenium wall, and this is the form of the eighteenth-century theatre.

The relative merits of these forms of theatre can be compared under various headings.

1 *Size:* It is obvious that the island form enables more people to be accommodated within a given distance of the stage than any other, and the end and proscenium forms



Alternative arrangements of apron stage in front of proscenium opening.



Practical limitations on visibility with increasing size of auditorium in proscenium theatres.

least, with the others in series between.

2 *Atmosphere:* If a sense of intimacy were produced merely by proximity, the island form would be the most intimate of all theatres, and some people find it so. Others think it disagreeable to see spectators on the far side of the acting area, and whatever may be said about the theatre of 'the detached spectator' (the end and proscenium forms) and the theatre of 'the participating audience' (the peninsular and island forms) this would seem to be a matter of basic temperament as modified by custom and the often conflicting desire to be thought up to date.

A major difficulty in treating the auditorium in any open form is that whereas it should be a place of gaiety and brightness, the walls and ceiling must have a low reflectance otherwise they will pick up too much light from the stage and intrude on the play. Whereas in the picture-frame stage the actors are seen against the setting as a background, in most open stage forms the background is the stage floor itself. This must therefore be finished in a dark colour with a matt surface to enable the actors to stand out against it, as well as to prevent it throwing too much light back into the auditorium. If the surface has any sort of sheen it will give most distracting reflections of lighting equipment to those members sitting near the front, and even a smooth dark surface is not good enough. The necessarily sombre decoration of an open stage building can be disconcerting for the audience when assembling and during the intervals.

3 *Acoustics:* In the wide fan, end and proscenium forms the actors can speak out in the general direction of the audience at all times and the acoustic problem is well understood. In the island and peninsular forms some actors must at least speak away from part of the audience, even where they manage to avoid turning their backs on them. In buildings seating more than a few hundred this raises unusual acoustic problems and places a great strain on the actors' voice production.

4 *Control:* In proscenium theatres the traditional place for the stage manager to work is the stage left corner. In this position he can see nearly all the stage, can prompt, and keep in close touch with the technicians and the cast. In the open stage forms there is no corresponding position and he must work from a control box in the front of the house. He then gets a much better view of the action, but can maintain contact with backstage only by means of telephones, while he cannot prompt. Very few stage managers have an equal experience of both systems, so that it is too early to say whether one has any real advantage over the other.

5 *Suitability for productions with orchestra:* Musical productions are relatively rare on open stages, and whereas it is usually quite easy to find a suitable position for a single piano, there are problems when an orchestra is necessary. It can be seated on the stage, to one side of it, or on a gallery above. In any case, it is important that all members of the audience hear much the same balance between one instrument and another and between orchestra and singers, and on island stages this is rather hard to arrange.

In proscenium theatres, of course, the orchestra is normally placed in a pit in front of the stage riser, although even here the balance is by no means perfect for those sitting at the front of the stalls. The same position can be used for end stages although it tends to diminish the contact between actor and audience which the open form should promote.

There have been too few performances of opera and ballet on open stages to make it possible to gain a real idea of their suitability for the form. While most attempts so far have failed, this may be the result of inexperience rather than of any innate difficulty.

6 *Sight-lines:* To the architect the picture-frame stage presents the most difficult sight-line problem, since his brief will be to accommodate a given number of people within a given distance of the stage so that they can all see the whole of the stage at all times.

The latter requirement implies that all members of the audience shall sit within the limits of the proscenium opening, and for a stage of 900 square feet a proscenium width of 30 feet is reasonable. If a spacing of 3 ft. between rows is to be maintained no more than 20 rows can be accommodated in the stalls within a distance of 60 feet of the stage. Upper levels can be added, but when allowance has been made for a rake on the stalls, the fact that the bottom of the gallery must not obstruct the sight line from the back row of the stalls to the top of the opening, while eye level at the back of the gallery shall not be higher than the top of the opening, it is unlikely that more than one gallery containing ten rows can be squeezed in, allowing for an opening 20 ft. high. This height is about the maximum for a width of 30 ft., and even then the proportions of an interior setting will be rather strange.

Within the limits of the opening itself there can therefore be no more than thirty rows, each 30 ft. long, containing seats 1 ft. 9 in. wide, which makes 17 seats each. This gives a total of 510 seats.

This result can be generalized as follows: if every member of the audience is to have an unobstructed view of the whole of the acting area, the maximum number of seats that can be accommodated in a proscenium theatre within a distance of 60 ft. of the stage is 17 per foot width of proscenium opening. Obviously, it is impossible to run a theatre of this size without an enormous subsidy and in practice these limitations are nearly always stretched. The auditorium ceases to be rectangular and becomes fan shaped, so that those sitting at the sides cannot see the near side upstage corner, the distance from the stage to the furthest seat is increased and a second and perhaps third gallery are added from which it is impossible to see the backcloth. This is illustrated in diagrams i and j.

The problem would not be so delicate were it accepted that those who pay lower prices for their seats should be content with a less perfect view. However, this attitude has come to be identified with the class barriers of the imperialist past, and it is often said that modern theatres, people's theatres, should have perfect sight-lines for all. This is not a matter of sociology but of geometry, and unless seat prices are raised considerably (hardly an egalitarian measure) or subsidies increased far beyond what may be expected

within the foreseeable future, any viable proscenium theatre must contain some seats, at least one-third of the total, from which it is impossible to see the whole of the acting area.

On the other hand, once the architect has done his job, and if he does it well those who cannot see the whole stage need not be unduly conscious of the fact, the jobs of the director and set designer are relatively straightforward. The audience is peering through a hole in a wall and provided that the scenery on the far side is sensibly designed and the grouping reasonably flexible, they will be able to see the whole of the action.

With some of the open stage forms the position is reversed. The architect's job is much simpler in some respects and, for instance, it is relatively easy to design a peninsular theatre which will accommodate 1,000 people within a distance of 60 ft. On the other hand, the director's problem is greatly increased. Settings are extremely restricted, unless the view of those at the sides is to be impaired, and it is difficult to arrange the grouping in such a way that one actor does not mask another. This is hard enough with only a few actors on stage, but becomes acute in crowd scenes in which the stage must be filled with people and yet the principals remain clearly visible.

It is, of course, possible to provide rostra or balconies on which the principals can stand, but they themselves then obstruct the view of actors on the far side, while they also impose a certain pattern on the production which can become very tiresome. It is not only the picture-frame theatre which has 'limitations.'

On the other hand, since one-third of the seats in a viable proscenium theatre must have an impaired view of the acting area, restrictions on visibility on open stages should not matter as much as all that. One might say that the proportion of good and bad seats is much the same in all forms of theatre, it is just that the position of the bad seats will be different. The cheaper seats should therefore be those from which the view is really the worst and not simply those farthest from the acting area.

7 *Scenery:* Proscenium theatres are, of course, better suited than any other form to the use of elaborate scenery and to changing it swiftly, either in sight of the audience or behind a lowered curtain. On end stages there is no special difficulty in using scenery, there is only the difficulty of changing it with no proscenium wall to hide the works. Where changeable scenery is required it must be changed in full view of the audience which necessitates some system of folding screens or light portable pieces that can be moved by the actors, or a revolve. Very much the same applies to the wide fan form.

In the peninsular form the use of scenery must be very restricted and it is chiefly confined to the back wall of the stage and perhaps a balcony or series of platforms, but anything which projects significantly from the back wall is bound to obstruct the view of those sitting at the sides. Changing the setting during the course of the action is extremely difficult and must be scarcely more than actors carrying furniture and the like on and off.

For the island form the problem is more acute still, and although it is possible to separate one part of the acting area from another by dwarf walls this confines each scene to a very restricted space. In most island productions there is no use of real scenery but only furniture and properties.

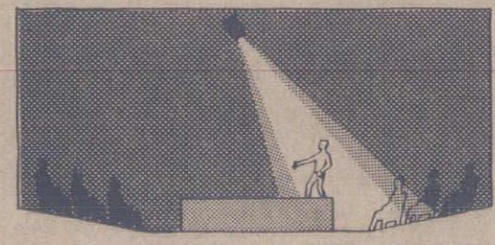
None of the open stage forms can easily be provided with a safety curtain so there are likely to be severe restrictions on the use of scenery and the materials from which it can be made on grounds of fire risk alone. The LCC and Home Office Regulations are still based on the assumption that all theatres of any size will have proscenium walls and will be fitted with safety curtains, and their application to open stages is still a matter of individual negotiation.

8 *Lighting as a substitute for scenery:* It is sometimes said that modern techniques of stage lighting are so far advanced that it can act as a substitute for scenery, or at least that the day of the painted setting is now over, to be replaced by three-dimensional forms whose appearance can be altered and controlled at will by variations in the play of light on and through them. While it is true that it is now possible, and in some cases comparatively easy, to do things that were unimaginable only twenty years ago, the author feels that this reliance on lighting is greatly overdone, and indeed that the enthusiasm felt for its potentialities is almost inversely proportional to the speaker's understanding of its technique.

One can say even of the very best lighting by the leading experts that its real contribution to the production is rarely in proportion to the time and money spent on it. Outside the handful of spectacular West End productions there is a limitation on the number of spotlights that can be used and it is rare enough to see good lighting for an ordinary picture frame production, but when it comes to peninsular and island stages the problems are enormously increased. The obvious dramatic effect of an actor lit from beside or behind by one spotlight loses all its impact, since what from one direction may be a figure with part of its face in shadow silhouetted against a brilliant beam of white light, from another merely looks like a man with his back to you standing in a good strong light.

More than this, things are seen only by the light they reflect, and at least some light must therefore reach each actor from the general direction of each member of the audience. Where the audience sit on three or four sides of the stage the lighting must, except perhaps for isolated 'dramatic' passages, come from three or four sides, and under these conditions it is very difficult to build up a coherent composition, so that the result often consists in no more than flooding the stage with light from all directions.

The worst problem of all is to light an actor standing at the edge of the stage with his back to the audience on the near side, facing those on the far side. If his face is to be seen properly by the audience towards which he is turned some light must reach it at an angle of elevation of not more than about sixty degrees, and preferably not more than about fifty degrees. Such a light is almost bound to spill at least on the legs and feet and possibly into the eyes of the audience sitting nearest him, and even where their faces are outside the main beam, no stage lighting equipment commercially available has a sufficiently accurate optical system to prevent their being aware of the source (diagram k). There is the choice of failing to light actors properly in these positions, or causing severe discomfort to those sitting in the front few rows. The problem can be eased by increasing the gap between the edge of the stage and the front row, or by ensuring that actors never stand at the edge of the stage and face inwards at least when they are speaking, but both these expedients diminish that very sense of intimacy which this theatre form is supposed to promote.



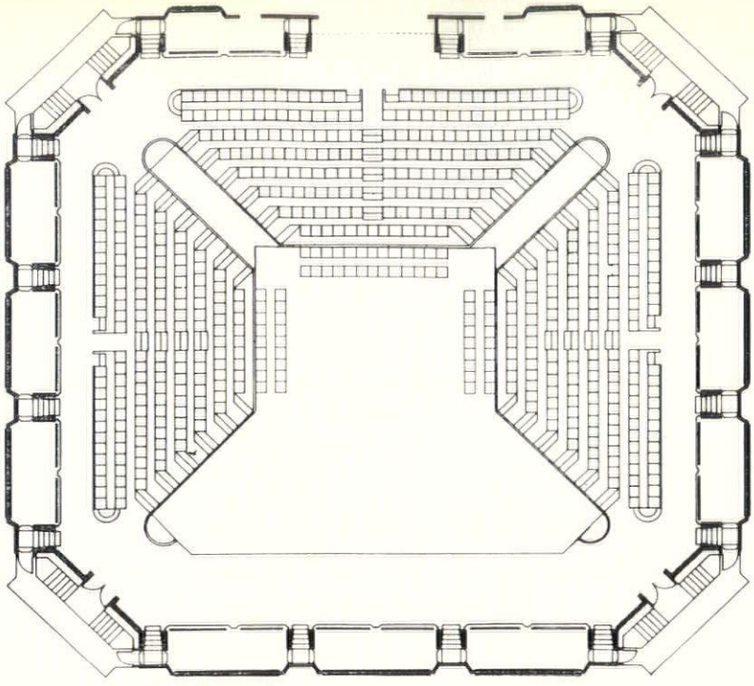
k
Practical limitations on lighting of island stage.

Worst of all, the effect of any lighting composition is greatly affected by the background against which it is seen. For island stages this background is always the audience opposite, so from this point of view no angle is any worse than any other. However, in peninsular stages part of the audience have the back wall or setting as the effective background while the remainder look across at the seating opposite. To devise a composition which is capable of reducing or eliminating the need for scenery when seen simultaneously under these various conditions induces nothing so much as a feeling of despair, and it is hardly surprising that the most vociferous protagonists of open staging are in many cases those who have little belief in the capabilities of stage lighting.

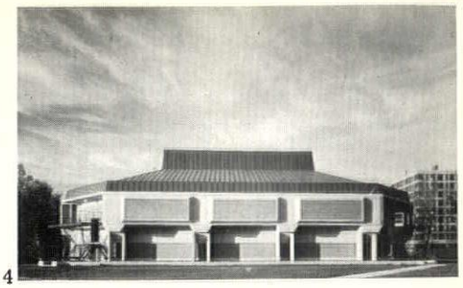
These are not the only problems of lighting on open stages. In order to avoid glare in the eyes of the audience it is necessary that much of the light shines down at rather a steep angle, and this tends to produce shadows in the eye sockets and under the chins of the actors. A light coloured stage would help by reflecting light upwards, but, as has already been explained, it is necessary that the stage be dark in colour.

The amount of lighting equipment necessary for an open stage of any size often causes comment, especially as it must all hang in full view of the audience. In a proscenium theatre the audience's attention is directed wholly at the opening by the very form of the building, but on open stages this is far less so. Instead, the acting area must be lighted relatively brightly, and in order to give the same sensation of brightness as on a proscenium stage about three times the intensity of light is necessary.

More than this, if actors are to be seen properly they must be lighted from an angle of elevation of between thirty and fifty degrees, and barrels to support spotlights are required not merely round the perimeter but in a grid over the stage so that any point can be covered, within this range of angles of elevation, from the general direction of each main block of seating. It is then necessary at least to double the number of units in order



plan with one tier removed

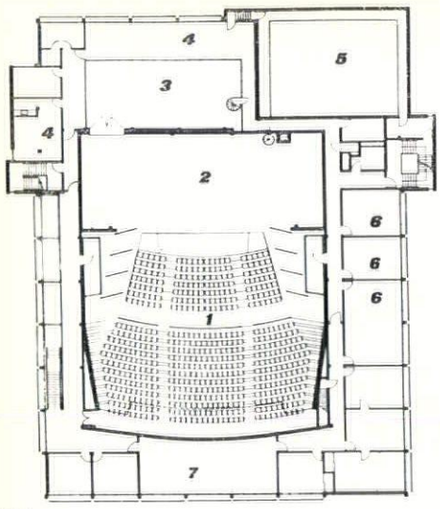


4

ARENA STAGE, WASHINGTON DC

4, the exterior of the auditorium: Designed by Harry Weese and Associates, this is one of the very few theatres whose architectural solution is comparable to that at Chichester. 5, the interior, arranged as an island stage—though the fact that it is located below the front row of the steeply raked seats fully justifies the term 'arena.' The plan shows one bank of seats removed to give a form of peninsular staging.

5

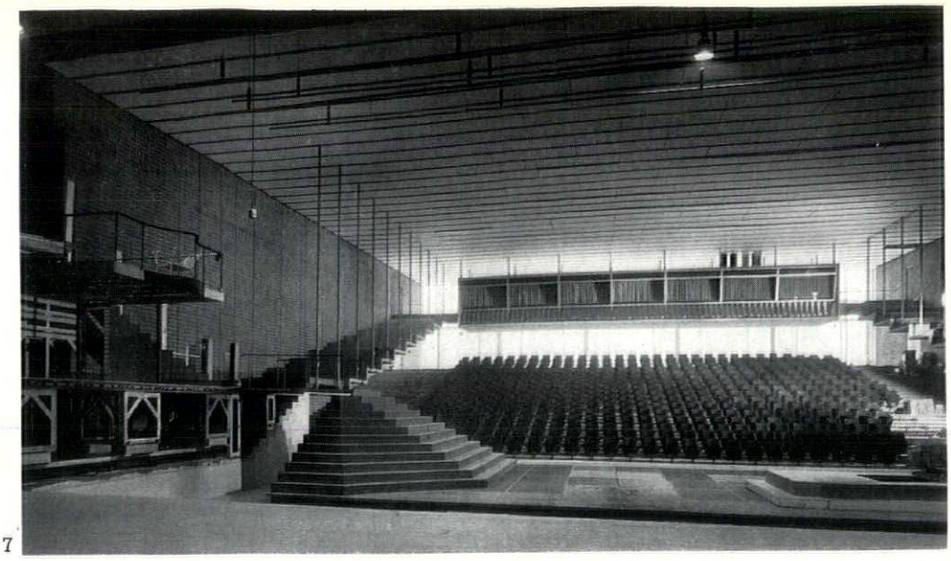


plan

key
1, auditorium
2, stage
3, workshop
4, costumes and drafting
5, try-out
6, rehearsal
7, library

LOEB ARTS CENTRE, HARVARD UNIVERSITY

6, the interior arranged as a peninsular stage—the plan above shows the forestage area filled with seating and the proscenium opened. Designed by Hugh Stubbins and Associates, and of a size comparable with workable university theatres in England, it offers the kind of adaptability between differing stage/auditorium relationships that can only be achieved with massive mechanical aids.



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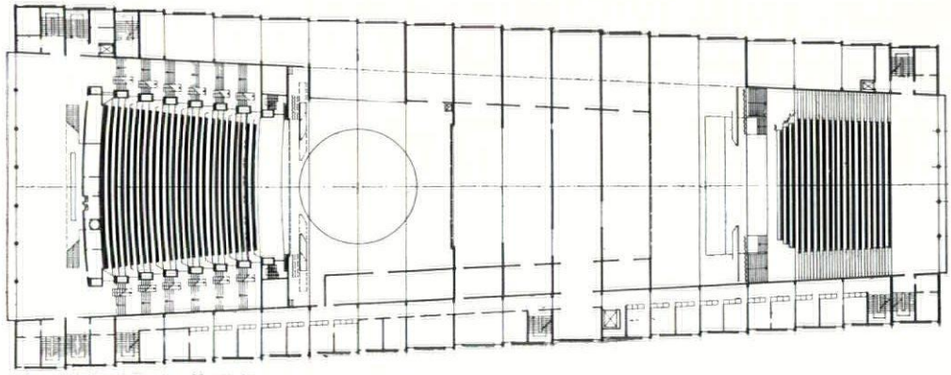
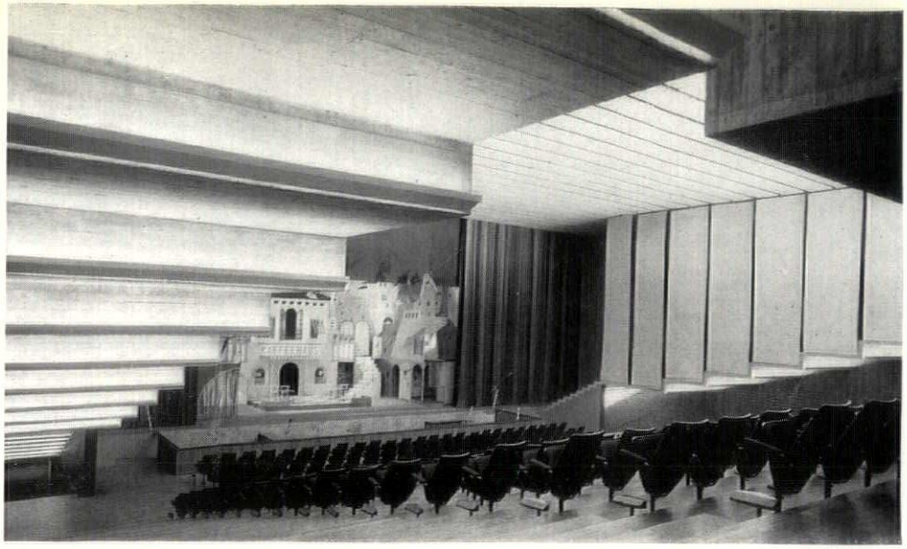


plan of National Theatre, Mannheim

6





8

NATIONAL THEATRE, MANNHEIM

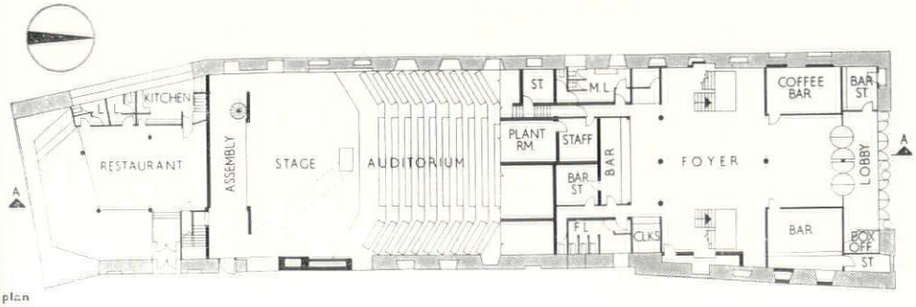
7, 8, two views of the smaller and less formal theatre, occupying the thin end of the elongated wedge plan of Gerhard Weber's double-house. Although this is a small theatre and highly adaptable, to the extent that seats can be arranged behind the nominal proscenium, facing across the stage into the main auditorium, as in 7, the amount of usable back-stage space is still enormous by economical British standards.



9

MERMAID THEATRE, LONDON

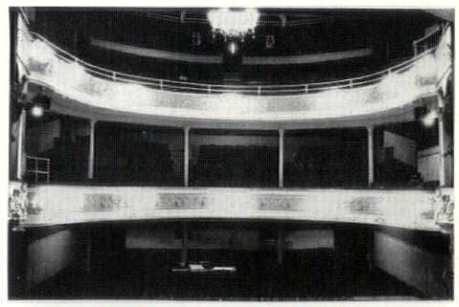
9, the interior, looking towards the end-stage of this ingenious conversion of an existing warehouse by Devereux and Davies. The extremely simple treatment front-of-the-house leaves the lighting equipment clearly in view, and gives an idea of the amount of electrical tackle that may be employed in even a small theatre nowadays.



plan

THEATRE ROYAL, STRATFORD, LONDON

10, 11, traditional three-tiered interior affording sight-lines that would be regarded as unacceptable nowadays. The stage boxes do, indeed, make a satisfactory visual transition from auditorium to proscenium, but are now occupied by lights, not people.



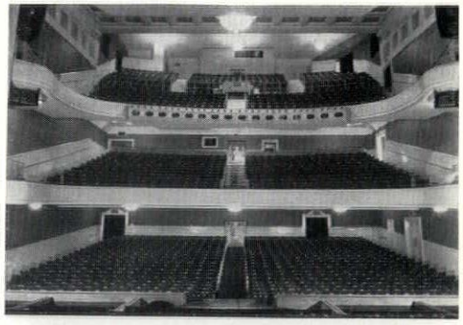
10



11

SADLER'S WELLS THEATRE, LONDON

12, 13, two views of Frank Marcham's interior after the recent alterations, showing the difficulties of preserving atmosphere and visual cohesion in a largish modern theatre with acceptable sight-lines. The unusual solution to the orchestra pit problem should also be noted.



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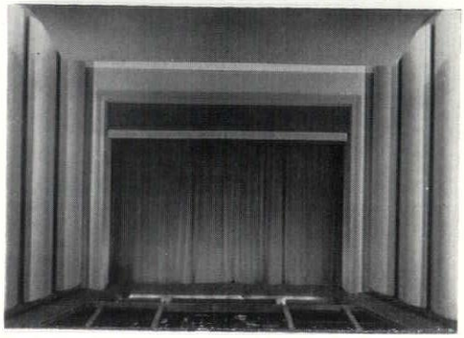

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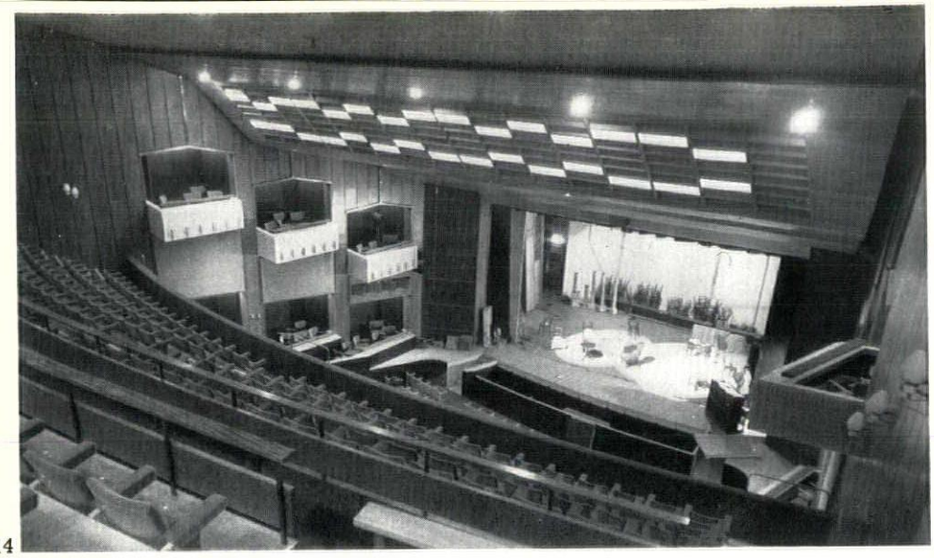
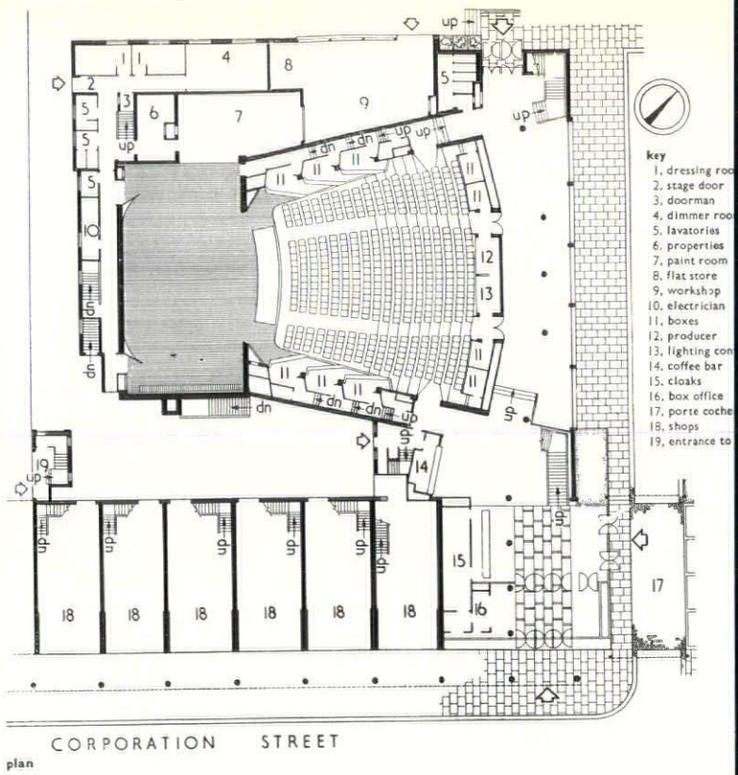


14

BELGRADE THEATRE, COVENTRY

14, *the auditorium looking down the steeply raked gallery toward the stage. Designed by Arthur Ling (the City architect) this was the first purpose-designed civic theatre in England, part of the post-war rebuilding of the bombed city. Unusual in retaining stage boxes, this employs a removable cover over the orchestra pit.*



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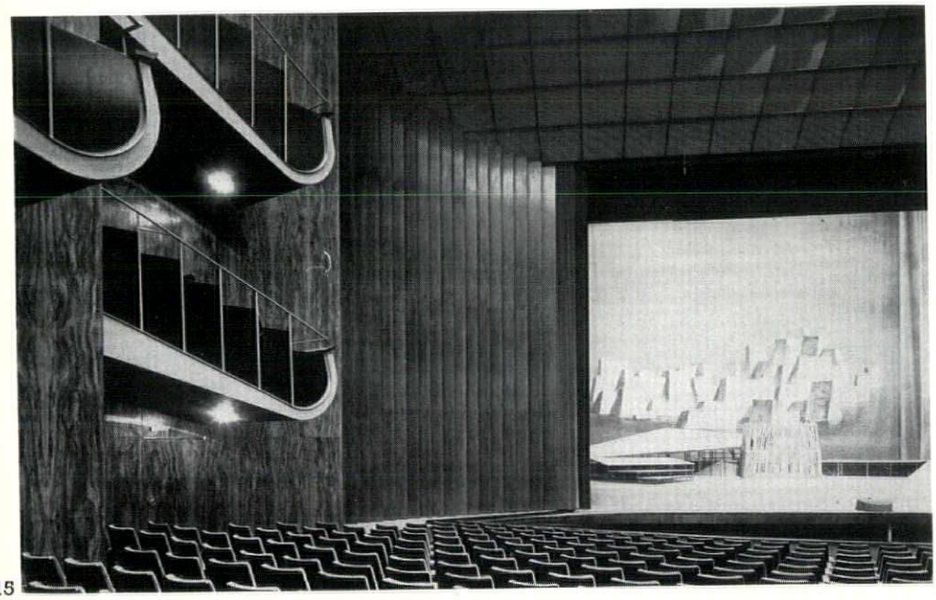


15

OPERA HOUSE, COLOGNE

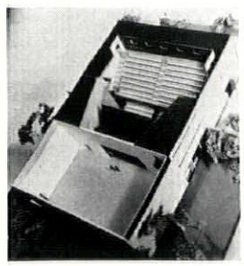
15, *box-balconies and flank walls to proscenium opening. The sumptuous finish and generous scale of W. Ripham's design, in which the back-stage space is not (as at Coventry, above) half the size of the auditorium but more like twice, is unremarkable by German standards, where the concept of a civic theatre puts to shame what is done by larger and richer cities in Britain.*



16

LITTLE THEATRE, MIDDLESBOROUGH

16, *view across the interior of the auditorium. Designed by Henry Elder and Enrico di Pierro for a group of local amateur enthusiasts, this unpompous theatre has something of that 'workshop' air that has appealed so much to the mood of post-war British theatre, without losing a proper theatrical atmosphere, and without being makeshift—the model,* 17, *shows that the back-stage space is more nearly adequate than in any British theatre for a very long time, though even here the width could only be obtained at the expense of height.*



17

to allow for variations in colour so that overall a very large amount of equipment will be necessary. The architect will doubtless wish to impose some restrictions in order to prevent the ceiling becoming one mass of lighting and he may succeed for the first season, but after that the equipment will find its way there just the same so he might as well make provision for it from the start.

9 *Cost:* From what has already been said it is clear that for a given seating capacity and size of acting area the cost of a theatre building will be least if it is of the island form, and greatest if it is of the proscenium form. Two principal factors determine this: firstly the size of the auditorium can be smaller and, secondly, the less changeable scenery can be used the less expensive provision need be made for it, both in space and equipment. The cost of the other forms is likely to form a series between the two extremes. This question of cost should always be borne in mind in any discussion of the rival merits of the various forms.

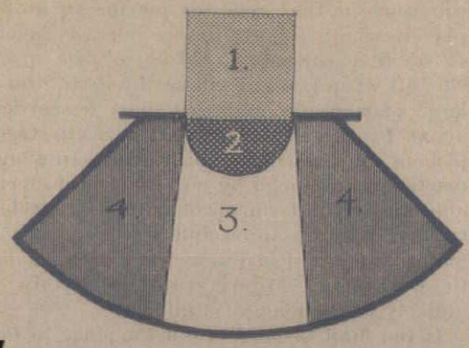
Adaptable theatres

The foregoing discussion would seem to show that no one theatre form has an overriding advantage over any other; for this reason architects are often asked to design buildings which can be arranged in any form by moving blocks of seating and the acting area, sliding screen walls and so on. Many and ingenious solutions have been devised, and the most spectacular so far is probably the Loeb Center at Harvard which is highly mechanized. Although the problem is all too often thought of in terms of pure engineering, it is really architectural. It is to design a building the interior of which can be equally valid when arranged in plan like any one of diagrams a to d, perhaps with g and h thrown in.

Put in this way the restrictions on adaptability should become clearer; apart from the question of cost there is no difficulty in principle in having large walls which fly away, blocks of seating which move round the floor, sections of stage which go up, down and sideways. What is difficult is to create an interior space which continues to feel right even when half of it has been hidden and the entire focus of interest shifted.

The maximum range of adaptability which can be expected in practice is from the simple proscenium form to the wide fan, and possibly, with a little self-deception, to the peninsular form. Where a commissioning body really needs both an island stage and a proscenium stage they had far better have two auditoria, although there can be common dressing-room, foyer and workshop space. It is not, perhaps, surprising that theatre people and technicians, whose insensitivity to architectural matters is notorious, should continue to seek a fully adaptable theatre, but it is disconcerting that architects do so too.

Even if the restriction on the range of adaptability is accepted it will be found that the seating capacity in the proscenium form is appreciably less than in the wide fan form. This is shown schematically in l, and if the maximum distance from stage to back row is kept constant there is no way round the geometry. In practice it will be found that the limit of seating for any building which feels like a theatre is about 450 seats in the proscenium form and 750 or so in the wide fan/



l

Comparison of feasible viewing areas (4, 3, 4) *with wide fan/peninsular stage* (2) *and feasible viewing area* (3 *plus* 2) *with proscenium stage* (1).

peninsular form, which rules out adaptability so far as civic theatres are concerned.

University theatres are a different matter. Firstly, the restriction on size does not affect them as they are unlikely to need a proscenium theatre seating more than about 400-450 in any case. Secondly, if the theatre is to be the laboratory of the English Department it is highly desirable to be able to present classical plays in the form for which they were originally written. There is therefore a strong case for adaptability even at some sacrifice of amenity as the prime function of the building is educational. Even so, where the money is available it will still be better to have two auditoria sharing backstage and front-of-house accommodation. In such a case, each can serve in some sense as a rehearsal room for the other, or be used for lectures or chamber concerts when the other is in use for a play.

There is, of course, no difficulty in building a large hall, or aircraft hangar, fitted up with portable rostra and seating which can be arranged in any relationship to each other, and it is even possible to construct a proscenium using scaffolding and curtains, or such more sophisticated means as there may be money to pay for. The question is whether the result, in any form, is worth calling a theatre—a pleasant place to which people will be glad to go during their leisure hours. As it is impossible to open a Sunday newspaper nowadays without seeing some fresh plan, using yet more elaborate machinery, which purports to be the fully adaptable theatre, I have thought it worth while to state the problem in these terms.

Practical decisions

There are comparatively few good theatre buildings in this country and not very many of these have been constructed within the last sixty years. It is not worth pursuing the reasons for this state of affairs, but it should be said that it is not only a matter of money, but of knowledge and interest among those who commission the buildings. Theatre people themselves, while quick to notice and comment on what they think are deficiencies, are not very good at describing their requirements in terms that are likely to be useful to architects.

Several architects talk and write as if they had real knowledge of the technique of theatrical presentation, and some may actually possess it. All too often they merely think they know and for this reason do not seek the right sort of advice. It is a great pity that few architects have designed more than one theatre and even those that have may be unaware of the true merits and defects of their designs. In fact, it is likely that a good architect who has no special interest in the theatre will do better, provided he knows where to go for advice, than another who thinks he understands the problems and succeeds only in building a monument to his own prejudices and limitations without considering whether these are shared by anyone who will actually have to use the building.

It must be emphasised that the techniques of theatrical presentation are very far from obvious, and least obvious to those whose only experience has been as spectators. Even successful directors and designers may be of little help to the architect, partly perhaps because they work instinctively and cannot verbalize, partly also because certain things are so obvious to them that they cannot conceive that anyone else, even an architect, needs to be told about them. An Association of British Theatre Technicians has been formed recently, having as one of its main objects the clarification and dissemination of information about theatre planning. The Association is preparing some planning notes for the guidance of commissioning bodies and it is no part of my purpose to trespass on their function.

However, from what has been said already it may be clear how some theatres come to be the sorry things they are. Those who wish to build may perhaps have taken the decision from a vague idealism with no clear idea of what they want; those others who have some knowledge of the economics of theatres and the building industry may well be altogether opposed to the project. Some will have heard that the picture-frame stage which served our fathers so well is quite good enough for us; others will assert that it is outmoded and the secret of true modernity is to return to the forms of the past. Neither side is likely to admit the disadvantages of the form which it favours, nor the advantages of the others. Even if agreement is reached here, nobody will be interested in the comfort of actors nor aware how much time and space is required to construct and manipulate scenery. Those who have amateur experience are perhaps worst of all as difficulties which can present a challenge when surmounted only twice a year are quite intolerable as a normal mode of working. Theatres must be thought of as places where actors and technicians work, and there is no reason why they should accept a lower standard of accommodation than any other professional people.

The commissioning body and architect may seek a way out of their ignorance, if they are aware of it, by appointing a theatre consultant; that is, a man who has special knowledge of the technicalities of theatres and can advise on the problems and methods of solving them. There are many people in this country, including the author, who have been asked to act in this capacity and it must be said that consultants can only be useful when it is made clear whom they are to advise—the architect, the client or the user—and about what. Where the theatre is being built for an existing company or individual, as will be the case for most university and civic theatres, the consultant will be required mainly as an interpreter—a man who speaks the language

of the architect, the client, the director and technician with equal fluency and can translate from one to the other. In fact, most consultants are theatre men, and however great their knowledge of the theatre as such they are often unable to communicate with the architect.

A new generation of consultants is required who can express their ideas in terms of clear drawings, who know something of structural problems and the properties of common building materials, as well as understanding the theatre itself. As the ABTT gathers strength it may do something to improve this situation.

Theatres in practice

Three open stage buildings have appeared in this country during the last few years. The Pembroke Theatre, Croydon, a small island stage in a converted hall (now closed); the Mermaid Theatre, Puddledock, London, another conversion but on a larger scale and an example of the end stage; and the Chichester Festival Theatre, a new building seating 1,350 people with a peninsular stage. None of them is a civic theatre, and the Pembroke closed when Croydon's civic theatre, a conventional proscenium frame building, opened.

It is too soon to gain any real idea of the long-term influence which these new buildings, and some others now projected, will have on theatrical production. While they have certainly justified some of the claims made for open stage forms they have by no means made them all good. The vast majority of plays are still presented on picture-frame stages and this form is likely to remain dominant for some time to come, although there will probably be several more experiments of one kind or another. On the other hand, there is an increasing tendency to provide aprons in proscenium theatres, either new or existing, and it is likely that many civic theatres will be of this form, which will now be discussed in some detail as it presents special problems.

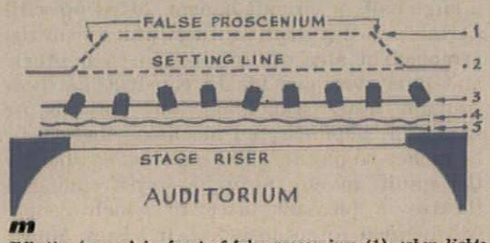
Any proscenium theatre must have provision for an orchestra pit, and it is an obvious and attractive idea to provide a lift in front of the main stage which can be raised to stage level to form an apron, lowered to floor level to provide extra seating space, and lowered still further to make an orchestra pit. This has been done many times, and what usually causes the greatest argument is whether to have a fully automatic lift or a series of rostra which can be moved by hand. We have little to say about this except that where a change must be made frequently under professional conditions a lift will pay for itself fairly rapidly, but where, as in a university theatre, it needs to be made only occasionally and an ample supply of unpaid labour is available it may be better to omit the machinery (to start with at least) and spend the money on something else.

Another common but less useful solution is to have a permanent orchestra pit with removable covers which can form an apron. In this case the apron should be about 6 or 8 in. lower than the main stage, as explained later.

The provision of a lift has important implications on the design of the auditorium. An apron, as opposed to a peninsular stage, should project not more than eight or ten feet from the proscenium wall and if the width of the opening is thirty feet this gives a maximum area of about 270 sq. ft. There should be provision in the orchestra pit for about 35 players who will need, on the average, about 12 sq. ft. each, making a total of 420 sq. ft. The lift when lowered will not by itself form a large enough pit, and this must be carried about five feet underneath the main stage, placing some restriction on the structure and machinery, although by no means an insuperable one. In this form, of course, it is impossible to have both an apron and a pit, but as the majority of musical productions keep rigidly to the picture frame convention this is unlikely to be much of a difficulty.

If the limit of 60 ft. from the stage to the back row is to be maintained it is difficult to decide which point to take as reference. It would seem reasonable to measure from the front of the apron, so maintaining the proper distance when it is in use although giving a maximum distance of about 70 ft. when the lift is at floor level or in use as a pit. In the first case nearly as many good seats are added at the front, so the deprivation of the back rows should not be drastic, while for musical productions, as has already been indicated, the restrictions on viewing distance are not so severe as for plays.

The size of the apron: it has been said that the apron should project up to eight or ten feet from the proscenium, but it is not quite as simple as this. Where scenery is used it is never set right down to the edge of the opening but to a *setting line* about two feet upstage of it. This is because there must be space between the proscenium wall and the scenery in which to hang lighting, the safety curtain, the main tableau curtain and sometimes a screen on which announcements may be projected or painted, while the stage manager must also have a 'corner' from which to control the production (diagram m). Where the structural opening is wider than is necessary for a particular production, a 'false proscenium' is often erected two or three feet upstage of the setting line and may consist either of black flats or brightly painted scenery providing an artificial frame for the action. In a civic or university theatre with an opening 30 ft. wide, it is likely that a false proscenium will be in use quite often as this width, although suitable for productions with large casts and plenty of action, is on the large side for many other kinds of play.



m

Effective 'apron' in front of false proscenium (1), *when lights* (3), *curtain* (4), *and safety curtain* (5) *have to be accommodated in front of the setting line* (2).

The setting line may therefore be as much as four or five feet upstage of the proscenium wall, and the actor steps out of the picture-frame convention whenever he comes in front of it. A lift projecting ten feet from the proscenium wall may therefore provide an apron effectively 14 ft. deep. This is why it is undesirable to provide a *permanent* apron in a building required for general purposes. If the money is available it may even be worth splitting the lift into two sections so that there can be a choice of size of apron. Where, for one reason or another, a permanent apron or pit with cover is unavoidable, it should not project more than about six feet from the proscenium wall, and can with advantage be six or eight inches lower than the main stage, as this will diminish the sense of separation from the front row when the apron is not in use.

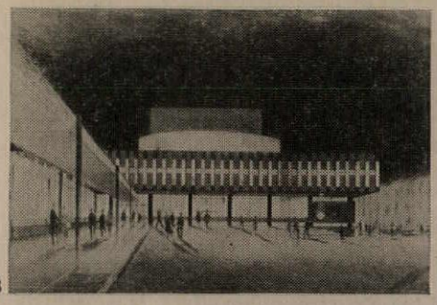
Linking the auditorium with the stage: it has already been explained that in open stage buildings the treatment of the auditorium must be muted so that it does not intrude on the action of the play. In a proscenium theatre the auditorium is quite separate from the stage so that it can be treated more freely; on the other hand it is important to provide some visual link between the two.

This problem is a by-product of the modern tendency to demand good sight-lines for all, and did not arise in Victorian theatres. These had galleries running right round to the opening, which were usually divided, near stage, into a number of separate compartments called stage boxes. Among the most charming specimens of this kind are Wyndham's and the Theatre Royal, Stratford, E. The sight-lines from the boxes are appalling, although this does not appear to have caused much comment at the time they were built as the enthusiastic follower of a particular star would willingly trade a general view of the action for proximity to his idol who would, in any case, normally stand right downstage leaving the less conspicuous parts of the acting area to lesser players. An incidental disadvantage of stage boxes is the acute cross sight-line which makes it all but impossible to mask the setting. Again, when social relationships were different from those of today, the fact that artists could be seen in the wings by some members of the audience seemed to cause no particular concern to either.

All this has gone, and the set must now mask fully and the audience see the whole stage. In existing buildings stage boxes are normally used for lighting equipment, loudspeakers and sometimes orchestral players. In a modern building it is difficult to justify stage boxes purely as a visual link without any expectation that they will be of use, although this has been done at the Belgrade Theatre, Coventry. It is clear that the auditorium should be handled in such a way that there are strong visual features which can be carried right round to the edge of the opening and give unity to the building, corresponding in visual function to the stage boxes of a Victorian theatre but not, of course, being used to accommodate members of the audience. It is also important that the orchestra pit, where there is one, be part of the auditorium and a solid screen between it and the front row is unlikely to be suitable. The traditional solution—a brass rail and curtain—is still a good one, but even where the pit is permanent and the screen has to support a cover it should be handled as delicately as possible, and should be sharply distinguished from the stage riser.

When an apron stage is in use it has a dual nature. Scenery may be set upstage behind the curtain, and actors behind the setting line are within the picture-frame convention. When they come right to the front of the apron they are entering into as direct a contact with the audience as in most open stage forms. In intermediate positions the atmosphere can be con-

CIVIC THEATRE, NOTTINGHAM



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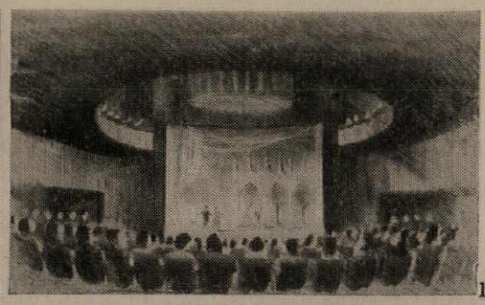

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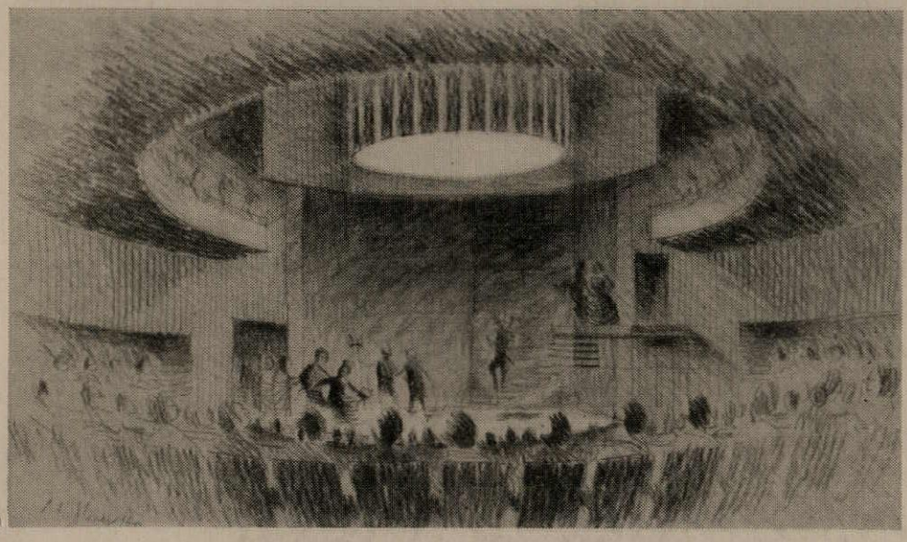
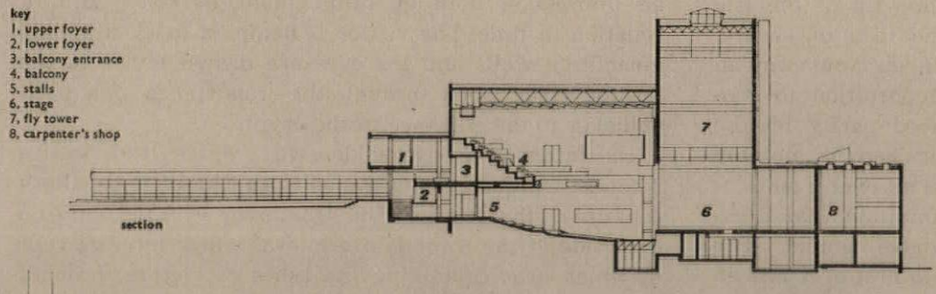
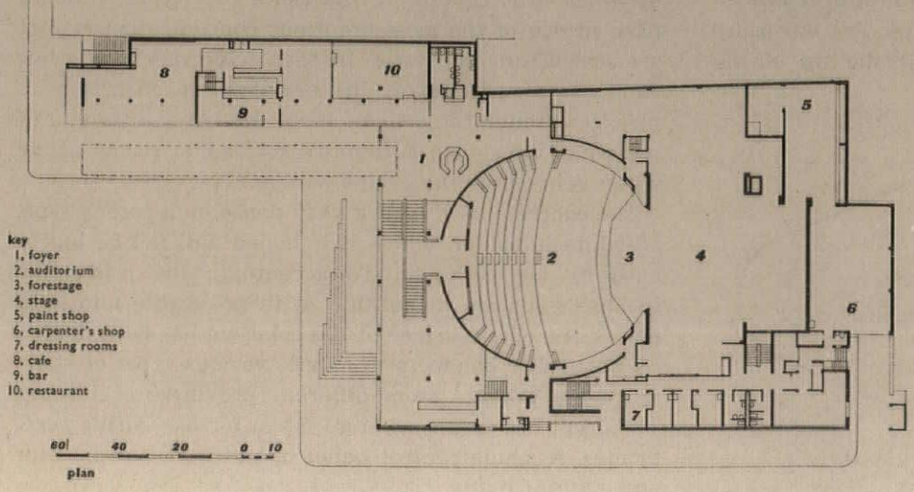


20

18, *exterior looking toward main foyer.* 19, 20, *the interior, arranged as a proscenium,* 19, *and as a peninsular stage for Shakespeare,* 20. *This degree of genuine mechanical adaptability offered by Peter Moro's design (now in course of erection) should establish Nottingham as the pace-setter for subsequent civic theatres in Britain. The mechanical provision, as such, would not necessarily be a great recommendation were it not that the rest of the design is also conceived in those terms—the back-stage volume is sufficient to make the illusionism of proscenium presentation plausible, while the lighting drum (not in use in* 19) *should make it possible to put light where it is needed when the fore-stage is in use.*





trolled by the style of the production; if, for instance, a carpet is laid partly behind the curtain and partly in front it preserves the picture-frame convention, whereas a complete absence of scenery, and perhaps one or two entrances made through the auditorium, emphasize the open character.

This has important implications for the treatment of the auditorium, since when actors are playing forward from some seats at least they have the walls of the auditorium as their background. It is therefore important that the 'strong visual features' referred to earlier, which must be used to link the proscenium with the auditorium, be not so emphatic that they destroy the effect. In fact, when a lift is provided to fulfil the functions of both apron and pit the design of the auditorium takes on some of the intractability of the adaptable theatre.

Sometimes theatres of this kind are called adaptable, but we think it better to reserve the term for buildings in which more than one distinct form of presentation is possible. The proscenium with, and without, apron are really two variants of basically the same form.

Conclusion

This is a time of transition in the theatre. There seems never before to have been so many competent actors and directors, while the long supremacy of the novel has been broken and more and more writers of quality are coming to regard the theatre rather than the publisher as their natural outlet. At the same time, there is an appalling scarcity of theatre buildings and although, for the first time in many years, several new ones are projected, there are considerable doubts about the type of theatre that is really required.

There is an influential pressure group for island stages of which the best known member is the indefatigable Stephen Joseph, while the groups behind the Mermaid and Chichester Festival Theatres have not failed to publicize their belief in the merits of their chosen forms.

We have explained that the design of a proscenium theatre to modern standards of comfort poses almost insuperable problems to an architect who has to work within fixed limits of cost and capacity, but that although the open stage forms are easier from this point of view they present other serious problems to the director and set designer.

The majority of professional directors still seem satisfied with the proscenium, although at times they like to experiment with the possibilities of open staging without committing themselves to it. This probably accounts for the popularity of aprons which, as has been explained, permit some ambiguity.

The clash of contrary pronouncements must be very confusing to the layman, but the cost factor should be kept in mind. A theatre such as that at Chichester can be erected for something of the order of £100 to £150 per seat, while a good proscenium theatre may cost from £400 to £600 per seat or even more. If we are to have many more theatres we must have cheap theatres, and in some towns the choice may lie between an open stage and none at all. The question is not therefore whether open stages are better than proscenium stages, as their supporters often say, but whether they are any worse. Until more theatres of this kind have been completed and many more productions presented in them it will not be possible to answer this question.

A memorial generally belongs more to sculpture than to architecture, since if fulfils its function by means of the visible fact of its existence and the message it conveys by its external appearance, rather than, like a building, by its habitability. But this memorial by the Seine in Paris is not only architectural in its nature; it represents the purest form of architecture: the manipulation of internal spaces, the exploitation of enclosure, contrast, changes of level and scale. It does these without recourse to any but the most basic architectural elements and it fulfils its function by leading the spectator through its imaginatively planned sequence of spaces.

Its emotional message—a very powerful one—is thus conveyed architecturally; for example by the sunken paved area, like a prison yard, shut in by walls beyond which nothing can be seen but the sky and a glimpse of flowing water beyond a fearsome iron grille, and by the narrow doorway into the crypt, whose reveals are shaped and surfaced like millstones to evoke something of their crushing power. Textures of stone and concrete, patterns of paving, transitions from light to dark, dramatic perspectives down the passages of the crypt add to the emotional intensity and the claustrophobic effect. It is perhaps the most distinguished memorial the Second World War has yet produced, designed by a veteran architect whose hotel (Latitude 43) at St. Tropez caught so many eyes as long ago as 1931, who was an associate at that time of Le Corbusier and Mallet-Stevens and who still teaches at the Ecole des Beaux Arts, that continuing refuge of architecture's basic geometrical concepts.

M. Pingusson's Paris memorial is also a brilliant exploitation of a site—the tip of an island in the river with a wide view over the most ancient parts of Paris—from which a lesser imagination might have assumed the need for a monument of a more obviously spectacular kind. Town planning requirements, however, and the idea of an oppressively confined space to express the memorial's subject, suggested this underground solution which, as well as being architecturally so effective, gains all the more by contrast with the airy spaces with wide views through which it is entered.

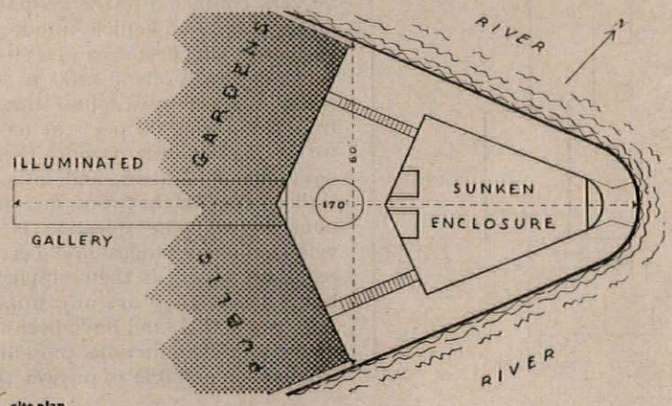
WAR MEMORIAL, PARIS

a monument to the French victims of Nazi concentration camps

ARCHITECT: GEORGES HENRI PINGUSSON

The memorial, which was inaugurated in 1962 by President de Gaulle, is sited at the extreme tip of the Isle de la Cité, behind Notre Dame. The idea of such a memorial originated with the *Reseau du Souvenir*, an association of those who survived deportation to concentration camps. It has been financed partly by the State and partly from various other sources, notably donations by school children sent from all over France.

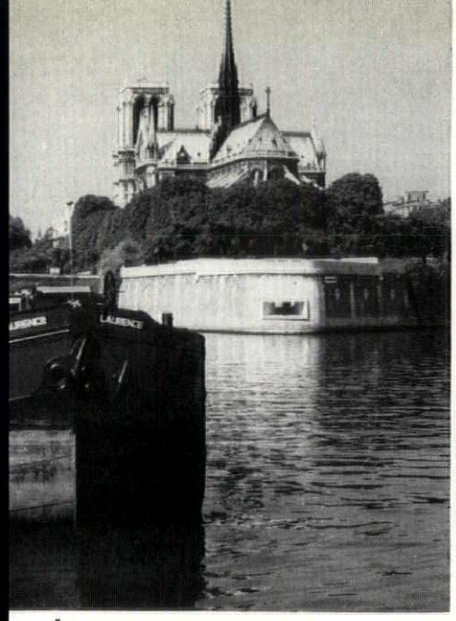
The site was made available on condition that there should be no structure visible above gound. The memorial was therefore given the form first of a sunken enclosure then, leading out of it, a crypt. The enclosure is reached from the public gardens at the tip of the island by two flights of narrow, high-walled stairs, giving an impression both of confinement in space and of isolation in time. The visitor is hemmed in by towering monolithic walls and his eyes are drawn either to the flowing river (seen through the iron spikes of a portcullis) or to the entrance to the crypt.



site plan

The latter is a narrow doorway, which leads into a rotunda. Opposite the entrance is an illuminated gallery containing the tomb of the Unknown Prisoner, and on each side of the rotunda are lateral wings forming cells in which urns containing the ashes of victims, brought from fifteen of the most notorious concentration camps, are sealed into the walls. In each wing one cell is left empty as a reminder of the brevity of each prisoner's passage through the cells of the camp. At the far end of the wings a passage and staircase lead to rooms above where relics from the camps will be kept.

The concrete used is of a very dense, non-porous type, off-white in colour, which it is hoped will not be blackened by air pollution. To accentuate the prison-like feeling, walls are monolithic, with no visible joints. In places, the outer surface of the concrete has been drilled by pneumatic hammers to expose various types of stone aggregate brought from different provinces of France. The crypt has an air-cooling system for use during ceremonies. A single control panel operates all the interior and exterior lights.



1



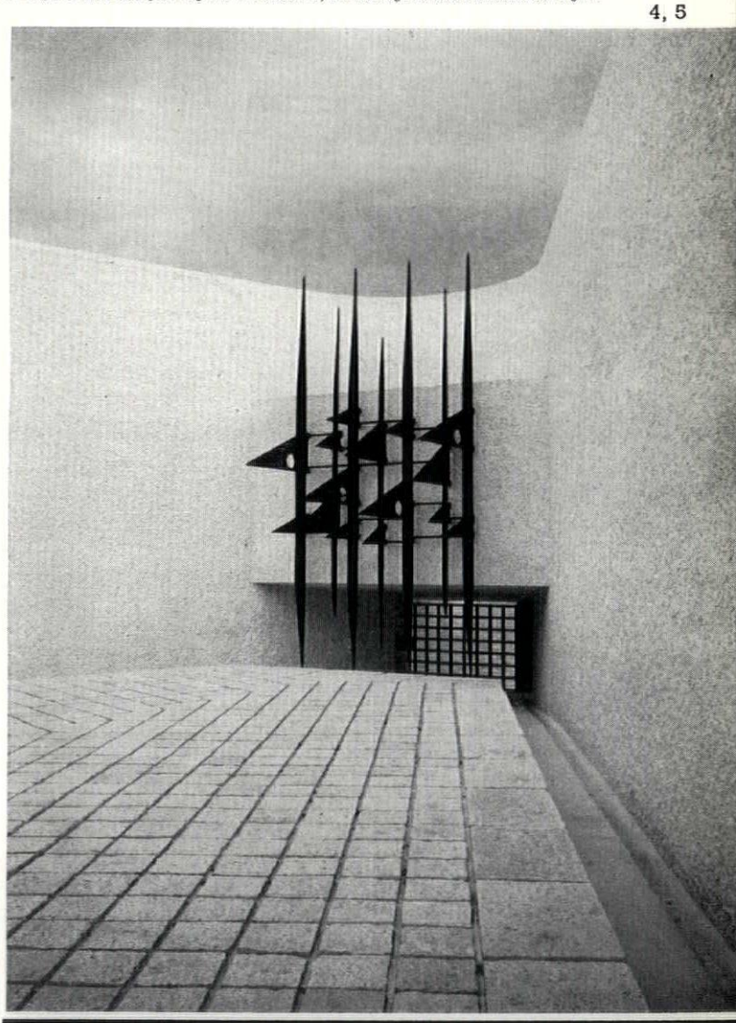
2

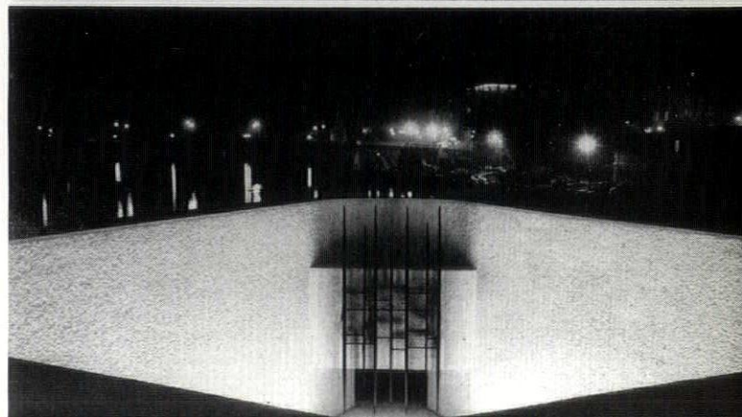
The memorial is sited on the tip of the Isle de la Cité, behind Notre Dame. All that can be seen of it from outside, 1, *is an embrasure in the river wall. It is entered from the public gardens,* 2, *by steep walled stairs. As the visitor descends these,* 3, *the views over Paris disappear, and he emerges in a sunken courtyard,* 4, *facing the embrasure; iron portcullis designed by the architect.* 5, *the courtyard illuminated at night.*

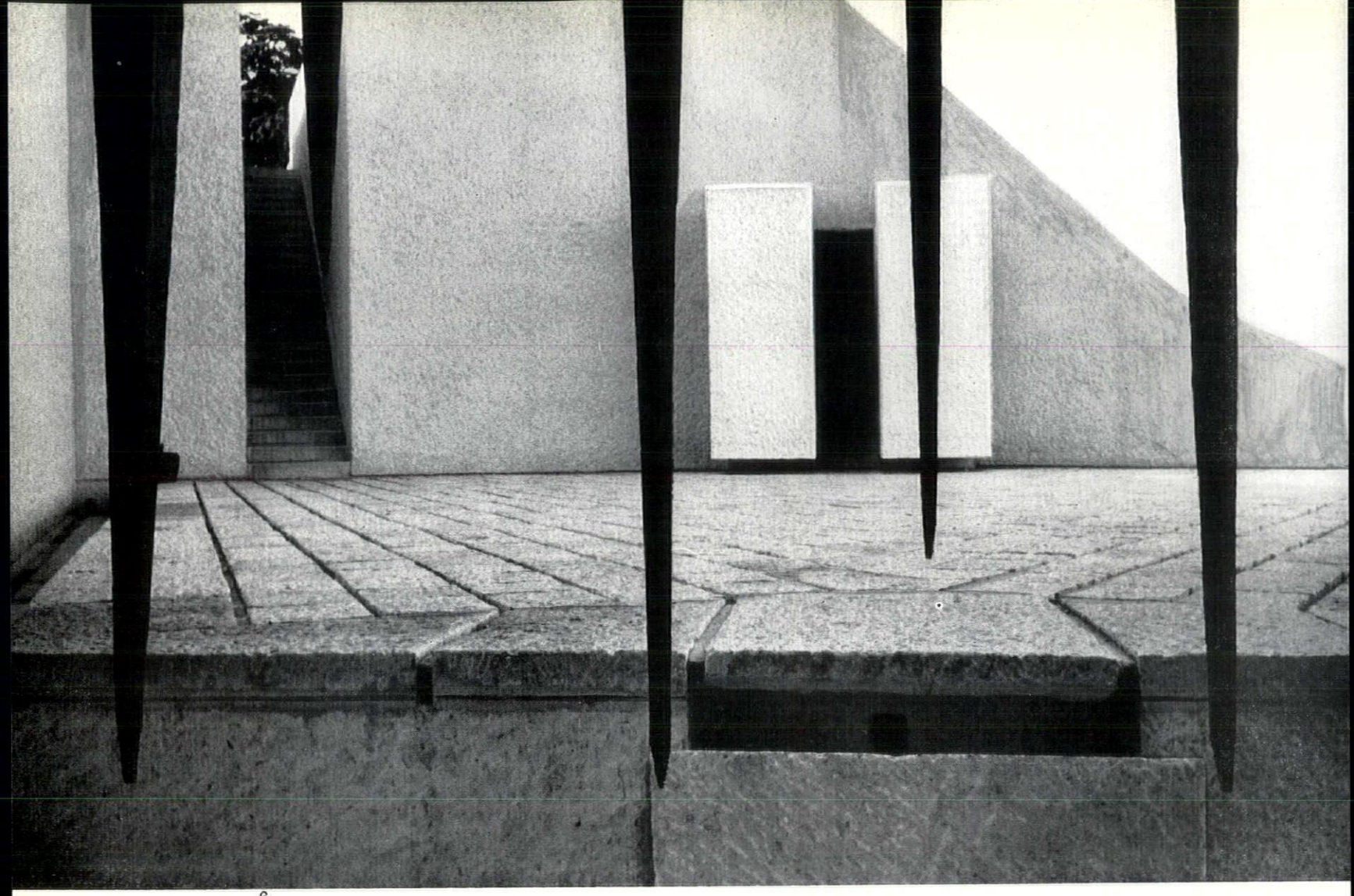
3



4, 5







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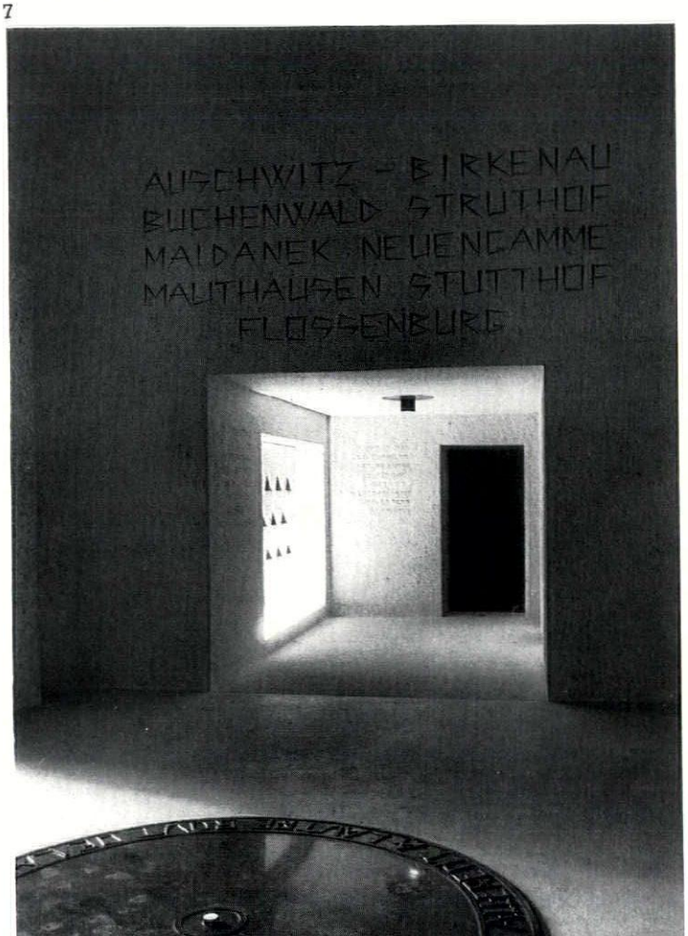
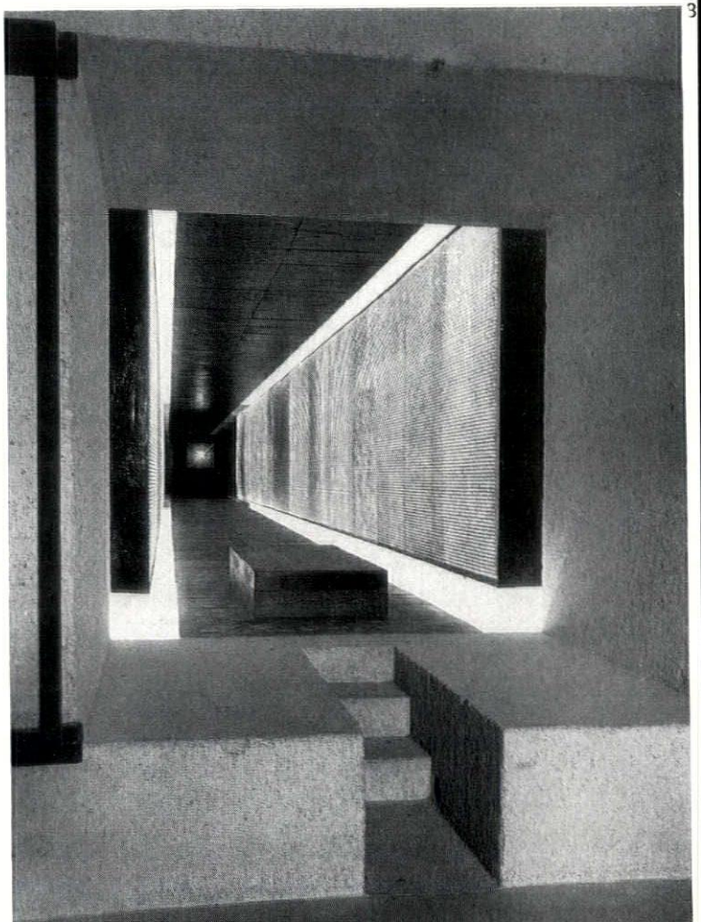
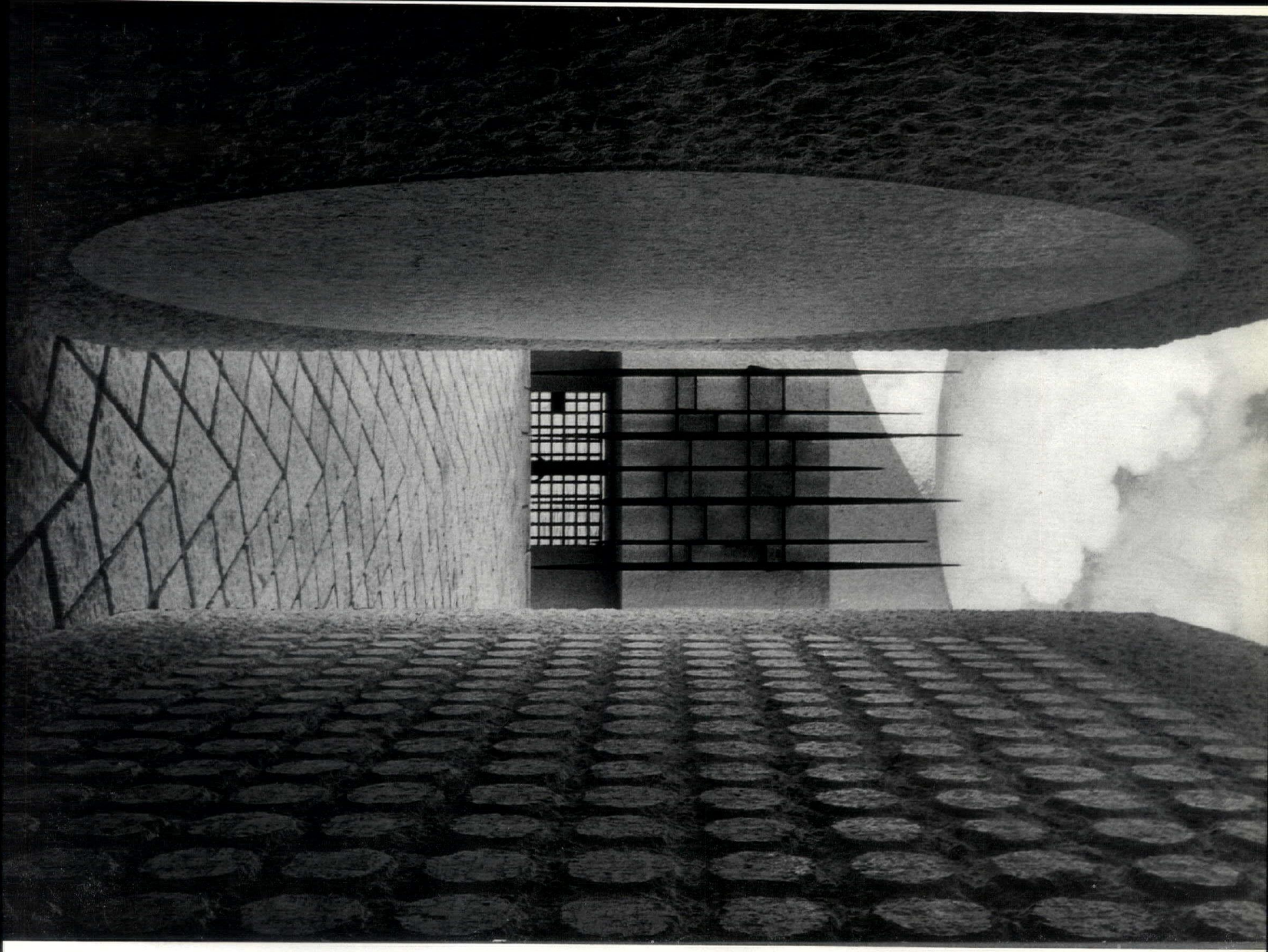




6, looking back across the courtyard towards the foot of the two staircases; between them the narrow entrance to the crypt. 7, south wing of the crypt. 8, memorial gallery within the crypt. It is 66 ft. long, with floor and ceiling of slate. The walls are lined with ¾ in. glass rods, lighted from behind. There are 200,000 of these, representing the 200,000 victims of Nazi concentration camps. In the foreground, the tomb of the Unknown Prisoner. 9 (facing page), emerging again from the crypt into the courtyard. The flanking concrete blocks are surfaced like millstones to evoke an impression of crushing power.

photographs by R. Bouwens



War Memorial, Paris

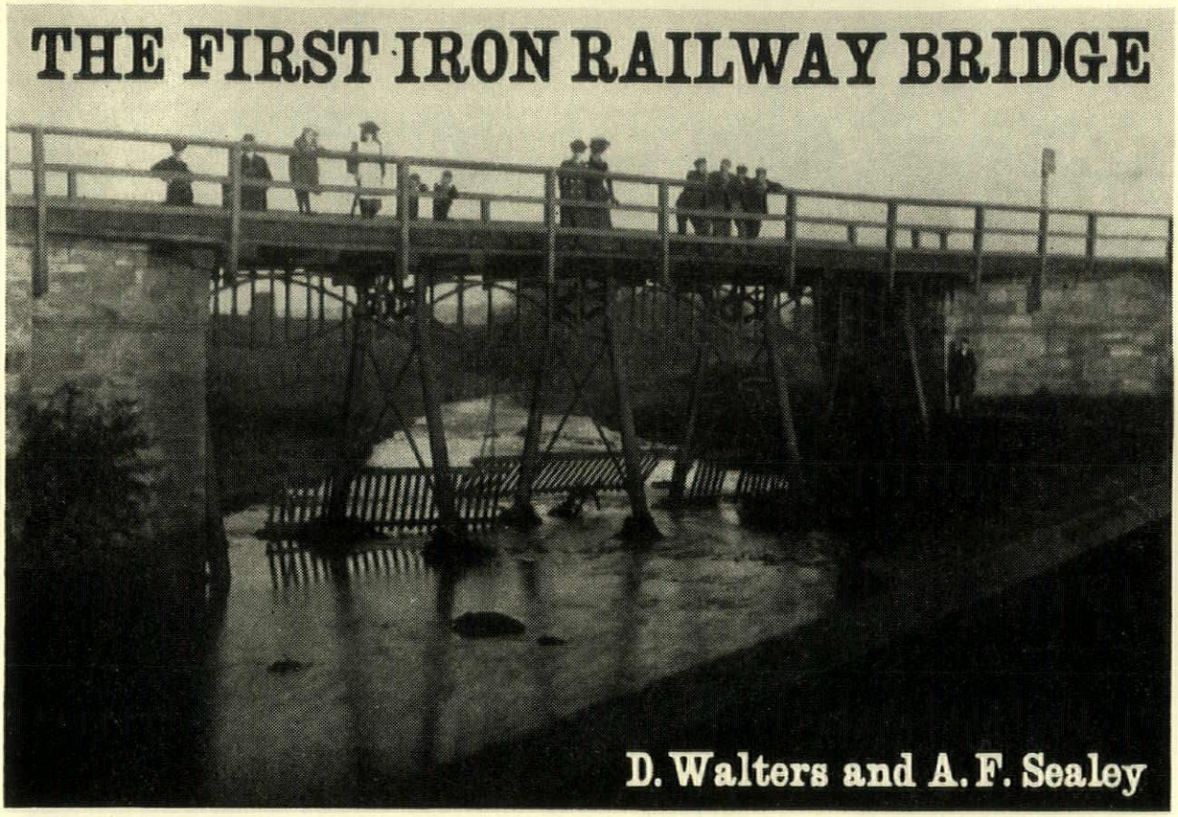
1

The article opposite describes and analyses the construction of the iron bridge that carried the Stockton and Darlington Railway across the River Gaunless in County Durham. Built in 1823-24, it was the first iron railway-bridge in the world. It is now preserved in the Railway Museum at York, where it is shown in 1, above. 2 is a close-up of a girder and connections. 3 is an early railway wagon-wheel, with wrought iron spokes and cast-iron bosses and tyres. The article points out the technical similarity between wheels such as this and the girders of the bridge, both of which were made by Burrells of Newcastle.

2

3

THE FIRST IRON RAILWAY BRIDGE



D. Walters and A. F. Sealey

4, *the bridge over the River Gaunless in* 1900 (*from a photograph in the possession of Mr. Henry Howe, of West Auckland*).

The Stockton and Darlington Railway, the first public railway to use locomotives, was opened to traffic on September 27, 1825. None would deny the importance of this event in the history of land transport. It is sometimes forgotten, however, that some of its bridges and fixed structures gave the event some importance in the history of construction also. One of the more interesting of these was the iron bridge, built in 1823–24, which carried the line over the little River Gaunless, at West Auckland, County Durham.

In some ways the Gaunless bridge is one of the most astonishing structures of the whole of the Railway Age; at one step it advanced the techniques of iron bridge building from the arch forms of Ironbridge, Coalport or Sunderland (which, however unconsciously, looked backward to masonry construction) to a truly iron form which showed an intuitive grasp of more advanced structural principles, and correctly exploited the differing characteristics of cast and wrought iron. Although its designer was no pundit with the background, training and experience of a structural engineer, more than a quarter of a century was to elapse before, with the development of the lattice truss, a more sophisticated bridging form emerged.

During the construction of the Stockton and Darlington line, the general government of affairs was directed by a hard-working sub-committee which met, normally every Friday, at the Company's offices in Darlington. Their engineer, George Stephenson, would frequently have to be present at these meetings, to report the progress of the works or to seek approval of some detailed proposal. In the minutes of this sub-committee for December 28, 1822, we read:

'Our engineer being present has exhibited a drawing and a plan of a stone bridge for crossing the Gaunless near St. Helen's Auckland which he apprehended will cost about £800, also a drawing and plan of an iron bridge which he apprehended would cost about £330 and which, he supposed, will completely answer our purpose.

'Resolved that he proceed to obtain estimates of cost for the same including the expense of erection and carriage and every other charge for a bridge complete, and that he lay the said estimate before this Committee as soon as in his power.'

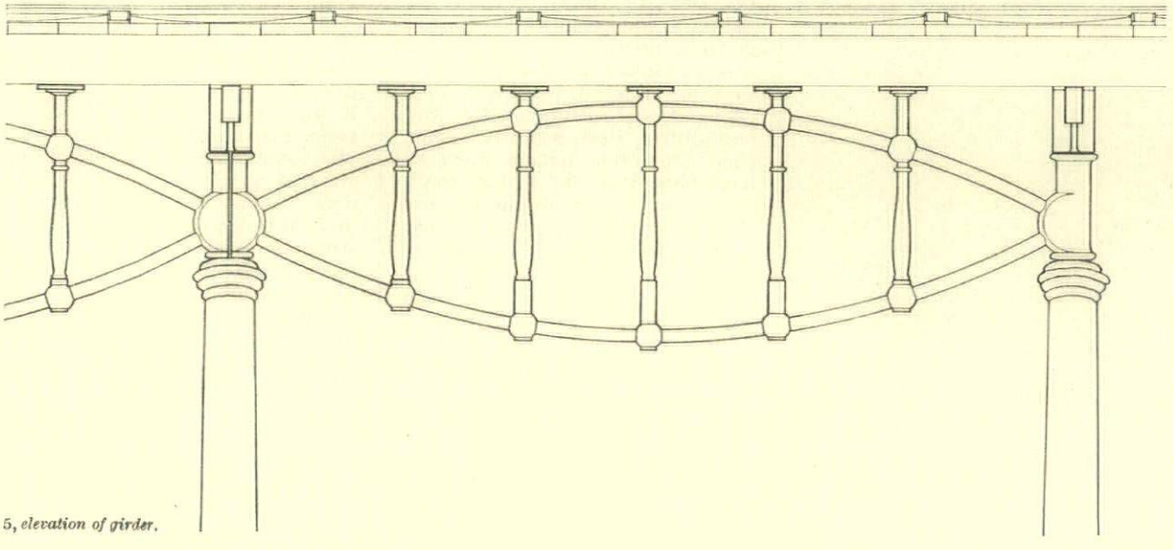
Despite the slight ambiguity in the wording of this minute, Stephenson did indeed lay before the sub-committee, some five weeks later, a tender for an iron bridge, in the sum of £330, from John and Isaac Burrell of Newcastle. The tender was accepted and the work ordered to be put in hand on February 28, 1823. The exact correspondence between George's first estimate and Burrell's tender suggests that he had been hatching the scheme with them for some time before he told his sub-committee about it.

The Burrells had established their foundry in Orchard Street, Newcastle, a year or so earlier, and their principal business seems at first to have been the supplying of wheels, axles and permanent way material for use on the colliery tramways of the district. When Stephenson opened his engine works in nearby Forth Street in 1823, Burrells supplied his castings, and were later taken over entirely by the Stephenson concern. We have discovered no documentary evidence which gives any precise clue to the designer of the Gaunless bridge, but we would not put it past the inventiveness and keen observation of Stephenson to have propounded the basic structural idea himself; clearly, to the Burrells, with their more immediate knowledge of the working of iron, must be attributed the elegant and economical manner of its realization.

The bridge consists of four pairs of iron girders, each spanning about 12 ft. 5 in. The girders themselves are made with curved top and bottom booms of 2½ in. diameter wrought bars, curved to a radius of 12 ft. The booms are united at their ends by having iron bosses cast on to them, and are also connected at intervals along their length by five baluster-shaped uprights, also cast on to the wrought bars; the balusters were continued upwards to form a level row of bearings for the longitudinal deal way-beams. The way-beams carried a deck of 2-inch deal planks with the rails on top.

The fact that Burrells made railway waggon wheels may have influenced the design of the girders; it was at this time becoming common to make such wheels with wrought iron spokes joined together at the centre by being embedded in a boss of cast iron.

The supports of the bridge each consist of a pair of hollow cast-iron columns, sharply raked for stability, and diagonally braced with 2½-inch round wrought rods. The girders are socketed* into the tops of the columns in a most ingenious way, and the connection at this point also involves the securing of the transverse stiffener and a cast cantilever bracket to carry the footway and handrailing; the beautiful simplicity and effectiveness of this connection is shown in the accompanying drawing. Apart from the fixing of the way-beams, which was probably by coach bolts, and of the diagonal bracing rods to the columns, which

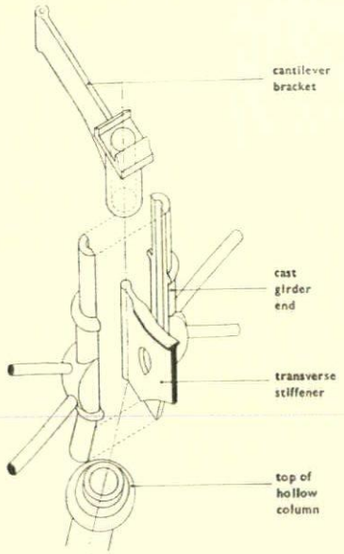


5, *elevation of girder.*

*In this socketing, and in the 'casting-on' of cast metal to wrought, there is an interesting anticipation of the techniques developed in the iron bedstead industry in the Midlands about twenty years later.

are secured in their bosses by set-screws, the whole of the erection was done without the use of bolts or iron cement; the socketing served to lock the whole structure rigidly.

Structurally, the functioning of the Gaunless bridge must be exceedingly complex. Since the girders have no diagonal bracing but rely on the rigidity of their cast joints to resist distortion, they are in some ways like modern Vierendeel beams. But the nature, magnitude and distribution of the various loads and stresses are open to a wide range of conjecture. However, what is important in tracing the history of structural progress is not how a structure actually behaves (for that is always problematical, even with the simplest of elements) but how its designer *thinks* it behaves. We feel it likely that Stephenson (if indeed the germinal idea was his) drew upon his knowledge of two well understood bridge types, the arch and the suspension, knew that one thrust outward and the other pulled inward, devised a composite form in which both elements were used and considered that in this way the horizontal thrusts would balance one another and relieve the supports of any but vertical loads. Thus also I. K. Brunel must have reasoned when, thirty years later, he worked out the design of his great bridge over the Tamar at Saltash; structurally it is very similar to this remote and diminutive precursor at West Auckland.



6, *girder end connection.*

The abutments and retaining walls were probably designed by the resident surveyor in charge of the western half of the line, Thomas Storey. It seems to have been the practice for the resident surveyors to be responsible for the detail design of the civil engineering works. George Stephenson surveyed the line, staked out the exact route and thereafter exercised a general rather than a detailed control over the enterprise. The plain ashlar masonry is executed in the local limestone, and is quite unadorned except for a rather odd string course. This is set at the level of the tops of the iron columns, and its profile imitates a moulding cast round these column tops. The moulding was evidently provided to give strength to the columns where the spigots of the girder bosses entered them, and it is purely an ironfounders' profile, of a form that enabled the pattern to be withdrawn easily from the sand mould; it is quite unlike any conventional stonework detail.

Though the order for the ironwork was placed at the end of February 1823, the bridge seems to have been nearing completion by the autumn of the same year, for there is a sub-committee minute dated October 17, 1823, authorizing a payment to J. & I. Burrell of £300 'on $\frac{4}{5}$ of iron bridge.' This may indeed be the total cost of the ironwork, though one cannot be sure about this from an examination of the minutes since from this time onwards Burrells supplied quantities of iron rail chairs and waggon wheels to the Company, and there are several records of further payments to them 'on $\frac{4}{5}$ of cast ironwork"; a final payment for the bridge may be concealed in these entries. At least one can say that the final cost was fairly close to the original estimate.

Throughout its working life, the Gaunless bridge probably never carried a locomotive; originally, locomotive haulage ceased at the eastern foot of the Brusselton Incline, about two miles to the east of the bridge. Trains were hauled over the Brusselton ridge by ropes and a fixed winding engine at the summit. Westward from Brusselton, over the iron bridge and as far as the other rope-worked incline at Etherley, haulage was by horses. In 1842 the Shildon tunnel was completed and this considerably altered the pattern of the railways in the area; as a result, the section of the line containing the Brusselton inclines and the Gaunless bridge went out of use and the bridge itself seems to have become entirely forgotten. It makes a brief reappearance at the time of the jubilee of the Stockton and Darlington Company in 1875, when an illustration of it was published in *The Engineer*, showing it as it then was, long neglected and with most of its iron handrailing broken away. Some time after this repairs seem to have been done, for a photograph of about 1900, reproduced here, shows it with a fairly new timber balustrade.

At the beginning of the present century a colliery near Brusselton was opened, and this brought part of the line back into use again; but the old bridge, after nearly sixty years of disuse, was wisely thought to be unsuited to carry the traffic of the day, and in 1901 it was dismantled and replaced by a conventional plate-girder structure, resting on new pad-stones built into the original abutments. The old ironwork was happily saved from the melting furnace, and preserved. In 1926 it was re-erected as a permanent exhibit in the Railway Museum at York, where it can still be seen. The line where it stood was finally closed at the end of the last war, and the plate girders themselves have now been removed.

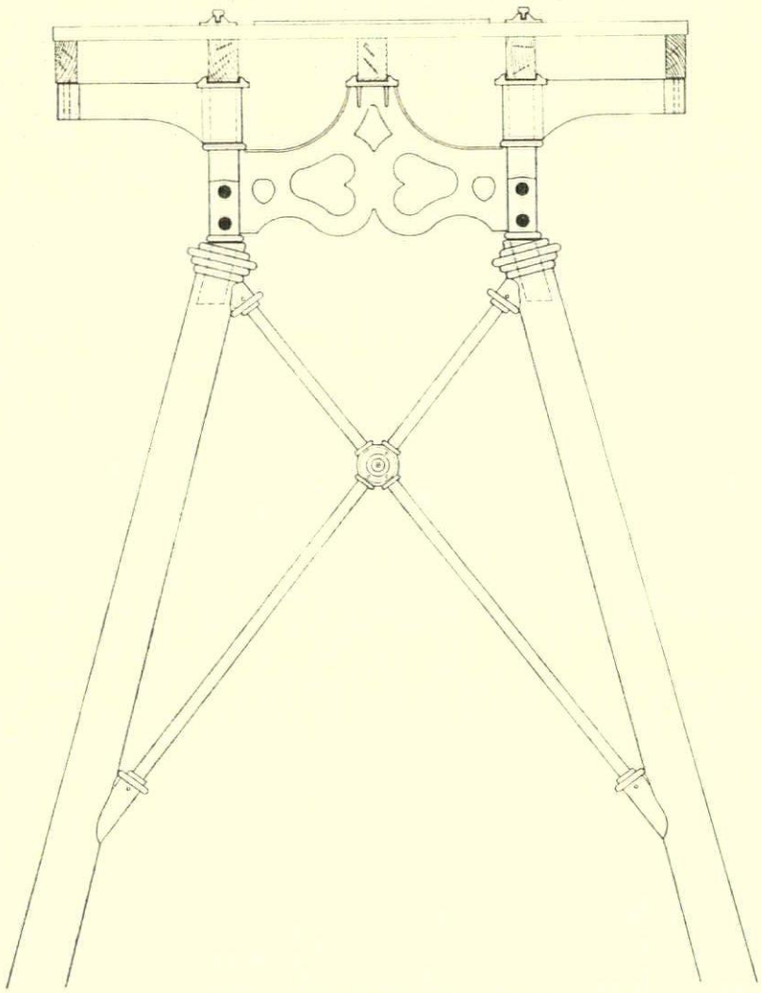
Today all that remains visible is the stonework, with its curious string-course, and the overgrown embankments. The site is easily found, about 100 yards to the east of West Auckland station, at map reference NZ 186266; a footpath from the main road, A.688, leads directly to it. The spot is still known to the people of West Auckland as 'Metal Bridge,' a name which commemorates what was undoubtedly the first iron railway bridge in the world.

A minor mystery remains: what was the exact detail at the lower ends of the columns, where they rested on their foundations? When the bridge was dismantled the columns were simply cut off at water level, and only the upper portion was removed. Our guess would be that they had flanged ends by which they were bolted to granite blocks, set in the ground below the bed of the stream. Such blocks were used in large quantities for sleepers during the construction of the line. Perhaps the ends of the columns were just set in concrete; this is historically possible but, we feel, less likely. However, the column stumps are still there and can be seen when the water level is very low; perhaps one day it will be possible to dig one of them out.

* * *

Acknowledgments: We would like to thank those who have helped us to disentangle some of the history of this bridge, and especially these: Mr. E. H. Fowkes, Keeper of Records, B.T.C., York, who allowed us free access to all the early papers, minute books and correspondence of the Stockton and Darlington Railway; Mr. R. J. Hunter, Curator of the Railway Museum, B.T.C., York, who let us measure the bridge which is now in his care and has given permission for the reproduction of photographs taken in the Museum; Mr. A. H. Jenkins, Assistant Engineer (Bridges), British Railways, N.E. Region, who gave us a copy of a drawing of the bridge made when it was dismantled; Mr. W. K. V. Gale, F.R.Hist.S., of the editorial staff of *The Engineer*, with whom we had an interesting correspondence about foundry techniques, and Mr. Henry Howe, of West Auckland, who remembers the old bridge and who showed us his photographs of it.

Bibliography. Published references to the bridge and its history are sparse, but brief notices and illustrations are to be found in the following: Tomlinson, W. W.: *The North Eastern Railway: its Rise and Development.* London: Longmans, Green, 1915 (*passim*); *The Engineer*, 1875, p. 214; *Engineering*, August 14, 1903.



7, *cross section showing design of intermediate supports.*

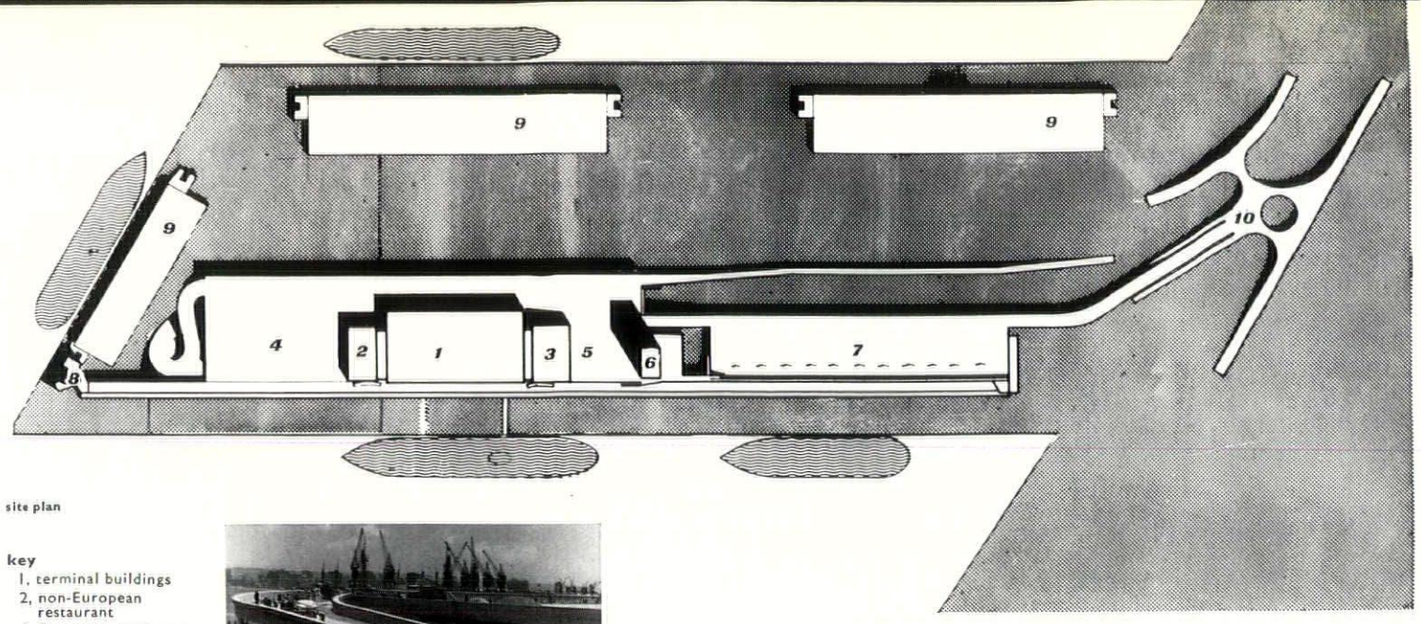
OCEAN TERMINAL, DURBAN

DESIGNERS | ***MICHAL S. ZAKRZEWSKI (consulting engineers)***
(architectural assistant, J. Warunkiewicz)

1

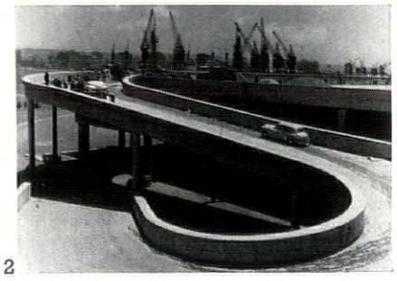


1, looking south-west from the bay, with the 12-storey administration block on the right.



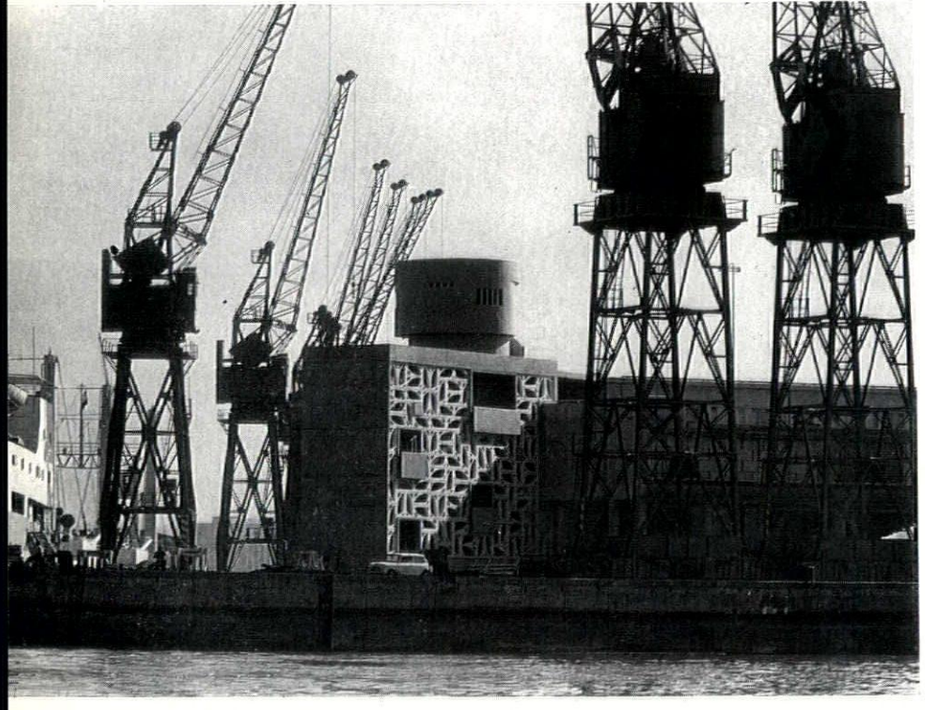
site plan

key
1, terminal buildings
2, non-European restaurant
3, European restaurant
4, non-European piazza and helicopter pad
5, European piazza
6, administration block
7, parking area
8, south access tower
9, goods sheds
10, approach viaduct



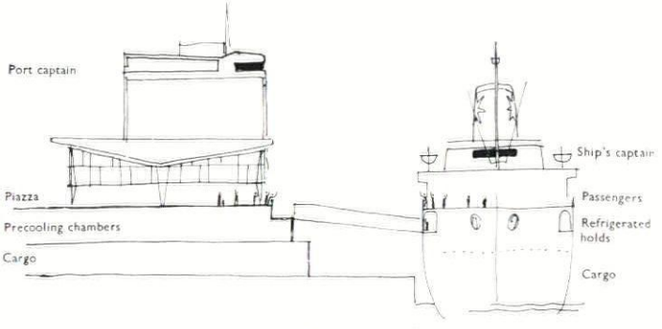
2, the ramp to piazza level.

3



3, the access tower at the south end of the quay (8 on site plan above).

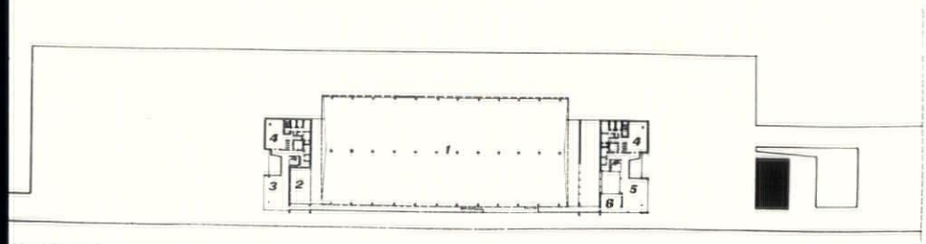
The terminal serves the Union Castle mail-boats from Southampton which dock at Durban every Tuesday morning and leave again every Thursday evening. They bring and collect cargo and passengers from overseas and coastal ports, and they also collect up to 4,000 tons of export fruit. The terminal therefore had to provide space for the storage of cargo in transit, special storage space for fruit (including pre-cooling installation to retard the natural ripening process while at sea), facilities for embarking and disembarking passengers, their baggage and their motor-cars, and an administrative block containing offices, staff rooms and the customs department. Each of these separate services is housed one above the other, parallel to the quay, producing a structure in section not unlike the mail-boat itself—see diagram.



Telescopic gangways

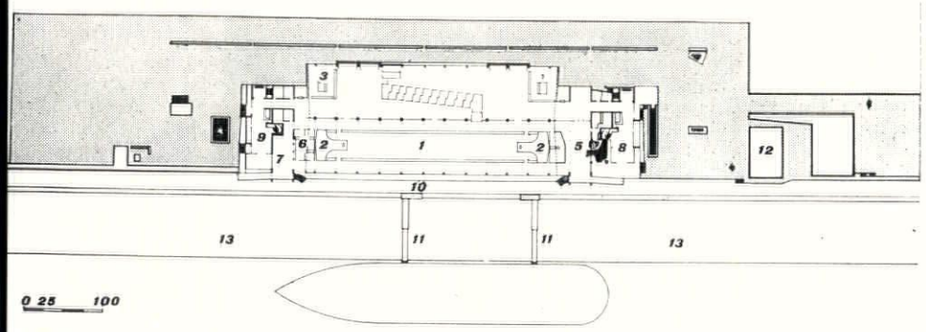
The passenger accommodation is on the third level, roughly corresponding to the level of the promenade deck of the boat, with which it is linked by two telescopic gangways that can travel the full length of the terminal. They span 80ft., clearing three lines of railway-track on the quay beneath. The fruit stores are immediately below, and below them, approximately at

OCEAN TERMINAL, DURBAN



third floor plan

key
1, upper volume of terminal building
2, upper volume of entrance hall
3, non-European dining room
4, kitchens
5, European dining room
6, bar



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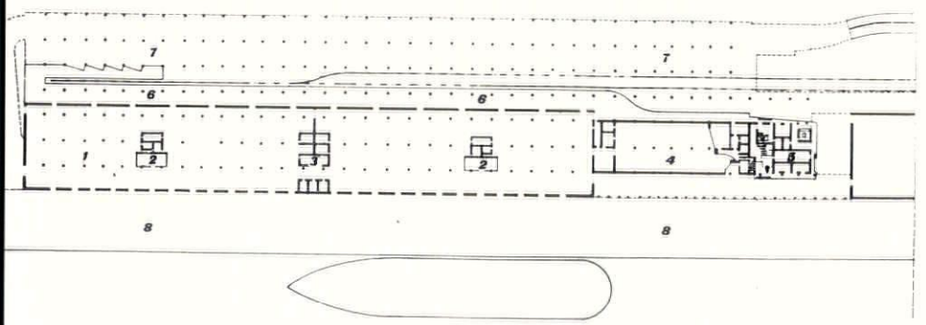
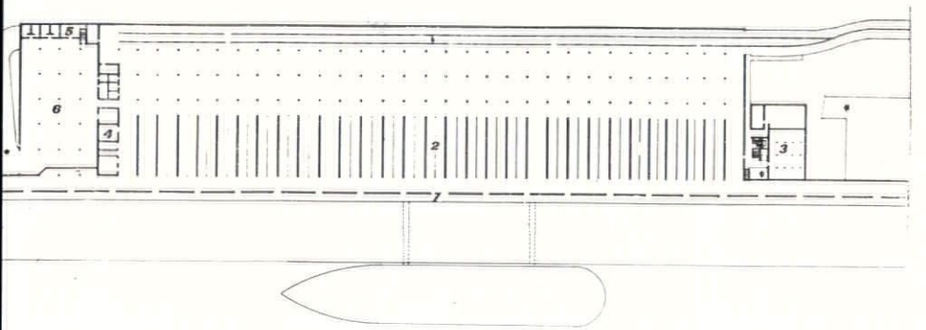
plazza plan

key
1, customs area
2, baggage ramp
3, baggage release
4, shopping kiosks
5, entrance hall for passengers
6, port health and immigration offices
7, entrance hall for passengers
8, European restaurant—lower floor
9, non-European restaurant—lower floor
10, baggage and passenger gallery
11, telescopic gangways
12, administration block
13, quay below



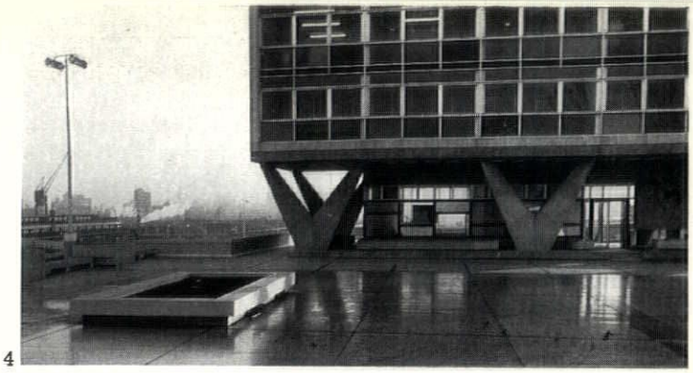
first floor plan

key
1, fruit handling area
2, pre-cooling chambers
3, ablution block
4, offices
5, re-pack area ablutions
6, re-pack area
7, loading platform
8, off-loading of trucks



ground floor plan of terminal building

key
1, cargo shed
2, 3, offices
4, pre-cooling engine room
5, sub-station and ground floor entrance to administration block
6, loading platform
7, road and stacking area



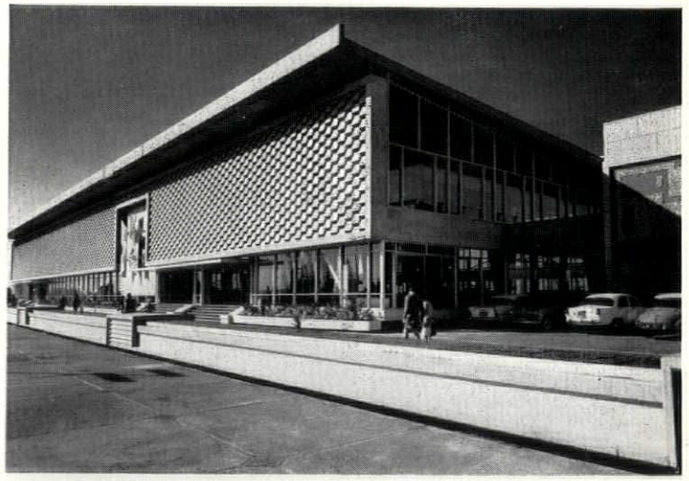
4

4, the base of the 12-storey block at piazza level.

quay level, is the cargo floor. The same cranes serve both levels.

To the north of the 900ft. long cargo floor, contained in what is known as M Shed, there is another single-storey transit shed, 600ft. long, known as L Shed, which has a flat roof for parking passengers' and visitors' cars. A fruit-shipping gallery over the quay side of this shed provides a link with the pre-cooling stores; through this fruit can be transported in skids to a loading point, allowing it to be loaded on to a cargo ship alongside L Shed as well as on to the mail-boats berthed opposite M Shed. The flat roof above this gallery similarly serves as an extension of the passenger accommodation in M Shed, for use when a second passenger ship, or a cargo ship carrying some passengers, berths opposite L Shed. The two sheds are

5, the west elevation of the custom hall. 6, interior of the custom hall, with baggage collecting counter on the right.



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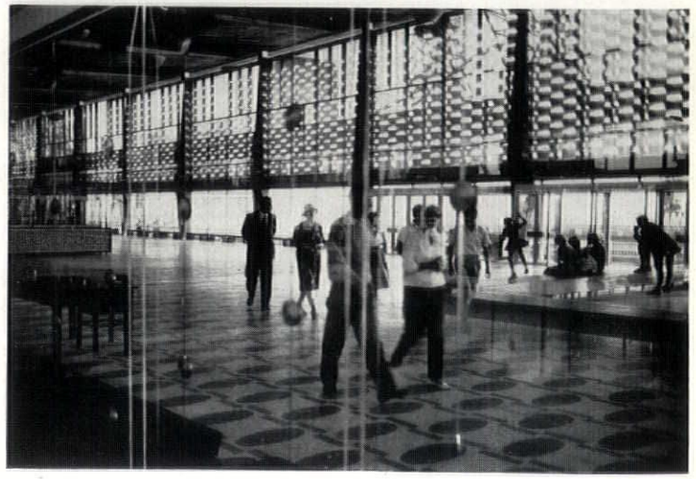

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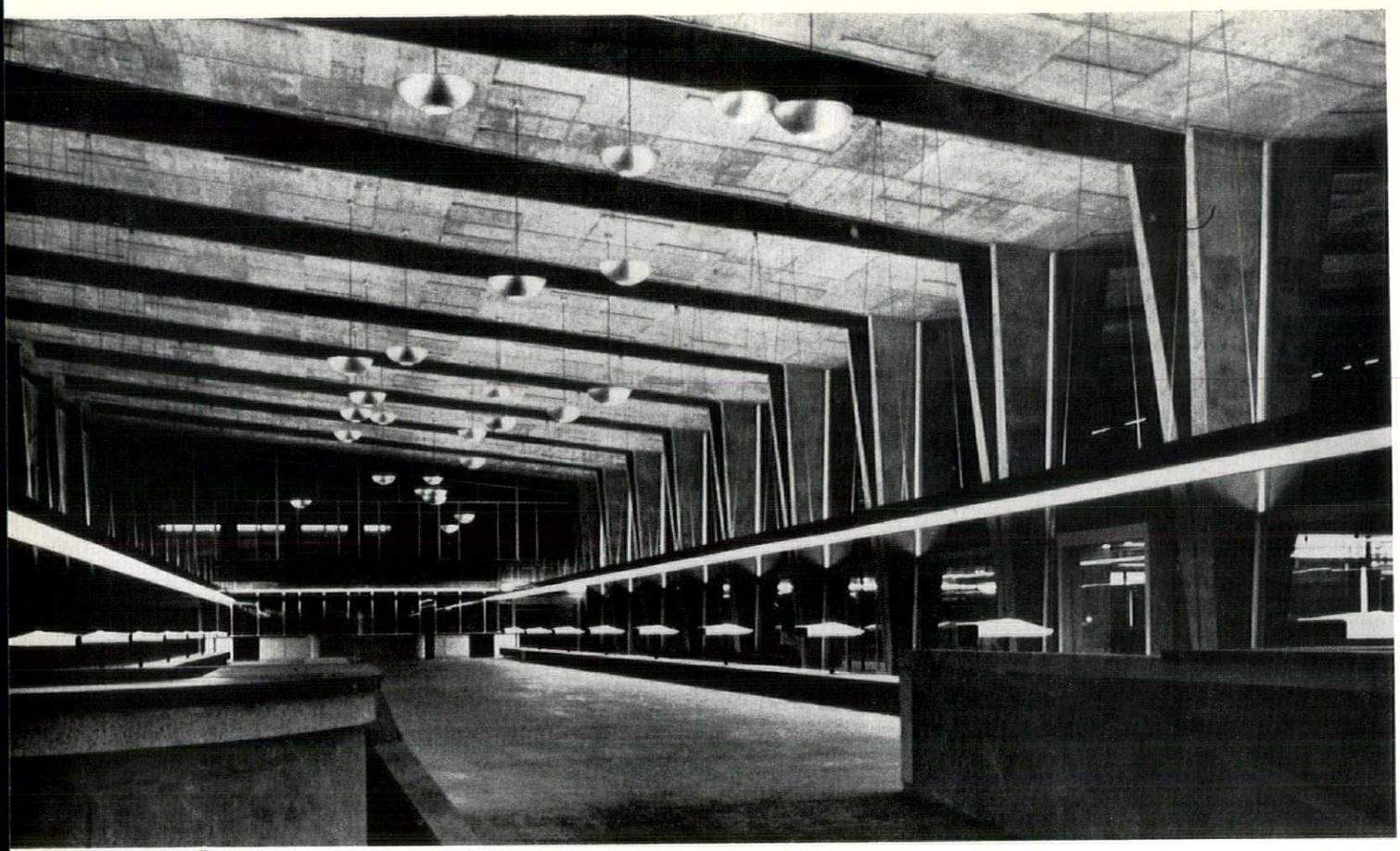


7

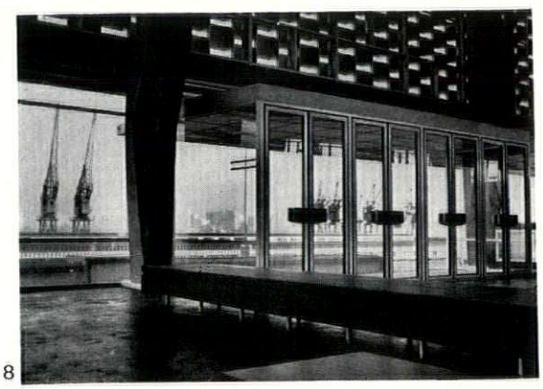
7, interior of the custom hall, with the desks where the officials interview passengers along both sides. 8, the entrance of the custom hall. 9, steel sculpture in the north entrance hall.

also linked by a visitors' gallery, parallel to the passengers' gallery and separated from it by a solid balustrade.

Between M and L Sheds rises the 12-storey administrative block, beneath the upper storeys of which the passenger piazza passes. Below piazza level are three storeys of ablution facilities and mess-rooms for staff and stevedores—who number about 500. The upper floors of the block house the customs department, the offices of the Port Goods Superintendent and of the Fruit Export Control Board and, at the top, the Port Captain.

The maximum number of passengers disembarking is 700. This being South Africa, there is separate passenger accommodation for Europeans and Africans. Restaurants and cafeterias adjoin the two entrances, with a piaz-a in front. Between the entrances is the main customs hall. Baggage is mechanically handled by way of tunnels and ramps to avoid crossing with pedestrian traffic. The piazzas and parking areas are similarly reached by elevated roadways to avoid level crossings. Elevated roadways also bring road traffic direct to the cargo sheds.

Construction is a mixture of steel and reinforced concrete, the latter including V-shaped columns supporting the upper part of the administrative block and a folded slab roof over the concourse and customs hall. The main building has triangulated wind-bracing, visible on both elevations, composed of three stressed steel cables. The administrative block has a sun-screen of aluminium louvres.



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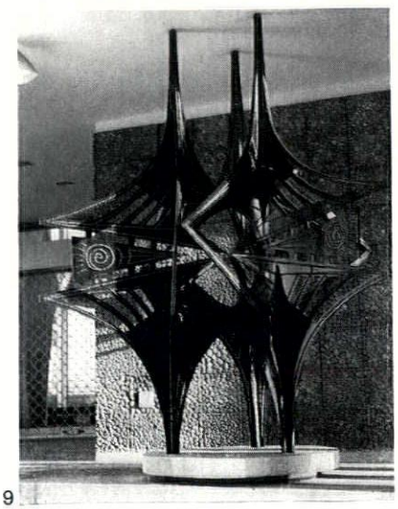

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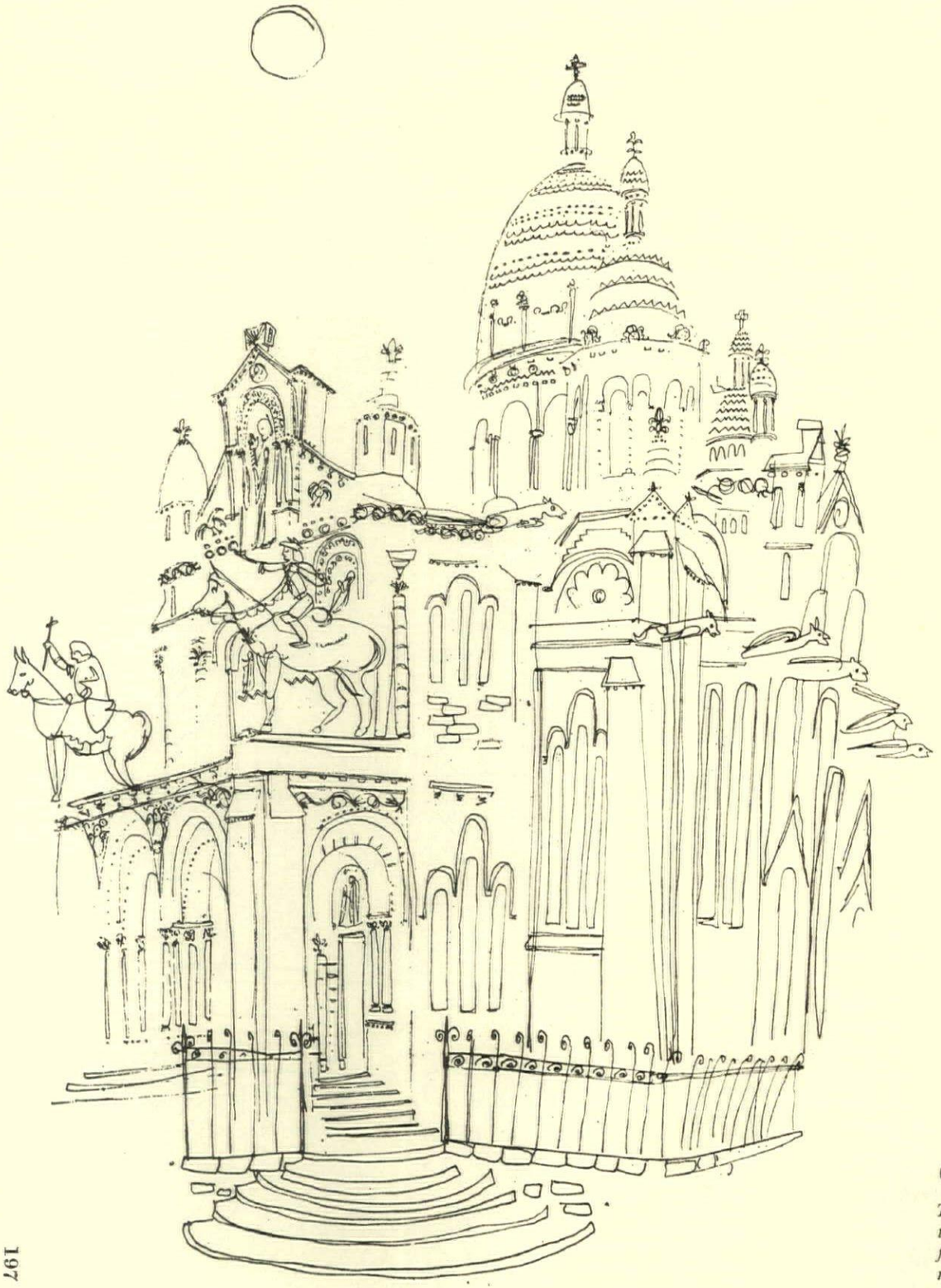
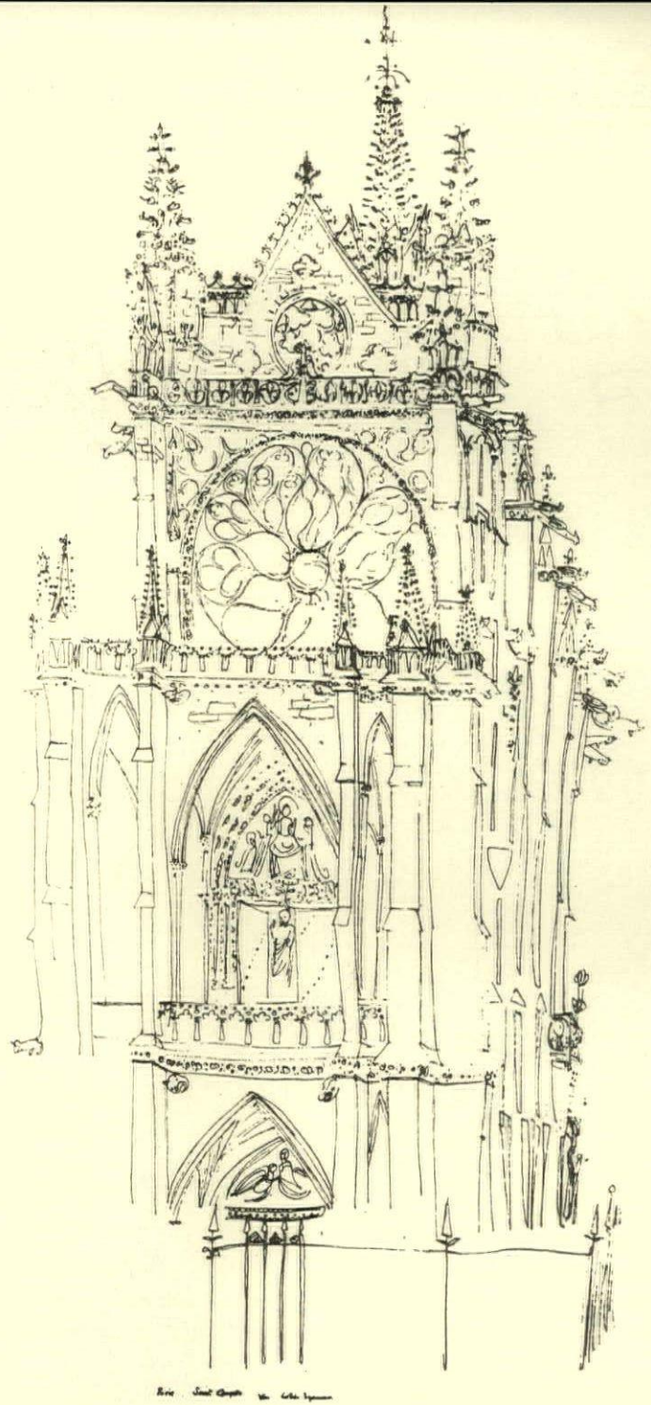
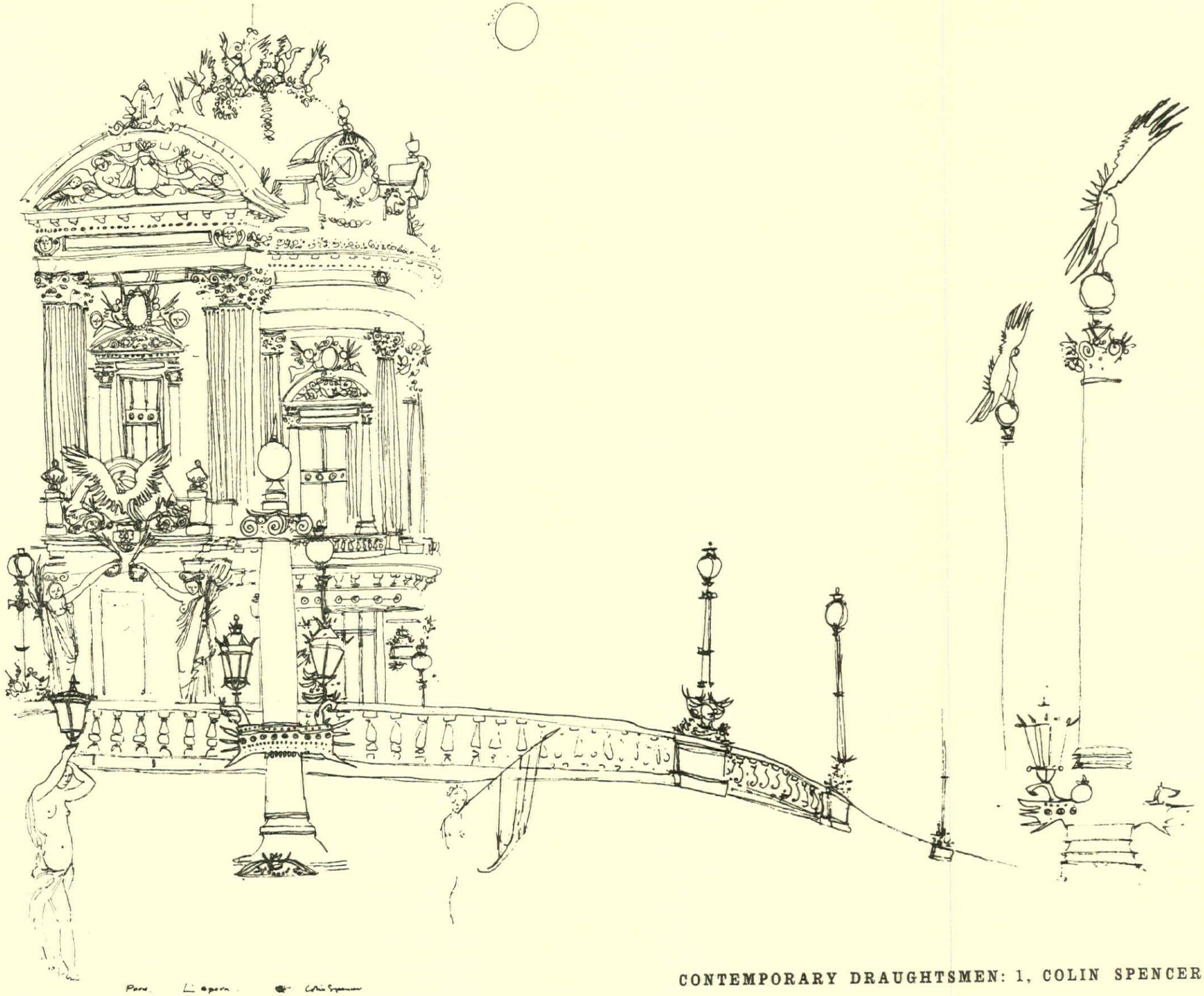




CONTEMPORARY DRAUGHTSMEN: 1, COLIN SPENCER

The drawings above and overleaf are the first instalment of a serial anthology of the work of the younger architectural draughtsmen. Colin Spencer, who is 29, was at Brighton College of Art for 18 months; he had no other formal art education. He lives at Saffron Walden and is also a novelist and short-story writer. He had a first exhibition of drawings and paintings last autumn at Cambridge (where his portrait of E. M. Forster hangs in King's College). He likes to draw 'beautiful but absurd buildings; elegant buildings covered in fidget; buildings with figures.' The buildings drawn here are all in Paris: the Sacré Coeur; the Sainte Chapelle; the Opéra.



CONTEMPORARY DRAUGHTSMEN: 1, COLIN SPENCER

ID
a monthly review of interior design

Ringway Airport Passenger Areas

architects: James Cubitt and Partners, in association with Manchester City Architect, S. C. Besant Roberts

This, Britain's premier municipal airport and now equipped with full international facilities, is the first airport of consequence to be illustrated in the AR since Michael Brawne's article on passenger-handling buildings appeared in November, 1962. The building is organized on the now familiar two-level section, with passengers going up to first floor level and continuing at that level until they descend from the fingers to the apron to board their aircraft. The main processing and holding spaces through which they pass while they are inside (and which are the subject of the illustrations and descriptions on the next six pages) are all the work of James Cubitt and Partners, within the framework of the City Architect's design for the building itself, which was included among the illustrations in the November, 1962, article.



1, ticketing desk, and baggage weighing position in the ground floor traffic hall.

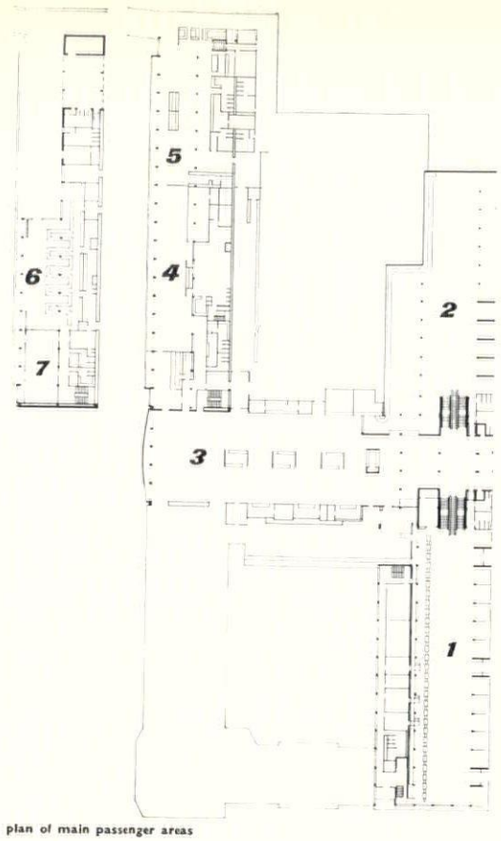


2

ID

2, direction board over the foot of the stairs and escalators from the traffic hall to the main concourse ; lettering specially designed by Leonard Saxby, of Manchester Regional College of Art.
3, general view of the main concourse, looking toward the airside end window which is slightly bowed on plan.

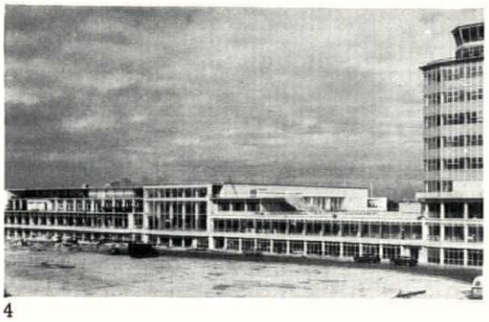
3



key
1, main traffic hall
2, baggage claim
3, main concourse at first floor level
4, main restaurant
5, main transit lounge
6, cafetaria at viewing-deck level
7, private dining room

plan of main passenger areas

Ringway Airport



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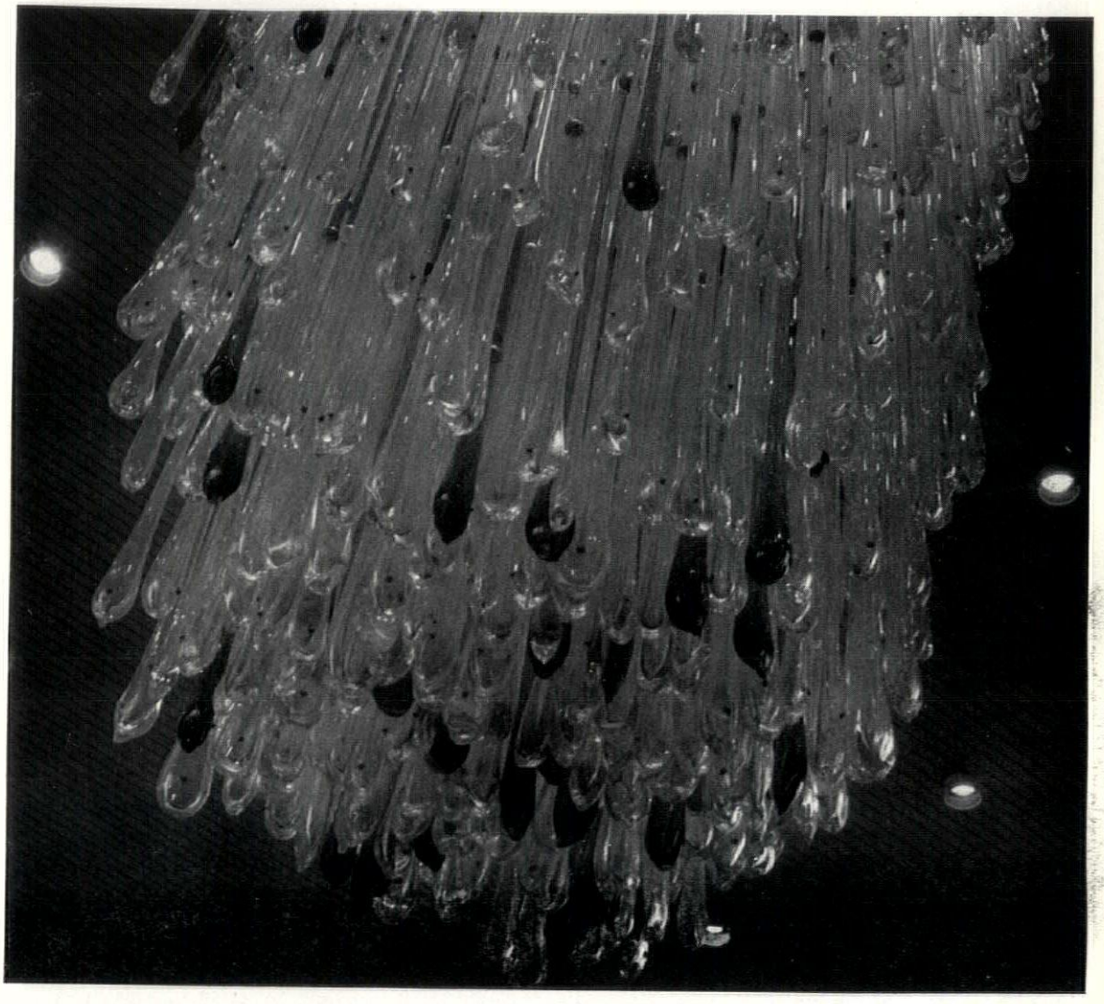
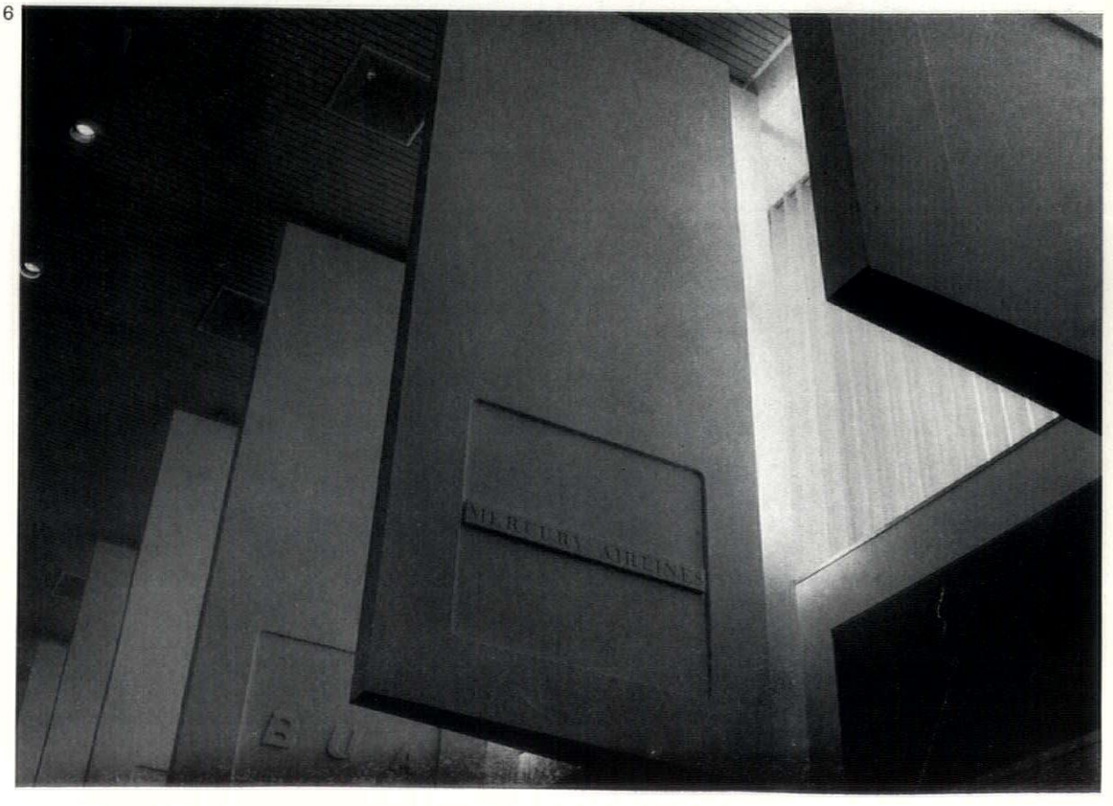


5

4, the exterior from one of the passenger fingers; the airside window of the concourse is seen centre, with restaurants, etc., at first and second floor beyond.
5, close up of one of the Venini chandeliers in the concourse; clear glass with random smoky drops.
6, light baffles to clerestorey of main concourse; combined with the louvre-drapes in the windows, they allow light to fall into the concourse but obviate the worst effects of high-level glare. Each has the name or appropriate symbol of an airline operating from Manchester cast into the fibrous plaster.



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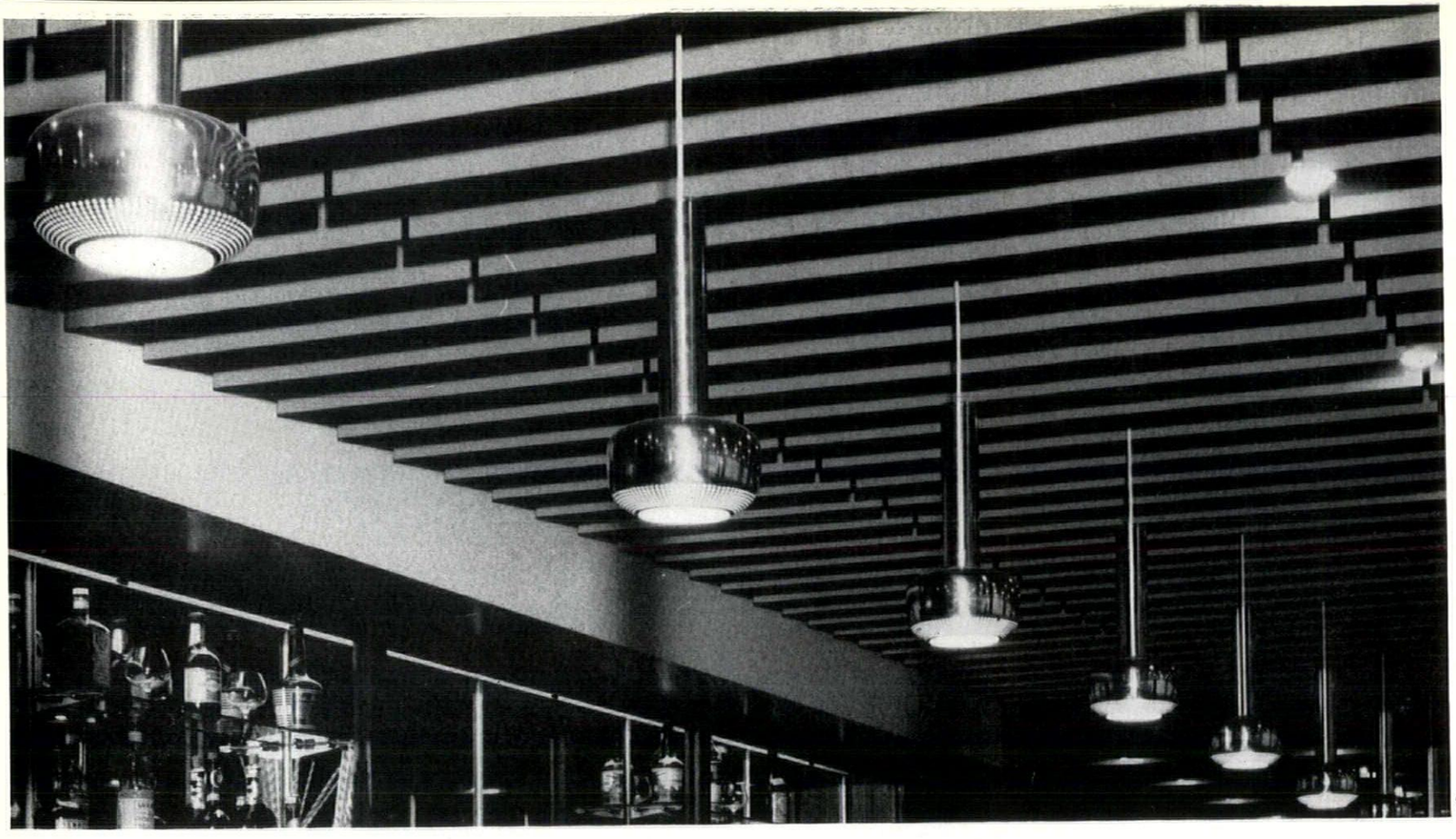

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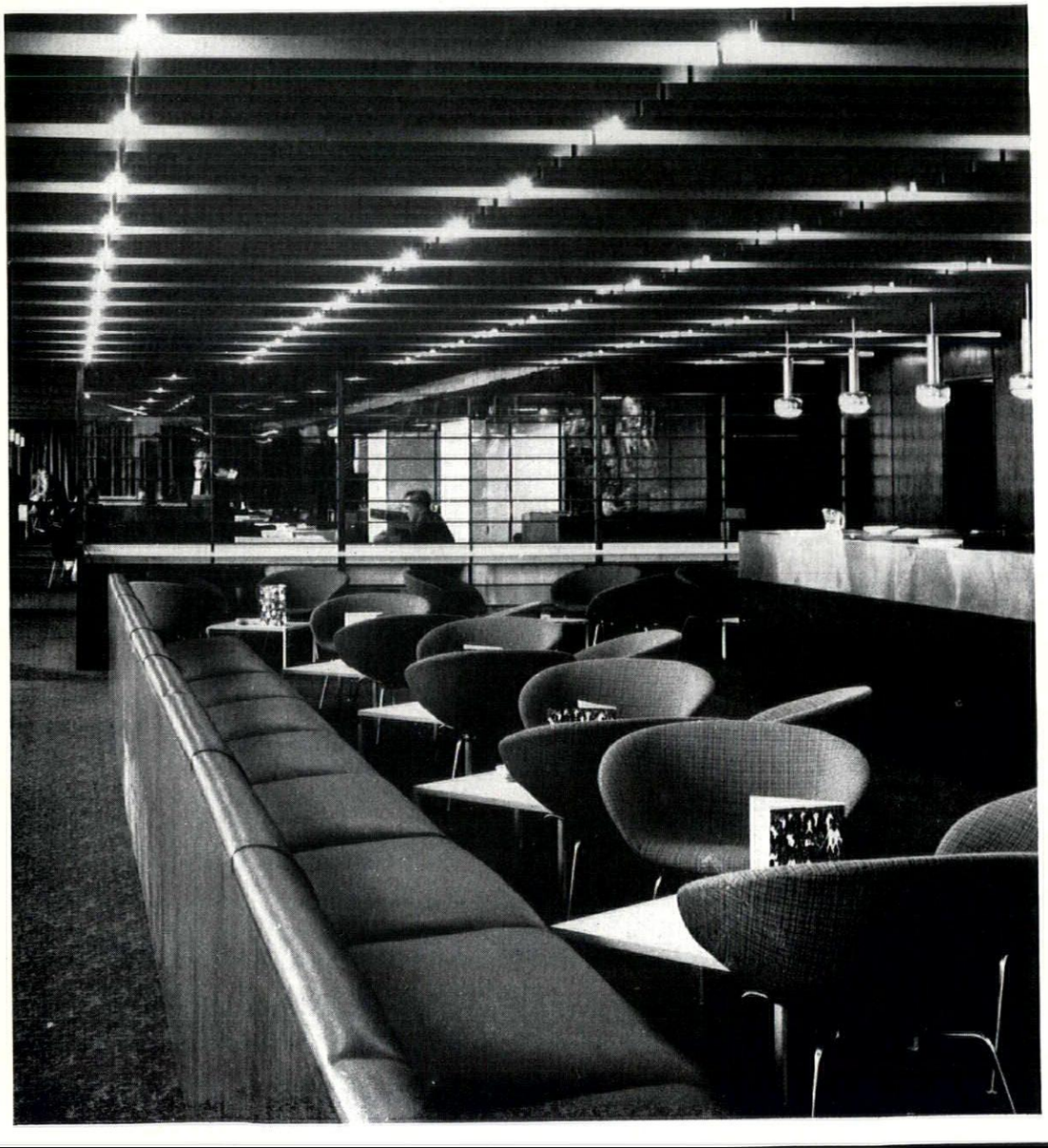

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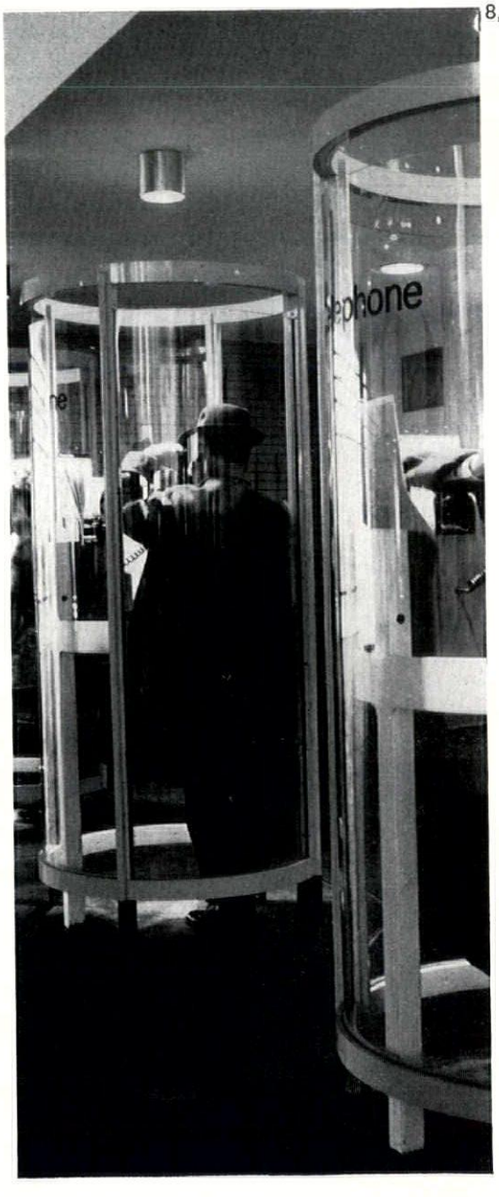
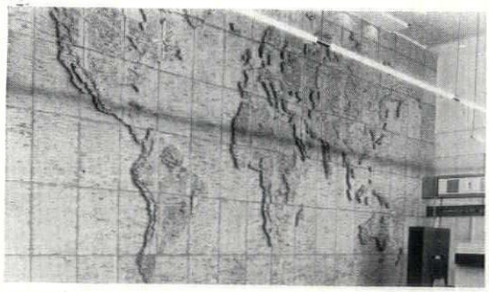




10

7 (opposite), lamps and slatted ceiling over the bar in the main restaurant.
8, view from the entrance to the main restaurant, with the bar area at right.

11



9, telephone kiosks, purpose-designed by by the architects.
10, 11, detail and general view of the world relief map on the end wall of the main traffic hall, executed in reclaimed tile by Ceramic Consultants.
12, 13, views along the main traffic hall, above and below the suspended "ceiling" of fluorescent lighting tubes (see also frontis, p. 199).



12



13

ID

Ringway Airport

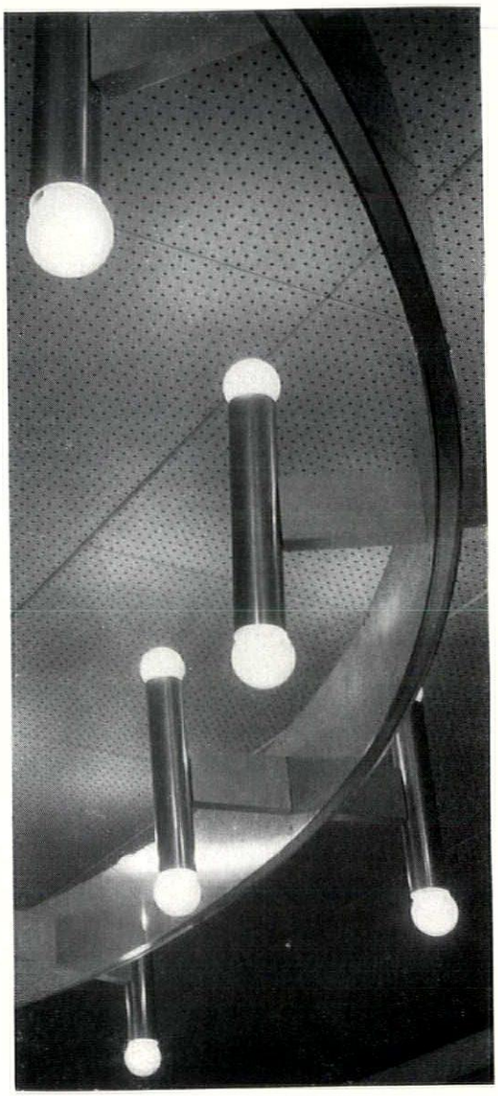
Ringway Airport



14



15



16

14, bar and seating in the second-floor cafeteria—as will be seen from illustrations 1, 2 and 3 (pp. 199-200) the same tiled surface which is used here on the bar and its podium is used throughout the passenger area for purely utilitarian walls and exposed surfaces.

15, general view of the private dining room with windows on to airfield at right.

16, detail of suspended lighting fixture in the private dining room.

photographs by H. de Burgh Galwey

THE ENCHANTED CIRCLE : PHYLLIS AUSTIN



1, *Bath Road, Bedford Park, looking east; from the lithograph by Berry F. Berry.*

The significance of Bedford Park is now well understood. It is treated in Nikolaus Pevsner's *Pioneers* as the first garden suburb ever conceived and built, it is discussed in Sir Reginald Blomfield's monograph on Norman Shaw, who laid it out and designed many of its buildings, and it is there—Turnham Green Station on the District Line—for anyone to see. Below is an account of life in Bedford Park—indoors and out—by one who lived there in its earliest years. The article is illustrated by reproductions of some of the chromo-lithographs, by various artists, in an album devoted to it which was published by Harrison's of St. Martin's Lane in 1882.

It was in 1881* that my parents moved to Bedford Park with three small children, the forerunners of a family of six of which I was to be the youngest. My father, L. F. Austin, a rising young journalist, literary and theatre critic, held as it were the passport entitling him to reside in this salubrious dwelling spot; for only members of the arts or those closely connected with them were granted leases or the right to purchase. So one felt an invisible wall enclosing the estate from the rabble of the Chiswick High Road and the stealthily encroaching villas of Acton.

The houses, varying in size, were Georgian and Anne in style, with many others which were just beautiful brain-waves of the architects, men such as Norman Shaw and Maurice B. Adams. All were built of red brick and had large windows with small panes. Most of the front gardens were enclosed by low brick walls surmounted by delicate palings. The gates were high and palinged also. Separating some of the houses were tall brick pillars crowned with a large stone ball or a sculptured acorn. Some had shell-shaped copings over the front doors. For years it was forbidden to hang out laundry.

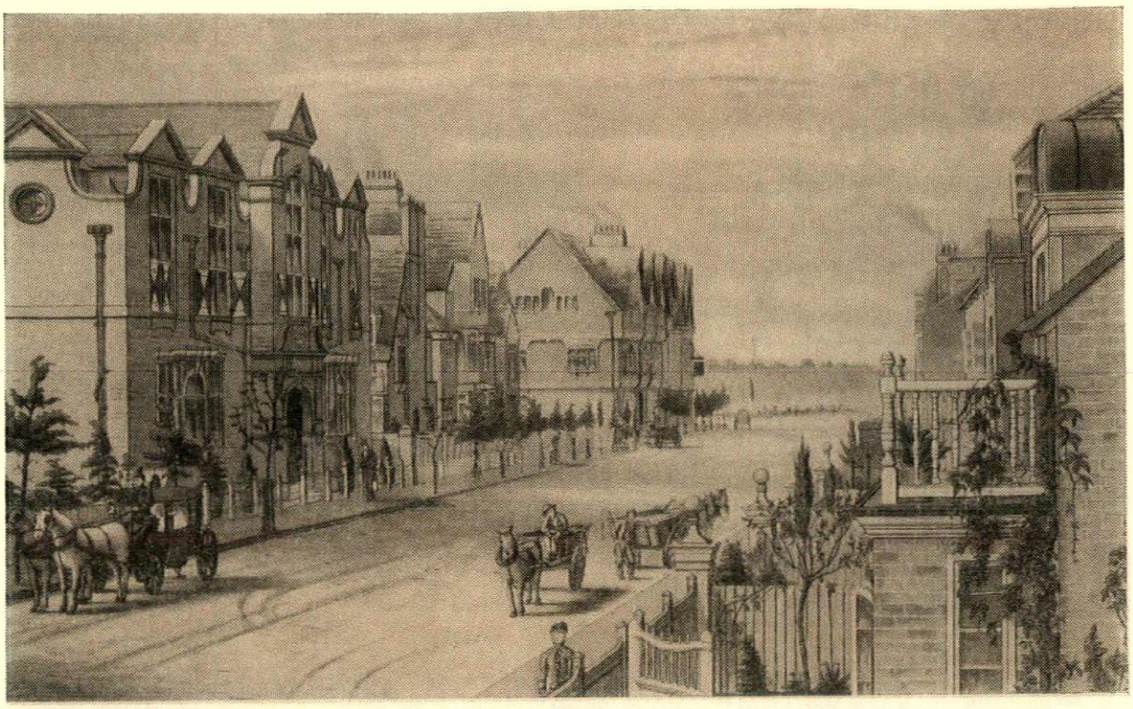
On one of its boundaries in the Bath Road stood the only public house, the Tabard Inn, next to which were the Bedford Park Stores where the wives of the Park could shop without having to face the dust and noise of the High Road. The stores, like every other building in the Park, were beautifully designed. The huge bay mullioned windows with the little panes were enough in themselves to urge the passers-by to sample the goods within. Once inside they would find a delectable emporium: a veritable Fortnum and Mason and Whiteley rolled into one.

On the corner opposite stood the church, the delicate and original design of which was enough to lure the most ardent atheist to worship. Another boundary was the beautiful wide Green which extended along the South Parade where nursemaids and their charges could play and gossip peacefully and dogs gambol in safety.

The roads also of Bedford Park came in for consideration. None of your London sooty planes here. Lilacs, laburnums, may (pink, red and white), mountain ash, copper beech, limes and acacias lined every pavement. To walk in the roads on a spring evening was an arcadian adventure. Also here and there one came across a veteran oak of some four or five centuries in age. According to a clause in the building plans not one of these old warriors was to be felled for the sake of a straight road, with the happy result that several roads and pavements were out of alignment as they obediently encircled the revered veterans. Queen Anne's Gardens is perhaps one of the best examples of this as it flows off its course like an erratic brook.

I seem to be putting all this in the past. Bedford Park still stands, but not as it used to be. Two World Wars, buses and cars have sullied its pink morning face. But no doubt it still dreams of its young days and of the famous people who came to live within its enchanted circle. My father in those early days was private secretary to Henry Irving, who was to become his dearest friend. They died within a month of each other in 1905, my father at the early age of fifty-three. Lawrence Irving in his splendid book on his father's life writes, and I quote: 'A day or two earlier my father had heard of Austin's sudden and unexpected death at Brighton. It was as though he had suffered the loss of a limb, for Austin, although he had become a very successful journalist, always found time to help and advise his old chief and with him to hammer out the weapons of controversy.' When Irving died my eldest brother lost his godfather. But these sad times were far ahead. It was the spring of 1881 and the family had settled in the little

*Only four years after Bedford Park was built.



2, *the School of Art, store and Tabard Inn (by Norman Shaw), lithographed by T. Erat Harrison.*

Queen Anne style house in the Park, the house in which my mother was to live for over sixty years, weathering all the trials and changes of passing time.

This particular house looked small from the outside, but they built back in those days and not up. All the rooms were large and beautifully proportioned. A drawing room, dining room and huge kitchen with separate scullery bigger than today's modern kitchen, larder and pantries on the ground floor, enough here alone to break the back of a servantless family. Servants were plentiful, inexpensive and well trained for their job, and did not mind being called servants. The sink was never seen, let alone discussed. But the architects of Bedford Park had thought of the servants sympathetically. We had seven bedrooms on two floors with large landings, the second floor containing rooms for servants as well as roomy and light night and day nurseries.

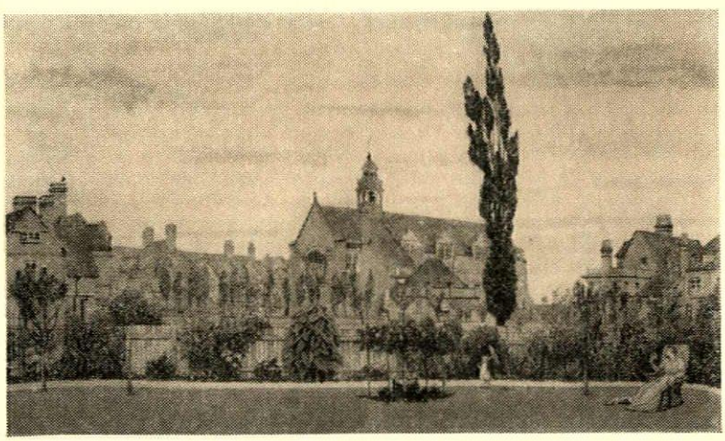
On the first floor was my father's library with a French window opening on to a large balcony overlooking a pleasant garden. These balconies are a feature of Bedford Park, and most of them still remain attached to some part of the houses. In most cases the original ornamental balustrades have gone, giving place to ordinary straight palings.

The Adam-style fireplaces in the rooms on the ground and second floors were particularly charming with their carved garlands terminating on each side with a graceful Grecian vase. They were also decorated with Dutch tiles. In the drawing-room these were in soft tints; in the other rooms the traditional blue, and all depicting vigorous life on the water or land, with an occasional fairy castle thrown in for good measure. There was nothing mean about the entrance halls in the houses of Bedford Park. Some had broad halls with fireplaces set across a corner. Ours was wide and passed into a second squared hall out of which the rooms opened.

One of the loveliest houses, and I believe the first to be built, was Tower House in Rupert Road. It carried a great air of importance with its surmounting glass dome and vast gardens and tennis courts. It was here that Jonathan Carr lived and entertained for many years, the entrepreneur for whom Bedford Park had been built. Alas, not only was it the first to be built but it was the first to come down. A block of flats now stands on the site.

There were dados, friezes, and ornamental cornices in most of the houses, and of course much plush and ebony furniture. Golden gravel paths were the fashion for gardens, where mostly old-fashioned flowers held sway: hollyhocks, sunflowers, geraniums, marigolds, etc. Many of the houses had small well staircases like ours. One could look down from the nursery floor into the square hall beneath. This was not always to the benefit of a three-piece orchestra which my parents hired for dances, for the older members of the family developed much skill in dropping beads on to the bald head of the 'cellist deep in the limpid passion of a Strauss waltz in the hall below.

For these occasions the doors of the reception rooms were removed and, much to the children's joy, men came to take up the carpets and polish the floors for dancing. Upstairs the library was cleared and trestle tables laid for refreshment. All this, including the three-piece orchestra, was provided by William Whiteley, about the only purveyor of that time who provided for every occasion. This was in the early '80s before I was born but well remembered by my sister who, being at the top end of the family and thus some years older than I, still has a remarkable memory.



3, *the church of St. Michael (by Shaw), seen from a garden, lithographed by F. Hamilton Jackson.*

I have already mentioned Jonathan Carr as one of the earliest residents. He was the man who started the Grosvenor Gallery. John Nash too came early, in the '70s, to live in the Avenue. Blair Leighton had a charming corner house and vast studio in Rupert Road. Cecil Aldin, the famous animal artist, also had a corner house and studio in Priory Road. A charming man with bright red hair, he used to let me ride his pet donkey all over the fields now long since built over. Charles Pears, the *Punch* artist, also lived in Priory Road. Charles Dolman, who will always be remembered for his painting of Captain Oates in the Antarctic stumbling out of the tent into a blizzard to meet his death, lived in our road, Woodstock. His two sisters kept the only kindergarten on the ground floor of their house. Jackson, the architect, Holloway and Haite also lived round about the Avenue. Arthur Pinero, the playwright, for a time lived in Bedford Park, also Robert Barr, the novelist, whose son I was to meet years later in Canada where he had become an eminent portrait painter. Gordon Craig with his first wife lived near us as did the Rathbones. Also W. B. Yeats lived for a spell in Woodstock Road.

The stage too was well represented. William Terris, father of Ellaline Terris, still happily with us at ninety-two years of age, lived in Rupert Road almost opposite Tower House. It was from his delightful little house in Bedford Park that Terris left one night for the evening performance at the Adelphi Theatre only to meet his death at the hands of a madman hiding in the shadows near the stage door.

Sydney Brough, brother of Lionel, lived a few doors from us and between us was David Carr's house. He was brother of Jonathan, and his house was not only different in style from most of the Woodstock Road houses, but it stood far back making room for the immense old oak sitting in the front garden. That too, like the others, has long since disappeared. Other actors I remember were Harry Nichols and Robert Nainby, of Gaiety Theatre fame.

My father numbered many famous people among his friends. To our house came Henry Irving, Ellen Terry, George Alexander and his wife, the Martin Harveys, Tree, Max Beerbohm, J. M. Barrie, and many others. He was also very friendly with Meredith and used to visit him on Box Hill. Born in 1828 he was already growing old by then.

My mother told me of one night at Christmas time when some exceptionally good voices were singing carols in the road outside. The singers were seated in a pony trap and masked. It was not till later that she discovered that the two tenors were Hayden Coffin, of Gaiety Theatre fame, and



4, *Tower House and Queen Anne's Grove, lithographed by M. Trautschold.*

Henry Lytton, that highlight of the Operas. He, incidentally, lived just outside the Park close to the far end of the Green. The Gilbert and Sullivan operas swept Bedford Park as they did everywhere else. Even the butcher boys in their high two-wheeled traps with spanking horses whistled the tunes, as did the milkmen standing on the steps of their Roman chariot-styled carts with large churns in front between them and the horse. It was a common practice to leave the lids off the churns in wet weather, no doubt profitable for the milk trade, but of very little hygienic profit for the customer!

Of the London street cries I only remember 'Who'll buy my lavender? Sixteen branches for one penny.' There was the muffin man with his bell and baize-covered tray on his head. A dancing bear too sometimes walked the pavements with its keeper; not a sight I enjoyed as it was chained to the man who looked angry and wore a fierce moustache.

My father accompanied Irving twice on his tours in the United States. From the second journey he brought back with him the first edition of *Little Lord Fauntleroy*. This had immediate repercussions on the fashions of the Bedford Park children. My mother could not wait to see her golden-haired darlings in original attire, the sway of Kate Greenaway having grown a bit thin by then, so she set out for Whiteleys and at great expense ordered all the velvet and Irish point lace necessary, with the result that most mothers of small boys in the neighbourhood plunged their little darlings into velvet and lace, trimmed with cut steel buttons. Many boys had long hair and curls in those days, it not then being considered 'sissy.' In point of fact boys started their lives rather effeminately, being kept in petticoats and dresses for the first three years of their lives. Apparently this had no untoward psychological effect on them, many of whom were to die for their country in the First World War.

It was fashionable in those days to parade up and down the Green after Sunday service; the women eyeing each other's finery, no doubt, and the men discussing the latest play or work of art and bemoaning the outrage of sixpence in the pound income-tax! The children old enough to attend church walked more or less sedately beside their parents. Victorian children were brought up strictly. Nurses saw to that even if parents sometimes were inclined to be indulgent. Babies were heard and not seen, and children seen and not heard. Those parades on the Green must have been a pretty sight. I can remember the trains and beautiful materials of the dresses: silks and satins which stood up by themselves. For years we kept one of my mother's little seed pearl trimmed evening slippers, probably bought in Paris. There is nothing half so dainty to be found anywhere nowadays.

I was only in my teens when my father died and was away a lot of the time abroad at school, but I remember that he had a flowing moustache, was, I thought, very handsome and in the winter wore a black top-coat, sable-lined with a large astrakhan collar. It was fastened down the front with braided frogs. With this went the inevitable top hat. Those were dressy days for men and women alike, and no one ever ventured to enter a theatre stall or circle except in full evening dress.

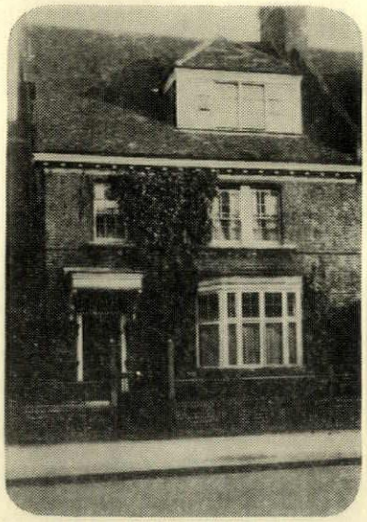
There being no radio or television when we were growing up, we had to make our own entertainment in the home. The words 'Musical Evening' conjure up terrible visions of large bosomed ladies and throaty tenors giving voice to the ballads of the day, or of the inefficient phonograph with its wax disc booming through the house. Henry Wood, before his famous Queen's Hall days, was giving piano lessons in the Park and had one notable pupil who played later under him at the Queen's Hall when still in her teens. We six had our own orchestra: two violins, 'cello, viola, clarinet and piano; the last very ably played by my eldest brother who was to make it his profession. The noise we made was evidently not too bad since it often brought an appreciative audience into the front garden applauding and treading down the flowers. We had a go at all the classics, not even being deterred by the sonorous grandeur of Wagner. Another brother, a writer of many lovely songs, was adept at arrangements for our six instruments. My mother of course thought we were geniuses and my father endured! We all eventually drifted into the arts, music, journalism, illustrating, the stage and novel writing.

For some years street musicians were not allowed in Bedford Park. The first I remember was the German Band which came mostly in the evenings when I was in bed. These bands must have been primed as to the atmosphere of the Park, for their repertoire was mostly composed of old German folk songs, the fashionable Gilbert and Sullivan, and some rather booming Schubert, brass not being the ideal instrument for that delicate composer. Later still came the barrel organ complete with monkey. Here was no personal skill at all, and their tunes were commonplace. They usually made more money by being paid to go away than for the pleasure of their entertainment.

In the early years there was only one doctor in the Park, by the name of Gordon Hogg. He is chiefly remembered for never being without his monocle, even when battling expertly with the intricacies of childbirth, a strenuous affair in those days when no relieving whiff of anaesthetic was administered. His delightful house was later turned into a school.

The inhabitants, as years went by, resolutely closed their eyes to the small villas creeping up ever more boldly to the very verges of the Acton boundary. Some extensions on the south-east side were less offensive. It was interesting to note how the newcomers to these so-called illegitimate parts of the Park kept their eyes open ready to pounce into any house that happened to fall empty within the Park, thus arriving on the right side of the blanket as it were.

Today there are still notable residents living in the Park, but it has lost its magic. The leisure and grace have gone for the most part. Children play in the streets; factory workers to and from Acton cut through in their swarms to reach the High Road; and the King's English is seldom heard. But the architecture of the place has not altered. Although in need of a face-lift it still glows warmly in the sunshine dreaming of the past.



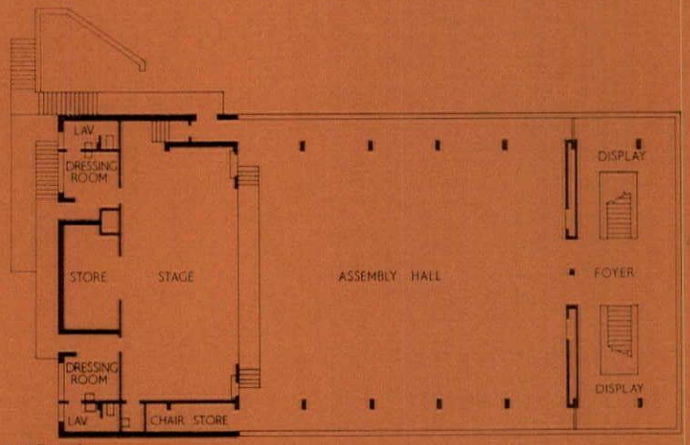
5, *photograph of No. 48 Woodstock Road, Bedford Park—the house where Miss Phyllis Austin lived for many years.*

I can think of no better way of concluding these memories of Bedford Park than by quoting the last four lines from the poem *The New Faces* by one of its most illustrious residents, W. B. Yeats.

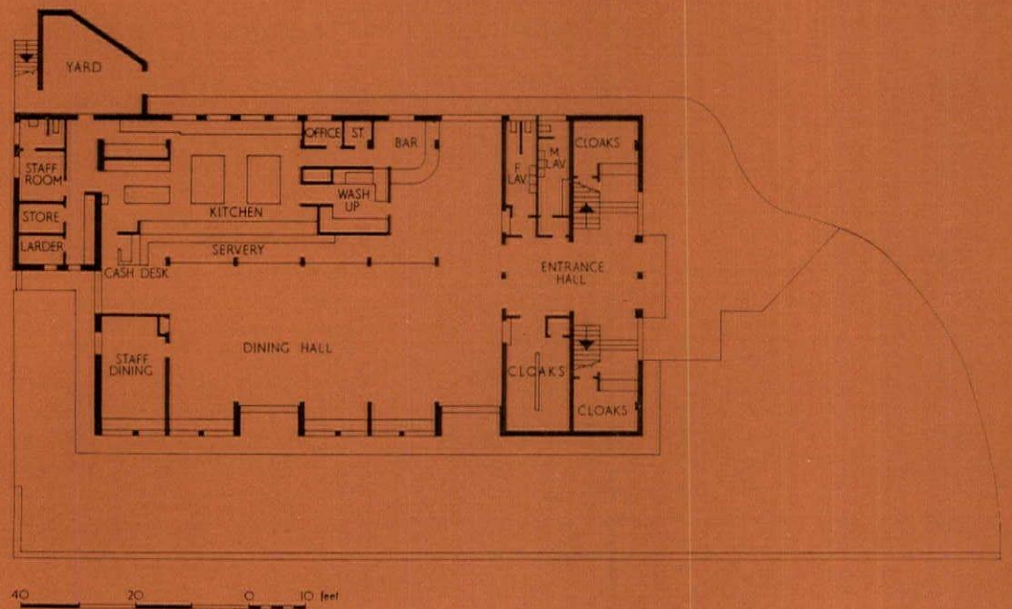
Let the new faces play what tricks
they will
In the old rooms; night can out-
balance day,
Our shadows rove the garden
gravel still,
The living seem more shadowy
than they.

TECHNICAL COLLEGE, WORSLEY, LANCS

ARCHITECT: T. MELLOR



first floor plan



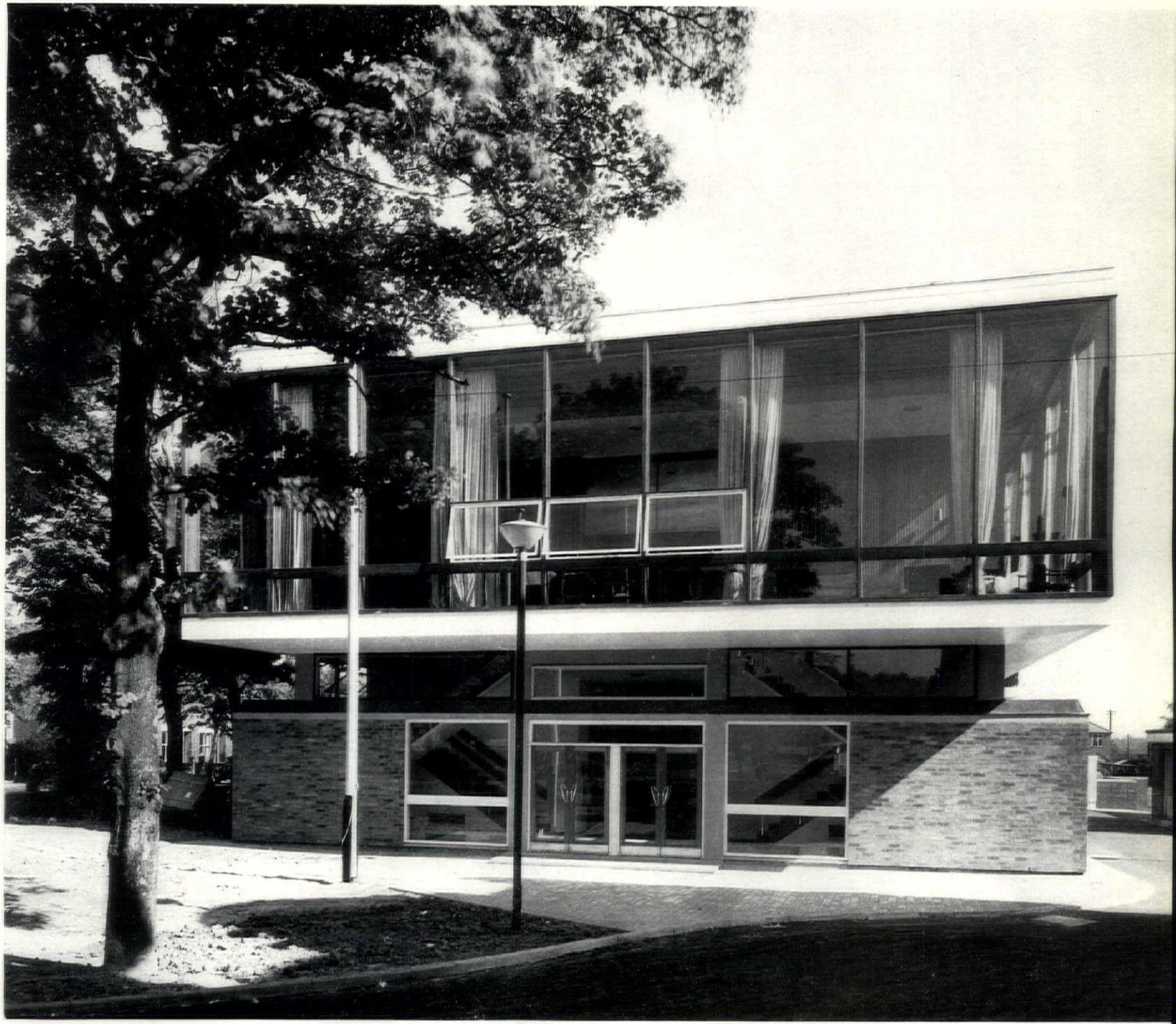
ground floor plan, assembly block

This is the second phase of a series of extensions to the existing College of Further Education, designed in collaboration with the county architect. The new buildings are an assembly and dining block and a separate extension to the teaching accommodation. The assembly block is on the eastern side of the site, facing the road and adjoining the entrance. The teaching block faces the park at the south-western edge of the site and is sited to allow for future extensions which could form the fourth side of a square around the College car-park and garden.

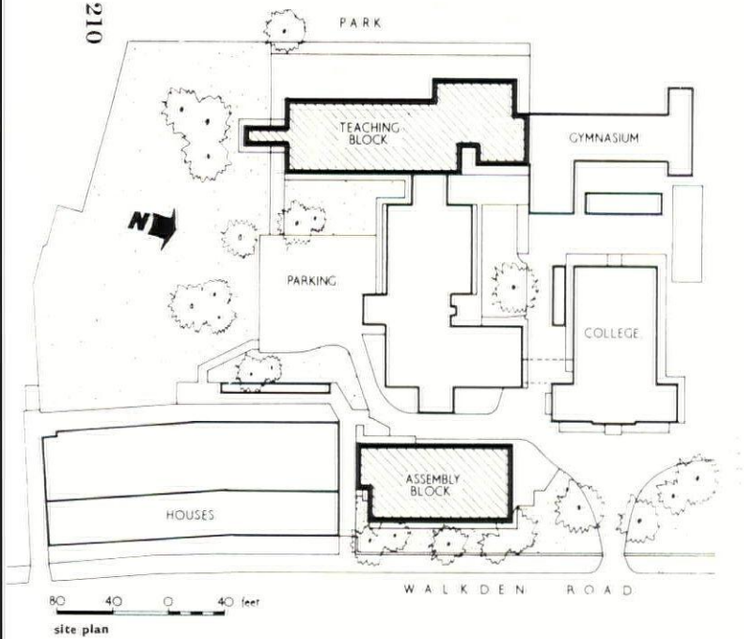
The assembly and dining block is a two-storey building, with the dining-hall (to seat 200) on the ground floor. The accommodation includes a fully equipped kitchen, with self-service counter to the dining-hall and a soft drinks bar. The hall, to seat 400, is on the first floor, and is entered from a foyer which is planned as a small exhibition area. The hall has glazed walls, giving views over the road and the entrance forecourt. The building has a reinforced concrete frame and floors, with a steel and timber roof. External finishes are facing brick, stone and glass with hardwood frames to the full-height assembly-hall windows. Hardwood has also been used extensively as an internal finish.

The teaching block provides twelve classrooms, a drawing-office, two laboratories and a library. The library has been sited to take advantage of the south aspect and of views into the adjoining park. A paved terrace is provided for outdoor reading. The structure is steel framed with concrete floors and timber roof. Hardwood is used for internal joinery and a concrete facing brick for the walls of all circulation areas.

Associate partner in charge, Harvey Freeman. Structural consultant, C. S. Allott. Mechanical and electrical consultants, Donald Smith and Seymour Rooley. Quantity surveyors, Worrall & Kelly.

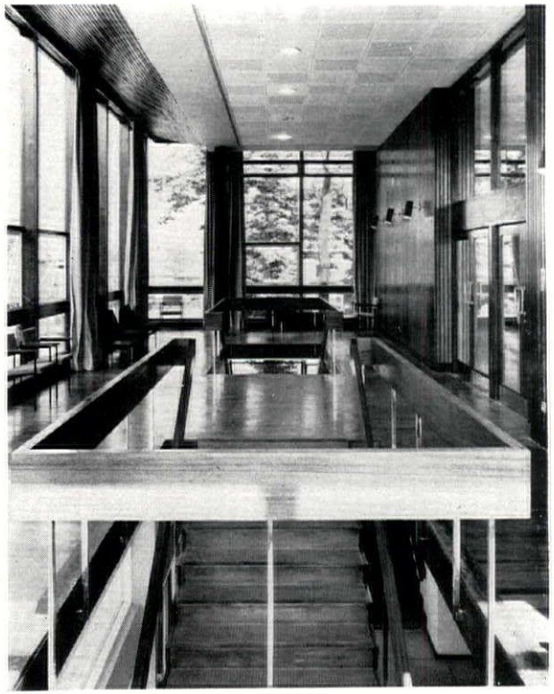


1, *the assembly and dining hall block from the north-west. The entrance is in the centre.*



site plan

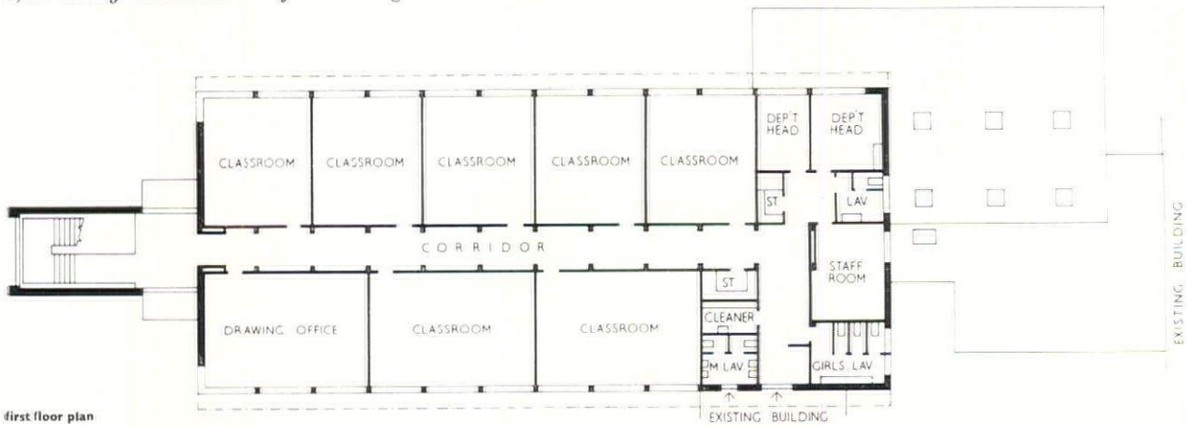
Technical College, Worsley, Lancs



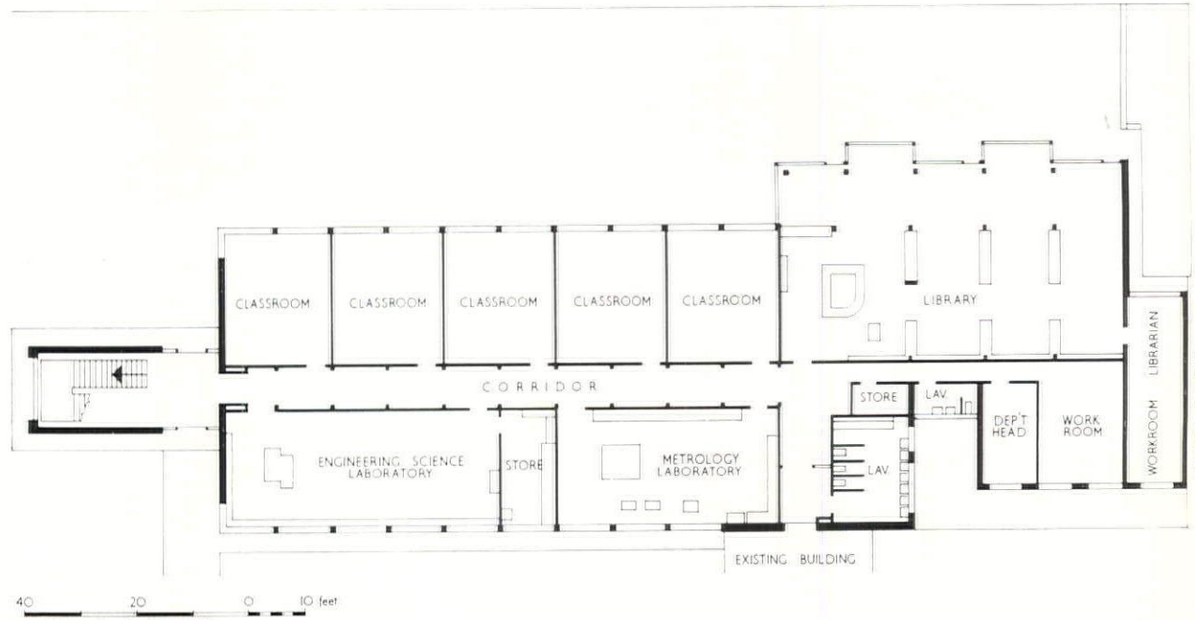
2, *the first-floor display area in the assembly block.*



3, *the library at the north end of the teaching block.*



first floor plan

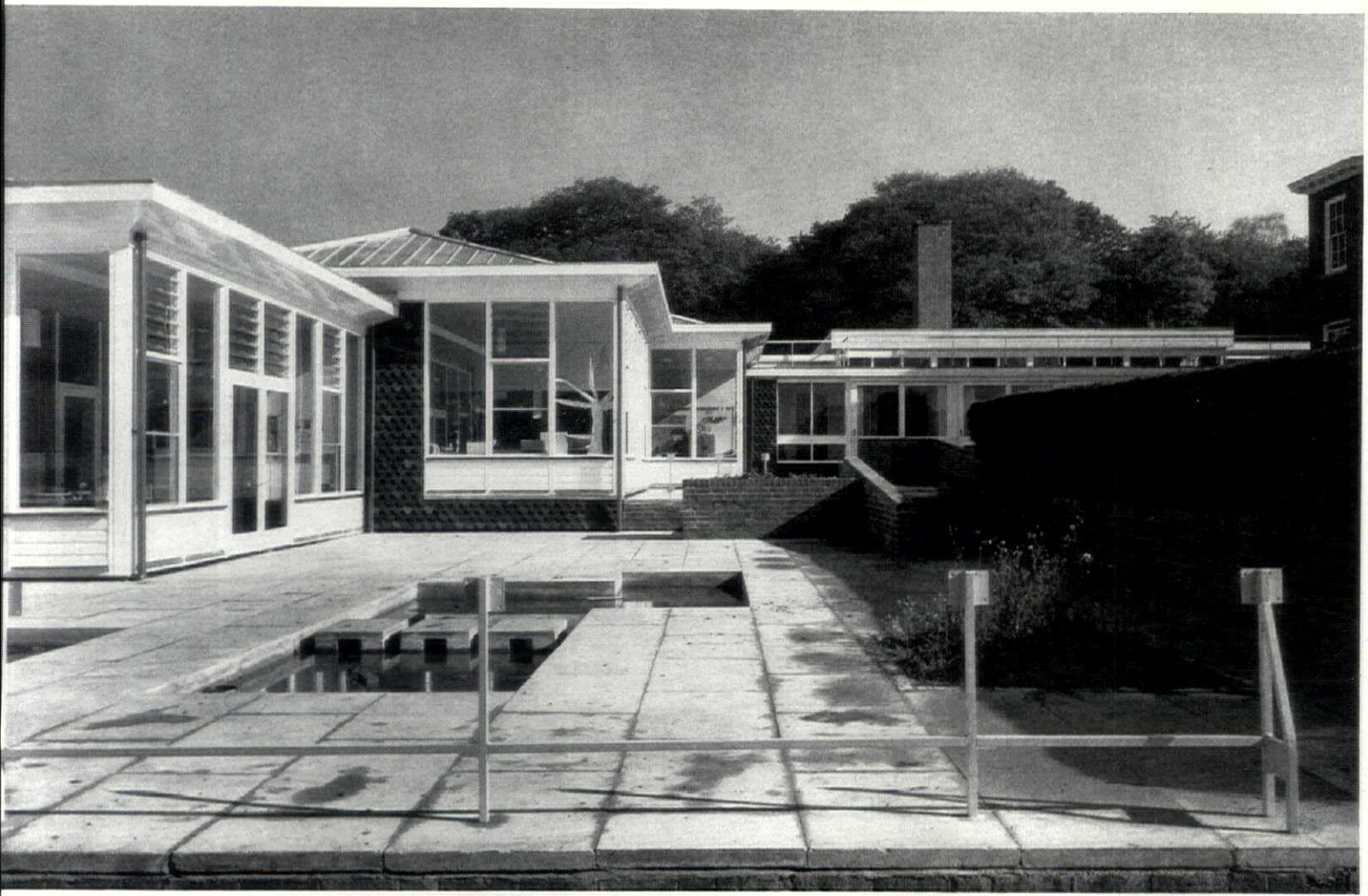


ground floor plan, teaching block

SCHOOL FOR SPASTIC CHILDREN NEAR HORSHAM

ARCHITECTS: HILTON WRIGHT AND INGHAM

1, *from the west, with the classrooms on the left and the assembly block on the right.*



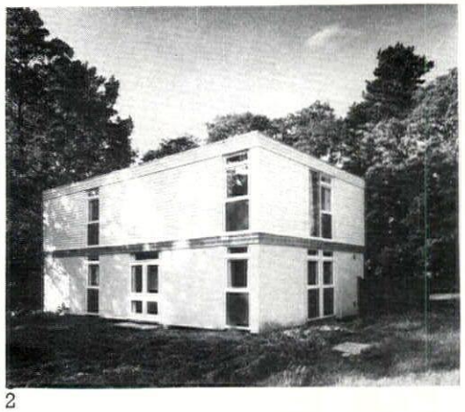
Ingfield Manor School is a boarding school for spastic educationally sub-normal children aged five to sixteen. The residential accommodation is mainly in an existing neo-Georgian country house of 1912. It was bought by the National Spastics Society and converted into dormitories and day rooms for the children and bedrooms for some of the staff. The new work illustrated is an extension from the north-east corner and contains classrooms, therapy rooms, hall, dining-room and kitchen. Houses for the staff have been built in the old kitchen garden which is separated from the school by yew hedges and trees. The site was chosen because the house had large rooms suitable for use as dormitories for about seven children each and because the ground floor was very nearly level with the surrounding garden, thus making it less difficult for heavily handicapped children to get out-of-doors.

The school is designed for a maximum of fifty children with one infant, two junior and two senior classrooms and two special classrooms for partially deaf children. There is a small classroom where one or two children can have individual tuition and this room is also used as a library. Classrooms are very large by normal standards, being 610 sq. ft. for only eight children. Children in wheeled chairs or special walking frames require much more space, and they have tables and chairs made to suit their own requirements. The younger children do much of their play and work on the floor, and for this reason underfloor supplementary heating has been used in the infant classroom. The two classrooms for the partly deaf are separated to avoid interference between the hearing-aid

equipment in each room. This equipment allows the teacher to speak directly to each child who has an individual receiver. The rooms are acoustically treated to reduce noise inside and to isolate them from outside sound. The corridors outside have sound-absorbing ceilings and floors.

The two speech therapy rooms, where those with speech difficulties, mainly the deaf or partly deaf children, are given individual training, are placed away from the classrooms visually and spatially, to help concentration. The therapy room is centrally placed since children come there for individual treatment. There is a call bell system

(*continued on page* 213)



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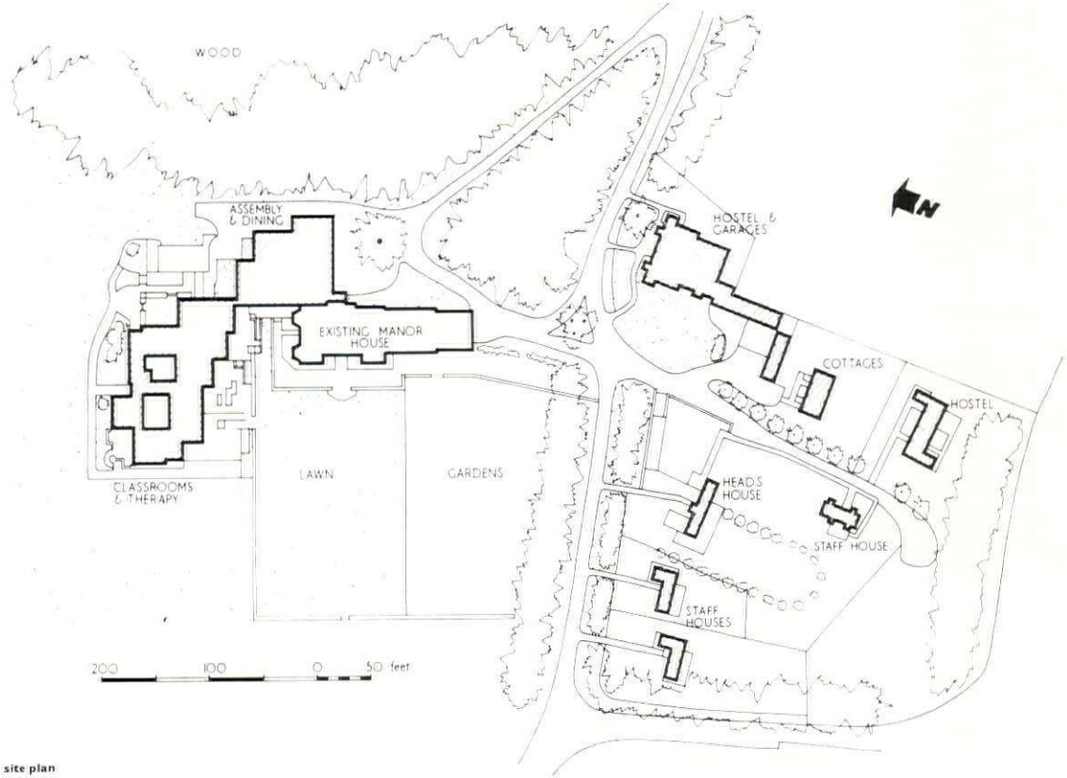
3

School for Spastic Children near Horsham

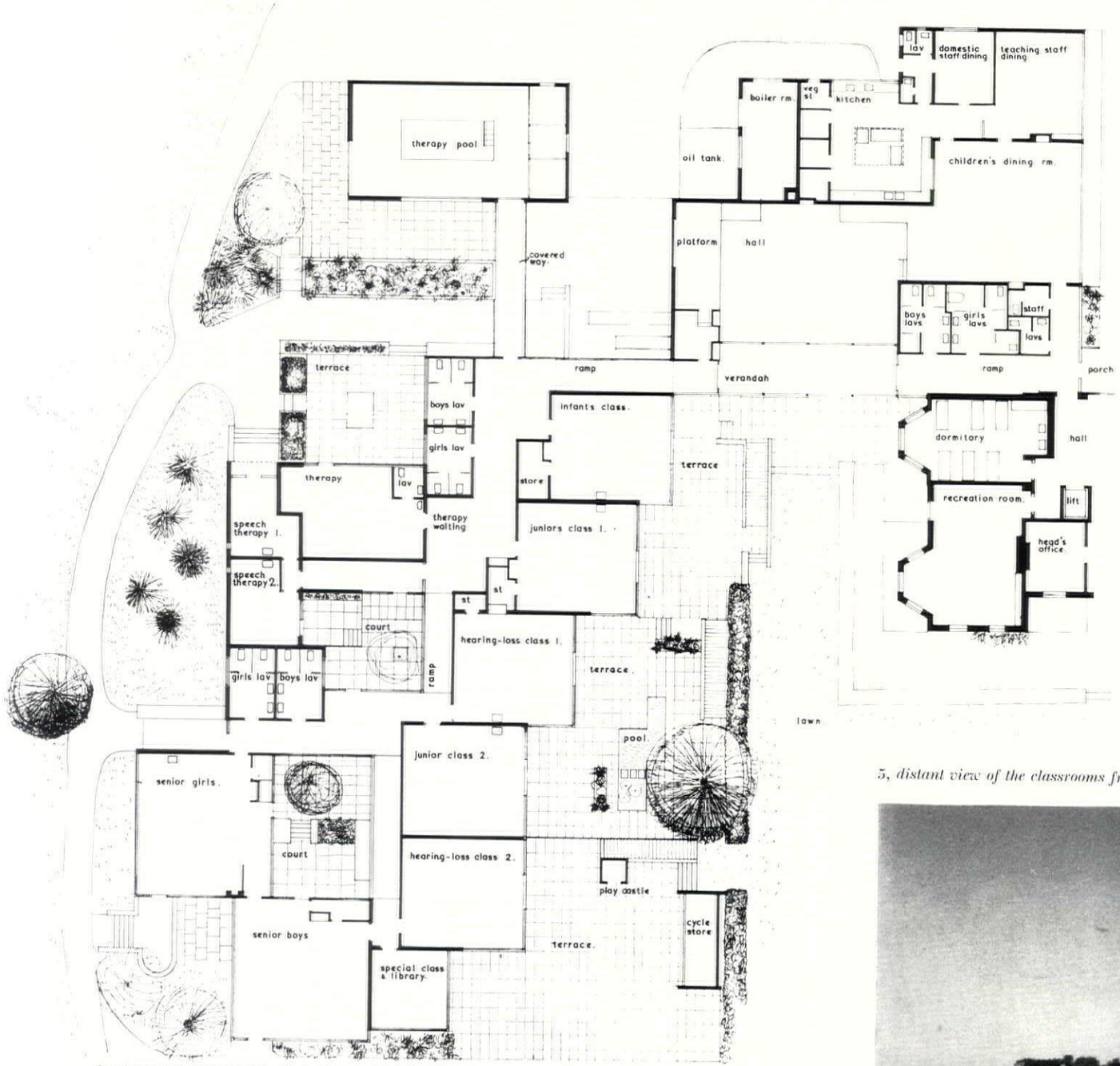


site plan



4

2, one of the staff houses from the south-east. 3, the garden front of the semi-detached houses seen from the south-west. 4, the head teacher's house from the north-west.



plan, classrooms and assembly/dining block, with part plan of existing house

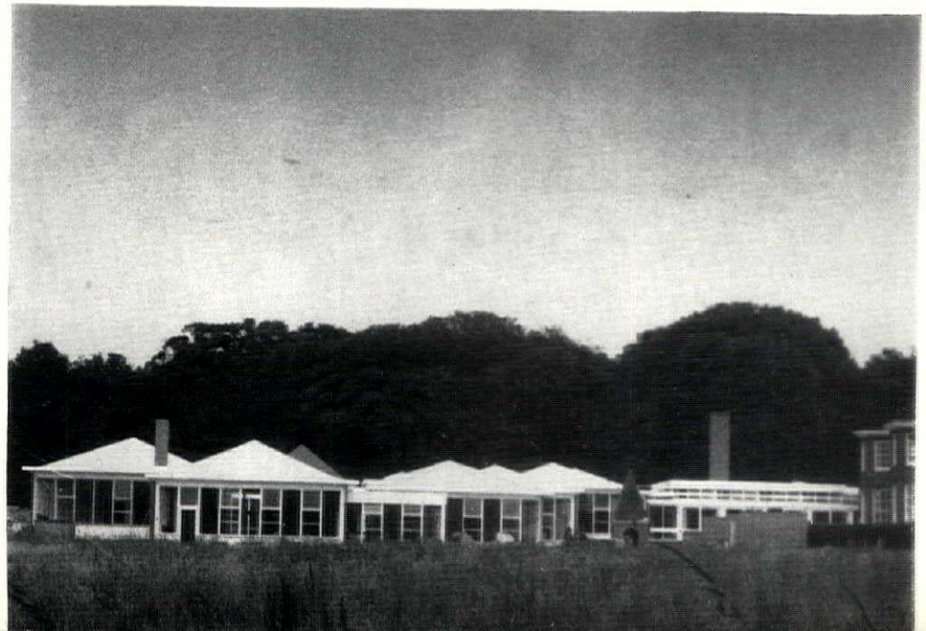
School for Spastic Children near Horsham

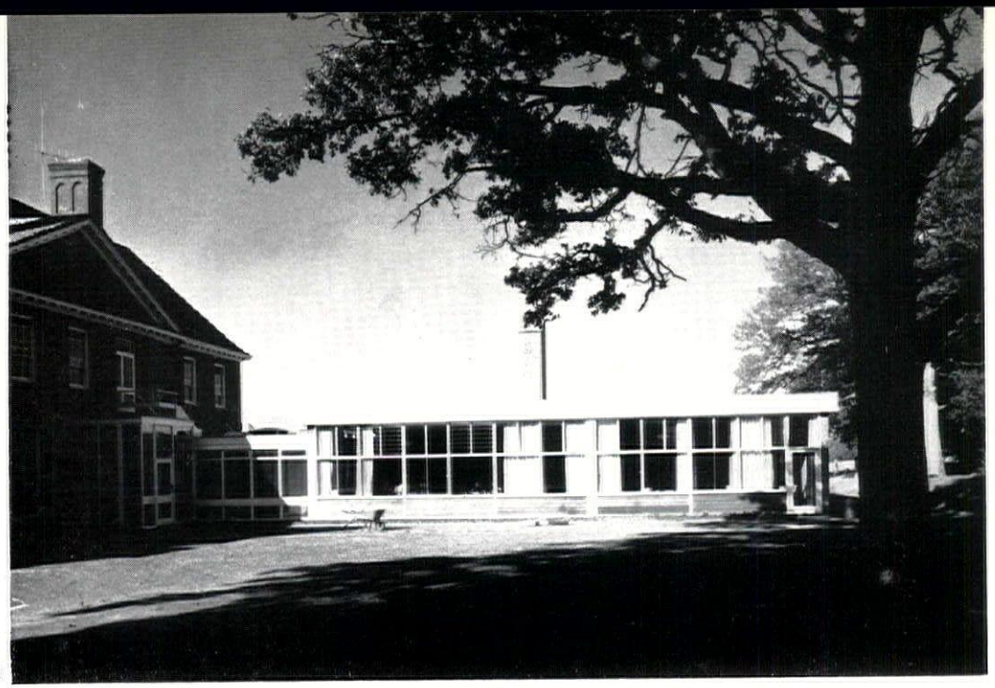
linking this room with the classrooms and space outside for children to wait and for wheeled chairs to be left. The room has a high ceiling to allow for ball games and a private terrace for out-of-door exercises. Close to this is the heated therapy pool with its own changing room. Corridors are wide and there is plenty of space outside the classrooms and lavatories to allow children to manoeuvre their wheeled chairs: the lavatories are larger than usual for the same reason. Guard rails and continuous handrails are fixed to corridor walls and in front of windows. Changes of level inside are by ramps at a slope of 1 in 12. Outside playspace is important and there is a paved area in front of each classroom and a communal playspace with swings, climbing frame and other equipment.

The staff houses are three and four bedroomed and a pair of three bedroomed semi-detached houses is being used temporarily as a hostel. A three-storey hostel for about twenty members of staff is to be built this year. In this type of school the staff/child ratio is very high, being nearly 1 to 1 when domestic and outside ground staff are included.

The hall, dining-room and kitchen have brick bearing walls and load-bearing timber curtain walling. The classroom and therapy block have brick bearing walls with site-made timber trusses over classrooms and timber and stramit decking over corridors. Classroom pyramid roofs are covered with chipboard and aluminium sheeting and corridors and the therapy pyramid with green mineral felt. Infill walling is covered with Sussex clay tile hanging

5, distant view of the classrooms from the west.





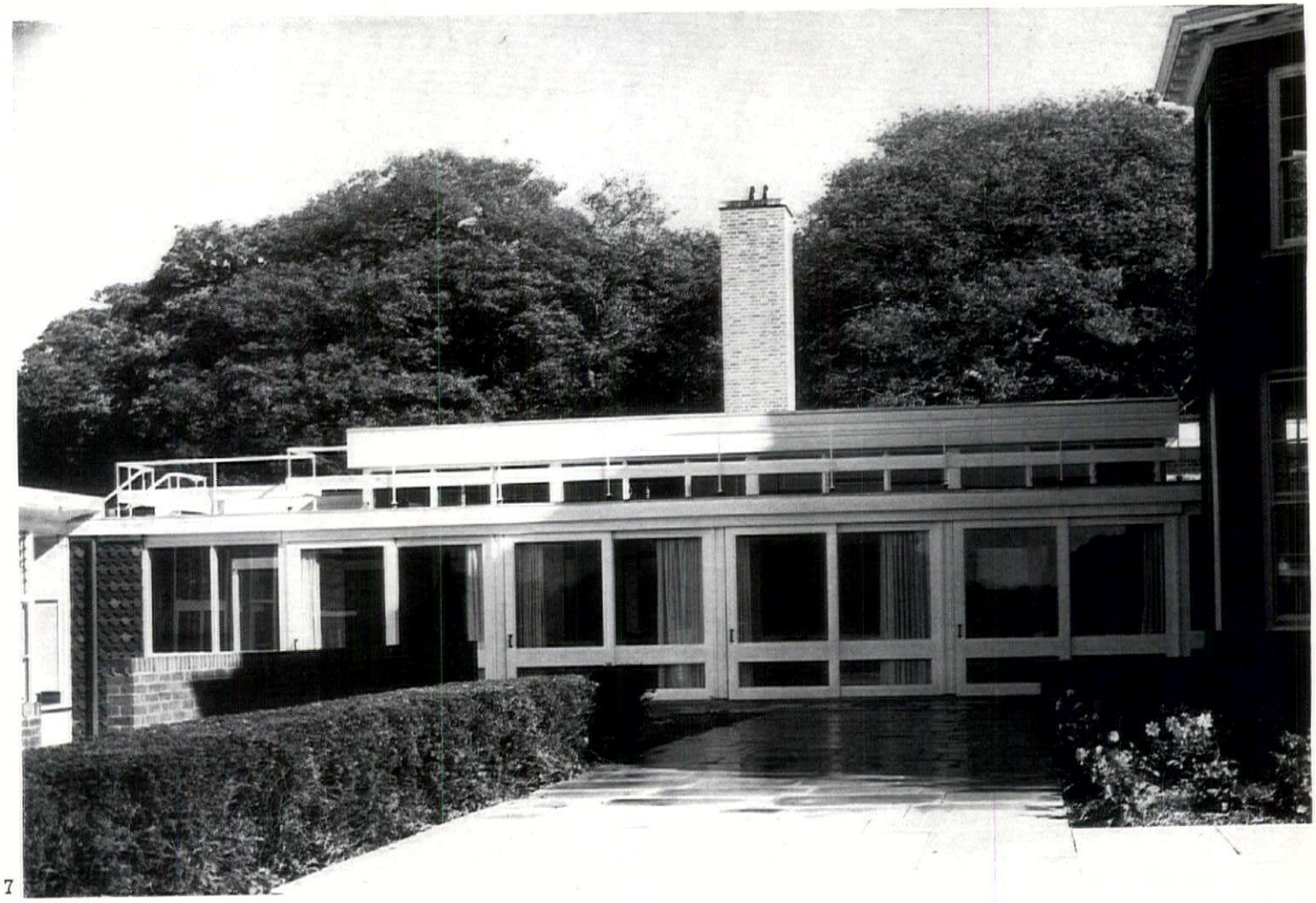
6

School for Spastic Children near Horsham

6, the children's and staff dining rooms from the south, with the porch link to the existing dormitory block on the left.
7, the assembly hall and verandah from the west.

and the panels under windows are ship-lap boarding painted white. Windows are load bearing timber framed with aluminium sash windows and louvres above. The houses are of cavity wall construction in two skins of lightweight concrete blocks finished externally either with cement rendering or ship-lap boarding painted white.

Assistant architects, K. J. Holley, B. E. F. Emby, G. Field. Designer of pyramid timber roofs, D. H. Moss. Quantity surveyors, Davis, Belfield & Everest.



7

EXHIBITIONS

THREE SORTS OF BLOT

In the script, recently published in Encounter, *of a brilliant and seductive lecture given at an American college, Sir Kenneth Clark divides the art of our time into diagrams and blots* and suggests that in periods when art had larger tasks to perform the diagrammatic faculty and the blot-making faculty were united in the artist 'by interest or pleasure in the thing seen.' His diagnosis of the present condition of art was not limited either to painting or to the period since the war, but one is left with the impression that at the time he prepared his lecture he was preoccupied by tachisme and that he was well aware that his American audience would have the large abstractions of the New York school in its mind's eye. Even the writing is rather tachiste, and has something of the ingratiating coming and going quality of an imaginary cloudscape by Paul Jenkins, for although Sir Kenneth Clark considers modern art to be 'a true and vital expression of our time,' he finds its truths to be of no great consequence and its vitality all that can be expected in an age whose best energies go into science and technology.

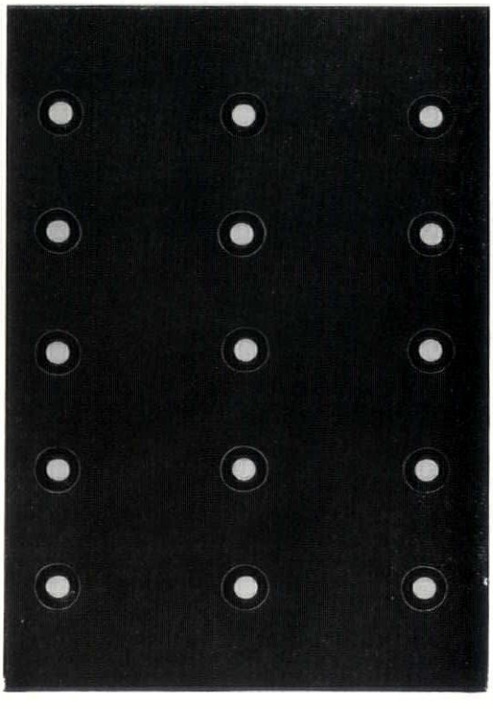
He allows modern painting one kind of diagram and two kinds of blot. The diagram is the kind, made for its own sake, which is involved in the mystique of measurement. The blots are either gestural or associational. He cites the work of Mondrian as an example of the diagrammatic aesthetic, but doesn't give specific examples of blottage. He does, however, refer to Pollock as one of the most representative painters of the age, and Pollock's drip-paintings can be taken as gestural. The cloudscapes of Jenkins will do for the associational kind. The one reproduced was in his last show at Tooths, 1. Sir Kenneth doesn't really need the diagram in his diagnosis of painting, and at one point says that a Mondrian only looks like a diagram. A Mondrian or a Nicholson or an Ellsworth Kelly is simply another kind of blottage—measured blottage. A nice example of measured blottage is Agnes Martin's 'Reflections,' 2, which was included in the group of works from the Betty Parsons Gallery shown in London, again at Tooths.

The idea that modern art is dominated by the blot is an insidious one and spreads like a stain to cover even the best of the work that seems to cling to the old categories; the landscape, the still life, the nude and so on. We have accepted Leonardo's proposal that we should stimulate the inventive faculty by looking at stains on walls, but we do not give their suggestiveness 'complete and proper form.' The stains as such support our sense of reduced identity. The rarest thing in modern painting is insistence on the reality of an object. The only thing an artist insists upon is the reality of his painting, as if he were jealous of everything outside his own vague, uneasy awareness of self.



1

So one is not exactly unprepared for Sir Kenneth's conclusion, even though its stinging kindliness might take one by surprise: 'We can only be thankful for what we have got—a vigorous, popular, decorative art, complementary to our architecture and our science, somewhat monotonous, somewhat prone to charlatanism, but genuinely expressive of our time.'



2

John Russell contends that he has made too neat a parcel of 'the age of Giacometti, Tobey, Balthus, Poliakoff, Nicholson, César, Rothko, Bacon, Coldstream and de Kooning.' It's a curious and provocative list, presumably intended to indicate the variety of modern art as well as some of its top practitioners. But the only artist in this list whose work is totally independent of the blot is Balthus.

Certainly one doesn't immediately associate the figuration of Giacometti, Bacon and Coldstream with the decorative; but it all depends, I suppose, on what one means by the decorative. In the context of Sir Kenneth's lecture it obviously means something much less than the greatest art, which he says is 'a means of communicating some truth which is assumed to be more important than the art itself.' I doubt if these three figurative artists would claim that there is anything more promising in the human condition as they delineate it than 'the truth of art.' By placing an emphasis upon the materials of their art they put it within the category of blottage. The paintings of Giacometti and Coldstream even imply that the high visibility of their raw material, the signs of their endless equivocations, the evidence of their doubt of what they see is more important than the image. Their paintings, on the rare occasions when a number of them are seen together, have an air of monotony. It's not that monotony of absence which characterizes a roomful of Tobey or Poliakoff or Riopelle or Sam Francis, but an overbearing atmosphere of



3

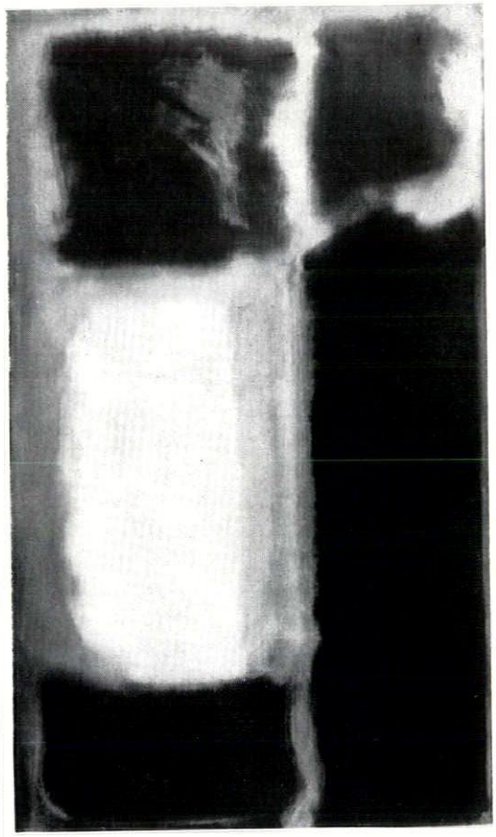
melancholy, created by the sense that human beings have been used as if they were of less importance than the artist's problems. In Bacon, the feeling that at least something, however horrible it might be, is happening to the figure saves it from monotony and melancholy. The activity and the horror are dependent upon the smear inherent in his use of paint, as this detail from a small triptych in his retrospective at the Tate indicates, 3, but one is always confronted by his interest in the human condition, even if it sometimes seems to be rather highly specialized.

Sir Kenneth's belief that science has not only 'absorbed many of the functions of art' but has deflected many potential artists implies that art has been denied its proper quota of creative energy and there is the further implication that the characteristic abstraction of our time is not really 'a true and vital expression' of it but the evidence of a serious deficiency in the artists. If there's any truth in this, the art of painting ought not to be with us much longer. Nevertheless, Sir Kenneth thinks that 'because the invitation of external reality is a fundamental human instinct' this state of affairs will not last for ever. I don't know how he has managed to generate even this faint spark of optimism from his line of argument, but in any case he makes it pretty clear that he doesn't want to see a return to an art of the human figure unless it is accompanied by the return of a belief in a nobler destiny for man than that uncovered by science. As was said, appropriately enough, in a recent medieval disputation, 'space research excludes the next world.'

But why should we try to forget or pretend not to know or feel ashamed that the human race has happened by chance, and is totally dependent upon the earth's situation in relation to one of the millions of fireballs whizzing about the universe? Why should this knowledge make us hate ourselves so much that the predominant art of our time is bent upon defacing or effacing the human image? Isn't it possible that art has temporarily taken a wrong turning and that far from being complementary to science, has tried desperately to emulate it? For better or worse, a great deal of what has happened in art in our century can be called a specialized kind of space research, and some of it has been brilliant and subtle. In the outcome, the best of it discloses a thirst for the sublime, a fact which was powerfully demonstrated by Rothko's retrospective at Whitechapel, 4. Yet all that Rothko's pictures give us is a gratifying sensation of envelopment.

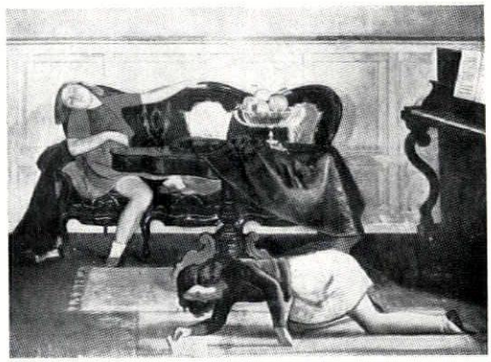
Sir Kenneth seems to me to be partly right when he says that of the 'three possible purposes of art—imitation, persuasion or exalted pleasure—only the third still holds good in an age of science.' It's certainly true that the art of blottage can only have this end in view, but I see no reason why an art based on a less hysterical view of the human situation than that which prevails in blottage should not be rooted in a triple purpose.

John Russell included the painter Balthus in his list. The typical example of his work, reproduced here, was exhibited in the unforgettable one-man show held at Lefevres some time ago, 5. Balthus treats



4

one aspect of the human situation too obsessively to be the ideal forerunner of such an art, but his work seems to me to be more tangled with the possibilities of a romantic humanism than that of any other artist of our time. The young girls in his pictures, transfixed by growing pains, sit or kneel or sprawl with an intensity which appears to be beyond the limits of normal



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behaviour because the artist persistently brings his powers of observation into line with his sense of their psycho-physical predicament. He has found for the human situation a precise formal correlative which enlarges our awareness. It imitates the exterior world, persuades me that all kinds of loving are permissible and gives me (perhaps the author of Lolita too) exalted pleasure.

Robert Melville

ARCHITECTURE

OLD AND NEW AT BISHOP'S STORTFORD

A rebuilt railway station is not the place to expect a graceful and sensitive matching of old and new. Scrap-and-start-again is the usual thing, by temperament and often by sheer functional pressure. Other stations on the London-Cambridge line have been rebuilt completely (e.g. Harlow and Broxbourne, AR, May, 1961); but at Bishop's Stortford half of the old structure has been kept, and the result is outstandingly successful.

In the background of the first photograph, 1, is the three-storey station-master's house which is Victorian and has been given a new entrance; the booking hall in front is brand new and very elegant, 2, with a space-frame roof which makes the perfect counter-point to the frilly Victorian ironwork on the platform. The square and round buildings in the foreground of 1 are actually Victorian water-towers, re-used as offices. The detailing throughout is fresh and sensitive, even down to things as humble as the asbestos roof on the cycle sheds.

Bishop's Stortford was designed by British Railways' Eastern Region; architect-in-charge R. Fawcett. If the problem of Euston had been approached with the same kind of sensitivity we would not now be committed to losing a masterpiece without—so far—even hopeful perspectives to show what is to replace it.

I. N.



1



2

SHRUBS

NATIVE SHRUBS FOR LARGE SCALE PLANTING

The large scale planting needed to tie some big construction into the landscape is often considered a problem because of the cost of plant material, but it is surprising what little use is made of the trees and shrubs native to the district. They have the immediate advantage of being well adapted to the local soil conditions, able to flourish with the minimum of attention, and if not always available from the nurseryman they may be quickly propagated in quantity near the places for which they are required. Frequently, also, a site is cleared of much unpromising looking scrub which, if thinned and properly treated, would provide the necessary foil far more quickly than imported stuff newly planted.

The elder, *Sambucus nigra*, 1 and 2, is a despised shrub frequently found on waste land or on the site of ruined buildings, but when well grown it is an extremely handsome plant. If allowed to do so it will quickly attain the size of a small tree some fifteen feet high, although judicious cutting will keep it in check. At any time its rather ornate leaves and shapely growth would make it worth growing, but in early summer it turns into a great cream fountain of flowers, the curious smell of which is said to discourage flies, and in autumn the branches are weighed down with large bunches of fruit the colour of blackberries. For purely garden use there is an effective golden leafed form and a hybrid, *Sambucus racemosa*, with much larger berries of a translucent red.

Another useful, though despised, plant is the common hawthorn, *Crataegus oxyacantha*. Considered as a fit plant for country hedges, it is seldom planted to form the protective thickets to which it is so well adapted. Fairly closely set it will quickly form solid barriers up to twenty feet high, laden in May with bunches of milk-white flowers and later with dark red berries set amongst leaves which

frequently take on a good autumn colour. If small trees of the typical low branching, twisted shape are wanted, it is no use planting six-foot standards, which for years will have a faintly suburban air. Much better to plant closely three or five bushes, allow them to grow together and force each other up, and when they have



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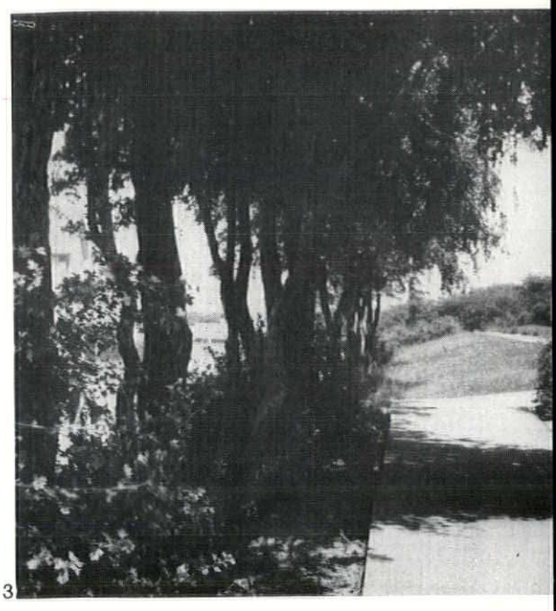


3

1, 2, *elder growing on a farm in Sussex.* 3, *hawthorn preserved at Basildon New Town.*

2



reached the desired height remove any which are not required. Few people seem to realize the usefulness of old overgrown farm hedges, often found on country sites. If the rubbish is removed, weakly branches and plants thinned out, and the remainder carefully pruned to produce good shapes, one is left with a row or at least several clusters of well established young trees which at once lend an air of maturity to their surroundings. 3 shows old hedgerow thorns retained and cleaned up to form part of the landscaping in one of the new towns.

The common 'palm,' *Salix caprea*, is a curiously neglected small tree. Quick and easy to grow, even a small shoot will produce a round-headed tree fifteen feet high in five or six years. The dull green, grey backed leaves and tidy habit of growth are always satisfying, but the arrival of the attractive silver fur catkins —the 'pussy willow' of country children— is one of the earliest and most welcome signs of spring.

Winter effects are always important, although too seldom considered. One of the easiest native shrubs, *Cornus sanguinea*, better known as dogwood, has rich plum-red shoots which lend a warm glow to the landscape when there is little else of interest. Growing from eight to ten feet high and as much through on any reasonable soil, it is an ideal shrub for quickly growing thickets, and has the added advantage of bearing bunches of strange steel-blue berries when well established.

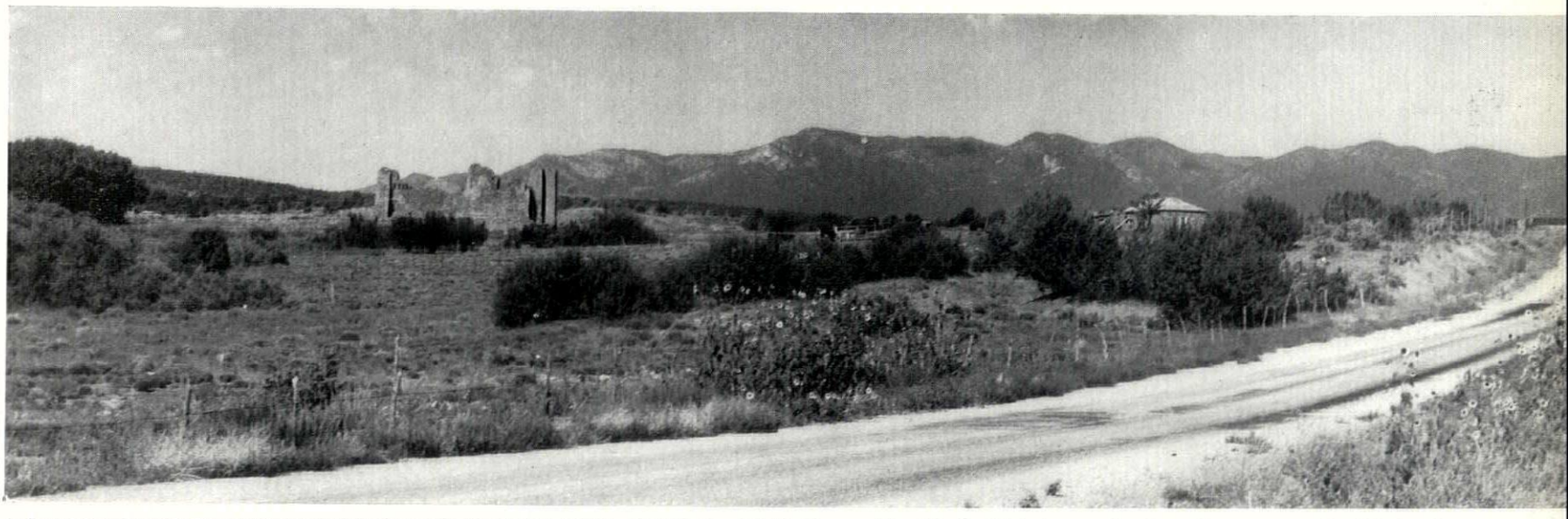
A. du Gard Pasley

HISTORY

THE MANZANO MISSIONS

Most of the Spanish colonial churches of New Mexico[1] *are built of adobe, sometimes (e.g., Acoma) with rough field stones as a secondary material.* The important exceptions are the ruined stone church at Giusewa, on the Jemez River forty-five miles west of Santa Fe, and a group of four stone churches, also in ruins, lying to the east and south of the Manzano Mountains, which reach a point about the same distance south of Albuquerque.

This group comprises the churches of



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1, *Quarai from the road. The ruined church of La Concepción lies at about 6,500 ft.; the highest peak in the Manzano Mountains behind rises just over 10,000 ft. above sea level. Quarai is in 'soft' country as New Mexico goes; the great archaeologist Bandelier thought that it was 'among the few picturesque sites in New Mexico that deserve the epithet of lovely.'*

2, *Quarai from the south-west, the foreground roughened by the overgrown mounds over the buried pueblo. Note the single window in the side wall of the nave.*



2

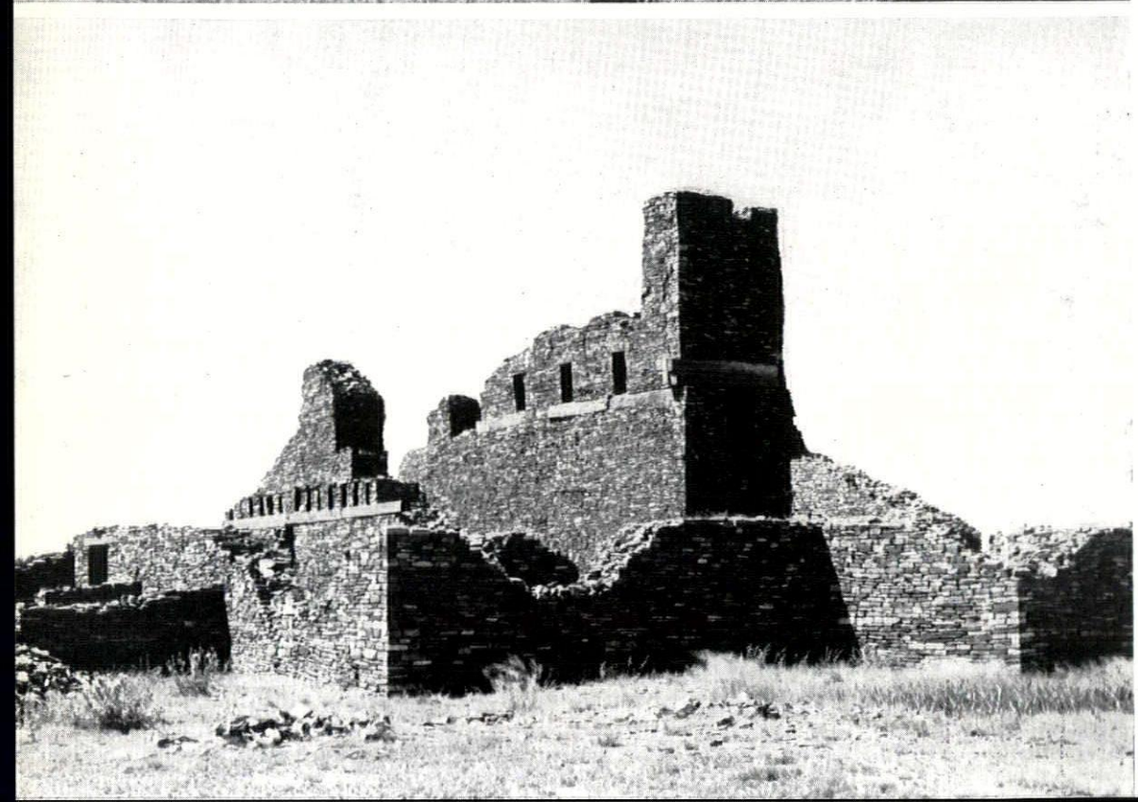
Abó (named after the seaport in Finland, now called Turku, to whose St. Gregorius the church was dedicated), Quarai, and the two churches of Humanas or Gran Quivira. All were built in the second quarter of the seventeenth century; all but the earlier and smaller church at Gran Quivira are distinguished from the general run of the early churches of New Mexico by having transepts. Two of them, Abó and the second church (San Buenaventura) at Gran Quivira, were most probably designed by the same Franciscan friar, the Sevillian Francisco de Acevedo, who was resident priest at Abó for more than thirty years; Quarai, built by Fray Estevan de Perea, has a strong family resemblance to them, while similarities in the planning of the *convento* buildings of all three suggest that one of them—Abó or Quarai ? —was the immediate prototype for the others.[2] All were abandoned, with the pueblos in which they stood, in the 1670's, when a great drought was followed

[1] The standard work—a model of its kind—is George Kubler's *The Religious Architecture of New Mexico* (Colorado Springs, 1940). Incidentally, Ronchamp has made many of these churches, with their sculptural walls, minimal fenestration, controlled lighting, and irregularities of plan and section, look more 'modern' today than they did when Kubler wrote.

[2] For plans see Kubler, *op. cit.*, pp. 21, 35, 74.



3



4

3, Quarai: the nave, looking north to the sanctuary. The slots in the walls held the roof beams and their supporting brackets. 4, Abó: the church from the north-east, with the sanctuary to the right. The surviving transept wall shows all that is now to be seen of the crenellation which only 110 years ago was a prominent feature of the ruined church.

by a widespread epidemic and an intensification of the ever-feared Apache raids.

Within the group, Abó and Quarai, which are illustrated in the accompanying photographs, have the most in common visually. About twelve miles apart in the foothills of the Manzanos, both are of red sandstone, 'taken from stratified outcrops . . . and prepared by fracture, probably with stone mauls,'[3] whereas the Gran Quivira stone is a rather ghostly grey. Oddity of oddities, in the *claustro* of each is an incontrovertible *kiva*, or Indian ceremonial chamber. A watertight explanation of the presence of this pagan feature has not yet, so far as I know, been produced. The mystery is deepened, if anything, by the fact (ascertained by National Park Service archaeologists last spring) that there is no *kiva* in the *claustro* at Gran Quivira.

For two and a half centuries the churches of Abó and Quarai withstood unaided the attacks of the weather, heavily reinforced during the last third of the period by treasure-hunters from afar and quarriers from nearby. And then, in the late 1930's, came—not restoration, but excavation and repair. The difference was one of which the archaeologists of the University of New Mexico and the School of American Research who undertook the work were well aware. 'We will preserve not only the stones of these venerable monuments,' wrote their director,[4] 'but the atmosphere of sanctity which should be their best protection. We will allow no vandal hands to destroy or restore them. . . . We will not put back a single block of stone more than is necessary to arrest destruction, and we will let no work of our hands deface the work of their builders nor belie the spirit that wrought them.' Although the process of arresting destruction did necessitate some tactful rebuilding here and there—in the façade of Quarai, for instance—and could not but result in a general tidying-up of the stonework, these resolutions were kept as well as any reasonable man could require.

Today if you go to Abó or Quarai you are confronted by a rustic gatehouse and a sign stating that the monument is administered jointly by the University and the Museum of New Mexico. You are used to this sort of thing. Then you discover that there are no tickets, no guides, not a visitors' book—not the least trace of

[3] *Ibid.*, p. 27.
[4] Edgar L. Hewett, in a report quoted by E. L. Hewett and R. G. Fisher, *Mission Monuments of New Mexico* (Albuquerque, 1943), pp. 207–208.

administration anywhere!—while at Quarai even the picnic ground is overgrown with weeds. Perhaps this state of affairs is due to circumstances which are not to the liking of all those concerned. One prefers to think that the surrender of the repaired ruins to nature is a demonstration of real faith in that 'atmosphere of sanctity which should be their best protection,' an example—how rare!—of the ultimate in tact and taste.

Marcus Whiffen

TOWNSCAPE

A KNOT IN THE MIDDLE

To most people Bicester is the home of the largest military camp in Britain. But the town itself, a mile or two away, is agreeably unspoilt—neat, on the whole quiet, restrained both in scale and in style, full of nice seventeenth to nineteenth century houses, an amalgam of the gentle Midland vernaculars. What makes Bicester a little more than just an ordinary English town is its plan, and the way this is used in three dimensions to give the centre of the town a special character.

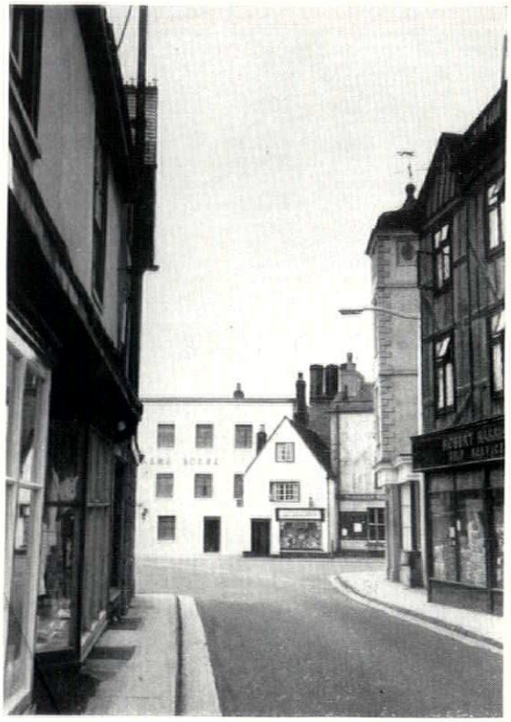
Bicester is at the crossing of the A43 (Oxford to Northampton) and the A41 (Aylesbury to Banbury). The A43 now goes along a well-sited bypass to the north-west. A41 goes as near as possible straight through the middle. Not very straight, however. Bicester has a long triangular market-place, its axis going away at right-angles to the main road, narrowing to a lane at the west where the church is. At the broad end the pattern is complicated by three separate islands of shops and houses, divided by lanes—an example of the familiar building-over of the market-place, in this case forming a tight little knot at the town's heart. One of these lanes carries the A41, whose progress can be followed from the broad High Street, 1, through a dog-leg turn into the narrows, 2 and 3; or in the other direction, 4 and 5, less enclosed, but equally having to turn sharply out of line to avoid the block of shops A (arrowed in 1, 2 and 4). From each direction, openings to the west bring the market-place into the picture. What happens here is that the road accommodates itself to the town—as



1



2



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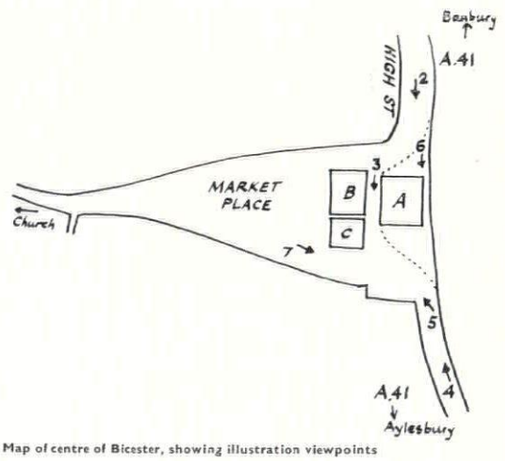


Map of centre of Bicester, showing illustration viewpoints

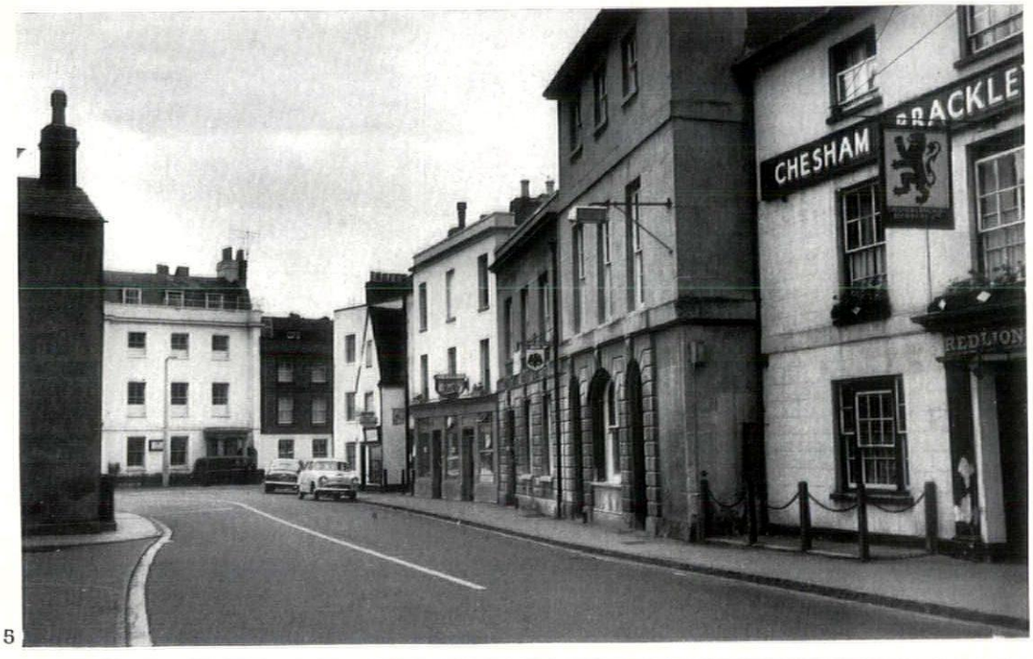
it should, for it is at this point that the life that is peculiarly Bicester concentrates.

But how long will it be allowed to? A41, though carrying much less traffic since M1 was opened, is still a trunk road. At the narrowest point, if two lorries meet, one must wait: there are no traffic lights, nor any indication of priority. Occasionally a lorry misjudges the angle, and the corner shop needs a new window. Moreover, as the plan shows, by doing away with Block A the road could go through with next to no trouble—to the traffic.

This is what must not happen. The whole



4



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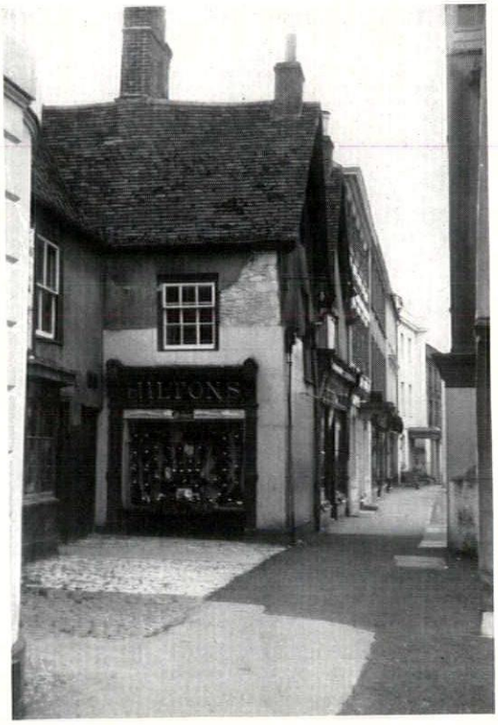
character of Bicester depends on the close contrast of the openness of High Street and the Market Place to the narrow intimacy of the shopping lanes, 6. This keeps the town compact, gives it a definition necessary to the physical focus of a little com-



6

munity of people. Block A is vital to keeping this compactness.

This case seems to present the conflict between the needs of traffic and the needs of a local community particularly clearly: the town gets virtually nothing from the through traffic, and if Bicester has to put up with it, Block A ensures as far as possible that it respects Bicester's autonomy. But the traffic that does use the road can still be a nuisance, though less of a nuisance than it would be if it were allowed to go through at its own rate. If a bypass for the A41 isn't managed soon, the traffic may get its own way: Block A will go, and with it half the attractiveness of Bicester. A just possible alternative is a short one-way system, taking northbound traffic to the west of Blocks B and C, along the roadway shown in 7. Yet this is desperate, for it would mean splitting the market-place in two and effectively isolating the town's middle.

The buildings in Block A are nothing special in themselves. They are probably fairly near the end of their lives. But the island itself must not go by default. Bicester needs the quietly dramatic gesture by which it announces the fact of its own presence. And traffic—it seems to need stressing again and again—is made for man, not man for traffic. So Bicester, which is a community of men, should come first.

Andor Gomme

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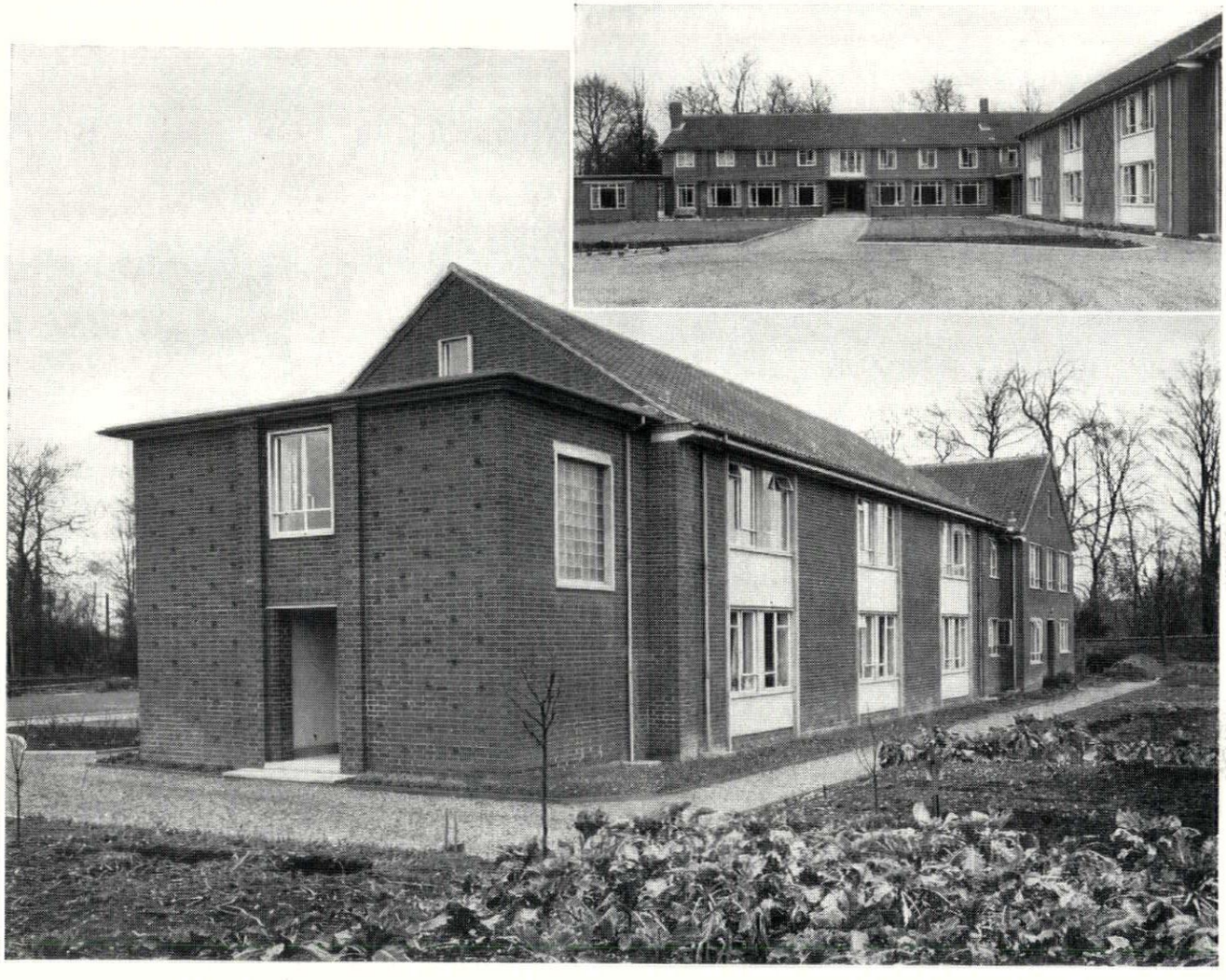

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SKILL

DOUBLE GLAZING

In April, 1955, Skill carried an article on double glazing. The emphasis in the article was on the reasons for using double glazing and its effect. Since that time there has been a considerable widening of the range of products, both windows and double glazed units, and it was felt that the time was ripe for an appraisal of these. This article by Iain Stewart attempts to do this.

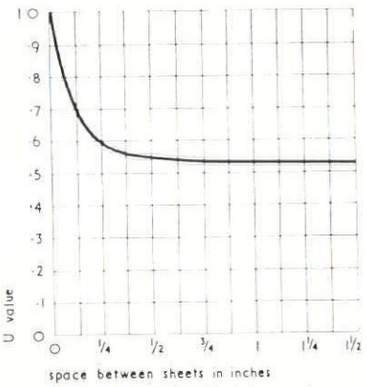
In taking account of developments in double glazing since the publication of the article in April, 1955, it will probably be useful to attempt first to reconsider the technological aspects, mainly for the benefit of readers who do not have access to the previous article.

Reasons for double glazing

There are basically two reasons for the adoption of double glazing in a building. These are (1) thermal insulation and (2) sound insulation.

Thermal insulation

In considering the thermal insulating properties of glass, thickness has small bearing on the question. The main check to the passage of



1, *graph showing relationship between air space and U value.*

heat is provided by the surface resistances. A U value of 1.00 is normally assumed for a single sheet of glass regardless of thickness. The provision of two sheets of glass separated by a layer of still air immediately increases the thermal insulation value, transmittance values falling to 0.54 for a ¾-in. cavity. If the cavity is increased beyond this, however, there is little further improvement in the U value since the larger cavity tends to permit the development of convection currents, destroying to some extent the insulating properties of the air space, since air, to be an effective insulant, must be as still as possible. The graph illustrates the relationship between thermal transmittance and the width of the cavity.

Sound insulation

Thermal insulation has generally been the reason for the employment of double glazing in recent times, but there is no doubt that there is some benefit to be obtained when it is used to increase sound insulation. The two functions are, however, not entirely compatible. High efficiency in one almost invariably means less than full efficiency in the other.

Airborne sound impinging on glass sheet sets up a vibration which then transmits the sound to the air on its other surface. This tendency to vibrate is governed by factors such as dimensions, seating of the glass in the frame and the thickness or weight. Of these, the simplest and hence the easiest to control is the weight. Obviously, for a given size, a heavier sheet will require greater force to induce vibration. This then is the measure of the sound reduction possible. Although figures are quoted for the noise level reductions of varying thicknesses of glass, these are necessarily approximate since noise is seldom a pure note, but composed of sounds of varying frequencies and wavelengths. Each frequency has a different effect and is absorbed to a different extent.

Double glazing has, of course, the effect of increasing the weight of material through which the sound must pass, but the cavity itself produces a side effect which can negate entirely the absorption effect. When the physical dimension between surfaces becomes an even factor of the wavelength that particular note (or notes) in the overall sound tends to be transmitted at full value if not actually amplified.

Whereas heat insulation reaches a practical optimum at ¾ in., insulation against airborne sound over the audible range tends to reach a maximum average at about 8 in. spacing.

This, of course, does not mean that the two cannot be achieved together. What it does mean is that it is virtually impossible to achieve maximum efficiency in both at the same time. A choice must be made as to which should govern the design. A good thermal insulating window will give some additional insulation against sound and a good sound insulating window will reduce heat losses.

Methods

Double glazing can be achieved in three ways:

1. By glazing a single frame with two sheets of glass suitably spaced.
2. Factory made double glass units.
3. Separately framed single windows, mounted independently or in a common sub-frame.

1. Single frame glazing

This is probably the simplest and cheapest method available. The detail can be designed for thermal or sound insulation as any required spacing can be readily achieved. In thermal designs where thickness is unimportant, it is possible to glaze the outer skin of a large pane with glass of sufficient thickness to withstand wind pressure, while the inner skin may be considerably thinner.

The method, though cheap, has one serious disadvantage. It is almost impossible to ensure an airtight permanent seal to both sheets, and condensation and dirt will find their way into the cavity to be deposited on the inaccessible faces of the glass. If either side is made reasonably removable for cleaning purposes, the problem is generally magnified. If, on the other hand, the occupier is prepared to remove one of the skins at frequent intervals to clean off deposited dirt, there can be little doubt that this method can provide relatively cheap double glazing.

Two simplified diagrammatic detail solutions are shown in 2 and 3.

2. Factory made double glazed units

These units are increasingly widely available today. Whereas a few years ago only one or two firms could provide reliable units, there are now a large number marketing either their own manufactured units or, in the case of Continental units, acting as

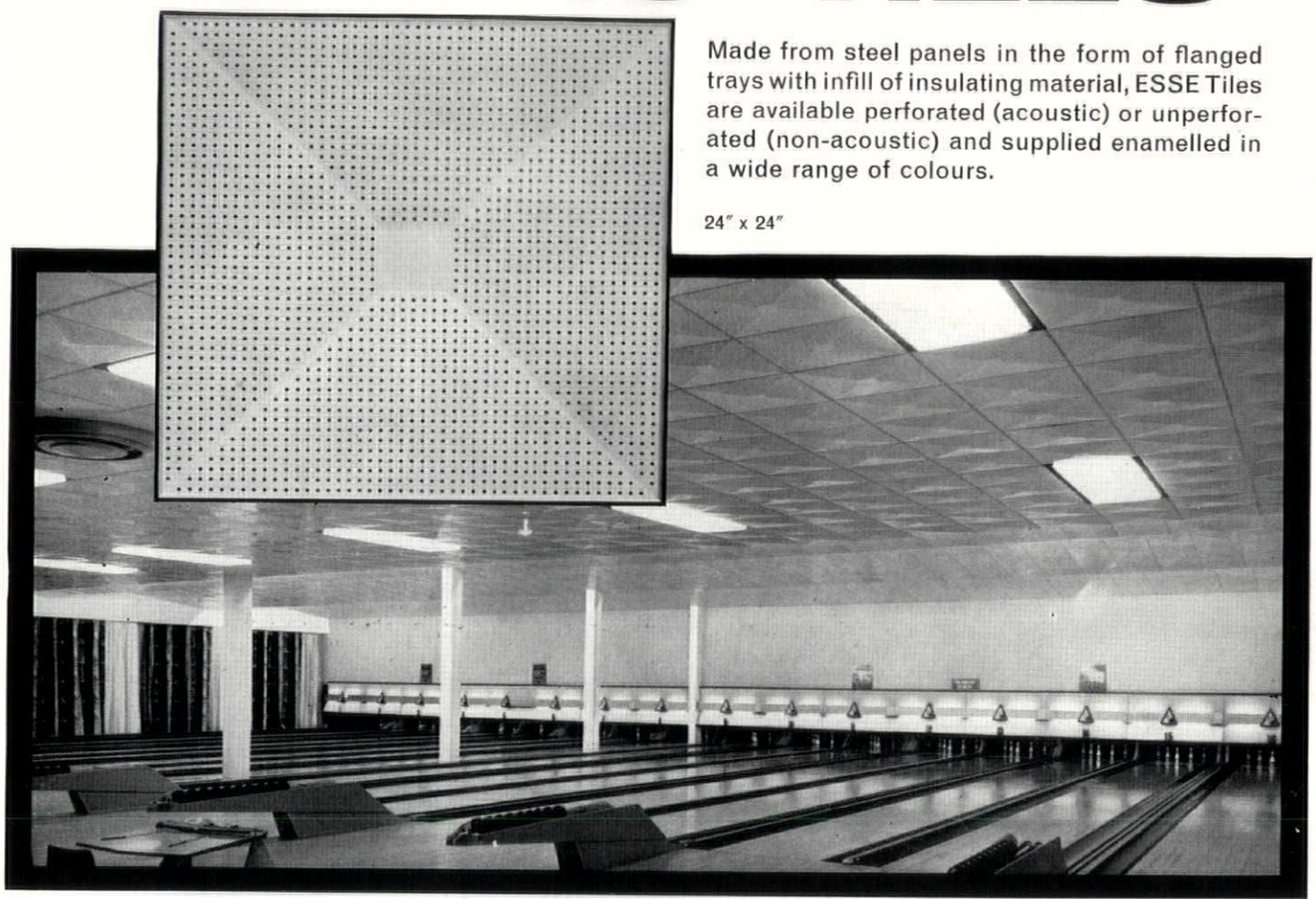
continued on page 226

ESSE

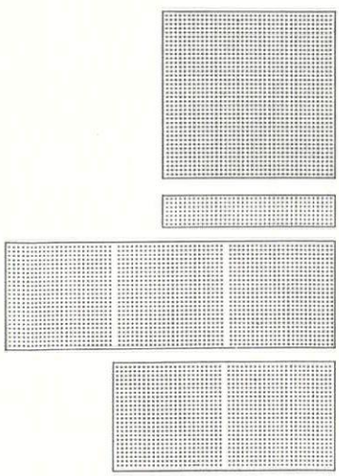
ACOUSTIC FIRE-RESISTANT CEILING TILES

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.

24″ x 24″



ESSE Ceiling Installation (Design No 8) at Olympia Bowl and Ballroom, East Kilbride



18″ x 18″ and 24″ x 24″

18″ x 3″

36″ x 12″ (also without grooves)

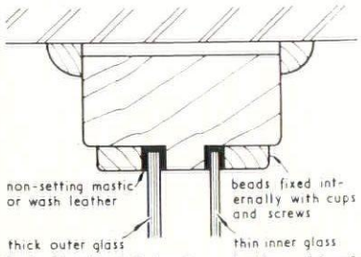
24″ x 12″ (also without groove)

ESSE Ceiling Tiles offer, as well as interesting aesthetic possibilities to the designer, these functional advantages —

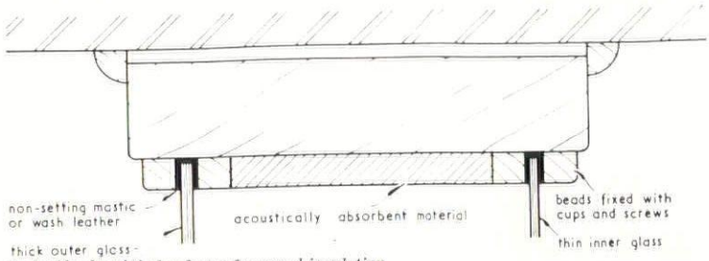
1. **Excellent acoustic properties,** especially in the sound range which includes office machine and restaurant clatter.
2. **Strong fire-resistance** characteristics. Official tests show that after 2 hr 10 min at up to 1000°C the load-bearing strength of steel beams above an ESSE Ceiling was not significantly weakened.
3. **Ease of erection.** ESSE Ceiling Tiles are designed for simple 'snap-in' fitting into galvanised steel supports.
4. The patented dished profile of Design No 8 ensures that no buckling or distortion occurs—even in heated ceilings—due to expansion and contraction.

ESSE **SUSPENDED CEILINGS**

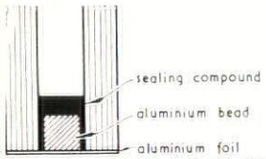
SMITH & WELLSTOOD LTD Acoustics Division Scott's Road Paisley
London: 63 Conduit Street W1 Manchester: 26 Cross Street 2



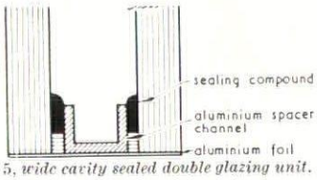
2, *double glazed timber frame for thermal insulation.*



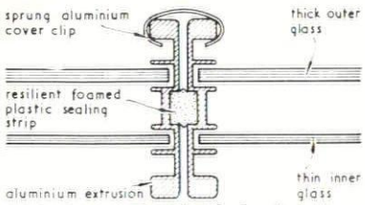
3, *double glazed timber frame for sound insulation.*



4, *narrow cavity sealed double glazing unit.*



5, *wide cavity sealed double glazing unit.*



6, *joint between Vitral double glazed panels.*

Manufacturers of timber double glazed windows

Allan Brothers Ltd.,
Tweed Saw Mills, Berwick-on-Tweed, Northumberland

D. F. Bennie Ltd.,
3 Park Circus Place, Charing Cross, Glasgow, C.3

Beves and Co. (Joinery) Ltd.,
Kingston Wharf, Shoreham-by-Sea, Sussex

Boulton and Paul Ltd.,
Riverside Works, Norwich, Norfolk

British Woodwork Manufacturers' Association, Sackville House, 40 Piccadilly, London, W.1

Cawood Wharton and Co. Ltd.,
Southlands, Harrogate, Yorkshire

East and Sons Ltd.,
Berkhamsted, Hertfordshire

J. Gerrard and Sons Ltd.,
Pendlebury Road, Swinton, Manchester

J. Honour and Son (Joinery) Ltd.,
Tring, Hertfordshire

Hope Emery Ltd.,
Waterfall Lane, Old Hill, Staffordshire

H. C. Janes Ltd.,
Barton, Bedfordshire

Frice Brothers and Co. (Penarth) Ltd.,
Station Road, Penarth, Glamorgan

V. Kann Rassmussen and Co.,
8 Broad Street, Oxford

Rippers Ltd.,
Castle Hedingham, Halstead, Essex

John Sadd and Sons Ltd.,
Bank Chambers, 329 High Holborn, London, W.C.1

Robert Sandall Group Sales Ltd.,
Worple Road, Wimbledon, London, S.W.19

Tomo Trading Co. Ltd.,
Packet Boat Dock, Cowley Peachey, Uxbridge, Middlesex

The Velux Co. Ltd.,
Stevenage, Hertfordshire

Manufacturers of metal double glazed windows

Alumin Building Components Ltd.,
Winterstoke Road, Weston-super-Mare, Somerset

Aygee (Metal Windows) Ltd.,
Century Works, Havelock Road, Southall, Middlesex

Frederick Braby and Co. Ltd.,
Braby House, Smithfield Street, London, E.C.1

Crittall Manufacturing Co. Ltd.,
210 High Holborn, London, W.C.1

Gardiner Sons and Co. Ltd.,
8 William IV Street, London, W.C.2

James Gibbons Ltd.,
Walkden House, 3–10 Melton Street, London, N.W.1

Heywood-Helliwell Ltd.,
Bayhall Works, Huddersfield

Henry Hope and Sons Ltd.,
Smethwick, Birmingham

The Morris Singer Co. Ltd.,
41–43 Great Peter Street, London, S.W.1

Quicktho Engineering Ltd.,
5 Grafton Street, London, W.1

Williams and Williams Ltd.,
37–39 High Holborn, London, W.C.1

Manufacturers of double glazed units

James Clark and Eaton Ltd.,
Scoresby House, Glasshill Street, London, S.E.1

Hill Brothers Glass Co. Ltd.,
4 Vernon Place, London, W.C.1

Hollow Seal Glass Co. Ltd.,
Stamford Street, London, N.1

Isothermglass (London) Ltd.,
110–116 Elmore Street, London, N.1

L. LePersonne and Co. Ltd.,
7 Old Bailey, London, E.C.4

Multiglass Ltd.,
65 Haymerle Road, Peckham, London, S.E.15

North Western Lead Co. Ltd.,
Hyde, Cheshire

Pilkington Brothers Ltd.,
St. Helens, Lancashire

Plyglass Ltd.,
Victoria House, Southampton Row, London, W.C.1

Wm. Purdom and Son Ltd.,
14-18 Fort Street, Ayr, Scotland

V. Kann Rassmussen and Co., (Vitral)
8 Broad Street, Oxford

Emile Regniers and Co. (London) Ltd.,
Thermopane Division, 4 Broad Street Place, London, E.C.2

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manufacturer's agents. The majority of them are also prepared to guarantee their product.

The two sheets of glass are separated by spacers which can be made of a variety of materials but aluminium square beads, channel or hollow square extrusions are the most popular. These are bonded to the glass with a permanent sealing compound and the edges are often sealed with a layer of aluminium foil.

Cavities may vary from $\frac{1}{16}$ in. to $\frac{1}{2}$ in. with glass thicknesses from 2 sheets of 24 oz. glass to 2 sheets of $\frac{1}{4}$ in. plate. Size can be anything up to roughly 12 ft. by 6 ft.

The units are glazed into frames in very much the same way as single glass sheets, but there are several snags to be borne in mind. The frames must be heavy enough to carry the weight of the unit and the rebate dimensions must be not only sufficient to take the thickness of the unit plus fixing beads but must also be deep enough to give cover to the edge seal of the unit since, if solar heat is permitted to play on this seal for any length of time, it will deteriorate and fail.

In the case of glazing from outside, this does not involve too great a problem but with such expensive and heavy components glazing from inside is often infinitely more practical. Handling double glazed units is hazardous, not necessarily to life and limb, but always to the seal. Carelessness and accidents can be avoided much more easily on the floor of the building than on a scaffolding outside.

Since the units are generally made to order and manufacturing obviously takes time, it is often necessary to order from window drawings. These may have a tolerance of $\pm\frac{1}{8}$ in. on the pane reveal dimensions. For the units $\frac{1}{8}$ in. seating all round is necessary and then there is a further tolerance of from $\frac{1}{16}$ in. to $\frac{1}{8}$ in. to be taken into account for manufacturing. The effect on the seal depth can be considerable.

For example, assume a pane reveal of 48 in. by 24 in. Assuming tolerances this may be $47\frac{7}{8}$ in. by $23\frac{7}{8}$ in. and minimum glass size will be $47\frac{1}{2}$ in. by $23\frac{1}{2}$ in. If the seal depth is $\frac{7}{16}$ in., assuming a minimum size unit $47\frac{1}{2}$ in. by $23\frac{1}{2}$ in. in a maximum size pane reveal $48\frac{1}{4}$ in. by $24\frac{1}{8}$ in., rebate depth of $\frac{3}{4}$ in. all round will be necessary.

In most of the double glazed units available great emphasis is laid on the permanence of the seal and the consequent dryness of the trapped gas. This seal will be easily broken by careless handling.

One firm, however, aiming at purely industrial applications, has decided to omit this delicate seal. The glass is mounted in a special aluminium extrusion which has filtered breathing holes in the bottom member. These units are not intended as glazing to window frames but as panels for cladding a façade. Manufactured to a Danish design, they are called 'Vitral' double glazed panels. The extrusions and method of coupling are shown in 6.

As well as the normal glazing, most double glazed units are now available in decorative forms for feature panels or infill units. Glass may be figured or coloured; one or both internal faces of the glass may be painted, or the cavity may be filled with a diffusing mat of glass fibre. In this case colour may be introduced in the form of cut-out patterns in dyed glass fibre mats.

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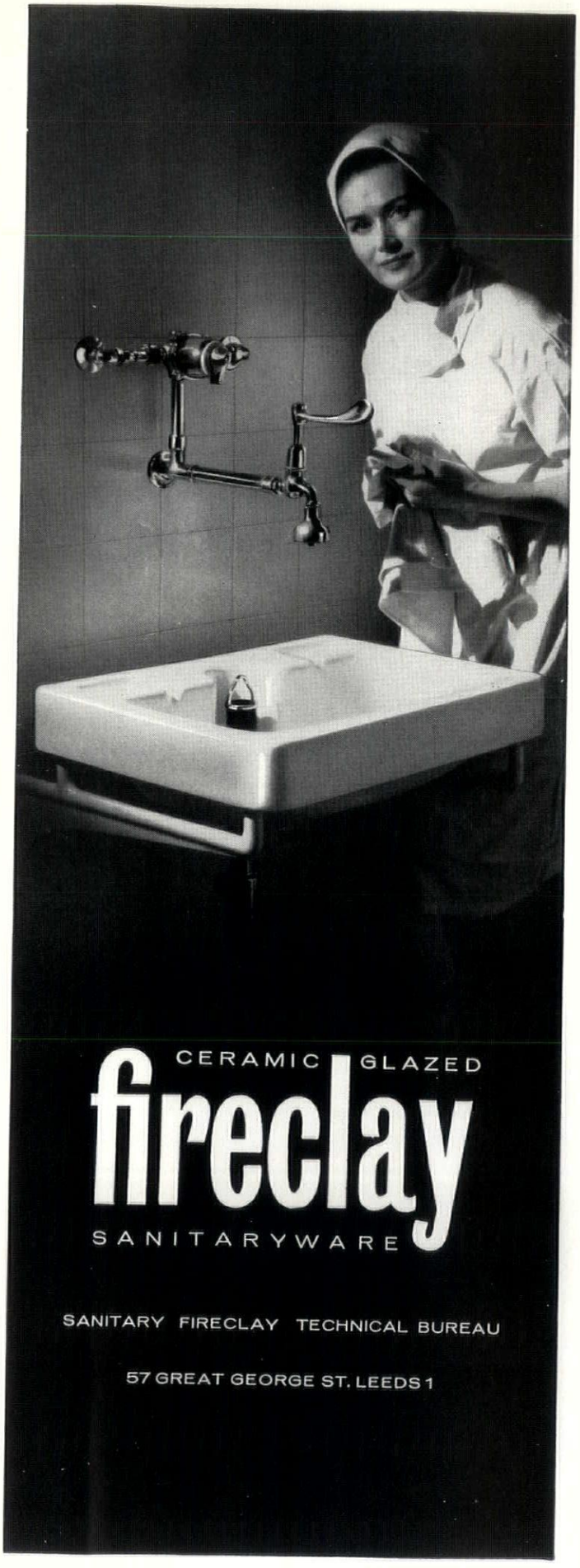

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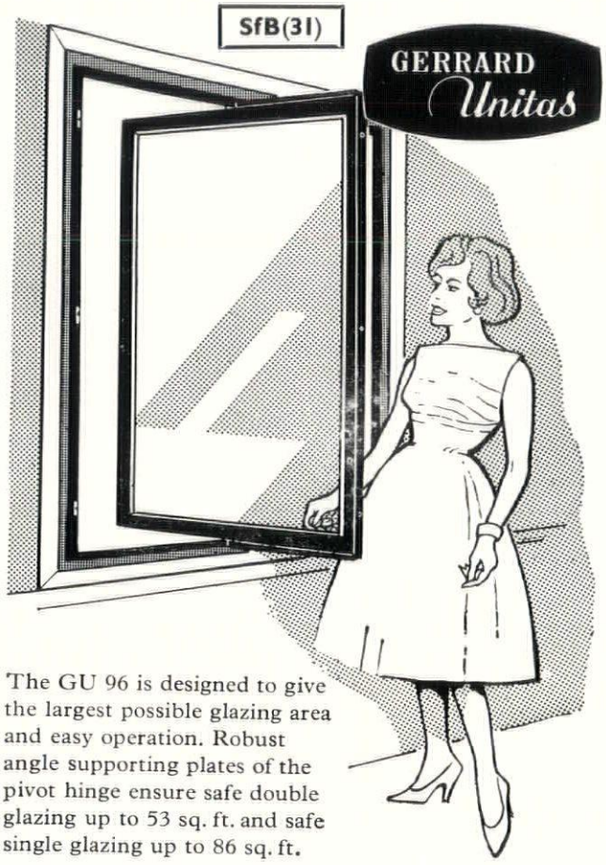
GERRARD *Unitas*



The GU 96 is designed to give the largest possible glazing area and easy operation. Robust angle supporting plates of the pivot hinge ensure safe double glazing up to 53 sq. ft. and safe single glazing up to 86 sq. ft.

96 GERRARD-UNITAS

VERTICALLY – PIVOTED WOOD WINDOW WITH DOUBLE OR SINGLE GLAZING

BARBOUR INDEX CODE 134

The sash rotates through 180° enabling the outside face to be cleaned from inside the building. Ventilation is accurately controlled by the friction brake which fixes the sash at any required angle.

✱ *For fully detailed information write for leaflet AR166*



GU Pivot window bearing.

J. GERRARD & SONS LTD.
SWINTON, MANCHESTER Telephone: Swinton 2261

Distributors: N. F. RAMSAY & CO. LTD.
59/61 Theobalds Road, London, W.C.1. *Telephone: Holborn 1514*
Charlotte Square, Newcastle upon Tyne, 1. Tel: Newcastle upon Tyne 2-6131
Lee Bank House, 63 Blucher Street, Birmingham, 1. Tel: Midland 6657

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3. Double window units

There is now a wide variety of double windows available. Much development work has been based on European ideas and methods. Since in this type of component no attempt is made to seal the cavity hermetically, much thought and ingenuity is devoted to enabling both faces of both sheets of glass to be cleaned internally.

Several forms of this type include provision for Venetian or pleated blinds within the cavity, bestowing additional thermal insulating efficiency.

Future developments

It is extremely difficult to predict future trends in this field. As far as double glazed units are concerned, our manufacturers have very little to learn. There is, however, a rumour from the United States of a unit where both faces are integrally from the same piece of glass and hence no edge seal problems occur.

In the complete window market, however, our manufacturers can scarcely claim to lead the field. European manufacturers have a long lead. This may be due to the fact that here demand has been limited and, therefore, the incentive is missing, but new ideas are being produced regularly in Europe. If Britain joins the Common Market this competition will obviously grow more fierce. No doubt our window manufacturers are well aware of this and, if so, we may expect to see competitive designs being produced here over the next year or so.

As far as the demand for double glazing here is concerned, this is almost bound to grow. Of course our climate is not too severe, but growth in the use of central heating and of air conditioning for an accurately controlled environment will almost certainly require greater control of heat loss and gain through windows.

THE INDUSTRY

Clock systems

There can be little doubt that two of the leading names in the clock industry are Gents and Smiths. By this very fact, however, their rivalry in the commercial field is almost guaranteed and hence it is something of a surprise to find that they have pooled their technical resources for the development of a new Master Clock system. Such a move has probably been encouraged by a possible increase in competition from European industry in the future but the fact that it has been done at all is a fact of note and example.

The result of this co-operation is a system which, while based on the controlled electric master clock, eliminates batteries and trickle charged accumulators with attendant maintenance problems and costs.

One of the major features is the spring reserve of the controlling clock which allows it to keep accurate time even in the event of a mains failure. On the reinstatement of supply, correction of all 'slave' clocks in circuit is automatically carried out. Impulses from the 'master' to the 'slaves' are transmitted over a simple two wire parallel circuit at intervals of one minute. In connection with these 'slave' clocks, it is claimed that their newly designed movement makes them silent in operation and gives a long life with little or no maintenance. Both companies will have available on the new system most of their existing clock designs as well as other timing devices such as Time Recorders. They intend, however, to extend the ranges with new designs in the near future.

The reduced cost of the controlling clock coupled with presumably lower costs for wiring installation and reduced maintenance will doubtless make this new system attractive for both large and small installations. The system will be marketed separately by both companies, Gents using the name 'Chronopher,' while English Clock Systems (Smiths) will use 'ECS Memory Master Clock,' 1.

Gent & Co. Ltd., Faraday Works, Leicester.

English Clock Systems, Great Portland Street, London, W.1.

Decorative lighting

As a supplement to main lighting installations the new 'Flamingo' fittings by Hailwood and Ackroyd form an interesting range. The diffusers are of satin etched white opal glass with clear coloured glass skirts and heat resistant plastic galleries in black or ivory, 2, 3, 4.

With six shapes of diffuser available together with five different clear glass skirts largely, though not fully, interchangeable in six different colours, the permutations are obviously wide. Glass colours used are amethyst, amber, blue, green, light ruby and wood smoke. Prices vary with the type of diffuser and skirt employed from 57s. 6d. to 71s. 9d. including purchase tax.

Hailwood and Ackroyd Ltd., 18 Lowndes Street, London, S.W.1.

Electric heating

Electricity cannot claim to be the cheapest form of energy source for heating but in spite of this the popularity of electric heating cannot be denied. Certainly, if one is prepared to accept this disadvantage, its relieving advantages are well worth consideration. It requires no fuel storage space, has no ash residue, makes no fumes, does not discharge heat to the atmosphere in waste products, is easy to control and rapid in response.

The new 'Sleekline' units by Heatrae form an attractive addition to the wide range of apparatus available in the appliance field. These units are designed to give background heating largely, of course, for domestic installation. Of slender outline and light in weight, they are available in three sizes and two forms.

The radiator panels are 18 in. high and 2 ft., 3 ft. and 4 ft. long with loadings of 400 watts, 600 watts and 800 watts, respectively. They can be wall mounted, 5, or fully portable and free standing, 6. Each unit is fitted with a twin lever switch which can give three heat positions as well as off. Control of each panel can be individual or by thermostat for fully automatic operation.

Heatrae Ltd., Norwich, Norfolk, NOR 29A.

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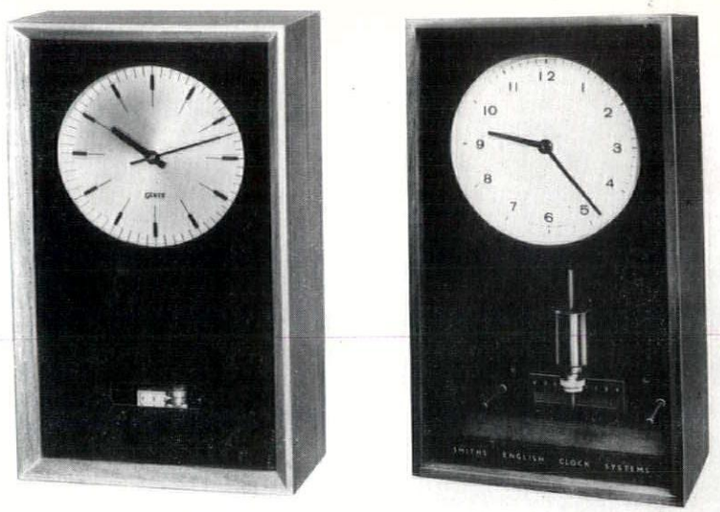

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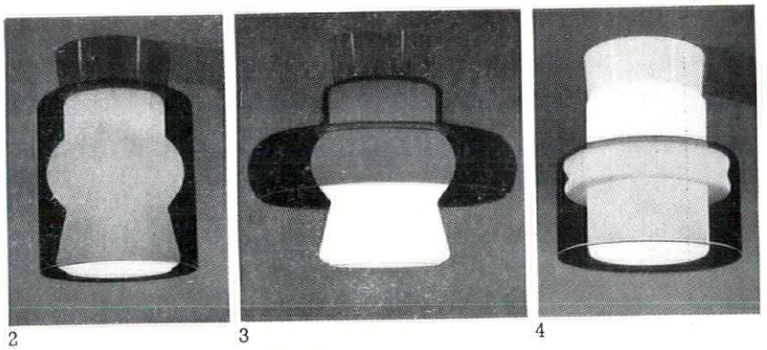


2 3 4



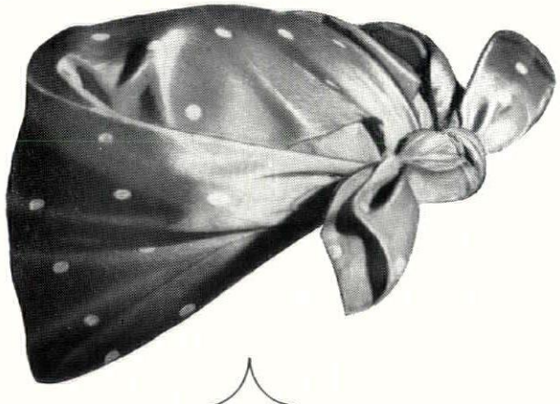
5



6

The new rooms on the first floor look smashin', sir . . .

Glad you like them, Mrs. B . . . we've used **Paramount Vinyl-faced plasterboard.** It's easy to keep clean – just a wipe with a damp cloth – and tough enough to withstand any amount of hard wear. There's a good choice of colours and patterns too . . .



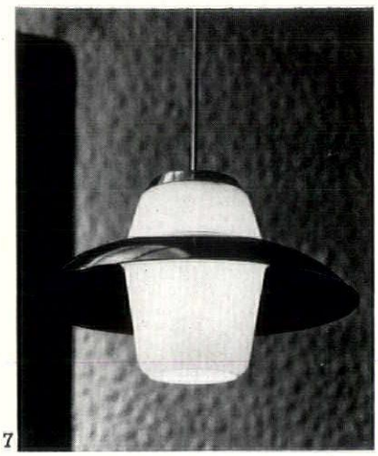


Well, reelly sir, whatever will they think of next!

'Phone or write for full details and samples of **Paramount plastic-faced plasterboard** and the 'Thistlebond' system of dry lining.

British Plaster and Boards Limited

Ferguson House 15/17 Marylebone Road London NW1 Telephone: HUNter 4021



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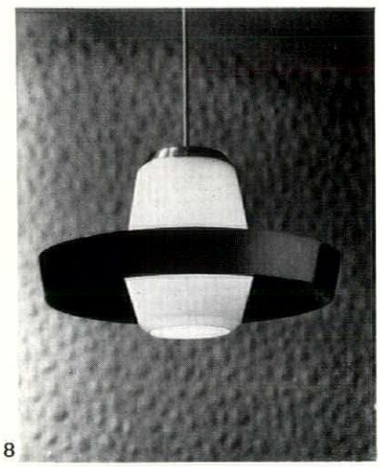

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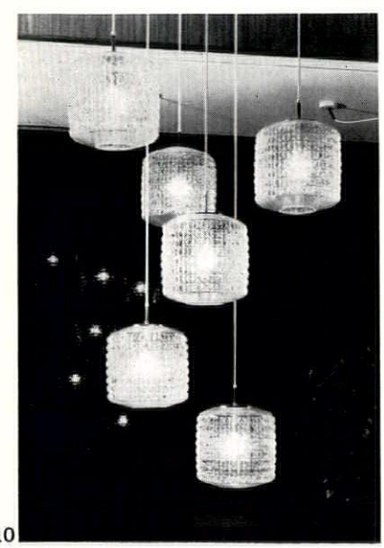

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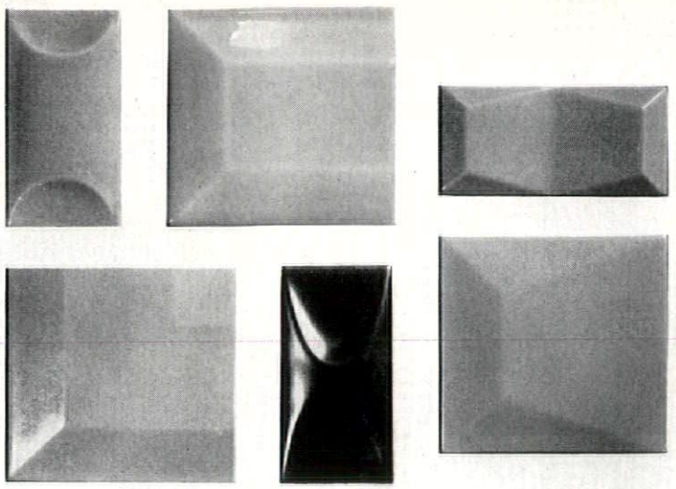

11

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Lighting fittings

Troughton and Young announced in December the completion of their 1962 design programme with the introduction of some 60 new items to their ranges. The designs, carried out by or in consultation with their consultant designer, A. B. Read, are notably well up to the standard which we have come to expect from Troughton and Young.

Particularly worthy of note are the pendant fittings in the 'Mondolite 2' range. One series of designs consists of reversible opal glasses which are ribbed to carry a variety of copper reflectors. 7 and 8 illustrate the two positions of the glass with two differing reflectors. The contrast between the white glass and the warm tone of the copper gives a pleasant appearance to these fittings, and the fact that the light source is visible both above and below the reflector ensures that excessive contrast in light value between the translucent and opaque units is avoided.

Another fitting, the 'Steplight,' 9, also employs this principle of top overspill light combined with an internally mirrored reflector and prismatically stepped glass diffuser which together provide highly efficient use of the light source with a neat trim appearance.

Slightly more bizarre in appearance are the Crystal Glass drum pendants, 10. This design is not necessarily to everyone's taste, but there are, doubtless, occasions when the crystal-like fussiness can add scintillating highlights to a decor.

Troughton and Young (Lighting) Ltd., Liscarten House, 127 Sloane Street, London, S.W.1.

Ceramic wall tiles

The illustration, 11, shows six of the main basic shapes of embossed ceramic wall tiles recently introduced by Richards Tiles. Their use can provide the architect with a means of creating a variety of pattern on tiled surfaces where the flat regularity of normal tiling is unacceptable or requires relief.

The tiles are 6 in. by 6 in., or 6 in. by 3 in., and ⅝ in. thick. Colour range is quite extensive as any colours in the company's existing Pastel, Duroflek or Durosilk ranges can be obtained, making a total of something like 100 colours including white and cream.

Care will, of course, be necessary in using such tiles since it will be only too easy to make a surface excessively busy by over-indulgence in different shapes and patterns, but sensible use of shape and colour should provide yet another way of giving decorative appeal to wall surfaces.

Cost of the tiles delivered is approximately £4 10s. per sq. yd.

Richards Tiles Ltd., Tunstall, Stoke-on-Trent.

CONTRACTORS etc

Country House near Godalming. *Architect:* Patrick Gwynne. *General contractor:* Sir Robert McAlpine & Sons Ltd. *Sub-contractors: Wood block flooring:* Acme Flooring & Paving Co. *Aluminium sun-louvres:* A. S. Blackman Ltd. *Garage doors:* Bolton Gate Co. *Roofing:* William Briggs & Sons Ltd. *Mosaic fascias:* The Brockwell Mosaic Co. *Furniture:* D. Burkle & Son Ltd. *Glazing:* James Clark & Eaton Ltd. *Perspex dome lights:* Cordar Ltd. *Corrugated glass screen:* Corroglaze Ltd. *Ironmongery:* H. & C. Davies & Co. *Electrical installations:* Electrical Installations Ltd. *Precast cladding panels:* Empire Stone Co. *Electric floor heating:* Falk, Stadelmann & Co. *Fibreglass trays:* Flexo Plastic Industries Ltd. *Service lift:* Hammond & Champness. *Tiling:* A. H. Herbert & Co. *Radio and gramophone equipment:* Thomas Heinitz. *Sliding tracks:* E. Hill Aldam & Co. *Stone:* Hornton Quarries Ltd. *Double glazing:* Isothermglass (London) Ltd. *Plastering:* Jonathan James Ltd. *Terrazzo and marble:* Marriott & Price Ltd. *Hot and cold water services and plumbing:* Mumford Bailey & Preston Ltd. *Windows:* Morris Singer Co. *Fitted furniture:* George Parnall & Co. *Water pump:* G. C. Pillinger & Co. *Sprayed ceilings and soffits:* Pyrok Contracts Ltd. *Wallpapers:* Arthur Sanderson & Co. *Fitted furniture:* Shapland & Petter Ltd. *Curtain tracks:* Silent Gliss Ltd. *Steelwork:* Somerville-Barnard Construction Co. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *York stone pavings:* The Stone Firms Ltd. *Chimney terminal:* Supira (London) Ltd. *Window control gear:* Teleflex Products Ltd. *Spot lights:* Thorn Electric Ltd. *Sewage disposal plant:* Tuke & Bell Ltd. *Suspended ceilings and other metal work:* The Universal Metal Furring & Lathing Co. *Louvre drape blinds:* Venetian Blinds Ltd. *Ventilation and electric heaters:* White Bays & White Ltd.

Ringway Airport Passenger Areas. *Architects:* James Cubitt and Partners in association with S. C. Besant Roberts, city architect. *Typographer:* L. Saxon, Regional College of Art, Manchester. *General contractor:* R. Costain & Sons (Liverpool) Ltd. *Contractor for interior:* Samuel Elliott and John P. White (Reading) Ltd. *Sub-contractors: Heating installation:* G. N. Haden & Sons Ltd. *Air conditioning:* Andrew Air Conditioning Ltd. *Electrical installation:* Frank Wall Ltd. *Light fittings:* Merchant Adventurers Ltd., Moorlite, E. J. Schofield & Co., Rotaflex. *Chandeliers:* Venini. *Fitted carpets, curtains:* Edward Bull Ltd. *Louvre-drape blinds:* Stilsound Vertical Blinds Ltd. *Fibrous plaster:* David Esdaile Ltd. *Public announcement system:* Tannoy Products Ltd. *Ribbed rubber flooring:* Pirelli Ltd. *Ticket conveyor:* Lamson Engineering Co. *Tile mural:* Ceramic Consultants Ltd. *Clocks:* General Signal and Time Systems Ltd. *Bar stools, built-in seat:* Trollope & Sons (London) Ltd. *Furniture:* Finmar Ltd., Hille London Ltd., supplied by Lewis's Ltd. *Vinyl floor tiles:* Semtex Ltd. *Ironmongery:* James G. Gibbons Ltd. *Signs and signwriting:* The Lettering Centre. *Closed circuit televison:* Pye Telecommunications Ltd. *Dampa ceilings:* Stilsound Acoustics Ltd. *Plastering:* Pollock Bros. (London) Ltd. *Lifts:* Electro-Lifts Ltd. *Ceilings:* Beamonts (Manchester) Ltd., Frenger Ceilings Ltd. *Kitchen equipment:* Moorwood Vulcan Ltd. *Windows and glazing:* Williams and Williams Ltd. *Painting:* F. & J. Pilling (Bros.) Ltd. *Slatted ceiling in restaurant:* Moorlite, E. J. Schofield & Co.

Technical College, Worsley, Lancs. *Architect:* T. Mellor. *General contractor:* E. E. Coleman Ltd.

School for Spastic Children near Horsham. *Architects:* Hilton Wright & Ingham. *General contractor:* Walter Llewellyn & Sons Ltd. *Sub-contractors: Heating, hot and cold water, plumbing and sewage disposal:* Norris Warming Co. *Lift installation:* Porn & Dunwoody (Lifts) Ltd. *Loop-induction deaf-aid system:* Multitone Electric Co. *Fireplaces:* Wren Fireplaces, supplied by W. N. Froy & Sons Ltd. *Roller shutters:* G. Brady & Co. *Sliding-folding partition:* Bolton Gate Co. *Ventilators:* Greenwood Airvac Ltd. *Dome-lights:* Williaam J. Cox Ltd. *Ceiling boards and tiles:* Jas. Chandler (Lewes) Ltd. *Decorative tiles:* Malkin Tiles Ltd., S.G.B. Dudley Ltd., Carter Tiles. *Alstrip aluminium roofing:* Manchester Slate Co. *Trofdek timber roofing:* H. Newsum, Sons & Co. *Bituminous felt roofing:* Prater Asphalte Co., Ruberoid Ltd. *Rikett floor tiles:* supplied by Rieber & Son, laid by Amasco. *Wood block and strip:* Hollis Bros. Ltd. *Bulgomme flooring:* Bulgomme (U.K.). *Sliding windows:* Alumin Building Components Ltd. *Metal windows:* Metal Casements Ltd. *Louvres:* N. V. Appleton (Pty.) Ltd. *Facing bricks and tiles:* Richard Parton Ltd. *Ironmongery:* W. N. Froy & Sons Ltd. *Timber connections:* MacAndrews & Forbes Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Kitchen equipment:* Radiation Ltd., Prestcold, Hobart Ltd., Haywards Ltd. *Classroom fittings:* Sintacel Ltd. *Chalkboards:* Westland Engineering Ltd. *Therapy swimming pool:* Formerete Ltd. *Fencing:* Allen (Fencing) Ltd. *Curtains and fabrics:* Andris Ltd.

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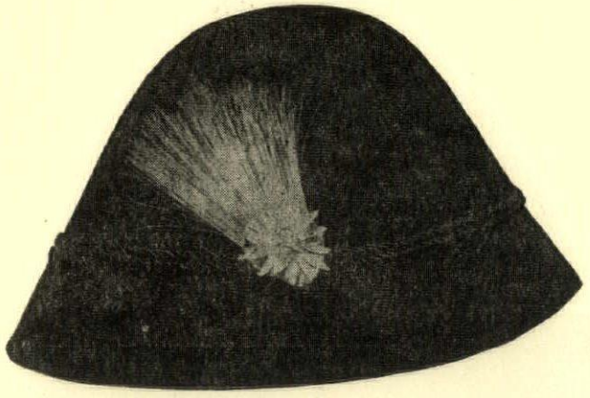

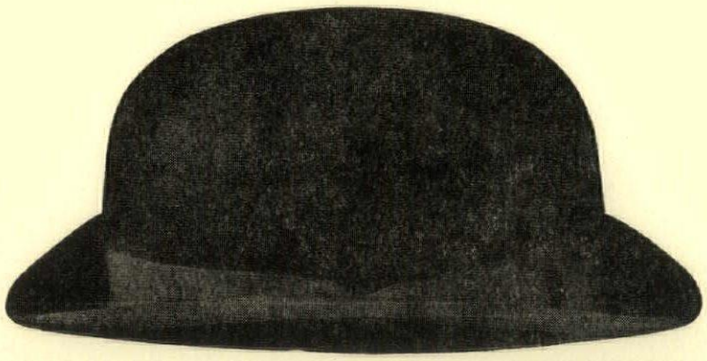

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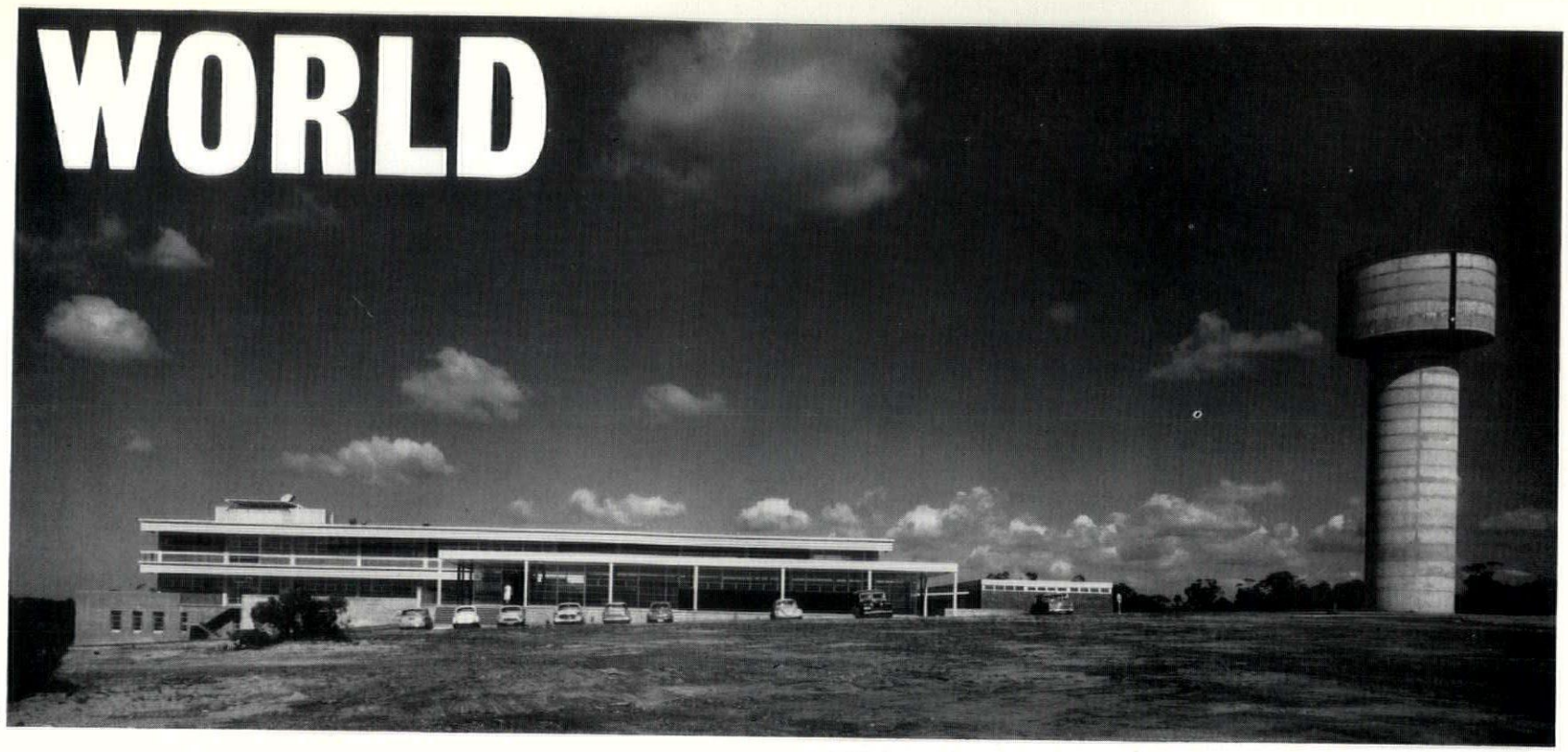


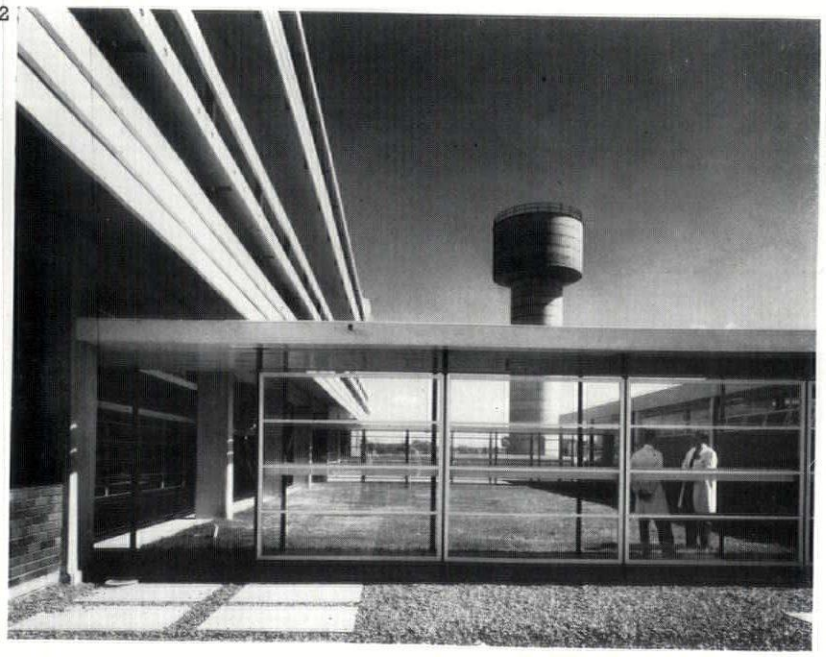
1

CRITIQUE SOUTH

Achievement and Opinion in Australian Architecture

Once again, the work of Collard, Clarke and Jackson for the Australian Atomic Commission at Lucas Heights, NSW, provides the title illustration for World, 1. On the last occasion (February, 1962) it was the Technical Physics building; this time the Medical and Health building, which conveys, in general, a more collegiate air, 2, than the Technical Physics building with its atmosphere of technocratic anonymity, while the sunshading of its external access balconies gives it different countenance over-all, though much of the detailing is very close in flavour to that of the earlier work.

When the earlier phase of Collard and Clarke's scheme appeared in the AR, there was very bitter criticism of the praise bestowed upon it—architectural polemic in Sydney, indeed in Australia generally, is apt to polarize sharply and at the slightest provocation, as some of the backwash of last year's RAIA Convention showed—the theme of 'Architecture and Human Behaviour' soon separated the 'inspirational' designers from the 'research-oriented' ones. However, it should not be imagined that the sharpness of the debate is a product of small-country, inbred bitchiness or simply too much talent chasing too few jobs. Australia is one of the countries where they discuss buildings, not architecture, and where a remarkable number of organs of comment exist and the debate continues at all intellectual levels, but always hinged very much around the building in view.



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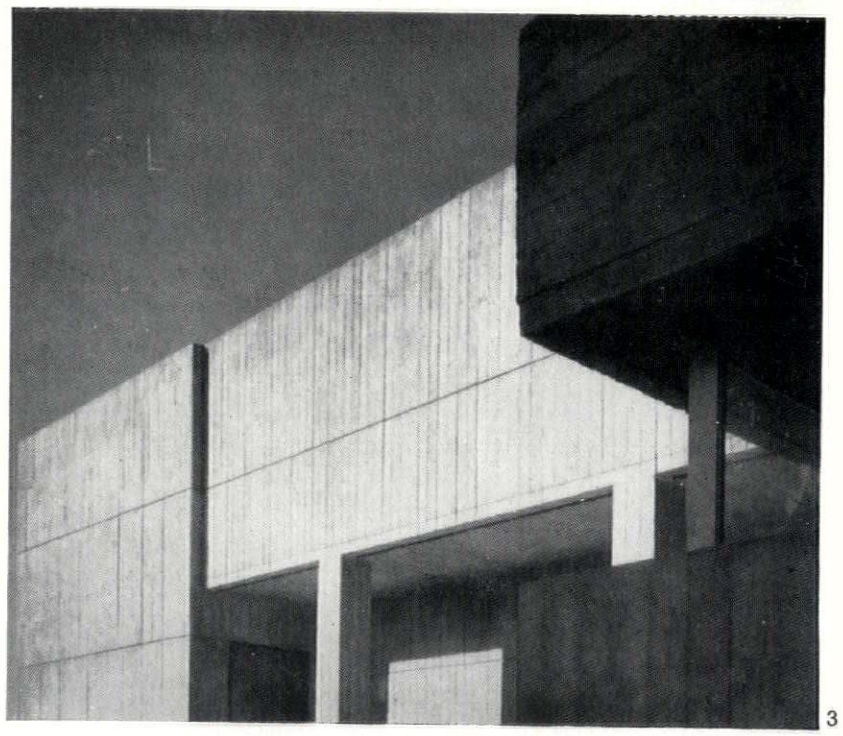


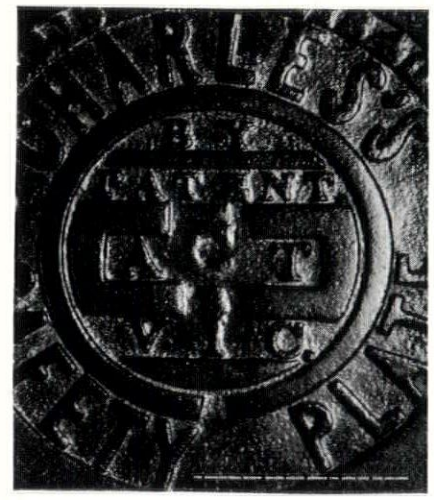
3

Melbourne, for instance, enjoys the constant stimulation of two remarkable publications emanating obliquely from the University School of Architecture. On the one hand there is *Smudges*, architecture's only satirical broadsheet, no respecter of persons or organizations (cf. World, January, 1962) and on the other there is *Cross Section*, officially bylined as from the University, and maintaining a steady stream of comment, often very sharp, on new additions to the local and national scene, phrased in a style that is as characteristic and as compressed as that of *Time* magazine: '. . . new Red Cross Blood Bank, Queen St., represents about 50% of B'bane's current city bldg programme. Lund, Hutton & Newell, Black and Paulsen: archts; Pearce and Fox, bldrs; cost £250,000 (bldg & services), £50,000 (furnishing and equipment). According to a recent report there is not one privately financed city bldg under construction in B'bane. . . .'

Perth has an excellent quarterly, *The Architect*, published by the Western Australian Chapter of the RAIA, but disclaiming, in its masthead, any chapter responsibility for the views expressed. Although the main body of the paper is devoted to straight articles and news coverage of interesting buildings—whose interest is often more than local, e.g. the beton brut of the new Hall, 3, at Hale School—the back of the paper has up to three pages per issue devoted to

ACKNOWLEDGMENTS

COVER: Eric de Maré. WORLD, pages 231–234: 1, 2, David Moore; 3, *The Architect;* 4, 5, *Tasmanian Architect;* 6–8, *Progressive Architecture;* 9, Wesselo; 10, Speedlight; 13–15, 17, *Forum;* 16, R. E. Enthoven; 18–22, *Arts & Architecture.* VIEWS AND REVIEWS, pages 235–237: 1, 5, Toomey Arphot; 2, H. R. Johnson; 4, Eric de Maré. FRONTISPIECE, page 238: R. K. Edwards. SHOPS AND OFFICES, CATFORD, LONDON, pages 245–249: Galwey Arphot. FURNITURE SHOWROOMS AND OFFICES, ALBEMARLE STREET, LONDON, pages 250–254: Galwey Arphot. EXPLORING EYE, page 259: Eric de Maré. CRITICISM, pages 260–266: 1, 3, 6, 7, 9, 10, Henk Snoek; 2, John Laing & Son; 4, 5, 8, Toomey Arphot. STUDENTS' UNION, UNIVERSITY OF KEELE, pages 267–270: Henk Snoek. HALL OF RESIDENCE, LEICESTER UNIVERSITY, pages 271–274: Colin Westwood. INTERIOR DESIGN, pages 279–281: 1, 2, 4, 6–10 Colin Westwood. THE FACADE OF S. GIORGIO MAGGIORE, page 282: Osvaldo Böhm; page 284: Courtauld Institute of Art. PUBLIC LIBRARY, NUNEATON, pages 285–286: John McCann. ARMY BARRACKS, CHELSEA, pages 286–287: Henk Snoek. MISCELLANY, pages 288–294: Exhibitions, 5, Solomon R. Guggenheim Museum. Popular Art, Jasmine Rose-Innes. SKILL, pages 295–302: 1, James S. Hornbeck; 6, CoID; 7, Peter Pitt; 10, Morland Braithwaite; 12, Verity Press (London); 13, Sound Stills Ltd.; 14, John Maltby; 17, Tella.



This month's cover *is a close-up photograph by Eric de Maré of one of the cast-iron coal-hole covers whose variety of design enlivens the pavements of many city streets. It is from the collection of Mr. Victor Musgrave, proprietor of Gallery One, where some of them were recently exhibited—see also page 259.*

THE ARCHITECTURAL REVIEW

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VOLUME 133 NUMBER 794
APRIL 1963

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is* £3 3*s.* 0*d. sterling, in USA and Canada* $10.50, *in Italy Lira* 6940, *elsewhere abroad* £3 10*s.* 0*d. 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. Subscribers may have their copies bound in half-yearly volumes at the price of* 27*s.* 6*d. Postage* 2*s.* 9*d. extra on the completed volume.*

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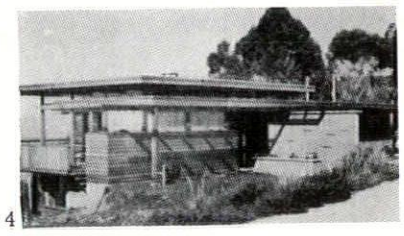
CRITIQUE

comments by the pseudonymous 'Caliban' on any architectural topic that comes to hand, at any length short of libel. The buildings for the Commonwealth Games, in particular provided him with something of a field day, and his views on Perth's new City Hall will be worth reading, even if (as is likely) they are entirely favourable.

But the *Tasmanian Architect*, published in Hobart by the Tasmanian Chapter, combines reportage and comment, publishing, for instance, a house designed by Ray Hefferman, 4 and 5, faced by a detailed and often hostile critique by Terry Barwick, and replies from both the architect and the client. As the house in question is a



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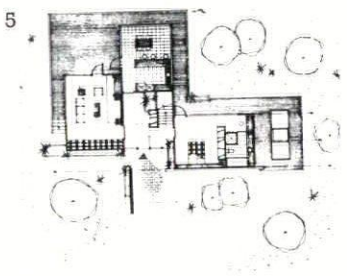

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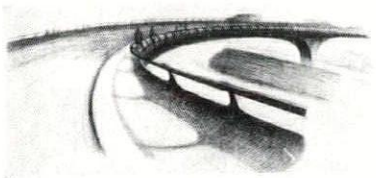
representative example of the Wrightian tendency towards 'posts and oregon beams, clear finish timber, varying ceiling heights, horizontally accented concrete blocks and pergolas' (Barwick *dixit*) which can be found all over South Eastern Australia, the polemic has a more than Tasmanian relevance, and should be read by anyone trying to grasp the peculiar flavour of Australian thinking about domestic design.

23rd Avenue Overhead

The tenth Annual Design Awards given by *Progressive Architecture* have now duly appeared (issue of January, 1963) and run soothingly true to form with no (or hardly any) surprises, Overwhelmingly East Coast jury as usual—Aline Saarinen, Jo Johansen, Robert Geddes, John Skilling and Paul Rudolph—selecting the same sort of neo-Academic designs as in the past two years, but this is a situation that may change before the Eleventh awards are made because P/A is having some major editorial changes. Thomas Creighton vacates the top chair and Jan Rowan moves up to Editor, and Rowan's architectural and educational experience ranges far and wide, from the AA to AGBANY, and—having practised in Phoenix—he may be able to restore to P/A the idea that there is a lot more of the USA beyond the Alleghenies (the spread on Goff was a hopeful omen).

However, there was one 'wild' award this year that is of considerable interest. Though it received only a citation, the inclusion of the 23rd Avenue Overhead project for Oakland, Cal., 6, by Carl Warnecke Associates and Kaiser Engineers (and a lot more well-known names: Lawrence Halprin for the landscaping, T. Y. Lin for the structure) is an important breakthrough. Though a relatively small work by highway standards, the design is detailed in a whizz-along Detroitish style, 7, that seems appropriate to the



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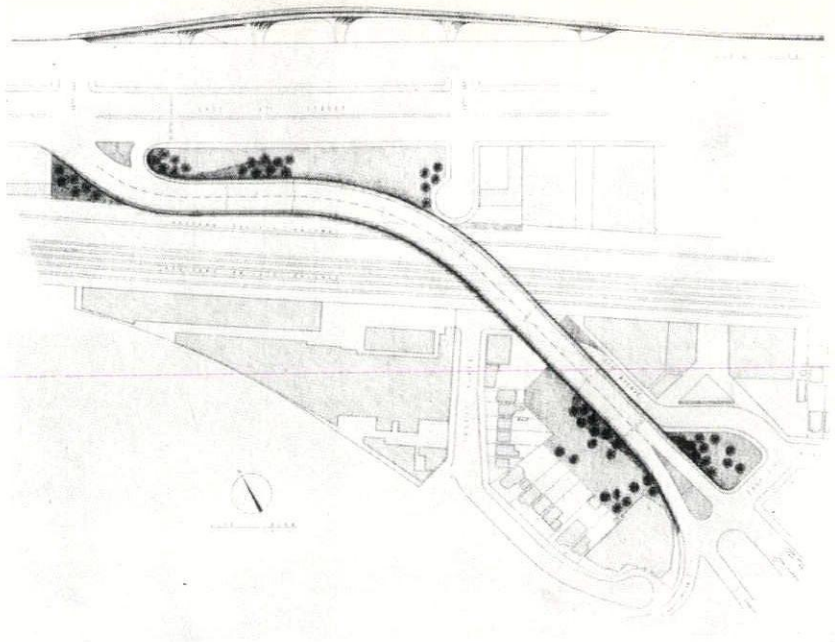
business in hand, the sequence of gradients with which it humps over the railway tracks and the sequence of curves and straights in plan, 6, seem right for the dynamics of a car in motion, the fitting of the strip lighting, 8, into the apparent 'handrail' avoids the visual confusion of gratuitous verticality. But the biggest breakthrough is in the fact that a jury of architects looked at a traffic work as it will really be seen—instead of looking at a slanted air-photograph and crying 'O sprawl, O horror, O destruction of the urban scene,' they looked at the elevation, which is what John Q. Citizen sees, and said 'A commendable design effort . . . in an area of construction activity seldom explored architecturally.'



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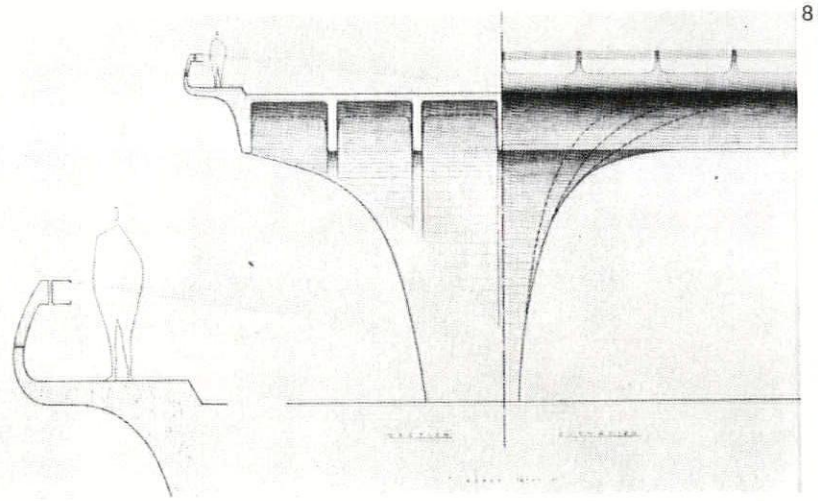

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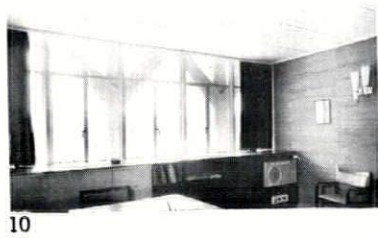
NON-ORTHOGONAL *Deviationist Elevations*



9

The non-rectangular facade grid is a constantly present possibility in modern architecture that persistently fails to materialize, and the rare occasions when it appears to have happened usually prove to involve only non-load-bearing screens. It is of interest, therefore, to report two such facades, one—cautious—completed, and one—less cautious—under construction. At Innes Chambers, Johannesburg, 9, the well-known local architectural practice of Abramovitch, David Pinshow and Schneider has used a three branched structural element for the exterior wall of the office floors above mezzanine. The use of this element (which is not precast, but in-situ surprisingly enough) appears to give improved sunshading, 10, to the glass wall behind,



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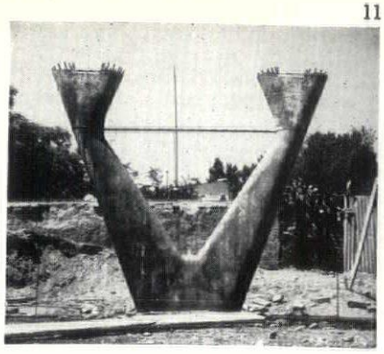
NON-ORTHOGONAL

and an unusual prospect outwards from the rooms behind it, while in this close view one can also see that the central branch is reduced both behind and in front, so that structural loads are in fact taken substantially by the diagonal members.

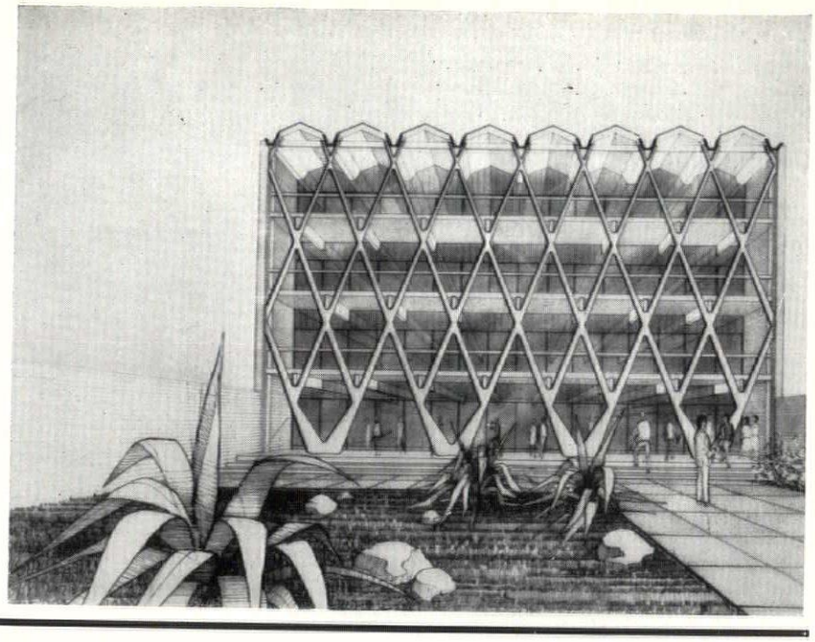
A system without vertical members at all is proposed and in construction for the new Faculty of Architecture building for the University of Mendoza, 12, in the Argentine, designed by Enrico Tedeschi (with Franciosi and Azzoni as engineers). The design justifies itself by the fact that Mendoza is in earthquake country, and the structure is seen as functioning as a cross-wall and slab frame, diagonally braced by the non-orthogonal members, which also act as load-carriers—it will be noted how the beams that carry the floor-slabs are brought through and carried in the crutches of the intersections, while the inverted U-troughs of the roof are carried on

11



the exposed forks of the intersections of the top row. The conception of this structure has caused some raised eyebrows in some quarters, but it is actually being built, as 11 shows—and 11 also shows the steel tie-rods between the legs of the V-pilotis, structural necessities that one suspects one is supposed to ignore for aesthetic reasons, as in the vaults of Quattrocento Florence.

12

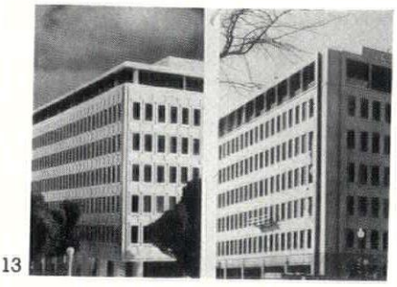


CAPITAL ISSUES

Planning Problems of Washington D.C.

In a special issue that stands well in the grand tradition of the Luce empire for prising major issues wide open (cf. *Fortune* on the Exploding Metropolis) the *Architectural Forum* for January, 1963, formally put the architecture and planning of the US capital on trial. Treading cautiously in places in order not to discourage the New Frontiersmen even while making it abundantly clear that their methods and their vision were totally inadequate to the needs of the ungoverned city (Washingtonians have no direct say in the government of Washington) *Forum* exposed a situation in which, as it truly said, 'expert cosmetics' are not enough.

The attention of the new administration (which had urban renewal among the planks of its electoral platform) has so far been devoted almost exclusively to 're-beautifying the parts of Washington that show,' a commendable enough intention within its limits, though its implementation *via* the Fine Arts Commission, demonstrated by *Forum* with before-and-after studies, 13, suggests that it could be better



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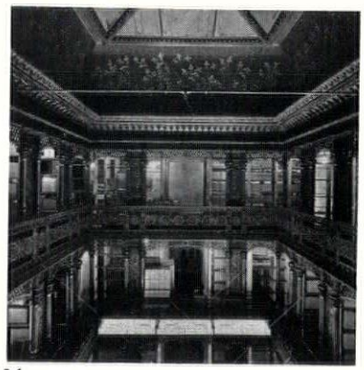
done even within those limits. Outside this, however, lies an undergoverned city with gigantic problems, such as that of an enormous negro population; a daunting collection of architectural monuments, some of them, like the court of the Executive Office building, 14, of unrecognized merit; some delectable 'Colonial' suburbs



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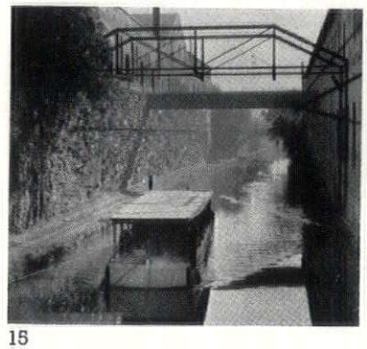
like Georgetown and forgotten (literal) backwaters, 15; a conventionally depressing down-town that could be anywhere but, *Forum* says, 'looks like nowhere'; and an urban renewal scheme in south-west Washington that



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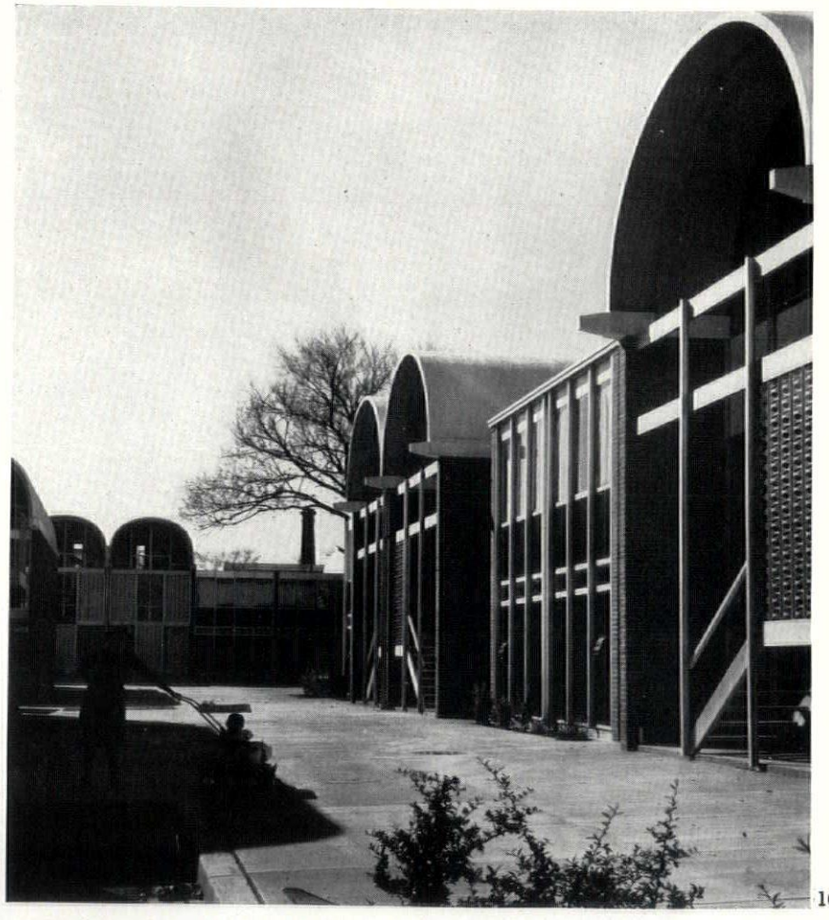
is, at last, something worthy of a great capital.

On the strength of what has been completed to date, SWW should live up to the proud boast of 'the finest urban renewal effort in the country'. At the behest of Big Bill Zeckendorf, I. M. Pei has designed some distinguished residential blocks (which will form part of the subject of a forthcoming *Criticism* article in the AR by James Marston Fitch); near them stands Harry Weese's Arena Stage (illustrated in AR, March, 1962), and a block away are Charles Goodman's unusual, but effective, barrel-vaulted rowhouses, 16, clustering around small courts, 17, and picking up something of the Georgetown flavour which is obviously becoming a residential ideal in the District of Columbia.

But one south-west does not make a fairer Washington. If the administration's ambitions are to be fulfilled in a manner that will give future generations reasons to thank the Kennedys, farther-reaching and more fundamental actions will be required. *Forum* gives four basic desiderata:



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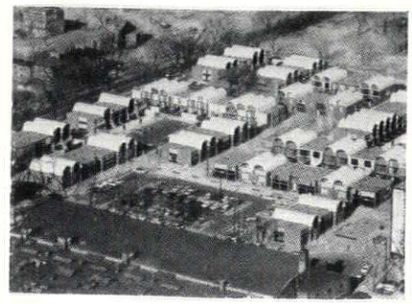


WASHINGTON

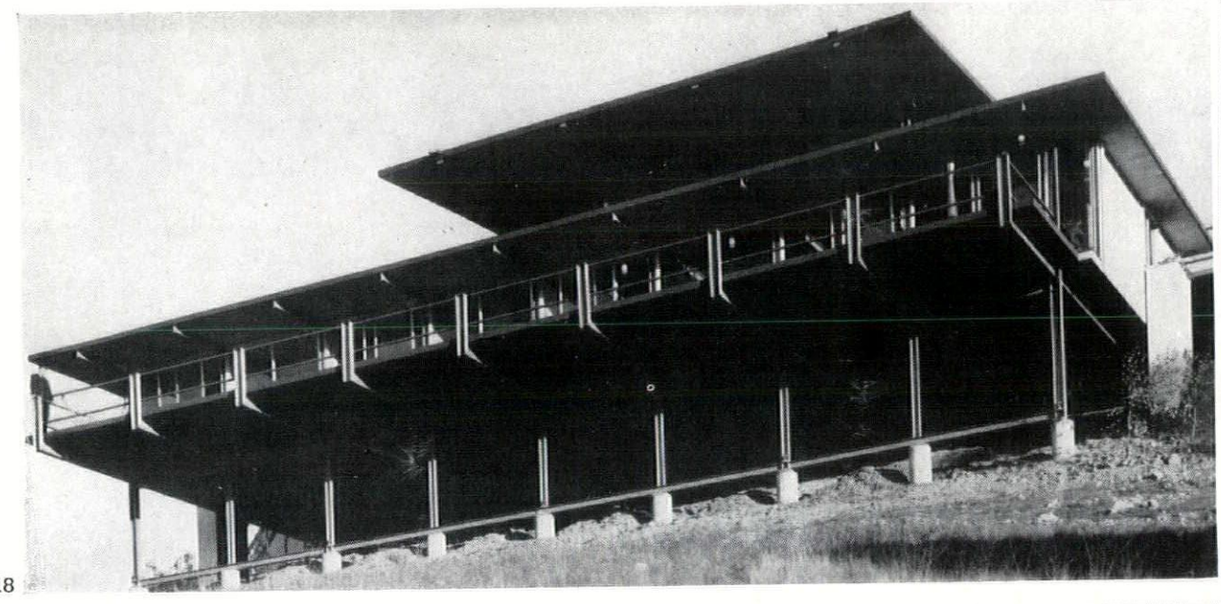
1, planning machinery on a regional scale, for Washington effectively sprawls far beyond DC; 2, a specific and comprehensive re-development plan, in order to reduce the waste and frustration caused by competing and unrelated planning proposals; 3, better definition of federal and local interests—and responsibilities; 4—and above all—democracy and political accountability, if only to remove the present citizen-neurosis about being governed in haste by authorities who have other things to do, and are responsible to no one in particular. Urban renewal, civic decency, and responsible citizenship begin, like charity, at home; the New Frontiersmen could hardly do better than begin by putting their own town to rights now they have finished putting their (White) house in order, and one can only hope that *Forum's* lavish memorandum will be duly noted and acted upon.

ZEVI vs BRASILIA

Leading Questions to IFLA Congress

'Fifteen Swiss Francs or Deutschmarks is really not much for *Anthos*', proclaimed a neat promotional insert wrapped over the cover of issue 3/1962 of *Anthos*, the journal of the Swiss Federation of Landscape Architects, and the official organ of the International Federation of Landscape Architects. Although *Anthos* does its editorial thinking in German, it carries most articles in French and English as well, and its coverage is genuinely international—the issue in question is strong on Israel because the eighth Congress of IFLA took place in Tel Aviv. But what recommends this particular issue is that in the report of the congress is the first published account in English of what has been described as 'Bruno Zevi's attack on Brasilia.' Apparently, Zevi posed a number of large, rhetorical-type questions on the scope and direction of landscape gardening, one of which was to enquire if the time had not come to make a clear distinction between garden planning and landscape planning, and then followed it up with a supplementary question, as follows 'How did it happen that Roberto Burle-Marx, the best-known Brazilian garden architect, was not consulted when the new city of Brasilia was planned? The landscapes of Burle-Marx did not fit into the pattern. Is the reason for this to be found in the neo-Classicism of the city planner Lucio Costa, or in the pseudo-modern monumental architecture of Oscar Niemeyer? Or was it just impossible to fit the Burle-Marx conception of gardens and parks into the pattern of a great landscape?'

However neo-Classicism may rate in Zevi's eyes today (it certainly used to be one of his more crushing insults) the tone of his observations on Niemeyer and Burle-Marx is clear enough—one is a fake modernist, the other not big enough for a man-sized job. The Congress seems to have been in two minds whether these observations should be taken at face-value or simply as congressional rhetoric, but it is clear that they regarded the trouble with Brasilia as the fault of the architects and planners who 'considered the landscape planner merely as a sort of decorator.' Yet the underlying query in Zevi's address remains—is Burle-Marx really big enough to cope with the problems of Brasil's biggest landscape opportunity?



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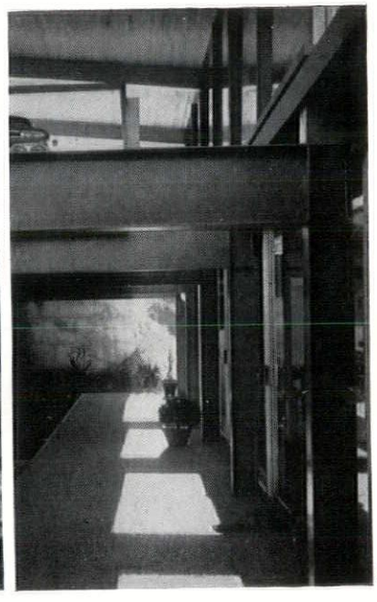

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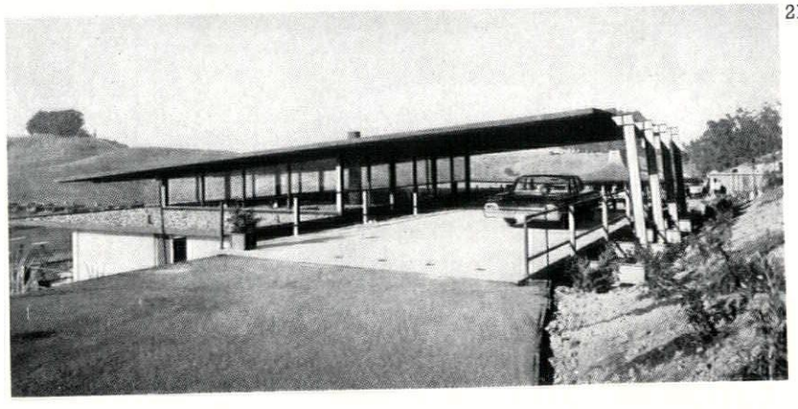
CASE 26

The succession of case-study houses sponsored by the magazine *Arts and Architecture* is one of the best things ever to come out of Los Angeles. Twenty-five houses ago they got away to a resounding start with the first case-study house by Charles Eames and the series has subsequently employed every major and some minor talent on the Coast. There have been convolutions of style and planning approach as the series has unfolded, but time and again the path has led back to certain basic concepts which seem to be completely summed up in House 26, in which the architect, David Thorne, has produced something that re-unites the informal redwood tradition with the mechanistic precision, 18, that has been a standard theme all through the case-study series. Indeed, much of the steel detailing has an almost Miesian nicety, 20, yet the trick of turning RSJs web-outwards produces a visually duplicated profile not unlike the twinned beams and uprights so common further up the coast in the modern architecture of the redwood belt. Of course, the site, with its steep slope giving access to the house from a high-level carport, 21, is again in the classic redwood tradition, and Thorne handles it to give sheltered spaces under and behind the main living deck, and a broad-view plan, 19, 22, which is like nothing seen in American architecture at large since the Beaux-Arts revival set in. It must be a great relief to many people all over the world to see that the architecture of the Pacific coast has been able to maintain its native traditions of easy planning and gracious space, without becoming set in merely traditional usages—reworked in steel the tradition shows its continuous living strength.



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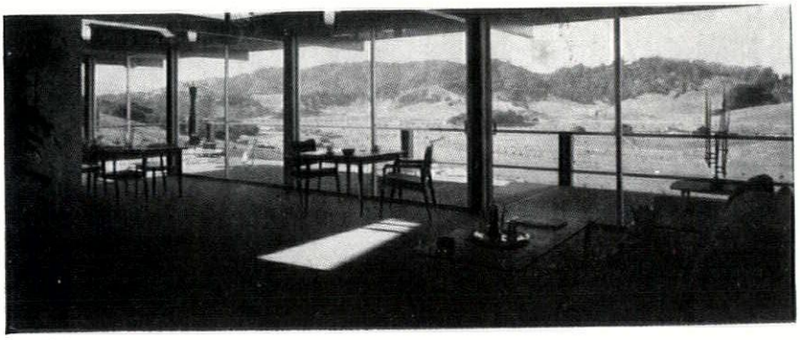
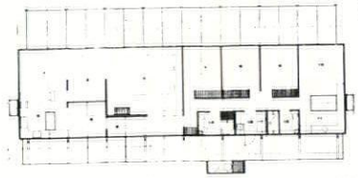




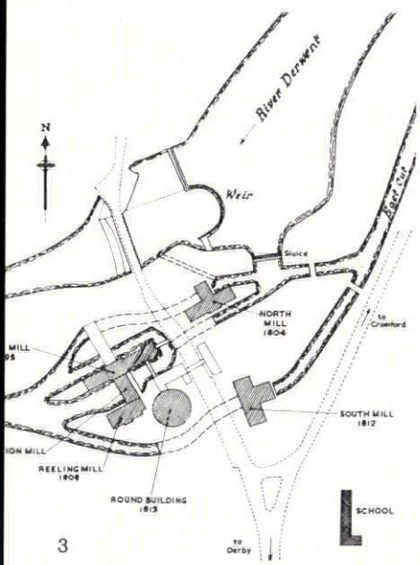
22

views and reviews

MARGINALIA

THE FALL OF NOBLE BUILDINGS...

The last few months have been uncommonly sad and frustrating for students and admirers of early engineering structures and the functional tradition, since they have been forced to stand by and watch key monuments destroyed. After many months of hopes raised only to be dashed, of protracted negotiations not only with Melbourne but also with the new Co. Durham Museum and after many dramatic gestures, the Coal Exchange has finally succumbed to the pick, and the progress (more properly, regress) photograph, 1, shows the condition of Bunning's great masterpiece at the beginning of February. It is still possible that some of the ironwork may be preserved, but this is a poor consolation for the loss of that spectacular ensemble of glass, iron, rich woodwork and decorative painting which was once the rotunda.



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Monuments of even greater historical importance, if of less architectural consequence, are still being destroyed in the North of England. The pioneer iron-framed mills at Belper, discussed in the authoritative article by Professor Skempton and H. R. Johnson in the AR for March of last year, are disappearing fast: in the fairly recent photograph, 2, the West Mill (right) is now partly demolished, the South Mill (centre background) has been demolished this year, and these losses, together with the recent destruction of the celebrated 'Round Building' (see plan, 3) mean that the whole heart of this historic site has now been destroyed.

In a recent letter, Mr. Johnson recalled 'At one time we had very high hopes of getting the West Mill preserved but when I visited it, it was quite obvious that it would have required a tremendous amount of money to do so. The only building of similar construction now remaining is the warehouse at Milford, not far from Belper, and it is extremely doubtful whether even this building will remain intact very much longer. When that goes, we shall have lost the earliest remaining and unique example of a system of multi-storey fireproof framework, and direct precursor of all our modern frame buildings. . . . Perhaps I should mention that I have arranged for the components around one column head to be put aside, which I hope either the South Kensington Science Museum or some other authority will be able to find a home for.' The moral, as far as Milford is concerned, seems clear enough, and one hopes that energetic action can be instigated for its conservation.


1


2

Three historic buildings which have recently been destroyed: 1, *the rotunda of the Coal Exchange in the City being demolished for road improvements;* 2, *the South and West Mills at Belper from the north* (*see site plan*, 3); 4, *Horstead Mill, Norfolk, which was burnt down in January.*


4

The last demise we have to record is not the result of human stupidity or indifference, but of an accident as yet unexplained. Horstead Mill, near Coltishall in Norfolk, 4, justifiably the best known of the East Anglian group of clap-boarded water-mills, was destroyed by fire on the night of January 23, when efforts to save it were severely hampered by ice up to a foot thick on all available water. The mill, which had been repainted and largely rebuilt within the previous twelve months by its owners, the Norfolk milling company of R. J. Read, had been recorded recently in measured drawings by a student at the Architectural Association, and Eric de Maré's photographs, which appeared in J. M. Richards's *The Functional Tradition in Early Industrial Buildings*, are well known. If the mill is not rebuilt, its site will set the owners something of a problem, for it is in the heart of the Norfolk Broads holiday area, and is of great scenic beauty, and the local newspapers have already been bombarded with suggestions from interested parties who hope to see artist-colonies, 'botels,' etc., there.

FAREWELL LEICESTER SQUARE

With their transfer to Audley Place in western Mayfair, the Leicester Galleries follow the current drift of the London art-galleries to the north and west, and abandon their premises in Irving Street, 5 (near Leicester Square), which—as far as the Modern Movement has traditions—can only be


5

described as tradition-hallowed. The style of the lettering gives a good idea when the hey-day of the gallery began, but its greatest contributions to the progress of modern art in Britain were in the 'twenties and 'thirties, when the great Ernest Brown pursued a bold

policy of showing the most advanced work of the Ecole de Paris and the rising British avant-gardistes of the Burra-Moore-Piper generation — and involved himself with the police in the celebrated and ludicrous *bagarre* over the exhibition of paintings by D. H. Lawrence. This particular affair should make us realize that it took more courage to exhibit the work of even moderate modernists in those days than to exhibit extreme *avant garde* works to-day, and if the focus of modernism has moved from the Leicester to a series of other galleries since the late War—the Lefèvre in the late 'forties, the Hanover in the 'fifties and the Marlborough/New London in the present decade—it is only because these have been able to build on the pioneering work done by Ernest Brown at Irving Street.

PENKHULL SQUARE

A little way downhill from the village of Penkhull (see page 255), and included in the proposed clearance, is an extraordinary building called Penkhull Square. The outside is unwelcoming: a gaunt roughcast mass, 6, with a single arched entrance. But through the arch, 7, is another world. All of a sudden there is a bit of de Hooch in Staffordshire; orderly brick cottages facing round a quadrangle, simple and delicate, 8. At first the details seem quite artless: then you realize that a very difficult problem has been perfectly solved. There is a diagonal cross-fall across the square. Some architects, today, would just let it happen. But the builders took up the slack by stepping the houses in a simple yet utterly satisfying way. Instead of trying too hard for an architectural separation of parts, they put in a step where it looked right. That on the left-hand side is half-way along; that on the right one-quarter. And in the top corner they put another step, and then, brilliantly, carried the roofline out of the quad altogether. Nothing could make the topography clearer whilst keeping the enclosure intact. The arched alleyway through to the back is put at the only point, ✗, where it would not break the composition. And similarly, on a closer look, nothing is in fact symmetrical though everything balances.

This is a small masterpiece, and it avoids all the self-conscious quibbles which make nonsense of so much modern architecture. It really does look as though the builder started at the bottom left-hand corner and altered the details as he went along, stepping up the roofline when it seemed to fit, putting in doors and windows as he came to them. The building both grew naturally and was designed.

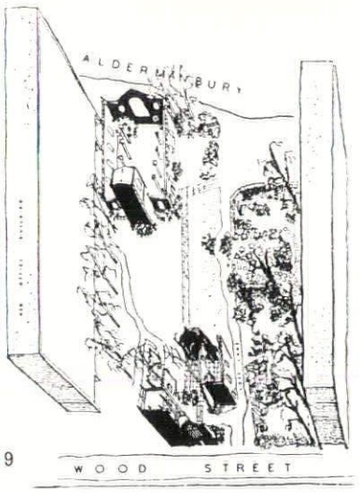
It all sounds shockingly unprofessional. But is it, really, for a job like this, which is comparable to a college quad? If the basic form and accommodation are fixed, why not leave the details to work themselves out on the way? It would at least get some part of the designing back where it ought to be, which is on the site rather than in the office.

Penkhull Square itself must be saved. Reconditioned, it would be tailor-made for old people and for childless young couples, and for everyone else who wants to live in a place with some identity to it. There are not many such places in the new estates of the Potteries.

Ian Nairn

ST. MARY OVERSEA

The proposal to transport a Wren church—the bombed St. Mary Aldermanbury in the City of London—lock, stock and rustication to Westminster College, Miss., and re-erect it there (under the supervision of Marshall Sisson) as a memorial to Sir Winston Churchill's Fulton speech, will doubtless strike older readers of THE ARCHITECTURAL REVIEW as vaguely familiar. As long ago as January 1944, the REVIEW selected this particular church, together with St. Alban's, Wood Street, as suitable for preservation in their ruined form in a single landscaped site (a project by Neville Conder is seen in 9) as a place of open-air worship and remembrance — a concept finally realized by Sir Basil Spence at Coventry Cathedral. Although nothing came of the Mary Aldermanbury project in that form, it should be noted that the AR also pioneered the idea of exporting buildings to countries short of ancient monuments, in an article by Peter Donner which appeared exactly



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ten years ago. Such a time-lag of one or two decades is not uncommon, and we wish Mr. Sisson, Dr. Davidson (the president of Westminster College) and Professor Horsburgh, who has enthusiastically backed him up, success in their venture.

CORRESPONDENCE

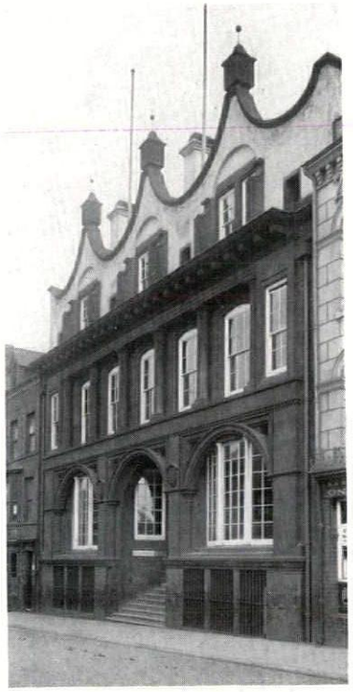
A LITTLE-KNOWN WEBB

To the Editors.

SIR,—Webb's building at Middlesbrough, 10 (Marginalia AR, February, 1963) is indeed a good example of the architect's later work and incorporates a number of features of particular interest.

The large arches supporting the lintels above the bay windows are a characteristic motif of this architect. His usual buttress-like stone-work supports at the angle of the window (as at Clouds) are, however, not present, but are replaced by free-standing octagonal columns of cast iron. This substitution removes the visual contradiction of having two apparent supports, buttress and arch, but increases the structural one because it is the slender white columns (which in the photograph melt into the white of window joinery) which really support the lintel, not the relatively massive arch of stone.

On the upper floor, the spacing of the circular columns (a fairly rare form with Webb, who usually prefers eight-sided shafts) does not correspond directly with the intervals of the arches below, and perhaps this arrangement may be considered as a prototype of Norman Shaw's spectacular development of the same theme in the South front of the Piccadilly Hotel some twenty years later, which in spite of the inflated scale, is clearly similar to Webb's facade; a screen of classical columns mounted on an independently modulated range of arches. The sculptural manipulation of the wall face at Middlesbrough, like a kind of architectural bas-relief, is as characteristic of Webb as the three-dimensional bravura of the Piccadilly is of Shaw.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The upper floor elevation is of particular interest. The building was begun, as pointed out in your column, in 1889, but it was designed early in the 'eighties, while the architect was at work at Clouds. A complete set of working drawings and detail sheets is dated March 1883. Delays followed and in 1889 a new set of elevations was prepared. Since the client must have approved the earlier design for Webb to have proceeded with his dozens of laborious detail sheets, it would seem that the later alterations are due to the changing taste of the architect himself. These altered drawings, from which the building was actually built, simplified the details and modified the upper part of the front elevation. The projecting cornice seen in your photograph was substituted for the original stone frieze which carried pediments to the range of windows below. Also new was the roughcast (which Webb was to use repeatedly in the 'nineties) which covered brickwork intended in 1883 to be laid in decorative patterns. Other additions to the design in 1889 are the 'blinker' buttresses which flank the dormer windows and the finials with 'invisible' metal stalks (significantly left in pencil


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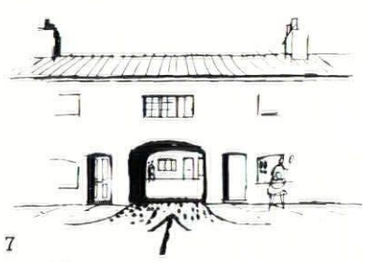
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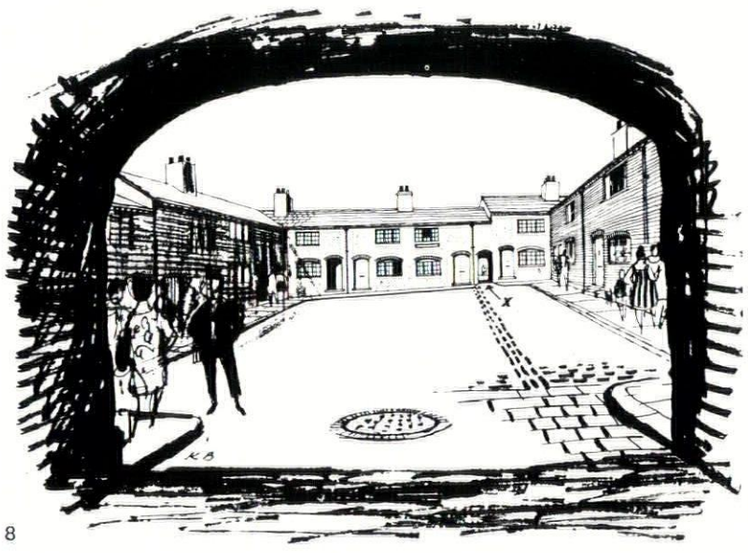
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in the otherwise inked-in drawing). On the other hand the downward curves of the parapet were already there in the 1883 design.

With such an unobtrusive building it is easy not to realize that every bit of carving was designed and drawn out in full size and sent as a pattern to the craftsmen. Their work, as far as design was concerned, was restricted to exact copying. The sheets for the individual carved panels on the face of the stone blocks that support the finials are dated 1890, probably the year of completion. A comparison between your photograph and Webb's early 14 Lincolns Inn Fields, gives some measure of his development over the intervening quarter century.

It is to be hoped this building will not disappear like so many other works of Webb's, leaving the architect's drawings (in this case at the RIBA) as a meticulous but melancholy record of a building which has vanished before its importance has been realized.

Yours, etc.,
DONALD HOLBROOK SMITH.

BOOK REVIEWS

FOR LAY EYES

GUIDE TO MODERN ARCHITECTURE. *By Reyner Banham. Architectural Press.* 25s.

Lucid and lively lay guides to modern architecture are still badly needed. There never was a time when understanding and appreciation of architecture and planning were so important, sociologically even more than aesthetically. If a powerful lay-man's lobby, based on sound knowledge, could be brought into existence, the squalid outlook for urban Britain in the remaining decades of the twentieth century might yet be transformed.

Reyner Banham's stimulating survey is a vigorous recruit to the ranks. He is never dull (though occasionally obscure) and he has it all at his nimble finger-tips. The inquiring ignoramus wishing to instruct himself will find sharp enlightenment in this short yet reasonably comprehensive and well illustrated book.

But exposition of modern architecture—still so misunderstood and ill-criticized—if it is to make converts and enthusiasts out of the man in the street (at whom Banham is evidently aiming, and who is the man that, because of his position out there on the pavement, sees most of architecture whether he is aware of it or not) should aim in the first place at clarity. It should be straightforward. Friend Reyner Banham's well-known, slightly off beat, highly idiosyncratic style—here judiciously tempered—can be highly diverting; but diversion is not the prime purpose of architectural wisdom for beginners: it could make it unnecessarily difficult. The seeker after truth in an admittedly complex and still controversial field may find himself having to do quite a bit of do-it-yourself and fitting together if he is to draw maximum coherence and comprehension from this sometimes oblique, allusive and non-continuous narrative. He will be required to come equipped with some rudimentary basis (fair enough: this is not for kindergartens: all the same, wouldn't the inquiring layman be within his rights in requesting a brief explanation or derivation of professional *clichés*—e.g. 'brutalism'?) and he will need either a good prior grounding of dates and dynasties, or else some work of historical reference at his elbow, to keep his place in the somewhat arbitrary sequence of text and illustration.

Modern architecture is here discussed in terms of function, form, material and space, and is traced and analysed through its devious origins and prophets from *art nouveau*, Giedion, Loos, Muthesius, Rietveld, Moholy Nagy, Corbusier, Lloyd Wright and all the others to Kahn, Mies van der Rohe, Ponti, Niemeyer, Buckminster Fuller and Park Hill, Sheffield. It is all handsomely here, and often brilliantly interpreted, as one would expect, with sudden highlighting comment. Admirably provocative is the evocation of the modern notion of man's place in relation to buildings—still the dirty Old Adam, still the same original 'end in view,' but now observed, annotated, measured. This should make the lay reader sit up and look about him (and incidentally rid himself of much false thinking about modern architecture persisting from the 'machine-for-living-in' days). Excellent too is the elucidation of modern architecture's approach to the manipulation of space as one of its cardinal hallmarks (traced in practice from the Eiffel Tower to the Ford House, Aurora).

The order remains mixed. There is also an occasional oddly confounding instance. In examining the fundamentals of the functional approach of grown-up modern architecture, resolved of its teenage uncertainties, we are given as the instance of a truly analytical approach to functional design a *church*: '. . . nowadays we should mean a building that started from a rigorous analysis of the ritual to be enacted in it, its needs in terms of space, lighting, sight-lines and other forms of human contact required by the religion or sect that was to use it, plus processional and other types of access and circulation within or through the "liturgical room".' What's so new? Isn't this more or less precisely what the builders of our much-admired mediaeval abbeys and churches were up to?

The British contribution to the total movement is put—fairly and still somewhat squarely—in its proper place in the perspective (we have had our pioneers). Format, layout and typography are well up to expected AP standards, though some of the photographs are too small to be of much practical use as illustrations.

Gerald Barry

GREEK SECRET

THE EARTH, THE TEMPLE, AND THE GODS. *By Vincent Scully. Yale University Press.* 105s.

The basic thesis put forward in this book is that the special secret of Greek architecture was its ability to act with the landscape; the subsidiary thesis is that the archetypal temple forms and temenos arrangements were capable of being made to body-out the ideas surrounding specific Gods. *The Earth, The Temple, and The Gods* is a long-fuse explosion of *Towards a New Architecture*, as Rex Martienssen's was a short-fuse. What Le Corbusier says seems banal . . . 'THE ACROPOLIS ATHENS: The apparent lack of order in the plan could only deceive the unlearned. The balance of the parts is in no way a paltry one. It is determined by the famous landscape which stretches from the Piraeus to Mount Pentelicus'—but it was enough. The spark-point of my own interest in Greek architecture was the famous caption under the picture of the Propylea: 'Every sacrifice, every cleansing had already been performed. The moment was reached when nothing more might be taken away, when nothing would be left but these closely knit and violent elements, sounding clear and tragic like brazen trumpets.' My memory reduced both to a kind of ideogram of the basic message—'a cry in the landscape.'

Now the difficulty of looking into this poetic idea of Greek architecture and of sustaining it as a formal thesis lies firstly in the absence of contemporary specific descriptions of buildings or landscapes, or even descriptions of experience of their use; and secondly in our lack of faith that the landscape is now as it was then. There is also, amongst most scholars, an even deeper mistrust of emotive deduction. The quasi-logical building-back from an emotion experienced. This is a mistrust not shared by me with regard to this particular book, but it is one which totally holds me off both Evans and Childe. Vincent Scully is *the* great architectural emoter of our time; if we are to take his lectures literally, he is physically moved by buildings—all sorts of buildings. It is a remarkable thing to hear him: one sees through another's eyes by the very force of his belief in the reality of his own experience. And the experience has been real, for the minutae of his experiences in this book tally with one's own . . . he has been there, he has studied the material, and he has recorded the physical experience of the visit and of the looking at the material itself.

To return to the point about the landscape being now as it was then: in certain cases, for example at Bassae where the temple was away from the town, in a wild place, and which is still a wild place, siting arguments can reasonably hold; but even here the deforestation/local planting/pattern of agriculture, obvious counter arguments have force. At an almost comic level, this has been demonstrated at the Hephaisteion on the edge of the newly excavated Agora in Athens. In the days before the Agora excavations were complete, the Hephaisteion was seen from a tram, from the back, across a strip of waste land. It looked terrible. The completion of the American excavations enables one to see it from the Agora—it looks better—and they have planted some little bushes in existing holes along its sides. They improve it enormously.

That such pathetic municipal topiary can have such an effect on God-given geometry; really I cannot bear it to be so, but it is so. What, one asks, can have been the effect of those sacred groves, palm trees, olives, those casual monuments and service buildings, the religious bric-a-brac, the houses, gardens and the forests, which are no longer there? I do not wish to seem to suggest that the imperturbable strategic geometries of the greater sites, such as at Delphi, were not there originally, certainly they were—it is only that one can look a bit too hard for them in other places where nothing of the sort was originally either offered, taken up, or constructed. The Greeks would only be Greek to me by doing nothing when nothing was necessary. For example, I find the description of the stragetic geometries of temples along streets on the flat, as at Paestum or Selinus, both difficult to follow and even more difficult to believe.

On the subsidiary arguments concerning the locking-in of the site and the architectural form, with particular Gods, I feel that if, for example, the temple at Sunion were to Athena instead of Posiedon, it would look the same. Concerning specific dedications, we are in any case sometimes relying on pretty scanty evidence. But Scully's pushing desperately along, God by God, temple by temple, is driven by a feeling well known to me—that Greek architecture is in a way the 'holy grail'; that in it lies a mystery which could make all lucid, all worth living for, and therefore no stone is too small to leave unturned; for the turning, or the returning, may reveal the secret.

Reflecting on the general thesis, it seems to me that to set up a wonderously precise relationship with the terrain in which he builds is normal to all men beyond the range of books. Siting is an instinct, not yet extinguished, as anyone can test by remembering his own mode of selecting and setting up a camping site. On looking back, my camping sites are always (when free choice is available) on medium high ground, away from habitations, with some local ground configuration (ditch or bank) and a tree. In this framework the camp is set up—the tree, the tent and the car, forming a central enclosure. The entrance to the tent faces this enclosure, the tent is protected (from animals and vehicles) by the bank/ditch, and its back is against the wind. Seen by an art-historian the records of a sequence of siting arrangements in specific landscapes would no doubt show laws which included formal criteria in the act of selection and in the laying out of the elements; and certain sites would demonstrate these laws most effectively and certain others be the most lucid and moving. But there would be others which just would not fit the pattern—the camps pitched at night by the slaughter-house liquid outfall (mistaken for a babbling brook), those on 30 deg. slopes in cloudbursts, or in suburban gardens (due to Ruhr fatigue). The siting of temples was a similar, if more precise, instinctive act, with one difference, that the thing they put into the landscape was a conceptualized object—a building absolute. It is the temple that makes the landscape presence itself absolute. Remove it, and the landscape presence still holds. Substitute another sort of building and all we have is farmstead or village locked into that presence, but not a home for the Gods.

Peter Smithson



The case for putting overhead electric cables underground, which is discussed in the article opposite chiefly from the point of view of amenity, was enormously strengthened during the winter just past, when the long spell of severe weather caused many breakdowns of the electricity supply. 'The big electricity fade-out,' said a newspaper report in January, 'was blamed on frozen fog settling on insulators and pylons still dirt-encrusted from the December fogs. At a hurriedly called conference in London Sir Christopher Hinton, chairman of the Electricity Board, admitted: "This is the worst breakdown ever." Electricity experts described the task of attempting to clear them all as "massive." Even if they were cleared nothing could be done to prevent them freezing again.' The photograph, also taken in January, shows the conditions in which this has to be done: repair-men are being rescued by helicopter after attempting to keep overhead transmission lines in Monmouthshire free from ice.

WIRES UNDERGROUND

The amount of overhead wire, especially high tension electric power lines, is increasing. Something can be done to mitigate its effects on the landscape by careful choice of routes and siting of pylons, but often the only satisfactory remedy is to lay cables underground, which is held to be prohibitively expensive. The article that follows discusses the undergrounding of wires, questions some of the assumptions on which the authorities base their view that it is impracticable and makes out the case for more serious efforts to overcome the technical and financial difficulties. One of the advantages of putting cables underground was emphasized in the recent exceptionally hard winter when cuts in the supply of electricity, at the very time people needed it most, were necessitated by the icing up of insulators on the overhead distribution system.

There is no doubt that overhead wire is a growing menace. The latest and most controversial of a monotonously long series of cases is the Central Electricity Generating Board's proposal to bring a 400 kV trunk line across the Hardy country, which was the subject of a public inquiry shortly before Christmas. Earlier last year the Board did adjust the route of another 400 kV trunk line to avoid the Constable country. On the other hand a couple of years earlier, supported by the Ministries of Power and Housing, they chose a route from Dungeness to Canterbury that runs disastrously across the middle of Romney Marsh when they had the alternative of a far less harmful route a little farther east.

Caught between a steadily steepling demand for power, especially in the south of England, and a steadily mounting volume of criticism from the scenery-lovers and farmers whose views and fields it intrudes on, the Board deserves sympathy as well as criticism. It may be carrying a can which is properly the Government's. At the same time its policy towards amenity, and that of the twelve Area Electricity Boards, requires scrutiny. In its own propaganda, by means of which it excuses its actions to the public (presumably at the public's own expense) it pays lip service to amenity, but it accepts too easily the idea that regard for amenity and the need for more electricity are incompatible. At a CEGB exhibition, for which the Royal Institute of British Architects made their premises available

last month, the efforts the Board makes to prevent its activities from being too destructive to the landscape were explained, and some of these are truly impressive; but their results are small in relation to the wirescape around us. The exhibition only touched on the question of putting wires underground, and that in the most pessimistic terms.

'Would the Minister not agree,' Kenneth Robinson, M.P., asked the Minister of Power on April 3, 1962, 'that if the present trend in electricity consumption continues, there is a risk that the whole countryside will become a network of pylons and overhead cables?' 'The man who tells me that I must suffer pylons 125 feet high in the name of progress I can just endure,' said William Deedes, M.P., in an adjournment debate which he provoked on July 30, 1959, 'but the man who tells me I shall eventually get used to them causes my gorge to rise.' And he added, 'this country is becoming a birdcage.' To which the Parliamentary Secretary to the Ministry of Power replied that he was 'not sure the damage to the public is as great from high pylons and main generation as from the indefensible tangle of wires in villages and country towns.' These three quotations contain the bare bones of the case of Amenity versus Electricity.

As the purpose of this article is to be reasonably dispassionate and useful, perhaps it is best to start with the case of Electricity versus Amenity. The Labour Government presented the electricity supply industry to the nation in 1947. In 1957 the Conservatives reorganized it with one of those neat pieces of decentralized administration that are apt to give the man in the street the feeling that he is dealing with a tripartite pantomime horse. The Central Electricity Generating Board is responsible for supplying the steadily growing national demand for electricity. It generates current at high voltages, 132, 275 and in the near future 400 and possibly 700 kV, and sells it to twelve Area Electricity Boards who supply it at appropriate lower voltages, 66, 33 and 11 kV, and 415/240 volts, to heavy and light industry, homes and farms. The Area Boards are independent statutory organizations, but their chairmen all sit, with two representatives of the CEGB and four or five other persons nominated by the Minister, on the Electricity Council, which advises the Minister on general questions and acts as a forum for discussing common problems. So that when 125 or 160-foot pylons are being taken across remote countryside, this is the CEGB's supergrid. When a cat's-cradle of wires messes up a village green, this will most likely be a mixture of the Area Board's lines with those of the GPO. And when, to its credit, the Electricity Council actually encourages the Area Boards to take the initiative in tidying up eyesores in their areas,[1] one can't avoid a faint feeling of the twelve chairmen sitting round and telling themselves what to do. Which is probably not a bad thing.

The electricity supply industry is virtually unique in this country, as its spokesmen point out, half ruefully, half proudly, in having a section (s.37) written into the 1957 Electricity Act specifically requiring it to have regard to amenity. It is rather typical of our legislation, in view of the obvious fact that a proliferation of pylons, lines, substations and transformers over the years is capable of more widespread damage to scenery than even the conurbations, that this section only got in under pressure from the CPRE and the National Parks Commission. But the fact is that it did, and certainly the CEGB and, more patchily perhaps, the Area Boards, are honourably aware of it. On the design of pylons and equipment generally, and the selection of routes, the CEGB is advised by Sir William Holford. Their Chairman, Sir Christopher Hinton, F.R.S., has shown a sensitive and civilized approach to amenity in his public utterances. There is an elaborate system of consultation with local planning authorities and amenity bodies, and the Board has to get not only planning permission for its power stations and routes but also the Minister of Power's consent under the 1909 Electricity Act.

The conflict on wirescape is thus not just a direct one between an amenity-loving public and a pack of vandals (it would be easier if it were), but usually between a set of amenity interests and bodies (i.e. people who can be bothered to take an interest in the question) and a hard pressed and in general beneficent colossus which takes a frightful panning from the public and the papers if there is a blackout or breakdown, especially at Christmas, or in a freeze-up like this winter's. As Sir William Holford himself has pointed out, 'electricity is basic to the whole existence of this country in the twentieth century, and, therefore, to the preservation of any amenity at all.' And there are plenty of people, as periodic fusillades of letters in the papers show, who couldn't care less if we strung wires along every skyline in Britain when millions are starving in Asia, or who unreservedly admire pylons (and why not?), or suggest that if bits of bent wire are the new art form why not make them universal? Still, it is a reasonable assumption that the vast majority of people, including many of the engineers, are anti-pylon, anti-wire and in favour of keeping mess not only out of the countryside but of even quite unattractive towns.

The CEGB and the Area Boards are charged with supplying electricity efficiently and economically. The responsibility is placed on them by Parliament, they cannot duck it, and if they throw money about, the Parliamentary watchdogs, the papers and ourselves are all on their tails. So we are back to the old problem, a reasonable balance between expense (and often speed) and amenity. For as we shall see, undergrounding electric cables is extremely expensive. The question at issue is, is it impossibly expensive? But first let us look at this from the CEGB's point of view, as they have the biggest problem and responsibilities.

The demand for electricity grows roughly at a compound rate of 7 per cent per annum and doubles

[1] CEGB Annual Report, 1960–61, paras. 175–6.

itself every ten years.[2] New factories; new offices; new houses; television, and especially electric cookers and water-heaters: London and the South-East in particular eat the stuff. But there are still plenty of farms and houses in the remoter country areas which haven't got it: in Borrowdale they have been waiting thirty years. The CEGB are investing £200 m. on new power stations, transmission lines and sub-stations every year, and before long it will be £300 m.; the Area Boards spend between £50 m. and £100 m. a year. Since 1948 the electricity supply industry has invested £2,500 m.—about 8 per cent of the total United Kingdom fixed capital investment. They are the biggest capital investors in Britain. Yet supply only just keeps its nose ahead of demand, even at routine winter peaks, while a prolonged spell of bitter weather, like the recent one, leads to widespread breakdown.

It was admitted at the public enquiry in 1960 into the CEGB's proposals to run 275 kV line overhead from Elstree to Finchley that the Board's overall annual income from selling bulk supplies of current was about £400 m. and that the additional cost of putting the line underground represented an annual charge of £60,000 to £100,000. But the CEGB's surplus for 1961–62 was only about £9 m.[3] and the year before they lost £12 m.; in 1959–60 the surplus was only £5 m. True they had surpluses of £16 m. in 1957–58 and £27 m. in 1958–59. But when Sir Christopher Hinton calculates that the undergrounding of all new transmission lines would cost over £100 m. a year[4]; when the Board's latest Annual Report (para. 52) increases that estimate to £125 m. now that the Board has decided to adopt 400 kV lines instead of 275 kV (largely on amenity grounds, because that means fewer lines though higher towers); when electricity prices go up with the increased prices of coal and fuel oil, and there is going to be at least a 3 per cent wage increase for electricity workers in each of the next three years; and when one reads that the Board aims to finance about £163 m. of its capital requirements over the next five years from its annual surpluses[5]: then it is understandable that they should claim that there is not much in the kitty to earmark for undergrounding.

There are certain other considerations which increase the CEGB's amenity difficulties. All power stations need enormous quantities of cooling water, and rivers, estuaries and the coast are their more suitable sites. Nuclear power stations have to be remote as well, for safety reasons. They are therefore almost always faced with the problem of running lines across open country. And the South of England where demand is greatest contains remarkably few suitable sites. Thus far one cannot but sympathize.

'The financial yardstick,' Sir Christopher Hinton has said, 'cannot be rigidly applied in assessing amenity values,' and the following paragraphs are quoted from one of several papers he has read, this one being to the Conference of National Parks Authorities at Harlech in May, 1961[6]:

'. . . it is no use to claim that on the featureless promontory of Dungeness a nuclear power station will provide a dominating and challenging feature and so will improve the character of that headland. The man who goes to Dungeness does so because nothing challenges him there other than nature, and the last thing that he wants is a challenge from a man-made structure, however magnificent.

'Similarly it is no use to argue that properly sited pylons and transmission lines stride grandly across the countryside. To the average man they are (consciously or sub-consciously) the tentacles of industrialization creeping out into a countryside which he would prefer to keep free from industrialization, and giving constant reminder of the continuous growth and spread of that industrialization. He will not welcome the transmission line striding, however grandly, across country, however dull, if at the bottom of his heart he fears the constant growth and spread of industrialization.'

More philistine and irritable and, one suspects, more common, is the attitude expressed in an article on 'Grid and Supergrid,' by Mr. J. L. Egginton[7]:

'Personally, I am inclined to wonder whether the degree of opposition we are at present experiencing to the erection of overhead lines is entirely justified. It could be argued that an overhead line is less of an affront to amenities than is a main trunk road. It is certainly much less of an obstruction to agriculture yet nobody suggests that trunk roads should be put underground, although this is technically possible as, for example, in the case of the Mersey Tunnel. I imagine that if the builders of trunk roads were asked why they did not put them underground their reply would undoubtedly be that the additional cost involved would be prohibitive.'

Either of course is an intrusion on unspoilt countryside; but whereas you can landscape a trunk road, however carefully you site pylons there are places where they will be disastrous in the relatively small-scale English scene.

The technical problems involved in burying 275 or 400 kV power cables are formidable. An unbiased consulting engineer writes as follows:

'An overhead line involves pylons at 150 to 800 yard centres with some freedom of route selection. Underground cable, which must be at least 3 ft. 6 in. deep, has to negotiate every type of sub-soil condition, cross roads, rivers and other obstructions often necessitating diversions and complicating wayleave and other negotiations. Over difficult country siting of pylons is normally much simpler than the routing of an underground cable.

'Insulation for an overhead cable is air and costs nothing; for underground cables the greater the voltage the more costly and complicated insulation becomes. At its simplest the covering for an underground cable comprises oiled paper, metal screen, lead sheath and steel armouring for protection against physical damage, plus possibly a moisture-protection material. The cross-sectional area for an insulated three-core cable can be ten times its bare conductor equivalent of three single cores; alternatively by weight insulated cable can be three or four times as heavy. Bearing in mind the manufacturing costs for wrapping and forming the necessary protection of underground cables, not to mention handling problems, there is an obvious considerable increase in cost.

'The higher voltages involve more elaborate and costly cables using pressurized oil and/or nitrogen gas at 200 p.s.i.g. The sheaths or pipes for carrying these are inevitably more expensive. The techniques are complex and special equipment is required at intervals on the route. Terminations and jointing of such underground cables is also expensive, often requiring special chambers in the ground. Pylons are usually designed so that at little extra cost they can take at least two circuits and each circuit can be doubled in capacity in certain schemes. In the case of underground cables this can be achieved only by a complete repeat of the laying and its attendant costs.'

It is without doubt an extremely expensive business, and the CEGB have opposed the idea of underground transmission lines at every public enquiry where it has been urged, on grounds of expense. The figure usually given, and notably on several occasions by Sir

[2] E. J. Turner, Secretary CEGB, to Association of Local Authority Valuers and Estate Surveyors, March 15, 1962. Many of the facts given here are taken direct from his paper.
[3] CEGB Annual Report 1961–62, para. 1.
[4] Paper to Electrical Power Convention, June 12, 1961.
[5] CEGB Annual Report 1961–62, paras. 7, 8.
[6] *The Problem of Growth in the Electricity Supply Industry*, p. 6.
[7] Reprinted by the Electricity Council from *Electricity in the Next Five Years*, April, 1962.

Christopher Hinton himself,[8] is £400,000 a mile of 275 kV line, or sixteen times the £25,000 a mile for putting lines overhead: £250,000 for the cable and £150,000 for the civil engineering. What is slightly disconcerting is that Ministry of Power spokesmen usually give the figure as £300,000 a mile: a whacking big amount, but after all, a quarter less.[9] And it is interesting to note that in October 1958, at the enquiry into the Dungeness-Canterbury line, the CEGB themselves gave the estimate figure of £310,000 a mile; and that their booklet *Pattern of Power* (July 1960) gives the figure as £300,000 to £400,000.

The layman cannot of course begin to question figures based on such complex and changeable technical considerations; but making every allowance for the widely differing circumstances of ground and conditions that might be met, and the possibility of rising costs, a tolerance of £100,000 a mile does seem pretty large. And who supplies the Board with their estimates and who the Ministry of Power? Particularly when, at the Elstree-Finchley enquiry mentioned above (the only one so far at which the decision has been that the Board must lay cable underground out of regard for amenity) the official estimate for undergrounding seven miles of 275 kV *light duty* cable was £243,000 a mile. Is it therefore possible that the £400,000 a mile is based rather arbitrarily on unduly large cables?

This is certainly the opinion of Mr. K. H. Tuson, a consulting engineer, who has appeared on the amenity side at several public enquiries, including the Elstree-Finchley one. He is reported in the *Daily Telegraph* (August 23, 1960) as saying:

'The estimated cost of the cable is based by the CEGB on the maximum load an overhead line can take.

'But in practice these lines are never loaded to this extent and are never likely to be. It is an extreme winter capacity. On the expected maximum load the cost of equivalent cable would be nearer £240,000 and £150,000 than £400,000 and £250,000.

'The lower figures are still prohibitively costly—though certain developments may further reduce them. That, however, is not the main point.

'The noteworthy feature is the policy of the CEGB to present a flat figure, which is incomplete to say the least, and manifestly designed to deter opposition.'

One wonders about this all the more when one considers the figure given in February 1962 for undergrounding the first 400 kV line from Sizewell power station near Aldeburgh to Sundon in Beds: it was £1,936,000 a mile. The Board won this enquiry, but, according to *The Times* (July 30, 1962), they were willing 'to put any power lines underground which may be offensive to our (i.e. Hertfordshire's) best villages.' As they have adopted 400 kV because it means fewer lines straddling the country, and as Sir Christopher Hinton has said they are considering running the cables near power stations underground to avoid birdcaging, the CEGB cannot be accused of being insensitive to public criticism. It may be they feel that the financial yardstick *has* been applied rather rigidly in assessing amenity values. But even so, there is a certain bulldozing quality about their figures which is unsatisfactory, and one wonders whether they accept too uncritically what the cable manufacturers tell them.

For there is a certain ambiguity about the research which is being carried out into cheapening the operation. In his paper to the National Parks Commission (May 5, 1961), Sir Christopher Hinton says flatly: 'It is vain to suggest that more money should be spent on research to bring the cost of underground cable down to the level of overhead transmission lines. This can never be done' (p. 11). Yet at the beginning of March that year, speaking to the Institution of Electrical Engineers, Sir Christopher was telling his audience that their problem was 'to evolve an underground cable at tolerable cost,' though he still saw little hope of lowering the cost of undergrounding transmission cable to allow of its extensive use. And he went on to point out that the shortcomings of so many new materials with high dielectric strength had not yet been overcome, and 'one wonders whether there has been sufficient or sufficiently imaginative research directed to this end.' While on September 27, 1961, the *Daily Telegraph* Science Correspondent, in an interview with him, reported:

'Yet another encouraging point is that it is becoming increasingly less expensive to bury electric cables than to carry them above ground. The colossal cost of burying electricity has been a major obstacle in the past.

'At present the cost of burying a 132 kV wire, which is medium high voltage, is about eight times as much as erecting the pylons to carry it above ground. But Sir Christopher Hinton said he could see the ratio coming down to about 4:1.'

On April 2, 1962, Kenneth Robinson, M.P., asked the Minister of Power whether he was satisfied that enough effort was being put into this research, to which the Minister replied:

'I am quite convinced that a great deal of effort is being put into this. I am also convinced, after expert advice, that it seems unlikely that, particularly at the high grid voltages, the disparity of price can be brought down to anything less than about 10 times as expensive to put the cables underground.'

Not very encouraging, but it would at least bring down the CEGB's £400,000 for a mile of 275 kV cable underground to £250,000.

There seems to be no mention of research into lowering the cost of undergrounding in either of the Board's last two Reports, though their Research Department has various projects in hand with regard to high voltage transmission lines and Sir Christopher is reported in *The Times* of March 6, 1962, as saying that their research laboratories are trying to find a suitable plastic for underground, easier to handle and less costly. Is the research therefore left to the cable companies or the big electric concerns? One hears whispers of superconductive lines, which are small and cold and through which current can go without resistance, so making unnecessary the expensive reactors which are needed at present to prevent current disappearing underground through dissipation by heat—but the breakthrough might take twenty years, by which time the country will be festooned with 700 kV lines.

That there is possibly a lacuna here is suggested by a further passage from Sir Christopher Hinton's 1961 paper to the Electrical Engineers:

'If I am right in suggesting this, research on underground cable is not merely a matter for cable manufacturers, acting in collaboration with electricity boards in relation to jointing and other techniques; it is a problem into which manufacturers of civil engineering plant and users of this plant must be brought. When one considers a similar problem such as cross-country pipe construction

[8] E.g. to Royal Society of Arts, November 25, 1959. To Institution of Electrical Engineers, March 2, 1961. To Conference of National Parks Authorities, May 5, 1961.

[9] E.g. Parliamentary Secretary, Ministry of Power, June 25, 1959.

one finds that the civil engineer and, even more, the designer of civil engineering plant have made the greatest contribution to reduction in costs. Perhaps you are dealing with a similar problem and your most important concern is to develop a cable which is sufficiently flexible and compact on the drum and which can be jointed so quickly that it can be laid across country by a continuously operating machine. If this is so, what you need is a broadly based research in which cable experts, civil and mechanical engineers are integrated.'

Who, one wonders, is responsible for the integrating?

With the low tension networks, the problem is rather simpler and the position in general more satisfactory. For 11 kV lines the cost of undergrounding is only about £8,500 a mile against £1,200 overhead, for 33 kV £15,500 against £2,500, for 66 kV £20,500 against £3,300. The authorities obviously feel that if fewer bones are made about undergrounding low tension lines, which are often more offensive than high tension, they will be less vulnerable to criticism over main transmission lines. Accordingly, as Sir Christopher says,[10] 'even with these differences (in cost) Area Boards are feeling that it is their duty to underground many miles of new transmission lines in the interest of amenity even though they are short of capital for other developments.' And a rough check of cases which have appeared in the press suggests that this is broadly true.

July 1959. North-Western Electricity Board write to Lancashire County Council over addition of three high voltage lines to a medium voltage line in a Lancashire village in the green belt: 'The additional cost to the Board for this work will be approximately £2,500, and we shall be pleased to hear if the Lancashire County Council together with the Crosby Borough Council and other societies interested in this village, will pay for this additional expenditure.' (quoted in *Preserving Amenities*, p. 86).

May 1960. Aldridge Urban District Council, Staffs, hold strongly that Midlands Electricity Board's proposed 66 kV line over 3,300 yards of green belt near Barr Beacon should be put underground. Board astonished at violent reaction when every effort had been made to site line as unobtrusively as possible. *Times*, May 19.

March 1961. East Midlands Electricity Board agrees to put underground the disfiguring overhead electricity wires in the Northants village of Cranford and bear the cost itself. Several other picturesque villages to receive similar attention. Result of efforts by Northants County Council and the East Midlands Consultative Council. *Times*, March 13.

July 1961. North-Western Electricity Board reversed its decision to run lines overhead in Upper Borrowdale without waiting for the public enquiry because it was 'impressed by the anxiety aroused by its proposal, and especially by the offer of the Friends of the Lake District to contribute to the cost. The Board will put all cables in Upper Borrowdale underground.' *Times*, July 31.

September 1962. Electricity will be switched on for the first time at Widecombe-in-the-Moor, 'Uncle Tom Cobley's' village on Dartmoor next Thursday. Church bells will be rung and there will be dancing on the green.

In the parish hall an oil lamp will be ceremoniously doused by Mr. A. N. Irens, chairman of the South-Western Electricity Board. The parish council has written to thank the Board for bringing in the power lines without spoiling the village.

Daily Telegraph, Sept. 21.

Perhaps the most interesting feature is the change in the North-Western Electricity Board's attitude over two years. And it is only fair to say that in general Area Boards have shown themselves sympathetic to representations by local authorities and amenity societies, and that such cases as Cranford and Borrowdale are valuable precedents for the sensible defence and preservation of local beauty. A recent technique developed which should make such results rather easier to obtain is the invention of the fully insulated 'Hunter's Inn' cable which can be supported on poles without insulators and run through a wood without the usual clearance-lopping of trees.

One very important point which never seems to get much publicity in all the controversies over undergrounding, but which must surely bulk larger after this winter's experiences, is the cost of maintaining overhead transmission lines and pylons. It must be considerable, and the work is hard and dangerous. The Board themselves made it the theme of one of their last year's prestige advertisements. 'It's not everyone who would turn out at dead of night to help repair a power line. . . . His task . . . takes on a different aspect at dead of night in November, when cold robs fingers of feeling and rain makes the girders slippery.' The oscillation of overhead line conductors under certain wind conditions, which can cause clashes and severe electrical faults, is a serious problem, and its reduction is a subject of current research.[11] Lines and pylons are subject to the effects of snow, of storms, or of freezing fog.

But this is nothing to what happened the last weekend in January, when the national grid suffered by far its worst breakdown since the beginning of its development 35 years ago, the scale of which (to quote *The Guardian* of January 28) 'astonished the Central Electricity Generating Board.' This breakdown, Sir Christopher Hinton confirmed at a press conference, 'was caused by severe icing on the insulators, aggravated by freezing fog and industrial grime which caused "flashovers".'

'The crisis and its causes,' to quote *The Guardian* further, 'will add new urgency to the research programme on insulation problems.' And 'the solution to the problem is bound by the economic rules of the electrical supply industry to avoid devising equipment whose production and maintenance costs would be out of proportion to its utility value.'

No one was so bold as to mention undergrounding in this context, but one cannot help feeling that a vast proportion of the cost and the peril, not to mention the hard-earned sleep of Sir Christopher and his Director of Research, might be saved if lines were undergrounded and properly insulated, and this could be set off over the years against the original outlay. No figures seem to be available on this question to enable even tentative arithmetic to be done. It surely merits attention, if only because one would think that the burying of electric cable, after our experience of even the rudimentary bombing of the last war, had some strategic importance. And there is the small but steady number of children who go on electrocuting themselves on pylons.

What then about Amenity versus Electricity? As always, the case of Amenity is harder to make in concrete terms—and this becomes obvious at every public enquiry into a threat to amenity—because you cannot measure it in money. And as most sizeable threats to amenity, whether electricity, gas, water or mineral undertakings, roads, airfields and other forms of construction and building, are financed by public money or are designed measurably to increase some form of production or public good (e.g. housing), the amenity argument generally has to be very powerful, or very

[10] Paper to Institution of Electrical Engineers, March 2, 1961.

[11] CEGB Annual Report, 1961–62, paras. 194–5.

influential, or both, to win. This is a commonplace of almost every amenity row since planning in this country began to be taken seriously and is indeed so obvious that it is hardly worth saying. But the threats to the countryside posed (unavoidably on the whole) by overhead lines and higher pylons are so great and widespread, especially with the proposed and violently opposed 300-mile line which is due to run from Kent to Cornwall via the Hardy country, that the case perhaps needs some re-examining, both in the particular terms of electricity, and in more general terms.

A first conclusion is that low tension lines, with the increased willingness of the Area Boards to underground at least some of their cables and the continued co-operativeness of the GPO, who have a good record in this respect, need not, in general, be such a menace as they have been, particularly if early and proper consultation with local planning authorities and amenity societies is insisted on. Much of the job is in fact undoing the mess of the past and much of this could have been avoided by more sensible routing. Time spent by the Boards in consulting and conciliating local opinion, especially in villages and country towns, is likely to be repaid in more speed in getting the operation through, and the cases quoted above suggest that this lesson is being learnt. Those of Cranford, Borrowdale and Widecombe show a pleasant attitude on the part of the Boards which one hopes will become a general rule, and not perhaps only among Area Electricity Boards.

The problem of high tension lines is far more difficult, simply because of the vast sums of money involved, whatever the rate per mile of undergrounding actually is, and the short nose which the CEGB is keeping in front of the demand for electricity. In view of the impact overhead lines make on the scenery, it seems not unreasonable that the CEGB should be expected, as Lord Feversham suggested in *The Guardian* in 1958, to set aside something out of its profits in good years for undergrounding its cables in the places that really matter. But this is not very satisfactory in years when the Board is only just making ends meet—and when it is being urged to finance even more of its capital needs from internal resources.[12] And the Board is no doubt right in saying that taxpayers in general will not stand a 50 per cent increase in their electricity tariffs simply to keep pylons off the skyline.

Should then the Government subsidize electricity production with the £100 m. to £125 m. a year which the CEGB claims is necessary to underground all its cables, and which will probably increase as longer and higher-tension cables are laid? Or should it pay for undergrounding them in all areas where overhead lines really damage worthwhile scenery—national parks, nature reserves, recognized beauty spots, scheduled areas of high amenity value? And even if it should, *will* a Government which found itself unable to continue food subsidies, is sweating blood to keep housing subsidies below £100 m. a year and is scared stiff at the idea of subsidizing public transport, buy that one? One's instinctive answer is, not on your Nelly, and the only Labour politician since the war who might not only have been sympathetic himself but might have persuaded a cabinet as well is the late Hugh Dalton. Yet surely many people who wouldn't subscribe to the Leonardo and couldn't care less if Covent Garden died overnight and think the LCC spends too much on its welfare services, would cough up a fiver a year or even more to keep their favourite stretches of the countryside free of obtrusive wire. And many people who would grudge a swingeing increase in their electricity bills would surely not mind some of their income, drink and tobacco taxes being devoted to this end.

The present situation is peculiarly futile in that the general areas of agreement are so large, and the points of conflict are so localized and repetitive. Most people, from Sir Christopher Hinton downwards, agree on the need for unspoilt countryside for people to enjoy. Most people, from Sir Christopher Hinton downwards, agree on the desirability of electricity in cottages, farms and factories. From the CEGB's point of view, this crystallizes in a long series of dreary, expensive, dilatory and almost identical public enquiries. The citizen in general is only up in arms when his own local or favourite country is threatened. And to a greater or less extent, this applies to proposals for motorways, pipelines, airports, training areas, town expansions, new towns and industrial estates. Some day some Government, with rather more time and fewer foreign and financial crises on its hands, will have to do something about appraising the amount of ordinary enjoyable Britain that can and should be left for the recreation of its decently housed, electrically provided, motorized, fully employed, nuclear defended, and steadily increasing, population—if by that time there is enough left to make the job worth doing.

Meanwhile, there are two things at least that could usefully be done: first, let the CEGB announce (and even use some of its advertising space to do so) that as a recognition of the importance of amenity it will undertake to lay high tension cable underground over a limited number of stretches of countryside that it proposes to bring electricity across, instead of fighting tooth and nail through every public enquiry, stating as accurately as possible the cost and the financial implications. This would focus public attention on the problem in a more sensible way and might induce the Government to underwrite some of the cost.

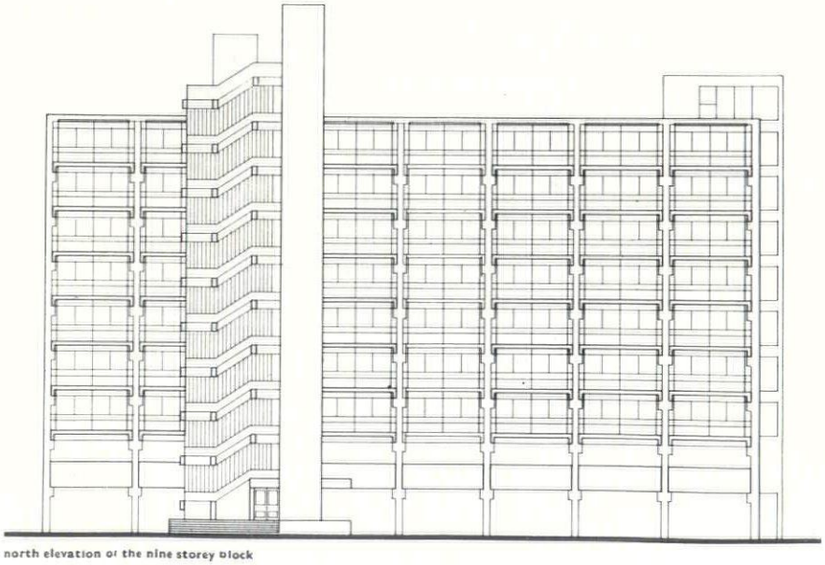
Second, let a good, down-to-earth committee, like the Parker Morris Committee which produced the Ministry of Housing's *Homes for Today and Tomorrow*, examine the question. Let it take evidence from the CEGB, the Area Boards, the cable companies, similar developments abroad, and the amenity societies. Let it also carry out some local survey, both in areas where lines are due to run and elsewhere, and discover how strong and reasonable public opposition is to CEGB developments, both locally and *in other parts of the country*, and how much expense people are prepared to go to in order to reconcile the provision of electricity with the retention of amenity. And let it make recommendations, and keep the problem under review yearly. And let the Government accept its responsibility and work out a policy, instead of leaving it as a heavily weighted free-for-all between Sir Christopher's men on the one hand and the locals and the writers of despairing leaders in the newspapers on the other.

[12] E.g. by Mr. Ronald L. Meek, in *The Times*, October 4, 1962.

1, close-up of south façade at the level of the first-floor car-park.

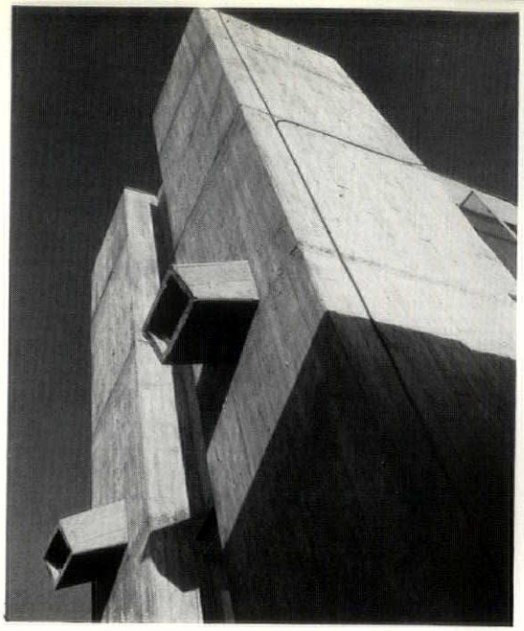
OFFICES AND SHOPS, CATFORD, LONDON

ARCHITECT | **OWEN LUDER**



north elevation of the nine storey block





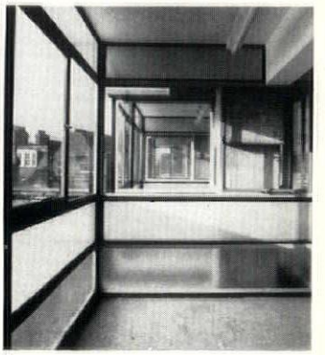
3

SHOPS AND OFFICES, CATFORD, LONDON

2 (facing page), from the north-west, showing the staircase tower with entrance hall at its foot. The empty ground-floor spaces are later to be filled by shops. Above these is the first-floor car-park. 3, detail of the top of the staircase tower. 4, looking up the façade showing construction and articulation of bay windows. 5 and 6, the bay windows from inside, showing the glazing returned round the structural columns.



5



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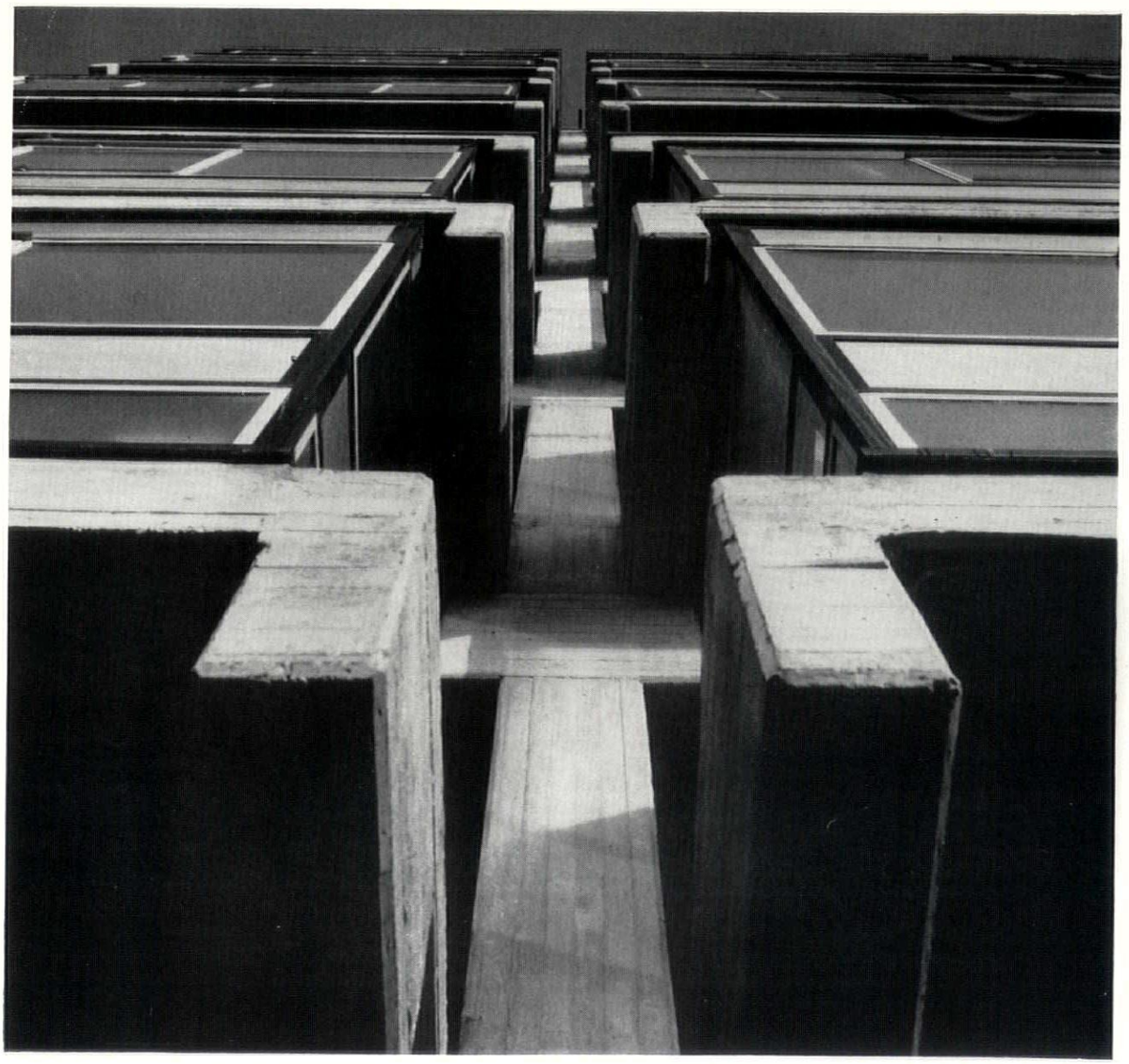

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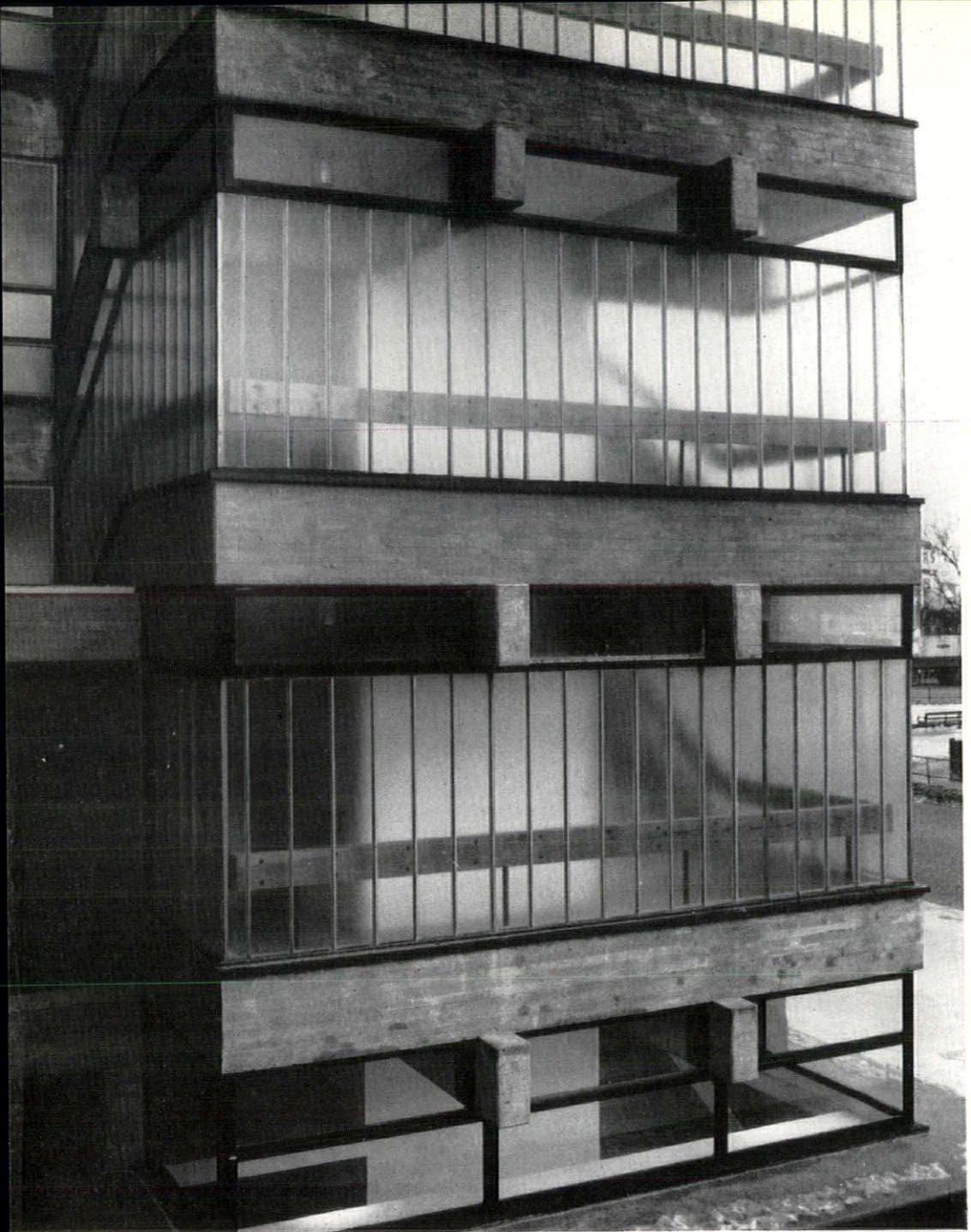

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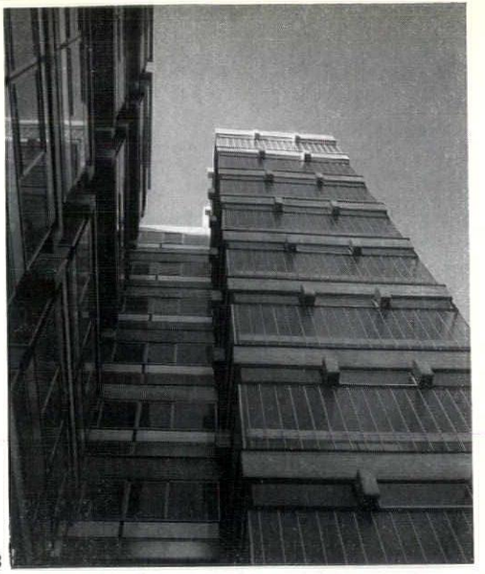

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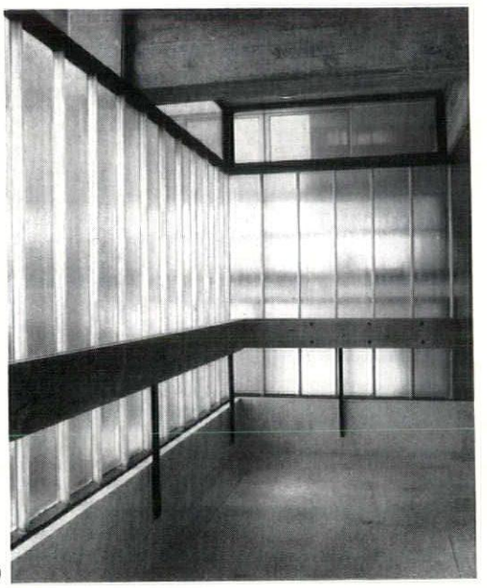

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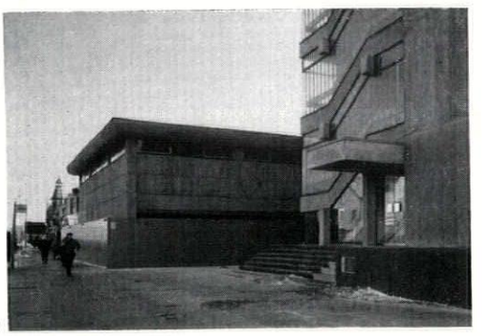

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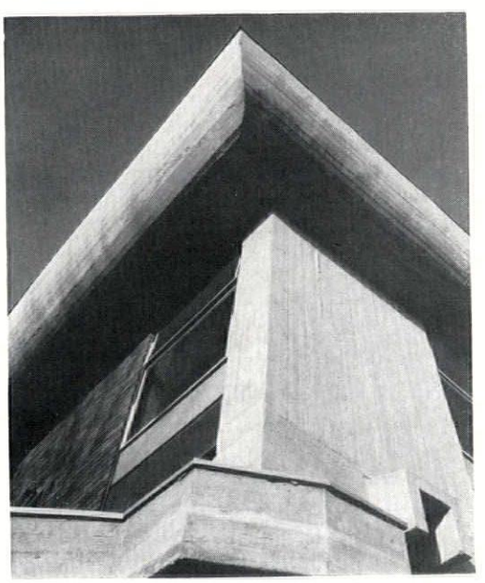
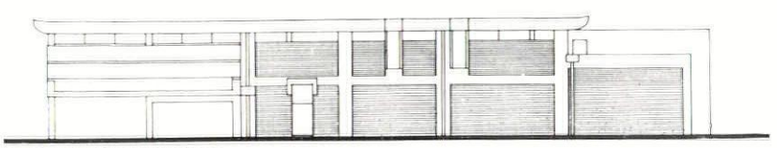


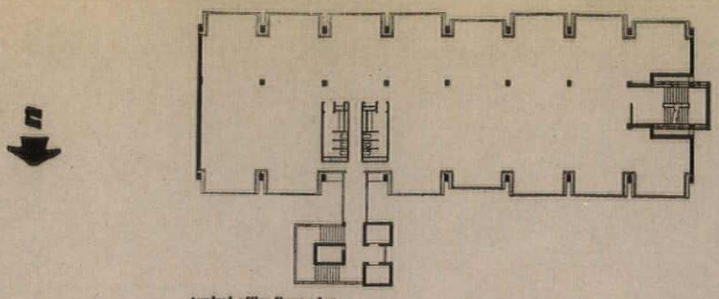
11

7, close-up of the lower stages of the staircase tower. 8, looking up the staircase tower. 9, the staircase from inside, taken at one of the half-landings and showing the timber handrail also seen through the glass in 7. 10, the two-storey block that adjoins the main block to the east. Its ground floor, at present masked by a hoarding, will contain a supermarket. 11, detail of exposed concrete walling and roof overhang at the corner of the two-storey block.

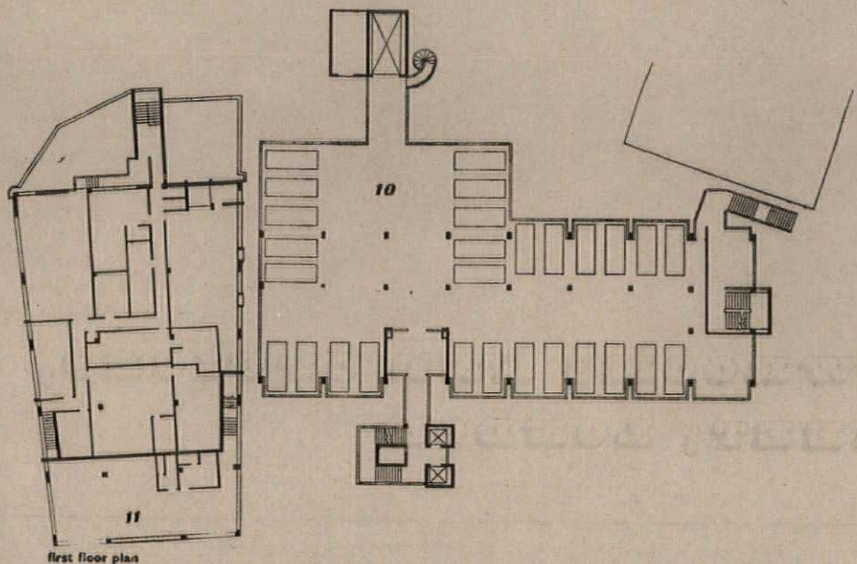
photographs by H. de Burgh Galwey



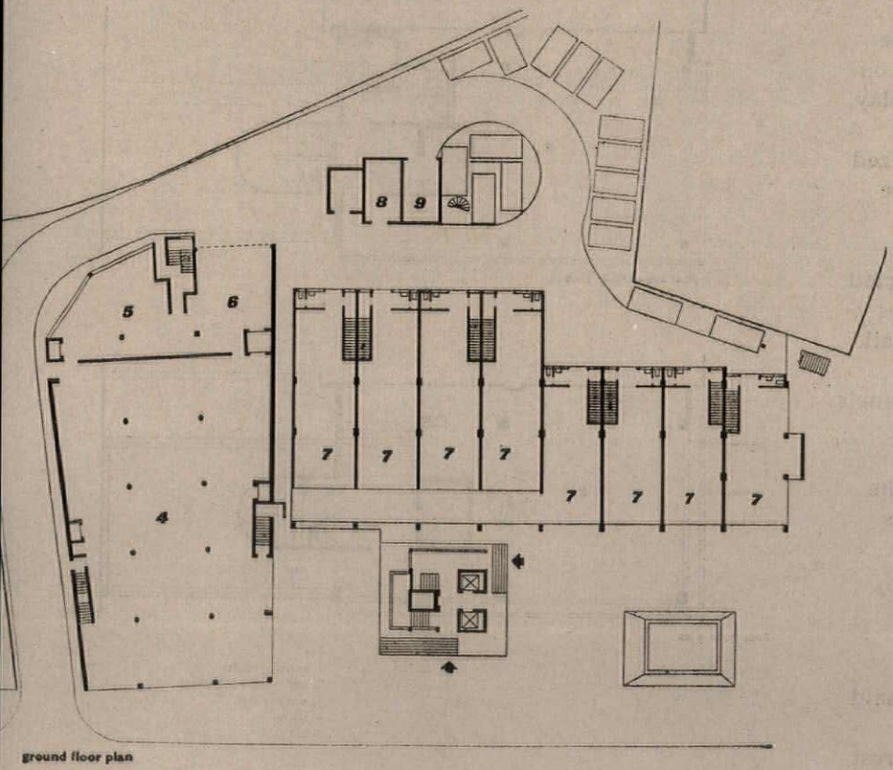
west elevation of two storey block



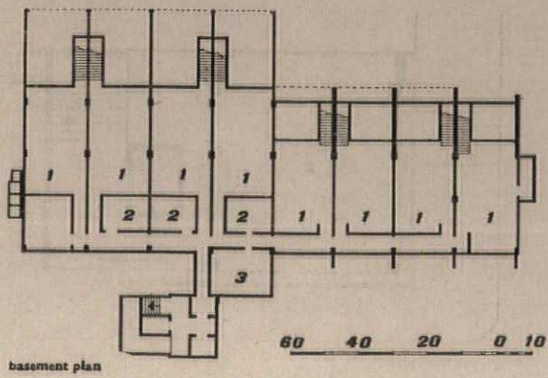
typical office floor plan



first floor plan



ground floor plan



basement plan

key
1. store rooms
2. switch rooms
3. transformer chamber
4. supermarket
5. produce room
6. loading bay
7. shops
8. sub-station
9. car lift
10. parking floor
11. barber's shop

This block of offices, with shops on the ground floor and an open car-park at first-floor level, to be known as Eros House, is on the corner of Catford Broadway on the site of the old Hippodrome theatre. It consists of a main building nine storeys high set back behind a forecourt, and a two-storey building alongside, coming forward to enclose the forecourt with a frontage to Brownhill Road, containing a supermarket. The main building has eight shops on the ground floor with basement storage beneath. The car-park on the first floor is served by a car-lift at the rear. Above are seven floors of offices served by lifts and staircase which occupy a tower, linked horizontally to the offices and with an entrance hall at its foot, projecting into the forecourt. The shops that form the frontage of the building are set back at this point to allow pedestrian circulation between them and the staircase tower.

The external treatment of the offices is closely related to the economics of the building. The flexibility it creates by allowing bay windows to be protruded or restricted at will allowed the maximum permitted density to be achieved by altering the floor area at a later stage in the design, the maximum area not being determinable until after demolition had taken place.

The building has a reinforced concrete frame with cantilevered balconies. Floors are of hollow-pot construction with wood-wall slabs that also serve as the insulation for under-floor electric heating. The storey-height metal windows have wired glass in their lower panels and infill panels of plyglass. Emphasis is given to the modelling by the middle glazing being divorced from the vertical structure. This also allowed metal-working tolerances to be worked to in the erection of the windows rather than the less fine tolerances of the concrete frame, which was important in view of the use of concrete straight from the shuttering, there being no cladding which could be used to cover tolerance gaps.

The strongly modelled treatment of the elevation was also regarded as a desirable accompaniment of the rough shuttered concrete finish used, since aesthetic quality does not in such a case depend on precision of surface finish. External concrete walls as well as the frame are of exposed concrete, except for the infill panels on the end elevation, which are precast with exposed aggregate. The single-storey supermarket has reinforced concrete columns, beams and floors with cavity brick infill walls and metal windows.

Client, Bernard Sunley Investment Trust, in association with the E. Alec Colman Group of Companies. Architect's assistant-in-charge, Peter Senior. Structural engineer, Gordon M. Rose. Quantity surveyors, C. R. Wheeler and Partners.

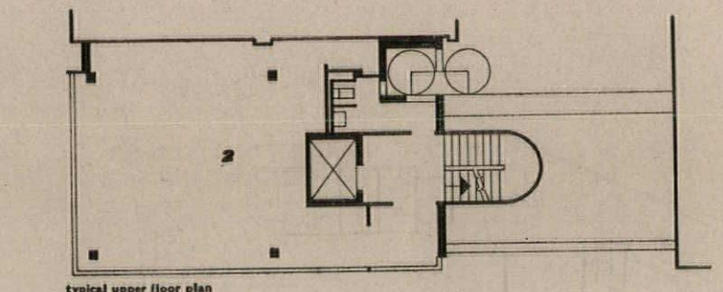
OFFICES AND SHOPS, CATFORD, LONDON

FURNITURE SHOWROOMS AND OFFICES, ALBEMARLE STREET, LONDON

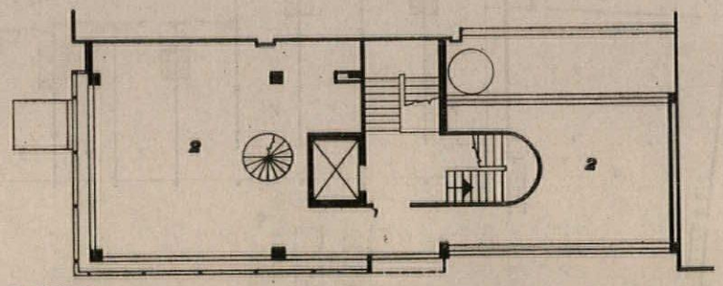
On a restricted but prominent corner site, on which the maximum floor-space had to be provided for Hille of London Ltd. Planning permission was conditional on a small car-park being provided on the site. The display areas (basement, ground, first and second floors) are superimposed and the vertical arrangement emphasized by the double-height ground floor, the spiral staircase linking all four display levels and the vertical proportions of the curtain-walling.

Construction is a reinforced concrete frame supported by the minimum of columns. The beamless floor-slabs are cantilevered beyond the columns. The curtain-wall is supported by aluminium mullions and has clear sheet-glass combined with ¼in. cast-glass spandrel panels silvered grey on the figured side and lead-sealed. In order to keep the exterior as simple as possible, the partitions on the office floors (which coincide with the curtain-wall mullions) have glass or mirrored panels where they join the outer walls. Concrete is left untreated internally, so that the rough texture that comes from the shuttering shall contrast with the furniture and fabrics displayed. The building has electric under-floor heating.

Partner-in-charge, Michael Mellish. Assistant, Ronald Paxton. Structural engineers, Clarke, Nicholls and Marcel. Quantity surveyors, Davis, Belfield and Everest.

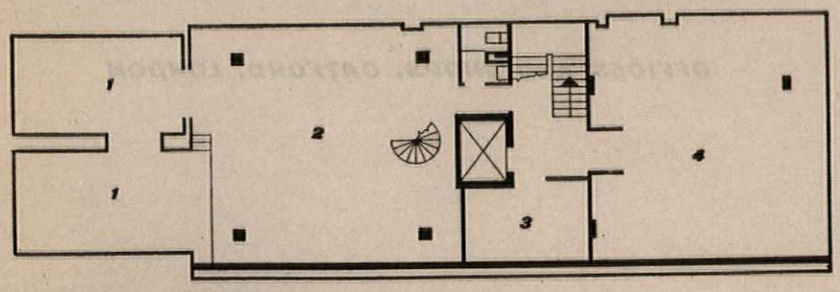


typical upper floor plan

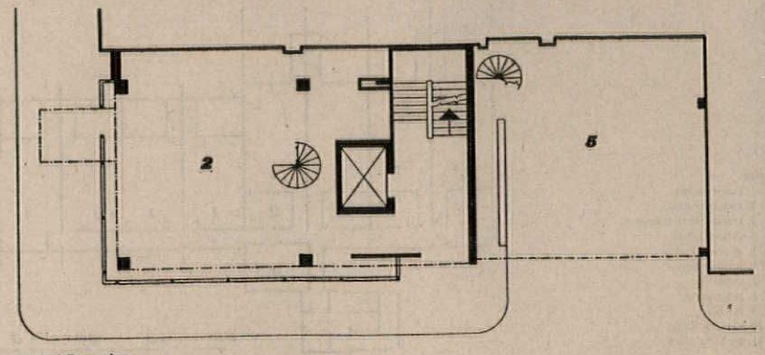


first floor plan

key
1. existing vaults
2. showrooms and offices
3. motor room
4. store
5. car park

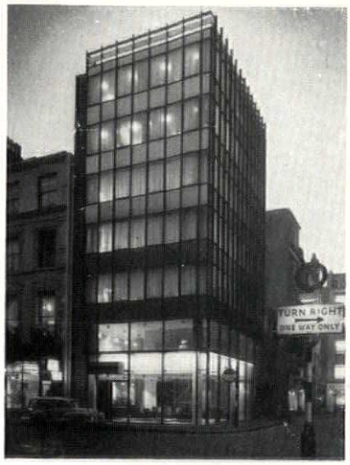


basement plan



ground floor plan

ARCHITECTS:
PETER MORO AND
PARTNERS
in association with
Robin Day



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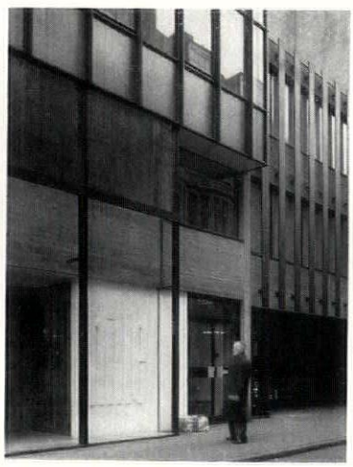


2

1, the building at night from across Albemarle Street, 2, close-up of entrance, which is in Stafford Street. 3, the Stafford Street frontage—also a night view. On the right of the illuminated entrance to the showrooms is the entrance to the street-level parking garage.

3



4

FURNITURE SHOWROOMS AND OFFICES, ALBEMARLE STREET, LONDON



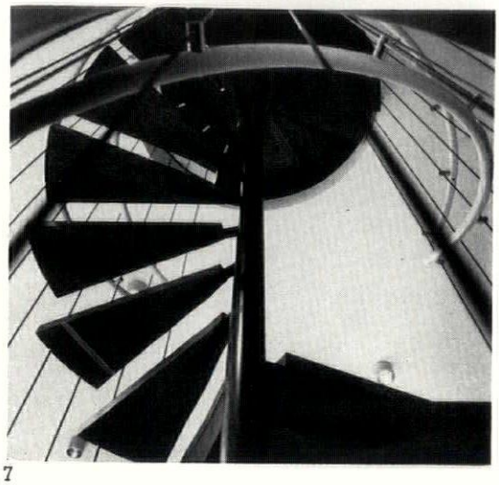
5

4, looking into the ground-floor showrooms from the roadway outside; entrance at extreme right. 5, close-up of the entrance doors. The illuminated box exhibiting the firm's name also projects the name on to the white terrazzo pavement after dark. This was permissible because the strip of pavement along the entrance front belongs to the client.

6, inside the ground-floor showroom. 7, looking up the spiral staircase which links the four showroom floors. 8, the top of the same staircase, as it emerges into the second-floor showroom. 9, the staircase at first-floor level; doorway from the main stair and lift hall on the right. 10, on the main staircase, showing handrail detailing. Mr. Moro was responsible for the building and for this and similar architectural detail; Mr. Robin Day for the spiral staircase and the interior display. 11, upper-floor office and showroom space.



6



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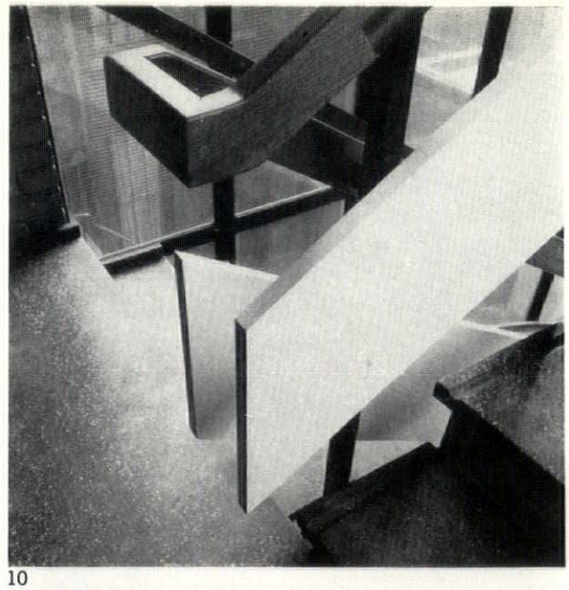

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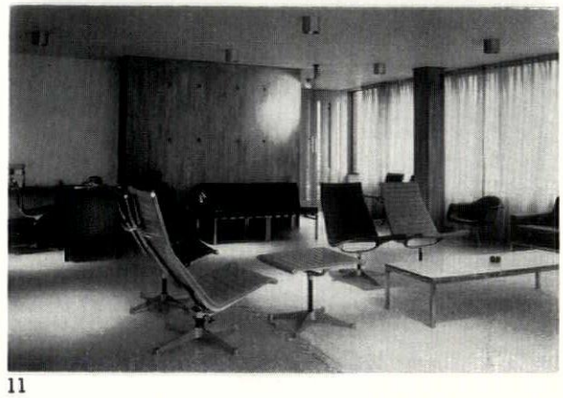
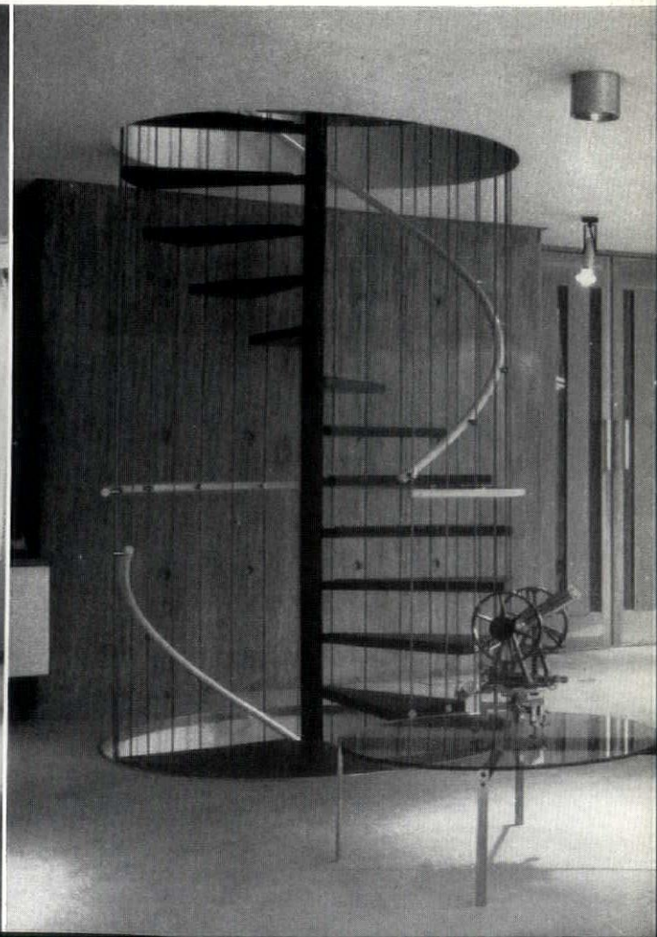


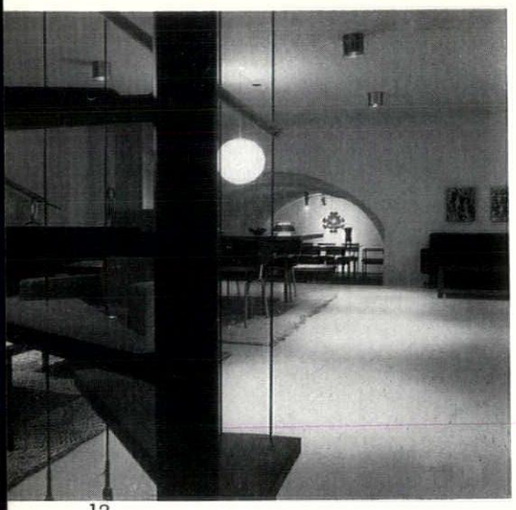
11

8



9





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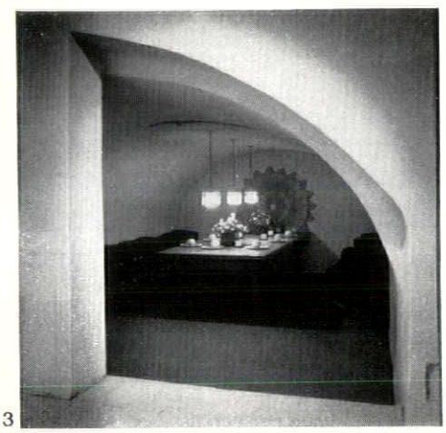


13



14



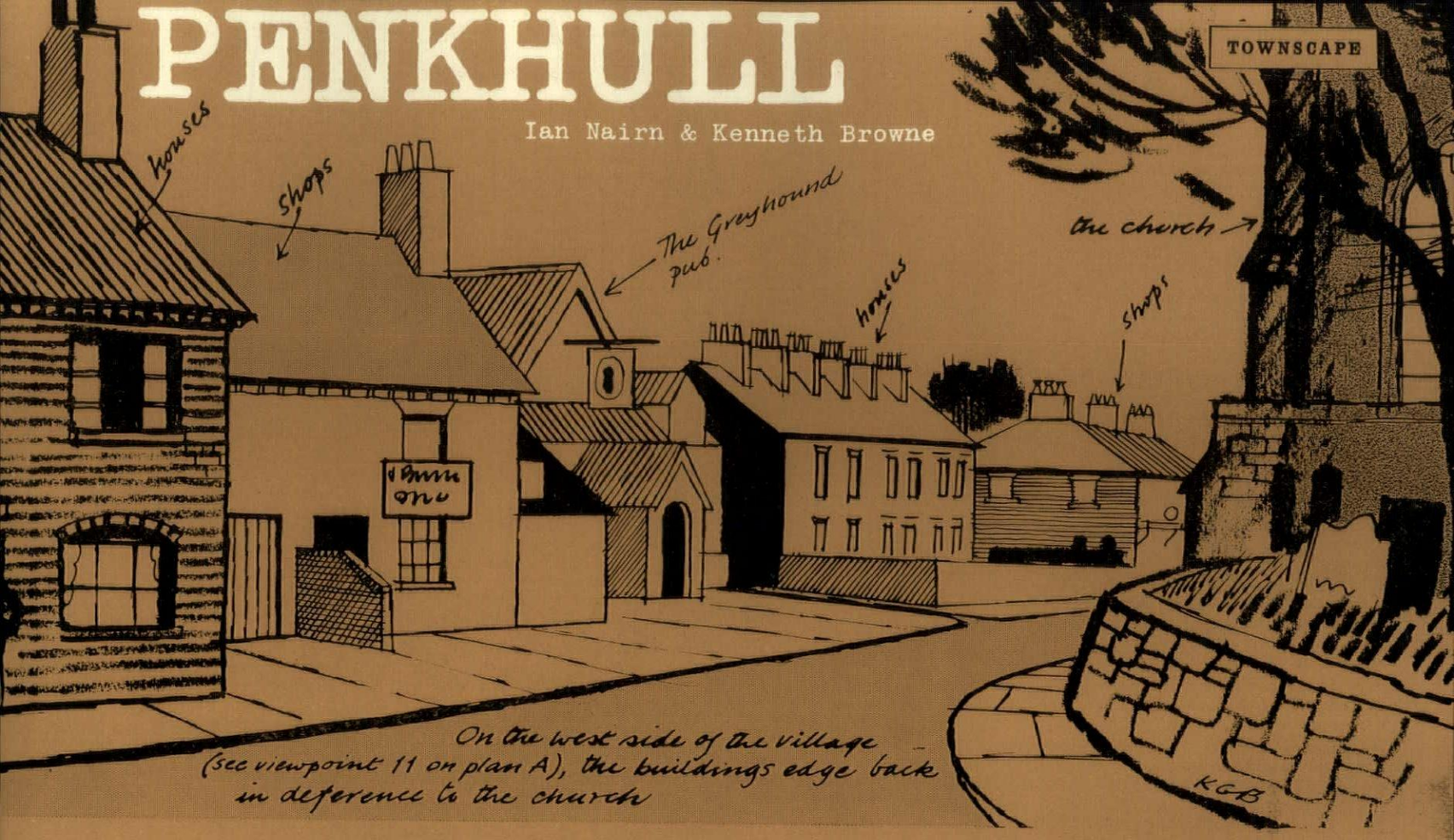
15

In the basement-level showroom, use has been made of the existing vaults under the pavement to extend the display space and to give variety of architectural form. The vaults are shown in all four of the photographs on this page. 12, looking across the showroom from the foot of the spiral stair. 13, the entrance to the second vault. 14, looking into the vault from the main showroom. 15, main showroom with entrance to second vault on left.

photographs by H. de Burgh Galwey

PENKHULL

Ian Nairn & Kenneth Browne



In another few decades, schemes of wholesale clearance may be seen to be as much of a twentieth-century crime as the concentration camps. At the moment, they are in fashion. When such a scheme is honestly presented as an improvement, but rigid standards are applied with the best of intentions to a very individual place, then the stage is set for another example of killing with kindness. This is the threat which is hanging over Penkhull.

Penkhull is a hill-top village in the Potteries, mostly built at about the time when Wedgwood was beginning to make pots. It has long since been swept into the urban area of the Five Towns, and some —but not all—of the old houses are past repair. The centre of the village is a little Victorian church on an island site, with the cottages grouped around the sides. The views in between, out across the industrial landscape, are spectacular.

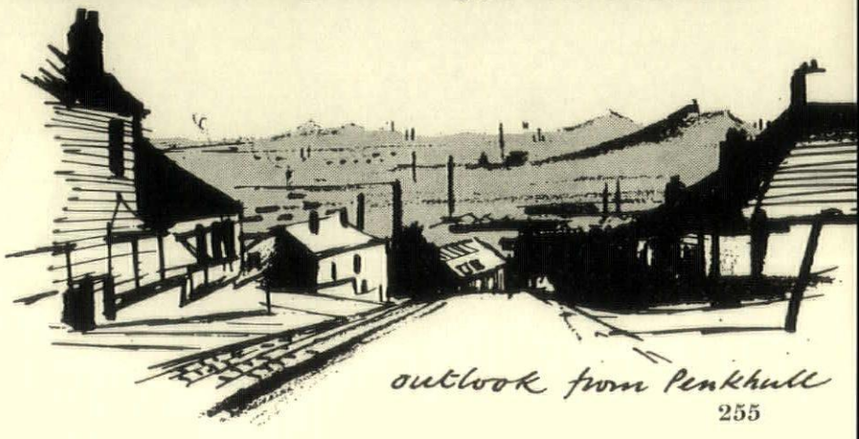
For the Potteries, Penkhull is something special. The local council realized this, and proposed a complete plan for a new village, intending it to be their showpiece. The spirit was excellent, but the results would have been deplorable. A look at the proposals, compared with a plan of the existing village, will show why. Everything is moved apart, the tight enclosure of the old buildings around the church has gone: it would only be a hill village on paper, incorporating hardly any of the old buildings, and none of the old spaces.

This design went to public inquiry a year ago. The Minister confirmed all of the major proposals but took two big areas and said that they must be developed privately. This has apparently thrown the council into a huff—understandably enough perhaps, for they were proud of their scheme, and really wanted to do well by Penkhull. So now the whole thing is shelved.

It need not be. Penkhull does indeed need redeveloping—but gently and carefully, instead of in one enormous clearance. What seems at first sight to be just a decrepit collection of sub-standard houses possesses on a closer look the same subtlety of design as a Cotswold village. It is this, rather than any particular parcel of bricks, that makes up the place. If the character is to be kept intact then the architects of the new scheme have first of all got to be artists in shapes and spaces.

The original method of design is shown best in the extraordinary place called Penkhull Square, which is described on page 236. It is a slow-growth process of inspired trial-and-error, and is just as applicable today as it was a hundred and fifty years ago. What stands in its way is only a collection of administrative, paper difficulties. If the council is really honest in its goodwill it must surely in the end feel that the rhythms of the place require loving piecemeal replacement, not a wholesale clearance.

On the two pages overleaf is a detailed comparison of Penkhull as it is and as misguided kindness would have made it. Page 258 shows the multiple townscape possibilities that would be opened up by introducing just one new building into the village, at the south-east corner.



outlook from Penkhull

pulling apart—

Six comparative views of Penkhull as it is **A** *and as the Council's plan would have made it* **B**. *The plan itself is now shelved, but the thinking behind it is likely to stay the same.*

1A *S.W. corner. Steeple close-framed by cottages. A signature.*

1B *New houses moved back, the foreground invaded by cars. The fag-end of any county borough.*

2A *Approach from the S.E. Anticipation; what's round the corner?*

2B *All revealed—why bother to go any further?*

3A *Looking west; enclosure, with a hilltop view in the slit.*

3B *The close view exploded, the distant view devalued by the foreground.*

4A *Looking east. As in 3, the south side asserts 'Penkhull,' making the view at the end all the more unexpected.*

4B *With the building set back, this corner loses identity and the distant view loses excitement.*

5A *The east side. Infinite subtlety with standard units, something individual. Penkhull.*

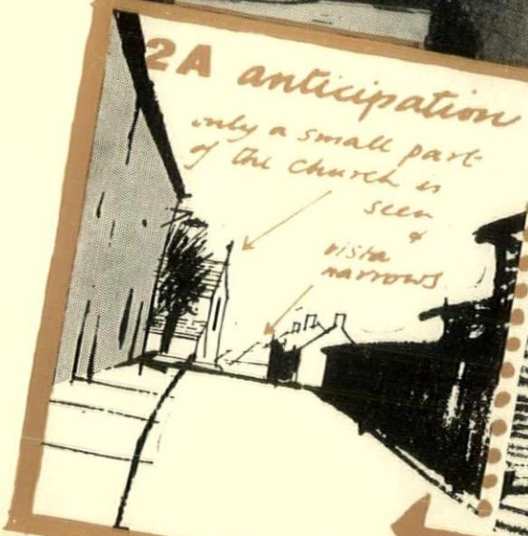
5B *Stereotyped boredom. A vacuous yawn. Nowhere.*

6A *Looking south. The way out. Drama close to with a big black wall; the edge of the village defined at the hill-brow.*

6B *Another yawn. On the way from one residential area to another. Who cares?*

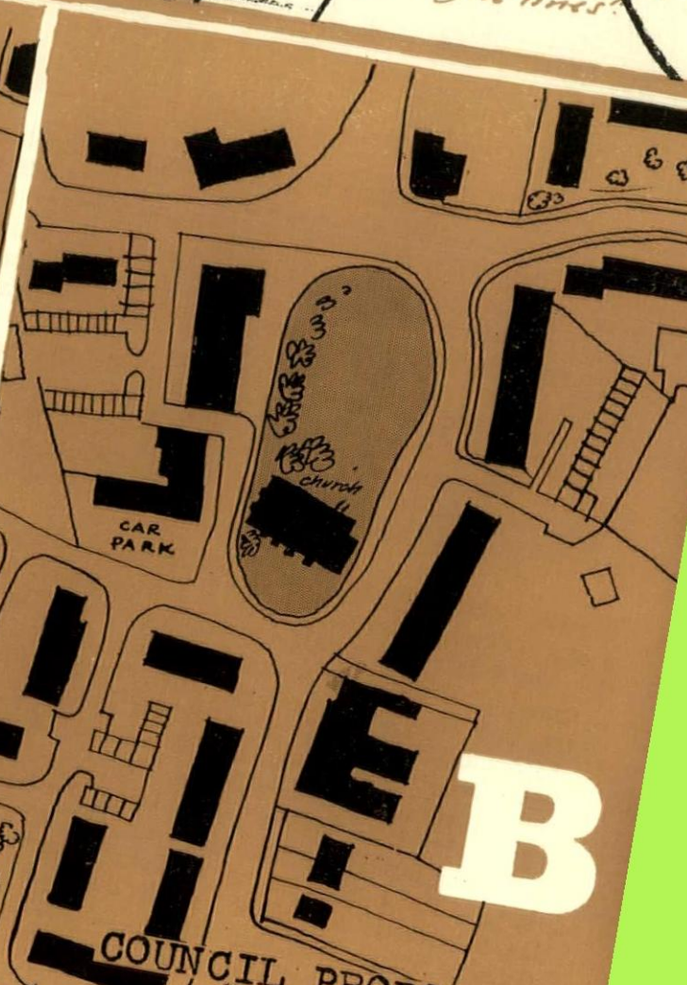




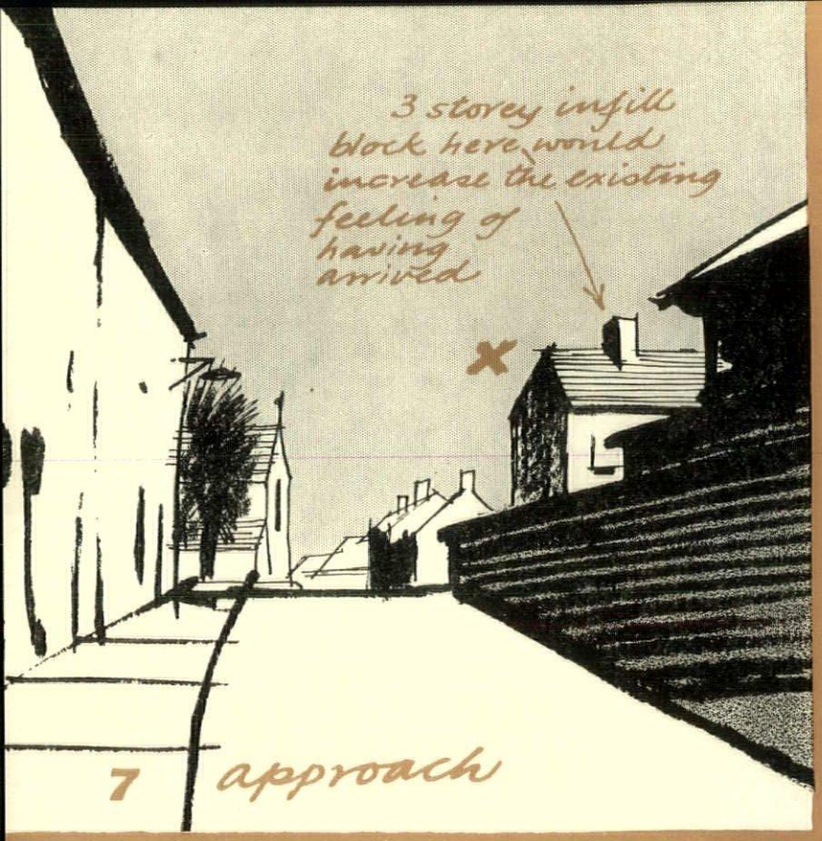




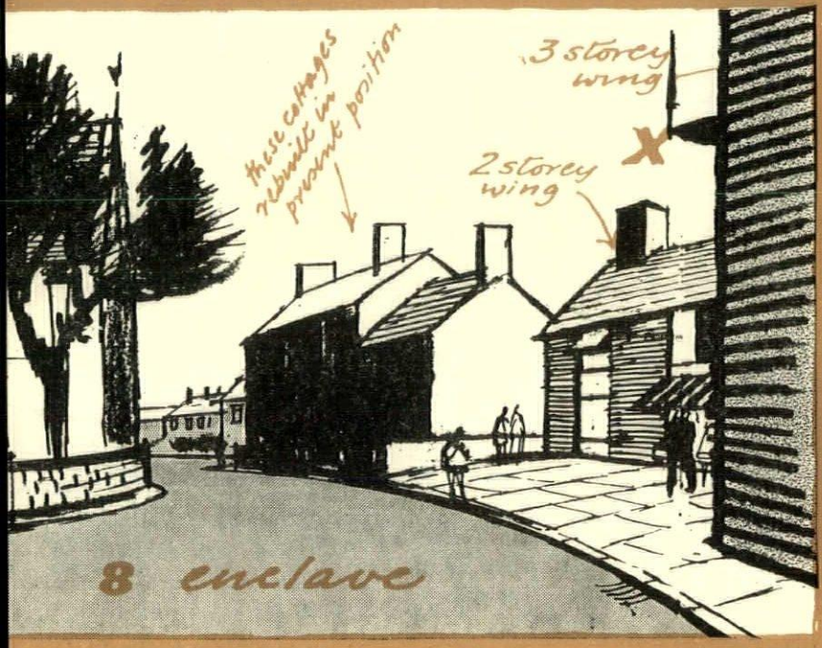





3A enclosure
solid wall
view out, hill town defined
3B explosion
no community to street
everything opened out
could be anywhere
4A corner held
note kink in roofline which arises thus
4B corner lost
buildings set back
5A interest
(see how this is achieved on plan)
no gaps
5B boredom
the obvious on plan + look what happens
6A way out
edge of village defined
6B why stop here?
eye funnelled through



7 approach



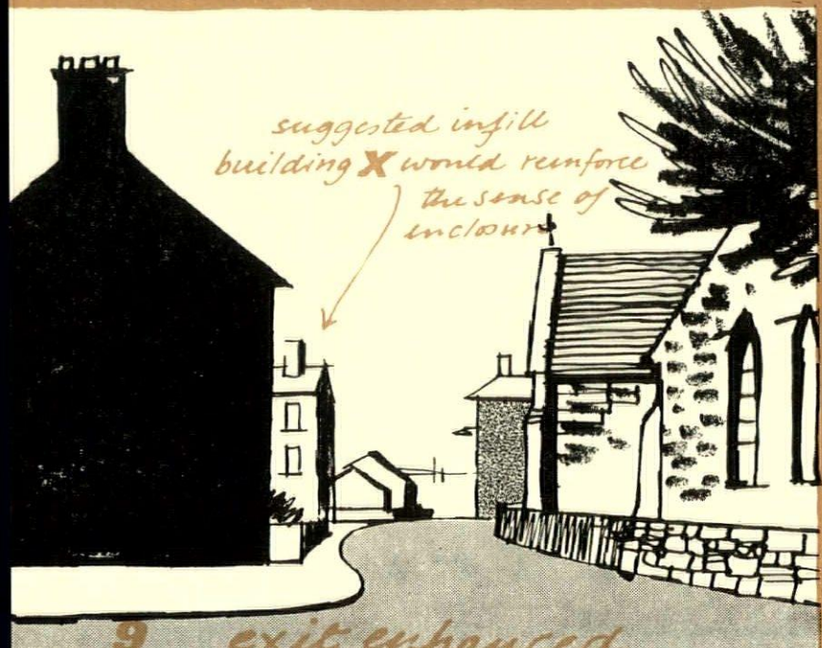
8 enclave

pulling together

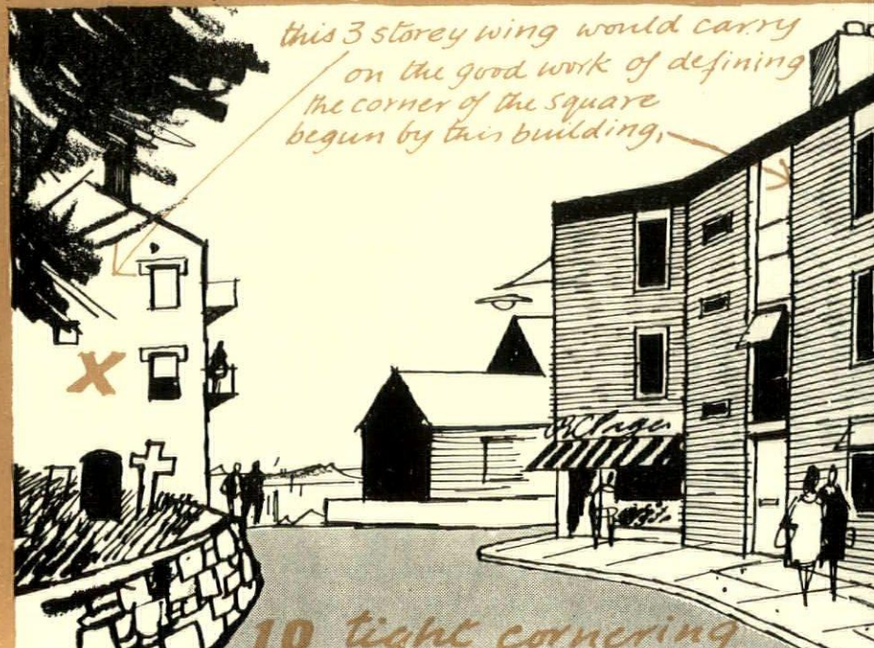
To put even one new building into this delicate mechanism is a complicated thing. There is already a gap in Penkhull, on the south-east corner, and by a mixture of experience and trial and error we feel that a two- and three-storeyed L-shaped block, *x*, would fit. The style is immaterial; it is the shape that matters. The townscape implications fill this page. **7**, the approach, with the sense of entering somewhere different reinforced by the three-storey arm, facing downhill. The footpath has disappeared behind the school on the right to give extra road width; a sightline is not needed on the left if the present one-way system round the church is maintained. Once inside, **8**, there is a new building to take up the grave minuet of forms on the east side. The setback here is not just an idle bureaucratic rule but part of the play of volumes. In **9**, looking the other way, the sense of a narrowness at the village exit is enhanced, and in **10** the distant view is selectively framed to include the distant pitheaps and exclude the new housing which dribbles away down the slope. The building on the right is replaced to exactly the same shape, for this could not be improved on. The kink at the end, which looks like part of the same process as produced the details in Penkhull Square (page 236), is vital for containing the space. Such a little thing, yet so important.

This one new building is all that is needed to start the redevelopment rolling. There is then a reservoir of accommodation, and the next unit can be thought of, patiently and carefully. The west side should be reconditioned as it is, for the houses are well kept up; the remainder of the east side should be replaced, one house at a time, not departing from the old shapes without good reason. It is all a far cry from the council's original plan, but it is what Penkhull and hundreds of villages like it must have if they are not to be killed with kindness; smothered by the 'this-is-good-for-you-dear' ministrations of an over-possessive aunt. One day a week from one architectural assistant would do it, provided he feels for the place. Surely, Stoke-on-Trent, a city of a quarter of a million people, can afford that?

Viewpoints ***7, 9*** *and* ***10*** *on this page correspond with viewpoints* ***2, 6*** *and* ***4*** *on the preceding pages.*



9 exit enhanced



10 tight cornering



This month the REVIEW'S *exploring eye keeps close to the ground and observes some specimens from Mr. Victor Musgrave's collection of cast-iron coal-hole covers, more correctly termed coal-plates or (to revive an earlier term) opercula. These specimens are among a large number exhibited at the end of last year in Mr. Musgrave's own picture-gallery, Gallery One, North Audley Street, London. Coal-plates are hand cast, and their robust modelling, well suited to the material and to the purpose of providing a non-slip surface, together with their lively combination of geometrical pattern and lettering, make them one of the nineteenth century's best contributions to an interesting city floorscape and a branch of folk-art with its own idiom and discipline. Another specimen forms the basis of the cover of this issue. Photographs by Eric de Maré.*




COMMONWEALTH INSTITUTE

1 (*facing page*): *the Commonwealth Institute seen in its parkland setting from Kensington High Street. On the far side of the low white wall is a pool which is linked to a slightly higher expanse of water crossed by the entrance bridge seen in the centre. The main three-level exhibition hall is enclosed with a brick base and vertical patent aluminium glazing with blue-green glass infilling. The stated intention of 'a tent in the park' seems to have been seriously compromised by this external treatment.*

criticism

Michael Brawne

Architects, Robert Matthew, Johnson-Marshall and Partners

Commonwealth Institute, South Kensington

This is the first major public building to be completed in London since the Royal Festival Hall was erected in 1951. It is thus of some significance as an architectural event. Its importance as a piece of architecture rests, however, not so much on any merit it may have as a built object as on the clarity with which it demonstrates a particular way of thought. This architectural thought process is moreover fairly widespread, there are examples all over the world, yet its workings can seldom be seen as clearly as in this instance.

Two starting points can be distinguished in architectural criticism: the first concentrates on the 'how' of architecture, on the stylistic skill of the architect, style used in its literary sense of manipulation of the material at hand, in the case of architecture, that is to say, of space. The danger is that it may never consider more than the cosmetics of building, the shuttering marks of the concrete or the attenuation of the mullion extrusion. Agreement on the approval or disapproval of such aspects creates the taste of a period—boarded concrete, dark brickwork, short skirts, blue eyeshadow.

The second emphasizes the 'what' of building, the content and the grammar of the architecture. It interests itself in reasons as well as visual results or, at any rate, it does not accept that the building as seen is purely the outcome of certain random and undefinable hunches to be judged solely as an object in space. It shifts the emphasis from cosmetics to anatomy.

This is not to suggest a hierarchy of architectural criticism, but only to emphasize these two aspects since sociologists and historians writing as architectural critics tend quite properly to devote themselves to the second, architects themselves to the first. The interest of the Commonwealth Institute as a building to be understood critically is that both considerations can be analysed and can be shown, as they usually are, to be wholly enmeshed.

The Institute, opened by the Queen in November 1962, does a kind of visual public relations act for the Commonwealth in London. It replaces the Imperial Institute which had to make way for the enlargement and current rebuilding of the Imperial College of Science and Technology in Kensington. A good many of the exhibits—mainly educational and aimed at school children—came over from the old building and could in many instances only be altered slightly to go into their new setting.

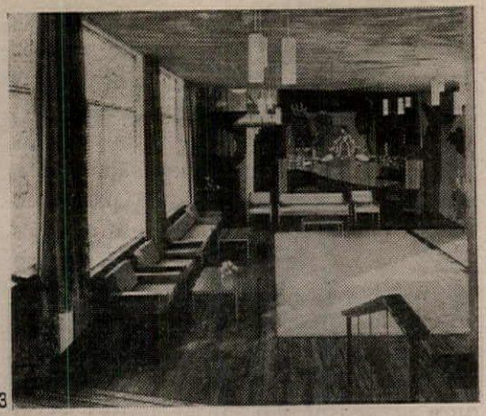
The move had, no doubt, certain symbolic overtones. There was thus, one suspects, a strong feeling that just as the word 'Imperial' was obsolete so was any form of architecture in any way reminiscent of the past. There was a premium on up-to-dateness; only the consciously latest would be in the spirit of the project. The solution was to some extent, therefore, prejudged by an attitude stemming not from analysis but from a need for a literal symbolism: in this case, the unity of the Commonwealth under a single roof. Yet symbolism of that kind is heady and dangerous stuff. Like crowns of thorns or birds in flight, a 'tent in the park'—as the architects have called the single roof—is a debatable starting point. Robin Boyd's warning on the dangers of the 'Engineering of Excitement' brilliantly made four-and-a-half years ago (AR, November 1958) obviously remained unheeded.

This is not to decry the value or importance of the symbolic quality of architecture. On the contrary, all architecture worth discussing has symbolic meaning. It is part of its make-up. But it must, like the symbolism of the Baroque dome, spring from conviction. In today's architecture such conviction is difficult to acquire and even more difficult to convey unless it is rooted in an analysis of the programme. Rooted what is more both emotionally and intellectually.

The tent had also to be up to date. At the time of its design, 1958, this certainly meant a thin warped structure and probably a hyperbolic paraboloid—no hyperbolic paraboloid had yet been built in London. Since then the warped structure has possibly been overtaken by the suspended roof in desirability. This is part



2



3



4

2, the west block containing administrative rooms, library and restaurant in its southern half on the right and the cinema and gallery in its northern half on the left has been cleft open by the exhibition hall so that the goods lift in that corner may be accessible from the service road. The result reveals a doubtful order of priorities.

3, looking down from the board room into the lounge with a curtain by Gerald Holtom drawn across the gable end wall. This is one of a group of subsidiary rooms which occupy the southern portion of the long west block seen in 4.

of an imagined hierarchy of architectural values which says 60 ft. spans are better than 40 ft. spans, 120 ft. better than 60 ft., 2½ in. thick vaults better than 4 in., wires in tension better than concrete in compression without consideration of the specific task to be performed. It places the emphasis on feats of construction rather than on performance in use.

In use the Commonwealth Institute is a series of platforms, some of which deal with movement and hold objects on display while the remainder carry ancillary functions of administration, library, restaurant and so on. It is never a tent, that is to say, a single floor with a roof requiring structure and enclosure springing from the ground. It is a series of floors needing enclosure—whether transparent or opaque is irrelevant—between them and with a roof over the uppermost. As the size of the area to be covered and its use varies, so could also, of course, the shape and expression of the roof. And the structure of that roof could have sprung from the supports which already hold the floors. Given such an architectural expression, the awkwardness of the junction between the two blocks which has given rise to so much adverse comment would not have occurred. The architectural problem of such a junction is obviously not insoluble, yet the undoubtedly best solution is the annihilation of the problem itself, not least since the presence of such problems is frequently symptomatic of fundamental ambiguities.

The visual clash between the two buildings—what John Donat has called the crash of 'an express train hitting an engine shed'—is not only an unfortunate relationship between two forms but the clash between two modes of architectural thought. The low block is a series of decks holding variously sized cells the height of which in terms of use controls the levels of the decks and the scale of the enclosure. The supposition is that here is something specific and that out of its particular nature a visual order and form can be created.

The main square exhibition building is, on the other hand, judged at least from the outside, a single envelope over apparently undifferentiated space. Its only job, it would seem, is to provide enclosure for activities whose nature is either unforeseeable or devoid of any particularity. The assumption underlying such architecture is that given enclosure—given that is to say a kind of absolute space—an infinite number of activities can go on within. Enclosure, whether of Manhattan under a dome or of an exhibition under a roof, is, however, only the beginning and one aspect of the architectural problem. The remainder, and especially the manipulation of space related to purpose, still remain to be solved.

Fortunately they were not neglected in the interior of the exhibition hall. Similar spaces which had previously been used for exhibition purposes had hardly been successful and were, presumably, a warning. Both the Dome of Discovery at the Festival of Britain and the American Pavilion at the Brussels Exhibition, for instance, had tried to present display in the amorphous space left within the enclosure and failed. The amount of information available within the field of vision at any one time was far too great and one's orientation in space impossible to judge. They probably failed because the vital place within a centralized space, the centre, was both barred to the public and neglected as a focus. The Commonwealth Institute completely reverses the situation. By a long and subtle progression from the street it leads



6



5

5, the canopy leading to the entrance serves an important function in excluding most of the sky from view so that the eye can accommodate itself to the lower levels of light to be found inside. The visually disturbing junction between concrete support, roof and wall is, like the junction between the main exhibition hall and the block seen in the distance, part of the unresolved clash between intention and executed form.



7

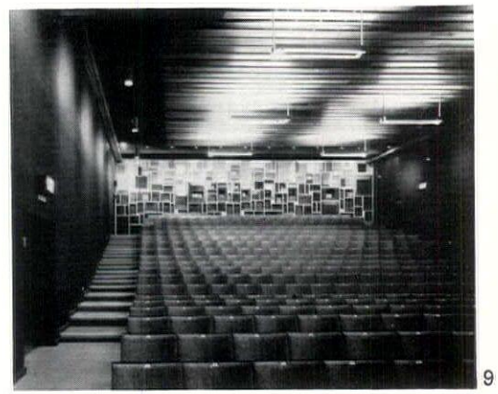
6, 7, the inner part of the roof, resting on two supports by-passed by the upper gallery floor, is a square hyperbolic paraboloid concrete shell. This is counterbalanced by an outer warped roof of timber beams and wood-wool slabs. The two sets of surfaces are seen again externally in 2. The general lighting level inside the exhibition area is relatively low and the exhibits arranged by countries have local lighting and thus attract by glowing in the darkened space. James Gardner's techniques do a good deal to maintain interest but seldom produce memorable sequences.



8, *the central platform which acts as a terminus to the controlled route from the pavement on Kensington High Street and which then becomes the reference point from which particular exhibition areas can be chosen. It is the focal point of the square hall and its galleries. The opening in the middle reveals a map of New Zealand 'down under.'*

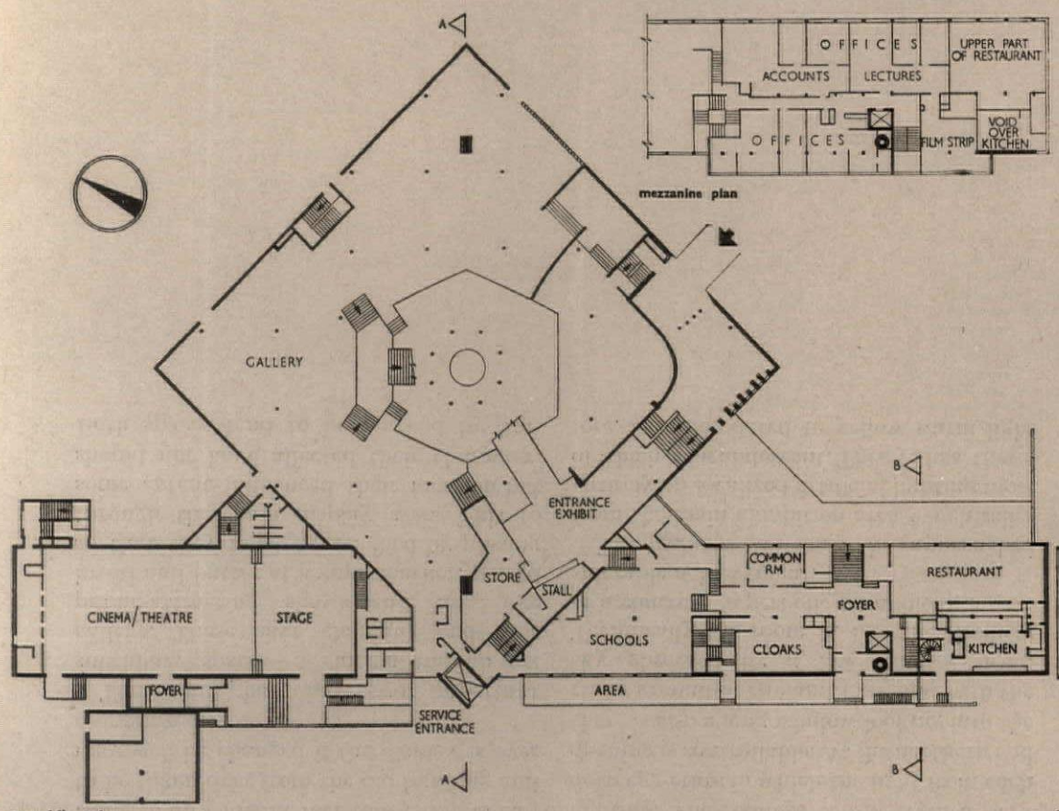
Commonwealth Institute, South Kensington

9, *the cinema is immediately under the art gallery at the north end of the long block. It is, like the gallery, entered from the main exhibition space although it is also possible for it to be reached from a separate foyer opening on to the service road along the west. In either case the entrances are at the side of the cinema. Apart from this the space is obviously unidirectional towards the stage or screen; yet paradoxically enough the main design effort has been expended on a multi-coloured screen at the rear.*



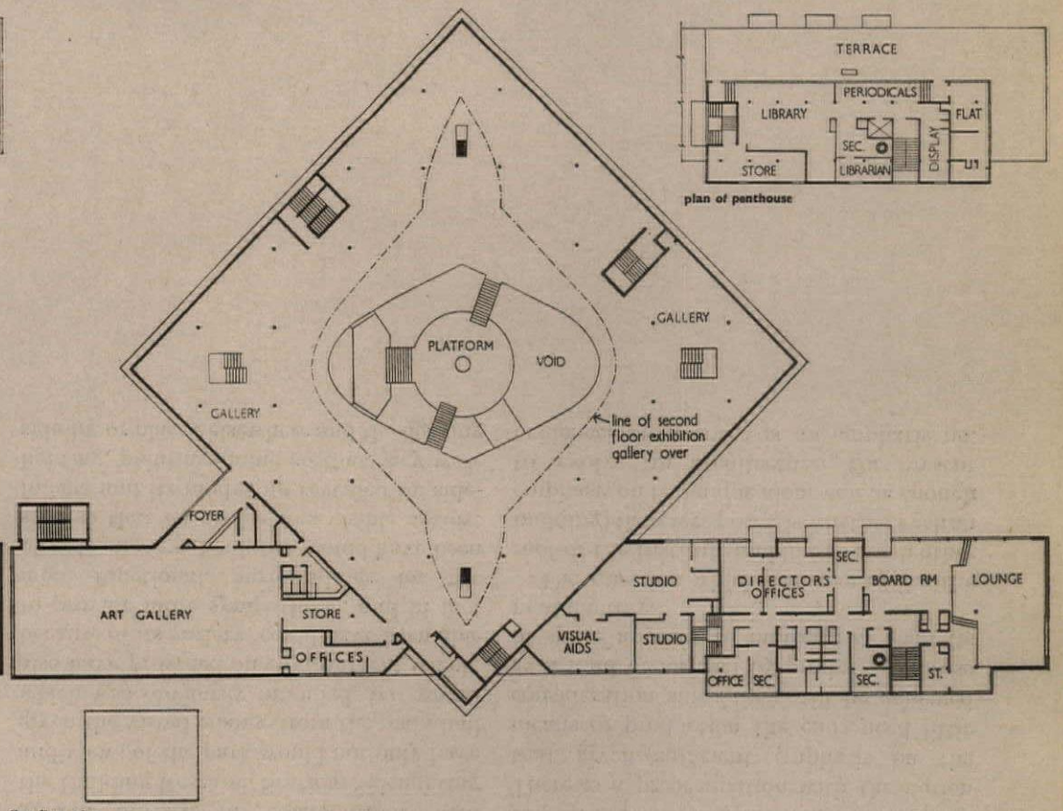
10, *the art gallery houses changing exhibitions of paintings and sculpture and is lit by a system of coffered roof lights. Each coffer also houses fluorescent lighting and a blind which can be drawn across the opening. The window at the rear gives a view of the rising ground of Holland Park, but because of its low position reveals little of the sky. The gallery is entered from the door at the right, roughly in the middle of its length, so that half the gallery can be shut off while the next exhibition is prepared. The attempt at limitless flexibility has in fact produced an environment of serious restrictions: it is extraordinarily difficult to create unique situations related to the nature of the exhibit.*





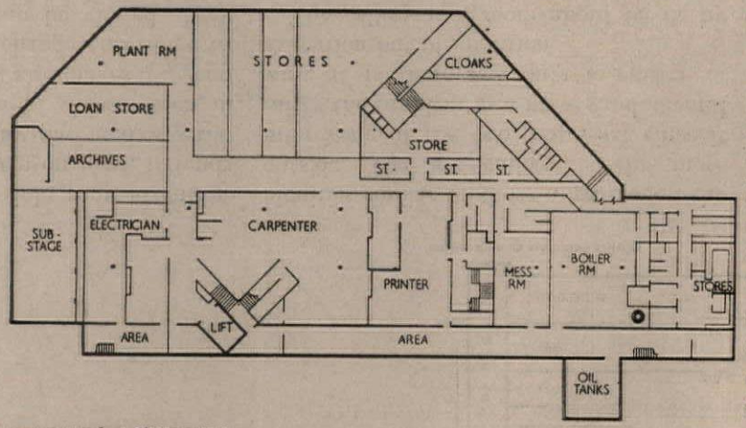
ground floor plan

mezzanine plan



first floor plan

plan of penthouse

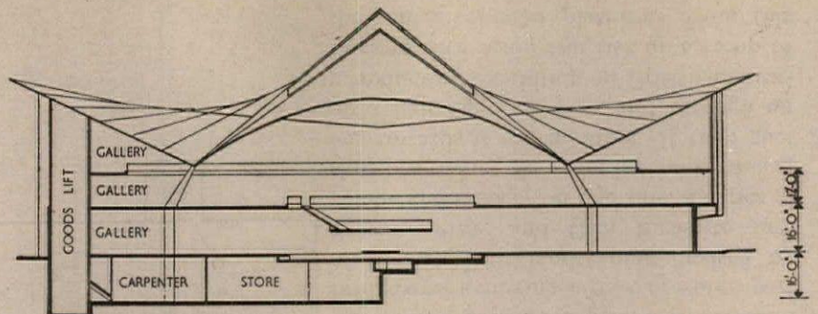


basement plan (scale 1/64 in. = 1 ft.)

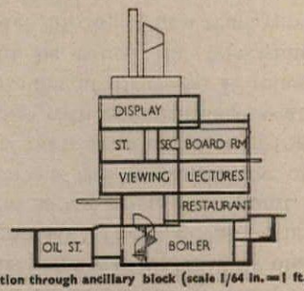
the visitor to a platform in the centre of the exhibition space.

The walk starting at the Kensington High Street pavement is controlled by water which provides both security and pleasure, by steps and by a canopy which cuts out views of the sky and so adjusts the eye to the lower levels of light which will be met inside. The path then crosses a bridge over a moving surface of water, part of the excellent landscaping devised by Sylvia Crowe, and then turns to face colour and display on one side, a series of slots positioning the main hall and enticing one towards it on the other. It then goes up a half flight of steps and through an introductory exhibition on British Institutions to turn again and rise up a ramp to the central circular platform. From this pivotal point the routes radiate to the upper galleries and the lower exhibition floor. One is simultaneously able to apprehend the space and select the display to be seen. This single central vantage point is the crux of the internal organization and as such wholly successful. The only pity is that the earlier proposal in which the countries would be identified by banners visible from this point was replaced by one relying on signposts. These devalue the central platform as the orientation point.

The display was the responsibility of James Gardner and is an adaptation of the technique he used with hypnotic success at the British Pavilion at Brussels. It relies on what might be called the television display method, a lit object in a relatively dark surround. While the system ensures,



section through exhibition galleries



section through ancillary block (scale 1/64 in. = 1 ft.)

as far as that is possible, some attention being given to the item on view, it tends to isolate each display and makes serial viewing—the relation of objects seen in sequence—difficult. It also makes it a good deal less simple to change the range at which the exhibits can be viewed. They tend at the Commonwealth Institute as a result to be seen at very much the same distance and therefore to be making rather the same impact. This may have had something to do with the fact that exhibits had to be taken over from the old building and may well be changed if the display is ever reorganized.

The main hall has two important subsidiary spaces—a cinema and an art gallery. These have changing and thus public-attracting shows and are, like bread and butter at a supermarket, placed so that they must be reached by passing through the main display area. This to some extent influenced their location but should not have affected their character. Both spaces tend to be marked by ambiguities similar to those apparent on the outside. The art gallery is the more interesting of the two, not least since it raises the problem in a more fundamental way; it is there not only a matter of execution but of intention.

The gallery is a room about 95 ft. by 45 ft. on the top floor of the northern part of the low block. It is meant for pictures and sculpture and a great deal of effort has gone into the design of a system of natural lighting. The room is top-lit from a very deep egg-crate in which the light from each opening is controllable. At the northern end there is also a long window looking into the rising ground of Holland Park and with the sky obscured by a low window head. Technically the room is, like the thinness of a concrete hyperbolic paraboloid, a considerable achievement.

The gallery can only be approached from the main exhibition area which relies entirely on localized artificial lighting most of which is incandescent. The eye has, therefore, accommodated to yellow warm light concentrated on specific zones. It is now presented with diffuse natural light excluding the sun which, if necessary, is reinforced by fluorescent lighting. The shock is considerable despite the transition through the louvred corridor. This in itself might not matter had the change been a real gain.

The room has three outside walls and could, like the new wing of the Stedelijk Museum in Amsterdam, for example, have been lit without recourse to the elaborate system devised in collaboration with the Building Research Station. Sidelighting and views of the park would not only have given the visual change from the main hall which was obviously intended, but would also have provided an environment which, because of its variety, could have been able to provide more sympathetic, and in fact more functional, surroundings for the objects on view. Sculpture could have been seen so that its profile was visible against foliage and its modelling revealed by sidelighting, paintings hung so that they were side-lit, or placed elsewhere and the lighting reinforced by artificial illumination whose strength and tonality would depend on the exhibit itself. Etchings do not need the same lighting as oil paintings and should not receive it. The possibility of creating a conscious relationship between space, lighting and exhibit was there, it existed both in terms of the site and the use within the space. It seems, however, to have been deliberately avoided.

The interest was elsewhere. This is, of course, true of a great deal of building. There is a preoccupation with the notion that given sufficient emphasis on the means of production the ends need little consideration since they will be achieved as a kind of natural by-product. The use of space appears to matter less than its manufacture.

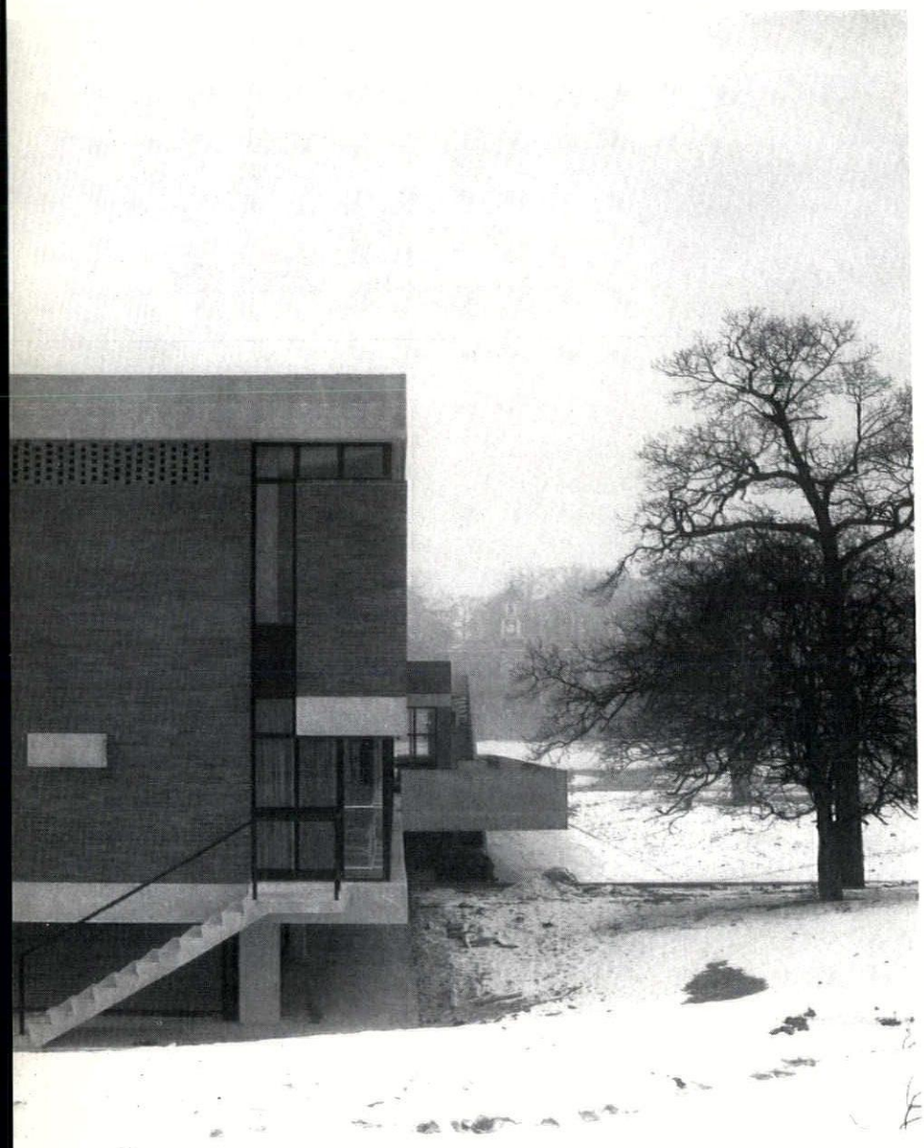
The question which this room (like the roof of the Institute and like so much other building) therefore poses, is whether such an emphasis on technique alone can be enough to evolve an architecture. On present evidence, the answer is an emphatic no.

STUDENTS' UNION, UNIVERSITY OF KEELE

ARCHITECTS | **STILLMAN AND EASTWICK-FIELD**

1, general view from the west.





2



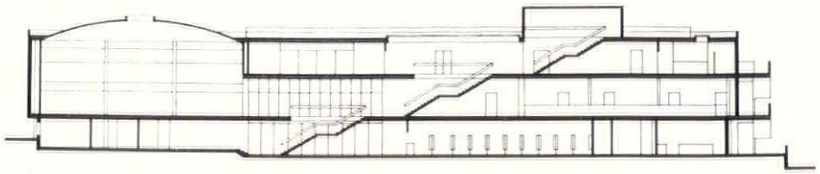
3

2, the north corner showing the external staircase to the ballroom and the cantilevered terrace over the entrance on the right. 3, the south-east side. 4, 5 (facing page), the ballroom; the walls are lined with Columbian pine boarding over sound-absorbing glass wool. Lighting is by 300 w. tungsten reflectors which can be directed at the floor or ceiling. The ceiling is coated with white glass chippings.

A building to house all the social and recreational activities of the students at the University of Keele, Staffordshire, which is wholly residential. It was designed for about 1,200 students—roughly 750 men and 450 women. The students themselves helped to assess the requirements and brief the architects, under the general guidance of the university's registrar and the university's architect, Mr. J. A. Pickavance; they also helped the architects of the building to choose furniture and fabrics.

Among the accommodation required was a large ballroom, but not a stage for drama. Since the students take their meals in refectories elsewhere, a snack-bar rather than a full-scale dining-room was required in the union building. The accommodation has been planned in three storeys, with the main communal rooms on the first floor: ballroom, lounges, bar, snack-bar and kitchen. These are arranged en suite, round a central circulation area. This area rises the full height of the building from a ground-floor concourse, and contains the main staircase which consists of three straight flights. The main (first) floor also has outside terraces and staircases, including a terrace opening off the lounge, which is cantilevered 18ft. over the main entrance doors.

The ballroom, which is of double-storey height with a shallow domed roof, is large enough for 300 couples and seats 600 for debates, etc. It has small balconies reached by spiral staircases and from the second-floor games room. Under the ballroom are the offices, which have their floor level stepped up to correspond with a rise in the ground at this (the north-eastern) end of the site. There are also four committee-rooms, three of which can be thrown together for larger meetings. The remainder of the ground floor is occupied by a shop, a bank, a



section



5

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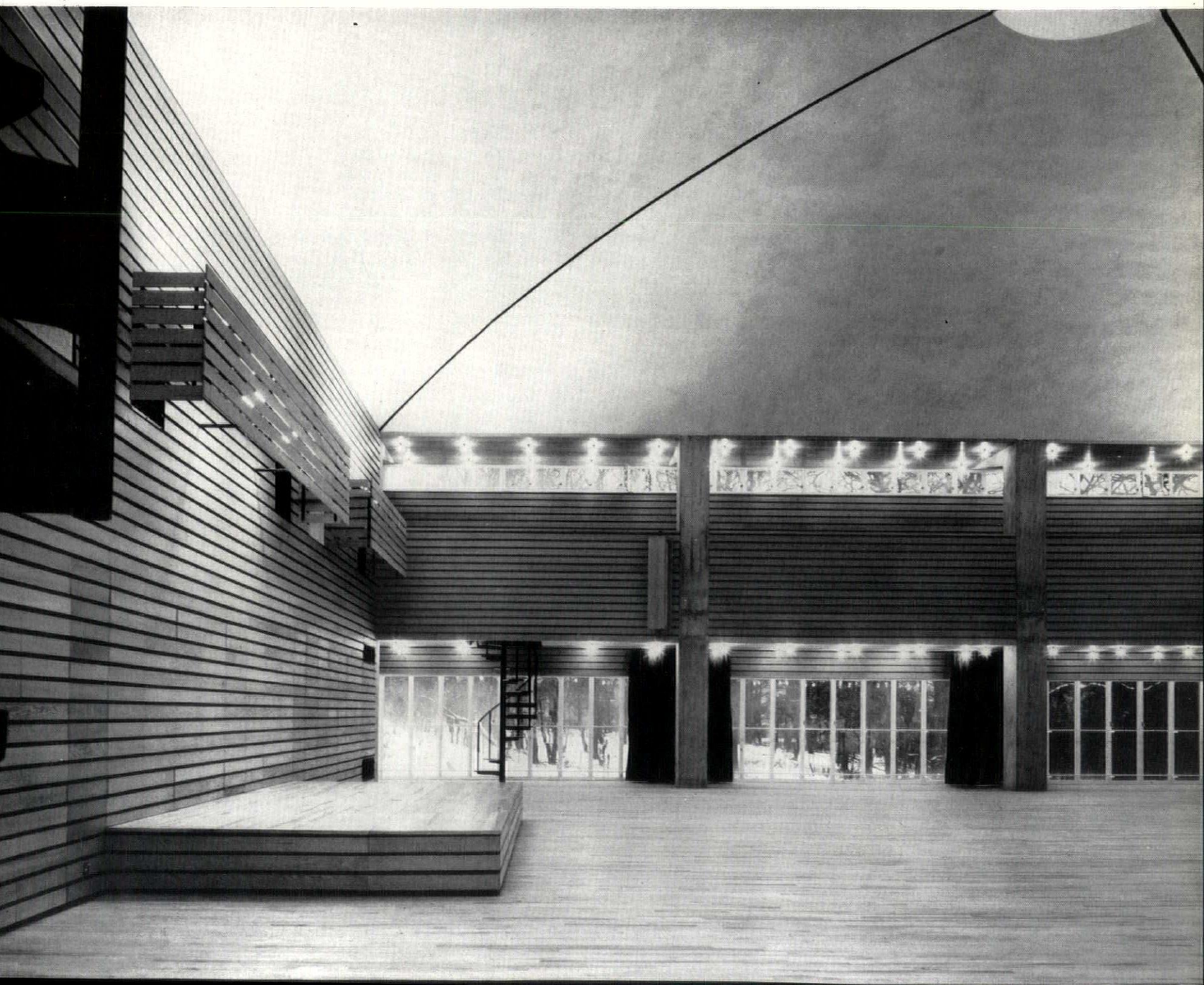
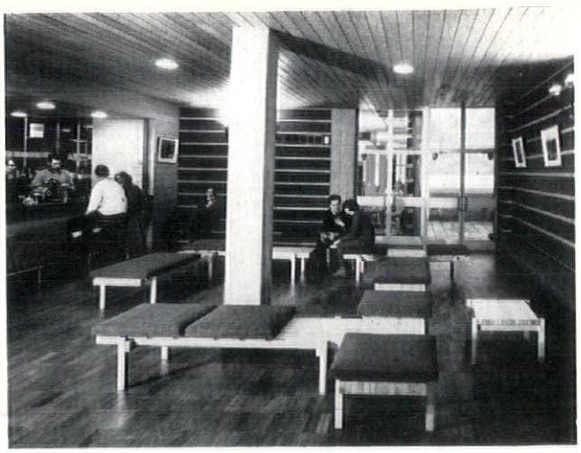
4





6

6, the bar, which receives daylight only through the two pairs of glass doors. The walls are painted sludge and have battens for fixing decorations. The ash bench units were designed by the architects. 7, 8, the staircase in the main concourse.

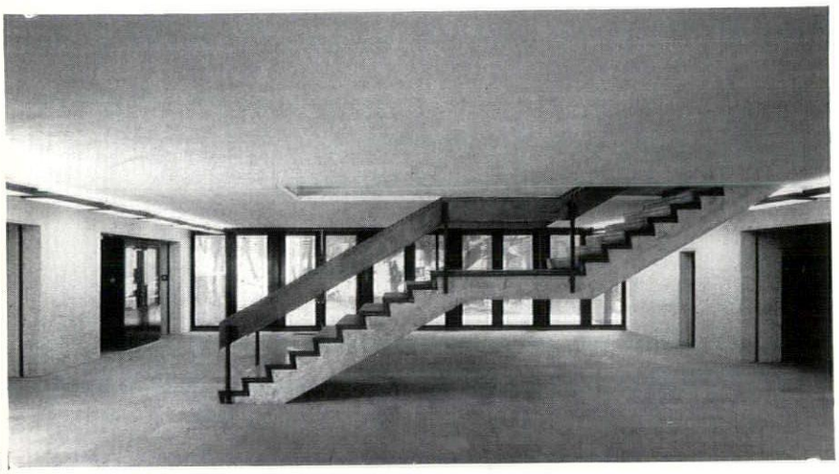
STUDENTS' UNION, UNIVERSITY OF KEELE

photographs by Henk Snoek

barber-shop, cloakrooms, stores and a workshop opening on to a yard at the back. On the second floor are games rooms, music-rooms and a periodical room.

The structure, including that of the dome over the ballroom, is reinforced concrete. This is for the most part left in its natural state, both inside and outside; a special white limestone aggregate has been used, which is exposed in the external work to improve weathering. Infill walls are of 2in. blue Staffordshire bricks. Windows and window-frames are metal, painted black. Internally the pattern set by the framed building is emphasized by the ranges of exposed columns and by the exposed coffered concrete ceilings in the snack-bar and periodical rooms. Apart from exposed concrete, the materials chiefly used are Norwegian Altazite stone for floors and white marble riven mosaic for walls in the entrance hall, and hardwood for the main doors and the staircase. The treads and handrails of the latter are of African padouk, which has a strong red colour. Where walls are plastered they are painted white, leaving the colour to be provided by curtains and upholstery.

Associate in charge, Ralph Smorczewski. Assistant in charge, F. R. Baden-Powell. Structural engineers, Donovan H. Lee and Partners. Mechanical and electrical engineers, Hoare, Lea and Partners. Quantity surveyors, Harry Trinick and Partners.



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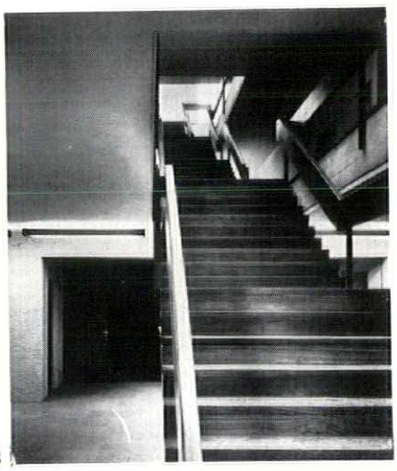

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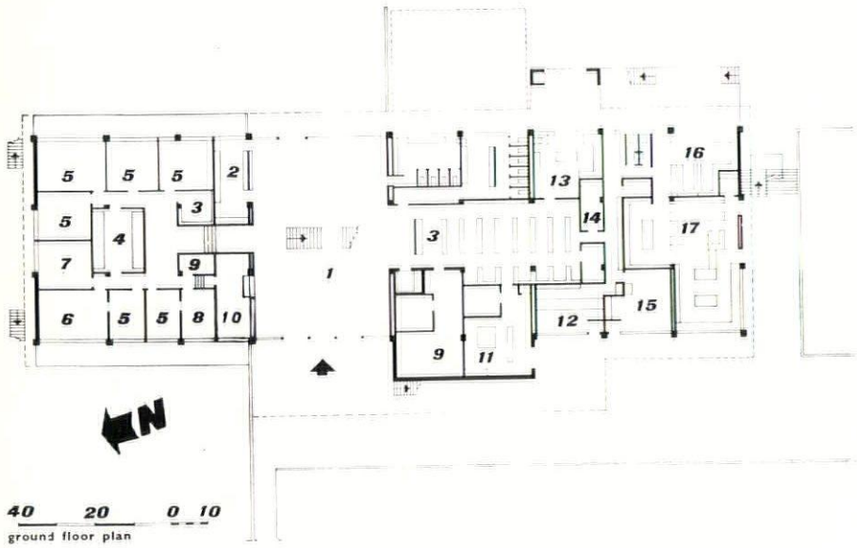
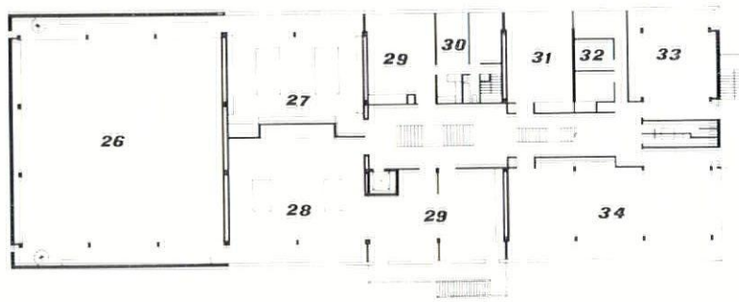
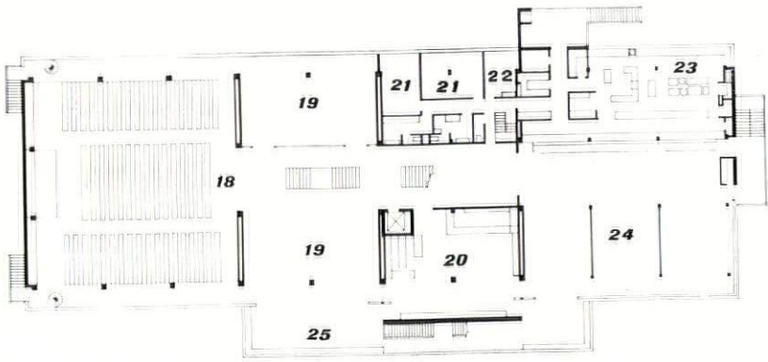


ground floor plan



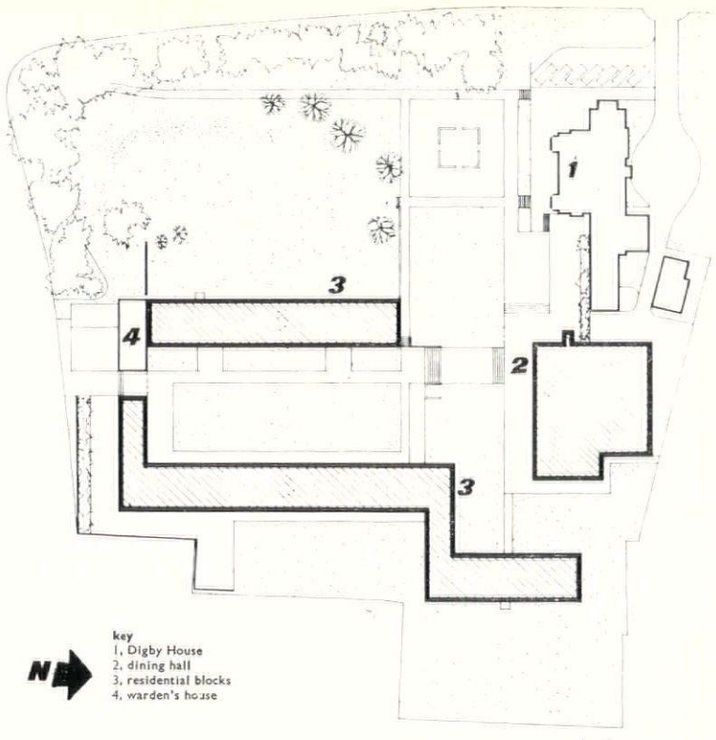
second floor plan



first floor plan

key

1. concourse
2. mail and telephone
3. cloakrooms
4. society lockers
5. society rooms
6. president
7. treasurer
8. secretary
9. stores
10. general office
11. bar cellar
12. bank
13. workshop
14. dark room
15. barber
16. shop store
17. shop
18. ballroom
19. lounge
20. bar
21. staff rooms
22. steward's office
23. kitchen
24. snack bar
25. terrace
26. ballroom (upper part)
27. billiards room
28. table tennis room
29. general purpose room
30. caretaker's flat
31. TV room
32. music practice room
33. music room
34. writing and periodicals



site plan

HALL OF RESIDENCE, LEICESTER UNIVERSITY

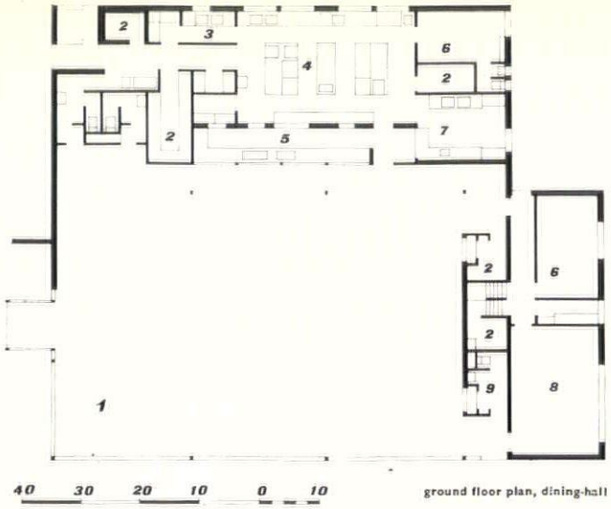
ARCHITECTS | **RICHARD SHEPPARD, ROBSON AND PARTNERS**

1, from the west with the dining-hall left and the residential building right.

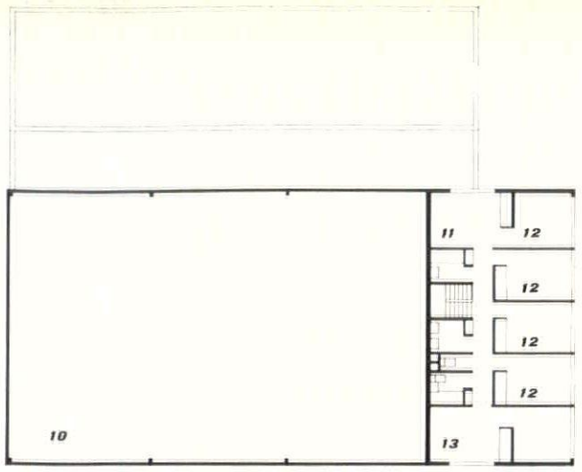


Known as Digby Hall, this hall of residence has been built in the garden of a large suburban house of 1908, which has been retained to serve as the communal centre and to provide rooms for 12 students. The new buildings consist of a dining hall with kitchen and a residential block containing another 152 study-bedrooms. So as not to disturb the dense woodland on the west side of the site, the dining hall adjoins the original Digby House on the east and the residential block adjoins this on the south. The latter encloses a





ground floor plan, dining-hall



first floor plan

key
1. dining hall
2. stores
3. vegetable preparation
4. kitchen
5. servery
6. staff room
7. wash up
8. senior common room
9. cloaks
10. upper part of dining hall
11. cook's sitting room
12. staff bedrooms
13. supervisor's sitting room and bedroom

HALL OF RESIDENCE, LEICESTER UNIVERSITY



4

2 (facing page, top), close-up of timber ceiling in the dining-hall, 3 (bottom), the dining-hall from the south. 4, looking along the east side of the residential building.

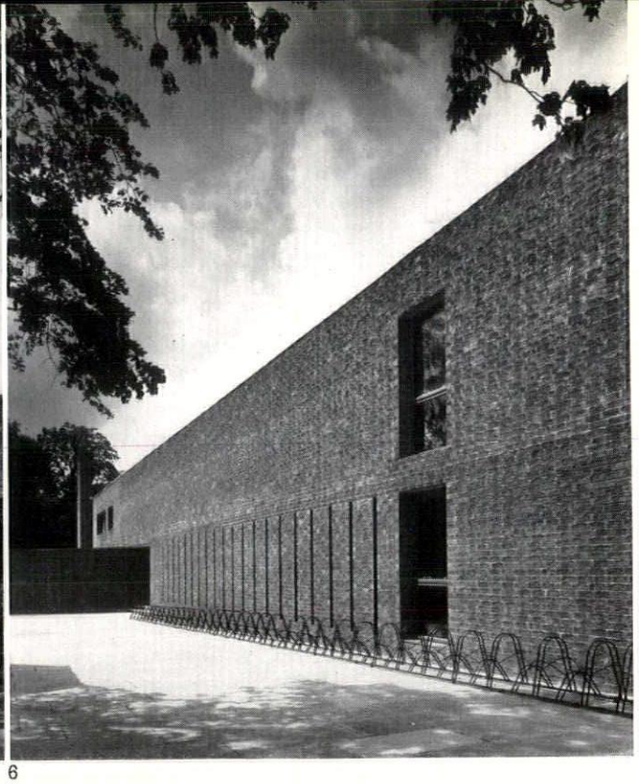
courtyard (see site-plan), which is at a lower level than the terrace in front of the dining-hall, to which it is connected by broad flights of steps.

The dining-hall, which was completed first, has steel framed walls clad with Western red cedar. The timber ceiling and roof are raised to allow clerestory lighting all round ; artificial lighting is by fluorescent tubes concealed in a trough which also runs all round the hall. The eastern end of the hall has an upper floor with accommodation for the resident domestic staff.

In the residential block the study-bedrooms are grouped in four units of 24 and two of 28, each unit



5

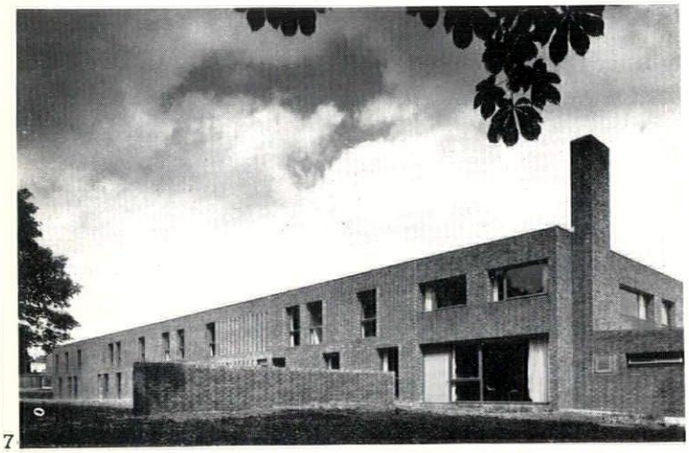


6

HALL OF RESIDENCE; LEICESTER UNIVERSITY

having its own staircases, with a large entrance hall furnished as a common-room and a screened-off kitchen at the back. The ancillary rooms (except for the bathrooms, which adjoin the study-bedrooms) are grouped round the staircases, so that each group of six or eight study-bedrooms has its own lavatories and each group of twelve or fourteen its own kitchenette. Each study-bedroom is 13 ft. 6 in. by 9 ft., giving a floor area of 121½ sq. ft. including personal storage.

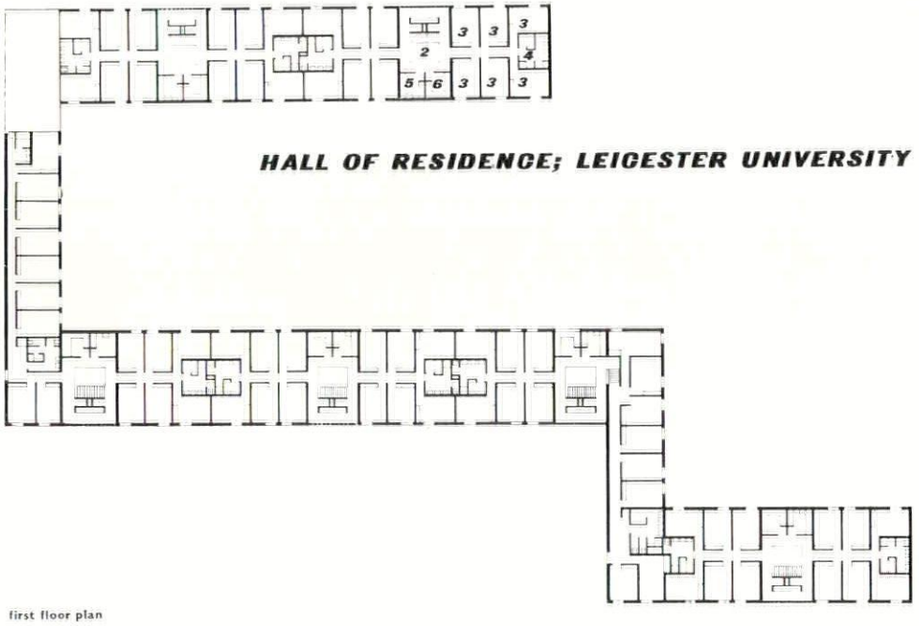
The building is of local brick, strongly coloured and textured, the rugged character given by the brickwork being emphasized by the proportions and irregular placing of the window openings. Floors are reinforced concrete slab, roofs of timber covered with felt and windows of Columbian pine, mainly of the projecting push-out type. Each room has low-pressure convector heaters, thermostatically controlled.



7

5, the residential building from the south. 6, looking along the south wall of the residential building. 7, from the south-west; the warden's house is on the right.

photographs by Colin Westwood



first floor plan



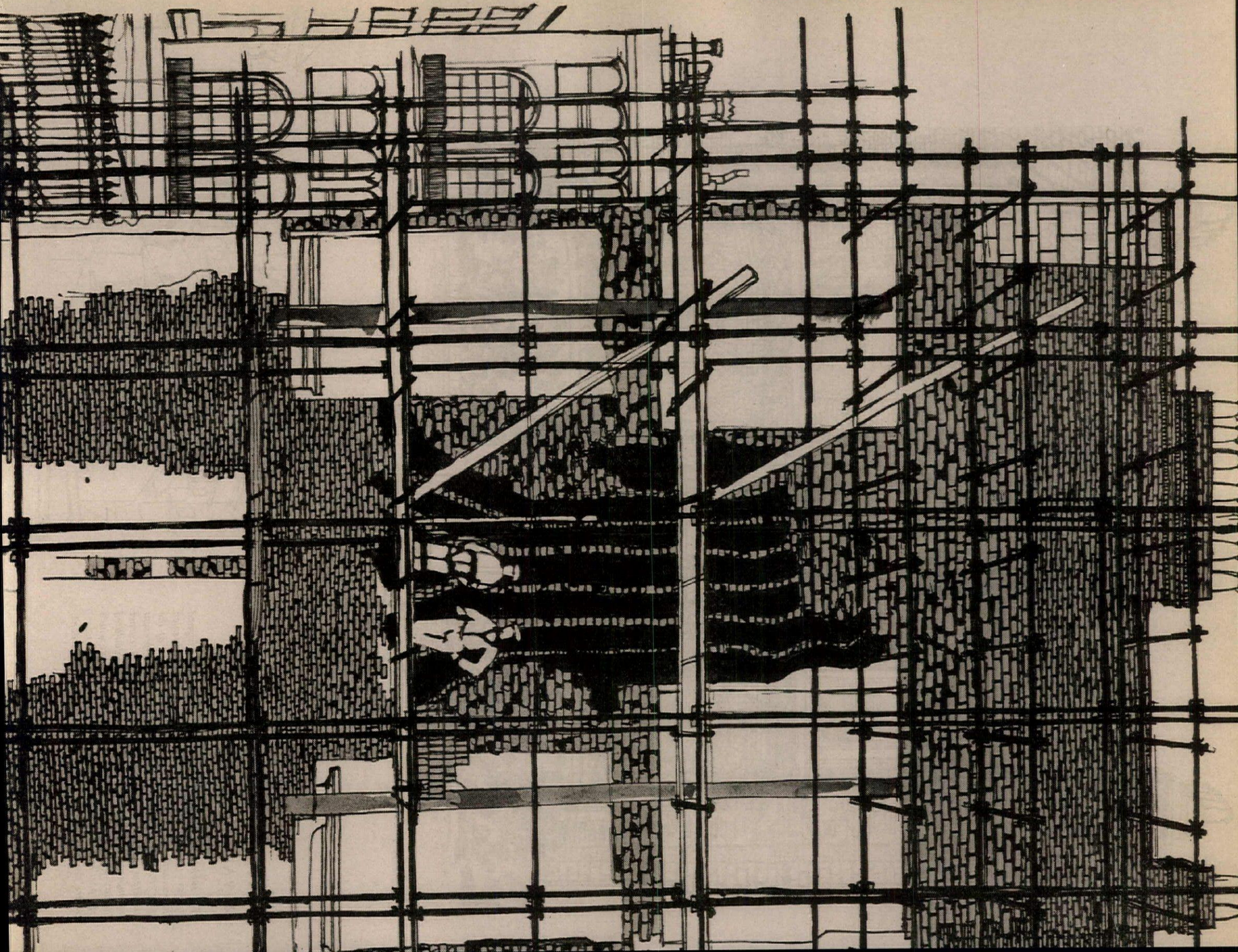
ground floor plan, residential block



CONTEMPORARY DRAUGHTSMEN: 2, VALERIE BAKER

The subject of this second instalment of a series designed to show the work of the younger architectural draughtsmen is primarily a textile designer. She trained as such at the LCC Central School of Arts and Crafts. She is at present assistant to the London designer of a Scottish carpet manufacturer. She is 25. She is interested in the 'calculated beauty of mechanical objects' and in architecture, which she particularly likes to draw in the East End of London, where the drawings here and on the next page were done.





Air Line Office Victoria

ID
a monthly review of interior design

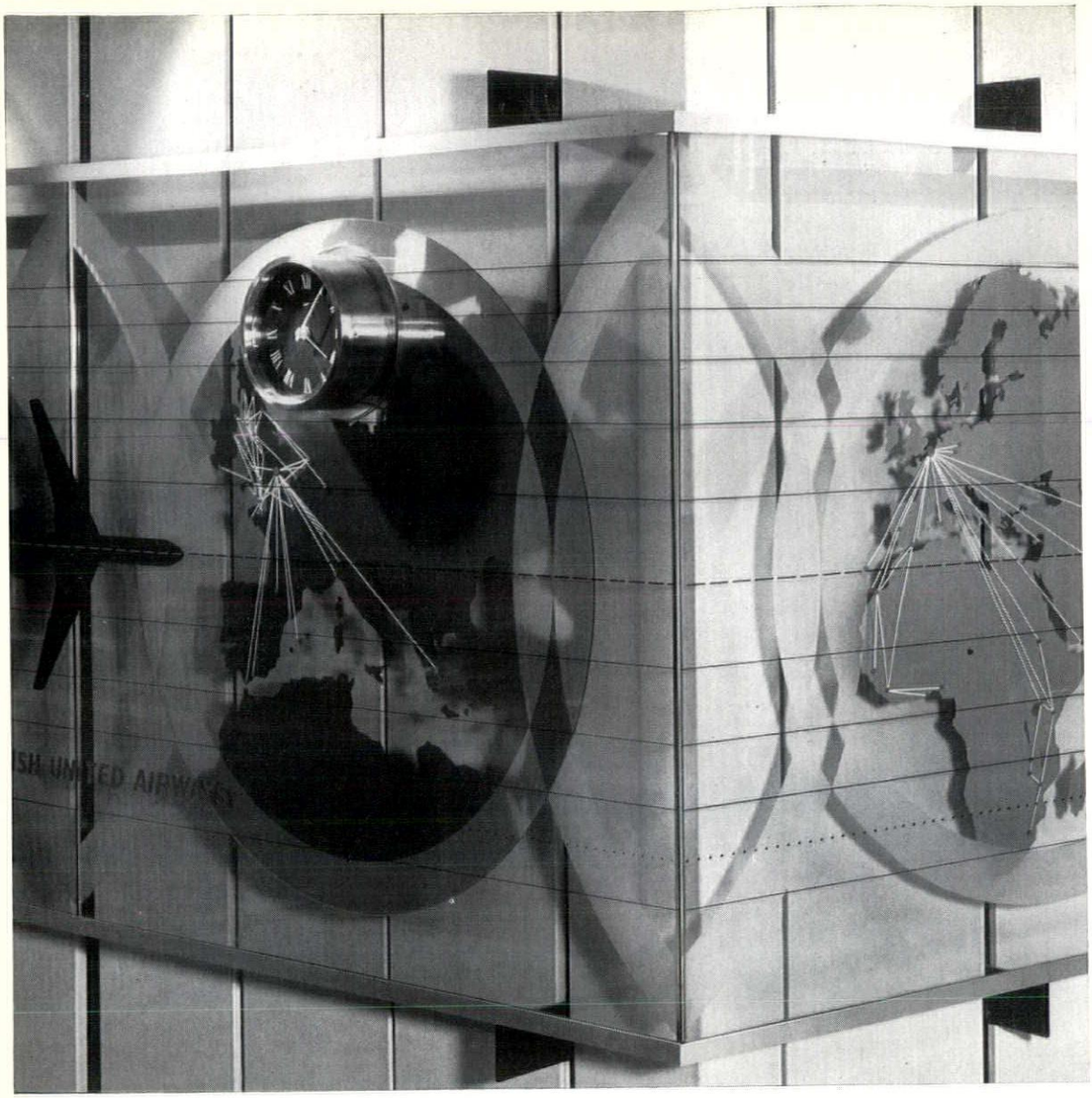
architects: Clive Pascall and Peter Watson

1, the car-ferry booking area.



Air Line Office, Victoria

Located on the ground floor of Portland House, one of the new tower blocks on the old Stag Brewery site, Victoria Street, London, this inventively-detailed office is in two symmetrical halves on either side of the main entrance to the block—to the north, the car-ferry booking area (seen on the previous page) and to the south the passenger booking area, from which the details on this and the next page are drawn, with a plan below.



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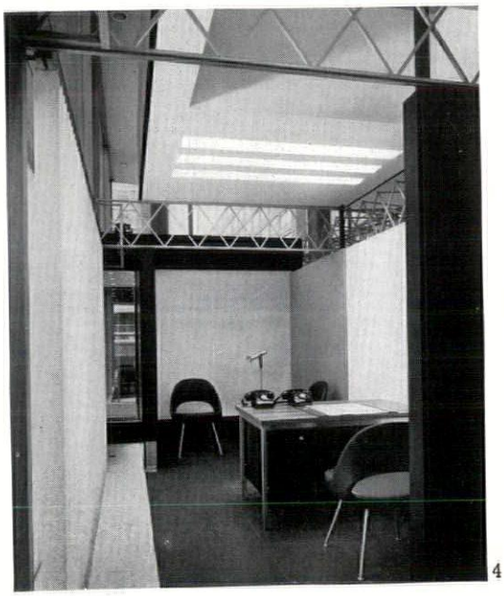

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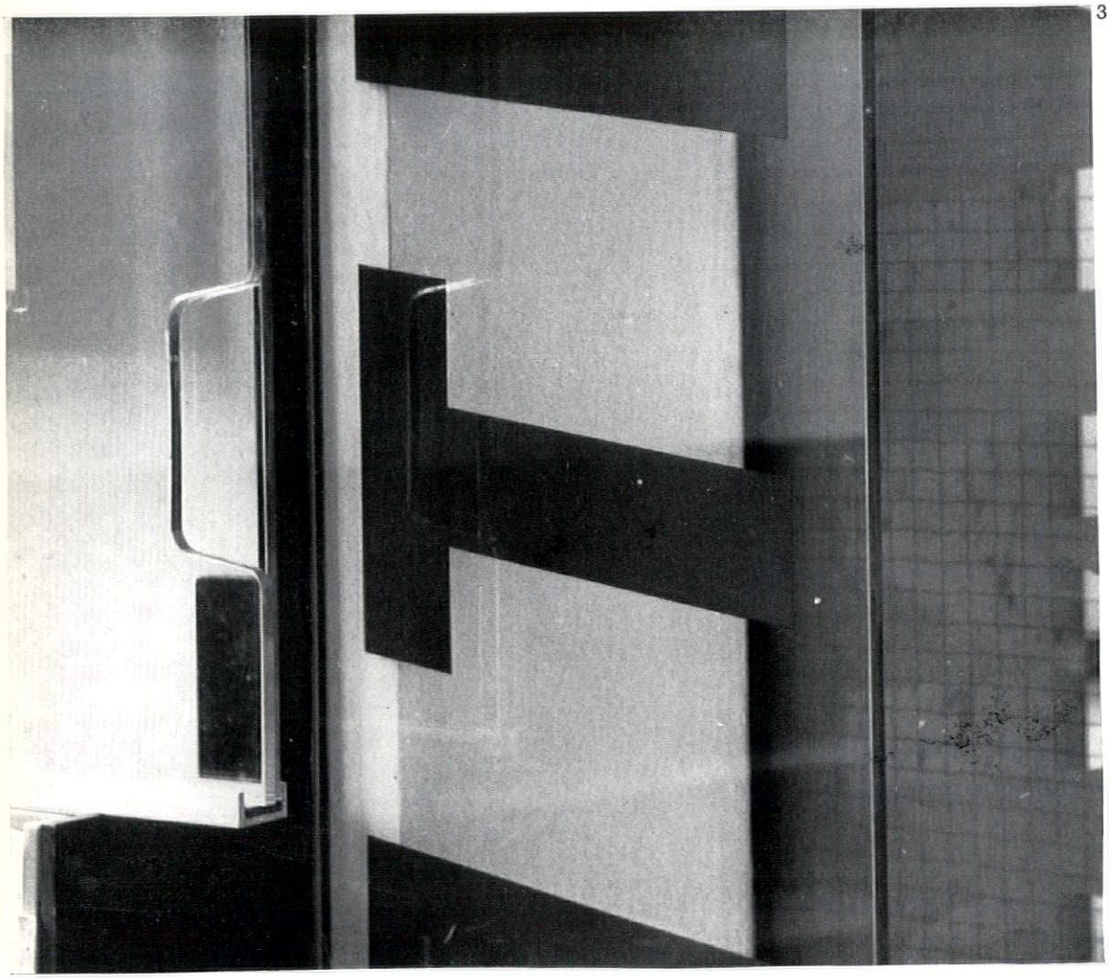
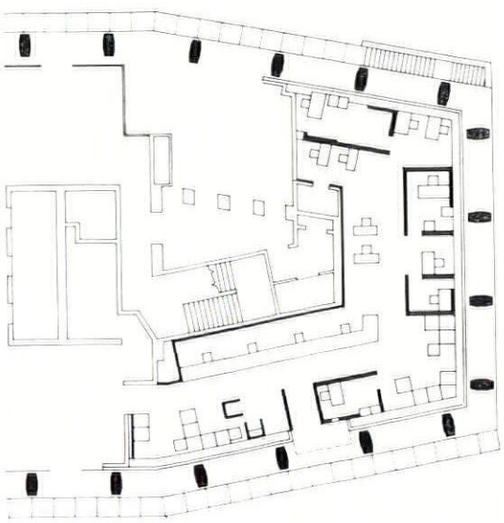
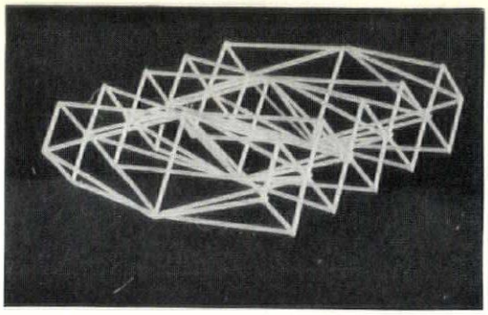


3

2, decorative glass screen of route-maps etched and colour-filled both sides with routes applied by silk-screen printing, carried in anodized aluminium frame.
3, lettering on glazed screen adjoining entrance from main hall of Portland House; at left, finger catch on sliding glass panels for framing travel posters, also visible at left in illustration 1, on previous page.
4, inside one of the office enclosures, with adjustable louvered sun-blind to outside windows at left. The external faces of the office-partitions are clad in interlocking black-anodized aluminium panels.

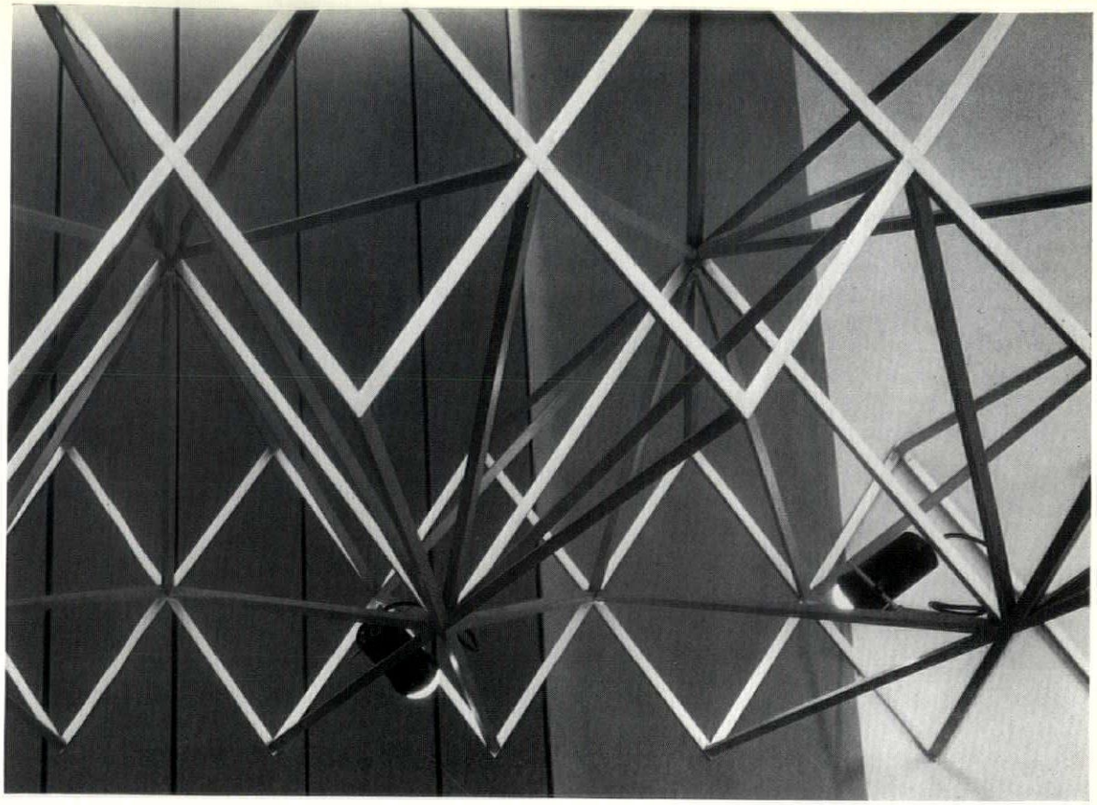
plan of passenger booking area





5

5, architects' design-model of space-frame structure for suspended ceiling.
6, close-up detail of space-frame and lights. The space-frame serves as a visual ceiling over the otherwise undefined circulation area down the centre of each booking space (best seen in 1, page 277) and carries spot-lamps to light the wall-maps and displays. The trusses which carry its weight also serve to steady the partitioning round the office-enclosures.



6

Men's Shop, Knightsbridge

architects: Bryan and Norman Westwood and Partners

ID

The shop, for Austin Reed, occupies the front part of the ground and first floors of a new block in Brompton Road, London, and each floor is roughly trapezoidal in plan with the main staircase rising in the centre. This is the latest in a series of new or re-designed interiors that this office has designed for Austin Reed. Norman Westwood was the partner in charge, Eric Leach the associate partner and John Holmes the assistant.

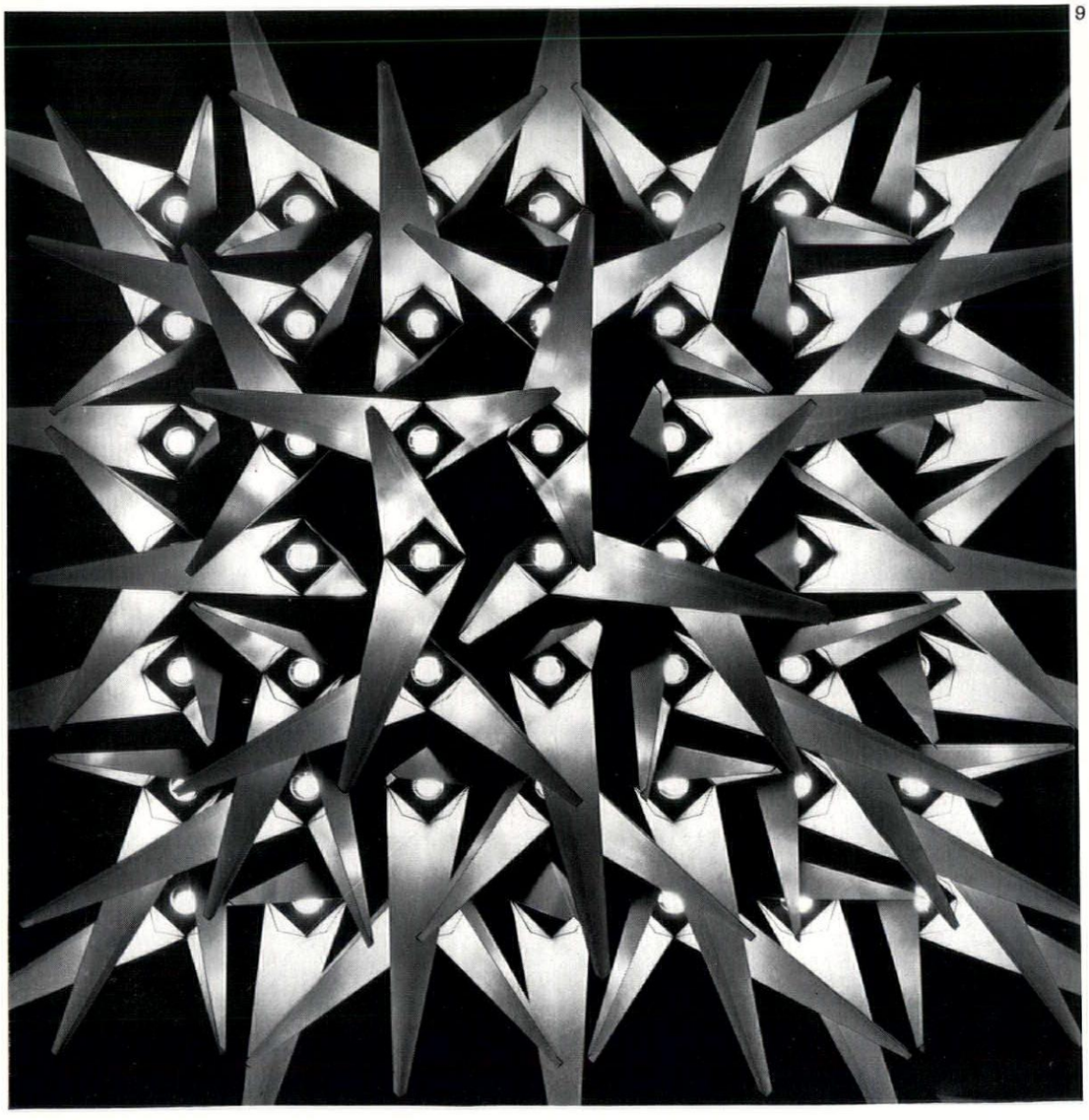
7, looking across the ground floor and the foot of the staircase—as will be seen, the sales fitments are all free-standing with no sense of anywhere being 'behind the counter.' The floor, where not carpeted, is of delabole slate, and the woodwork of the fittings is afrormosia carried on satin-finish stainless-steel legs.



7



8



9

Men's Shop, Knightsbridge

8, the top of the staircase at first-floor level. The balustrade is of teak carried on steel balusters with infill panels of smoky glass. Most of the visible woodwork at this level is teak and, although the floor is almost entirely carpeted, areas liable to heavy wear around the top of the stairs are in slate.

9, looking up into the masked diffuser-lamps and aluminium reflecting fins of special light-fitting by John McCarthy over the staircase.

10, exposed structure of the main staircase at ground-floor level, with sales fitments and display underneath. The decorative screen of glass, variously coated with transparent plastics in rich colours, was also designed by McCarthy, and serves to set off the predominantly natural wood colouring of the interior.



ID





The article opposite deals with an important Palladio problem: the origin and authorship of the main facade of one of Italy's most celebrated churches, S. Giorgio Maggiore in Venice. The facade is discussed in relation to that of another Venetian church, the church of the Redentore, and the exteriors and interiors are illustrated on this page, S. Giorgio in each case being on the left. The author of the article is curator of the collection of architectural drawings at the Royal Academy of the Fine Arts at Copenhagen.





HAKON LUND

THE FACADE OF S. GIORGIO MAGGIORE

The façade of S. Francesco della Vigna in Venice bears the following inscription: NON SINE JUGI EXTERIORI INTERIORIQUE BELLO. This sentence no doubt refers to certain difficulties which arose during the erection of the church. The existence of a philosophical programme for the proportioning of the building is known.[1] Professor Wittkower has drawn attention to the fact that in the plan of the existing building the programme has been followed fairly strictly.[2] The façade drawn by Sansovino was rejected, and we know it only from a medal. It seems to have been a traditional two-storeyed front of the type first used by Alberti for S. Maria Novella in Florence. In his critical programme Giorgi established that the façade was to correspond to the inside of the building, and that from it one should be able to grasp the form of the building and all its proportions. It remains obscure why the original project was abandoned, and we cannot be sure whether the front as seen on the medal complies with the programme or not.[3]

When Palladio built his façade some thirty years later, the use, although modest, of proportions corresponding to those employed in the church proper, shows that Giorgi's programme had not been forgotten. The front as we see it today certainly does not allow us to grasp the form of the building and all its proportions. An architect with Palladio's background could not have drawn a façade preparing the observer for the sight of the fairly dry and dull interior. The intervening thirty years, and perhaps the great reputation of the architect, may have weakened the demand for proportions embodied in the programme, so that the architect might have had a free hand in his conception of the façade provided he would make use of some of the figures from the platonic programme.[4]

An examination of the Redentore and S. Giorgio Maggiore (see facing page) shows that the problem of how to attain the highest degree of correspondence between the front and the interior must have been of great importance to Palladio. A comparison between the front of the Redentore and the internal wall of the front makes it obvious that the two reflect one another. The main division and the means by which it is obtained are identical. That the pediment-motif of the portal is not repeated inside may be explained by the fact that the size of the door stays the same, whereas the interior side of the front wall is smaller than the façade itself in total height and width. And not only did Palladio make the two sides of the front wall reflect one another, the articulation of the side walls also corresponds outside and inside: two columns (outside, they are pilasters) flanking alternately a niche and the entrance to an altar (represented outside by lunette windows).

On the strength of these facts, it will be useful to re-examine the façade of S. Giorgio Maggiore and the problem of who designed it. The inscription above the portal proves that the front was completed thirty years after the death of Palladio. The identity of the designer has been disputed ever since Temanza[5] wrote: 'La Facciata si rizzo poi sul principio del sussequente secolo XVII. Da certa carta da me veduta nell'archivio di questi spettabilissimi Monachi . . . che a me sembra di mano dello Scamozzi, si puo dedurre che lo Scamozzi medesimo v'abbia posta qualche assistenza.' In itself the statement is sober. The inference is that Scamozzi may have contributed something to the façade. Temanza does not tell us whether he was only concerned with execution or whether he altered Palladio's design. The argument of Vincenzo Barbieri, the recent biographer of Scamozzi, runs as follows:

'1601—About that year the work on S. Giorgio Maggiore in Venice was completed. The church was planned by Palladio, interrupted at the time of his death and perhaps completed under the supervision of Scamozzi.'[6] In earlier literature the discussion is somewhat arbitrary. Cicogna denies Scamozzi's participation after having searched without success for Temanza's document. Magrini asserts that it never existed. Ricci notes a 'noticeable difference between interior and façade' and suggests an 'anonymous minor master.' Cicognara and his collaborators support the Temanza tradition.[7] If all these authors believed that the façade as existing faithfully represents Palladio's design, the whole story would not be worth telling. What they are looking for, however, is the designer of certain features in the façade which they refuse to ascribe to Palladio.

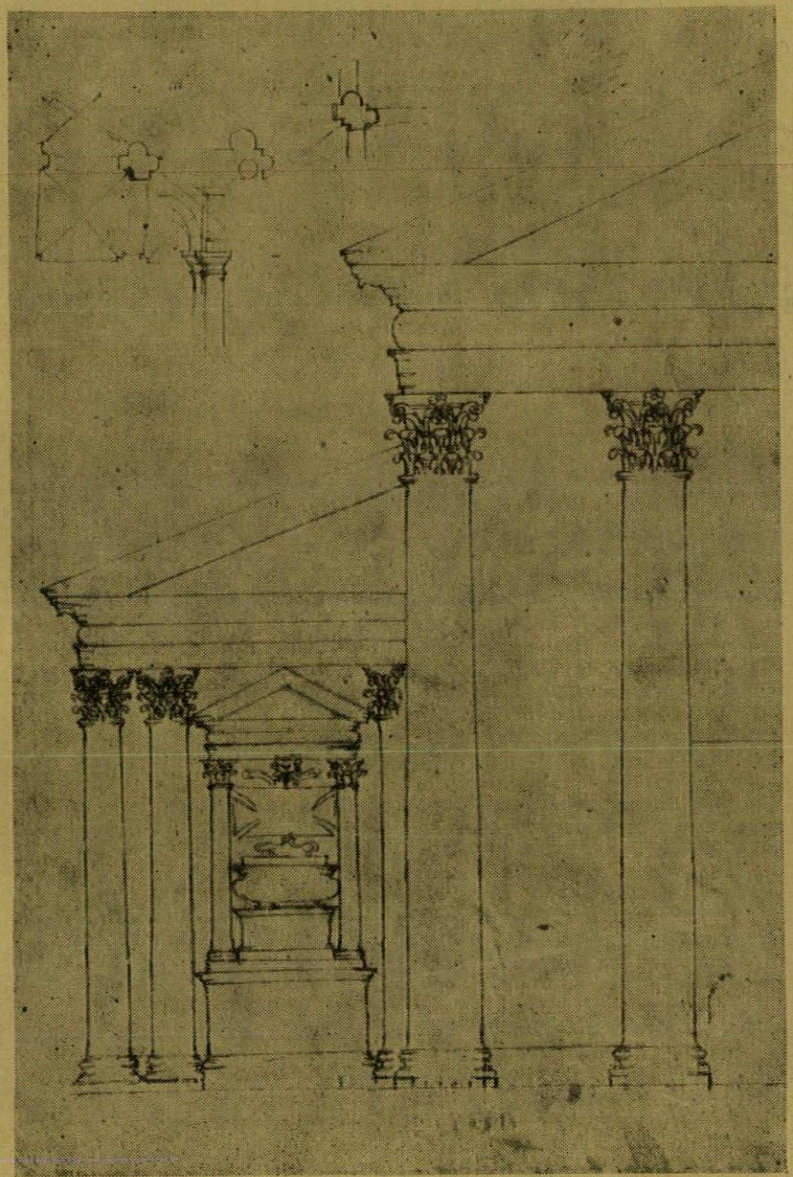
The high pedestals on which the large half-columns stand have been considered particularly questionable. Professor Wittkower[8] ascribes the façade to Scamozzi, referring to the writers here quoted, and in agreement with them asserts that the front cannot correspond to Palladio's intentions. His reasons are that 'the two orders do not rise from the same level. The large half-columns stand on a high pedestal while the small pilasters rise almost from the ground. This discrepancy in level, which is particularly unfortunate where the high bases cut into the adjoining pilasters, is not the only fault.'[9] Another is that the tabernacles of the outer bays stand on disproportionately high bases which, together with the pedestals of the composite order, oppress the small pilasters.[10] In support of this aesthetic criticism Professor Wittkower publishes a drawing (reproduced herewith) with the words: 'Palladio's original design has been preserved in a measured drawing which allows us to assess the later alterations. This drawing proves that he wanted large and small orders to rise from the same level, and, no doubt, he must have regarded this as essential to the unity of his design.'[11]

In a note he gives an account of the similarities between the design and the present church. The two monuments seen on the drawing are found *in situ* on the façade. He adds that the proportions given in the design correspond 'almost exactly to those of the actual façade (height of aisle and nave and width of aisle).' This is true, but the relative width of the aisle, measured in proportion to the height of the aisle, is larger in the drawing than in the building as it stands. To get a proper idea we must compare the relation between the width of the nave and its height, and further the relation between the width of the aisle and the width of the nave. If these proportions agree in the actual façade and in the design, then and only

[1] Francesco Giorgi's memorandum published in Moschini, *Guida per la Città di Venezia*. Ven. 1815, II, p. 60.
[2] R. Wittkower, *Architectural Principles in the Age of Humanism*, 2 ed., London, 1952, p. 93.
[3] Most likely not, Giorgi's programme appeared about eight months after the foundation-stone was laid.
[4] Wittkower, op. cit., p. 86, mentions the figures used.
[5] Temanza, *Vite dei più celebri Architetti & c.* II, Venice 1778, p. 379.
[6] V. Barbieri, *Vincenzo Scamozzi*, Vicenza, 1952, p. 191 f.
[7] Cicognara, *Iscrizione Veneziane*. Venezia, 1853, T III, p. 330. Magrini, *Memorie intorno ad Andrea Palladio*, Padova, 1845, p. 64. Ricci, *Storia dell'Architettura in Italia dal sec IV al sec.* XVIII, Modena, 1860. Cicognara, Diedo, Selva. *Le Fabbriche e i monumenti cospicui di Venezia*, 1840, II, p. 117 ff.
[8] Wittkower, op. cit., p. 84 f.
[9] Ibid.
[10] Ibid.
[11] Ibid.

then is the drawing 'the original design.' This, however, is not the case with regard to the present drawing. The design is unfinished but is easy to reconstruct. In order to correspond with the church, the middle bay should have the double width of one of the side-bays. If so, the ratio between the width of the aisle and the width of the nave agrees; on the other hand the height of the nave and its width would be proportioned differently in the design and in the building. In the drawing the height exceeds the width by 13 per cent; in the façade by 32 per cent. If the drawing were the original design, the lack of precision could surely not have been as big as that. We must therefore presume that the drawing is a preliminary sketch, probably made at a date when the inner configuration of the church was not fixed.

Through the entire length of the nave one motif is constantly repeated: a composite column reaching up to the vault of the nave and placed on a high pedestal flanked by two small pilasters standing on the ground. They are, of course, the pilasters supporting the archivolts of the arcade between nave and aisles. In short, the feature of the front against which the objections are directed is one of the main motifs of the interior.[12] Nobody questions the fact that Palladio is the designer of the interior. So it does not make sense to deny him the idea of the front. It is no proof of alterations by Scamozzi that he had assisted in the erection of the front, or that perhaps he made drawings for it. The entrance-wall of the nave—*la facciata interna*—shows the same architectural motifs as the façade. A horizontal section of the wall reveals that the position of the two central half-columns corresponds inside and outside. The lateral ones are on the inside, forced slightly towards the centre in consequence of the space occupied by the side walls.



Detail of Palladio's original design for the elevation of S. Giorgio Maggiore. (From the RIBA collection of Palladio drawings.)

So far it does not seem to have been noticed that in his fourth book[13] Palladio mentions S. Giorgio Maggiore. In chapter XVI concerning the 'Battesimo di Constantino' he writes as follows about the base of the column: 'On the base of the loggia are leaves which carry the shafts of the columns. This is worthy of note, and we must praise the sound judgment of the architect who, without any loss of beauty and majesty could accommodate his design so well to the circumstance that the shafts for his columns were not long enough.' This proves conclusively that Palladio is responsible for the interior side of the front wall. The beautiful marble columns were not long enough, but they were so fine that he used them all the same.[14] Their function was to support the architrave above the porch. If they were to correspond to the pilasters flanking the porch of the façade—as was no doubt Palladio's intention—they ought to have been placed directly on the ground. Palladio expressly states that the columns used were not long enough. As a makeshift he placed them on plinths sufficiently tall to enable them to support the architrave.[15]

Palladio justifies the lack of correspondence between the two sides of the wall, brought about by the shortness of the columns, with a remark about their beauty. Nothing could bear out more impressively the wisdom of Goethe's remark in his 'Italienische Reise' on Palladio's way of approaching architecture: 'This particular thing I have done against my will, but I have done it all the same, because in the given circumstances I could only in this way get close to my highest ideas.'

[12] In *Bollettino del Centro Internationale di Studi D'Architettura Andrea Palladio*, II, 1960, p. 66, R. Pane make this similarity alone prove that Palladio was the originator of the front.

[13] Palladio, *I quattro Libri dell'Architettura*, Venetia, 1570, Lib. IV, p. 53 (61).

[14] Ibid.

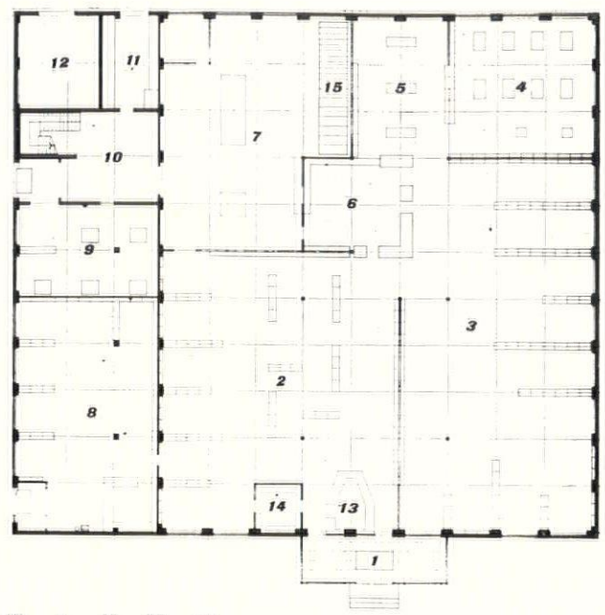
[15] The plinths are wholly out of proportion with the small columns, wherefore Palladio's justification is rather formal.

PUBLIC LIBRARY, NUNEATON

ARCHITECT: FREDERICK GIBBERD

key
1. entrance lobby
2. general library
3. reference library
4. special collections
5. music and picture collection
6. enquiries space
7. workroom
8. children's library
9. news room
10. staff hall
11. caretaker
12. transformer room
13. service counter
14. book sorting room
15. mobile storage unit

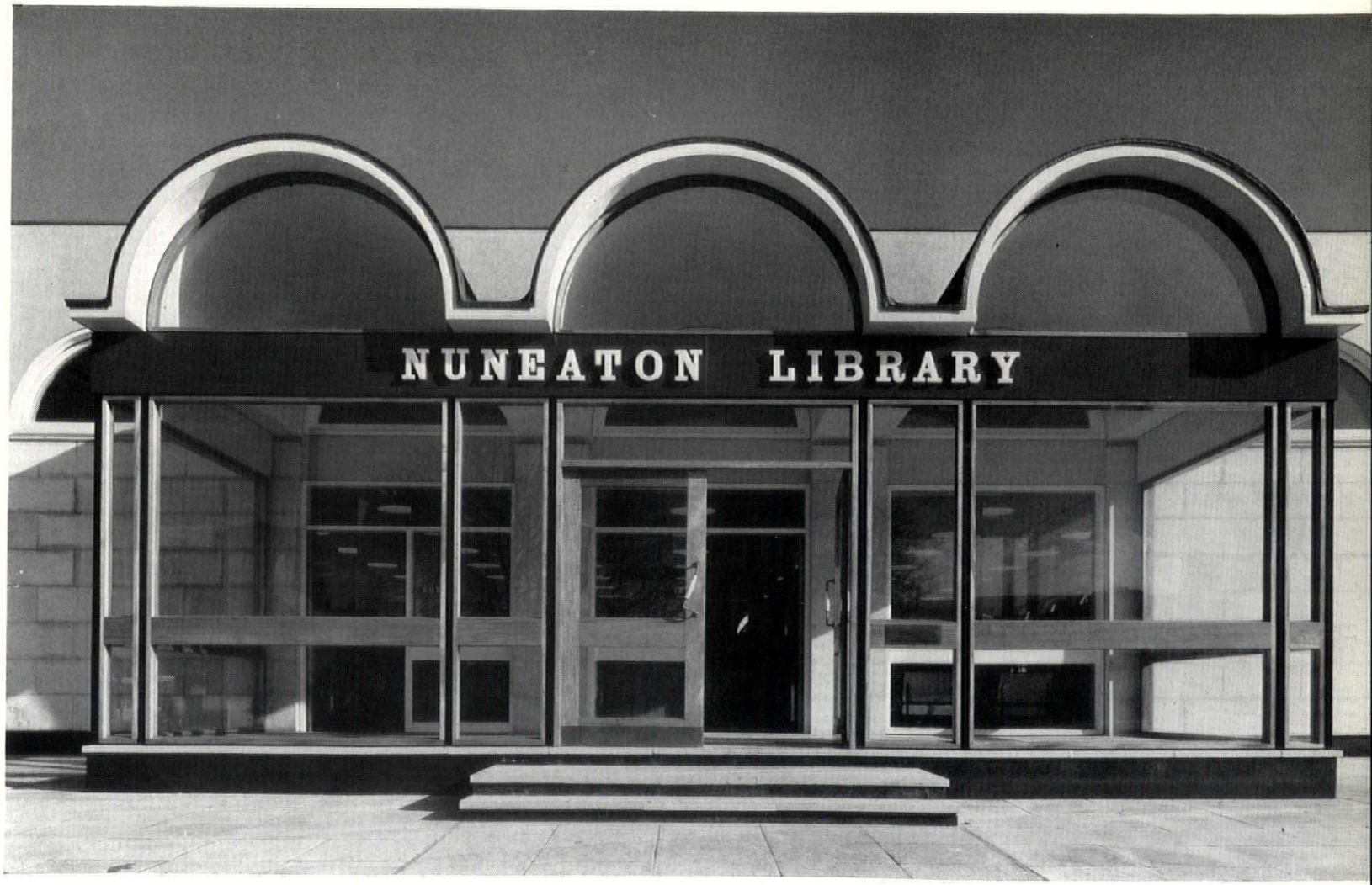
N



ground floor plan

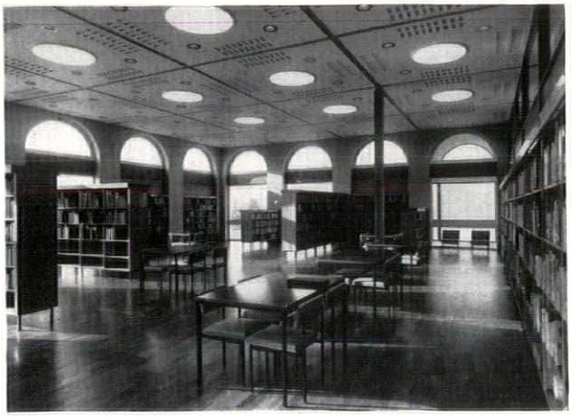
This is one of the key buildings in the reconstruction of the bomb-damaged central area, the design for which was prepared by the same architect in 1946. It adjoins the new loop road and the parish church and is related to the recently completed Crown offices and the magistrates' courts and police-station, now under construction. A single-storey main building contains the library proper; behind it, in a two-storey wing, are the children's library and miscellaneous accommodation. The main entrance is approached from a wide forecourt placed away from the main road.

The main library, which was designed in collaboration with Mr. S. H. Barlow, the borough librarian, provides flexible accommodation which can be varied as particular departments expand or contract. It is a large, top-lit rectangle which can be sub-divided on a 10 ft. square grid by demountable partitions or bookcases. These partitions define three main types of floor area; the general library, reference library and special collection. In addition, there are small music and picture libraries, which are expanding. At the hub of these spaces is an enquiry area,



1, *the main entrance.*





2, *from the west with the two-storey wing on the left.* 3, *the reference library.*

which extends into the working side of the library. The general library is controlled by a service desk equipped with microfilm cameras which record the issue of books. The adjacent reference library contains the bulk of the book stock. Here the bookcases are arranged to form alcoves for special subjects. Between this area and the enquiry desk are the catalogue cabinets. The special collection area, besides having the George Eliot and other local collections, is intended for use by students and is equipped with study tables. The children's library, in the two-storey block, is self-contained with its own external entrance and service desk. The bookcases, scaled down for children, are arranged to provide a large open space in the centre of the room for meetings. Also in the two-storey block are the news room and, on the first floor, a meeting room and staff accommodation.

The building has load-bearing external walls and internal steel columns and beams. The walls consist of Portland reconstructed stone-faced concrete piers, alternating with double-glazed timber windows which are carried to the ground. Above the wall and window system is a continuous frieze, faced with light grey mosaic and pierced by semi-circular clerestory windows. On the entrance front these are projected forward in the form of concrete, copper-covered barrel vaults over the metal and timber-framed glass entrance lobby. The roof is of steel beams, arranged on the 10 ft. grid, carrying a lightweight deck of steel and wood-wool and a suspended fibrous plaster ceiling.

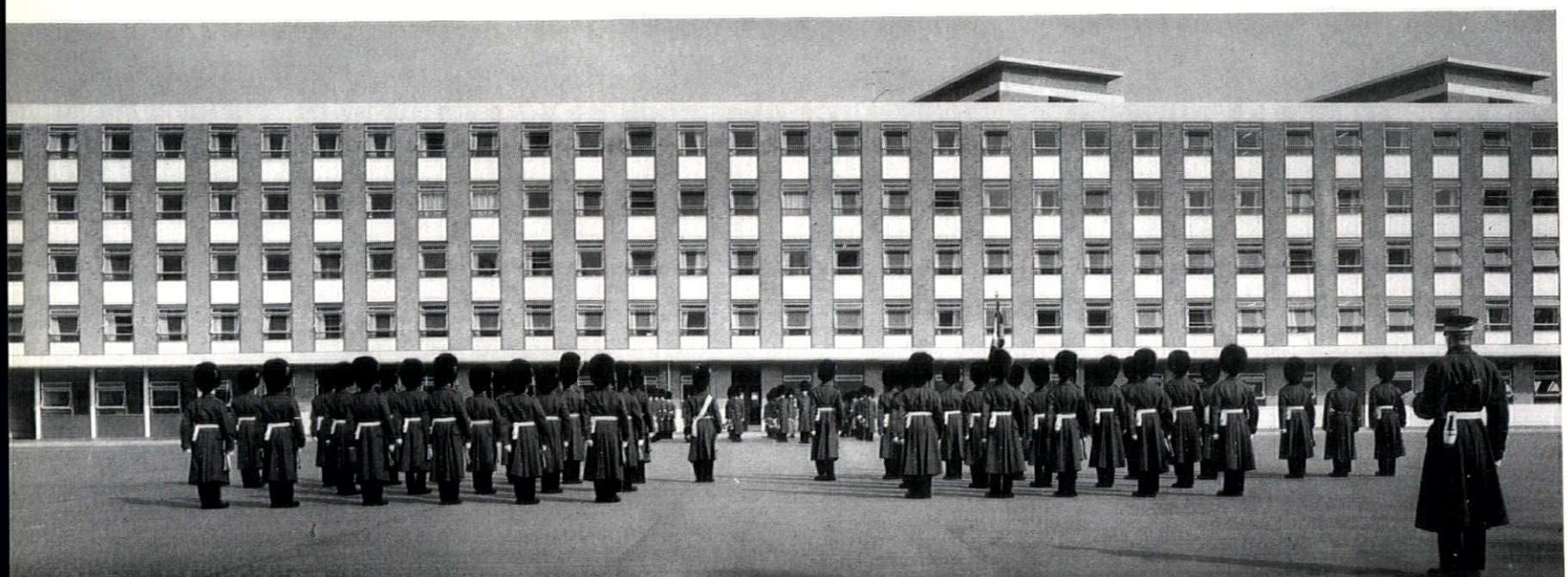
In order to give the same lighting conditions over the whole interior, each 10 ft. ceiling square has its own recessed tungsten fittings, slotted acoustic absorbent and a glass roof-light, except when it is adjacent to a clerestory window. The timber divisions between the units are designed to take the demountable partitions. The two-storey wing is of similar load-bearing construction and has suspended reinforced concrete floors and roof. The whole building has under-floor heating. West African mahogany is used for doors, partitions, furniture and bookcases.

Partner in charge, A. E. Kelsey; assistant, H. D. Blowes. Structural engineer, T. F. Burns & Partners. Quantity surveyors, Oswald A. Wainwright & Partners.

ARMY BARRACKS, CHELSEA

ARCHITECTS: TRIPE & WAKEHAM

1, *the main barrack block from the parade ground.*



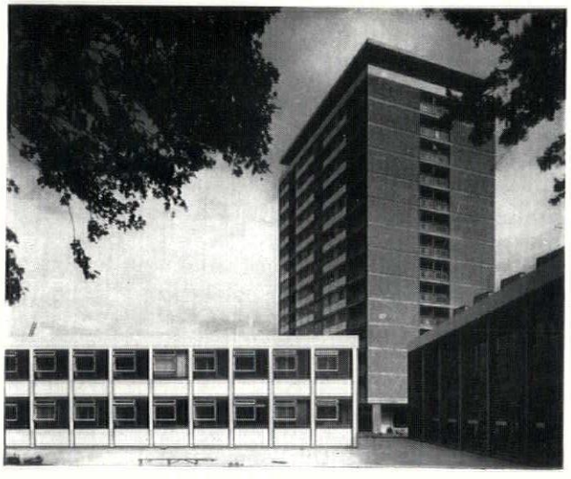


2

Army Barracks, Chelsea

key

1. boiler house
2. NAAFI self-service shop and store
3. married soldiers' quarters
4. guardhouse
5. telephone exchange
6. garrison engineers' offices
7. workshop
8. band practice
9. existing chapel
10. medical and dental centre
11. swimming pool
12. gymnasium
13. squash court
14. NAAFI staff quarters
15. junior ranks' club
16. rank and file quarters
17. married officers' flats
18. education and instruction centre
19. officers' mess
20. guardhouse
21. rifle range
22. senior ncos' quarters
23. kitchen and rank and file messes
24. stores (whole of ground floor)
25. senior ncos' mess
26. parade ground
27. pump room
28. motor transport ancillary buildings



3

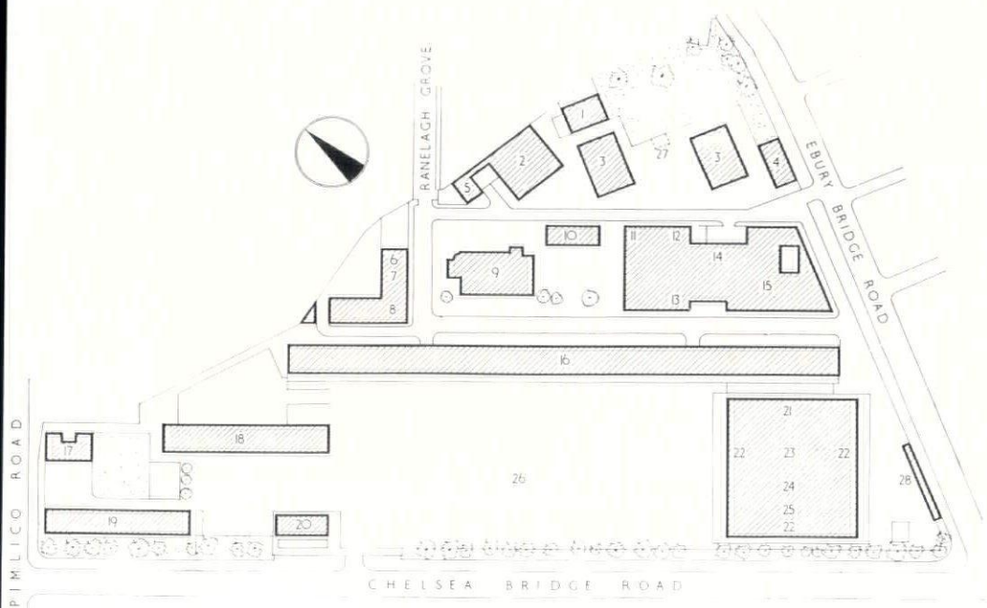
To house two battalions of the Brigade of Guards, replacing the old Chelsea Barracks built in 1861. The main entrance, from Chelsea Bridge Road (facing Wren's Royal Hospital) leads into the parade ground, which is flanked on one side by the officers' mess and the instruction centre and on the other side by the non-commissioned officers' and guardsmen's messes. Along the far side of the parade ground is the long five-storey barrack block. There are ways through beneath this building to the back of the site where, in separate buildings, are workshops, medical centre, athletics centre (with swimming pool), junior ranks' club, NAAFI, chapel (an old building retained) and two fifteen-storey blocks comprising married soldiers' quarters.

The main barrack block has stores and offices on the ground floor and the unmarried soldiers' quarters on the four upper floors. The accommodation is duplicated about a centre line to satisfy the army's requirements that the two battalions should be separate. They also have separate messes. The barrack accommodation is in the form of eight-man rooms, subdivided into cubicles for four. The structure of the barrack block is a reinforced concrete frame, with reinforced concrete end walls, cross-walls and staircase walls. External walls are brick with rendered panels and mahogany window-frames incorporating coloured glass infill panels. Windows are steel.

The two tower blocks containing married quarters have pram stores and children's lavatories on the ground floor and 2-bedroom and 3-bedroom flats on each floor above. Water for all the buildings belonging to the barracks is stored in tanks on the roofs. One of the blocks incorporates the flue from the adjoining boiler-house which provides heating for the whole barracks. The tower blocks also have a concrete frame with brick external walls, but have windows of aluminium. The smaller buildings are of two or three storeys and of similar construction.

Partner in charge, J. H. Broome (in association, for the later stages of the project, with Sir Donald Gibson, Director-General of Works at the War Office). Structural consultants, Wilton and Bell. Services consultants, Kennedy and Donkin and Barlow, Leslie and Coombes. Quantity surveyors, Langdon and Every.

2, the officers' mess at the north-west corner. 3, one of the point blocks seen between the medical centre (left) and the junior ranks' club. 4, the two point blocks from the east.



site plan

4

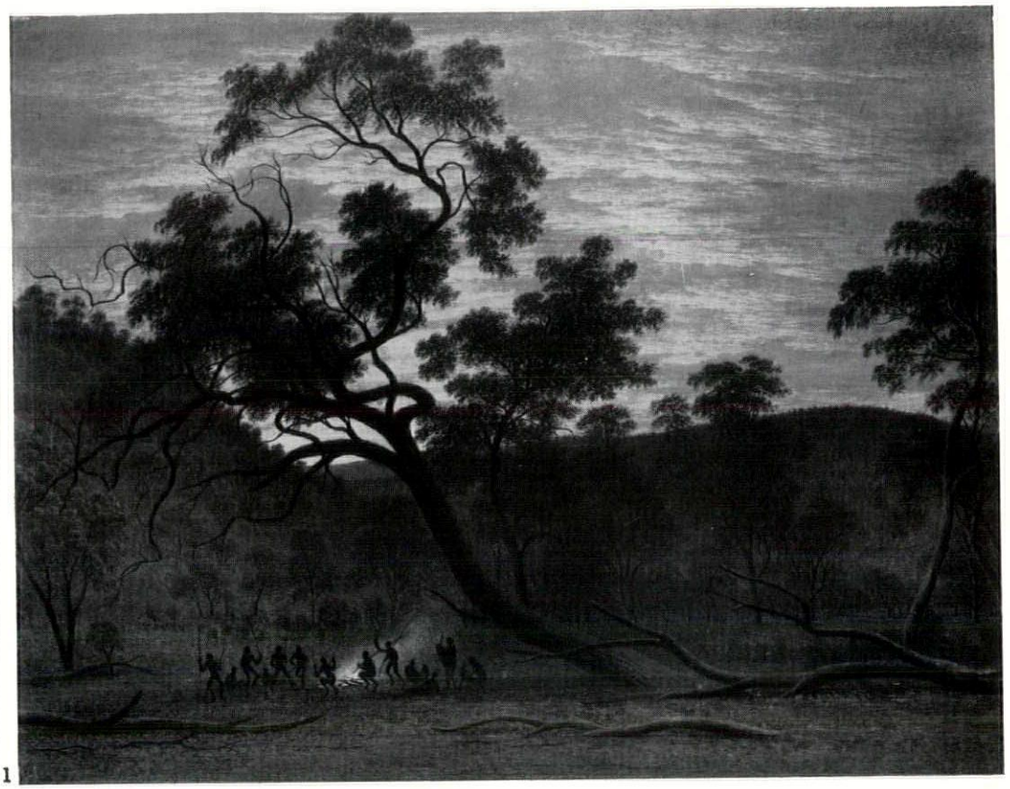


EXHIBITIONS

PAINTING

It's generally agreed that the Australian exhibition at the Tate Gallery was disappointing. But the fault is in us. We are far too anxious to see the Australians make a unique contribution to painting. They dislike us for it. They find us presumptuous and patronizing. They think we want them to specialize in quaint and uncouth scenes from Australia's past, as a light relief to the great and serious abstract art of Europe and America.

They probably feel that their suspicions were confirmed by our warm response to some of the pre-twentieth-century work. Actually it was only the paintings of John Glover which detained us in the Colonial section of the Tate's exhibition. (He emigrated to Tasmania in 1831, where his work in a placid English topographical tradition was enlivened by an injection of exoticism, as in the charming 'Corroboree,' 1.) But the entire section devoted to the late nineteenth-century painters who called themselves Impressionists was a minor revelation. It seems that they took their name from an innocuous remark made by the French Academician Gerôme to the effect that the first thing to look for in a painting is the general impression of colour. Their leader, Tom Roberts, was a good all-rounder, but for the most part they were painters of landscapes with figures. The figures were sheep-shearers, tree-fellers, wagoners and such like, but the paintings can't really be called *genre* because the painters were as much concerned with the land, the heat and the light as with the people. They often worked as a community

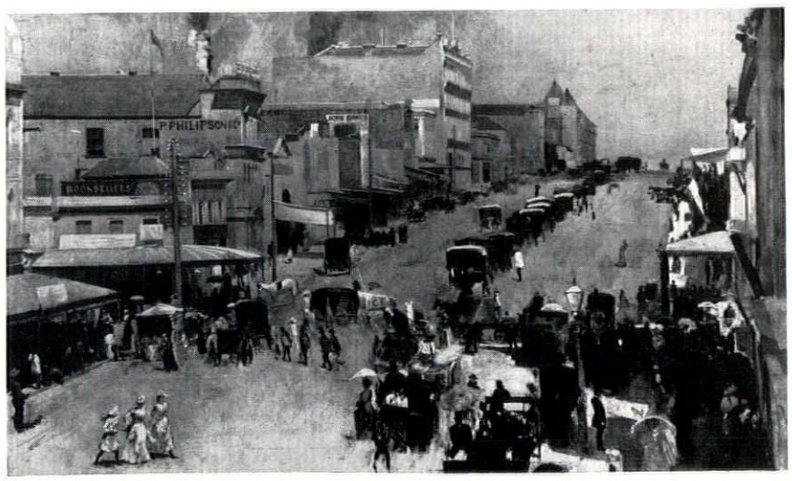


1

in camps which they set up outside the towns, and so many of their paintings were stamped with the blue of the Australian sky and the gold of its sundrenched earth that their camps deserved to be hung with blue and gold banners. Now that one has at last seen these samples of an art that must be very familiar to most Australians, it seems surprising that no modernist has thought of paying homage to them with a blue and gold painting in the Rothko manner. A Melbourne Street scene, 2, by Tom Roberts, discloses a flair for the animated scene and the casual-seeming viewpoint that was not shared by all his friends; what they did share with him was an ability to record the brilliance of the light and the best of their work still burns with a clear pale fire.

The composition of David Davies's 'Golden Summer,' 3, is too conventionally artistic, but he has unassumingly communicated the sense of a light so intense that it robs objects of some of their solidity and gives the painting a faintly mirage-like quality.

The one modern Australian painter who may have learned something from these men is Sidney Nolan, and they couldn't be paid a better compliment for he is still the most brilliant and original artist Australia has produced. In a profoundly poetic picture of an escaped convict lost in the outback, which he painted fifteen years ago, the figure has become insubstantial in the light and the bars of his convict's garb seem to be flowing into the vegetation and the heat haze as if he were



2

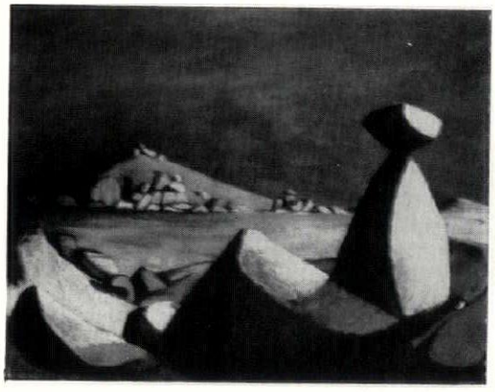


3

becoming a figment of the heat and light, a mirage or a phantom. The picture is charged with meanings and associations beyond the range of the Australian Impressionists, but their treatment of light is all that Nolan could have had to draw upon by way of an Australian tradition.

The Australians don't seem to realize that we think of these early Nolans as the least provincial things that have come out of Australia. It's true, as Daniel Thomas says in his interesting catalogue commentary on the contemporary situation, that he painted 'an almost entirely Victorian Australia,' but Thomas adds that he had 'little of Drysdale's emotional commitment,' and if this also is true, it simply means that his imagination was not hindered by 'specifically Australian needs' or the sterile debate between Australianists and Internationalists which turns the work of both camps into little storms in teacups. Nolan's Ned Kelly is a purely twentieth-century conception. Thomas would like to say that we are seduced by its old-fashioned charm, but a simple poetic image of this order is not involved in the time factor that will continue to make Australian abstraction old-fashioned the moment it's painted as long as the chief reason for painting it is to be in the swim. Kelly has joined that company of twentieth-century *personnages* which includes Picasso's minotaur, Chirico's mannequins, Ernst's bird-man, Bacon's pope and Giacometti's walking men. Not one example of the Kelly series was included in the exhibition.

I would like to be able to say that I think Drysdale's landscapes and the abstracts of Ian Fairweather, and the very much younger but already more famous Brett Whiteley, have escaped the effects of the debating society. But Drysdale's



4

landscapes, 4, look like melodramatic backcloths for an expressionist play about the Aboriginals, and the abstracts of Fairweather and Whiteley are well-painted works within known terms of reference: from a provincial standpoint their work could represent a major breakthrough, but from any other, all that can be said is that they've come into line, and that International Abstraction now has representatives in Australia. One has only to plod through the pavilions at the Venice Biennale to realize that it's of no great consequence to be bringing a bucket of water to the main stream.

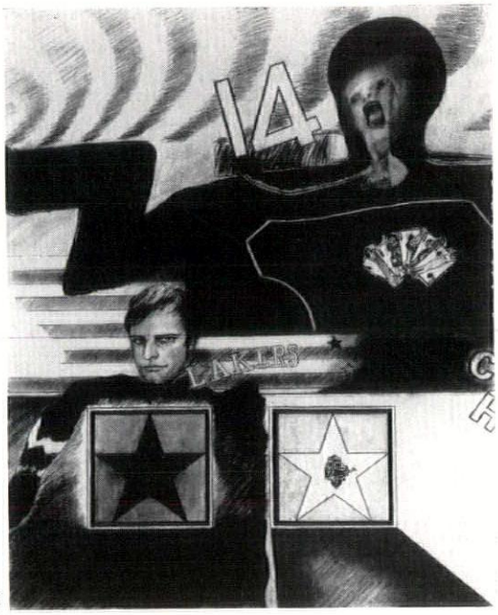
Thomas quotes from a manifesto issued by the Antipodean group in defence of the 'Image' which denounced mainstream abstraction in rather appealing terms. 'The great Tachiste Emperor has no clothes. He is only a blot—a most colourful, elegant and shapely blot' . . . but 'We are witnessing an attempt . . . to reduce the living speech of art to the silence of decoration.' The last phrase turns into encomium if one attempts to apply it to the great spectaculars of the New York and West Coast schools. In these works the sense of silence is, so to speak, amplified and spreads through a room like an oncoming tide. In Pollock's drip paintings this huge silence is broken by a kind of susurration, like the sound of someone walking through tall grasses, but in Rothko and Clifford Still the silence is total and enveloping, giving the spectator some of the sensations of being a solitary. Philip Guston is another of these invokers of silence, and his retrospective exhibition at Whitechapel made it quite clear that his is among the very best of the contributors to the New York school. Like all of them, his work is at its most impressive when presented in a large, repetitious one-man show. In Guston's case, the work of the middle fifties—a series of big pink paintings with a bunching and clustering of red paint marks near the centre—makes a particularly fine spectacle. He told David Sylvester in a recorded conversation that the self-portraits of Rembrandt have been the chief influence on his work. It's well known that painters are reluctant to name any of their contemporaries as influences, and Guston is by no means the only modern who claims to have been influenced by Rembrandt, but there's rather more to Guston's claim than to some of the others and I recall that he spoke the name diffidently, without any attempt to use it as a testimonial. The central clusters of red marks in the works of his middle period seem to have been put there when the artist was in a state of extreme tension, as if he had hesitations and doubts about each separate mark before finally taking the plunge: the marks are made with firmness and weight but not with facility. There's something about these complexes of brush-strokes which suggest that a configuration other than what we see is seeking to be defined—it could be a human head—and although nothing specific ever does get defined, they so strongly convey an atmosphere of expectancy that I found myself *waiting* in front of one of them and was reminded of the well-known drawing by Henry Moore in which a little crowd of people are staring at a large tied-up object. The untitled painting reproduced here, 5,



5

is a little later than the pink-and-red series and marks the beginning of a change. There is still the sense of one dominant area coagulating before our eyes, but a process of dispersal has started, and the latest works, painted with great virtuosity, are composed of separate colour areas distributed across the canvas. Overt good taste and know-how intrude and leave us with elegant blots.

Edward Lucie-Smith's contribution to the exhibition series called 'Critic's Choice' which is an annual event at Tooth's, was a selection of English works painted in 1962, intended to demonstrate that a new climate is in the making. His idea was a good one and the choice of artists a credit to him, but the majority of the works he brought together were so innocuous that one was tempted to conclude that a demon scientist had been experimenting on the artists with the intention of reducing their sense of identity and had handed over to Lucie-Smith a batch of documents to show that the experiment was going according to plan. Jack Smith produced a Jungian mandala which was already practically free from psychic content and Gwyther Irwin made several attempts at one but was evidently short of intention. Bridget Riley completed another very successfully, but it was spiralling headlong into pure blankness. Peter Phillips in one or two of his things appeared to be uncertain as to whether he was himself or Peter Blake, but in a nice drawing, 6, held on grimly to the design of becoming a star performer. Blake played a little game of shop and a big game with a postcard and Patrick Hughes gathered together twenty miniatures of pictures he had already painted as if he hoped they would remind him of himself. Hockney, though not at his best, sketched a pleasant send-up of the springing tiger petrol act and/or Phillips's solemn homage



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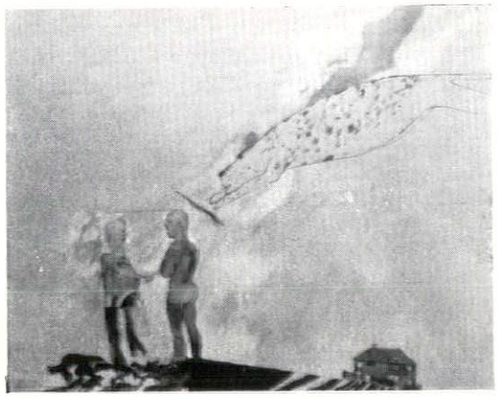

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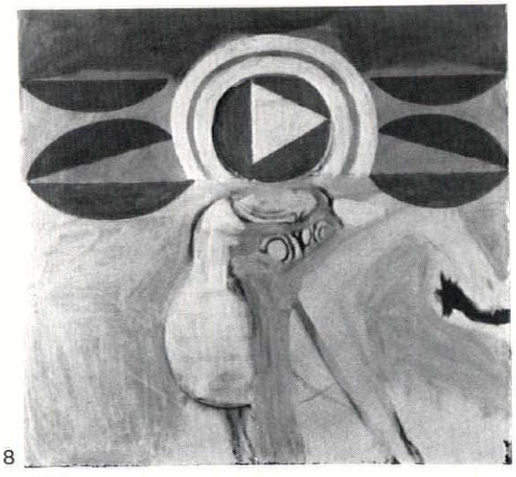
to it, in his 'Painting emphasizing stillness,' 7, and Howard Hodgkin, in his 'Portrait of Mrs. Rhoda Cohen,' 8, seemed to be using painting as black magic, for if appearances are anything to go by he was bent on replacing Mrs. Cohen's identity with a somewhat obscure display of his own. It's just possible that he's found a solution for the problem of painting a likeness by substituting a mandala for the face. But in that case the mandala would surely have to be done by the sitter. It's pushing the hope of keeping one's identity too far to give the sitter one's own.

Robert Melville



8

WIRESCAPE

WIRES ALONG THE VIA APPIA

Britain is not the only country that suffers from wirescape. The intimate, small-scale British landscape may be especially vulnerable to it—see the opening article of this issue—but the menace occurs all over the world, even in historic places where the authorities in charge have special reason to preserve their amenities.

A case in point is one of the most famous roads in the world, the old Via Appia leading into Rome. These photographs, taken by Georgina Masson, show how this sensitive and historic landscape has been allowed to become not only desecrated by overhead wire but confused by a proliferation of untidy road signs. Wherever a small piece of paving from the Roman period has been left bare and creates a bumpy surface, the over-zealous commune has created a couple of warning signs, 1. These ruin the view of the picturesque Casal Rotondo, the Roman tomb of the Messala and Cotta families.

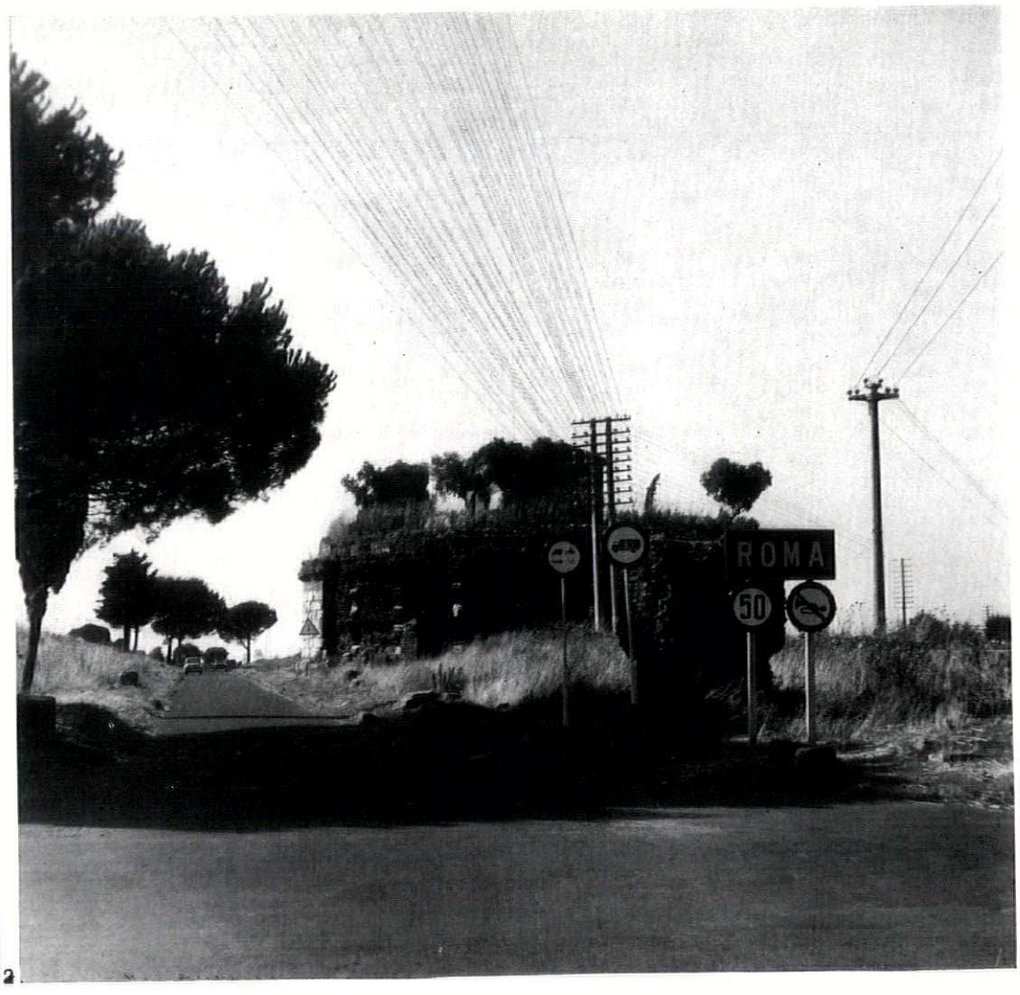
2 shows a particularly unfortunate combination of wire and road signs because it occurs at the point where anyone arriv-



1



3



2

ing at Rome (Ciampino) airport and wishing to enter the city by the old Appian Way —the only beautiful and typical route left —would join it. At this point there should be a clear view across the Campagna towards the city end.

Similarly, one of the roads to Naples, 3 and 4, which should give a marvellous view like the old pictures of the Campagna, is made sordid with wirescape, signs and pylons. 5 shows the old Via Appia again with the Casal Rotondo in the foreground. No attempt has been made to conceal the wires, which cross and recross the road wherever a house has been built.



5



4

POPULAR ART

ASAFU

All along the coast of Ghana, among the tall coconut palms, pressed against the sea, lie the old slave castles; some derelict among their toppled, rusting cannons; some preserved by the Ghana Museums and Monuments Board till they glitter like white sugar icing, each a wedding cake or, perhaps more aptly, each sitting like a great white hen amongst her tatty brood of changeling chicks—the old adobe houses which press beneath the battlements. For the castles are now washed clean of guilt and serve innocently as post offices, rest houses or youth centres while the villages themselves have changed very little, decayed a lot and then grown again from the debris of their own brown melting mud so that they still lean together among the rubbish and goats and children and fishermen, their dishevelled thatch tumbling into narrow alleys black with shade and acrid with the stench of ordure.

But these dark corridors give suddenly upon an open space and there, dazzling



1



2
3



white in the hard sun, clean as marble among the scavenging goats, sits a monument, a miniature castle, a joke fortress, a toy, a bauble moulded in cement, sparkling with whitewash and primary colours. This is an Asafu monument and it serves as the rallying point for one of the local village guilds.

Asafu comes from the word sra (scout) and it seems that these Asafu companies grew up as units of defence when the inland people moved down and settled as fishermen a hundred and fifty or two hundred years ago. Although village feuds and disputes over fishing rights or the burial of the dead are seldom now violent, the Asafu companies still exist to do mock battle on festival occasions, and they function erratically as clubs, each club having its monument upon which to hang its slogans and boastful symbols of power.

The chief is the virtual head of each village, but beneath him he will appoint two group leaders to two different companies, Tuafo (one) and Dentsifo (two) and each of these two companies will be divided in turn into sub-groups so that a fairly large village will have as many as seven different groups, each vying with the other in mock intensity on festival days when every man in the town turns out in his special uniform of brilliant motley, carrying an ancient musket loaded with blanks, which he shoots off indiscriminately as he calls to his rivals to 'Come and try us' or 'If you can fly, I can fly higher.'

One such village is Anomabu, where most of the accompanying photographs were taken. It is a fishing village some 75 miles east along the coast from Accra. Here in 1673 the English built Fort William and armed it, so the chronicles go, with seven 6-pounder and eight 3-pounder guns. The inhabitants of Anomabu have facetiously caricatured the past by building this castle battleship in concrete, 1 and 2. It stands in a rough open square among the most ancient of the adobe houses, about 50 yards from the sea. The square is used as a place to dry fishing nets and sails. The mud houses are very old and stand upon piles of rubble. They seldom have all their rooms habitable and are very rarely whitewashed.

The battleship is the rallying point for Anomabu Asafu Company No. 1. The base is colour-washed with reckitts blue, the hull yellow ochre (note a lifeboat painted on the port quarter); windows are glazed and pricked out in red while the black concrete cannons are at the ready, stuffed with silver painted cannon-balls. The anchor and anchor chain are real while the eagle on the bridge represents their soaring invincibility: 'It you can fly, I can fly higher.'

On festival days, once or twice a year the monument is hung with multi-coloured flags, and it swarms with bodies. Here the whole company assembles, deadly serious, gaudy in antique fluttering dress, each with his musket and an endless supply of blank cartridges. Visitors are not then welcome and the mock battles between rival companies often lead to bloodshed.

The little white man at the prow, 3, with his black moustaches and pith helmet shakes his fists in impotent fury at his adversaries—or does he represent the missionary leaning down to exhort the people towards Christianity?

Another monument in the same village —the vivid edifice shown in 4—is the totem castle of the Dontsin Company, the third Asafu company in Anomabu, as the close-up views of the base, 5 and 6, indicate. It is ornamented with two vast white lions, 7, a toothy whale such as never was seen, 8, and, on the higher battlement, various animals of indeterminate species,



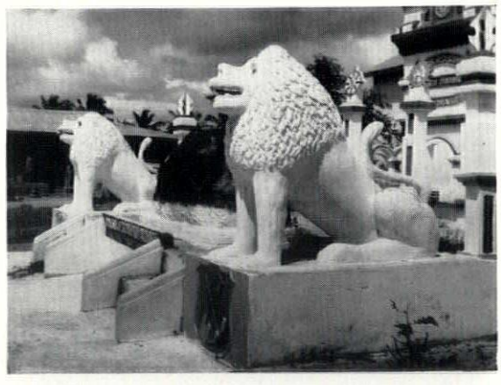
4

5





6



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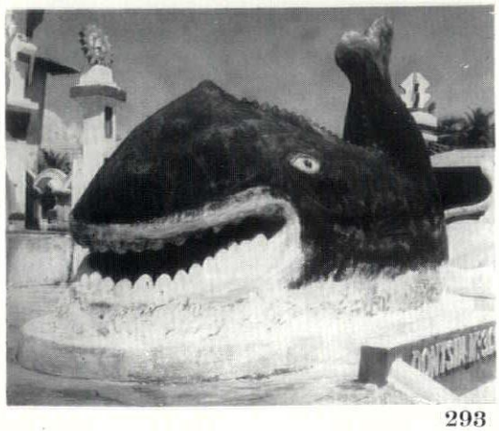

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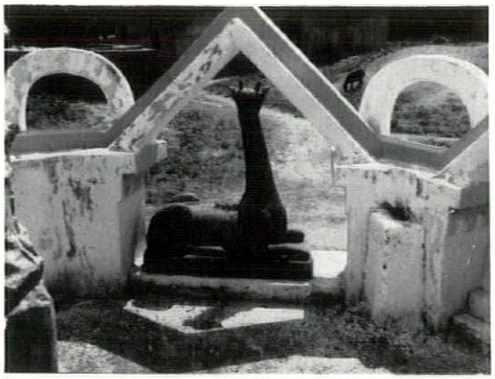


9



10



11

photographs by Jasmine Rose-Innes



12

9, which look down upon the square. A large concrete tree frog, 10, climbs the palm tree which stands, clattering its tin green leaves, atop the whole monument.

In another village, Tantum, the castle is completely obliterated and only a few cannons now lie among the rubble. But right in the centre of the village, in amongst the dereliet mud houses, sits this piece of erect and seemly nonsense, 11. It seems to have been built in 1920 when, on the 3rd of the twelfth month, an aeroplane crashed on the foreshore. During this week, they say, there was a battle, the last one of any significance, when the village of Daru made entry to return the dead body of one of the Tantum men who had died in Daru, and Tantum refused the body.

The curious object like a wing-nut just below the aeroplane is a chief's cutlass. The battlement, 12, is decorated with red and yellow lions and severed human heads. COME AND TRY can be interpreted as 'take us on boys!' Various little painted figures in bright colours beat drums or flee from the enemy while Obi Sin Bi freely translated means 'We are better than you!' The pot in front is for the pouring of palm wine libation to the ancestors of the group.

Jasmine Rose-Innes

SKILL

ALUMINIUM IN BUILDING

Aluminium is finding an ever widening use in the building field as more and more manufacturers realize its potential to meet their or their customers' problems. This article by Iain Stewart reviews the metal as a building material and the uses to which it can be put.

In terms of the history of building, aluminium is a comparative newcomer, largely a twentieth-century material in fact. Its existence and properties have been known for some considerable time, but it required the availability of large quantities of reasonably priced electric power to permit of any commercially economic production of the metal in quantity.

Some idea of the growth of aluminium as a usable metal may be gained from production figures. At the turn of the century it was being produced at a rate of something like 8,000 tons for the whole world. In the twenties this figure rose to 100,000 tons and during the Second World War reached a peak of over 2,000,000 tons. After the war production dropped drastically, but had climbed back to the 2,000,000 tons level by 1953.

It now ranks second in place after iron and steel and in terms of volume, production is greater than the total of all other non-ferrous metals combined. In Britain, of course, due to the lack of primary ore, the aluminium industry is mainly one of semi-manufacture or conversion in that it uses ingots derived from refined scrap and from imports. In this way use is made annually of something like 360,000 tons. Of this total, however, only 10 per cent is used by the building industry as opposed to nearly 20 per cent in USA.

Properties

The metal is available in several degrees of purity as aluminium alone. Of these, probably the best known, if only by name is Super-Purity quality. This is aluminium refined to a practical maximum. The resultant material has, however, limited use in building. Its softness and workability, resembling that of lead, give it possibilities of application in similar situations. Flashings and fully supported roof coverings are examples in this field. In this pure quality it has a high resistance to atmospheric corrosion. This, of course, does not mean that it does not corrode, but, like lead, a skin of inert corrosion products is formed on the surface which insulates the body of the metal from further attack. Used in these situations it has several advantages over lead. Its light weight permits the use of lower stressed supporting work and one of lead's primary faults, that of creep on a slope, is avoided. There is a tendency for work hardening to take place, i.e. repeated flexing and working of the material will cause it to harden and eventually crack, but such conditions are seldom likely to occur in building applications.

As has been said, pure aluminium is soft and easily worked, but these very properties tend equally to reduce its usefulness since they automatically mean low strength properties and if only pure aluminium were available, its applications would certainly be severely limited. Metallurgy has come to the rescue here, however, providing a range of alloys to meet specific requirements. Some give mechanical strength, some add hardness and some give improved casting properties. These alloys are in effect the aluminium of building.

Among the discoveries in alloys the development of a copper-containing metal is one of the landmarks. The addition of roughly 4 per cent of copper with traces of other metallic elements was found to produce a metal which exhibited the property of age-hardening. In other words strength and hardness increased over several days following heat treatment. This discovery led to the development of Duralumin, the first of a whole family of heat treatable alloys. These provided a metal with a strength and hardness comparable to mild steel, but with the advantage of light weight.

The aircraft industry soon seized upon the advantages this development gave it and it must be acknowledged that it was largely due to the demands of aircraft that improved alloys were sought and produced.

The strength, hardness, ductility and resistance to corrosion of any particular alloy is, of course, determined by its chemical composition, i.e. other metals present either by deliberate introduction or as a controlled impurity. Other factors, too, have a bearing. Of these the main ones refer to the condition of the material. For the user there are two main alloy groups: (1) alloys suitable for casting and (2) alloys suitable for working, i.e. forging, rolling, drawing and extruding. Of these two main groups a further sub-division can be made by reference to the alloy's suitability for heat-treatment or otherwise. At first glance this further subdivision would appear to have very little bearing on architectural choice, but the matter has some significance.

First, it is essential to understand the meaning of the heat-treatment. An alloy is effectually the solution in the solid state of a metal or element in another. This solution is, of course, accomplished in the molten or liquid state and in subsequent cooling there is a tendency for the alloying elements to crystallize out in pockets throughout the solution. Such crystallization is extremely difficult if not impossible, to control. In some alloys, however, the required properties can best be obtained when the solution is as complete as possible. The different metallic atoms must be made to interlace as fully and completely as possible. Happily, the fully liquid state as the average layman knows it, is not essential for such solubility to be achieved. If the temperature is increased to some figure below the actual melting point solution is improved and if the metal is then cooled rapidly, i.e. by a blast of cool air or by quenching in water or oil, it can be held and the required properties achieved. If this process is not carried out and the metal allowed to cool naturally, the process is called annealing.

A heat-treated aluminium alloy should have a strictly limited amount of cold working after treatment since the process, while achieving the necessary strength and hardness also reduces the resistance to work hardening and metal fatigue, a fact discovered by the aircraft industry at some considerable cost a few years ago.

It is also important to note that heat-treatable alloys should never be used in an annealed condition. Not only is the strength reduced or lost by subsequent annealing, but the metal reverts to a condition which can be subject to very aggressive corrosion forms. Such conditions will be found when welding of heat-treated alloys is carried out, the areas adjoining the weld, taking up the annealed condition. This trouble can be avoided by re-solution under heat-treatment after welding, but, of course, such treatment is best carried out in the manufacturer's works and in general any process involving local heating of the metal should be avoided on the site.

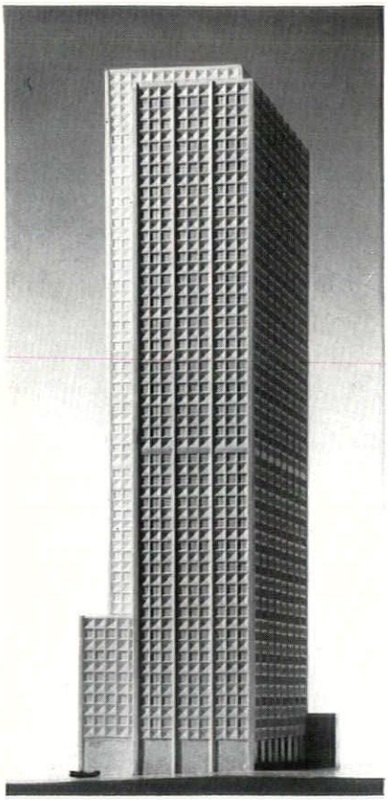
The range of aluminium alloys are fully covered by British Standards 1470 to 1477 and 1490. Although producers still give proprietary designations to them, they are all covered by these standards. The prefix 1 indicates 'pure' aluminium, N, non-heat-treatable material, H, heat-treatable material and LM, casting alloys. Table 1 gives a list of alloys with their composition. Reference should be made to the British Standards as to the suitability of alloys for the form under consideration. Casting alloys are, of course, covered by the LM series, while the others refer to bar, sheet, plate or extrusions.

The extrusion process is, of course, one in which aluminium and its alloys excel. The high ductility of the material permit the formation relatively easily of highly complex shapes and the variety of readily available extrusions is extremely wide. A few of such sections are shown in 3.

Durability

In the question of durability, aluminium suffers from a certain amount of misinformed and unearned criticism. Early failures led to distrust and unnecessary caution over its use but most of such failures can often be attributed to inappropriate application or detailing or a failure to understand the material.

The continuous but extremely thin film of inert oxide formed on the surface of aluminium exposed to air acts as a protective barrier to further oxidation and corrosion, but it must



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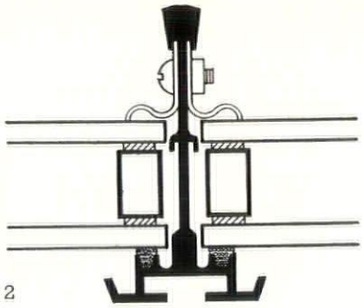

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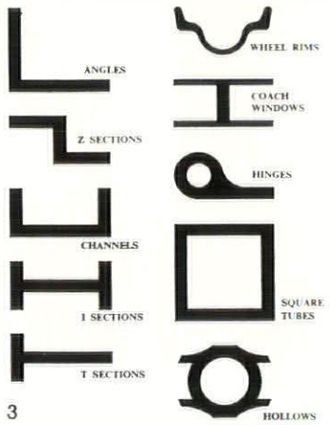
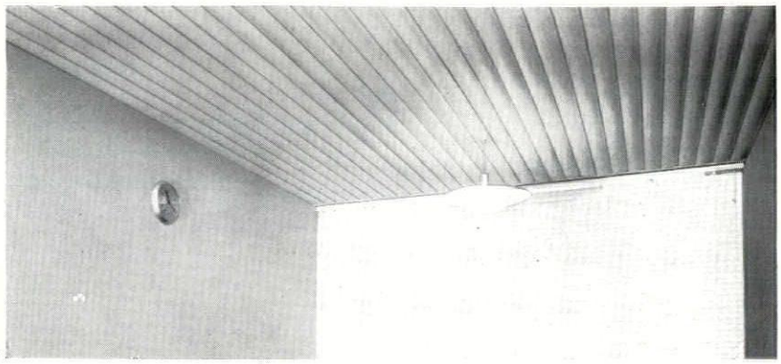


3

1, *study model for the Alcoa building (architects: Harrison and Ambramovitz) in Pittsburgh. This building was largely designed as an aluminium showpiece with the material used in every possible application with every care being given to careful and precise detailing to suit the properties.*
2, *Haywards Ltd. Reform Alluma.loy double glazed patent glazing section.*
3, *a few aluminium extrusion sections, part of the stock of standard extrusions available from British Aluminium Co. Ltd.*



4

4, *perforated aluminium strip ceiling (Metacoustic) by The Merchant Trading Co. Ltd.*
5, *the restaurant of the new Bristol Hotel in Lagos, Nigeria, clearly showing the loadbearing stressed skin sheet aluminium pyramids that make up the Pyramroof ceiling construction. Architects: Architects' Co-Partnership; Pyramroof developed by Dr. Z. S. Makowski.*



5

Table 1: Aluminium and its alloys for building purpose

Type	*BS Designation*	*Composition*
Super-purity	1	99.99% Aluminium
Commercially pure	1A	99.8% Aluminium
	1B	99.5% Aluminium
	1C	99.0% Aluminium
Non-heat-treatable alloys (wrought)	N3	Aluminium-Manganese (1¼% Mn)
	N4	Aluminium-Magnesium (2½% Mg)
	N5	,, ,, (3½% Mg)
	N6	,, ,, (5% Mg)
	N7	,, ,, (7% Mg)
	N21	Aluminium-Silicon-Copper (5% Si—0.1% Cu)
Heat-treatable alloys (wrought)	H9	Aluminium-Magnesium-Silicon (½% Mg—½% Si)
	H19	,, ,, ,, (1% Mg—1% Si)
	H20	,, ,, ,, (1% Mg—½% Si)
	H30	,, ,, ,, (¾% Mg—1% Si)
	H14	Aluminium-Copper-Magnesium-Silicon (4¼% Cu—¾% Mg—¾% Si)
	H15	Aluminium-Copper-Magnesium-Silicon (4¼% Cu—½% Mg—1% Si)
Casting alloys (non-heat-treatable)	LM2	Aluminium-Silicon-Copper (10% Si—1½% Cu)
	LM4	,, ,, ,, (5% Si—3% Cu)
	LM5	Aluminium-Magnesium (5% Mg)
	LM6	Aluminium-Silicon-Copper (12% Si—0.1% Cu)
	LM18	,, ,, ,, (5% Si—0.1 Cu)
	LM20	,, ,, ,, (12% Si—0.4% Cu)
	LM21	,, ,, ,, (5% Si—3% Cu)
	LM24	,, ,, ,, (8% Si—3% Cu)
Casting alloys (heat-treatable)	LM8	Aluminium-Silicon-Magnesium (4% Si—½% Mg)
	LM10	Aluminium-Magnesium (10% Mg)
	LM11	Aluminium-Copper (4½% Cu)

be appreciated that this film is thin and will not provide a complete protection against the rather virulent corrosive atmospheres of our cities without attention.

It is this question of attention which has led to most misunderstanding. In a clean dry atmosphere, the appearance of aluminium will remain unchanged indefinitely and even outdoors in a clean country atmosphere there will be little if any deterioration. This property has led to thinking in some quarters that aluminium is a maintenance-free material. This is largely true, of course, but in a very limited sense. Aluminium left to weather in a typical urban atmosphere accumulates deposits of dirt and grime. These stick to the surface and build up except in the most exposed situations. The effect is then that rainwater absorbed by this grimy deposit is held in contact with the oxide film. If the grime or the rainwater were inert in character little harm would be done, but city grime is not inert. It is composed of several highly corrosive substances and even the rain in our towns and cities is not innocuous pure water. It has dissolved waste gases from the atmosphere and has become acidic in character. If these substances are allowed to remain in contact with the metal for any length of time, they will attack and eat into it. The usual result of such attack is extensive pitting of the surface.

The difficulty seems to arise out of the definition of maintenance. For architects and builders, maintenance suggests the periodic repainting of an exterior. Viewed in this sense, of course, aluminium is maintenance-free, but from the building owner's point of view this is not so. Maintenance for him also covers such relatively frequent operations as window-cleaning and in a highly polluted industrial atmosphere aluminium requires cleaning at an equivalent frequency. Washing down with a wet leather or cloth is all that is needed to preserve aluminium in its original appearance indefinitely.

This diversity in the meaning of one word has undoubtedly been a root cause of many failures and adverse comment and publicity on the material. The architect, in proposing the use of aluminium to his client must make it quite clear that in external situations the material may be self-preserving, but is not self-cleaning.

Aluminium is also subject to a particularly virulent form of attack which for many years was not understood. This was electrolytic action. In certain cases it was found that aluminium was mysteriously eaten away apparently under the influence of rainwater alone. Careful investigation revealed that the water causing such deterioration had usually been in previous contact with other metals. In particular the worst cases were usually associated with copper.

The process involved is a sacrificial one in the chemical sense, similar to that employed in early wet batteries. Two metals immersed in a slightly acidic solution will set up an electric current by the chemical action involved, but this also causes the gradual eating away of the anode. The anode is always the metal which exists lower in the electro-chemical series and aluminium coming low in this scale is particularly prone to this form of attack. The higher the opposing metal is in the series, the more virulent will the attack be. Hence the particular vulnerability to copper.

Of course, the solution, once the problem was understood, was relatively easy to find. Under no circumstances must aluminium be placed in contact with electrolytically active metals where any moisture is likely to occur, nor must it be placed where it can be subjected to washings from such metals. Any fixings should be aluminium or heavily galvanized steel and where proximity of other metals cannot be avoided, non-conducting gaskets or washers should be used.

Finishes

In normal circumstances aluminium can retain its appearance to a reasonable degree without any further finishing process. Some dulling of the surface must, of course, be expected, but regular cleaning by washing or by abrasive action can maintain a largely original condition. In time, however, it is likely that surfaces subjected to differing exposures will weather to different colours and even on one surface, the general dulling effect will not be entirely even. Where appearance is not the overriding consideration, this may be quite acceptable, but in situations where the decorative effect is important, some

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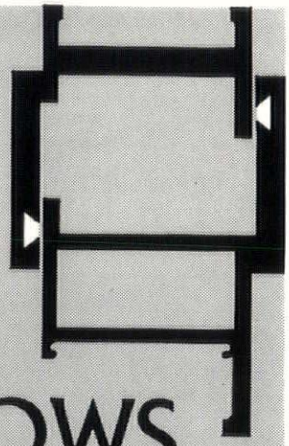

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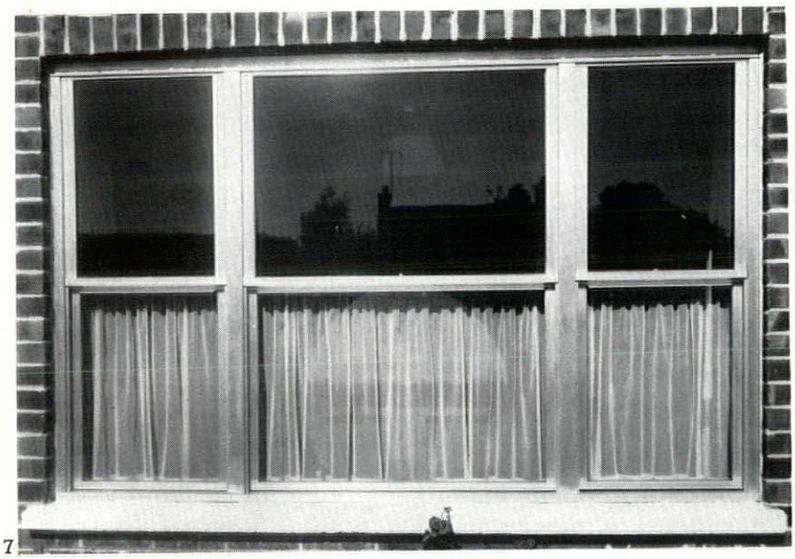

7

6, *range of aluminium curtain rails and tracks by Silent Gliss Ltd.*
7, *aluminium sash windows by Williams and Williams replacing older wood windows in the conversion and modernization of an existing property.*
8, *venetian blinds with stove enamelled aluminium slats by Luxaflex Ltd.*



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form of finish will be necessary. The methods of applying such a finish can be roughly divided into five categories.

(1) *Conversion coatings:* These are chemical surface treatments applied by immersion or by spray. Obviously immersion processes must be carried out at works and cannot be used as on site treatments. The several forms are tabulated in Table 2 showing the different uses to which they can be put. This type of finish is used sometimes for decorative effect, for anti-glare purposes, for corrosion resistance or for pre-painting treatment.

(2) *Painting and lacquering:* For any painting or lacquering to be successful, careful preparation of the surface is necessary. Old or weathered aluminium should be rigorously rubbed down with coarse wire pads but, of course, such pads should never be of copper or brass.

For new or ex-works material a first essential is to remove completely all traces of grease or wax. The surface should then be etched either by application of an etching primer or by a conversion coating. In some cases the material may even be lightly anodized. Where only small areas are involved sand-blasting may be effective.

After cleaning or preparation a lead-free primer should be used preferably containing a chromated pigment and finishing coats applied. Care, of course, must be taken that these coats are compatible with the primer used.

Where the original colour and texture of the aluminium surface is required to be retained, lacquering can be used. These lacquers are generally methacrylate, or cellulose acetate butyrate based. Some criticism has been levelled at lacquering because of a tendency to yellow or to peel. It is claimed, however, that non-yellowing materials can now be made. Peeling can often be the result of over-generous application and this should be avoided.

Painting and lacquering of aluminium have not achieved a great popularity, probably due to the fact that they require periodic renewal and hence dispense with the property of being maintenance-free in the narrow sense previously mentioned.

(3) *Stove enamelling:* This, of course, is a factory applied finish. Paint is sprayed on to the material and is then hardened by heat. The result is more durable than with normal air-hardened paint, but apart from the necessity of works application, it requires careful handling since damage to the finish cannot be made good. Some manufacturers have produced stove-enamelled finishes which will retain sufficient elasticity to permit forming and working after application without the film cracking or flaking.

(4) *Vitreous enamelling:* This is a surface film of continuous inorganic glaze. No post-forming can be carried out after finishing, but a well prepared coating can be cut and drilled without chipping due, of course, to the softer coating produced by the necessarily low temperature in stoving. This heating causes a reduction in strength of the aluminium and hence the use of vitreous enamelled components should be confined to non-loadbearing elements.

(5) *Anodizing:* This is probably the best known of all aluminium finishes and the one most often brought to mind when applied finishes are considered. The process is one of electrolytic oxidation of the surface producing a stable, hard film. The material, which may be left in the mill-finish or may be polished to varying degrees up to a mirror-finish, is first cleaned of all traces of grease and wax. It is then immersed in the bath of electrolyte, usually sulphuric acid. This part of the process should be carefully controlled as to time of immersion, voltage and current applied, temperature, and the electrolyte must be kept constantly agitated to ensure even film development. When this has been completed the film is porous in character and if required may be dyed to produce a colour effect. After dyeing the metal is then dipped in a sealing bath which renders the film impervious and this provides a continuous inert surface protection to the metal.

Standards of anodizing have been the subject of much discussion in the past year. No one will deny that excellent anodizing can be obtained in this country, but it is equally undeniable that some very poor quality work is also marketed in spite of the existence of a British Standard. The architect who experiences trouble with anodized finishes probably must bear part of the blame in his general failure to specify standards adequately. The standards are there. He should make use of them. They are, however, minimum standards and not particularly easy to enforce at the delivery stage. It is, of course, at this stage that the architect requires assurance that the product will withstand the weathering to which it will be subjected in position. Detail tests after a failure, to allocate responsibility, are no reassurance. What he needs is a guarantee in effect that failure will not occur.

Such a guarantee is not easy to obtain. One company, Acorn Anodising Co. Ltd. does provide it, but their case is an exception to the general rule. The problem, of course, is highly complex in nature. When a decision is made to employ anodized aluminium for a component, very often the architect must place himself in the hands of the manufacturer. From him, advice can be obtained on detail design, the correct alloy to be used and the standard of finish. These last two, however, are not necessarily easy to specify particularly as very often the architect has no contact at all with the supplier of material or

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Table 2: Conversion coatings of aluminium

Type	*Effect*	*Uses*
Chromate-Oxide	Produces grey coating on purer grades. Immersion applied	Decorative or anti-glare purposes
Chromate-Fluoride	Yellow to golden-brown according to thickness. Immersion or spray applied	Pre-treatment for painting or vitreous enamelling
Chromate-Phosphate	Green non-crystalline opaque film. Immersion applied	Decorative or anti-glare purposes, or as base for paint
Zinc-Phosphate	Light grey crystalline coating. Immersion applied	Decorative or pre-treatment for applied paint

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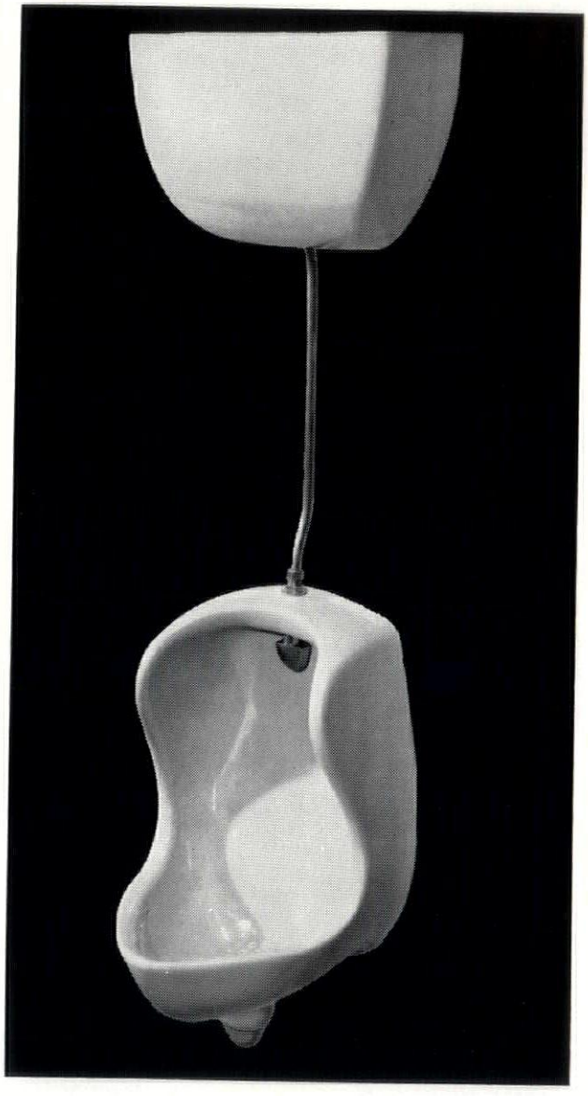

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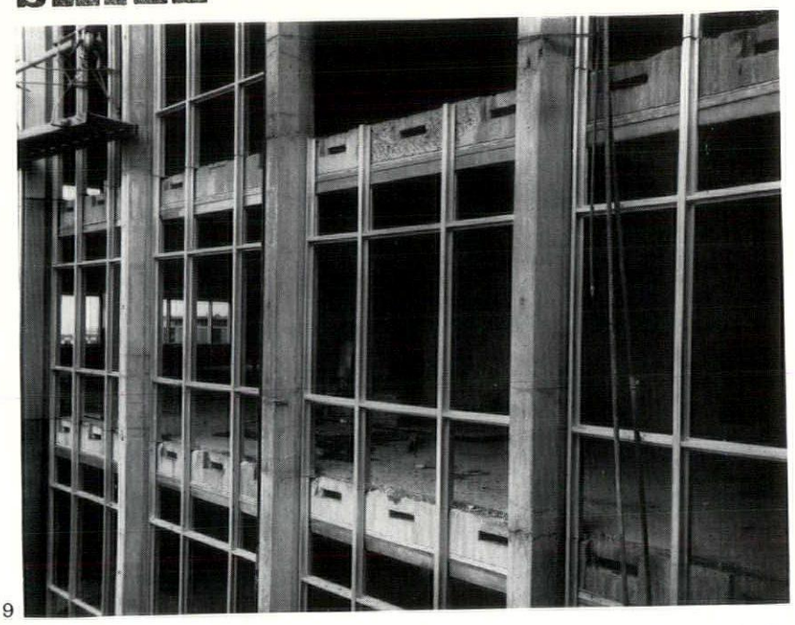
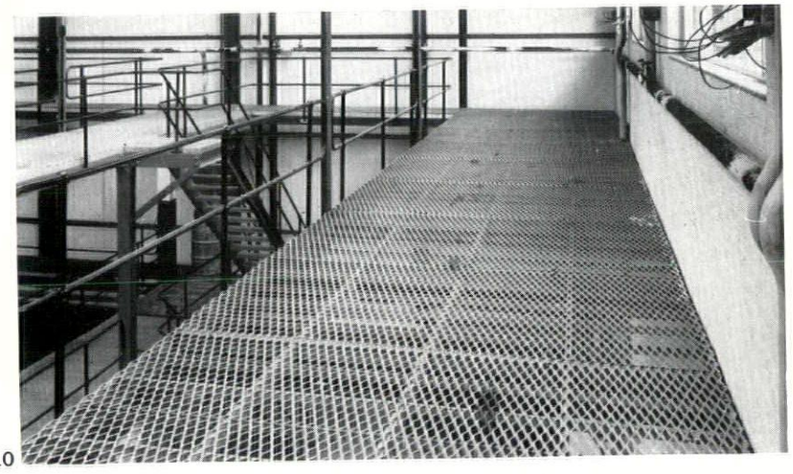


9, *aluminium curtain walling by Williams and Williams in course of erection on the British Columbia Electricity Authority Building, Vancouver. Architects: Thompson, Borwick and Pratt.*



10, *aluminium walkways by Expanded Metal Co. at Birmingham University.*
11, *aluminium roof decking by F. McNeil & Co. Ltd.*



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the anodizer. Yet both factors are interdependent. Choice of alloy and choice of finish cannot be separated

What then is the architect to do? He can, of course, specify accurately both material and finish, choosing the most suitable for the particular component, the manufacturing process involved, the detail design, the atmospheric conditions to be encountered, the finished appearance and the cost, but to do so he will require a great deal of detailed knowledge in what is, after all, for him, only a marginal field. Similar detailed knowledge would be needed for full specification in a multitude of like problems over the entire building process. Life is too short. The scope of the architect's responsibility is far too wide and diverse to permit any one person to become expert in everything. In many details he must have some acceptable guarantee that criteria have been met and be given easy proof that this is so. The adoption of the BS1 Kite Mark has done this for the shopping public. It should not be too difficult for a similar arrangement to apply to the many problems of quality within the building industry, not least of which is this one of anodized aluminium.

Such a scheme could do much to popularize the finish among architects, most of whom are aware of its usefulness. But awareness and confidence are not synonymous and it is in the realm of confidence that reassurance is necessary. The effect can be only beneficial. Competent firms will be enabled to guarantee their product in a simple manner and the less competent will be forced to improve quality or cease production.

Applications

Aluminium has found a great variety of applications in the building industry and it will only be possible to review these in rather general terms.

Roofing

In this application, the material has gained ready popularity, the most important factor probably being its light weight. Savings in supporting structure are certainly equal to any likely increase in cost. In UK the most usual development has been in profiled decking units where the formed profile has helped to counterbalance the lower strength of the material. In such a use, of course, weathering is not a factor and internally the constancy of the surface makes it very desirable in its freedom from maintenance and corrosion. Several profiles are also available as a weathering surface for pitched roofs and provided precautions are taken against using corrosive fixings, it has proved highly suitable. The bright surface has also proved popular in tropical countries where its high reflectivity has helped to insulate interiors against solar heat gain. Apart from the normally corrugated sheets commonly used, profiled rolls of material have been developed such as Fural roofing and Rigidal Lokrol. Sheeting profiles have, of course, also been used and on occasions specifically developed for sidewall covering.

It is in the roofing field that super purity aluminium has been particularly useful, as a substitute or replacement for other heavier fully supported metal coverings.

Wall cladding

The use of aluminium as wall cladding has been promoted by two main lines of development. The first has

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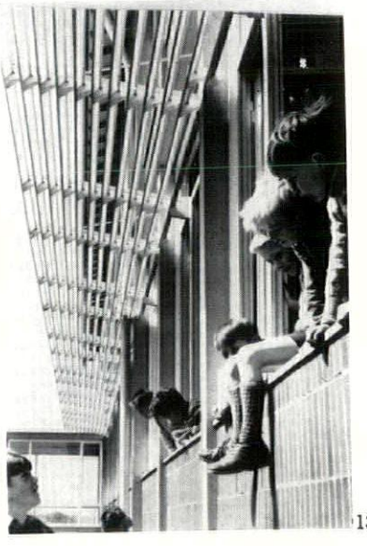
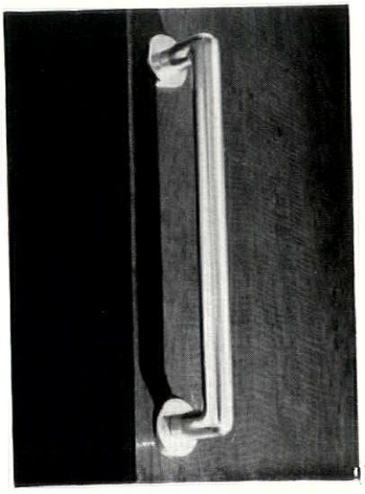
12, *standardized Starkie-Strading aluminium balustrading by J. Starkie Gardner Ltd.*



13, *sun louvres in stove enamelled aluminium by Hunter Douglas.*

14, *Aluminium grip handle No. B4992 by James Gibbons Ltd.*



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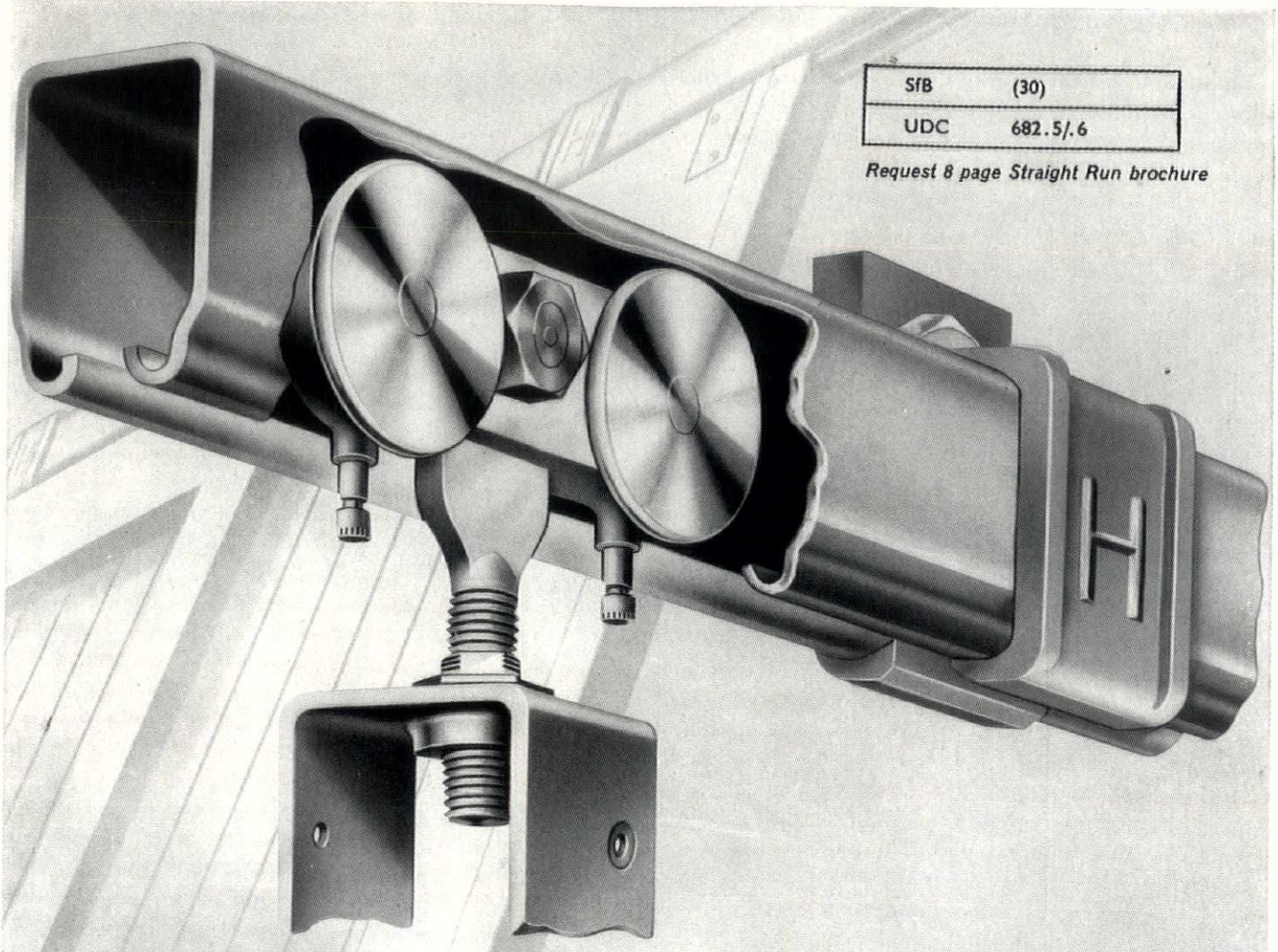

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continued from page 300]
been the more obvious one, in the use of pressed and profiled sheeting similar to that in roofing. In some cases, of course, this form of cladding has been developed for a decorative use, the famous Alcoa building in Pittsburgh being such an example.

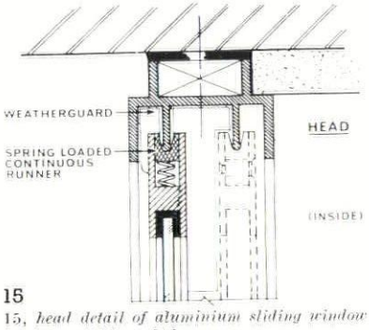
The other line of development has been the use of aluminium foil in conjunction with other materials, to increase the thermal insulating properties of the composite structure. Low absorption and equally low emission of heat give good insulating properties and this fact has been used in a multitude of applications. Foil-backed plasterboard, roofing felt, glass fibre pipe wrapping and p.v.c. sheeting are only a few of the many on the market. As well as providing the reflective layer, the use of foil also provides an effective vapour barrier assisting in the alleviation of condensation problems.

Curtain walling

It is probable in this field that aluminium has received its greatest promotion as a building material. Its light weight characteristics, weathering properties and ready formation possibilities have made it an ideal material for such uses. This property of being extruded in highly complex shapes and profiles has been developed by many companies to formulate wall-systems using aluminium as the basic material. Slender clean lines can be given to mullions and transomes and much ingenuity has been lavished on careful detailing, to give flexibility and efficient jointing.

Windows

An early development in the use of aluminium was that of extended sections capable of being fabricated into metal window frames. Cost was, of course, higher than the normal galvanized steel counterpart, but a strong selling point was the freedom from rusting and corrosion. This probably resulted in much of the distrust to which aluminium has been



15

15, *head detail of aluminium sliding window by James Gibbons Ltd.*

subjected since it was this freedom from corrosion and the necessity of painting which led to the misleading maintenance-free problem. It is to be hoped that the problem of ensuring adequate cleaning will become more widely understood since without such understanding aluminium will always suffer from a cloud of ill-informed distrust.

A particular development in the window field which is of some note is that of double-hung sash windows. This form of window with its readily controlled ventilation properties has been rather unfashionable for some time, mainly due to the necessity of large bulky frames to accommodate the counterbalance weights. By employing aluminium members, however, it is possible to reduce the weight of sashes considerably and balancing can be effected by concealed springs. The resulting window can compare favourably in clean elegance with the more usual metal casement and is finding a ready market in modern building.

Patent glazing

This, too, is an early development and is one that has probably experienced the least problems in use. Sections are obviously adaptations of previously accepted steel forms and though subjected to some possible refinement have remained largely static through their history. The use of sprung aluminium strip weatherings to the bar in place of the traditional lead wings is one such refinement.

Structural uses

This is a type of use which has not received a great deal of attention until comparatively recently. As a substitute for steel in structures, framed in a steel-like manner, it has little to offer. The lower strength properties demand the use of more material and hence higher costs. These costs were generally so much higher that compensating advantages were difficult to find and only in relatively few cases was the material used.

New developments in structural techniques have changed this picture somewhat lately. Structures using a multitude of small members or stressed skin construction where loads are distributed widely to give low stresses in the members, give aluminium its chance to exhibit its advantages, the greatest of which in this context is its lightness. Self weight of the structure can be reduced and forms achieved which would probably be almost impossible in other materials.

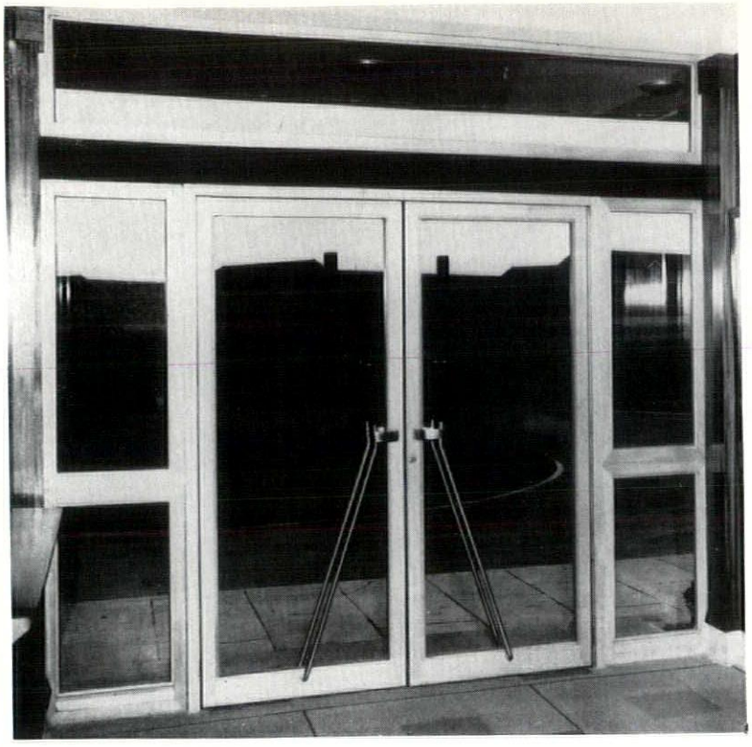
General applications

Other applications of aluminium in building are almost too numerous to mention. Door furniture, rainwater goods, soil and waste pipes, partitions, venetian blinds, sun control screens, shop fronts, stair nosings, flue linings, roof trim, curtain rails, heated and acoustic ceilings: these are a few of the many. An attempt is made in the accompanying illustrations to show some of these.

As to the future, the possibilities of using aluminium seem endless. Sound design, using properties to advantage and careful guarding against property weaknesses will provide many uses. Probably in the realm of industrialized building will be found the major development scope. Well designed and finished components manufactured to the fine tolerances to which the industry has proved itself capable of working, will undoubtedly find a ready market and it is in this direction that the industry should be pointing. Architects, too, will be thinking along those lines in the coming years and no doubt they will receive from the aluminium industry the ready co-operation they have almost come to expect.

* * *

Note.—An exhibition of aluminium products and components relative to the building industry is to be held from April 8–11, 1963, in the hall of the Royal Horticultural Society, Westminster, S.W.1. This exhibition is sponsored by the British Aluminium Co. Ltd. and is open each day from 10 a.m. to 8 p.m. and 9 a.m. to 12.30 p.m. on the final day. Readers may also be interested to know of a symposium being held in London on June 11 and 12 under the auspices of the Aluminium Development Association. The subject is 'Aluminium in Structural Engineering' and full details can be obtained from the Association at 33 Grosvenor Street, W.1.



16

16, *standard aluminium Slim-line doors manufactured by Heywood-Hellliwell.*

17, *expanded aluminium balustrading panels on a shop staircase. Expanded Metal Co.*



17

5540 RANGE
Totally enclosed weather and corrosion-proof unit. Spine is a single piece casting, with control gear mounted on a hinged channel.



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5650 RANGE
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5350 RANGE
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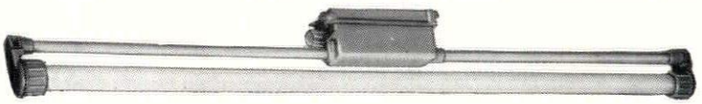

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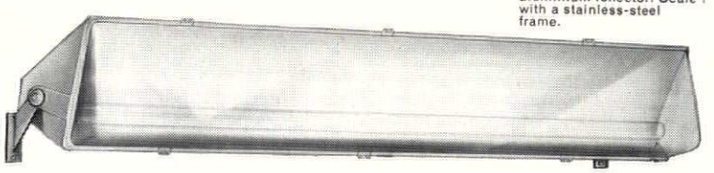

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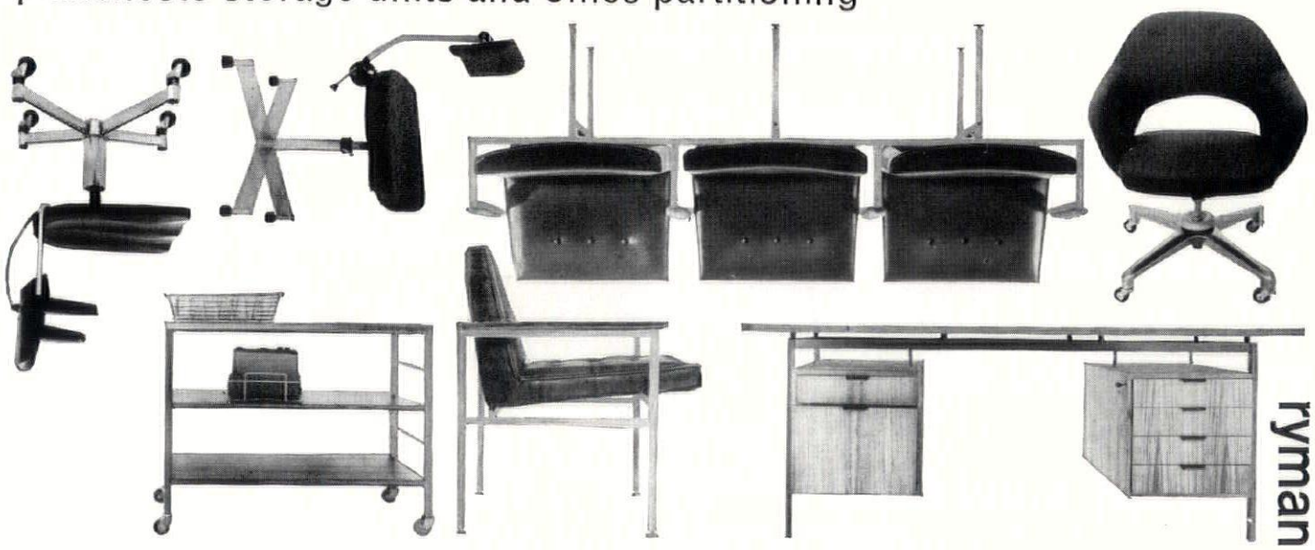

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THE INDUSTRY

Warm Air Heating

Kaloric electrical central heating seems to offer a neat economic solution to the problem of installing warm air central heating in new and existing houses and flats.

The unit is remarkably small, measuring only 14 in. square by 17½ in. high, and can, therefore, be installed in a very small space such as an airing cupboard. The fan blows air through four outlet apertures which are connected by flexible ducts to the necessary outlet grilles. Each aperture is fitted with an electric heater element operating at black heat, the loading of which can be from 1 Kw to 1¾ Kw each. Since the air is recirculated, response is quite rapid.

Arrangements have been made to supply completely packaged units and in this package is included the fan and heater battery, 1 inlet grille, 4 outlet grilles, 4 adjustable bends and the control panel illustrated in



1

1. This panel provides automatic Venner clock control with individual hand control for each element giving remarkable flexibility in operation.

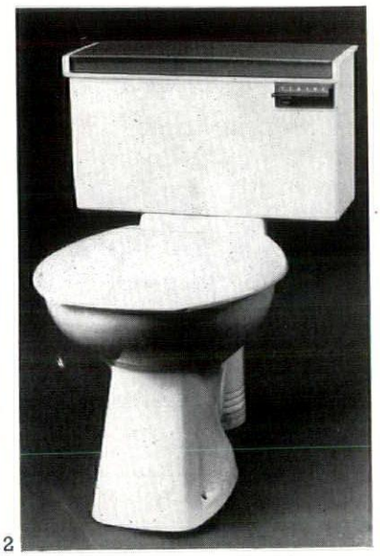
The manufacturers claim that the entire system can be installed completely wired and connected for £90–£95 regardless of loading.

M. and J. Lossos and Co. Ltd., 29–31 *Beethoven Street, London, W.*10.

Plastic Cistern

Cisterns Limited announce the availability of a new cistern for wc suites designed by John Barnes, FSIA, and called by them the Super Viking. The unit shown in 2 is all plastic in construction and undoubtedly presents a neat uncluttered appearance. The main body is available in white or colours with matching or contrasting coloured cover. The works inside the cistern are also plastic including syphon ball valve and float ensuring a maintenance free life for the assembly and disposing of all troubles connected with rust and corrosion. Conforming to relevant British Standards, it carries the BSI Kitemark.

Cisterns Ltd., Addingham, Ilkley, Yorkshire.


2

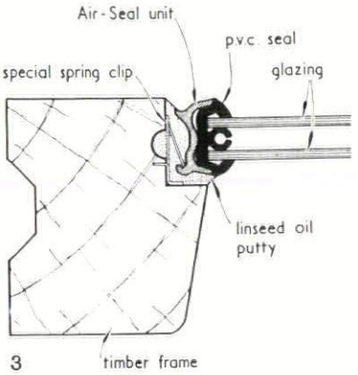
Double Glazing

A new development in double glazing units was announced just too late to be included in the March article on the subject. These units, manufactured by Agnew and Schwarz (Multi-Glazing) Limited, are called Air-Seal units, 3.

The two sheets of glass are mounted in a pvc extrusion. The outer flanges of this extrusion are bonded to the glass with an adhesive while the hollow central spacer section is treated with a slow curing seal which progressively strengthens for some time after manufacture. This plastic sealing unit is protected and strengthened by an aluminium outer frame making the whole unit comparatively simple to handle without fear of breaking the edge seal. In fact, the unit is so strong that it is possible to hinge it as an opening light without further framing.

When the unit has been sealed two small holes are made in opposite corners of the inner sheet and all the trapped air is replaced by dry nitrogen and the holes sealed with small unobtrusive caps. The units are guaranteed for five years but, even after this time, should drying out become necessary, this can be simply done in situ by means of these plugs.

The biggest advance which the use of these units affords, however, is the comparatively simple method of fixing. The seal is protected by the outer flanges of the extrusion itself and so extra deep frames or rebates are not necessary for seal cover. In fact, the standard units can be glazed direct into normal wood or metal frames. Sprung galvanized steel clips are fitted into the rebate which is then buttered with putty or mastic and the unit pressed into position. It is then held securely and can only be removed by des-



3

troying the clips which engage in the shaped aluminium edging.

Up to roughly 24 sq. ft., these standard units can be used. Above this size and up to 50 sq. ft., a larger unit Type D1 must be used, and above 50 and up to 90 sq. ft. Type OUT units are available.

The units are not, of course, cheap compared with single glazing, but where cost permits they certainly appear to be a very practical proposition.

Full details and prices are available from *Agnew and Schwarz (Multi-Glazing) Ltd., 52 Rochester Row, London, S.W.*1.

CONTRACTORS, etc

Offices and Shops, Catford, London. *Architect:* Owen Luder. *General contractor:* Bernard Sunley & Sons *Sub-contractors: Infill panels:* Plyglass Ltd. *Vinyl floor tiles:* Michael Nairn & Co. *Passenger lifts:* Marryat & Scott Ltd. *Car lift:* Evans Lifts Ltd. *Electrical installation:* Roda Electrics Ltd. *Underfloor heating:* Heating Investments Ltd. *Profilit:* Aygee (Glass) Ltd. *Armourplate entrance doors and panels:* James Clark & Eaton Ltd. *Piling:* Frankipile Ltd. *Mild steel windows:* Standard Maclean Ltd. *Exposed aggregate panels:* Tarmac Vinculum Ltd. *Suspended ceilings:* Unitone (Acoustic Tiles) Ltd. *Roller shutter:* G. Brady & Co. *Felt roofing:* William Briggs & Sons Ltd. *Domelights:* Williams & Watson Ltd.

Furniture Showrooms and Offices, Albemarle Street, London. *Architects:* Peter Moro and Partners in association with Robin Day. *General contractor:* Tersons Ltd. *Sub-contractors: Windows:* Williams & Williams Ltd. *Underfloor heating:* Grierson Ltd. *Joinery:* Davies Bros. *Ventilation equipment:* Greenwoods and Airvac Ventilating Co. *Light fittings:* Rotaflex (Great Britain) Ltd., Atlas Lighting Ltd., Merchant Adventurers Ltd. *Projector incorporated* in sign by Projection and Display Services Ltd.

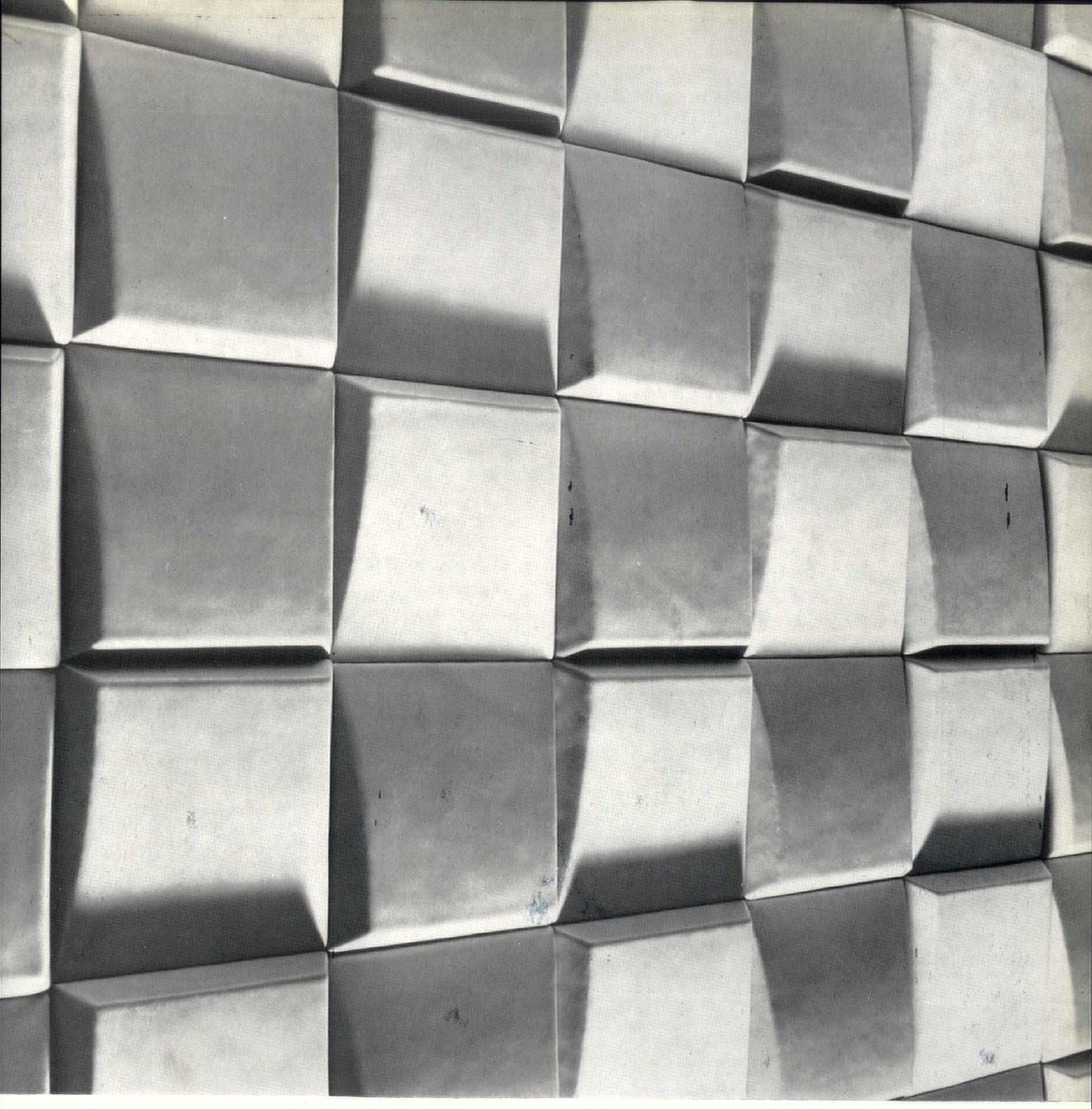
Commonwealth Institute, South Kensington, London. *Architects:* Robert Matthew, Johnson-Marshall & Partners. *General contractor:* John Laing Constructions Ltd.

Students Union, Keele. *Architects:* Stillman & Eastwick-Field. *General contractor:* C. Cornes & Son Ltd. *Sub-contractors: Metal windows:* Morris Singer Co. *Bricks:* Berryhill Brickwork Ltd. *Prestressing:* McCalls Macalloy Ltd. *Prestressed concrete:* Pierhead Ltd. *Redalon retarder:* Adamite Co. *Metalwork:* Reynolds & Litchfield Ltd. *Hardwood floors:* Horsley Smith & Co. *Kitchen equipment:* Stotts of Oldham. *Flush doors:* Gliksten Doors Ltd. *Domelights:* R. Seddon & Sons Ltd. *Lightweight roof screeds:* Isocrete Co. *Cotex dome finish:* Kendells Flooring Ltd. *Marble mosaic:* A. Elder Reed & Co., Stanley Tiling Co. *Slotac ceilings:* Treetex Acoustics Ltd. *Sound equipment:* AEI Ltd. *Slate floors:* Altazite Ltd. *Hoists:* G. Brady & Co. *Shutters:* Shutter Contractors Ltd. *Sanitary ware:* Twyfords Ltd. *Light fittings:* GEC Ltd., Atlas Lighting Ltd., Frederick Thomas & Co., Linolite Ltd. *Clocks:* Baume & Co. *Furniture:* Humphreys Ltd., George Stone Ltd., Conran Co., Hille of London Ltd., Design Associates, Pel Ltd. *Curtains and carpets:* Primavera (Contracts) Ltd.

Hall of Residence, Leicester University. *Architects:* Richard Sheppard, Robson & Partners. *General contractors:* F. Perks & Son Ltd. *Sub-contractors: Heating:* Weatherfoil Ltd. *Dining hall steelwork:* Boulton & Paul Ltd. *Roof lights:* British Challenge Glazing Co. *Ventilation:* Colt Ventilation Ltd. *Cork tiling:* Fitchett & Woollacott Ltd. *Felt roofing:* General Asphalte Co. *Ironmongery and entrance gates:* James Gibbons Ltd. *Cycle racks:* MAC Engineering (Bristol) Ltd. *Overhead garage door gear:* Ellard Sliding Door Gears Ltd. *Precast terrazzo:* Constone Ltd. *Soil and waste plumbing:* Econa Modern Products Ltd. *Flush doors:* Leaderflush Ltd. *Slate cills:* Bow Slate & Enamel Co.

Library, Nuneaton. *Architects:* Frederick Gibberd & Partners. *General contractor:* G. E. & W. Wincott. *Sub-contractors: Structural steelwork:* Edward Wood & Co. *Underfloor heating:* Williams Bros. (Electrical) Ltd. *Copper roofing:* T. Stratton & Son. *Asphalt roofing:* Permanite Ltd. *Precast stone:* Calverley (Concrete) Ltd. *Mosaic facings, w.c. partitions:* Carter & Co. (London) Ltd. *Plyglass double glazing units:* Martin Dunn Ltd. *Fibrous plasterwork and acoustic ceiling:* Allied Guilds. *Wood block and vinyl flooring:* Horsley, Smith & Co. (Hayes) Ltd. *Bookcases:* Harris & Sheldon Ltd. *Service counters, enquiry desks:* D. Burkle & Son Ltd. *Motorised storage cases:* J. Glover & Sons Ltd. *Recessed light fittings:* Courtney Pope (Electrical) Ltd. *Light fittings:* Merchant Adventurers. *Electric clocks:* Gents. *Venetian blinds:* Coventry Blind & Shutter Co. *Catalogue cabinets, special library furniture and tables:* A. Edmonds & Co. *Chairs and other furniture:* Hille of London. *Adjustable shelf brackets and supports:* Savage & Parsons Ltd. *Soft wood storage units:* Remploy Ltd. *Outdoor seats:* LM Furniture.

Army Barracks, Chelsea. *Architects:* Tripe & Wakeham in association with Sir Donald Gibson. *General contractor:* Gilbert Ash Ltd. *Sub-contractors: Lifts:* Hammond & Champness Ltd. *Fittings:* Built-in Fixtures Ltd. *Lightweight screeds:* Celcon Ltd. *Balustrading:* S. W. Farmer & Son Ltd. *Roller shutters:* Haskins Rolling Shutters. *Mosaic:* Milano Mosaics Ltd. *Piling:* Soil Mechanics Ltd. *Aluminium windows:* Williams & Williams Ltd. *Mild steel windows:* Local Casements Ltd. *Joinery:* Norbury Joinery & Cabinet Works Ltd. *Slate:* Setchells & Sons Ltd.



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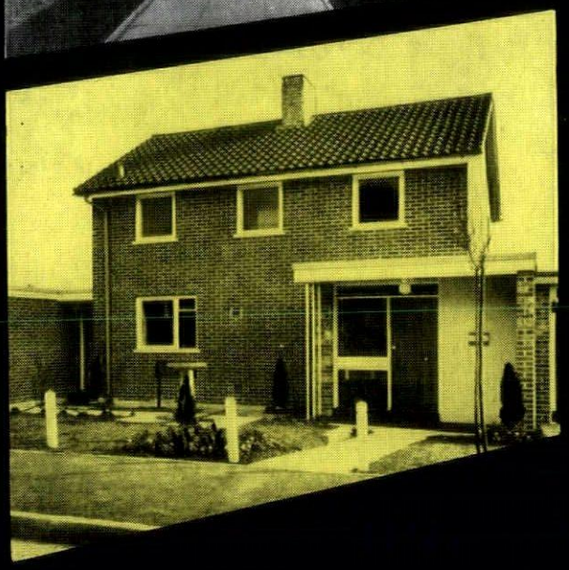

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THE L.C.C. ARCHITECTS' DEPARTMENT fitted Gas convector room heaters in the 11-storey flat development at Ackroyden Estate (Architect: Professor Sir Robert Matthew, C.B.E., F.R.I.B.A.)

WATES BUILT HOMES LTD. installed Gas warm air heating and clothes drying in nearly 300 flats in Dulwich, designed by Austin Vernon & Partners.

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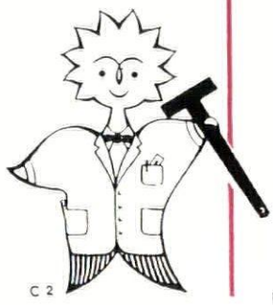


C 2

BARBOUR INDEX FILE NO. 360

Illustrations

Top Left
L.C.C. FLATS, ACKROYDEN ESTATE

Top Right
WATES FLATS, DULWICH

Bottom
PRIZE WINNING HOUSE, WINDSOR

ISSUED BY THE GAS COUNCIL

ar euromart

QUICK testet Fertighäuser

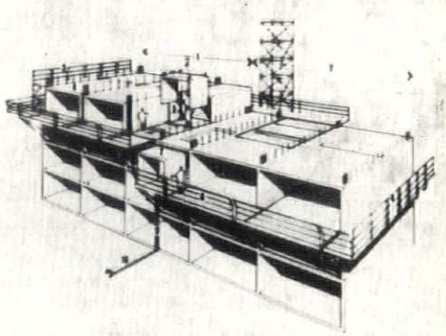
Auch dieses Haus testete Dipl.-Ing. Architekt Gerhard Schulze, Hamburg-Altona. Er sagt zu dem Therma-Fertighaus „Typ 9x12" der Firma Otto Förster KG, Cloppenburg: „Besonders glücklich gelöst finde ich hier die Kombination von Küche, Eßplatz und Terrasse."

Bauzeit: 4 Wochen
Preis: 52 400 DM (ohne Keller)
Wohnfläche: 93 qm
Lieferzeit: 4 Wochen

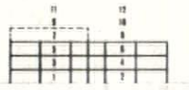




Diagram showing the Bectra system of construction



1 Phase 7 being shuttered
2 Phase 8 shutter track being placed
3 Gable shuttering in position
4 Tunnel shutter
5 Formwork to opening
6 Platform for withdrawn shutters
7 Shutter being withdrawn
8 Platform for supporting gable shuttering
9 Heating mains
10 To heating unit

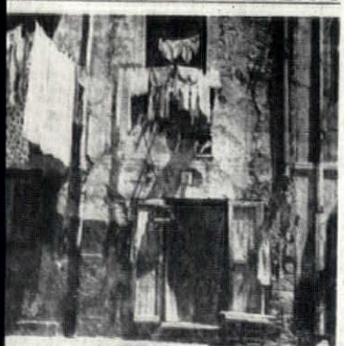


Shuttering phases

- 5 -

Sabez Misch-Automaten

BOOM edilizio di Bari

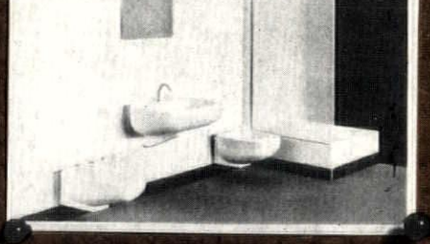


Articolo dell'on. Mario Assennato

La situazione economico sociale del capoluogo pugliese, esplosa in piazza nei « Fatti di Bari » dello scorso agosto, è individuata dall'on. Mario Assennato nell'intreccio del capitale monopolistico con quello dei commercianti e degli agrari che attraverso il boom edilizio hanno raggiunto le note posizioni di indisturbato privilegio.



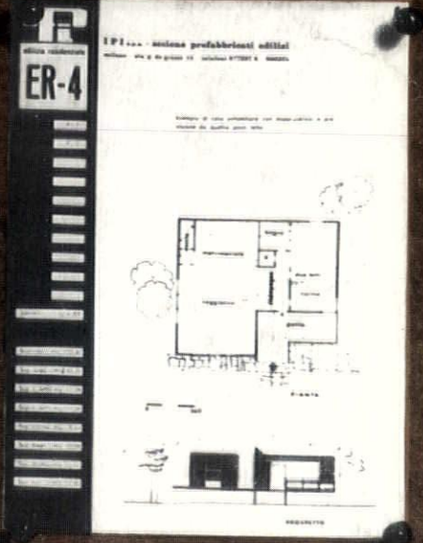


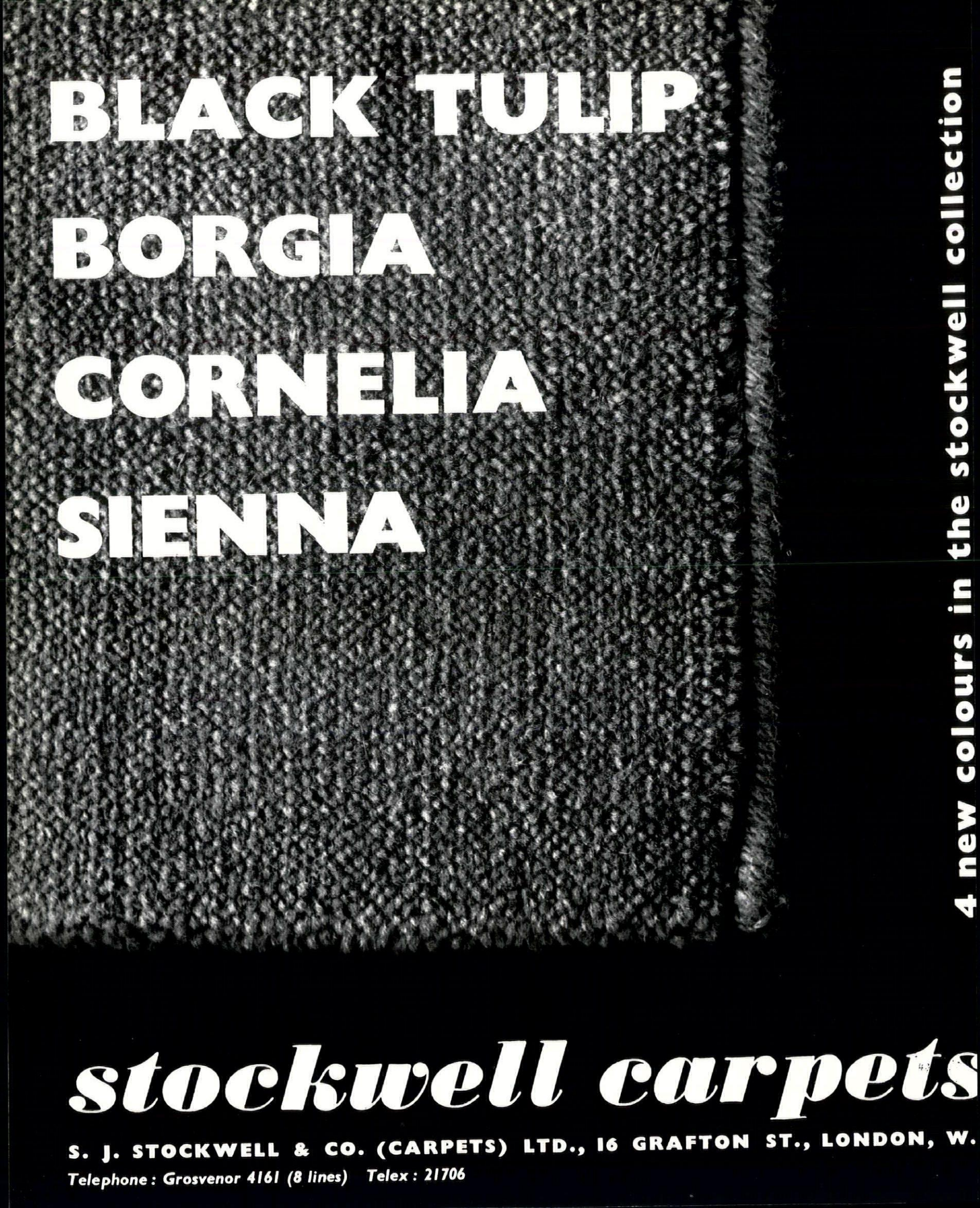




MADE IN DENMARK







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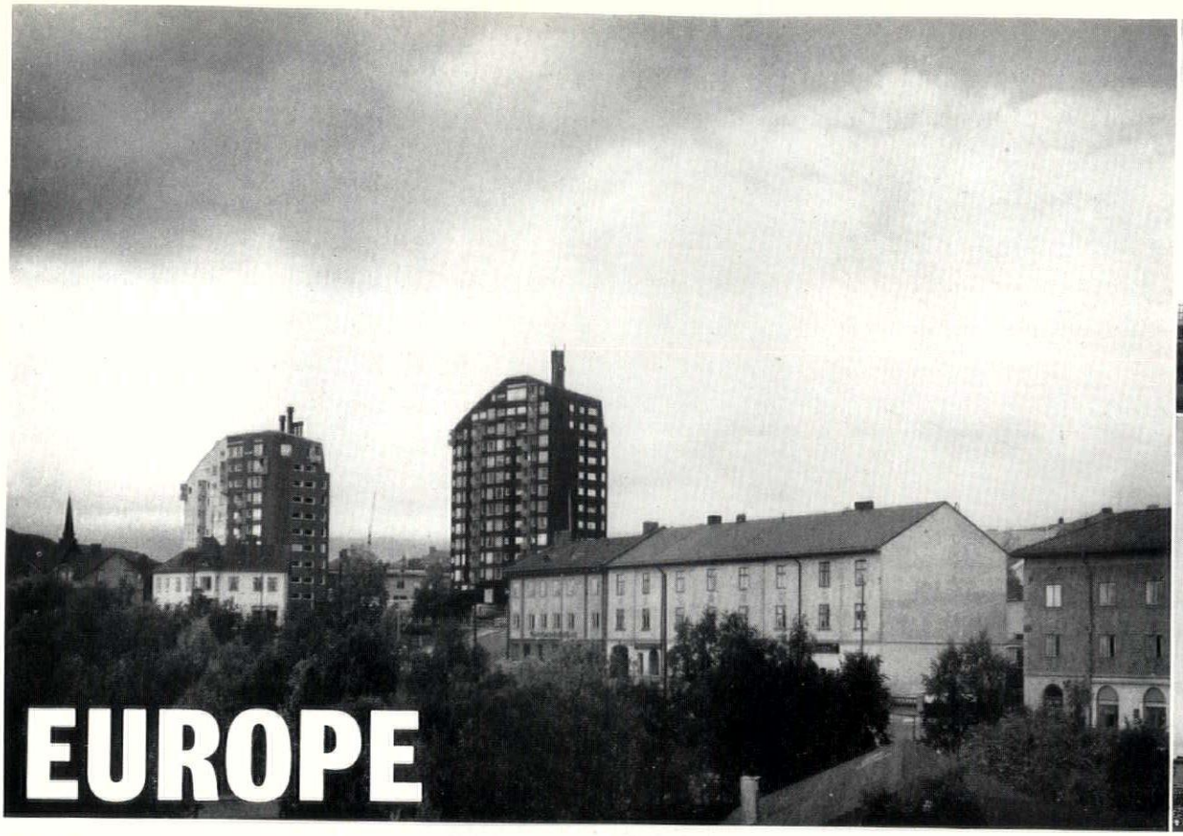

EUROPE

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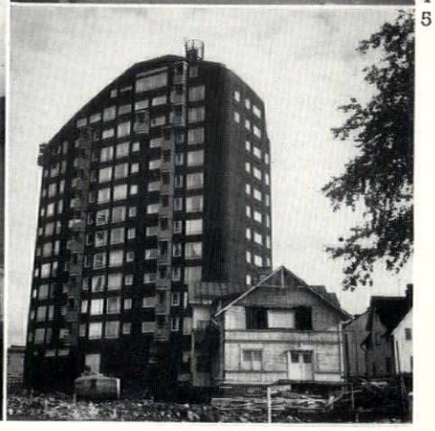


5

For this special issue, WORLD is devoted to the ingenuities, achievements and perplexities of the architecture of Europe, beginning at the very

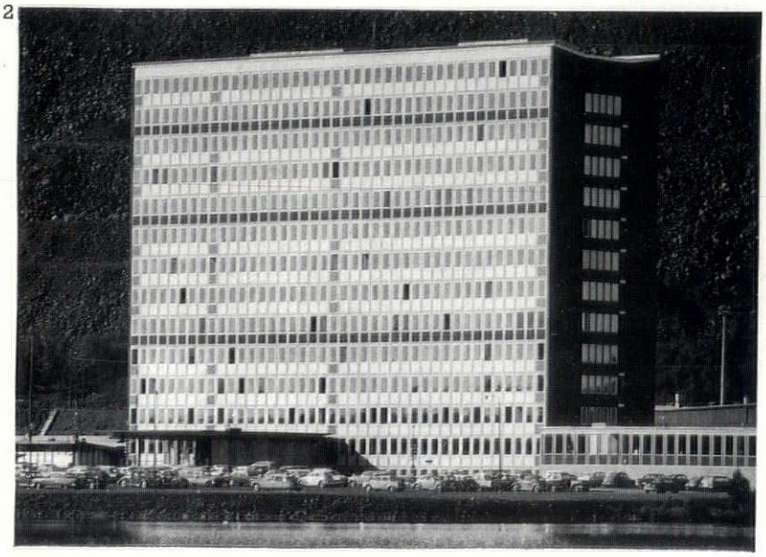
FARTHEST NORTH



3

Even farther beyond the Arctic circle than Lulea, Kiruna in Sweden is Europe's most northerly industrial city. It is also beginning to acquire buildings of the quality a major centre of Swedish life should be able to expect: Hakon Ahlberg's office-slab, 2, beside the lake, for the mining company; Artur von Schmallensee's town hall, more distinguished inside, 3, than outside, it seems and—now—the first phase of a scheme of housing and shops, by Ralph Erskine.

As usual, Erskine is completely and unpredictably original: the two towers of phase one, 4 and 5, are only vaguely alike in their idiom of irregular rooflines, and the contrast of sharp rectangularity and smudged-off corners, 6, in the detailing. Either one of them would make a striking addition to any small new town, but the dialogue of their highly individual forms rising above the smaller structures of the town's central area, 1, will be astonishing for years to come. Erskine is also, as the result of winning a competition, to design a satellite village outside Kiruna.



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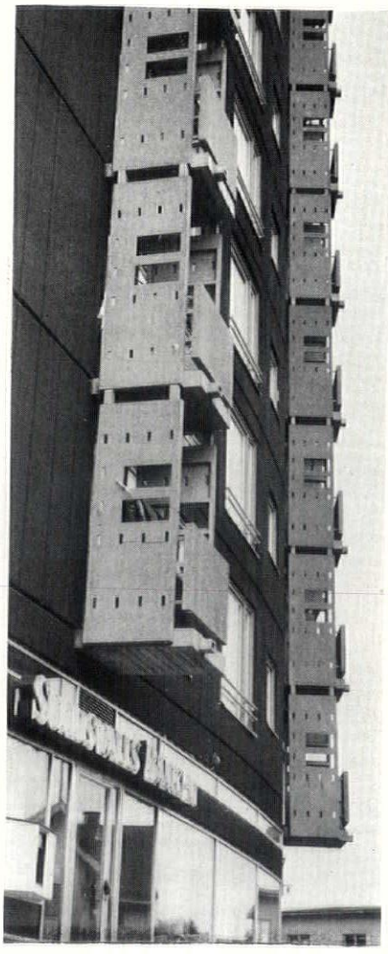

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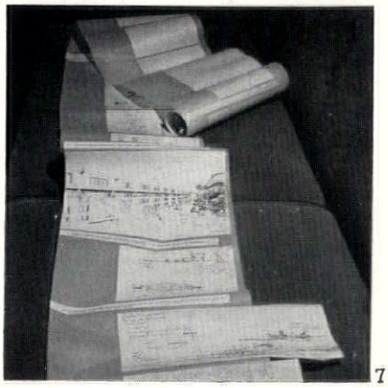
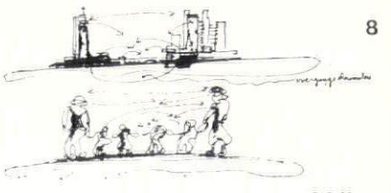


7

SCROLL

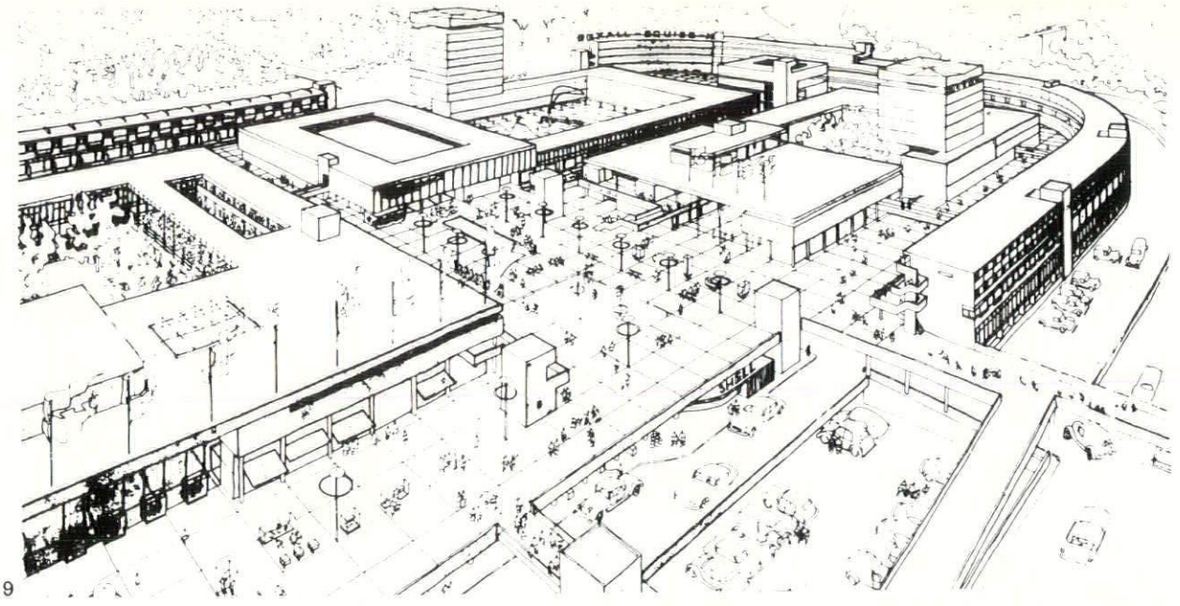
A document that adds new dimensions to the concept 'a lengthy apologia' is the seventeen-foot scroll, 7, of typescript and drawings which has recently been circulating privately in England as a vehicle for the town-planning ideas of the distinguished Dutch architect J. B. Bakema. Related in theme to the presentation he made to the recent congress at Royaumont, subsequently reprinted in part in the *Team X Primer*, it illustrates his philosophy of urban spaces in sketches that reveal occasional flashes of his characteristic humour—8 illustrates the concept of small buildings helping large ones to join hands—and ends with his vision of an holistic urban



8

BAKEMA'S SCROLL

scene and way of life, 9, in which buildings large and small and the spaces and communications between them work together as a human habitat. The use of the scroll form for the exposition of a sequential argument has obvious attractions wherever there is room to spread things out, as there often is on the drawing boards of an architect's office, and it could also be adapted for use in teaching machines of the simpler kind. One wonders if some enterprising publisher could be interested in producing it, even in a limited edition—the printing problems involved would be well-calculated to challenge the ingenuity of a firm like de Jong of Hilversum, who are already deeply involved with architecture and design, and will shortly be producing a study of Rietveld's Schröder house in their *Quadrat Print* series.



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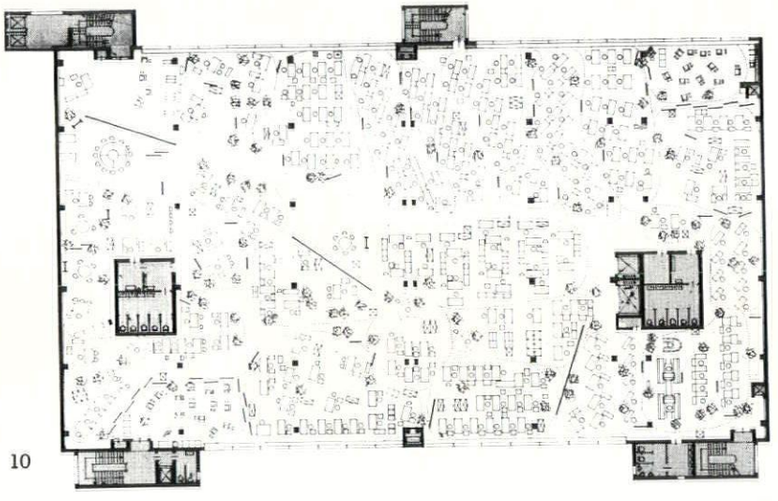

10

OFFICE CLUSTER

One of the most unexpected and intriguing thoughts to be let loose in Europe recently is what might be called the free-association office-plan. The brainwave-man behind this concept seems to be Eberhard Schnelle, the architect most involved is Werner Henn, and between them they have repudiated the concept of a large office space organized into regular ranks of desks and partitions, and replaced it by a planning method that seems to have affinities with the theories of natural clustering employed by Kevin Lynch in the US or the Brutalists in Britain. Their most worked-out scheme to date is for the 'Buch und Ton' offices in Gutersloh, illustrated in *Bauen und Wohnen* for January 1963. Large, clear floor-spaces make very free planning possible, 10 and 11, and theoretical justifications of all sorts, from cybernetics to circulation, are available. What is obviously crucial is a 'clean, well-lighted place' with plenty of PSALI to make all parts of the floor-area equally habitable and usable. What is less obvious is that the result is not necessarily visual chaos; interiors at Gutersloh do not look half as demented or ill-organized as might be expected, and there can be little doubt that with right basic decisions, and intelligent adjustment later, there might well emerge a pattern of working and occupying space that would manifest a clear and unmistakable functional order.

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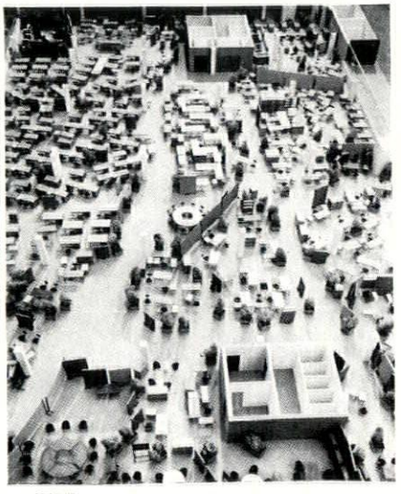
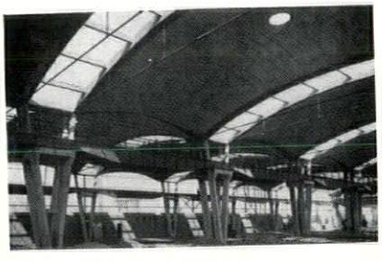


HUNGARIAN INDUSTRIAL

The shrewd and lively *New Hungarian Quarterly* is one of the most attractive of all the English Language publications emanating from Eastern Europe at present—and one for which the 'visual world exists.' In no. 7 of vol. III, Ivan Boldiszar, the editor, completed his two-part account of a tour of Britain sponsored by the British Council—an account spiced with sharp observations of the London scene, graced by the names of one or two British architectural personalities in unbuttoned mood, and the observation '. . . I have found out how this (Park) Crescent came to be built. . . . I had no need to delve into libraries, for that has been done, on my behalf, and on behalf of all Londoners and foreigners who love the city's stones, by Nikolaus Pevsner, the British equivalent of our Genthon. . . Pevsner is marvellous, he knows everything but keeps on grumbling, and nothing in London is good enough for him the way it is or the way it has developed,' followed by half a page of delighted appreciation of the two London volumes of the *Buildings of England*.

The same issue also contains a short article by the architect Maté Major on the subject of *Matter and Form in Hungarian Industrial Architecture*—another document inspired by London, for it begins with an account of the IUA Congress here in 1961 which leads to some general speculation on the role of technique in architecture, and ultimately to some briefly commented illustrations of Hungarian post-war industrial buildings, a field of building activity where Major believes the Hungarians to shine. There seems to be good warrant for this belief: the work of Lajos Semsey has been a subject of comment in World before now (Sept. 1961) and he is represented in Major's article by the vaults of a tube-shop, 12, designed in collaboration with Istvan Menyhard. Others who show well in his survey are Arpad Szabo, with his river-port installations, 13, and Istvan Ramocsay, designer of the highly original paper mill seen in 14—a design whose 'Italianism' Major finds 'at worst, a most pardonable offence.'



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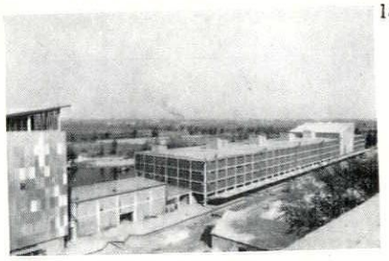

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CATALAN CONTROVERSY

Most buildings built by professional bodies of architects for their own occupation lead to arguments—Xavier Busquets's new Faculty of Architects building, 15, in Barcelona, with its incised mural by Picasso has been no



15

exception, though the argument has not been about the Picasso. Rather, it is the decision to give the interior design of each separate floor to a different firm of architects that has sparked off the controversy—and then, not in the direct sense of doubting whether this decision was wise, but simply because of the obvious contrasts of style thereby revealed. The Catalan cultural magazine *Serra d'Or* conducted an enquiry (published August/September last year) into the apparent crisis of design, and polled the opinions of a number of critics, artists and one (why only one?) architect.

Contrasts as marked as that between the sixth floor, 16, by Tous and Fargas,



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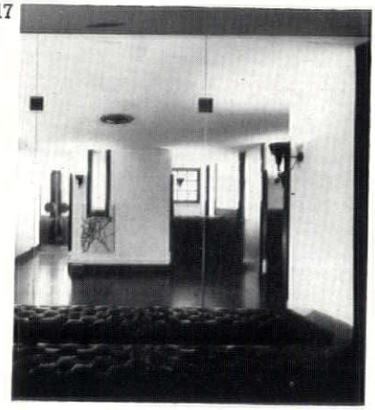
and the fourth, by Martorell, Bohigas and McKay, 17, gave them plenty to bite on, but one may be forgiven for feeling that the editors (or whoever drew up the questionnaire) somewhat



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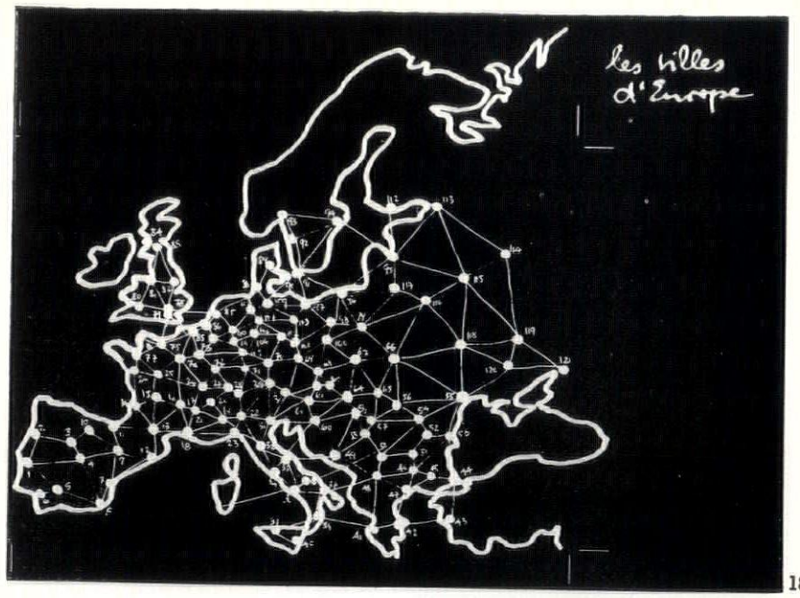
prejudiced the issue by putting the crisis firmly into the categories of Rationalism vs Empiricism—even a moderate linguist should be able to pick his way through their ultimate characterization of the two sides in the dispute as they saw it: 'L'un utilitza sovint les titubejants i modestes parets de mao; l'altre creu en la geometria dels rectangles de vidre i d'alumini.'

The answers were more varied than the questions deserved. The most internationally distinguished of those asked their opinion, the critic Alexandre Cirici-Pellicer, said 'It is very clear that two groups exist, but neither is very interesting. While one group strives, by offering models and examples, to put the country on the level of the more industrialized nations, the other pessimistically submits to retrograde working methods . . .' and in this latter category he speaks of the '. . . terrorism of Bohigas, Martorell and McKay, that . . . speaks only in terms of elementary pre-industrial techniques; they neither create models for industrialization nor submit to social reality.'

Others were prepared to support Bohigas, Martorell and McKay, terrorist or not, and one, Joan Perucho, justifiably drew attention to their kinship with BBPR in Milan. Rafols Casamada, equally justifiably, enquired about the cost of each floor and how long each would be in use per annum, while the only architect whose opinion was asked, Josep Sostres, threw the question out in substantially the same terms as would any other architect in any other part of the world 'Why speak of crisis? Since 1947, architecture has been plainly conformist, living off the creations of the first Rationalist epoch and some innovations made by the succeeding generation. Within the normal existence of architecture there are always mannerisms, and to-day's crisis is simply to-day's mannerism, the over-valuation of the individual.'



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FRIEDMAN'S EUROPE

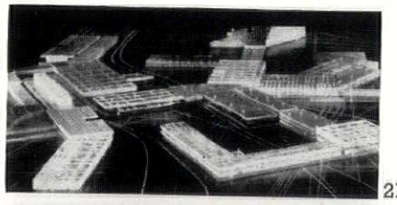
Never underestimate the power of the mass media, nor of the neuroses brought on by a traffic crisis; these, and other influences, have combined to make the planning authorities in Paris pay more serious attention to Yona Friedman's plan to create a



19

second, adaptable Paris in a space-frame above what already exists on the ground, 19. Whether or not the outcome will make him the second Haussman, the current Parisian city-wide and semi-permanent traffic jam has convinced the powers-that-be to undertake a full theoretical evaluation of the project, while a recent exposition of his ideas on French TV met with widespread public acceptance—aided, no doubt, by the fact that Parisians live in daily familiarity with the world's most famous and most handsome space-frame, the Eiffel Tower. They do not fear that such a structure will cut off all light from the city below—the gaps and the staggering of the different levels, as in 20, assure them that sufficient light will fall through.

Friedman's ideas have also had an excellent exposure recently in *Werk* (2, 1963) in a lengthy study which gave him the chance to draw attention to similar thinking in the direction of *architecture mobile*, by Constant, 21, 22, and Schulze-Fielitz, 23. Such schemes, if implemented, should (in Friedman's view) lead to a fresh concentration of the population of Europe into compact cities, distributed in a rationally triangulated grid across the face of Europe, 18, in a topological network whose apices are already given by the location of the major railway-junctions and airports.



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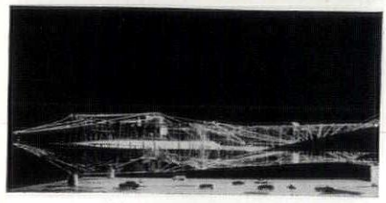

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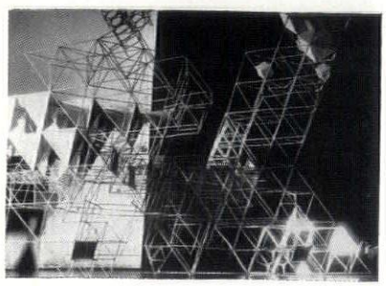

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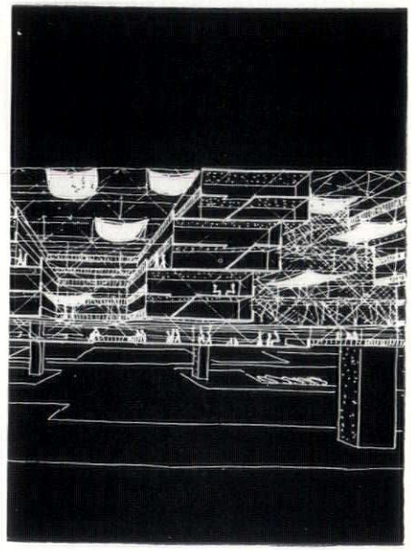

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views and reviews

MARGINALIA

THREAT TO NEW LANARK

In any view of the prehistory of modern architecture, the name of Robert Owen must figure large—in aiming to turn social progress directly into the masonry of better housing he pioneered the basic moral imperative of modern architecture, just as his other propositions about hours, wages, working conditions, education and welfare anticipated the imperatives of every welfare-oriented state. Indeed, his vision of the built structures and the social programme as an indivisible unity puts him still ahead of much of what we are doing to-day. Yet the first monument of his vision, the complex of mills and workers' housing, built to model standards in the years immediately after 1799, at New Lanark, 1, is now threatened with abandonment to neglect and decay.

The housing, in particular, has become something of a financial embarrassment to the present owners (Gourock Ropeworks) who have other commitments (for capital re-equipment of their plant) and, although the condition of the housing is far from disastrous, 2, an expert report on its rehabilitation and making good gave a total figure that the Ropeworks could not consider under their present circumstances (although the cost per individual dwelling was not high). Unable to tackle the problem themselves, they offered to make the housing over to public ownership for a nominal sum (£250) but there have been no takers, the local housing authority preferring to accommodate the ropemakers in new council estates elsewhere and abandon the original Robert Owen housing. Other means of financial assistance (such as grants via the Scottish Special Housing Association) exist, but someone will have to take responsibility for the operation, and other authorities, such as the Ministry of Works, seem either to have their hands full with other problems, or not to be very interested (Scotland's record in the preservation of early industrial architecture is not much better than England's—it appears that the Catrine Mill is now to be written off, in spite of its pioneer date).

In the meantime the Ropeworks is to continue the upkeep of the housing until such time as the future becomes clear. While one sympathizes with the cares and responsibilities of overworked public bodies, it is difficult not to feel that an architectural and social monument of this order should have a strong and early call on any monies that are available, and pressure should be brought to bear on responsible Ministers for a proper transfer to public ownership. Such pressure might well come, not only from architects and industrial archaeologists but also from both sides in industry—the Left can claim it as a pilot-project for the Welfare State, while the Institute of Directors could, with equal propriety, claim it as an early triumph for enlightened management. As the first clear sign of the conscience of the Industrial Revolution, New Lanark is part of the history of the industrialized world, and its preservation concerns us all.

PEVSNER'S 'OUTLINE'

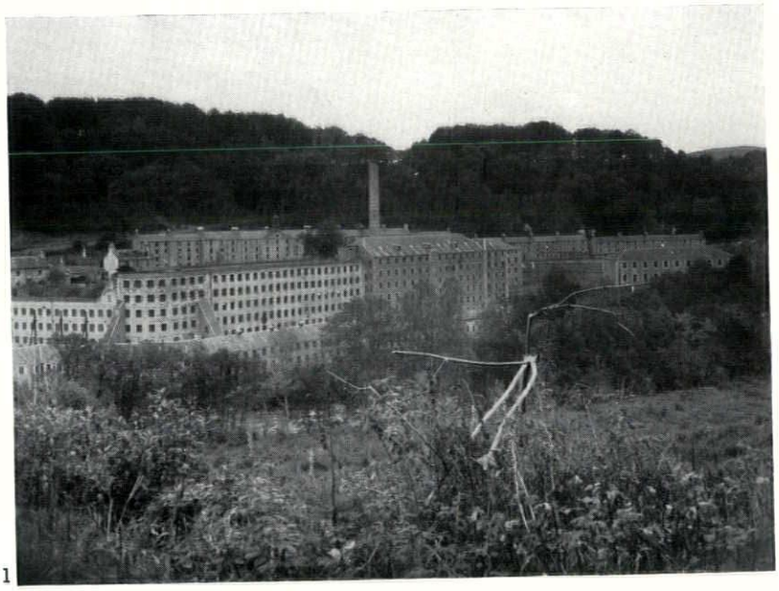
Nikolaus Pevsner's *An Outline of European Architecture* is never out of print for more than a few months. Recently students had got restless, and now that the new edition (the ninth, including unaltered reprints) is out, they may well remain restless. For the price is now 12s. 6d. Is not that a mistake? Admittedly the book is now a little larger in format, although, of course, still a paperback, and it has 480 pages and 295 illustrations as against the 328 pages and 229 illustrations of the previous edition, but in the new edition the pagination includes the illustrations, in the previous one it did not. That previous edition cost 6s. So there does not seem sufficient reason for a rise of over 100 per cent, and the student has clearly a right to grumble, since the book has certainly not yet become expendable. On the contrary, it still goes on growing, here in bits and there in whole chunks. The development through the twenty years of its existence is in fact as pretty a success story as any in the non-fiction book trade: 1943, 160 pages and 107 illustrations; 1953, 318 pages and 205 illustrations; 1963, see above; and that leaves out the translations, the library editions and luxury editions. Taking it all in all the half million mark must be reached or well in sight.

RINGWAY AIRPORT

When the interior of the new passenger building at Ringway Airport, Manchester, was illustrated in the AR for March, it was explained that the building itself was the work of the city architect. We have been asked to make it clear that the design, which was originally prepared in 1954, was not by the present city architect but by his predecessor, Mr. Leonard C. Howitt. The interiors illustrated were by James Cubitt & Partners.

UNIVERSITY COLLEGE, DAR-ES-SALAAM

When the design, by Norman and Dawbarn, of this college in Tanganyika was illustrated in the latest AR Preview issue, January, 1963, the firm of quantity surveyors concerned with it should have been given as Armstrong and Duncan (Tanganyika) instead of Duncan, Daunhauser and Partners, the London firm with which they are associated.



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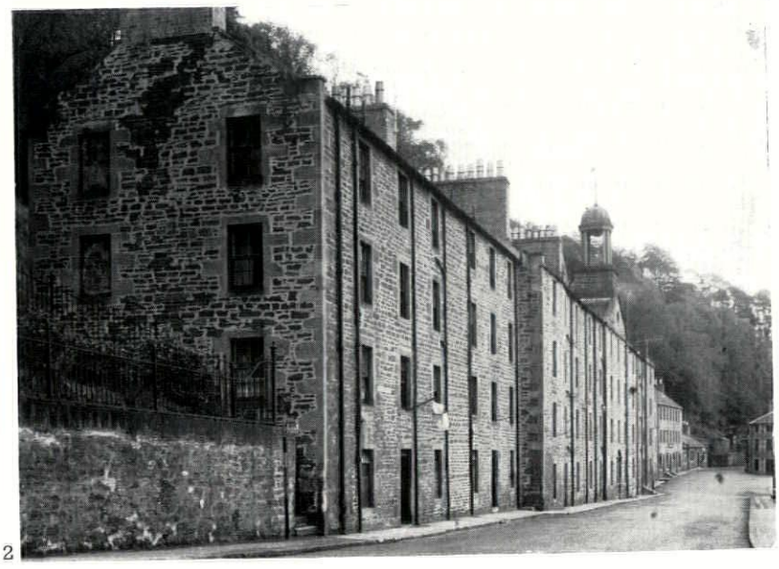

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3, the National Coal Board's Safety Trophy, a bronze by Michael Edmonds, of Chelsfield, Kent, which was the winning design in a national competition judged by Henry Moore, Sir John Rothenstein and Josef Herman.

BISHOP'S STORTFORD

In Ian Nairn's article on the reconstruction of Bishop's Stortford railway station, published in the AR in March, credit should have been given to Mr. H. H. Powell, chief architect to the Eastern Region of British Railways as well as to the architect in charge of this project.

CORRESPONDENCE

THEATRES—STAGE & AUDITORIUM

To the Editors.

SIRS,—I have read with great interest Mr. Peter Jay's excellent contribution on theatres in the AR for March. It is one of the few articles of recent years that is unbiased either in favour of the theatre in the round or the more traditional proscenium type of stage. The author says, quite rightly, that the primary function of most civic theatres should be to accommodate a resident company needing probably a seating capacity of 750-1,000. In his concluding remarks he states that 'a good proscenium theatre may cost £400-£600 per seat or even more.' Whilst I agree that it would be very pleasant to be able to design a theatre to cost this amount, it

is surely very high price to estimate, and one likely to inhibit many local authorities from even considering such a project.

There is a demand in some cities for a multi-purpose 'theatre,' or perhaps 'auditorium' would be a better word. In the case of the Congress Theatre at Eastbourne, now nearing completion, the requirement of the Eastbourne Corporation was for a building in which a variety of functions could take place, such as conferences, ballet and musical shows, orchestral concerts, etc. These uses permit more latitude in the proscenium width and the maximum distance from the stage than would be appropriate for a theatre dealing only with 'straight' plays. The number of usable seats is correspondingly greater and this is reflected in a lower cost per seat. The Corporation already has a small theatre seating 900 for intimate plays.

Naturally, as Mr. Jay points out, it is impossible for any one auditorium to be perfect for multi-purposes of this kind, but I feel it is essential in spite of the inevitable criticism, for the challenge to be met. At Eastbourne, for example, a special seat layout was devised so that when used for conferences the hall has a substantial amount of natural lighting. The following brief statistics of the Congress Theatre may be of interest :

Contract price approximately £390,000 (1961).

Fully equipped proscenium stage 40 ft. deep—85 ft. wide—51 ft. 6 in. high to underside of grid.

Adjustable proscenium opening—max. 45 ft., min. 37 ft.

Adjustable forestage mechanically operated.

Maximum seating 1,700 for conferences (without seats on stage); 1,130 with 'good' sight lines within 80 ft. of the proscenium opening; 1,310 with 'good' sight lines within 90 ft.

If, allowing for rise in prices, one assumes today's cost at £420,000, the cost per seat at 1,130 seats works out at approximately £370 and the cost per seat at 1,700 seats at approximately £250. This I hope may give encouragement to other promoters. But I would stress, as Mr. Jay so rightly emphasizes, the pitfalls that lie in wait for the designer in any scheme of this kind.

NORMAN WESTWOOD

London, S.W.1.

BOOK REVIEWS

MICROMANIA

DREAMING SPIRES AND TEEMING TOWERS: THE CHARACTER OF CAMBRIDGE. *By Thomas Sharp. Liverpool University Press.* 4s.

This is a reprint of a report commissioned by the county planning authorities and first published in the *Town Planning Review*. Subtitled 'The Character of Cambridge,' it doesn't pretend to be more than a visual appraisal ending with a short list of purely aesthetic recommendations. Thomas Sharp analyses the experience of Cambridge with all his old sensibility:

'Not only each college, but each court within each college, generally has a strong sense of being a fully enclosed space, the links between the different courts in each college being often reticent and to unfamiliar eyes obscure. The necessarily flowing configurations of the town streets are in marked contrast to this. Whether they be wide or narrow, straight or curving, *the streets, in their elongation and continuity, are dramatically different from the squarer more finite forms of the courts*. Moving through a college gateway, inward from street to court, or outward from court to street, is to experience a strong sense of environmental change, a change almost to a different kind of physical world.'

He sees that the old centre of Cambridge 'has become over-solid,' and that if its character is not to be finally swamped by a series of Prudential buildings it must take redevelopment in artificially small doses. Investment (to use Jane Jacobs's metaphor) must irrigate through small channels and not swamp in great floods. Unfortunately in refusing, with some justification, to be drawn into making his own plan for Cambridge, Dr. Sharp stops well short of all the hard facts and problems that are the bones of planning. It seems pretty clear, for example, that we cannot have his snug medieval streetscape plus supermarkets plus modern office blocks plus the traffic they generate. To dismiss the bold plan to take the whole lot out of the historic centre as 'the University's take-over bid for the university-town' seems unnecessarily emotive since it is entirely unsupported by argument. Reading between his lines (and not always between them) one is conscious of his having taken sides in a stale, obsolete and meaningless town-versus-gown controversy. If these issues had either been ignored or properly dealt with Dr. Sharp's professional expertise would have commanded more attention.

The second half of the report consists of a powerful assault on 'the new fashion for high buildings,' taking London as exemplar and warning. Here, too, there is not even a gesture towards objectivity. The points that reasonable residential density and normal plot ratios do not necessitate high buildings are made, but the controversial problems of daylighting, bulk, circulation, parking, etc., all of which influence the decision to build high, are scarcely mentioned and certainly not assessed with the coolness one has some right to expect of the professional adviser to the planning authority for Cambridge. Counter-attacks on what is, of course, a fashion as well as a technical expedient, can do nothing but good and are unquestionably welcome to many people in the Ministry, in the LCC and elsewhere who have to pay for housing. It just seems a pity that so much of this report is devoted to generalities and so little to the obstinate problem of accommodating the urgent needs of a great university.

Whether high buildings in the centre of Cambridge should be absolutely ruled out is doubtful. The skyline of Cambridge is not, as is Oxford's, a frail and astonishing masterpiece of the human race, clearly visible from surrounding hills, and does not in itself justify (as does Oxford's) a total prohibition. The valuable and vital viewpoints are, as Dr. Sharp points out, within the town—from the Backs, of course, from Parker's Piece, Midsummer Common and Downing. One is inclined to suspend judgment and see whether architectural ingenuity can solve the problem. Coolness of judgment will not be helped by references to the megalomania of architects.

It is very disappointing to have to write with so little enthusiasm of a report by Thomas Sharp, whose work and personality I have admired all my life.

Lionel Brett

AMERICAN CRITIC

AMERICAN ARCHITECTURE AND OTHER WRITINGS. *Montgomery Schuyler. Edited by William H. Jordy and Ralph Coe. Harvard University Press, Cambridge.* 1961. *Two Volumes, 664 pages. Illustrated.* $12.50 *the set.*

Montgomery Schuyler (1843-1914) was one of America's very few fully professional architectural critics. As a result of decades of writing for both the professional and the popular press, he left behind him a very large body of work; and, since his active life precisely covered a period of American architecture which is only now coming in for systematic exploration, this work has caused increasing interest in scholarly circles. However, until the appearance of this admirable selection of his writings, only odd and disparate aspects of his thought had been republished. With this new edition by Jordy and Coe, it is now possible to arrive at a more clear and better-rounded picture of Schuyler. The clarity of this picture is due, in about equal parts, to an astute selection and organization of the man's more significant essays; and to a quite remarkably lucid introduction by the editors themselves.

They begin with a candid recognition of Schuyler's limitations as a critic. They feel that selected quotations of his more perceptive essays have made him seem to have 'a clarity of vision which he did not possess.' In trying to decide which essays to include and how to organize them, the editors tell us, they gave up any hope of strict chronological presentation because that implied a progressive development: and this they could not find. 'Precisely here, in (his) *lack* of development,' lies the paradox of his career. He began well, sharing with Richardson, Sullivan and Wright the inheritance of a 'cluster of progressive mid-nineteenth century ideals.' But, with Schuyler, these critical ideals did not develop: they remained instead 'a critical constant through forty-five years.' Initially, they gave him both confidence and perceptivity: hence the earlier pregnant essays on Richardson, on the skyscraper, on the engineer, on the Chicago World's Fair. But later, Schuyler becomes uncertain and shallow before the twin impacts of a waning progressive movement and an aggressively ascendant Beaux Arts. He ends, in their words, 'a provincial cosmopolite.'

Schuyler's whole corpus of work can thus, for Jordy and Coe, be 'dissected into a three-part dialectic': his progressive eclecticism (he often seems to equate the word with artistic freedom); his radical rationalism; his ultimate commitment to the picturesque. This dialectic, in the editors' view, leads to a characteristic action of impatient thrust forward and then a retreat from the very consequences of that thrust. This behaviour—'now so clear-sighted, again so confused—epitomizes the entire development of progressive American architecture from 1840 to after World War I.'

The matter could scarcely be better phrased, and a reading of the essays fully confirms the editors' estimate. These two volumes are historically very valuable, for their illustrations as well as their text; but they are exasperating in a peculiarly American way. Part of this is no doubt due to the fact that Schuyler and the men about whom he wrote shared the typical Victorian dilemma: though they do not hesitate to formulate radically new theories of art and design, they seem totally unable to imagine that an entirely new language of form will be required to contain them. Instead, in their search for a suitable idiom, they engage in a continuous reshuffling of the historic styles that seems, in retrospect, simply fatuous. Sullivan and Wright appear as the only exceptions to this rule; and precisely because they are consciously at work to invent this new language, Schuyler handles them with evident diffidence, even while he praises their courage.

But Schuyler and his contemporaries are disappointing in a more specifically American way. They are almost professionally amateurish in matters of intellectual principle. They are almost proudly lacking in any real centroid of esthetic theory. And this, of course, is what renders them so tragically vulnerable to the clubs and carrots of material existence. Sullivan is alone in his ambition to discover 'that rule which admits of no exception'; Burnham's stylistic radicalism collapses at the first prick of success; Stanford White remakes himself into a couturier for the very rich; even Schuyler is impressed with Richard Morris Hunt's great difficulties in fitting chateaux from the Loire on to the 'villa-sized' plots of Newport.

And even when one of these men displays real intellectual principle, he seems unable (Sullivan and Wright again excepted) to give it any congruent esthetic expression. Thus Leopold Eidlitz seems to pre-figure modern physics when he says that in Nature 'matter moves, accumulates, and distributes itself, and in so doing facilitates or retards relations. . . . Every relation of matter has a certain stability which, in highly organized matter, becomes . . . energy of function expressed . . . in visible form.' Instead of inventing forms, Eidlitz reasons, the architect should 'study the conditions, analyse the environment, yield to it everywhere, respond to it always, until the functions resulting from all this are fully expressed in the organism.' All this sounds most convincing until one turns to an actual Eidlitz building: the discrepancy between concept and expression is grotesque.

There are many passages in these volumes which establish Schuyler's abilities as a critic. He is certainly a pioneer in recognizing the esthetic power of sheer engineering as expressed in bridge and skyscraper. His *Last Words about the World's Fair* is correct, both in attributing its popular success to the fact that it confronted

most Americans with the first completely finished urban landscape they had ever seen; and in predicting that any effort to imitate its scenic make-believe in real life could 'hardly fail to be pernicious.'

Schuyler's value for us to-day is just that he is so accurate a mirror of this central dichotomy in American experience, at one of its most troubled periods. Jordy and Coe have done us a great service in making him so easily accessible again.

James Marston Fitch

FUNCTIONAL CHURCHES

TOWARDS A CHURCH ARCHITECTURE. *Edited by Peter Hammond. The Architectural Press.* 30s.

A great number of churches have been built since the war. As a result of bomb damage and the creation of new housing areas, the need for new churches still is very great in this country alone. It was estimated in 1961 that, for the Church of England, 1,425 church buildings—churches, halls, dual-purpose buildings, and so on—were then required. Few people can be content with the quality of the buildings so far provided and churchmen and architects must welcome an attempt to think out the problem afresh in a radical way.

Towards a Church Architecture consists of ten essays by theologians and architects—five Anglicans, four Roman Catholics and a Presbyterian—written in the last three years at the instigation of the New Churches Research Group. They stress the primary importance of a clear theological answer to the question of what is a church for—not nearly such an easy or simple question as might appear at first sight, even to a new church committee. It is only on the basis of an answer to this question that churchmen 'can keep hammering away at the "functional" requirements being met' and eliminating 'the obviously meaningless,' and architects can remember the primary importance of the 'general solution' and serving first 'that which is "central to the problem".'

There are certain obvious differences of opinion among the writers, as in the placing and treatment of the baptistery (a photograph of S. Paul, Bow Common, on page 156, which appears to suggest baptism by total immersion as the norm, is clarified by the photograph on the cover), but these differences are recognized by the editor and do not affect the theme of the book. What is more important is the puritanism which appears in varying degrees in different parts of the book. Bread and wine, a cup, a plate and a table may be all that is necessary for the celebration of the Eucharist, but more can and should be provided to make plain the nature of what is going on and to help the congregation to express their worship. The fascinating illustrations, which the blurb says show 'the first results of this regeneration of church architecture,' suggest to one reader at any rate that some of the churches are bleak, cold and uncomfortable. Both on practical and theological grounds churches should not be like that, and such churches would not comply with the German and American directives quoted with approval at the end of the book. Admittedly the problem of church decoration at the present time is a very difficult one and some of the solutions shown in the illustrations do not seem very satisfactory (e.g. the wall decoration in the church at Cologne on page 137), but an attitude which shelves the problem suggests a puritanism which is neither theologically sound nor practically helpful.

For the churchman who is not an architectural expert, a fuller discussion of the two chapels illustrated might have been valuable. The chapel at Otaniemi, in Finland, for all its 'architectural seriousness,' seems to offend against principles expressed again and again in the text, as by placing a skeletal holy table and ambo against a wall of plain glass looking on to a snow-covered forest, so that they are almost invisible and what is done at them would appear in partial silhouette, while the eye is drawn right outside the building. And how really functional is the much admired Mies van der Rohe chapel, in Chicago, with its west wall of plain glass? It would be interesting to know whether those who use the chapel are made to feel inhibited or uneasy in their worship by being in full view of any going their ways outside at the Institute of Technology.

There are plenty of questions that arise in one's mind as one reads this book, and indeed it is a purpose of the book to make one ask questions and go on asking them. Everyone who is, or is going to be, in any way connected with the building of a new church should certainly read it. It will at least make plain how much thought is necessary before it is possible to begin discussing the problem intelligently. 'Only the marriage of a complete understanding of liturgy—its objectivity, its manifestation of divine truth through rite and action, its communality—with a scientific study of contemporary social fact can ensure that the Church may again be equipped with buildings adequate to its present needs and true to its eternal purposes.'

Walter Hussey

UP THE GARDEN

A HISTORY OF GARDEN DESIGN. *By Derek Clifford. Faber.* 70s.

A History of Garden Design is really an unsuitable title for a book which is in fact largely an expression of personal views and preferences. If the title is misleading, the opening sentence does at least put the matter clearly. To state, as the author does baldly, that 'For all practical purposes the history of gardening as an art begins at the Renaissance,' is to ignore the patient and scholarly work of others in this field, as well as the discoveries of modern archaeology. In vain does one look in the bibliography for the titles of books which, if he had read them, might have caused Mr. Clifford to qualify such a sweeping statement. For instance L. Hautecoeur's *Les Jardins des Dieux et des Hommes* (Paris 1959), with its excellent general survey of the gardens of antiquity; or P. Grimal's scholarly and detailed *Les Jardins Romains à la Fin de la Republique et aux deux premiers siecles de l'Empire* (Paris 1943); or again the archaeological studies, even of planting, in V. Spinazzola's *Pompei alla Luce degli Scavi Nuovi* (Rome 1953).

It is true that Mr. Clifford ostensibly limits his scope by calling the first chapter 'Pliny and the Renaissance Garden,' though in fact it includes a good deal of comment on Roman gardens in general. But even in this limited field he does not seem to have studied a great deal more than the two much-quoted letters of Pliny the younger, describing the Laurentian and Tuscan villas. Otherwise the author could scarcely have assumed as he does textually (pages 28-31), that, unlike Greece, the alleys and avenues of Roman gardens in general, and Pliny's in particular, were simply intended for effect and not for exercise and conversation. This is in direct contradiction not only of Pliny himself (as stated in the less-known letter to Fuscus, Book IX letter XXXVI, in which he specifically mentions that his normal day in his Tuscan villa included three walks in the garden, the last in company with persons of learning of his household); but also of Vitruvius and the discoveries of archaeologists. In Hadrian's villa and elsewhere inscriptions giving the length of the garden promenades have been found. Moreover, from a wealth of literary and archaeological sources, M. Grimal has made the importance of these garden promenades in Roman villa life abundantly clear. Mr. Clifford's assumptions as to the use of sculpture and topiary (in the Roman sense of landscape gardening and *not* as the author defines it 'the art of the tree barber') in Roman gardens are equally misleading.

In the same way, by his lack of study of the historical background and authoritative sources on his subject, Mr. Clifford has been led into false assumptions as to the origins and nature of Italian Renaissance gardens, particularly those of Rome. After dating the Borgia Pope, Alexander VI's death to 1492, the year in which he began his reign of 11 years; the author makes the following surprising statement: 'Islamic taste and learning reached Italy from Spain.' According to him it was by way of the fifteenth century Neapolitan and Borgia courts that 'the practical water jest . . . the water stairway, the cascade and a positive passion for water in the garden' came to Renaissance Italy. By this contention Mr. Clifford not only disregards documentary evidence of the Renaissance artists and garden architects' careful study of the ruins of antiquity, where water was used in gardens on a grand scale (particularly in Hadrian's villa, studied by Bramante, Raphael and Ligorio, where even water staircases still exist); but also the Moslem occupation of Sicily for close on two centuries, up to the Norman conquest of 1091. Part of this artistic legacy survives to this day in the mauresque fountain and water-stairs of the Ziza in Palermo; while trick fountains and automatons were established at Hesdin by Robert of Artois in 1270, after a visit to Palermo.

It is only too easy to pick on small factual errors in a book which covers so large a field. But surely to mistake the Ippolito d'Este who made the Villa d'Este at Tivoli, for his uncle, and to draw unpleasing reflections upon the society in which he lived from this erroneous supposition is a bit hard. But what is a great deal more confusing is to find the lower part of the Villa d'Este garden described as if the pergolas shown in the sixteenth-century Duperac-Lafrery print still exist. These had already disappeared in 1675, when Veturini made his engraving of this area; being replaced by the famous cypresses of Fragonard's drawings, which still survive. But Mr. Clifford writes: 'At the northern boundary on the lowest level on artificially created level ground there *is* what can only be described as a typical late mediaeval garden; the paths *are* tunnels of elaborate trelliswork and where they cross a great pavilion of trelliswork marks the spot. *Emerging from this spangled shade one finds. . .*' None of this has existed for three centuries, and one can only conclude, from this and other references, that the author has never seen the garden he describes so graphically.

Viewed in the context of such imaginative writing, Mr. Clifford's assertion that 'the statue came back into the garden' (the Italian Renaissance garden) 'because there was nowhere else to put it,' will be treated with the seriousness it deserves. So, too, will his final judgment on the sixteenth- and seventeenth-century gardens of Rome: 'The villas of the cardinals with their fountain humour and their varied astonishments were nearer in spirit to the spectacles which Nero provided in the Colosseum than to the grove of Academus.' Aesthetic considerations apart, Nero committed suicide in AD 68, the Colosseum was begun by Vespasian in AD 72 and inaugurated in AD 80 by Titus. It was built on the site of the lake in the gardens of Nero's Golden House as part of the Flavian emperor's policy of returning the land which Nero had confiscated to the Roman people.

I cannot speak from personal experience of the gardens of the Moslem world, Spain, France and the Far East with which Mr. Clifford also deals in this book, though I have seen a few of them. It may be that his judgments upon them are based on firmer ground than that which supports his theories about the gardens of ancient Rome and the Italian Renaissance; certainly some of the prints used as illustrations are attractive and interesting. Nevertheless, one finds even among these chapters statements such as 'To lump together all these elaborate gardens that lie in time between Bramante's Belvedere and Charles III's Caserta, to sweep them together and to call them baroque is generally true'! though he has the grace to admit that this is an over-simplification. While the most austere critic of the baroque style would scarcely go as far as Mr. Clifford does on page 110 in describing 'baroque forms' as 'fungoid growths.' But it is perhaps the author's estimate of William Kent which is the most surprising. To refer to the architect of Holkham, house and park, and the gardens and interior of Rousham as being personally incompetent and lacking in perception and discernment, is to run counter to the highly qualified judgment of Mr. Christopher Hussey. Possibly the best summing-up of this book comes in the publisher's blurb: 'Mr. Clifford evolves some unusual theories on the way in which garden design developed.'

Georgina Masson

THE ARCHITECTURAL REVIEW

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

VOLUME 133 NUMBER 795
MAY 1963

SUBSCRIPTION RATE:—*The annual post free subscription rate, payable in advance, is* £3 3*s.* 0*d. sterling, in USA and Canada* $10.50, *in Italy Lira* 6940, *elsewhere abroad* £3 10*s.* 0*d. 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. Subscribers may have their copies bound in half-yearly volumes at the price of* 27*s.* 6*d. Postage* 2*s.* 9*d. extra on the completed volume.*

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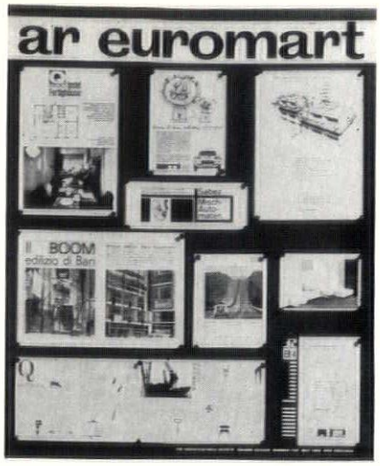
ACKNOWLEDGMENTS

COVER: Toomey Arphot. WORLD, pages 305–307: 1, 2, 4–6, Richards Arphot; 3, LKAB; 11, Bauen and Wohnen; 12–14, *New Hungarian Quarterly*; 15–17, F. Catalá Roca. VIEWS AND REVIEWS, pages 308–310: 1, 2, Tom Scott. EUROPE—THE RELEVANT CONTINENT, page 312: Banham Arphot. EUROPEAN INTELLIGENCE REPORTS: 1, page 317, *Architect and Building News*. CONTINENTAL PREFABRICATION, page 322: *Interbuild;* pages 325–332: 1, Publifoto; 2, Grete Hamer; 3, Erika Sitte; 5, Neil Hutchison; 6, 7, Coignet; 8, Balency and Schuhl; 9, 10, SIREC; 11, Hubert Lacoudre; 12–14, Photolac; 15, 17, 18, S. W. Newbery; 24, 26, 27, Herbert Gerhold; 30, 31, Minsart. EUROPEAN INTELLIGENCE REPORTS, page 334: *Cahiers du Centre Scientifique;* page 335: Galwey Arphot. THE HARDWARE BAZAAR, pages 337–348: 1, 2, Toomey Arphot; 5, B. P. Scorey; 6, Willi Moegle; 12, Elsam, Mann and Cooper; 13–15, Turners (Photography); 21, A. Villani and Figli; 22, Nico Grupink; 27, Felix Fonteyn; 30, Photopress. SYMBOLS AND SERVANTS, pages 354-355: Mary Reyner Banham; pages 357–364: 1, 2, 4, 7–15, John Donat; 5, 6, Edward Bull. THE UNITED CITIES, page 367: *Form*; page 367, *Publieke Werken*. SKILL, pages 369–380: 1, 2, Standard Catalogue Co. 3, 4, 14, 18, 19, 21–23, 25, 27–29, 32–38, 41, 44, 45: Galwey Arphot; 5, Moisio; 12, John A. Rose; 16, *Tiles et Briques*; 24, Arthur Cooper; 40, Bedford Lemere.



The cover was assembled from a kit of European parts devised by James Meller

a special issue of the Architectural Review, compiled and edited by Reyner Banham

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The compilation of this special issue would have been impossible without the good counsel and assistance of many individuals and organizations, especially the following:

Gontran Goulden, P. M. J. Tennant and Leslie Julius, for basic guidance and suggestions on the ground to be covered
and, for assistance and information on particular subjects,
Neil Hutchison, Paris
Francesco Gnecchi-Ruscone, Milan
Olga Vitale, Milan
Herbert Ohl, Ulm
Lothar Kallmeyer, Duisburg
Madame des Cressonnières and the Institut d'Esthetique Industrielle, Brussels
Elizabeth Henderson
Terence Conran
Tom Hancock
Tarquin Cole
Terence Bendixson
Maurice Goldring and Anthony Williams of the RIBA
Mrs. Craig and the International Section of the Building Centre
C. W. Oram and the Cement and Concrete Association
British Standards Association and the Consumer Advisory Council
A. C. Brighton of Holland, Hannen and Cubitt
A. G. Smith of Brockhouse Steel Structures
Federation of British Industries
Studiengemeinschaft für Fertigbau, Darmstadt
Palazzo dell'Edilizia, Genoa
Associazione Italiana Prefabbricazione, Milan
Stichting RAAD, Amsterdam
Bouwcentrum, Rotterdam
Centre du Bâtiment, Paris
the Building Centres at Darmstadt, Hamburg, Munich and Vienna
and John Donat for special photographic assistance

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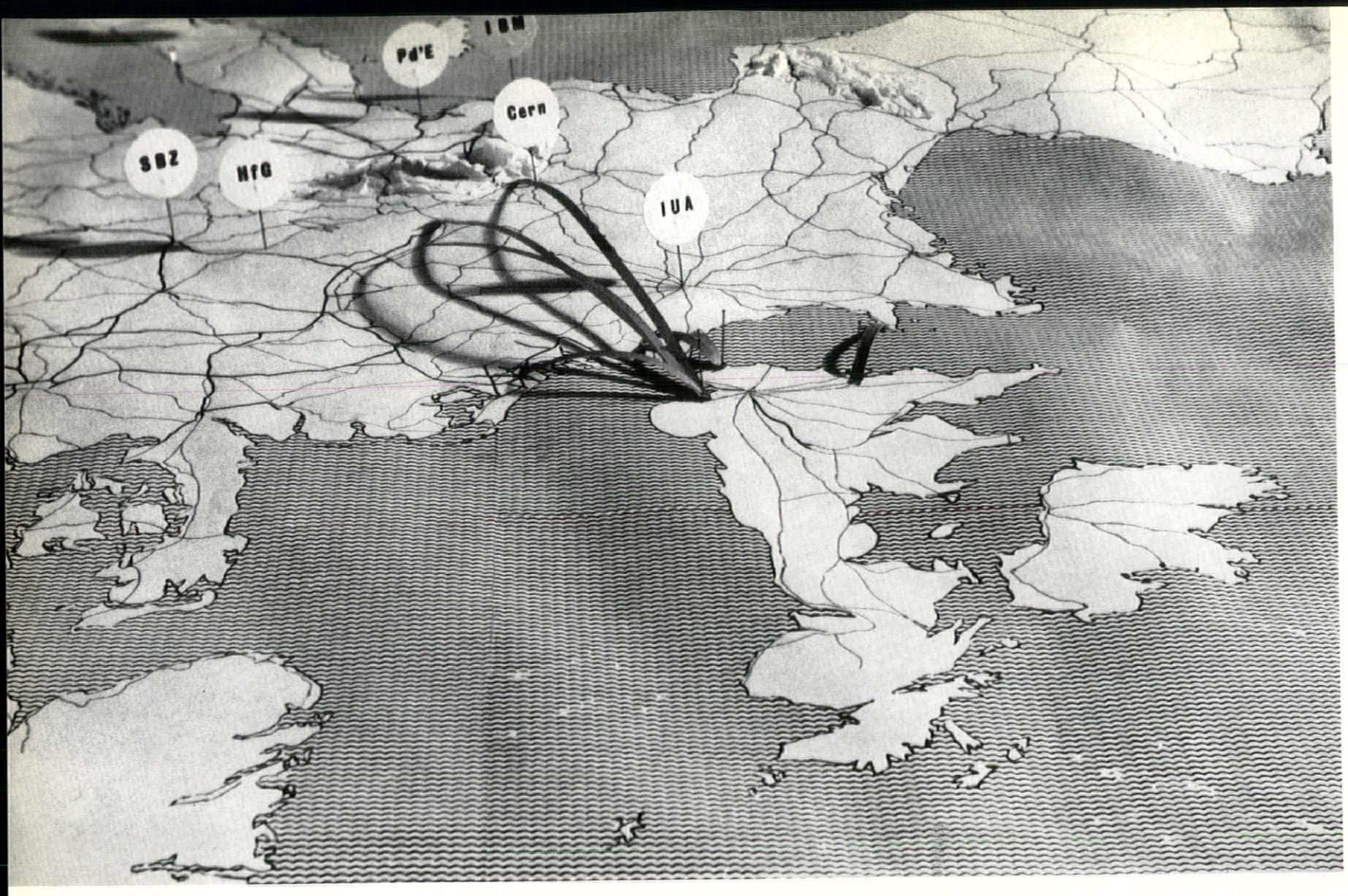


europe—

A good way to start on Europe is to turn the map upside down and see Britain, no longer safely cradled between France and Scandinavia, but semi-detached in the Atlantic wastes. Our connections with the bustling Continent are slender, and all channelled through London and the south-east. Slender to the point of non-existence, almost, are our connections with the network of motor-roads, shown above, that connects the highly mobile, motorized managers, administrators, educators and designers of the new Europe of initialled organizations and influential institutions. Our connections with these men are vital—as is argued in an article on pp. 366-368—but our ability to exploit and enjoy the connection is limited in strict ratio to our ability to get into our own cars and drive straight to any point on the Continent with the same ease and speed as they can. In practice, this can only be achieved via airborne car-ferries, and—as the leaping arrows on the map show—they are still few in number, tied to the pattern of holiday traffic, and start too far south to be much use to architects or businessmen operating from anywhere north of Birmingham. While we wait for the Channel Tunnel, however, they remain a vital link.

The pins identify the location of organizations that were in the news while the map was being prepared: the International Union of Architects, Paris; Centre Européen des Recherches Nucléaires, Geneva; IBM/Europe research centre, Nice; Palazzo dell'Edilizia, Genoa; Hochschule für Gestaltung, Ulm; Suddeutsches Bauzentrum, Munich.

The political shock experienced by Britain on the brusque termination of the negotiations with the Rome Treaty powers has served to make us even more aware of our involvement with European trade than we might be if we had been admitted to the Common Market. Trade affects the business of building and the practice of architecture as much as it does other parts of the British economy and professional practice, and involves both with developments that are currently revolutionizing the life, the labour and the appearance of the whole of Western Europe. This special issue of THE ARCHITECTURAL REVIEW *deals, therefore, less with architecture and design, as such, than with trades and professions, products and organizations that bear directly or indirectly on the way in which architects conceive and detail their designs. From these studies, surveys and reports it will be clear that the prospect before us is as stimulating as it is disturbing. For British architects, Europe remains the most relevant continent.*

Reyner Banham

the relevant continent

If one class of European products or techniques is conspicuously absent from the pages that follow, it is windows and fenestration. By any standards, windows have been our most significant, if not our most numerous, Continental importation since the late War, and their significance lies not in their monetary value, nor directly in their technical performance, but in their intellectual content. For most British architects, their first encounter with Swedish standard windows of the *Carda* type was a confrontation with a concept at once alien and relevant. The British window, in wood or metal, however hung or swung, had been a minimal climatic plug in a hole in the wall. A single membrane of glass, capable of admitting light and excluding rain and draughts, it leaked heat like a sieve in winter, and condensed airborne moisture either into messy and unwanted water, or into frost patterns that, however pretty, were the record of wasted fuel. If the poor thermal performance of single glazing was less noticeable in summer, this was due more to the absence of summer than any other cause.

The double-glazed Swedish window, with a folding or Venetian blind between the two leaves (which could be separated for cleaning), the whole centrally pivoting and equipped with handles and catches that belonged to a different world to the hardware of British fenestration—all this did not merely fill the hole in the wall, it practically mechanized it. It made of the window a piece of specialized equipment, an environmental control more comparable with the services inside the building than with its structural carcase. Coming from a climate where the performance of every external element needs to be scrutinized and justified, it revealed an ability to think of windows in terms radically different from those normally employed—to think radically, in fact.

In the light of the currently diminished vogue for such windows, it might be argued that they have been simply a fashionable innovation in England, like the *brise-soleil*, and that the expense involved is not justified by the few occasions when their extra margin of performance is needed. The fact that a score or so of British joinery firms now manufacture roughly comparable windows, quite apart from other types of double-glazing, shows that it is only the vogue for making a fuss about them that has abated, not their

utilization. Indeed, in a country whose common climate seems to consist largely of off-cuts from other nations' meteorological disasters, as the late winter has amply demonstrated, maximum performance is frequently required to deal with the extremes whose average gives us our otherwise fictitious temperate clime.

Yet the point that Swedish windows have put at issue is not merely a climatic one, it deals with manners of thinking. The radical critique of our native equipment which these windows established was radical because it derived from a variety of conditions—social, financial, human, as well as climatic—that were different to ours, but not so alien as to be irrelevant. That our equipment should fail by Swedish, or any other Continental standards, is a far more serious matter than that it should fail by, say, Indian or Latin American standards.

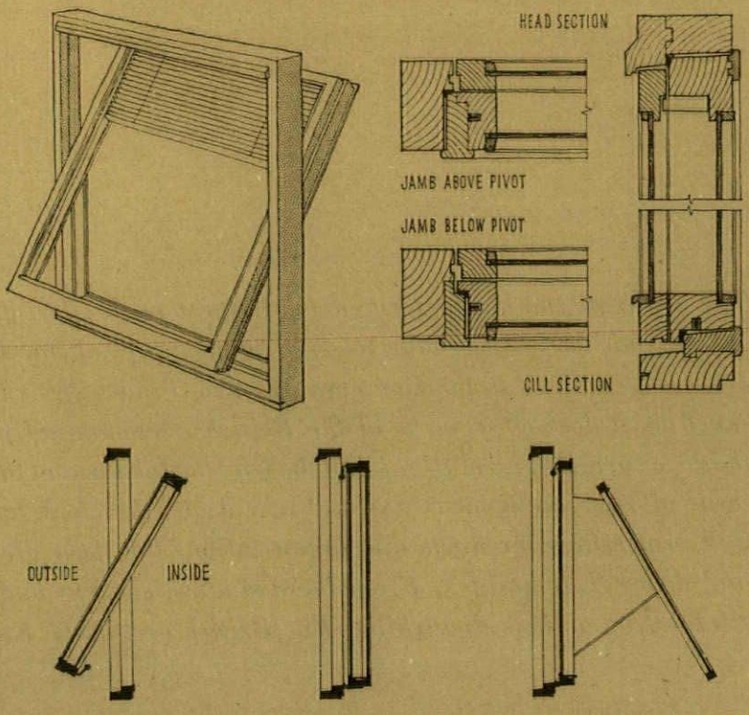
This is obvious enough, or should be, but we can be confused in these matters by superficial irrelevancies of communication and mensuration. We are apt to take more immediate notice of, say, American criticisms of our plumbing because a common language and certain established patterns of humorous reference make it easy for that criticism to reach us. But our ties of language and custom with other English-speaking people in the Western and Southern hemispheres should not be allowed to blind us to the fact that we have often very little of relevance to say to one another—Australian architecture has been as pointlessly deflected from its normal paths of development by unwarranted comparisons with England, as has European architecture by pointless comparisons with the US.

Conversely, the barriers of language that divide us from other European peoples must not be allowed to prevent us from hearing what they have to say on matters of common concern in any field. Any comparison that damages our local building techniques or architectural design must be taken seriously if its point of reference is one of those neighbours who share our pattern of cyclonic/anticyclonic weather, social patterns derived from the collision between Germanic folk-democracy and Roman discipline, and concepts of conscience and charity derived from a Christianity that has been two millenia soaking into bone and stone.

Statistically, Seattle or Vancouver may have a climate that is more typically 'English' than that of Trondheim or Rimini, and the inhabitants may complain about it in turns of phrase very similar to our own. But the action they take against it reveals the values of a culture that poses its faith in different concepts of action, different methods of association and social co-operation, resting on a technological infrastructure that reveals different priorities in the processing of raw materials to serve human needs, at a different pace and on a different scale. And this whole pattern of values and organization has been imposed on a territory effectively virgin until little over a century ago, in which even the pattern of land-ownership had no history and was invented ad-hoc by rectangular sub-division.

For us, as for the Continental Europeans, it is a very different matter. We have not started from a *tabula rasa* almost within living memory. Whatever action we take, especially in architecture and town-planning, involves us in picking our way among ruins and relics—of *anciens régimes*, megalithic burials, feudal land-ownership, cathedral closes, pocket principalities, abandoned forges, the sub-cultures of poverty, classical inscriptions, gabled warehouses, the right to levy local customs, ancient lights, ducal palaces, mop fairs and the rest of the richly-layered social and physical structure of European life. The bulk of this ancestral impedimenta is common property to all Europeans, and, in our common skill in dealing with it, we recognize a sense of kinship that cuts under differences of language, and refers back to the fact that Charlemagne's unification of Europe under the Christian Church, the Latin tongue and the Roman Law, recognized and gave shape to what was already a community of peoples.

The present exploitation of that sense of community by old men in search of political leverage, or instant glory, may tarnish the European image, but any unifying concept that has survived the disruptive efforts of demagogic nationalism and social sectarianism in the nineteenth century should be capable of surviving anything short of thermo-nuclear obliteration. The sense of European fraternity persists because it stands for something real; the present manner in which its history is being manipulated and misrepresented by interested parties cannot conceal the fact that its history has happened, and that the concert of Europe has never ceased to be a valid ambition or a live issue for Europeans. Above all, that sense of European fraternity persists in the age-grown relationships of men and buildings.

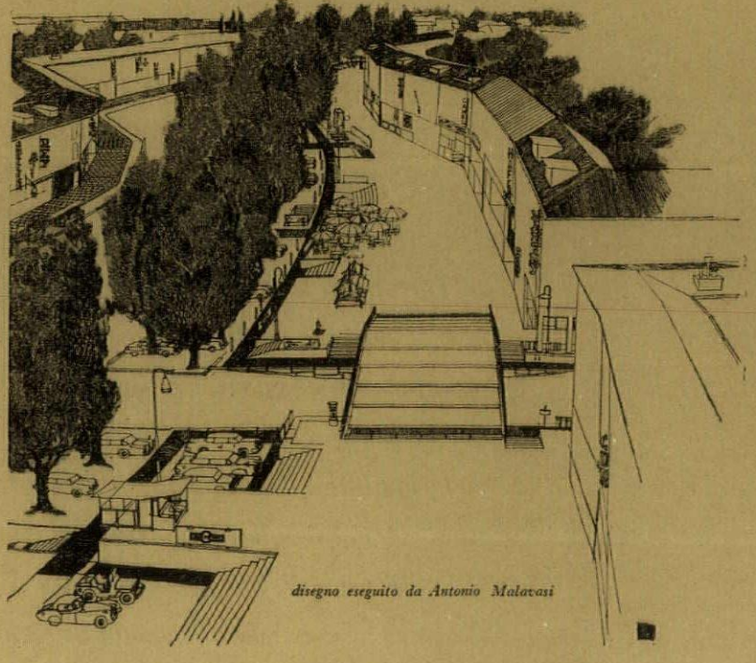


The Carda window goes through its paces—pivoting, lifting out, splitting for cleaning—and shows off its finer points, such as the blind permanently fitted between the two layers of glass: a classic post-war example of a Continental product that has revolutionized British architectural ideas.

We read the meaning of that relationship in a different, specifically European and—to our eyes—more adult manner, than the inhabitants of other cultures. As Alistair Cooke pointed out two years ago at the RIBA, the Americans seem prone to replicate the *forms* of Florida, its buildings and spaces, in Illinois and Michigan, or of California in New England. North European architects, on the other hand, scrutinize the Piazzetta of Venice or the grid-plans of the bastides, not for forms or even building-types, but for information on the way the distribution of buildings affects people, and the way the predispositions of people affect buildings. In this, there is a grave and constant risk of sentimentality, of studying the unemployed of the Latin South because you are embarrassed or bored with the workers of the industrial north, or to glamourize the folk-culture of the Coronation Street past because you feel threatened by the pop-art of the prefabricated present. But, for all this, Europeans have come to recognize, and rightly, that on a continental scale they have bred a peculiar man/building relationship which cannot be exported to other continents, even though the building-types may be repeated.

Conversely, they also recognize that this relationship has to be defended at home in its native continent. Exoticisms (including the whole automotive culture) can only be accommodated by tearing the European socio-physical structure apart. Maybe this is no bad thing—no one can pretend that Europe as it exists is an ideal Continent—but it needs to be done with a sharp sense of what is at stake. It cannot be allowed to happen by negligence or indifference, any more than Europe's own cancers and necroses can be allowed to go un-physicked. If architects—and particularly British architects—have been loudest in demanding curative or preventive action, it is because they are, by self-appointment, the guardians of the man/building relationship, and because they deal with it in a true Esperanto that enables them to read the lesson of Europe as a whole. Employing the laws of physics, which are universal, in the service of European men, who are remarkably consistent in their attitudes and preferences, they have the means to understand the human situation in any part of Europe, without waiting on translations and protocols.

English ideas accepted as relevant on the Continent—Italian townscape study for a linear neighbourhood centre with traffic separated from the pedestrian Mall by a belt of trees and a change of level. Drawing from La Casa, 3 *(Rome,* 1956).



disegno eseguito da Antonio Malavasi

The fact (which should not be surprising) is that they are dealing with remarkably similar buildings over the whole continental spread: from Jerez to Kiev, Europeans are pretty unanimous about what constitutes a church, a tenement, a square, a palace, a town, a villa, a market—and that unanimity resides not only in basic agreement about needs, but also in the high degree of professional mobility that European architects have always shown. The present generation of Mercedes-borne consultants were preceded by Gothic masons on loan from one diocese to another, Renaissance *uomini universali* who found Italy too small or too hot for them, *stuccatori* and *ébénistes*, professional draughtsmen and lordly amateurs to whom the whole of Rococo Europe was a single architectural scene, Scots civil-engineers and North Country railwaymen who changed the face of Europe and at the same time brought its extremities closer together, Art Nouveau designers working the circuit of international exhibitions and *Kunstgewerbe* schools. One might say that the church having split and lost its grip, it was left to masons and architects to hold Europe together. Le Corbusier's *Centrosoyus* in Moscow is a symbol of European unity that neither Rome nor Constantinople can equal, and the indebtedness of Russian system-building to French Rationalist ideas is visible proof that this symbol is neither empty nor irrelevant.

Architecturally, we are one with Europe. We may have our misconceptions; we may put on rose-coloured spectacles to peer across the narrows of the Channel or the shallows of the North Sea, but watch we must, because what goes on out there concerns us emotionally and factually in a way that the doings of no other continent can. Europeans, too, while they often find us farther offshore mentally than we are physically, know that we have much to teach them that is relevant. LCC housing, the New Towns, CLASP, university architecture of the last five years, Sheffield, the English versions of Radburn planning, the Design Centre, the present upheaval in architectural education, the Town and Country Planning Acts, Brutalism, the Functional tradition—all have been duly noted in the European literature and given a prominence that is rarely commensurate with the actual bulk of building involved, simply because they have something to say to Europe that more portentous and spectacular architectural performances elsewhere cannot.

So, too, with the whole glittering bazaar of goods and services, materials and organizations which forms the subject of this issue, the architectural common market which has never waited on politics, nor been

greatly restricted by tariffs. The time-honoured techniques of direct sale, licensing of patents and honest plagiarism, pin-pointed by Terence Bendixson (p. 337), have kept products and concepts steadily on the move, improving and modifying the techniques or goods of any one European country by constant comparison with those of all the others. Some of these interchanges are of almost pre-European antiquity; the import of ceramic wares (such as those discussed by Tarquin Cole in this month's *Skill*) is part of a trading tradition that goes back to Belgic Black pottery. Others, such as system building (pp. 321–332) are as new as Europe's present and persistent housing shortage. All are relevant illustrations of the growth and present state of Europe.

At the breakdown of the negotiations for Britain's entry into the Common Market of the Rome Treaty Powers, it looked as if the growth of Europe had been temporarily checked; halted by one man's retrogressive concept of European unity under the hegemony of a single military power. The longer perspectives of history may show that he did Europe a service of sorts, by calling in question the relationship between Europe and the USA. But he undoubtedly did Europe a greater service in making many Europeans ask themselves what stake they had in Continental unification, by making them ponder what they might lose if it did not happen, by making them see that the advantages of unification still had to be fought for, were almost meaningless if offered on a plate. To those in Britain who wished to trade with the Continent it was a challenge to justify their intention and show what efforts they were prepared to expend in order to implement their aims. The mood of determination that has sprung up already, makes the often-heard observation 'We'll be in Europe in less than three years' sound more like a threat than an idle wish. Individual concerns, architects, organizations are already establishing themselves across the water, and their piecemeal establishment of a common European market may yet prove a more substantial contribution to architecture and building techniques than any blanket political entry could be. As specialists, traders and representatives of interested bodies, they will naturally seek out what is particularly attractive or relevant to them, and draw attention, as this special issue attempts, to products and trends that really matter.

That 'groundswell of revolution at work in the West, eroding nationalism in Europe' of which Uwe Kitzinger spoke so effectively on the Third Programme amid the ruins of the Brussels talks, makes it certain that we shall be in Europe, politically, economically or both, before many years have elapsed. The present check in that process gives us a pause in which to study the intelligence brought back by those who are already established there, and form a clearer picture of what is relevant to our needs and ambitions out of the wealth that the Continent has to offer.

Relevant the Continent may be but the relevance is not always easy to see at first. Information, as always, is our chief need, and the pages that follow set out to satisfy that need in the following manner: there are four main studies of aspects of the market— structural prefabrication, p. 321; *hardware and fitments, p.* 337; *furniture, p.* 353, *and architectural ceramics (in* Skill), *p.* 369. *There is also a study of the importance of personal mobility, p.* 365, *and the ability to 'think European.' Between these studies appear a sequence of European Intelligence Reports, covering a variety of background subjects, such as professional legislation, office organization and practice in different countries, experience of international co-operation in design, information services, consumer protection and the like. These reports will be found on pp.* 317-320, 333-336 *and* 349-352. *The coverage afforded of even this restricted section of the European scene is not exhaustive, but the studies made, and the information given, are intended to be typical, even where they are not total. The European market has not been described to the last detail, but this—roughly—is what it should be like*

EUROPEAN INTELLIGENCE REPORTS: 1

Before we join, or do not join, any kind of European Union involving the profession of architecture, we must know what kind of professional legislation awaits us. A body of

INTERNATIONAL PROFESSIONAL LEGISLATION

already exists and is about to become effective in the EEC countries.

The outlines of a code of law and practice for a fully internationalized architectural profession can be seen emerging in a most promising way in the proposals put forward by the Liaison Committee of Architects of the EEC. A committee of this sort is, more or less, a self-generating body formed by private initiative, though its existence is officially envisaged as a means of ensuring the detailed working-out of the proposals which the relevant Commission of the EEC is required to put before the Council in order that directives may be issued in implementation of Articles 52–66 of the Treaty of Rome where they bear upon the right of professional establishment in the territories of the signatory powers, and the right to offer professional services in those territories—in short, the right to work anywhere in the EEC area, on the basis of qualifications recognized throughout that area.

Committees proceed according to their own lights and come to their own conclusions—there is no apparent pattern of procedure for them to follow, and the Liaison Committee for Industrial Design, for instance, has worked in quite a different manner to that for Architecture. However, each is linked to the Council by its Delegate General—in the case of architecture, Willy van Hove, of Belgium, the originator of the committee—and to the Commission for Architecture by way of the EEC's own civil service. The Commission will consider proposals put forward by the architects of the Liaison Committee, before passing them forward to the Council for action.

Willy van Hove, father of the European profession.



The object of the exercise, which has been in progress since July, 1959, is to ensure that, by three stages concluding in 1969, the profession of architecture in the member states will have achieved 'mutual recognition of diplomas and abolition of all forms of discrimination.' In practice this may be taken to mean that by the end of 1965 it should be possible for an architect already recognized and practising in one member country to set up office permanently in any other member country on an equal footing with local architects, and that, as soon as possible before that, some formula for temporary establishment should be worked out. It is a fair measure of the variation of approach of different Liaison Committees to note that the Industrial Designers, under the leadership of Madame des Cressonnières, seem to have put most of their energies to date into establishing a *Sélection Européenne d'Industrial Design*, a sort of EEC Design-Index.

However, the Industrial Designers enjoy a slightly advantageous position, as compared with the architects, since ICSID is already at work on international problems arising from the practice of design. The practice of architecture, on the other hand, shows considerable differences of law and status even between the countries of the Six; the response of the Liaison Committee to this situation has been an almost text-book example of that process of 'standardization by levelling up' which is the professed ideal of all Common Market legislation. Even temporary establishment in another country, *as of right* and not by special licence, requires a fair measure of uniformity of qualifications, rights and obligations. To achieve this uniformity, the Committee has taken the best practices (as the profession sees them) that can be found in any of the member states, and has recommended that they become the rule for all six.

Thus, to cite the main *Report* of the Committee (Paper 3 in the documents compiled by the RIBA):

A comparison of the present statutes brings out the essential differences:

Right to the title (of architect): this may be freely assumed except in Belgium, France, Italy and in four departments (Lander) of the Federal Republic of Germany.

Professional Registration: in France and Italy alone, an 'Order' has been established by Law. Admission to this order is controlled.

In Belgium there is an enrolment register; only members of the profession who conform to the law can be registered and can practise.

Obligation to employ an architect: this obligation exists in Belgium and to some extent in Italy.

It is therefore clear that no single country has a complete system; that is to say, a system which is to be found in all its details in another country. To co-ordinate the national statutes, i.e. for each detail of each and every statute to have its equivalent in all others, two formulae are possible:

The first consists in equalizing from below; that is to say, in bringing the six countries into line on the basis of the minimum conditions of the others.

The other formula consists in equalizing from above; i.e. to establish in each country those conditions which do not exist, but which exist in another member of the 'Six' without introducing excessive regulations.

The Committee has therefore arrived at the following objectives:

1. To organize the profession into National Orders (as in France and Italy).
2. To protect the title of Architect (as in Belgium, France and Italy and to a certain extent in the Federal Republic of Germany) so that only members of the National Order have the right to the title.
3. To regulate admission to the Order (as in France and Italy).
4. To make it compulsory to employ an architect (as in Belgium and Italy).

This is—from the profession's point of view—a very promising framework to be filled out with the detailed codes of professional conduct, and supported by the full equivalence of diplomas of qualification. It offers the Common Market architect a status which is something like that of a British architect under ARCUK and RIBA, but with the enhanced position that his services are now obligatory. On the other hand, fears have been expressed in Britain that the proposed codes cosset the principal of the moderate-sized private office, have too little to say about the position of assistants and working students, and fail to take proper cognisance of the status of architects in public service.

In fairness, on this last point, one should add that the fourth and last of the 'additional facts' appended to the supplement to the above *Report*, states:

The civil service architect, that is, one employed by a State administration or public body, keeps the prerogatives attaching to the title of Architect, and remains a member of the (national) Order.

Against this, it is difficult to see how the prerogatives of the title of architect would stand up if, say, a consortium of European highway

authorities should try to build a major bridge with their own architectural staff, for the Committee elsewhere require that when large organizations pool their resources for major construction works 'it must be undertaken in conjunction with an architect practising his profession freely.'

There is some obscurity here, but these additional facts also contain some propositions that are more threatening than obscure. For instance, the Committee explicitly evades responsibility in cases involving foreign architects employed on military projects, and the promise of complete and unrestrained international interchangeability is seriously compromised by the proposal that 'If an architect keeps his own nationality, he should not have the opportunity of rising to the higher levels of the profession in the country of his adoption.'

Notwithstanding such occasional betrayals of bias in favour of the comfortable hierarchies and practices of the *status quo*, the proposals put forward by the Committee, if duly ratified, are such that British architects should not have too many qualms about joining their peers and equals in the Six. There may have to be some 'horse-trading' as the *Architects' Journal* calls it, and some modification of professional law, if and when Britain joins the EEC, but it already presents the lineaments of an organization worth joining.

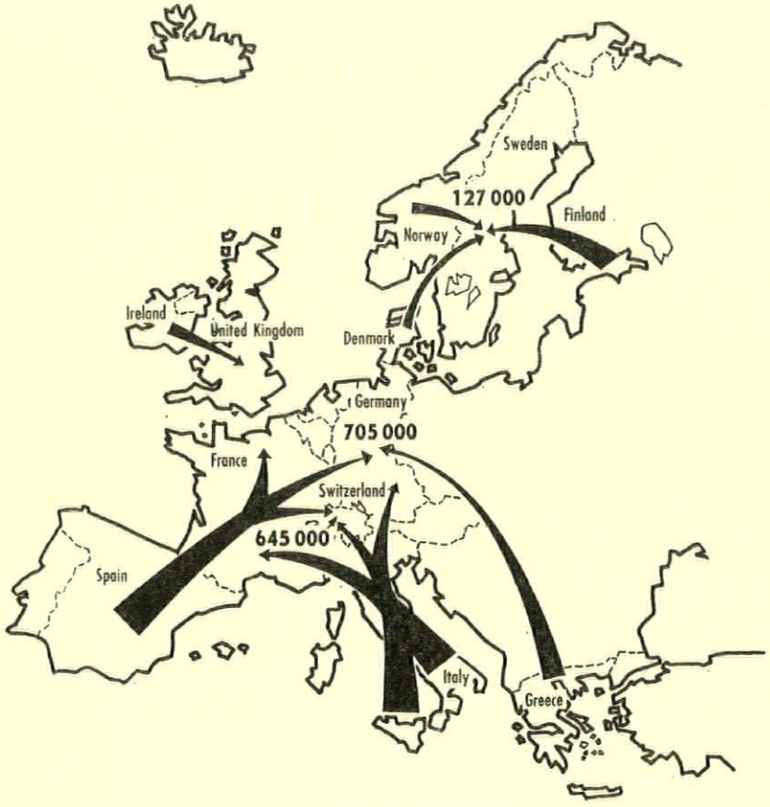
Those are the conditions in which European architects will become professionally mobile. In simpler form, similar rules apply to

MOBILE BUILDING LABOUR.

But could the laws of circulation in an inward-looking EEC deprive Britain of labour that might have been willing to cross the Channel?

Speculation about the possible availability of European labour for British building with or without Common Market mobility, is put on a somewhat firmer basis by the figures published in February by OECD (Organization for Economic Co-operation and Development) on the state of the migrant labour market, as of the middle of 1962. Although the figures are not broken down into separate trades, construction work is acknowledged as one of three largest employers of mobile labour. Apart from the focus of attraction provided by industrialized Sweden for labour from the other Scandinavian countries, Germany was the main target for migration with over 700,000 foreign workers, Switzerland second with nearly 650,000 and France third. The main sources of labour were the under-industrialized areas of Southern Europe, Spain, the Mezzogiorno of Italy, and a newcomer, Greece (even Turkey now contributes a trickle of migrant workers). Britain, it will be noted, played no significant part in all this—its migrant labour came from Eire, the size of the migration unknown because work permits are not required as they would be if Continental frontiers were crossed. All else being equal, it appears that Ireland will continue to be the main source of mobile building labour in Britain.

European labour movements at July 1962, OECD estimate.



One of the outstanding possibilities suggested by the proposed EEC legislation is the formation of

INTERNATIONAL DESIGN CONSORTIA.

At least one experiment in this form of organization has already been made, and a member gives his views below.

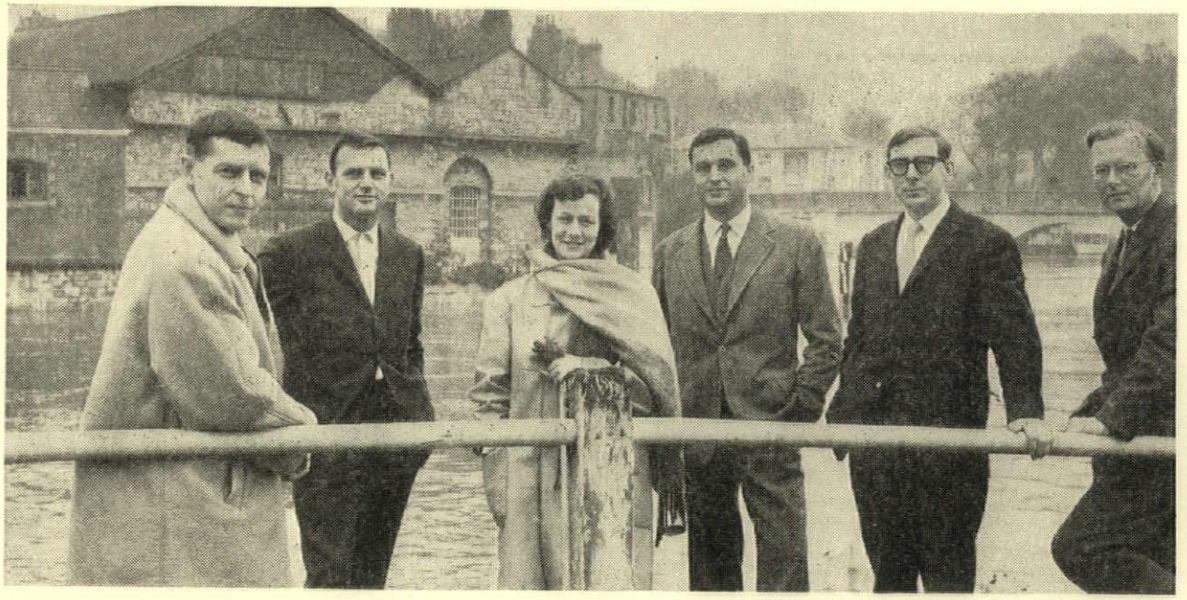
Even if Britain *had* entered the Common Market, and her architects become subject to the rules being drafted by the Liaison Committee, the situation facing British architects wishing to practise in Europe would still have been that some form of international partnership was the most workable solution, and the desirability of such design consortia would have remained. The opportunity therefore remains for joint practices of architects, alone, or of architects and specialist consultants to work together for the realization of civilized environments of the sort that commercial concerns, domestic or international, cannot produce. The concept of architecture as built space, planned and serviced for optimum environmental conditions (including psychological conditions) is extending to cover town and regional planning. Within such a definition, however, the quality of building usually remains low, largely because of the low level of the organization of production. Within the architectural profession, here and abroad, methods are being evolved to increase both efficiency and productivity. We are beginning to see the slow thaw of the 'great architect' concept and the types of practice that go with it, and the beginning of their replacement by efficient team-practices.

Closer relationships between architects and contractors or developers have already begun to appear, particularly across the Channel, and offer valuable experience for us to learn from, particularly in the fields of programming and productivity. This approach is at present narrow in outlook and rather limited in its objectives, but must broaden out as the scale of operations grows to include the contributions of the scientist and technologist—at present concealed in consultancies. As far as a serious contribution to environment and communications is concerned, therefore, it seems that committed professionals can perform best by working in combine. This may appear to be a defence of professionalism but, as I see it, this is the only way in which we can keep a clear vision of the long range possibilities (rather than the short term exigencies) of the present situation.

Of all forms of international activity, Europe offers the most useful immediate field for co-operation. In the USA it is quite normal for large practices to work from a number of offices separated by distances greater than those in Europe, and only a flimsy barrier of language prevents something similar being done in Europe. As businesses, there is no reason why such international partnerships should not be as successful as their American counterparts, but at least one of the purposes of 'going into Europe' is to help maintain that continent as a continuing centre of liberal culture, and internationally co-operating European architects should work together towards visionary as well as practical ends.

For instance, we could work together towards the creation of a great school of architecture, town-planning and the related technologies, which could become the first faculty of a true 'University of Europe,' and could concentrate, in the first instance, on the problems of the great conurbations and mass housing, on estimating European resources and programming their deployment—research that could then be extended to the development countries as a real European contribution to world problems. There could also be a useful contribution to major European problems of land-use planning, the growth of new conurbations, new city regions, and the conservation of coastal and landscape preserves in the face of increasing mobility and increased leisure.

No doubt, there will be co-operation among large-scale and official architectural practices as a matter of



Members of the pioneer European Association of Design Offices. Left to right: John Morton, Claus Bremer, Anne-Marie Rubin, Francesco Gnecchi-Ruscone, Tom Hancock, Tom Lupton.

necessity and expediency, but the chances are that the real thinking and most original propositions will emerge from small partnerships of like-minded men bound together by personal affinity and mutual regard for one another's national cultures. Their aims should certainly be higher than that of merely increasing business, nevertheless it is as well to begin with small and practical matters, such as a central office for the exchange of information and technical skills. A small joint practice could then follow naturally from this, and experience shows that the first and most essential move is to appoint a good secretary to co-ordinate office work and arrange the meetings, and sort out the kind of difficulties that are apt to arise from the very great differences in professional practice from one country to another—the principals of the various offices will always be too busy with their own practices, and nothing will be done, no effective organization set up, if it is left to them. And there must really be an effective organization in being before the first joint scheme is undertaken, because the kind of client most likely to see the advantages of using an international architectural practice will be large managerial bodies (commercial or official) who will also appreciate working with an organization that is organized.

Such a practice is not necessarily for small men or mediocre talents, there will be a place in such circumstances for the 'great architect' to make a valid contribution. Rather in the way that Aalto has served as the catalyst for the nation-wide revival of Finnish architecture, so men capable of true vision and spatial organization can act as generators of ideas and activity, instead of being limited to formal exercises. How much more fruitful it might have been for Arne Jacobsen, for instance, and for this country, if he could have been the leader of an international team designing a complete new University, instead of merely conducting a formal exercise within the narrow framework of the Oxford concept of a college. European countries, throughout their history, have always extended their cultures by exchange with other countries, and if architectural consortia can bring men of high calibre across frontiers and allow them to work in a really productive manner, they have a truly European contribution to make.

Tom Hancock

Developments in system-building have already produced situations in which international consortia could work to effect. One such is the arrival of

CLASP IN ITALY

evaluated here by one who was directly involved—though independently of the consortium described above.

The success attained by the CLASP school in the 1960 Triennale coincided with two circumstances just then beginning to occur in Italy, circumstances that made that school particularly relevant to Italian eyes. A major educational reform was just about to be set in motion and all levels of public opinion were becoming aware of the desperate inadequacy of school accommodation throughout the country. At the same time the 'Italian miracle' was stretching to its limits the productive capacity of the building industry on one hand offering numbers of opportunities for profit but on the other drying up the traditional sources of site labour.

With salaries and overheads soaring and plenty of jobs, contractors began to desert public contracts, involving lengthy procedures, low prices and delayed payments. To many hard pressed authorities prefabrication seemed the magic word that would solve all their problems, but what existed in the way of studies and projects, some dating back to the post-war reconstruction era, had been relegated by hard economic realities then prevailing, to the status of architectural utopias, rather than viable business propositions.

A few industrial firms were just beginning to produce their prototypes and to probe a market that offered no clear clues as to what was needed. In these circumstances, operation CLASP in Italy was started. It is probably premature to judge its results at this point: the first building is just completed (see p. 325), the first real programme is being drafted for the current year, while from the point of view of architectural results, one should wait until more architects have used the system and until enough confidence in it has been gained to allow greater freedom from the influence of the original models. In a way the degree of validity of CLASP is directly proportional to the amount of variation possible and if 'national ways to CLASP' can be developed, the system will have passed a major test. Naturally these differences, to be of positive value, must amount to an enrichment of possibilities and not just reflect limitations imposed by different circumstances such as building regulations or cost of materials.

What are then the trends that can be detected so far, and why do they occur? In all probability most questions arise from the different administrative set-up behind the CLASP operation in Great Britain and those on the continent; CLASP cannot be considered as just a kit of components to be assembled into buildings; it is in its original form a highly complex 'unicum' in which technical details and building programmes, contract procedures and functional standards are inextricably interlocked. In this situation the client, the architect of the building and the designer of the components are never very far from one another and from this situation can stem a certain looseness (no offence meant: I always considered it one of the main assets of the original CLASP) of the system. What is more they are closely associated in their interests in the ultimate result, the overall architectural performance of the finished product. This rules over the economic result, which is naturally a condition in the brief, but not the aim.

When CLASP as a technical system is divorced from its consortium, at least three major conditions are altered: the building programme is no longer a known datum in the problem but at most a working assumption; the architect may well be very unfamiliar with the system; on the other hand there is no longer any need to operate through local contractors competing

with one another: the competition takes place at an earlier stage, against other systems of prefabrication and points to the advantage of one or a few contractors specializing in the erection of CLASP buildings.

All these new conditions tend necessarily to tighten up discipline in the system, to reduce the number of alternative components and possible combinations, in short to make it more rigid. To assess whether this is good or bad in the new circumstances, one must return to the basic assumptions from which CLASP grew, almost a matter of intentions and attitudes.

It seems obvious that from the start the problems were faced more with empirical realism than with a preoccupation with absolute consistency (nor would we Cartesian continentals expect anything else from the English) and that for this very reason the impact of such factors as availability of certain materials on the market, possibility of cost advantages through bulk ordering and composition and organization of the typical contractors' team, played a very relevant part in the solution of quite a few design problems. Why then not follow a similar course, take stock of the altered conditions and modify the system accordingly in a number of components and details? It is probably on issues of this kind that will depend the success of the CLASP operations in other countries not only in terms of cubic metres built but also in terms of architectural contributions.

As far as Italy is concerned quite a few modifications are required: the use of timber must be cut down to a minimum because of its cost, because contractors do not normally have carpenters on their teams and joiners would be too expensive if employed, e.g. to erect cladding frames and because fire authorities will never accept timber decks and only very reluctantly timber roofs on single storey buildings. This is a typical and most evident instance of a local requirement that has to be met. It has caused the practical impossibility of using cladding tiles, a major component of CLASP language as we know it. On the other hand it has determined a new range of partition panels that need no site cutting or adapting. It will certainly produce other changes from the present form of CLASP.

But it is not these or other technical solutions in themselves that are relevant here; what matters is the indication of a method.

CLASP cannot be just transplanted or 'flogged' on a 'market;' besides there is no need to: the most should be made of its inherent adaptability to operative conditions. Practical considerations, such as those just made against extensive use of timber, should not be the only motive for local development work. There seems to be no doubt that the original design of CLASP and the choice of materials were influenced at the root by a decision to produce architecture and not 'prefabs,' obviously not in a snobbish and dubious distinction, but in a conscious attempt to avoid that just-landed-flying-saucer-look to which quite a few prefabricators seem to be romantically attached, and this to the point of using a very traditional (and traditional looking) material, such as cladding tiles.

Well, this is a very stimulating example for the Italian exercise. The landscapes and townscapes of Italy are a very strong and often worrying presence one cannot just ignore: San Gimignano needs schools too. Cesare Fera noted once, talking of CLASP or perhaps more generally of component systems, that architects are now given that opportunity for expressive consistency that was offered to those who built the vernacular, spontaneous architecture of the past: free composition with predetermined parts and techniques with the difference that the new parts and techniques are the latest product of an industrial process and not the gradual development of a familiar operation. It is a brilliant observation. One must only remember in this context that a vernacular, even a new one, is by definition popularly understood, which confirms the rightness of the original CLASP assumptions and the need in a new environment to accept its method rather that its final results.

In this sense, and culturally speaking, CLASP is already an established success: it has become accepted as the archetype of component systems by authorities, architects and industry and one may well expect to see in the coming years quite a few of its characters, ranging from associations of local authorities to assembly details, reappear in a number of different initiatives. Biological genes and chromosomes work in funny ways: just imagine what cultural ones will do: it is worth watching.

Francesco Gnecchi-Ruscone

Whatever community of aims persists, whatever the similarities of the end-product, local differences of law, technique, education and history combine to cause considerable variations in the manner in which the process of designing buildings is conducted. Differences in

NATIONAL PRACTICES IN ARCHITECTURE

can be sufficient to cause difficulties in international co-operation. While no exhaustive survey can be conducted here, a sampling of the extent and nature of these differences begins, typically, with **ITALY.**

The average English architect's romantic impression of his Italian equivalent working in the intimate atmosphere of a small office in the corner of some ancient palazzo or cloister, assisted by a handful of adoring students, and taking time occasionally to dash off the design for a brilliant, if slightly impractical, chair or light-fitting, is not so far from the truth. The office probably is quite small—a couple of principals, no room for more than two or three drawing boards, probably staffed part-time by students (or full-time if they are on strike, as recently in Milan) who have come in to help with a big job or a sudden rush of work, their adoration of the master tempered by the shrewd suspicion that they may never get paid for what they are designing. There is time to dash off the odd piece of furniture because it may never be detailed by the master himself—such matters are often merely discussed with an assistant, who may do no more than pass on a verbal briefing to the craftsman.

Indeed, there may hardly ever be any detail or working drawings in the office at all. Obviously, some architects put an immense amount of work into detailing, but in most cases working drawings, for which there is insufficient drawing-board space in the office, are farmed out to other architects or, if the architect is designing for a large commercial concern like Pirelli, Montecatini, Agip or Olivetti, the client may call the working drawings into his own drawing office, which may be quite large.

The chances of being a local authority architect in Italy are

EUROPEAN INTELLIGENCE REPORTS are continued on page 333

continental prefabrication

Little more than a year ago, a study of Continental building systems and prefabrication would have been regarded as something of an academic exercise, and could have attracted very little attention. The protracted afterglow of CLASP's resounding success at the twelfth Triennale di Milano had blotted out the memory of earlier flurries of interest in such Continental initiatives as the Austrian *Fertighaus* system, and the French achievement in housing has been commonly regarded as purely numerical. Smug self-assurance about the superiority of British system-building was allied to the unquestioned belief that British Development Group methods were the true path into the future.

But by the end of the summer of 1962 it had become very plain that the British building industry, architectural profession included, was about to fail in its immediate social task of raising its productivity by something like seventy per cent, without increasing its labour force. As the magnitude of the task became apparent, so did the limitations of available British systems. Continental methods of pre-casting and raising large structural units—hitherto the interest only of committed left-wingers dazzled by Kruschovian cast-and-hoist achievements—became a compulsive topic of study; the workings of the French Bureaux d'Etudes Techniques ceased to be brushed off as 'disguised package-dealing'; and the heavy battalions began to reveal their Continental alliances —the London County Council with Denmark's Larsen and Nielsen (by way of Taylor-Woodrow), Laing with the French Sectra system, and Holland, Hannen and Cubitt with Camus, the pioneer of French post-war structural panel systems.

In this dramatically changed situation, interest in British systems became the mark of the Little Englander or blinkered bureaucrat. The sun of prefabrication shone from Europe, and still blinds many eyes to the fact that it illuminates the scene of CLASP's greatest Continental triumphs to date. With one school finished, one building and twenty under negotiation in Italy (see p. 319), about the same number of projects in varying stages of advancement in Germany, as well as the pilot structures for the new University of the Ruhr at Bochum, CLASP is very much among those present in Europe. But its presence is even more effectively assured by a programme of some forty-odd primary schools for BAOR —a shop window that any system might envy, and an unrepeatable opportunity for Brockhouse, who are conducting all these Continental operations, to train a number of German contractors in the use of CLASP's kit of parts. The full potentials of this British presence in Europe are not easy to evaluate, but, clearly, they are not to be brushed off as a provincial day-dream.

Not that the potentials of the Continent itself are any easier to evaluate in this field. The trouble here is less one of the idle dreams of British contractors who hope to buy a natural winner, ready-made, for the Keith Joseph slum-clearance stakes, but a general failure to appreciate the extent and variety of what is on offer. The immediate social task of burying our housing shortages under a pile of rapidly constructed dwellings has narrowed the British view of the Continent's prefabricating resources to half a dozen French and Danish heavy systems for building flats. What is on offer, however, is a whole spectrum of methods and solutions, that will bear study from one extremity to the other.

national style in prefabrication

Wherever there is prefabrication on the Continent it bears the marks of its local and national history, and

current social circumstances. It is interesting to speculate what might have happened in France—how the enormous HLM programme might have been built, for instance—did the French not have a history of pre-casting panels that goes back to Mopin and the early 'thirties (Mopin was also one of the earliest systems to be exported and was used for Quarry Hill at Leeds in 1933). But this would be no more than speculation, and the fact remains that there has been a devious but continuous historical development that begins with the early activities of Baudouin and Lods, of Bodianski and Prouvé, and extends down to the large scale schemes illustrated in AR, November, 1961, and others more recent, more developed, and more interesting architecturally.

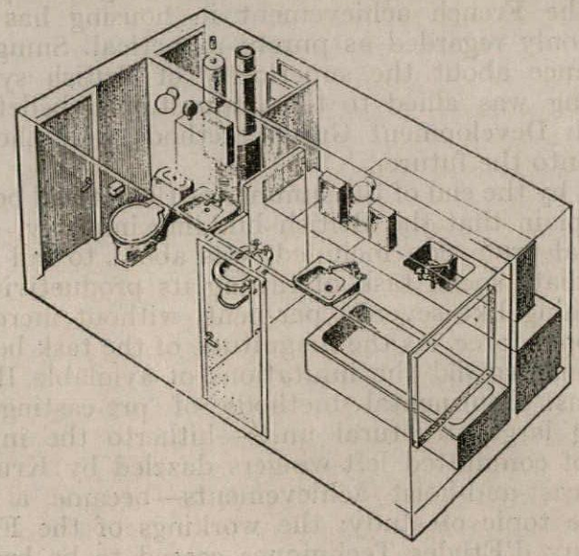
The growth in the scale of operations in France has been paced by increasing sophistication and less scholastic concepts of rationalization. Heavy or light, French prefabrication has grown up under the long shadow of Auguste Perret and his narrowly classicist concepts of rationalization. Whether his work was prefabricated or not, its constant hammering of the theme of frame-and-fill influenced the movement in its infancy and opened two immediate lines of advancement—one through the frame-and-cladding techniques of Mopin at Drancy, the other through the pioneer curtain walls of the public hall at Clichy. This, junior, tradition of light construction in metallic elements has continued on the path originally laid down, and Prouvé's work is all of a piece from Clichy onwards.

On the heavy side, however, frame-and-fill has given place to the more logical, if less Perretesque, use of load-bearing wall-panels. This was the real innovation of Camus, the first of the new wave of prefabricating systems in France, with a history going back to 1949. In spite of some residual crudities inevitable in a pioneering effort—'Camus dispenses entirely with dimensional accuracy' goes the saying—this system, with 40,000 dwellings to its credit, is the very heart of the French post-war experience in prefabrication. It has been a panel-built experience, and this movement towards large, moulded, self-supporting units reaches an extreme point, one might say, in the plastic shells of Coulon and Schein.

The growth of an industry so vast and by French standards so revolutionary in so short a time has depended on the rise of a special breed of men: entrepreneurs like Raymond Camus and Jean Barets, and the super-technicians of the Bureaux d'Etudes Techniques who are always so closely involved in the workings of such systems—Barets even has his own. It is one of the miseries, as well as one of the splendours, of the present architectural scene in France that these BETs, which relieve the architect of so many technical minutiae, should also tend to deprive him of any fundamental control over the system employed (see p. 333). Such complications as conduits and heating pipes cast into the slabs at the factory—a logical price-cutting development now available in most systems—tend to concentrate yet more power in the hands of the specialists responsible for the detail design of the slab. It is clear that the great reservoir of system-skill in France lies in the BETs, rather than the builders or the architects. It is the BET, not the architect, which tends to have the synoptic view of the entire design-process, and it is they also who tend to take the crucial decisions that decide whether the result shall be an integrated architectural whole. They are part of the national boffinry on which the aggressive new France depends, but they were implicit in French system-building right from the start, from the moment consultants like Prouvé began to replace the integrated design service typified by the Perret organization.

Scandinavia offers a marked contrast to the extremist tendencies of France—their systems are the product of the less extreme historical processes, a better organized social outlook. Common sense is the quality most commonly attributed to Danish and Swedish prefabrication, but the fine working tolerances of some systems must command respect (if not awe!) and so must the provision for the accidents of real life, such as the movement of footings. Long, and fairly uninterrupted practice in thinking broadly about social problems, and accumulated skill in engineering their solution (facilitated by the relatively small populations involved) has resulted in an architecture which is less showy than that of French system building, but is usually vastly better detailed, and also shows a capacity for thinking in bigger units than is common in France. In spite of relatively shorter production runs, the Swedes now have the *Hjartat* core-unit—a concrete box containing bathroom, kitchen and heater—and the *Corpus*, a room-size concrete box with all internal services, woodwork and painting installed at the factory. Though still in the pre-production stage of development, *Corpus* is without equivalent this side of the Iron Curtain.

Hjartat unit by Skanska Cementgjuteriet—completely prefabricated double bathroom, kitchen and boiler-cupboard in a concrete box.



But Scandinavia is not all Skanska and room-sized units. One of the most interesting propositions in Swedish prefabrication comes from Ifö verken, a firm whose basic business is in ceramic facing and flooring-tiles and mosaic, but now also offer mosaic facings for off-the-peg wall units, should these come to exist.

Off-the-peg wall units or, at least, units available only in standard modular sizes, are not system-building, of course, but they would be a useful enrichment of the material resources available and would fit in naturally with the standard modular structural elements available in systems such as Jespersen. In addition, they extend the mental framework in which systems-thinking is done, blurring the arbitrary boundary between what is hopefully called 'real prefabrication' and what is dismissed contemptuously as 'traditional construction.'

a broad appreciation of potentials

The use of such phrases as 'real prefabrication' implies a degree of intellectual snobbery. It is a phrase that has meant different things at different times in this century, and currently it means system-building in a fairly narrow sense. This constriction of view restricts our appreciation of what any European country has to offer, but Germany it renders almost invisible.

Yet Germany should figure very large in any history of system-building—the large precast wall slabs that may be seen in process of being hoisted into position in photographs of the city of Frankfurt's live exhibit, designed by Ernst May, at the Weissenhof exhibition, mean that Germany had system building of some sort as early as 1927. In historical fact, it was of a very good sort, most thoroughly rationalized, and comprehensive down to the last door-handle and drawer-pull. Yet, nowadays, Germany has no system of consequence to offer except Hoesch, a fairly simple affair of light precast cladding over lightweight steel frames. Now an importer of systems such as Balency and CLASP-Brockhouse from abroad, Germany seems to have turned her back on her historical promise.

But was such system-building Germany's destiny? The kind of housing that Gropius discussed in his early memorandum on prefabrication (see AR, July, 1961) seems to have been for detached housing of far from minimal quality, the kind of prefabrication in which Adolf Sommerfeld ('I taught Gropius all he knows about prefabrication!') was engaged in 1919-1920, was light wooden structures intended for temporary housing; and now, in 1963, Germany has over eighty companies offering single-family prefabricated dwellings, mostly of light wooden construction. Like nuclear deterrents, these companies vary in credibility, but at least twenty seem to be in serious business. Their products vary in architectural quality from the most poverty-stricken *Heimatstil* to the tolerable, if sometimes superficial, *Modernismus* of optional-architect systems such as Wolff and Milz. But taken all round they suggest that to ignore Germany as a prefabricating power is to act at one's peril: Germany, in fact, appears to be about to make a significant and unique contribution to European prefabrication, may even have broken through to it already.

The credibility of these firms may be measured by their outputs—some have built only demonstration-houses, others have 350, 1,000, 3,500 or more than 5,000 units to their credit. The big producers (though not so big if compared with Camus or Barets) have tended to achieve their high outputs in conjunction with large-scale private or social financing, but the bulk of the middle run are doing something that has been the unfulfilled dream of prefabrication ever since the idea was born—they are selling in the ordinary consumer market, and their products can be regarded as consumer durables like cars or refrigerators. The popular weekly magazine *Quick* has lately been featuring consumer-tests of available prefabricated dwellings, such as Schälerbau and GER-DE-CO (a Danish import) and while one may note these have been mostly small producers whose business could use a resounding journalistic puff, the mere fact that such a promotion could be seriously undertaken and given six pages in one issue of a mass circulation magazine, shows that the relationship between the public and the producers of prefabs is very different in Germany to the situation obtaining in Britain at present. The mere fact of prefabrication is no longer a point at issue in public acceptance of buildings.



Typical German pre-fabs evaluated by Quick *magazine during its recent series of consumer-tests (conducted, significantly enough, by architects).*

It is conditions like this that make the potentials of European prefabrication so difficult to assess. Germany may be only marginally involved in system-building, but the spec-built prefab industry represents an impressive reservoir of talent and (above all) experience, that could be of the utmost Continental significance. Again, the market for which it produces is one whose ultimate ramifications are inscrutable even to those who—unlike the British—are awake to its existence. Producers outside Germany are already clearly interested in this market; some Danish and Swedish firms are already in it, and the Belgian 'Eurovilla' project, though nominally aimed at the whole of the EEC area, seems to have Germany particularly in view. With the amount of mental energy that is being devoted to prefabrication and industrialized building, and the evolution of radical new sandwich materials such as the concrete-polystyrene laminates being developed at the Hochschule at Ulm, Germany has become a major imponderable in European prefabrication. Perhaps less of an enigma than Italy, where relevant brains as impressive as those of Giuseppe Ciribini exist in an almost total vacuum of tangible achievement, coupled with an almost total organizational readiness to deal with Italian prefabrication if it ever happens—the catalogues of components and structures for prefabrica-

tion available from the Genoa building centre are models of comprehensiveness and clarity.

The pity is that they have so little to present. Germany is an enigma of another kind; a portentous body of experience, intellectual capacity, accumulated research and organizational ability that delivered some 12,000 houses to site in 1962. If galvanized into concentrated activity instead of the present piecemeal operations—if, say, one of the big combines now watching in the wings should decide to weigh in—Germany could overrun the local industries of competing countries, and offer *ein-familie* units that might be attractive enough to undermine both the planning concepts and the pattern of social acceptability on which the densities needed for successful heavy system-building are based. The German consumer-oriented prefab could be the instrument of European super-sprawl at a rate that would make the drift to the south-east of England look positively glacial.

an understanding of needs and wants

Whether or not this happens, depends on transport—not only the personal transport needed to live at low densities, but more decisively the transport needed to move units from factory to site. Although there exist such tantalizing transportation possibilities as the extension of the Rhine-Ruhr-Scheldt waterborne network across the North Sea (a network which already moves precast *Schockbeton* units from Holland to Germany) most prefabricated elements will move quite short distances, rarely as much as fifty miles—for greater distances it is usually better to build a new plant nearer the site, unless the manufacturer has some kind of captive distribution network, such as a chain of builders' merchants. Since most of these units must move at least the last part of their journey to the site by road, economical roadability will be a decisive factor in their distribution—it is worth while to move *Hjartat*, crammed with services and equipment, but doubtfully economical to move *Corpus*, empty and waiting for the family furniture, and specific local conditions of roadability make whole-room units on articulated trucks one of the sights of Moscow.

The prefab, large or small, will never flood out over Europe from a central assembly-plant like Wolfsburg or Dagenham. Even if it should become a universal standard product, it will be produced for local needs in regional plants—and it is worth remembering that though such diversified production should favour diversification rather than standardization of design, it might well prove to be an advantage for a commercially sale-able, consumer-oriented product-house to be recognizably the same 'Casafertig Farnsworth Plein-Soleil' whether erected in Malmö or Majorca. A Europe that apparently can't wait for the standard kitchen and the standard (not to say Ideal-Standard) bathroom may soon be clamouring, under the guidance of the same home and garden magazines, for the standard house.

But even this, the ultimate expendable 'consumer-durable,' would still not have the intrinsic value, bulk-for-bulk or weight-for-weight, of the Fiats and DKW's that thread their way across Europe on lengthy railway trucks and flat-boats. What will move from country to country will not be buildings but sheets of paper—drawings and specifications, licences and patents, cheques and expense-sheets. At any level of the building industry, from domestic dwellings to civil engineering works, the most exportable product that any nation of Europe possesses is human skill and, in particular, consultant talent. This, of course, runs counter to the hopes that most British architects seem to have entertained of Britain's proposed entry into EEC, which were for labour, plant and components, not competitive experts. They dreamed of cheap and skilful south-European labour, fabulous French and German site-machinery that would do properly all those tasks that available British machinery seemed only to do wrong, and Dutch facing tiles with undercut keys that would stay put even on soffites. The last (see p. 369) they can have on the same terms as before, shipped over from Rotterdam to ports in East Anglia, just as in the Middle Ages. Plant may move about less than it has done—when big contractors go abroad they seem most likely to hire plant locally, or even make temporary consortia with local plant-owning contractors. And the labour situation (see p. 318) looks like remaining exactly where it was—a skilled man, however underpaid, is harder to move than a labourer. He will come to execute his special function, and go home when the job is finished, and charge travelling expenses.

Therefore, it is only worth the trouble to pay the fares of men with really productive skills, the kind of skills that put other men to work; managerial capacity, technical know-how, professional services, and these will circulate whatever the political and tariff structure of Europe. Characteristically, one of the strongest cards in Brockhouse's hand in selling CLASP in Europe is the fact that they can offer, commercially, the market intelligence and bulk-buying capacity of the consortium which originally developed the system, and when Continental contractors make overtures to an organization like Cubitt's, it is usually finance or organizing capacity they want, not plant or labour.

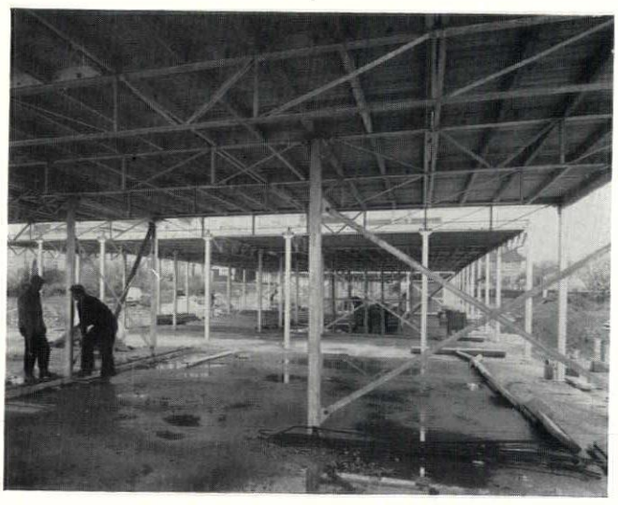
Sheer experience in system building and prefabrication is one of the greatest riches that European architecture possesses at present. It is a fund that can be drawn on by anyone who can pay for the expertise, and knows how to make it serve his needs. In Britain, we see, without mental effort, that we need more housing quickly, and we also see five or six European systems that can obviously satisfy that want in the manner in which we normally and conventionally express it. But often the need that stimulates an expressed want can be satisfied in less obvious ways, and it would be a lasting reproach if we were to pass over other European possibilities of satisfying the housing need simply because they failed to fit in with received ideas about point-blocks and slabs. After all, the great recommendation of CLASP (indeed, the whole British schools programme) to Europeans was—roughly—that it offered to satisfy their basic need for more educational capacity by by-passing their expressed but superficial wants for traditional *Licei* and *Gymnasia*. The lesson to be learned seems clear enough.

clasp

1, *the first CLASP school to be completed in Italy, at Biella. National and local building regulations account for some of the deviations from the style associated with the system as used in Britain, others derive from the re-examination of the basic propositions of CLASP that were made in the process of converting to metric standards, etc.* (*see also p.* 320).



1



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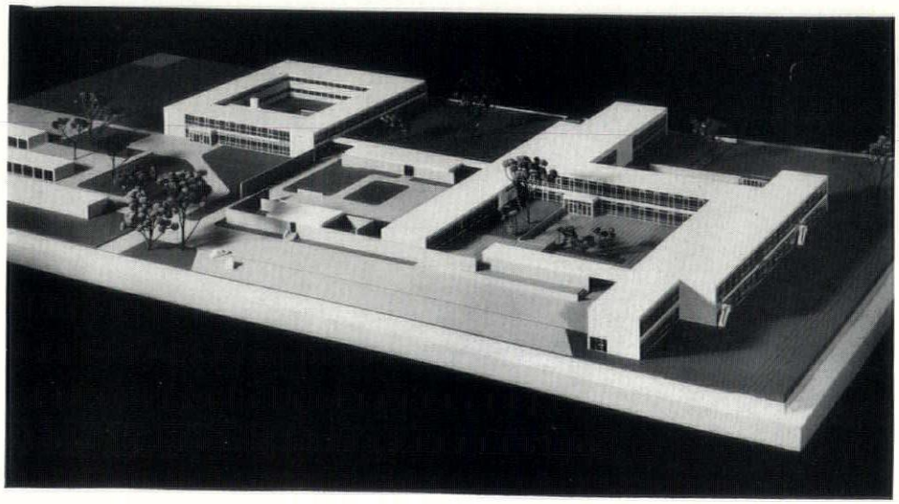
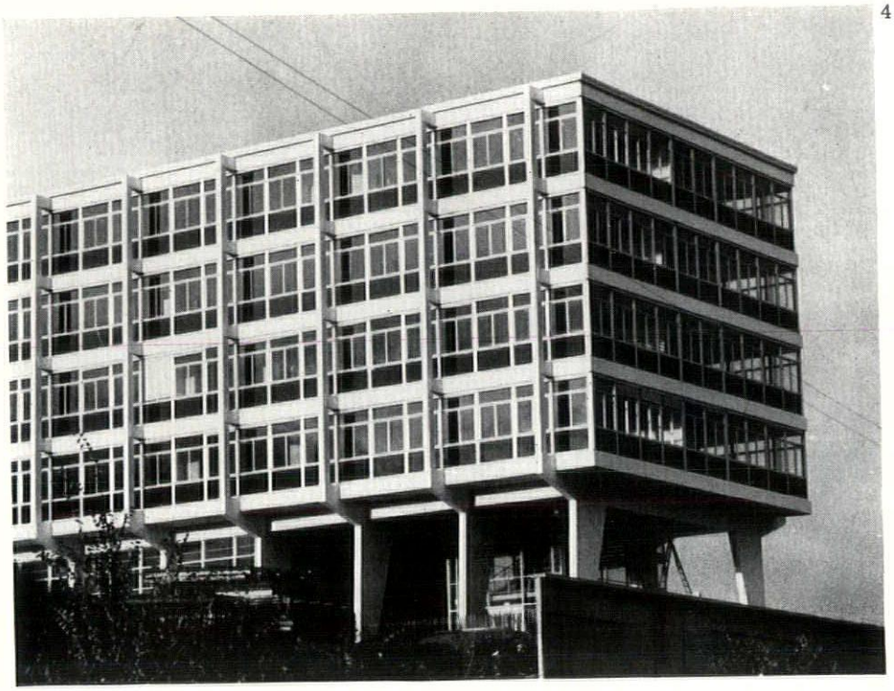
2, *pilot buildings under construction for the new University of the Ruhr, at Bochum, to be used chiefly by planning and architectural staff in the first phase of the University.*



3

3, *model of the proposed CLASP-built secondary school at Münster, Germany, part of a programme of some forty-odd schools in progress for BAOR that will constitute one of the largest overseas operations to date for any European building system, British or Continental, and will provide an organization in being on the ground for subsequent large-scale civilian programmes in Germany.*

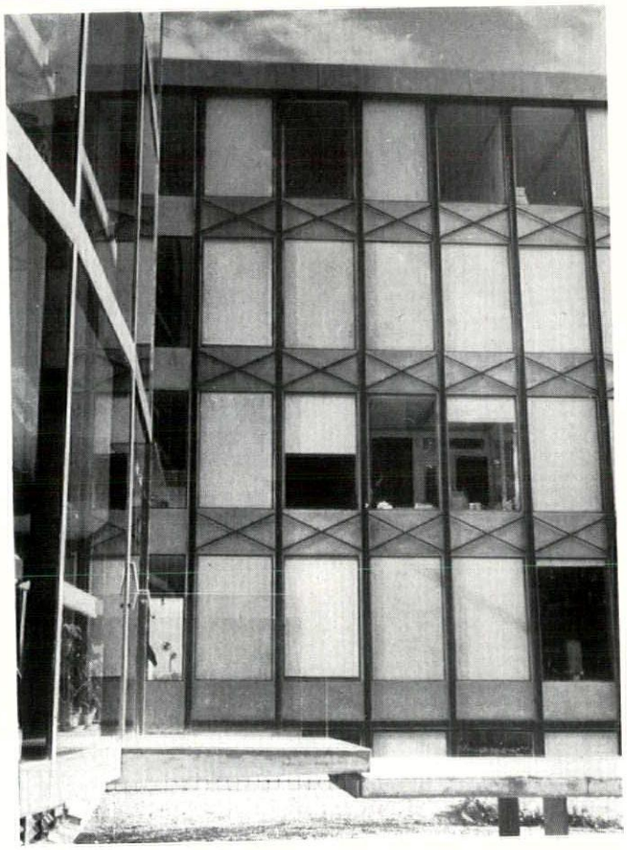
4



4, continuance and elaboration of classic French frame-construction—lycée at Argenteuil; architect Marcel Lods, built by La Construction Normande.

5, the lightweight tradition in French frame construction—Air France building at Orly, in welded steel tube, by the architect/engineer team of Albert and Sarf.

5



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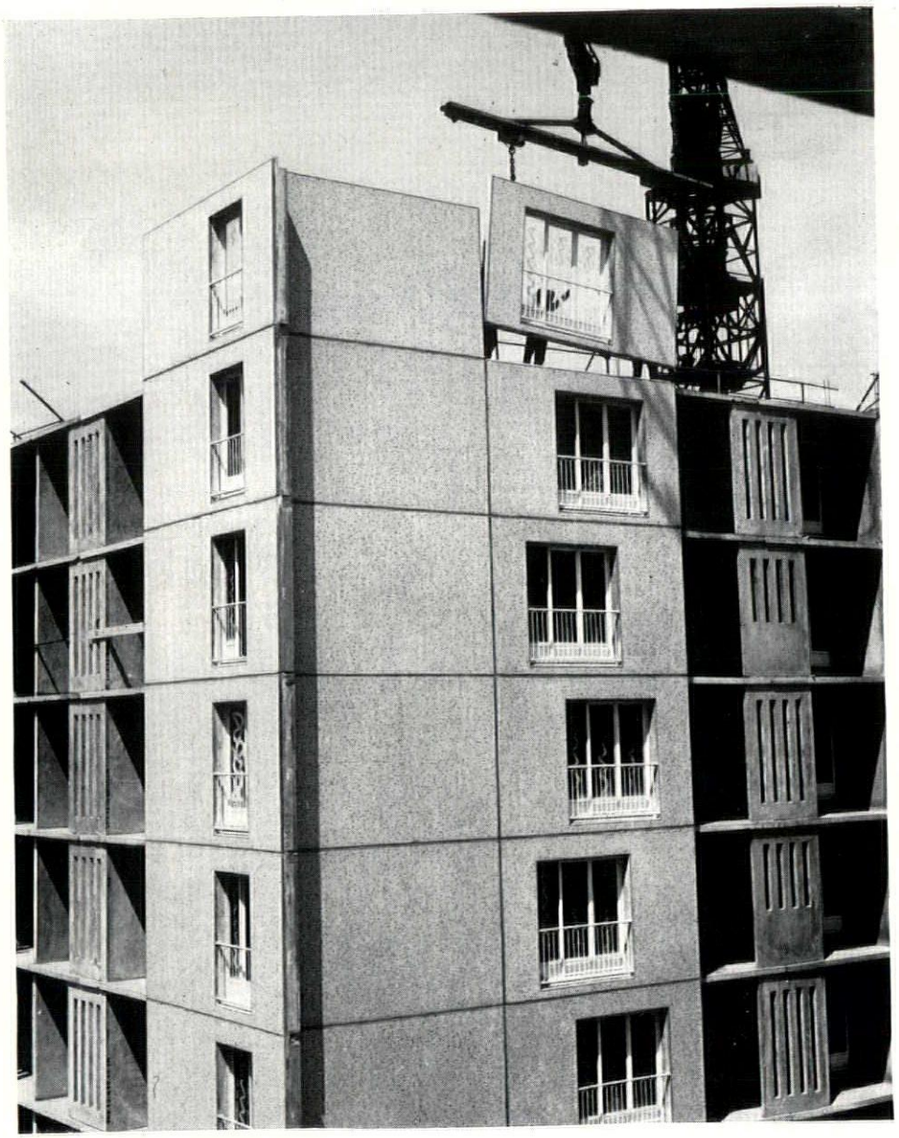


coignet

6, wall panel, complete with window, glazing and security rails being lowered into place on a residential tower-block at Sauvigny-sur-Orge. One of the world's oldest names in concrete, the Coignet company is here seen keeping well abreast of current sophistications in heavy panel construction.

7, five-storey flats in a scheme at Blanc-Mesnil (architects, Legrand and Rabinel) built of basically similar Coignet units to those in 6.

7



balency

8, *two large slab-blocks (each of a size comparable with one of Le Corbusier's* Unités*) built on the Balency and Schuhl system, designed by Zehrfuss and Sebag, and forming part of a housing scheme at Nanterre. Somewhat deviationist by current French system-practice, these are post-and-slab structures with only occasional structural cross-walls and no major loads carried by precast panels. All the darker-toned parts of the façade are, in fact, more or less conventional mason's work in concrete blocks laid in mortar and then rendered over.*

8



barets

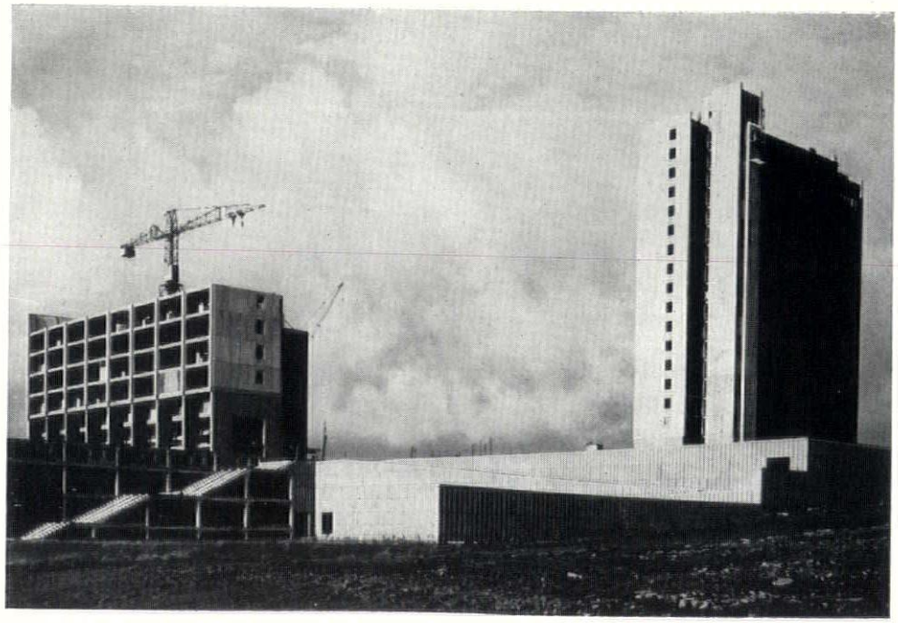
9, *residential tower-block at Canteleu, near Rouen; architects, Leroy, Vincent and Louard, built by Barets through and with his subsidiaries CO.F.E.BA and Societe Française d'Engineering, in a characteristically close association that makes it difficult to tell where specialist consultancy ends and contracting begins. One of three tower-blocks in a mixed scheme totalling some 2,500 dwellings, it has six flats per standard floor and rises fifteen storeys.*

10, *two blocks of the Cité Modèle, near Brussels, a Barets operation outside France, designed by the local architectural collaborative 'Groupe d'Equerre'. The part-finished block, left, shows the fairly conventional cross-wall structure: the strength of Barets lies primarily in his avoidance of factory fabrication and preference for low-investment, on-site operations.*

9



10



camus

11



11, *twenty-storey tower-block by Heaume and Perutz at Maisons-Alfort, built by Camus, and exhibiting most of the characteristics of this 'father' of the French post-war system building boom. In the background, more Camus blocks, this time designed by Robert and Manuel.*

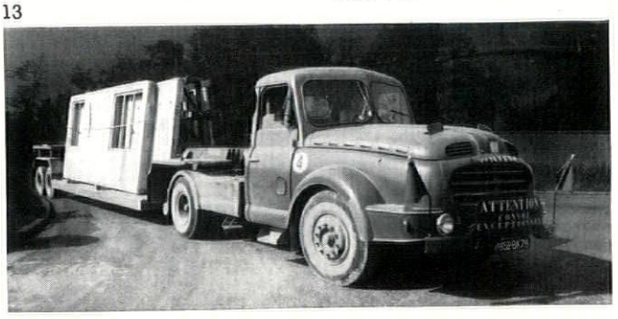
12



12, *construction shot of the best known Camus scheme to date—the 'blue towers' at Pantin, designed by Aillaud and seen by every BEA passenger on the road to Paris from the airport at le Bourget. Whatever may be said about Camus's attitude to dimensional niceties, the finish of the panels is always noteworthy, largely because of their manufacture under controlled conditions in the factory—a point of which Camus has always made much, as he has also of his use of computers and his quality-control techniques.*

13, *factory production means that Camus units must be roadable—this articulated truck with its load shows the size of units that can be carried.*

13



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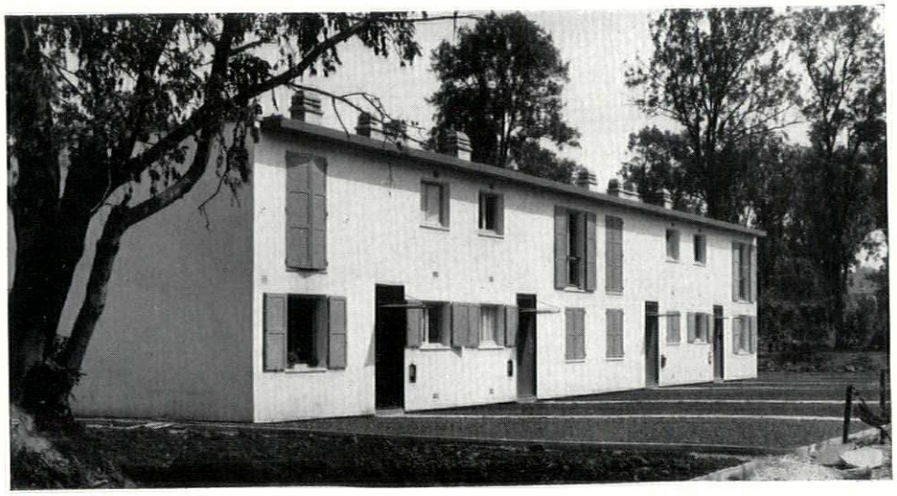


14, *two-storey Camus-built housing at Langres—it is often forgotten in Britain that heavy-panel prefabrication can also show economies in work of this relatively small scale.*

larsen and nielsen

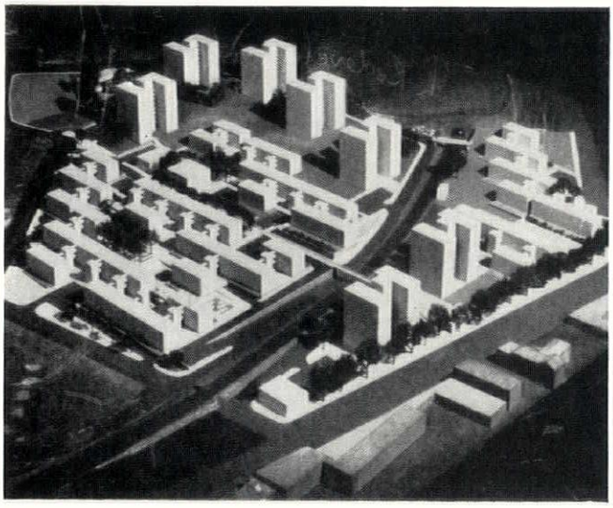
15, *high rise apartments in Denmark, constructed in the Larsen and Nielsen system—factory cast and cured sandwich panels, with insulation between two layers of concrete. The relatively deeply-moulded façade (as compared with other panel systems, such as Camus, opposite) and such accessories as cast-in flower boxes do not necessarily reflect a more sophisticated technique, in spite of great detail refinement, so much as a more generous and humane financial and social situation than elsewhere.*

15



16, *for a variety of reasons, Larsen and Nielsen is the Continental system which seems to have the greatest appeal to British local authorities and architects, and the LCC is to use it for this development at Morris Walk, Woolwich, with Taylor-Woodrow-Anglian as the system contractors.*

16



ohlsson and skarne

17, *welded joint in reinforcement, before pouring of grout at junction of floor-slabs in the Skarne 'heavy system,' a structural refinement unusual among heavy panel systems, even in Sweden. Ohlsson and Skarne offer two different systems: the heavy, which is used primarily for cross-wall construction, without load-bearing external walls, and the light, which is an all-load-bearing panel system more comparable to French procedures. However, it is easily distinguished from all other systems on site by its use of a slip-formed, cast in situ, lift/stair tower, completed first in order to carry the crane which raises the units of which the rest of the block is built.*

18, *typical light-system site at Arsta, with blocks in differing degrees of completion.*

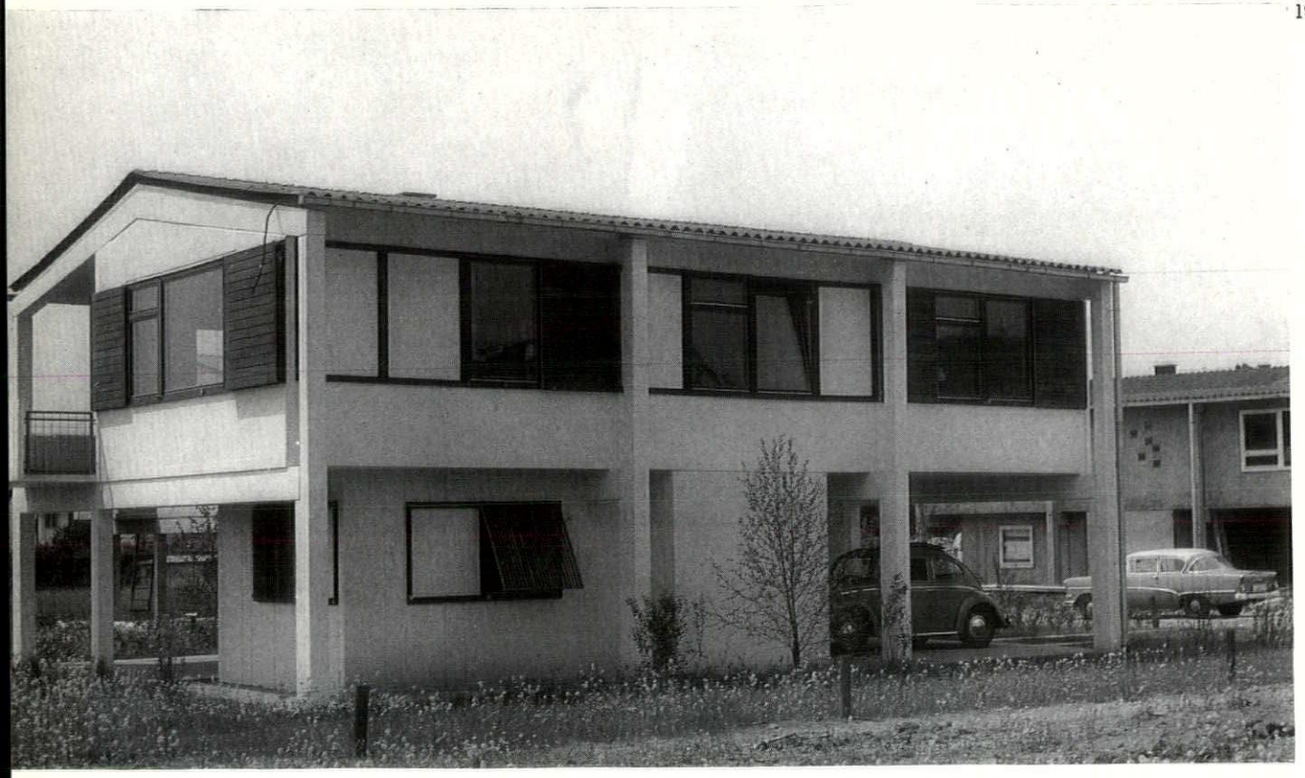
17



18

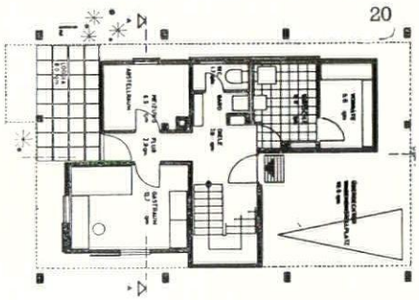


bossert



19, *two-storey house, type R1224, showing the use (rare among German systems) of exposed concrete frame—which is not a portal in spite of its appearance, but consists of pairs of uprights carrying a beam at first-floor level and a precast bent to support the roof-decking. Wall elements also in concrete, backed by polystyrene insulation with plaster skim. The method of construction is adaptable also to single-storey structures, isolated houses of four or more bays and also to staggered row-housing.*

20



21



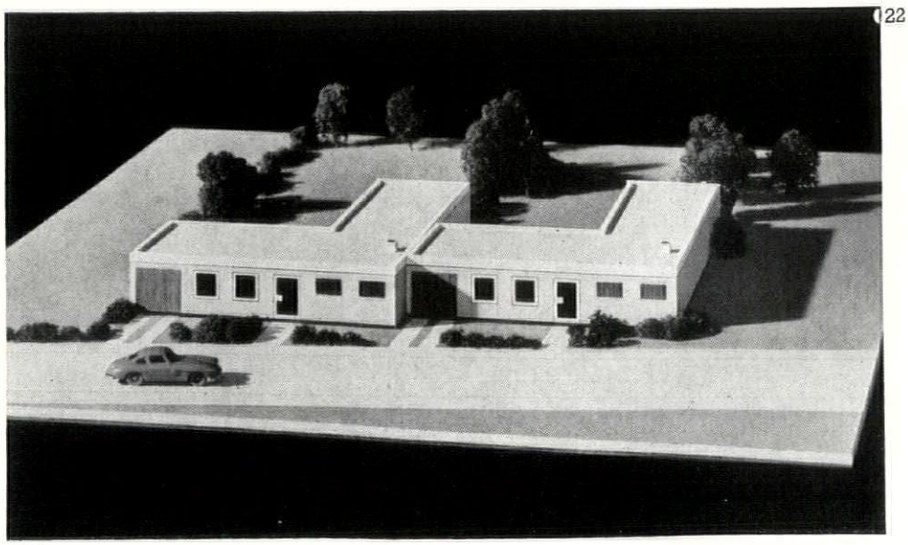
20, 21, *ground and first-floor plans, showing relatively generous space-standards and free planning of the lower floor.*

milz

22, *model showing Milz Type 4 houses arranged in rows—since this German panel system is conceived as adaptable to rearrangement by architects, its potentialities as a system for high-density patio-housing are obvious. Two-storey row-houses are also catalogued.*

23, *plan of type 4 as illustrated here.*

22



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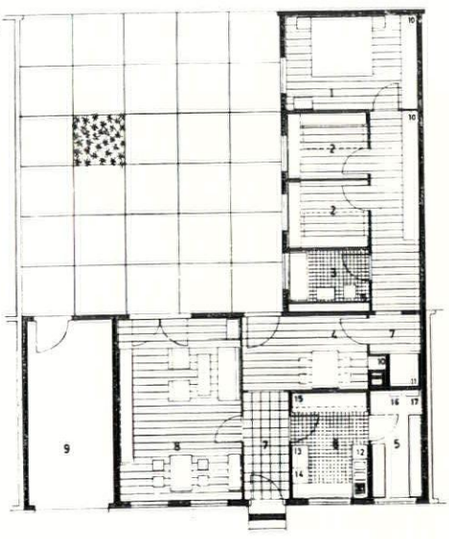
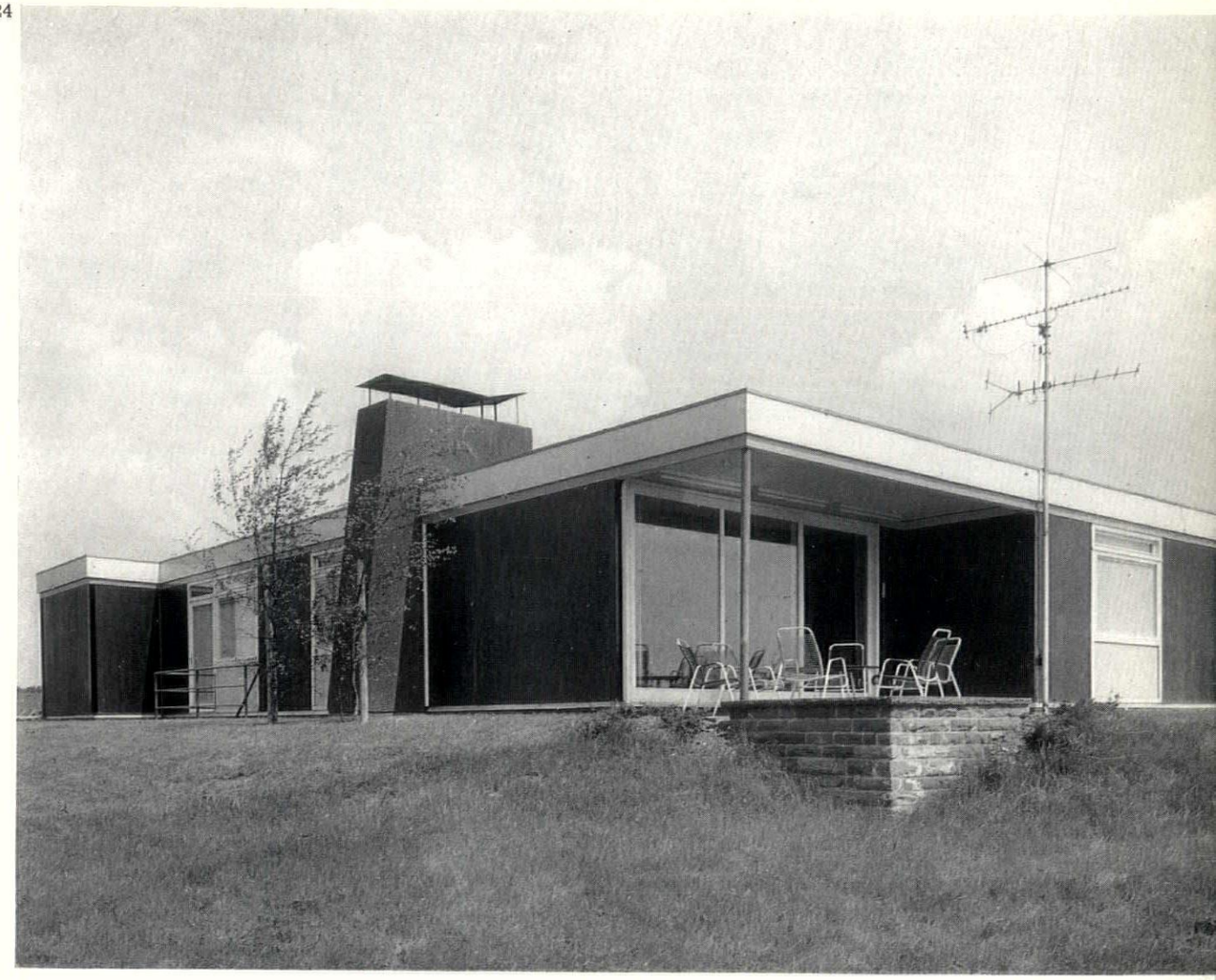


wolff

24



24, *Wolff 'Skandinavia' house —if German prefabrication for the middle-class market is a threat to planning, trade or anything else, the Wolff house shows the reason why. Styled to appeal to a certain kind of affluent sophistication and already the darling of the home and garden magazines, it offers (in a building time of four weeks) a genuine dream-house off the peg. Wooden construction (mostly plywood) and no provision for a second storey.*

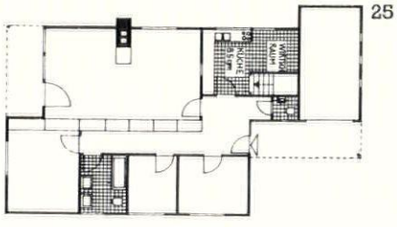
26



26, *simpler and less obviously styled version of the Wolff house. In spite of the pitched roof, most components are identical with those used in the Skandinavia.*

25, *plan of the version illustrated above, showing arrangement of rooms on either side of corridor lined with built-in cupboards.*

25

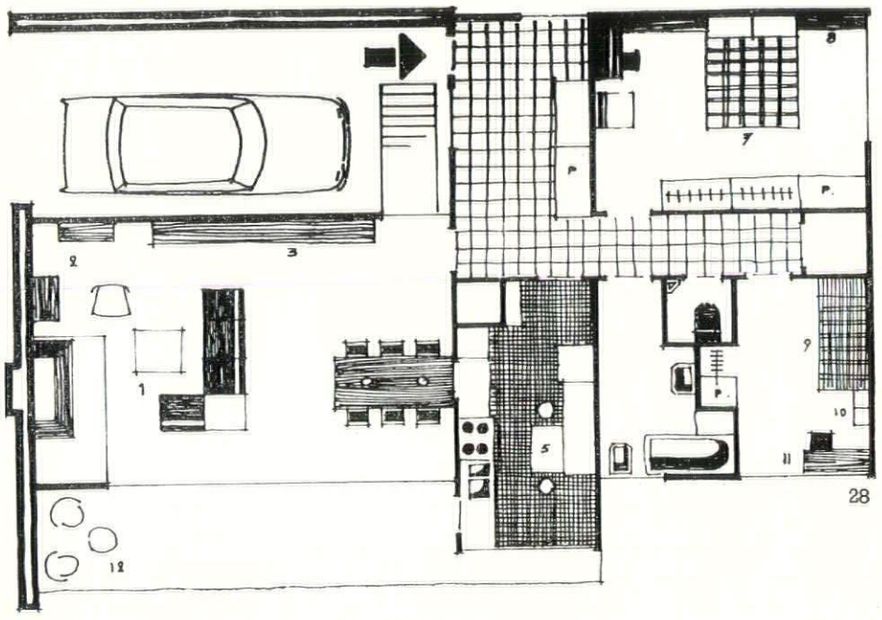


27



27, *looking through the living room towards the front door of the Skandinavia. Brick-built fireplace is a styling feature that hardly follows from the constructional methods, but the wall of cupboards is an excellent example of system furniture as the natural concomitant of system building.*

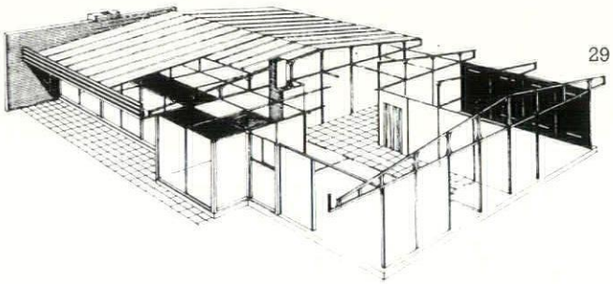
eurovilla



28

28, *plan of 'Eurovilla' prototype, designed by Ivan Fatise. This Belgian design is a proposition of a different order to even the most sophisticated of the German system-villas with which it may find itself in competition on the commercial market. Its space-standards are not lavish, but it makes better use of the square-footage available, and the position and fenestration of the kitchen implies a less mediaeval attitude to woman's place in the home, by giving her both view of, and access to, the terrace.*

29, *the structure of Eurovilla—tubular metal framing carrying aluminium sections which accept the glazing, partitioning panels, etc., all laid out on a module of* 120 *cm. The technical specification is also advanced by general European standards, with a sophisticated heating system, involving warm air slots in panels in the walls and further outlets in the ceiling above the windows.*



29

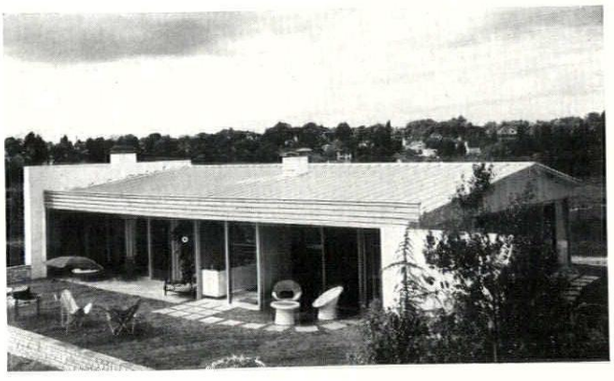


30

30, *the entrance hall of the prototype house, with car-port door at left and system-furnishing type cupboards at right; one of the warm air outlets is seen above the door.*

31, *view of the terrace side of the prototype house outside Brussels, which is being employed for a one-year family-occupancy test in order to evaluate its general workability, before production is put in hand.*

31



continued from page 320

slight, but not absolutely non-existent. Some, if not every, *Provincia* maintains an architectural design department that can be taken seriously, though this will still be incredibly small by British standards —perhaps half-a-dozen architects and engineers for a relatively affluent and prosperous Province. Other official 'architects' are often little more than building managers or inspectors. However, the Comune di Milano has just set up Italy's first Local Authority Development Group (the source of the inspiration for this move should be obvious enough) to work on the problems of schools, and has staffed it with some of the city's brightest younger talents.

What the British architect doesn't see is the relative chaos outside the office. Name any conceivable relationship of client, architect, contractor and package-dealer, and it can be found practised somewhere in Italy. His own *direttore di lavori* on some jobs, dealing directly with specialist contractors (as in Germany) the architect may hand over most of his responsibilities (including the working drawings) to an *impresa di costruzione* on another one. Alternatively, a big *impresa* will be capable of designing buildings itself, through its own architectural department (a good place for newly fledged architects to gain experience).

He may need such experience: his University training is liable to be thin on the technical side, not lacking depth so much as comprehensiveness. The inadequacies of his training will be due chiefly to an inherent liberal-studies snobbery in the Italian University system: Italy alone of Western Countries seems to have set out to separate architecture as a 'humanity' from architecture as a 'trade,' by creating a caste of sub-architects—the *geometri* whose training is conducted at a Technical College level, includes subjects outside architecture proper but not, as any Italian architect can tell you, the cultivation of taste or aesthetic sensibility. Those who advocate the creation of a two-tier profession in Britain might do worse than contemplate what has occurred in Italy, where the *geometri*, created as a race of architectural drudges, have never passed up any opportunity to branch out on their own (usually as the package-dealing head of an *Impresa di Costruzione*) and design any class of building that the law permits them. A trained *geometro* is fully qualified in all the purely mechanical aspects of getting a building designed, his taste is not always as excruciating as it is made out to be, and he and his like put up a very large proportion of the buildings outside a few active architectural centres like Rome, Milan, Turin, Udine, Reggio d'Emilia, Bologna, etc.

Nevertheless, the existence of these 'second-class citizens' of architecture, goes some way to make nonsense of regulations requiring the use of architects on all buildings of consequence, requiring architects to be registered members of the *Ordine degli Architetti*, and to be registered in the area where they intend to practise. The architecture of Italy —like that of France—seems to need an effective national body such as the RIBA, not only to demand and supervise better architectural legislation, but also to represent the interests of architecture and of architects in the public domain. Existing bodies, such as IN/Arch, are either too ineffective or too patchy in their national coverage, but it is widely felt that architects will have to put their house in order soon, or it will be too late for them to help in putting the national house in order.

Problems of putting houses in order beset other national bodies of architects besides the Italians.
In **FRANCE,** *however, the difficulties of the profession have to be seen against the background of a highly developed building industry and a body of uncommonly sophisticated consultants.*

It can safely be said that most French architects would hesitate before setting out for the shores of 'Perfide Albion,' as long as the archaic method of Weighing and Measuring in use in Britain is not modified; it is asking too much of a rational Gallic intellect to understand why the metric system has never been adopted. Conversely, a British architect setting out for the Continent need have no qualms about dealing with kilos and metres. Nor need he fear that methods of research and planning differ to any great extent. What does vary is the structure of the profession, the teaching system and, of course, the vast administrative problems to be dealt with in day-to-day practice.

Until 1940, there was no legislation governing the pursuit of architecture in France and only then was the Ordre des Architectes created, which now govern all activities in this respect. It is an official governmental body, run by the profession, but coming under the aegis of the Ministry of Education. Although it has a strong voice in general policy matters, it is more comparable to ARCUK than the RIBA. Parallel to the Ordre, there are a multitude of less formal syndicates and associations of many types but, alas, no strong central body such as the RIBA to focus all these individual efforts. The result is that the profession is not as strongly organized as it might be and is, in fact, sometimes trodden on rather heavily. Recently, for example, architects were unable to oppose the Minister of Construction's project for establishing a black book of all incompetent 'confrères.' The need for such an Institute can be felt in the average practice, where the usually lone Principal still tends to work on an artisanal basis, with no guidance on modern administrative methods at hand, few facilities for research work (the equivalent of the RIBA Library simply does not exist), hence little encouragement to modify his methods. Moreover, a radical difference in educational methods has tended, in the past, to produce a conservative type of architect, diffident about modern methods of construction and wary of contemporary architecture. He may be called upon to collaborate with brilliant contractor-engineer teams, such as Campenon-Bernard and Freyssinet: his role in these cases is often reduced to designing the basis of the project with orders to leave enough scope for these teams to produce a genial, economic and constructive solution, using their own particular patents. Fortunately, he is headed by a small group of talented architects, representing about 3 per cent of the 8,000-odd members of the Ordre, and who wield a strong influence throughout the country. Most of them act as part-time

'Architecte-Conseil' for the powerful Ministère de la Construction or in some other official capacity.

The much criticized Ecole des Beaux Arts, which trains the majority of architects, is greatly to blame for these shortcomings. This Government-run School, with its nineteenth century syllabus, still has to face up to the fact that technical knowledge is of very great importance to-day. The Beaux-Arts student, struggling against this initial handicap, spends many years before obtaining his diploma; a large proportion of these years, however, is spent in offices where he forms an integral part of the labour force. He will wander from office to office, is paid by the hour, expects no overtime pay and, following the tradition, is often prepared to work all night on rush jobs. He has imagination and talent but little technical knowledge and needs careful watching.

A new element which threatens the architect's hitherto authoritative position is the appearance of a profusion of Bureaux d'Etudes Techniques. These organizations (which work with or without an architect) combine, amongst other things, all the consultants needed in any given project and will complete the architect's drawings with their own. They are often backed by the big banks and have certain encouragement from the Government. On most official contracts, a BET will be imposed by the Ministry concerned and the architect may or may not be lucky: some are good and some are bad. They can be a grave disadvantage to him, if he allows himself to be jockeyed out of position, but a great advantage if, with his generally meagre technical and administrative resources, he happens upon a good one. The result of these combined efforts to produce adequate working drawings is sometimes completely annulled when, as happens only too often, a contractor is encouraged by the client to propose constructional variations, provided his tender is the lowest. It is common to see weeks of work go by the board as a result of this eternal economy seeking. It is partly for that reason that it is common practice for the builder to do his own working drawings, under the architect's supervision. Regional differences in brick sizes, little use made of standard windows, local systems of floor and partition construction all tend to render the architect's working drawings valueless. He may, therefore, have less detailed drawing to do, but his task is complicated by the absence, more or less, of a system of general contracting on British lines; the nearest thing to it in France is the 'Entreprise pilote.' Each specialist has to be dealt with separately and the co-ordination on a big site of all these individuals can be a very trying job.

As in most countries, the continued effort required to avoid being overwhelmed by bureaucratic rules and regulations leaves the Principal in any small firm little time for designing. There are few, if any, large highly organized firms as in England; the French architect clings to his independence and will often only link up in a partnership for a specific job. He does not delegate higher responsibility easily, but if the job is too big or the site too far away, will accept the appointment of an 'architecte d'opération.' In theory, his free and easy ways and clinging memories of his student days give him a greater degree of 'liberté, égalité et fraternité,' but the time will come when he will be obliged to organize himself in a more rational manner in order to strengthen his present rather precarious position. The lead must come from the existing organizations, dispersed as they are, as it came to British architects many years ago.

Neil Hutchison

Even a brief face-to-face encounter can tell us something fresh about national practices in architecture —in this case, a provincial office in **HOLLAND** *provides professional illumination.*

We knock and explain to the tall blonde woman who we are: architects from England who have come over by yacht. The call 'Poppa!' produces the architect husband and we are asked in with enthusiasm. Past open-riser stairs, we are led into the office part of the house; two drawing boards, files, samples—all very familiar. All drawings no larger than imperial, filed folded into foolscap size. Simple details in pencil and very much basic text-book. There is even a real king-post truss for a village hall, but also open-web joists and *Stramit* boards. Houses, a small town hall, a yacht club, a restoration job, a small school, more houses. Naturally, we ask if the employment of architects is compulsory.

'Oh no, but the council doesn't want to see its town spoiled, and people would be furious if someone tried to build without an architect!'

So that's it. And what about fees? We look at the sketch-design for a small town hall. . . .

'For this, I get about six per cent. Of course, when it proceeds, I get another five to six per cent.'

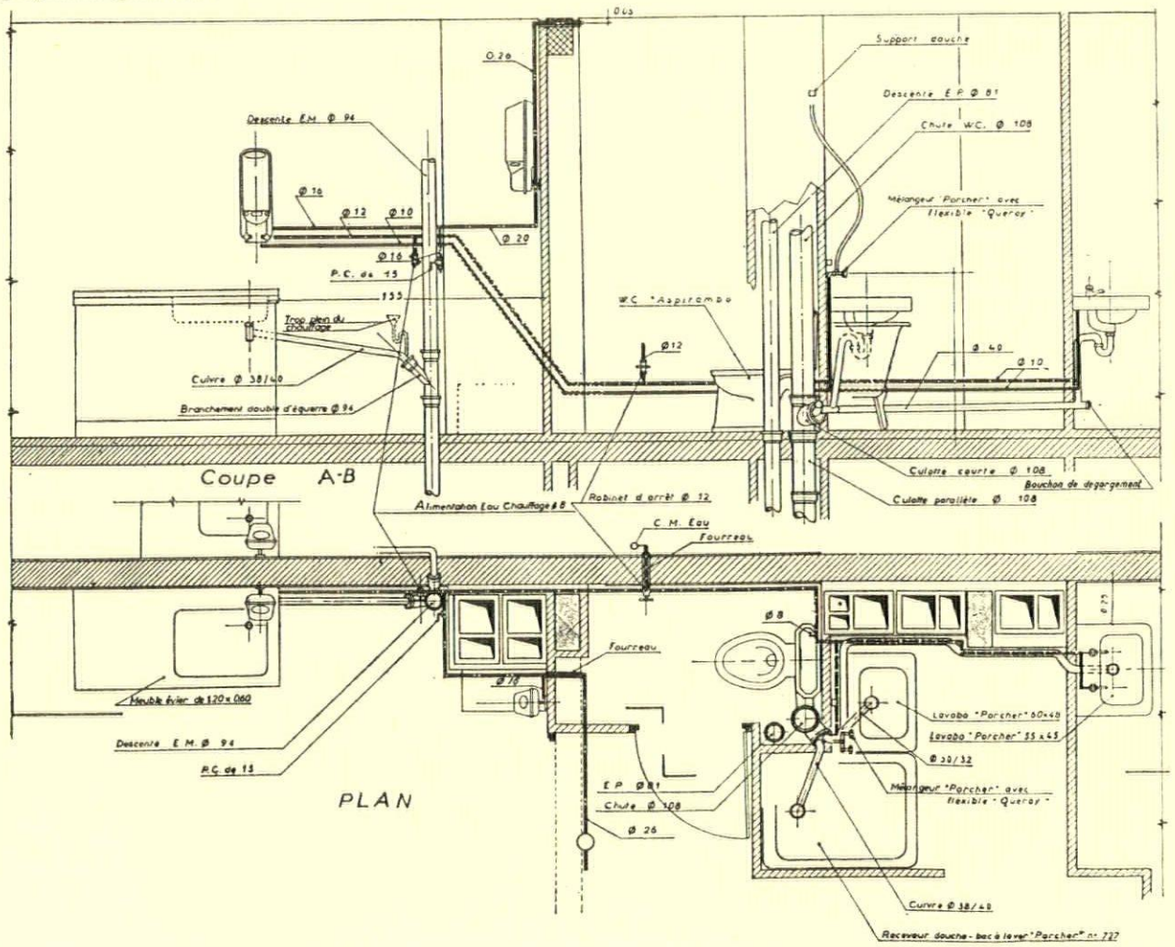
We gape in astonishment. 'Really?'

'Well, I am an artist. I am paid for the design. But they have to pay me for my studio, light, telephone, constructional details and supervision—I can't be expected to do that for the same money. Oh no!'

And we were shown the Dutch scale of fees. True enough: fees for the whole work ranged from about twenty per cent for small jobs, down to about twelve per cent, with an average of about fifteen per cent. Only for repetitive housing were the fees less than in England 'but I don't touch that sort of thing.' Building costs seemed about the same as in England.

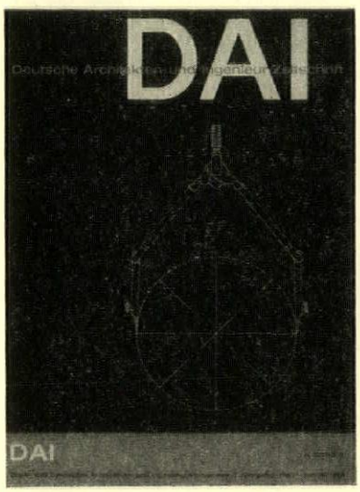
Then we were shown cuttings from the local newspapers: '. . . architect X

The elaboration of French expertise—standardized bloc sanitaire *for an HLM development at Port-Marly (Seine) devised by one architectural office and three specialist* Bureaux *collaborating under* a Maitre de l'Ouvrage *responsible for programming the work.*



budgets) for public buildings, on works of art. This provision for art is not mandatory but is often made, and gives many German architects the chance to work with an independent artist in the creation of a *gesamtkunstwerk* of a modest kind. There is also evidence that the status of architects in the public regard is improving—his right to rule on architectural and legal aspects of building is increasingly recognized and his professional prestige has probably never been higher.

Cover of the newly founded journal of the Deutsche Architekten- und Ingenieur-Verband, *symbol of the persistent hope that the special features of German professional practice and training may one day make a real bridge between architects and engineers.*



Any kind of practice that bridges national frontiers presupposes an international flow of architectural knowledge and constructional facts —and also adequate means of tapping that flow from any point in Europe. For these reasons

INTERNATIONAL INFORMATION ORGANIZATIONS

are certain to have an important part to play in any Europeanized architectural profession.

For an architect anywhere in Europe, the prime source of information on building, products and practice in other countries will be his normal first resorts—in Britain they would be his own files, the Building Centre and the RIBA library. Although the BC is setting up an International Section—a natural move in view of the Europe-orientation of its Director, Gontran Goulden—each of these sources can be expected to contain a vast amount of European information as they stand. Nevertheless, the total pool of architectural information commanded by the EEC Six and the EFTA Seven would already make a sizeable inland sea, and the stream of fresh information flowing into it a major torrent. At the European level, as at all others, action is needed to keep information under control and to guarantee its speedy retrieval when it is needed; such action is under way, and the present position may be summarized as follows.

Product Information. The Building Centre, as mentioned above, is the prime source, and its International Section should give a comprehensive coverage when it is fully operative (the compilers of this special issue have been privileged to make some use of its files, and the service offered promises extremely well). Certain trade bodies, such as the Cement and Concrete Association, are also making a worthwhile contribution to the available information services. Beyond this, lies the European network of national and local building centres, listed in the table at the end of this article. Some are as illustrious as the Rotterdam Bouwcentrum, others are less distinguished; all those of any consequence are members of the Permanent International Conference of Building Centres (in Britain, those in London, Bristol, Glasgow and Manchester). Some product queries may come within the scope of the SfB Bureau in Sweden, or the equivalent services offered by the RIBA, but countries where SfB is not current have no equivalent service.

Research Information. Member organizations of CIB (International Council for Building) have the obligation to publish some form of abstracts of research papers produced in their home countries. Performance in this field varies widely, however—the French *Cahiers du Centre Scientifique* have become something of a legend, the output of other countries less so. In Britain there is some degree of divided control: BRS digests are well regarded, but do not, at present, answer to the preferred forms of presentation of CIB; on the other hand, the RIBA Subscription Service will offer material in approved form, but is not yet fully operative. When it is operative, it should offer one of the best services in the field, giving abstracts of current papers, and the cream of the documents in full. This is a field of information operations where most countries are inclined, at present, to complain loudly about the shortcomings of other nations, but in the end, most will probably get as much out of the operation as they are prepared to put into it.

Classification Standards. CIB and FID (International Federation for Documentation) between them have produced a lively offspring in the form of the International Building Classification Committee. Currently, IBCC has a British chairman, Agaard Evans, and secretary, David Dean, and one of its most active members is the RIBA's delegate to it, Dargan Bullivant (of AJ/SfB fame). Such British dominance (if only temporary) is to be expected in a body concerned with questions of use and method in SfB and UDC classification, and so is the fact that IBCC looms so large on the information-scene at the moment, when there is so much work still to be done in classification (though present SfB classifications are frozen by a moratorium lasting until 1970).

Once the present phase has passed, however, one may expect classifica-

EUROPEAN INTELLIGENCE REPORTS continued on page 349

has an interesting new village hall for us on his board . . . architect X explains the idea behind his design for the new tennis club. . . .' Do we ever find the name of an English provincial architect in the local paper —except when he has parked his car in the wrong place?

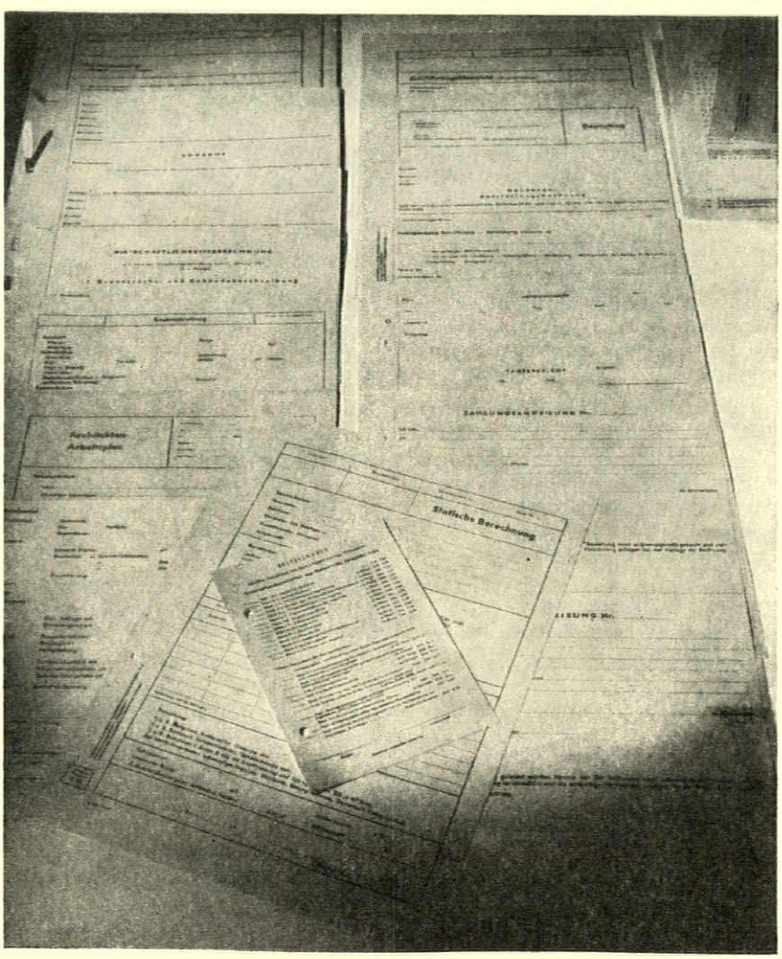
H. Werner Rosenthal

Of all countries in Europe to watch, because it may become the model for future developments in professional practice, **GERMANY** *offers the most striking richness and variety of professional experience,*

industrial expertise and skill in methodology and organization. Nevertheless, architects have their difficulties.

The common observation that a German architect should buy an adding-machine before he buys a drawing-board has some support from the present state of the profession in Germany: nowhere in Europe has an architect more specific managerial duties or more numerous legal liabilities—the latter tending to increase from year to year. His labours and his liabilities are apt to start with the bill of quantities, for he does not enjoy the benefit of that profession which affords so much comfort to the British architect—the quantity surveyor. Estimating is done in the office, but the labour involved can hardly be said to be covered by the fee payable, nor are the legal liabilities that are thereby assumed. Specifications for very simple buildings can be worked up out of the *Bauleistungsbuch*, or there are even standard printed forms for specifying that can be be used. For buildings of any degree of complication or size, these simple

The refinement of German methodology—a selection from the fifty-odd items contained in Robert Gas's comprehensive set of standard Architekten-Formblätter.



aids are rarely adequate, and firms building largely standardized jobs, such as blocks of flats, use their own standard specifications.

However, the architect can rely on *Deutsche Industrie-Normen* in work of this kind, and their comprehensive coverage gives him not only standards for materials and equipment, but also for execution and finishes and numbers of coats of paint and methods of making the flashing between roof and chimney, etc. These standards often lag some way behind new techniques and materials, whose use and treatment need to be specified from scratch, but for the established and customary practices (which constitute the greater part of building in Germany, as in any other country) DIN stands the architect in good stead. To some extent, also, its deficiencies on new techniques are compensated by the way in which a German architect can work very closely with a manufacturer in developing original solutions—this has been particularly true of the metal window industry, where curtain-walls, etc., have been designed in such close collaboration between manufacturer and architect that it has been said that the architects have taken over the direction of the firm and the running of the factory.

On site, again, the German situation is unlike ours. Although the architect cannot be his own contractor, any more than in Britain, there is no general contractor either, and the architect will be expected to manage some fifteen to thirty-five sub-contracting operations for the various specialized trades. The British clerk of works is replaced by a *Bauleiter*, appointed by the architect (often from his own office strength) to be his representative on the site. On a big job the *Bauleiter* practically lives there, usually keeps a drawing board in the site-office where he can work, sometimes on the building in hand, sometimes not. He will, in any case, be required to settle points of detail and solve problems as they come up and is responsible for site safety of workers. The labour force with which he will have to cope is not conspicuously better or worse than in Britain, though its craft traditions are often different, the degree of mechanization marginally higher. Official inspection of the work is rigorous, and occurs twice—once at the completion of the structural carcase, again at the completion of the fully fitted out building. Codes of practice vary somewhat from *Land* to *Land*, but a simplified general code, the *Bundesbaugesetz* is now on the stocks. Any improvement of codes and laws will be welcome—among other things, the German architect has to bear with a guarantee period of two years if the contract is drawn up under the VOB (*Verdingungsordnung für Bauleistungen*) rules, which are not necessarily enforcible in law, or five years if under the ordinary civil law (Bürgerliches Gesetzbuch).

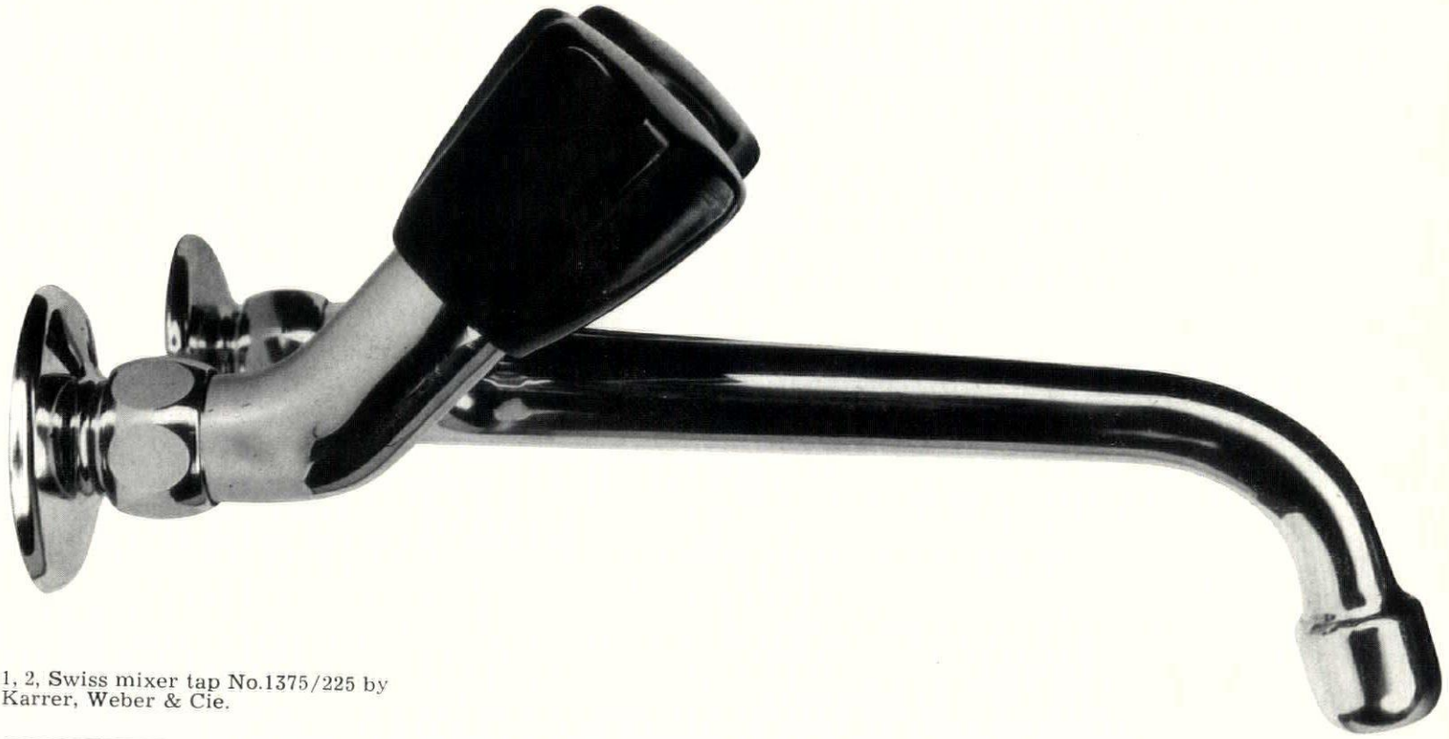
Within the office, conditions will probably look more familiar. Practices run slightly smaller than in England with somewhere between three and twenty assistants. There are a few large offices but these rarely have a staff of more than fifty at the drawing board, plus admin. men, boffins, and clerical staff. The one-man practice, which is something of a tradition in Germany, is suffering a severe squeeze from the present economic contractions (some of the big offices are suffering too) and a few of those lone rangers have already been forced out of business. To some extent the administrative problems of small offices are eased by the fact that one can buy complete folders of documents needed to cover a job from preliminary permissions to final certificate (illustrated at left) like standard specification forms (and subject to the same limitations on their usefulness). However, it is not admin. but fees that are the great problem for the small office. Fees are lower than in many other countries, and are expressed as 'ceilings' or maxima, so everybody feels it a point of honour to try and force his architect down to the lowest possible figure (public authorities are no better than other clients in this matter, though their bargaining methods may be more *suaviter in modo*). In general, the fee scale favours the large job as against the small, the businessman-architect rather than the patient detail-designer who makes plenty of careful drawings, and the phasing of the fees over different stages of the design process militates further against careful detailing and specification-writing.

The other great German grouse is the 'class-structure' of the profession. Not only are there two types of qualified architects (diploma'ed either in architecture or engineering) but in most *Länder*, with honourable exceptions like Bavaria, Rheinland-Pfalz and Württemburg-Baden, any Hans, Heinz or Hermann can call himself an architect and submit schemes for planning approval. Even in those Länder where professional licensing exists, there are no qualifying examinations as in Britain or the US.

What makes life worth while for a German architect, then? There are some official compensations for officious bumbledom: one is the provision for spending up to two-and-a-half per cent of the budget (descending to one per cent on very large

the hardware bazaar

1



1, 2, Swiss mixer tap No.1375/225 by Karrer, Weber & Cie.



2

3, British fireclay basin specially for spastics by Adamsez (1155 Lotus K Line).

4, British ' Fontana ' divided flow tap No.5326 by John Webb.

5, British ' Mira ' mixer tap by Walker Crosweller.

At the level of building components there is a remarkable degree of integration in Europe, and the explanation is that merchants, rushing in where statesmen fear to tread, snatch significant inventions across frontiers as if they were Paris fashions. The speedy dissemination of ideas that results applies not only to the main stream of new techniques flowing into all European countries from the United States, but also to European innovations such as the rocker-action electric switch.
New inventions get spread around in one of three ways. In some cases—accordeon doors for instance—several independent companies in Britain and Germany acquired the rights to manufacture a variety of American patents. Alternatively, as in the case of products like Rawlplugs or Silent Gliss curtain rails, the original device is manufactured and distributed under the same name all over Europe. Finally, in the case of developments that are not patentable, the good old-fashioned habit of plagiarising accounts for similarities in the appearance of many products and for technical conformity in some others. It is condemned by all manufacturers, but since it is practised by most it is clearly an important means of spreading improvements in design, and has already accounted for several unexpected developments over a wide range of hardware-types. The result of all this traffic in licences, components and ideas is that a survey of non-structural European building components brings few surprises. Indeed a British architect who found himself working on a job with a German or Italian office would probably be surprised by the number of familiar trade brochures in his colleague's files. Like the German who said on arriving for the first time in the United Sates, ' So, you have Coca-Cola here too?' he might even find that one or two companies whose names seem as British as John Bull are in fact Dutch or Swedish in origin. Nevertheless there are noticeable national differences among those components that are governed by local regulations and laws. Sanitary wares and electrical fittings are obvious cases (see page 350).
Unfortunately the restriction of international trade and therefore of competition that results from such laws tend to stultify the industries thus protected. An example is the British brassfounding industry, the products of which are with rare exceptions both technically and æsthetically stodgy when compared with the best Continental ones although the vigour of the equally protected British sanitary potters proves this need not be so.
The quality of trade literature throughout Europe is remarkable more for its even mediocrity than for anything else. Perhaps the French hold the palm for inscrutable brochures made of pulpy paper, and probably the Swiss succeed most often in combining good typography with technical clarity. But apart from these tentative extremes and the surprising extent to which British paper sizes have already been rationalised, all countries are united by the state of mind that employs frowsty blondes to advertise plastic laminates and giraffes to look benignly down on maintenance-free roofing materials.



3



4



5

6. German anodized aluminium lever handle No.121 by Wehag (Agents A. G. Roberts).

Despite the jolt that imported Continental and particularly German architectural ironmongery has given to British manufacturers—and the resulting improvements in the quality of their own wares—there is still plenty of room for better finishes and new ideas. Only last June the judges at the Guild of Ironmongers Convention exhibition at Harrogate were saying there *was* a need for despondency about the standard of British products, and that manufacturers were inhibited by tradition. Admittedly they would probably have said something similar at a comparable German convention, since the poorer German ironmongery is just as tinny and imaginatively bankrupt as Britain's, but with makers like Ogro, Hagri and Wehag at the other end of the scale in Germany the overall balance is better.

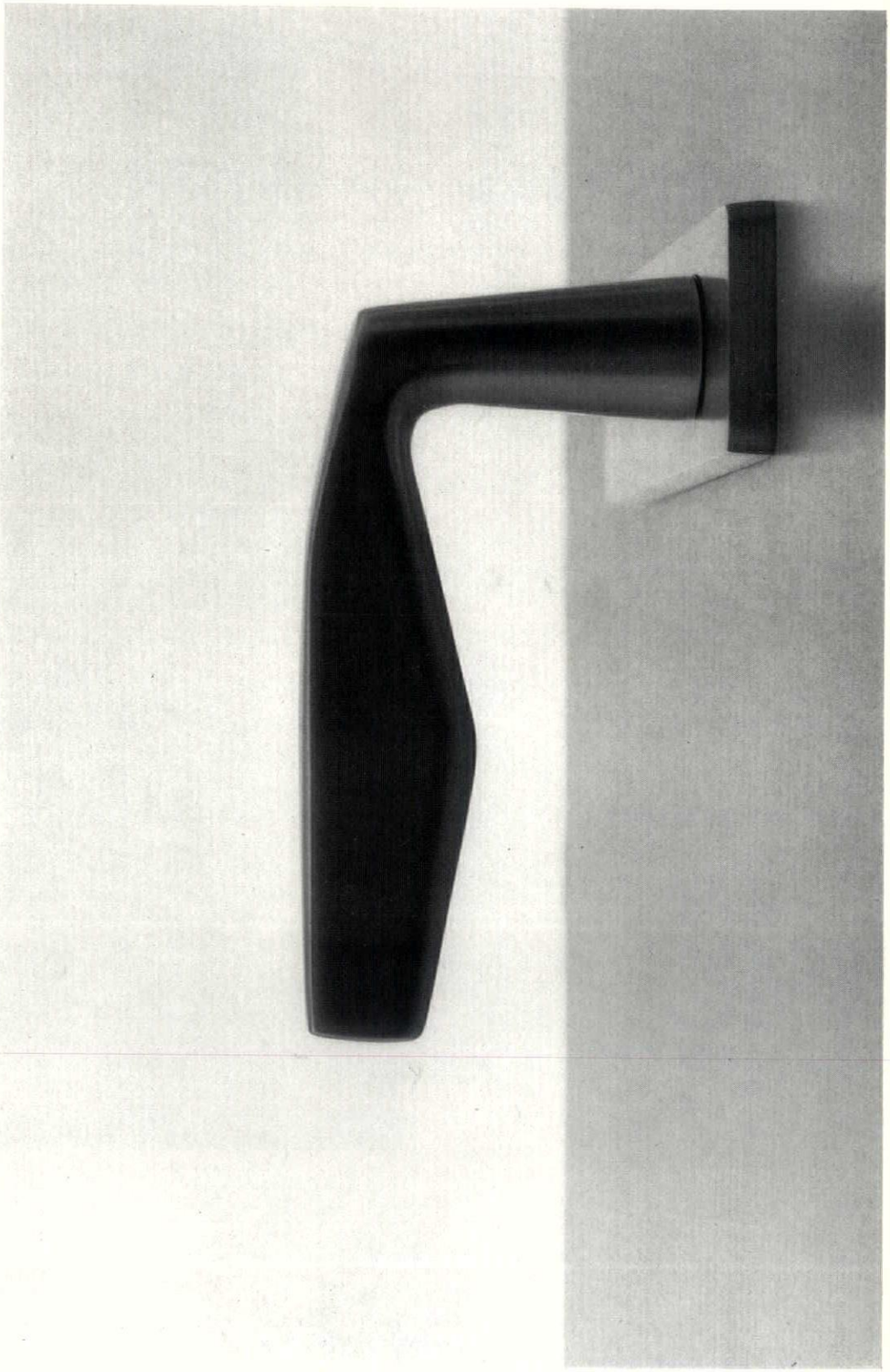
The trouble with ironmongers in all countries is that they are still hungover with the Victorian distinction between style and technique. This is especially apparent in such things as lever door handles which tend, like St. Pancras station, to have a flashy bit of forging designed by one man at the front and a mechanism designed by someone else around at the back. Salesmen add weight to this division by ballyhooing sculptured handles and calling them new designs even though they may be attached to their spindles in exactly the same inadequate way as the previous year's 'designs.' Nowadays there are several British manufacturers who are just as skilled at superficial styling as their Continental counterparts. All are therefore producing the following two types of lever handles: those with a simple shape to which the hand is expected to adapt itself and those supposedly anthropometric forms that suggest they are based on clenched rolls of soft clay. The relative value of the two types is a matter of opinion.

Equally in dispute is the practice of Continental locksmiths of installing main springs powerful enough to return lever handles to a horizontal position. (In Britain it is commoner for a lock to be made with two springs to do the job.) On the assumption that a single large spring can be made of better quality than two medium-sized ones of the same total cost, many people believe the Continental design is superior.

The search for secret door closers to replace bulbous hydraulic devices has resulted in the design of at least two types on the Continent. Regro, a Swiss make, consists of a long oil-filled tube that can be concealed behind a kicking plate in the thickness of a door. The Universal is a smaller German device the hydraulic cylinder of which fits parallel to the long axis of the door and preferably in the frame.

The variety of Oni secret hinges, precision-made in Germany for cabinet work and special purpose joinery, is also noteworthy.

In window gear the high quality of Scandinavian and German designs is marked. This is partly explained by the



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7, German stainless steel lever handle No.523 by Hagri.

8, British nylon casement stay by R. Cartwright & Co, Birmingham.

willingness of architects to specify and of building owners to pay for expensive windows in those countries. As a result a lot more effort goes into the development of new types of window gear. An espagnolette bolt with a ball race mechanism is one example. Lifting and sliding door and window gear are others. In the case of the door gear (Gretsch-Unitas) positive draught exclusion results from a groove in the bottom of the door fitting down on to a tongue on the threshold. The tongue also acts as a rail for rollers. An example of the complexity of Continental window design is a model made by Wilhelm Weidtmann and called the ' Diplomat.' It is hinged at both side and bottom so that it provides controlled ventilation when opened as a hopper but can be washed on both sides when opened inwards as a casement.

Plastics, particularly nylon, are creeping slowly into ironmongery all over the Continent and suggest that the age of nylongery is just around the corner. Wehag doubts nylon's suitability as bushing between door handles and back plates but in Britain it is already being used for door hinges and for bearings in window pivots. R. Cartwright of Birmingham make a casement stay entirely of white nylon, and if it is followed by suites of nylon fittings a reappraisal of the material's æsthetic properties will have to be made. As anodized aluminium door furniture has recently been used to add a bit of sparkle to natural wood almost to the exclusion of everything else, any reassessment would be valuable. Richard Sheppard, Robson and Partners went to the extent of using special bronze door and window furniture at Churchill College, to find a companion tone to teak joinery, dark brown facing bricks and copper flashings. Good looking white, black and grey nylon fittings such as the Hewi-Nylon range by Heinrich Wilke may soon be accepted as a less expensive alternative. An interesting example of German inventiveness, also by Hewi, is a nylon hinge the leaves of which slot into screws in the door and its frame. It needs no lubrication, is corrosion free and can be removed for painting. The manufacturers claim a pair of such hinges can be mounted in about seven minutes.



7

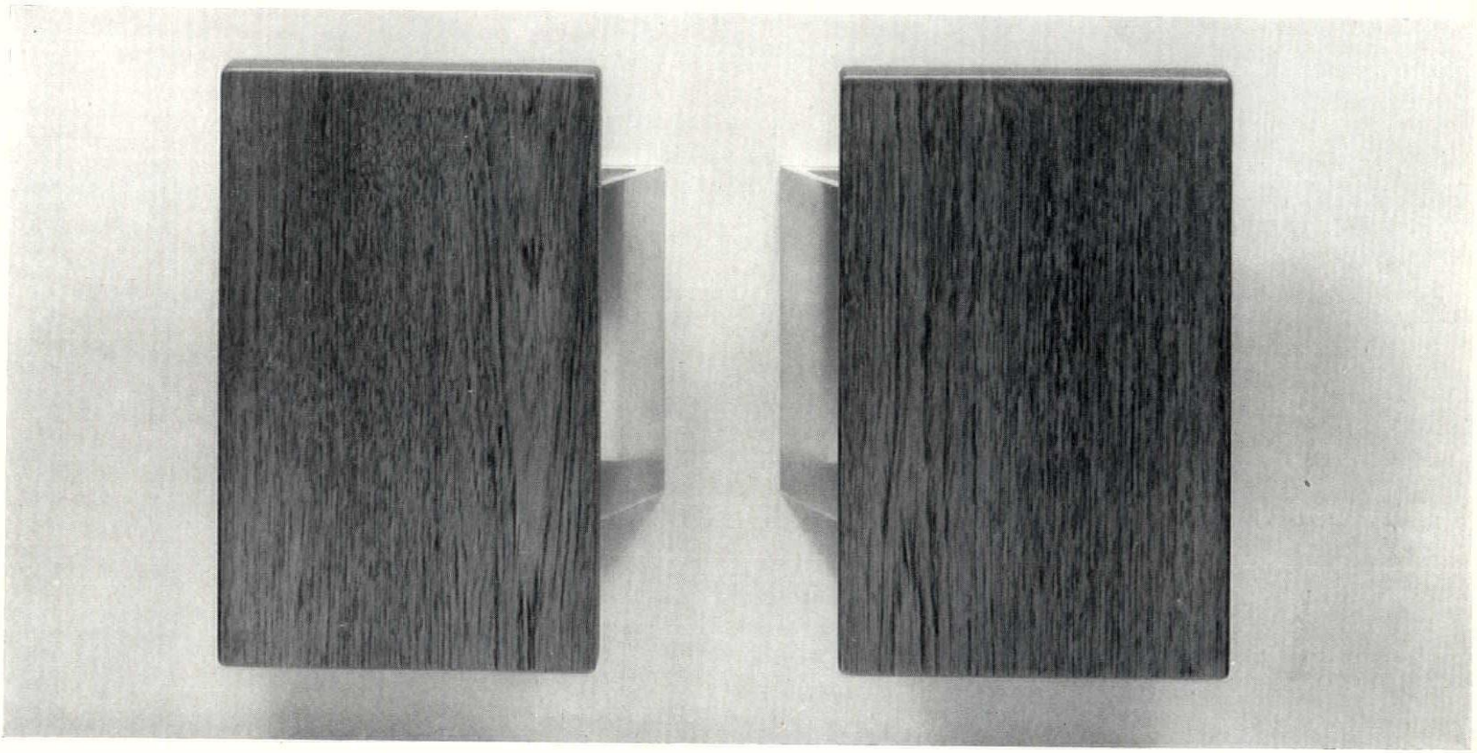


8

9, German anodized aluminium and teak push pads No.2890 by Wehag (Agents A. G. Roberts).

10, German anodized aluminium lever handle No.70L and escutcheon No.1341 by Wehag (Agents A. G. Roberts).

11, British Adjustable plastic spring catch No.1 by MAP, Cheltenham.



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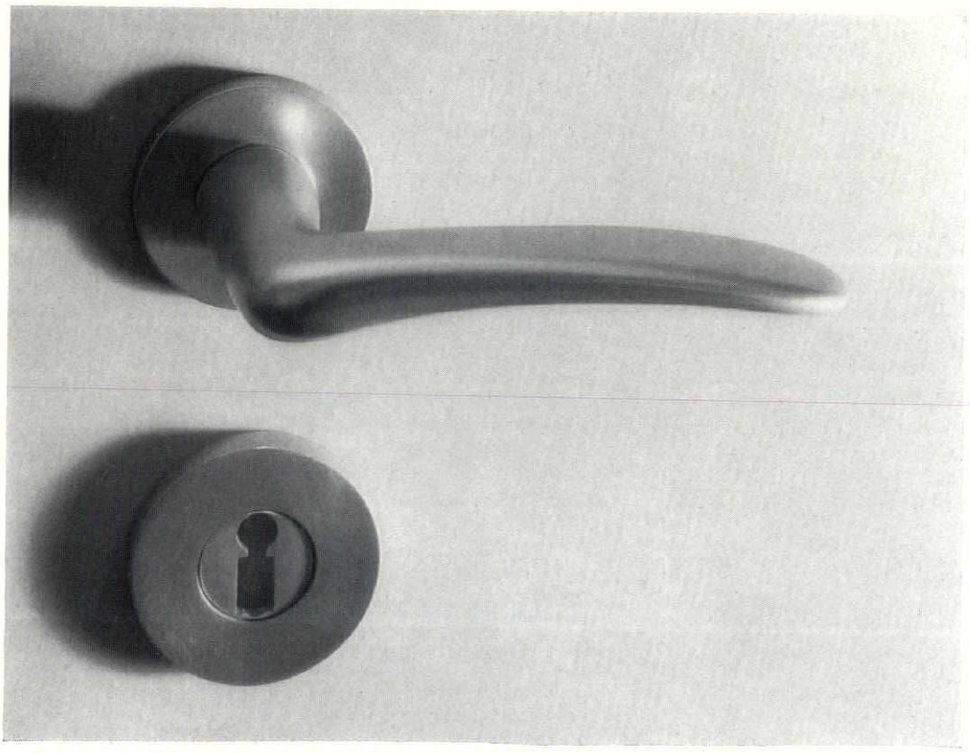

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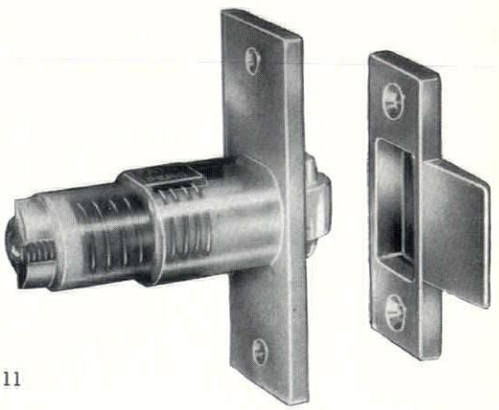


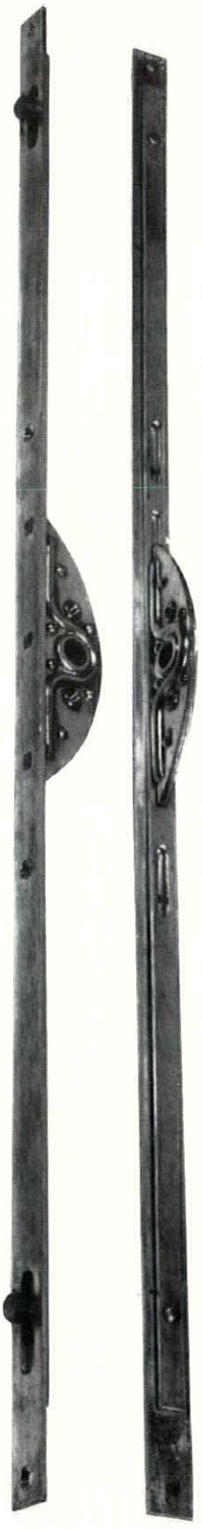
11

12, German lifting, sliding door gear, Gretsch-Unitas GU931 (Agents J. Garrard & Sons, Swinton).

13, German espagnolette bolt 'Globus' (Agents N. F. Ramsay).



12



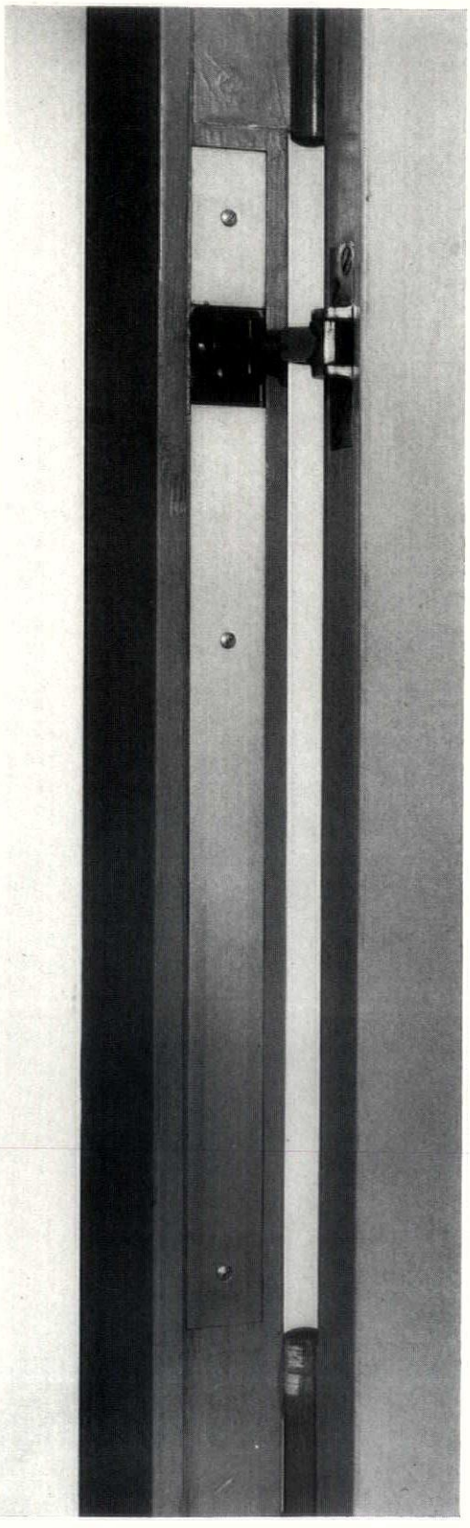
13

14, German hydraulic door closer ' Universal ' (Agents N. F. Ramsay in the North ; A. G. Roberts in the South).

15, German extruded brass concealed hinge, Oni ' Sepa ' (Agents N. F. Ramsay).

16, German nylon door hinge by Hewi.

17, German anodized handrail bracket No.2526 by Wehag (Agents A. G. Roberts).



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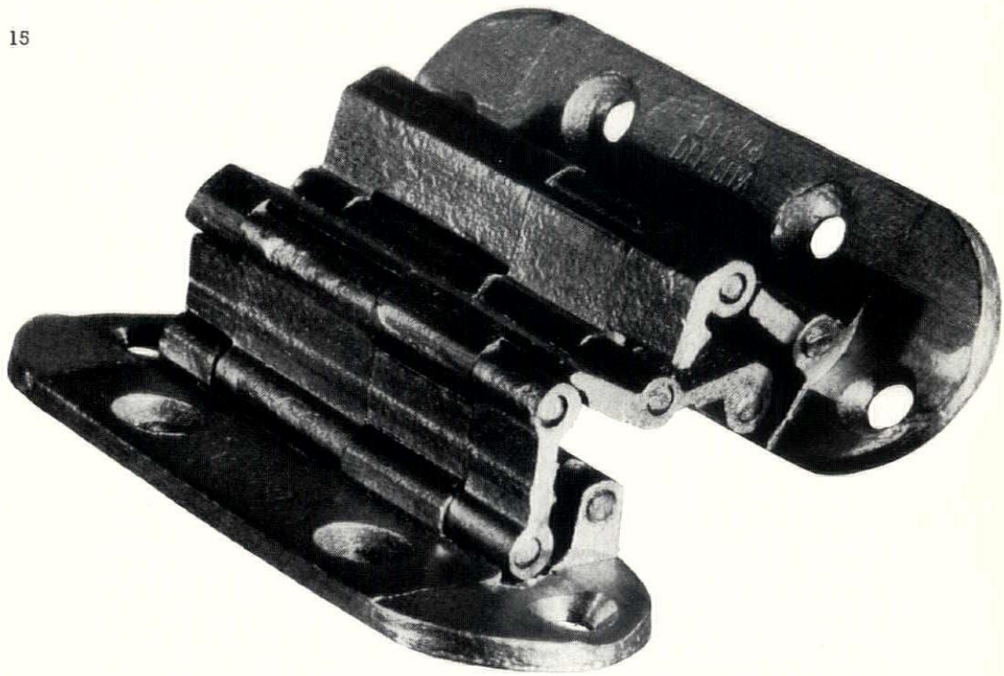

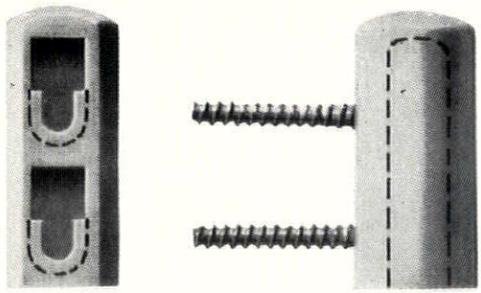



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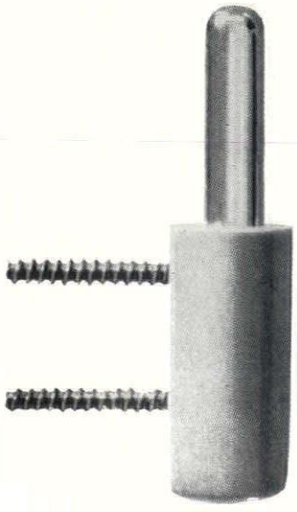
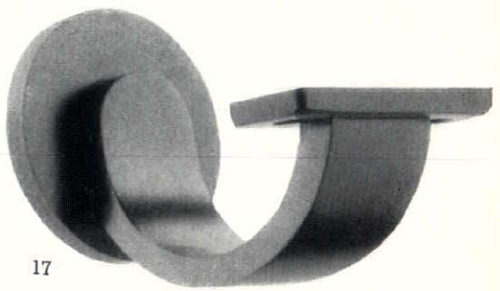




17

18, German mixer taps with special mounting for institutional washing lines: Type 558/567 by Hansa Metallwerke AG.

19, German mixer tap for wall mounting Type 343/565 by Hansa Metallwerke AG.

Foremost among European brassfounders in both technical ingenuity and functional design is the Swiss firm of Karrer, Weber and Cie. Efforts are being made to import their products into Britain, and if successful their introduction will shock many manufacturers and delight many architects. It may be, as is commonly said, that the bulkiness of British brassware results from the requirements of British Standards, but one suspects that if Karrer, Weber were located in Britain they would find a less stodgy expression of the Standards than the indigenous brassfounders. Unfortunately, if the experience of the Smithsons in submitting a KWC wall-mounted mixer tap to the Metropolitan Water Board for testing is anything to go by, British water engineers are determined to exclude such high quality fittings. After testing the mixer the MWB commented in a letter: ' Whilst it was found to be sound on test, I would draw your attention to some items in which the valves do not comply with BS 1010.' These concerned the use of a rubber O-ring as a gland packing, the use of a gauze instead of a corrugated streamlining in the spout, the slotting of the spindle top to form a grip for the capstan head and the consequent reduction of its cross-section area to sub-standard, the use of a push-on capstan head, etc., etc. ' Having regard to the foregoing, added the MWB, ' you will understand that I am unable to permit the use of this fitting in connection with water supplied by the Board.'
The Metropolitan, like other area water boards, is rightly concerned with conserving water and gears all its efforts to this end, but to withhold sanction from a valve that passes all tests is an act of medieval obscurantism. Comparable obstruction to the importing of fittings made by the excellent German firm of Friederich Grohe resulted in a British agency for them being resigned. On the other hand the British-invented Supatap was accepted despite its unconventional design. It is contrasts such as these that give rise to a feeling that the technical committee of the British Waterworks Association can be unduly influenced by nervous British brassfounders.
Other items in Karrer, Weber's range are a smoothly shaped bib-tap with a very compact valve and a single hole mixer tap (Unitrou) of the type now produced by many Continental and a couple of British makers. The company also makes central heating valves and has recently introduced a model the maximum flow of which can be pre-set with a special key. It is intended that heating engineers should pre-set the valves off site, thereby saving the time spent in balancing them up when installed. KWC issue special graphs for plotting the appropriate valve settings. The valves themselves are fitted with twin O-ring gland packings that can be replaced by removing the plastic capstan head and opening the valve to its fullest extent.
There are several other excellent Swiss



18



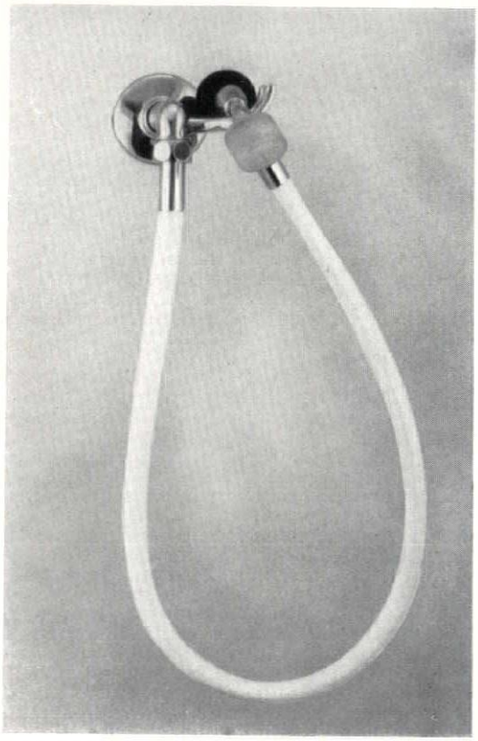
19

20, German hand shower with plastic hose and rose with suction fixing: Type 589/700 by Hansa Metallwerke AG.

21, Italian radiator with twin panels and detachable sides and top by Ideal Standard.

22, German convector heater for skirting or sill by Ernst Zorn K-G (Agents Hillingdon Boilers, Uxbridge.

23, 24, German kitchen mixer with flexible hand shower set No.02.3624.103 by Friederich Grohe.



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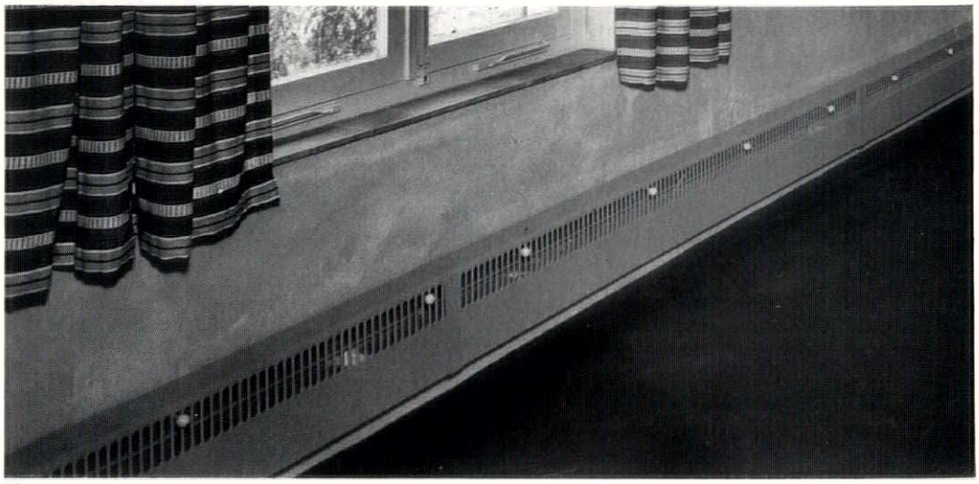

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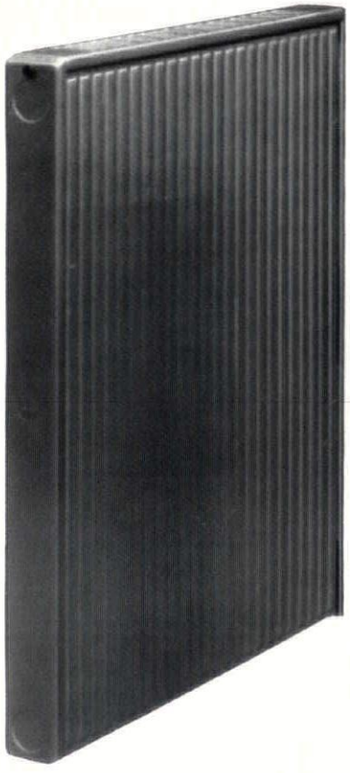

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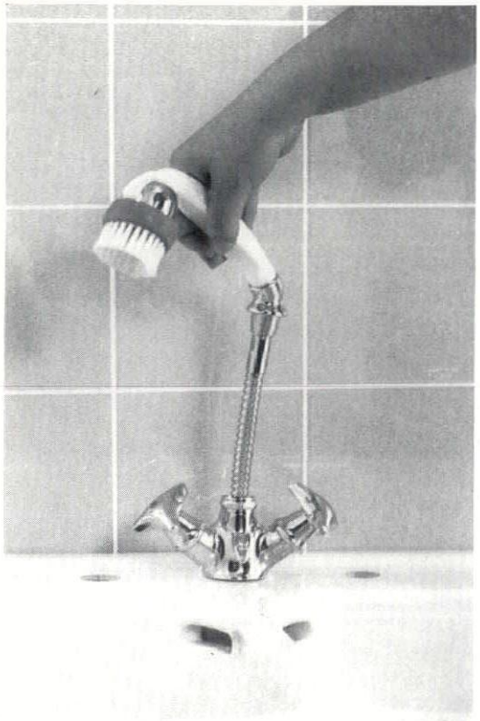

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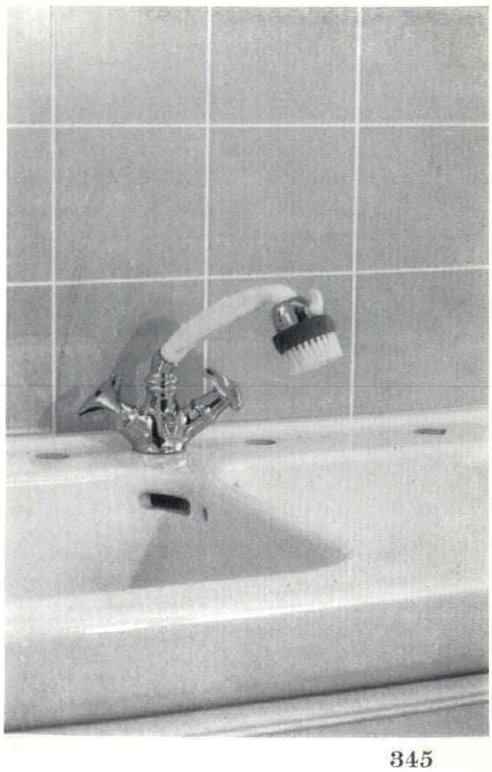


24

25, British small-bore angle valve with lockshield: Belmont, by Peglers.

26, British small-bore straight valve with plastic capstan: Belmont, by Peglers Ltd.

and German brassfounders but none of them quite reach the pinnacle of achievement of Karrer, Weber, Oederlin make a combination mixer with a nozzle radius of 14½in. In a bathroom with a tiled floor and a drain it can be put on a wall between the bath and basin to serve both. Hansa make a mixer custom-designed for back-to-back washing lines in schools. It has a special sleeve that acts as a die for cutting into the pipes; afterwards the sleeve becomes part of the fitting. One of the cleverest small details is found in the fittings made by Grohe. This is the use of a rubber O-ring as a seal between the basin top and tap collar.

Various thermostatic valves of Swiss and German manufacture appear to be in use domestically on the Continent which suggests that long intervals between maintenance must have been achieved. Several of the valves work on the principle of a gas or other liquid exerting pressure on a bellows and therefore differ from the bi-metallic coil in Walker Crosweller valves. Among them, a valve modishly designed by Arwa in Switzerland is outstanding, but unlike Walker Crosweller's Leonard 72 it is not capable of balancing different hot and cold water pressures.

In the field of central heating equipment Ideal Standard of Italy makes a smart, twin-panel radiator-convector with clip-on top and side shrouds. Ernst Zorn of Regensburg make a skirting convector that is detailed with comparable precision.



25



26

The extent of international trade in w.c.'s and baths is inevitably limited in Europe by handling difficulties, but with increasing production of pressed steel baths (50,000 were exported by Rankewerke from Cologne in 1960) and the promise of sanitary ware in light-weight plastics this may change. According to some British manufacturers the big breakthrough in plastics will come only when a satisfactory w.c. is perfected. This will permit matching suites of baths, basins and w.c.'s to be made. But in view of the decline of three-piece suites for sitting rooms there is no reason to believe bathroom suites are sacrosanct.

As with other types of building components, secret fixings and clean appearance seem to be the ambition of the better European sanitary potters. On the whole such detailing is easier to achieve on the Continent than in Britain because the hit-and-miss technique of jointing soil pipes is allowed. A pedestal w.c. made by Richard-Ginori to fit flush to a wall shows what a clean, practical installation this permits and a cantilevered design made by Royal Sphinx in Holland is a further refinement. In Britain by-laws forbid such concealed joints and in some places outlaw w.c.'s without flushing rims even though they are more hygienic than pans of the older type.

In the field of close coupled w.c.'s a model by Pozzi of Milan achieves an extremely low profile by means of a forward looping syphon. Pozzi are a firm which would not dream of producing a brochure about sanitary fittings without prefacing it with lavish illustrations of quattrocento marble fountains, but they are incongruously dedicated also to ducted plumbing. To this end they publish an excellent brochure showing a wide variety of ducted bathroom layouts for hotels. The firm of S. I. M. Brunt (Italy) makes w.c. cisterns that are only 3¼in. thick by using a float-type flushing valve. They are intended for use in ducts but can be incorporated in the thickness of a partition. In Britain where water boards insist that cisterns shall have non-waste syphonic flushing valves, 6in. is the minimum thickness so far achieved—in the Fordham Panel cistern.

In an effort to combine the functions of a bath, bidet and foot bath in one vessel a Swiss company has designed the Poliban. A hi-lo flexible shower is used and a third socket put into the bottom of the bidet recess to achieve what the Germans term *an Unterdouche*. Chamberlin, Powell and Bon may stimulate production of a related device in Britain if they go ahead with their proposed shower and bidet for the Barbican flats.

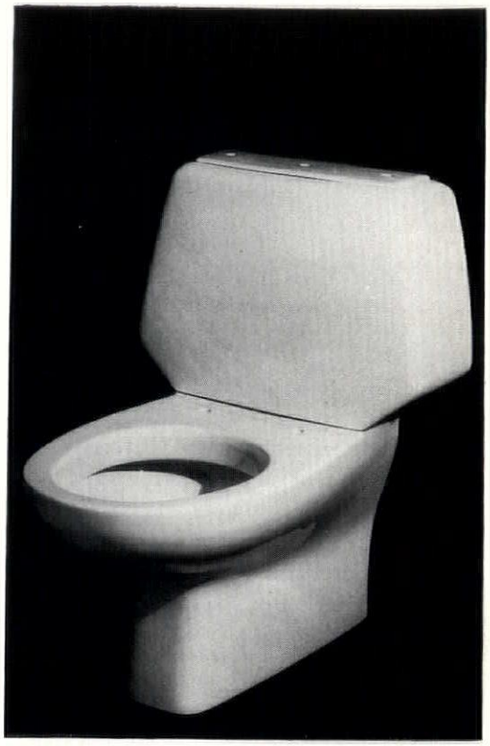
27. British perspex w.c. seat to fit Adamsez C.424 bracket closet at New Zealand House.

28. Italian close-coupled w.c. by Richard-Ginori.

29. Swiss combination bath and bidet 'Poliban 140' by Sadas Suisse.



27



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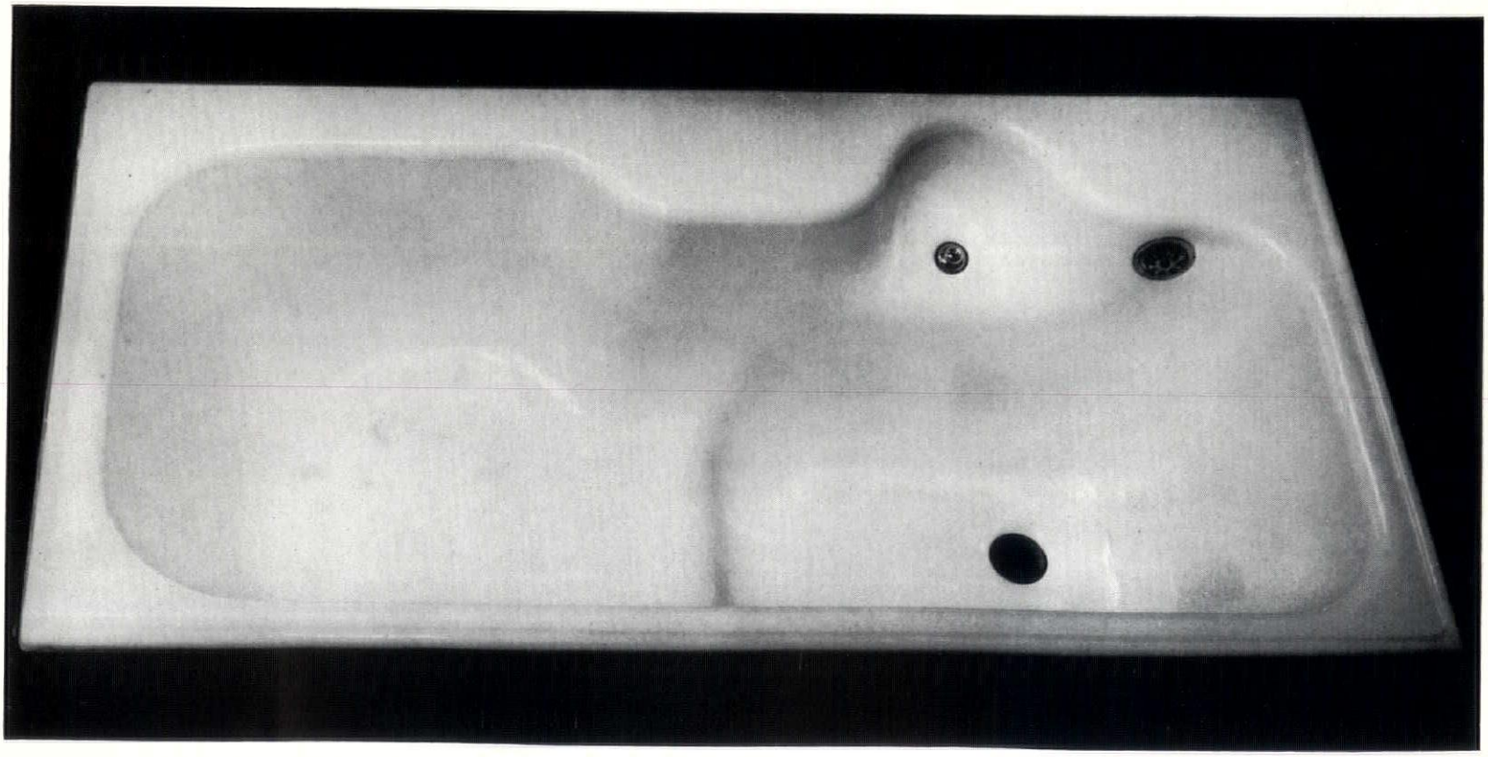


29

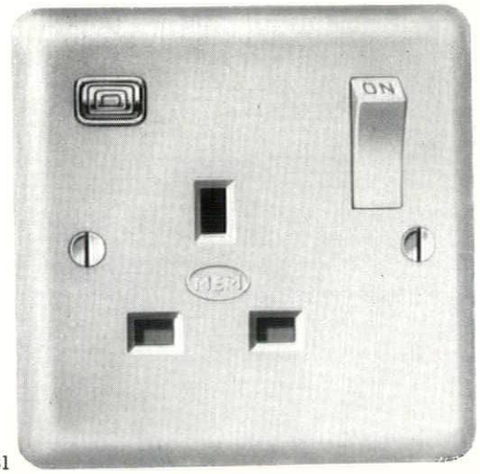
30, French automatic, photo-electric light switch, ' Lumandar ' by Cometa.

31, British 13 amp. rocker switch-socket No.813 by Mem.

32, Italian 6 amp. two-way rocker switch and rocker bellpush No.1202 ' Domino ' by Ticino (Agents SELL, London).

33, Italian 6 amp. one-way rocker switch No.1100 ' Domino ' by Ticino (Agents SELL, London).

Apart from differences in plug and light sockets and in weights of insulation, electrical fittings are technically similar throughout Europe. Rocker switches are, however, replacing dolly types everywhere, and those made by Adolf Feller in Switzerland and by Brown, Boveri in Germany are outstanding for their Hochschule für Gestaltung appearance. Wall-mounted internal communications telephones made by Siemens in Germany exhibit the same perfectly neutered æsthetic. The French firm of Arnould make switches for domestic use with rechargeable fuses in casettes that can be unscrewed with a coin from the face of the finger plate. This appears to be the logical extension of the British 13 amp ring-main practice of having sockets with integral fuses.
As with brassware, the enforced use in Britain of electrical fittings made to British Standards that are not yet European standards is a barrier to the importation of some Continental designs, although some firms such as Bassani of Milan manufacture Ticino switches specially for the British market.
Simplification of wiring is a preoccupation everywhere but does not yet seem to have produced a revolution. Two British efforts in this direction are the captive screws in Mem 13 amp sockets and the sliding nylon cover to a 13 amp plug made by New Day Electrical Industries.
In France there seems to be a demand for automatic devices for opening doors and garages. A more practical aspect of this hankering after automatism is the Lumandar photo-electric light switch. It can be used to control lights in public places, factories, hotel lobbies and private drives. It is said to give economies in electricity consumption by reducing the use of artificial illumination to a minimum.



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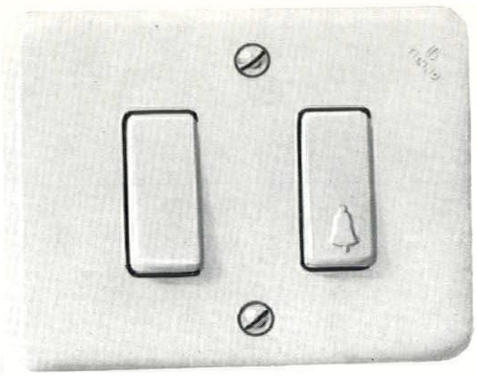
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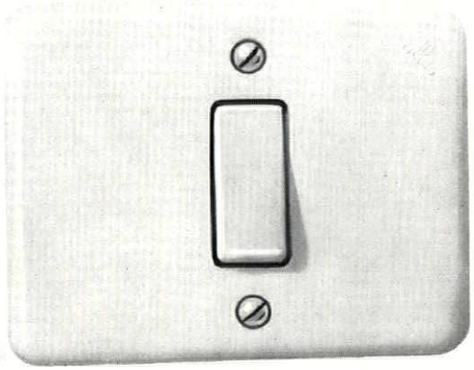
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30

Any attempt to evaluate European non-structural building products as a whole suggests as many questions as it answers. Are the Germans quite so technically progressive as they appear ? Is the expensiveness of Swiss products a reflection on the high *cost* or the high *quality* of building in that country ? Can the French really make so much trashy rubbish as it seems? Why do architects and designers with big names do so many superficial restyling jobs in Italy? Do Holland and Belgium make only a small proportion of their building components and import the rest from Germany and France ? These are questions that keep posing themselves, but whatever the answers it is clear that sufficient differences exist between the various countries to promote trade.
As for Britain, the replacement of existing dimensional standards by performance standards is likely to swell the importation of Continental components. (The performance basis to the new BS for plastic waste traps is therefore significant.) This means that unless British manufacturers strive after high standards, more and more architects will find themselves saying, along with the designer of an office now under construction—
' practically everything in it except the cement is from the Continent.'

continued from page 336

tion to retire to its proper position as the handmaiden, not the mistress, of information, and then the real problem will come to the surface again—accessibility of information. This is not a new situation, nor does its solution call for radically new techniques. National and international networks for forwarding queries to other libraries and information centres now exist in most fields of specialized information, and work well enough at the present levels of use. What would happen if the flow of information requested were to increase significantly, as it may well do in the foreseeable European future, is another matter. Too much already depends on a few willing secretaries and library assistants scattered across the Continent. Their hands must be strengthened, their numbers increased, and this will mean spending money. Unfortunately, it will mean spending it, not on glamorous new institutions with fashionable initials, but on tried and trusted bodies whose reliability is taken for granted, almost to the point of boredom. The initiatives of the RIBA, the Building Centre and the Cement and Concrete Association (to single out only the most informative of the trade sources) in providing international information services, deserve far more support and appreciation than they are getting at present—as does the information side of BRS. They may be very old friends of the architectural profession, but they are also very good friends.

BUILDING CENTRES IN EUROPE

Austria
Österreischisches Bauzentrum, Palais Liechtenstein, Fürstengasse 1, Vienna IX.

Belgium
National Bouwcentrum, Jan van Rijswicklaan 191, Antwerp.
CIBAT, 34 Boulevard Léopold II, Brussels 1.

Czechoslovakia
Výzkumný Ustav Výstavby a Architektury, Letenská 3, Malá Strana, Prague 1.

Denmark
Byggecentrum, Gyldenløvesgade 19, Copenhagen V.

Eire
The Building Centre Dublin, 17 Lower Baggot Street, Dublin.

Finland
Pysyväinen Rakkenusainenäyttely, Fredrikinkatu 53, Helsinki K.

France
Centre de Documentation du Bâtiment, 15–17 Rue des Buisses, Lille (Nord).
Centre Régional d'Information et de Documentation du Bâtiment, 7 Avenue de Birmingham, Lyon (Rhone).
Centre de Documentation du Bâtiment, 6 Avenue du Maréchal-Foch, Mulhouse (Haut-Rhin).
Centre de Documentation et d'Information du Bâtiment de l'Ouest, Palais de la Bourse, Place du Commerce, Nantes (Loire Atlantique).
Le Centre d'Information et de Documentation du Bâtiment, 100 Rue du Cherche-Midi, Paris VIème.

Germany (Democratic Republic)
Deutsche Bau-austellung, Sporthalle, 119–143 Stalinallee, Berlin 18.

Germany (Federal Republic)
Bau-Muster-Haus, Bahnhofplatz 2, Darmstadt.
Bauzentrum Essen, Norbertstrasse 2, Essen.
Bauzentrum, Esplanade 6, Hamburg 36.
Süddeutsches Bauzentrum, Theresienhöhe 18, Munich 12.

Greece
c/o Architectoniki, 9a Valaoritou Str., Athens.

Holland
Bouwcentrum, Weena 700, Rotterdam.

Italy
Palazzo dell'Edilizia, via Don Vincenze Minetti 7, Genoa.

Norway
AS Byggtjeneste, Haakon den VII's Gate 2, Oslo.

Spain
EXCO, Plaze de San Juan de la Cruz 1, Madrid 3.
Centro Informativo de la Construcción, Lauria 117, Barcelona 9.
Etxegintza, Paseo Ramon Ma. Lili 9, San Sebastian.

Sweden
Byggcentrum Goteborg, Skånegatan 26, Gotebord S.
Skånsk Byggtjänst, Stora Nygatan 27, Malmö C.
AB Svensk Byggtjänst, Kungsgatan 32, Stockholm C.

Switzerland
Schweizer Baumuster-Centrale, Talstrasse 9, Zürich.

Yugoslavia
Gradjevinski Dokumentacioni i Informativni Centar, 29 Novembra 24, Belgrade.

One of the great European achievements —and one on which much may prove to rest—is the progress made to date in the **STANDARDIZATION OF STANDARDS.** *Political pressures inside and outside EEC and EFTA have hastened the process and revealed how much remains to be done.*

It is clear that any Europeanization of design procedures and building methods must rest upon a wide basis of European, rather than national, standards of construction, safety and performance. Unification of such standards is imperative, but what will that mean in practice? Large areas of the Continent are already covered by systems of standards that vary in extent, but are mostly national. Some of these national systems have acquired almost the character of national traditions—the most comprehensive, the Deutsche Industrie Normen (DIN) have already survived three changes of regime and two wars, and enjoy the added prestige that DIN leaps over Ulbricht Walls and Iron Curtains, and applies to Eastern Germany as well as the Federal Republic, a bridge between East and West too valuable to be casually broken by Federal manipulation of DIN standards to suit EEC politics.

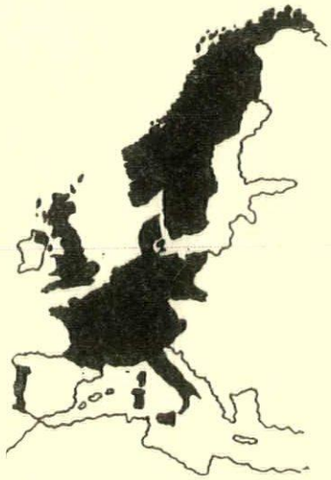
The normalization of standards cannot, therefore, be simply a matter of rational men, experts and functionaries, adjusting their differences by rational discourse. Although EEC is becoming something of a career-administrators paradise, both the professional civil servant's pride in seeing business done and his reluctance to see it done too fast, will be subject to heavy pressure from political and industrial lobbies. In some cases there will be fairly urgent pressures to even out the consequences of the larger inequalities between country and country—there appears to have been some brisk activity, for instance, to level

up standards for electrical goods in order to prevent further ruinous underselling of the French and German domestic appliance industries by Italian manufacturers enjoying somewhat easier safety standards as well as the side benefits of a semi-colonial economy.

In the eyes of many Continental industrialists, one of the functions of EEC is to eliminate the situation (common to many countries) where it was possible to import goods of a lower quality than could be manufactured at home, but trade offers more compelling and broadly based reasons than industrial self-defence. It is not much use, for instance, to have a whole continent (barring Spain) standardized on the normal railway gauge of 4 ft. 8½ in. if the lines have been electrified at voltages as various as 25,000 AC, 20,000 AC, 15,000 AC at 16⅔ cycles, 3,600 AC at 16⅔ cycles, 3,000 DC, 1,500 DC and so forth. This is something that will have to be sorted out soon, because it lends, at present, an air of lunacy to heavy transport in the heartland of the EEC—the Rhine-Ruhr/Benelux/North-Eastern-France industrial complex—but as the whole problem comes within the scope of nationalized railway managements it will probably be solved operationally without recourse to outside bodies empowered to fix or adjust standards.

Domestic electrics and electronics are a different matter, of course, and the determination of the EEC Six to level up standards in these fields was at one time so compulsive that it looked as if they might break out of existing organizations such as CEN and CEE in the rush to set their own house in order. They were restrained, however, and have provided much of the dynamic and leadership in getting through the very large amount of work that has already been done. Since the practical politics of standard-fixing has now brought us into the plethora of abbreviations with which the field is littered, it might be as well to establish the hierarchy of bodies involved before proceeding.

There are, in fact, two hierarchies, one for electrical goods, headed by IEC (International Electrotechnical Commission) and one for non-electrical headed by ISO (International Standards Organization). At the European level, the interests of ISO are represented by CEN (Commission Européenne de Normalisation) which covers all the EEC and EFTA countries, and thus serves all Western Europe except Spain and Eire. It has an electrical counterpart, which is something of a shadow organization, since effective action



Map showing area covered by CEN in Western Europe.

at the European level rests with CEE, initials which stand, incredibly enough, for Commission on Rules for the Approval of Electrical Equipment, an all-Europe body whose activities extend, like those of DIN, even beyond the Iron Curtain to cover countries such as Poland and Czechoslovakia. BSI is Britain's representative body on CEN and its shadowy electrical counterpart, while BEAB (British Electrical Approvals Board) is our member body on CEE (electrical practice is to establish equipment tests, rather than standards of specification).

It will be deduced from the foregoing that electrical unification outstrips that in other fields and this should cause no surprise, since the work has been going on longer. Few recommendations have been made as yet by CEN in the building products field, though it is empowered to select European problems for study, and to implement ISO recommendations at European level —ISO standards for the dimensions of corrugated asbestos sheets, for cements, paints and flame-spread tests are in existence. But who will set the style for European standards? The example of DIN's all-embracing comprehensiveness looks, at first sight, as if it might be very influential, but the existence of alternative bodies of standards, such as those of BSI or the French *Cahiers du Centre Scientifique*, often more up to date in both content and concept than DIN, makes this less certain as time proceeds. In addition, the Germans have often shown themselves to be flexible as well as shrewd negotiators over Rome Treaty matters, and may be willing to bend DIN to meet the proposals of the other five, as well as the general injunction to equalize by levelling up.

How far will Britain be prepared to bend BSS's to meet them? There is a widespread tendency to be very insular and stiff-necked about this, on the assumption (rarely justified) that Continental standards are lower than ours ('different' rather than 'lower' would be more accurate). Distressingly enough, the only kind of unbending of the stiff neck that is envisaged in some quarters proceeds on the assumption that 'Wogs begin at Calais,' and proposes the creation of a dual standard to facilitate the production of 'Bazaar market goods'—presumably for sale in the souks of such caravan centres as Stuttgart and Brussels. That British manufacturers have, in fact, made trash-trade goods for hit and run marketing in underdeveloped countries is well known—the eccentric traveller Bernard Newman reports the sight of a Chinese peasant raising from the washing stones the semi-transparent remains of an alleged 'shirt' and calling out 'One time berong Engrishman!'

It is difficult to see any but the most short-sighted arguments for maintaining this malpractice, let alone extending it. In any case, rationalization, rather than raising or lowering of standards, is what is needed to make British taps or sanitary ware acceptable on the Continent and *vice versa*. Standards have often grown up piecemeal with pre-technological industries (such as water-supply) and pre-Pasteur social attitudes (such as the fear of the plague). In many cases, the biggest blockage to more international usage of domestic equipment and building products is not a nationally acknowledged standard but a model by-law that has lain entrenched and unquestioned for decades.

But overshadowing all other questions affecting the normalization of standards between Britain and the Continent is the question of the standard by which standards are expressed—measurement. In a typically paradoxical way British science works its wonders on the same measures–centimetre/gramme/second/centigrade—as the rest of Europe, while industry tries to keep up, operating on inch/pound/Fahrenheit. Some British standards are to be expressed bilingually, so to speak, and BSI has already drawn up a twenty-year plan for full conversion to metric measures. But the proposal will have to hump some heavy ballast. Britain is already integrated into an inch/pound/Fahrenheit empire which is larger than the Commonwealth, because it includes the USA. Not only is this a very big piece of territory—and one which many insist must convert to metric as a whole or not at all—but it is also the biggest bloc of industrial capacity in the world, commanding a special position because 'In mechanical engineering it is not infrequently the case that the greater technical experience is in inches, and such standards are more developed and complete than metric standards' (BSI statement, May, 1962).

Considerations such as this, rather than minor civil wars between the RIBA, the brick industry and the Modular Society, are the factors that will eventually decide the fate of the four-inch/ten centimetre module. While system building and prefabricating techniques drive building towards engineering technology, inch-inertia will delay conversion to metric, even though manufacturers of less 'mechanical' building products, such as copper tubing, are ready to convert now. Also, the closing of the gap will need the unifying frame of mind, and this we hardly have yet, even within

Programme for British conversion to metric standards as proposed in BSI News *for May* 1962.

TENTATIVE 20-YEAR PROGRAMME

	Years
Preparation of policy	
Government pronouncement	0
Industrial consultations and planning	0——3
Revision of education programme (with necessary reprinting) and implementation	1——4
Technical literature, handbooks, data sheets, charts, etc., reprinted and on sale	2——5
New measuring instruments, dials, gauges, become available or old ones are converted	2——4
B.S.I. programme	
Formulation of general policy and programme	0——3
Major revision commences	3——
Revision substantially complete	——15
Industrial action	
Stocks run down, detailed planning, etc.	3——5
New designs coming forward	5——
N.B.S. becoming available	——5
New components becoming available	——10
Metric production gathering momentum	10——15
Efforts to expedite the movement and to eliminate old units	15——20

the inch/pound empire. Thus, unified standards for screw-threads have been agreed by Britain and the USA, at last, but they are not yet uniformly employed even in these sponsoring countries. It would be a useful exercise, before we start clamouring to join anybody else's system of standards, to do some pruning among our own, so as to have fewer to convert when the day comes.

Concern over the protection of the man in the street against goods and services whose faults are not obvious to the lay or uninstructed eye is increasingly characteristic of developed industrial democracies of the Western type. Europe's aim to become one single highly developed industrial democracy means that

EUROPEAN CONSUMER PROTECTION

is a subject needing urgent action at an all-Europe level while the situation is still fluid and the marketing patterns are still open.

The creation of any kind of homogenized European marketing area presupposes the existence of a substantial body of standardized customers within the area concerned. In fact, this body of consumers already exists anywhere between Stockholm and Milan, Barcelona and Vienna. The heart and spine of this body is the *corps d'élite* of skilled workers and the solid middle of the white-collar brigades—and the absence of these two sections from most Mediterranean economies effectively fixes the southern limits of the bulk market in consumer goods. Spain is not part of EEC, nor will Southern Italy be, except in name, for many decades.

Nevertheless, the effective size of this homogenized market presents serious social problems, which have hardly been voiced as yet, and one of these is the defence of consumer interests. There is no hope of legal and administrative barriers crumbling as fast as tariff walls, and there is a fair risk of consumers finding that they have bought goods from outside their own national territories but have no adequate means of redress for inadequacies and malfunctions if the manufacturer can dodge down behind a frontier. In practice, many standards of specification and acceptance tests are already international, thus partially obviating the need (or possibility) of extra-territorial legal redress. Even so, no country has a body of standards that is exhaustive or completely up to date, and in some areas the coverage is either sketchy or insufficiently strict to satisfy the needs of sophisticated consumers in other territories with a keen apprehension of their legal rights.

There is thus a clear need for the formation of a lively and effective European consumer defence organization, which could fulfil the spirit of the Rome Treaty by levelling up all round—extending the protection already enjoyed by well-organized consumer-nations to goods coming in from abroad, and improving the protection afforded to consumers in less well-organized nations. At face value, the beginnings of such a European body already exist, within the International Office of Consumers' Unions, which has its headquarters in the Hague. It already includes among its members such organizations as the British Consumers' Association, the Nederlandse Konsumenten-Bond, the Belgian Association des Consommateurs and the Norwegian Forbruk Erradet. These four are members of the Council which directs the activities of the Office, and—at four out of six—they might be expected to give the Office a usefully European bias. But out of the other two, one is the Australasian Consumers' Association, and the other is the US Consumers' Union, and the latter has tended to dominate the Office by its sheer size and disposable funds—it has been described as treating the office as 'little more than an overseas purchasing commission for luxury goods.'

This is undoubtedly chauvinistic and unfair, but the fact remains that Europe is not represented to advantage—or not as well as it might be. Two reasons are plain. One is the curious holier-than-thou political snobbery that infects so many middle-class radical organizations of this kind, and here operates to exclude from the seats of power any consumer body 'tainted' by too close association with governmental influence or support—such as the BSI Consumer Advisory Council. This insistence that consumer bodies should be as simon-pure and reliably protest-oriented as nuclear disarmers will—if it persists—deprive the Office of the active advice of some of the best established and most responsible organizations in the field, such as the Staatens Konsumentenrad of Sweden and the Dutch and Danish householder-councils.

The second reason for poor European representation lies in the fact that some countries still have no effective consumer organization. When one tots up the list of European members—Norway, Sweden, Denmark, Iceland, Britain, Holland, Belgium, France—there are some glaring absences. Italy is an understandable absence, with half the country still outside the area where consumers recognize themselves as such, but the absence of Germany is another matter, and the situation there underlines the crisis that is latent in the creation of a European super-supermarket.

The German Economic Miracle, in spite of such export-phenomena as the Volkswagen, has been a largely self-raising affair of economic aerobatics depending so conspicuously on a rising level of home consumption that there has come to be almost a socio-moral obligation to consume in order to keep the balloon rising. Resistance to this compulsion has taken weird and violent forms: the satirical magazine *Pardon*, parodying the naming of Rudolf Augstein as Public Enemy No. 1 during the *Spiegel* affair, identified as *Staatsfeind Nr. 2* as one Siegfried Reulasch, a conspicuous non-consumer, living rough in the woods 'throwing handfuls of sand into the machinery of our economy.' But if the EEC should become, even temporarily, the inward looking, watertight economy of the Old Men's dream, then Reulasch's *clochard* army might become *Continental* Enemy Number One. Such an introvert market might well find itself in urgent need of a steadily expanding home consumer market in times of crisis, and the German compulsion to consume might become generalized throughout the Rome Treaty Six.

But the German compulsion has produced non-humorous reactions that are more violent and potentially disruptive than *Pardon's* parodies. The need for vigorous radical counteraction against a stifling paternalism—the same need as produced *der Spiegel*—has produced the savage consumer-tabloid *Deutsch Mark*. Employing a muck-raking tone like that of *der Spiegel* and the knock-out typography of *Twen*, it has carried the consumer/producer dialogue into a world of journalism that would cause alarm and horror in the editorial offices of *Which?* or *Consumer Reports*. Such tactics—plus the fact that it accepts advertising—have tended to give the impression that *DM* is less serious than its non-German contemporaries, and less thorough in its testing methods. Neither impression is entirely justified, and the recent legal brawl with a watch-manufacturer (who anticipated the *Spiegel* scandal by having *DM's* offices raided by the police and a complete issue sequestrated) showed that *DM* has principles by which it is prepared to stand, over and above journalistic success.

It is difficult to see *DM* ever being admitted to such a body as the International Office of Consumers' Unions (even supposing it was eligible) but an homogenized European consumer market is going to need such watchdogs. The larger the territory to be covered, the louder the defenders of consumer interests are going to have to shout. Europe is going to need a *DM-Europe*. But Germany equally needs a Federal organization matching Consumers' Association or even CAC. The formation of such a body, involving organization from below, is not in accord with German political habit—

Un-funny joke from satirical magazine Pardon, *identifying undisciplined consumer as German Public Enemy No.* 2.



or not yet, in spite of fifteen years of experimental democracy. Yet it is clearly essential, for effective international consumer protection, to have a vigorous and comprehensive body on the territory in every nation. The International Office is, at present, a clearing house for information and queries, not a body for making action. Yet it is action that Europe needs in its present consumer situation.

Whatever organized safeguards for the consumer there may be, it is in the nature of the architect's calling that, when choosing a product to incorporate in one of his designs, he must be able to see, feel and assess it at first hand. To make proper comparisons of such products he must also find most of them under one roof. This he can now do for British products at the Design Centre, but for European products he must visit a number of

FOREIGN DESIGN OUTLETS

scattered over a large part of Central and Western London —an unsatisfactory situation.

Three years ago it was suggested privately that the Council of Industrial Design should cease being exclusively British and that the Design Centre and Index should contain products from Europe or at least the Common Market countries. Then the consumer and manufacturer would see, displayed on equal terms, the best products of a vast industrial area. There would be greater incentive for the complacent producer with an established home market to improve his designs and, for the first time, in the case of some, it would be sound economic sense to apply for inclusion in the Design Index. Also it is hoped that with the removal of the 'British-only' tag the 'lowest pass' level would be stabilized and not, as now, vary in order to include a reasonably comprehensive range of consumer goods.

Since the suggestion was made only one small exhibition of foreign goods (Svensk/Form Award winners) has been held on an exchange basis—not in the Design Centre but in the Council Conference room next door. During the same period several stores have been opened, and more are planned, some with Government support, dealing exclusively or predominantly in European goods. The resulting unrelated and dispersed display creates for the designer, architect, trade and private buyer confusion, inefficiency and a tendency to plump for one supplier or showroom and as a result one country of manufacture. With the COID's present inability to pass on orders directly to the manufacturer, the foreign displays which can do this are in an advantageous position.

The Board of Trade subscribes about half the COID's annual budget, the remainder being obtained from the Council's activities, including the charges made to manufacturers of products displayed in the Design Centre. Whether or not foreign Governments made grants under the proposals outlined it would make strange reading if the Board of Trade were to *reduce* its contribution solely as a result of a move to come in line with those taken or suggested by other Ministries for the increase of European trade.

Only by such joint European participation in the Council's work can British industry be helped, and it shows tragically few signs of helping itself, into a position where it can fairly be assessed with its rivals. After all the COID was set up 'to improve British design' not to protect the indifferent.

Unfortunately in the current Annual Report 1961-2 there are depressing signs that the Council is becoming even more confused as to its role. It states that 'the necessary Britishness will emerge only if British designers are encouraged to do their natural best without looking over their shoulders at what other countries are creating.' (British shipbuilders used to talk like that.) The protection of national idiosyncrasies may help maintain the Burslem potters and the Walsall saddle makers, but it has nothing whatsoever to do with the encouragement of good design.

The following Governments sponsor permanent displays in London:

Greece—Greek Centre, Regent Street (Government run).
Portugal—Government display centre, Lower Regent Street.
Russia — Russian Shop, High Holborn.
Yugoslavia — Government shop, Regent Street.
Czechoslovakia—CEDOK, Oxford Street

though it should be noted that well-designed goods there will be found in mixed displays, often of indifferent standards.

In addition, of the following Governments help towards exhibitions in Britain: France (French Week); Holland; Germany; Switzerland; Portugal; Yugoslavia; Austria; Poland.

Poland is investigating the setting up of a Government sponsored store as in Brussels and Paris.

Private enterprise operations selling foreign design in London include:

Denmark—Scandia, Marylebone High Street; Anne Storm Ltd., Newburgh Street; Danasco, Golden Square; Finmar, Kingly Street; Eward Baumban, Gamages.
Finland—Finnish Designs Ltd., Golden Square; Finland House, Haymarket.
Norway—Tibali (with Denmark), Brompton Road; Ostmo—New Quebec Street; Designs of Scandinavia, Regent Street.
Sweden — Svensk, High Holborn; Vasa, Lowndes Street.
Spain—Products of Spain, Charlotte Street; Anglo-Spanish Trading Centre, Grange Place.
Germany — Rosenthal, Brompton Road and Regent Street.

Cedric Price

symbols and servants

To many British architects and interior designers, economic integration with either EFTA or EEC appears to offer the prospect of the British furniture industry being galvanized into better design, better workmanship, shorter delivery and higher productivity by competition from superior furniture from better-organized Continental manufacturers. A pretty prospect—but the evidence does not support it. Some of the greatest enthusiasts for the Common Market are the big manufacturers of middling domestic furniture who, faced with the prospect of diminishing utilization of their heavily mechanized plant and impending redundancy for their highly specialized labour, look with envy bordering on rage at the sprawling and unsatisfied suburban hire-purchase market that has grown up in France as a by-product of the Gaullist economic miracle. All those gigantic HLM developments all over France will have to be furnished; their occupants are largely younger couples who have hived off from the traditional French clan structure and will never go back to the family farm and its heirloom furniture. Furthermore, they have abandoned peasant caution in finance and are ready to pledge themselves to hire-purchase agreements on a scale that France has never seen before. Cars they can get from the automobile industry; refrigerators they can get cheap from Italy, like other electrical goods; but no manufacturing country on the Continent has the capacity to satisfy the potential market for furniture, and the local French industry is in little better than a peasant state of development by general European standards. In the eyes of British furniture manufacturers, France is like an unexploited colonial country—some are considering direct invasion by transferring their plant and skilled workers to the Continent, others are already involved in Continental alliances, and others again are considering ways of creeping under tariff walls and cutting transport costs by shipping furniture in a knocked-down condition ready for reassembly, like a parachutist's Sten gun, deep inside the invaded territory.

Outside this *vacuum d'ammeublement*, however, the picture is quite different though it still bears little resemblance to the hoped-for bracing breeze of change that has been discussed in the devotional literature (such as the *DIA Yearbook*) since the Common Market was first mooted. As far as the evidence encourages speculation, it points in the direction of an inter-European furniture trade whose main features will be as we see them today, only more deeply engraved. The dominant feature at present is that furniture, for obvious reasons, only becomes an interesting item of international trade when its ratio of desirability over material bulk passes a certain, fairly high threshold. In practice, this means that furniture moves from country to country in a big way only if it is fabulously expensive or ridiculously cheap—either the great International status symbols produced by sophisticated industrial techniques, such as the big chairs of an Eames or a Jacobsen, or the almost anonymous servants of man, produced by traditional industrial techniques or cottage labour, such as the little chairs in bent-wood from Czechoslovakia or of ladder-construction from Italy. The great bulk of middling furniture, produced, as has been said '*by* a disappearing bourgeoisie, *for* a disappearing bourgeoisie at disappearing profit margins' is just not competitive in this field, partly because the margins are small, but also because the styling techniques that make it bulky for its price make transport a disproportionately large part of the eventual charge to the customer. Local products, aimed at local tastes and hauled only short distances, will always have the advantage—and, in any case, G-Plan have covered themselves by employing a Danish designer for one of their ranges, to make doubly sure.

Where functional considerations prevail, where taste is international, or where bulk buying provides

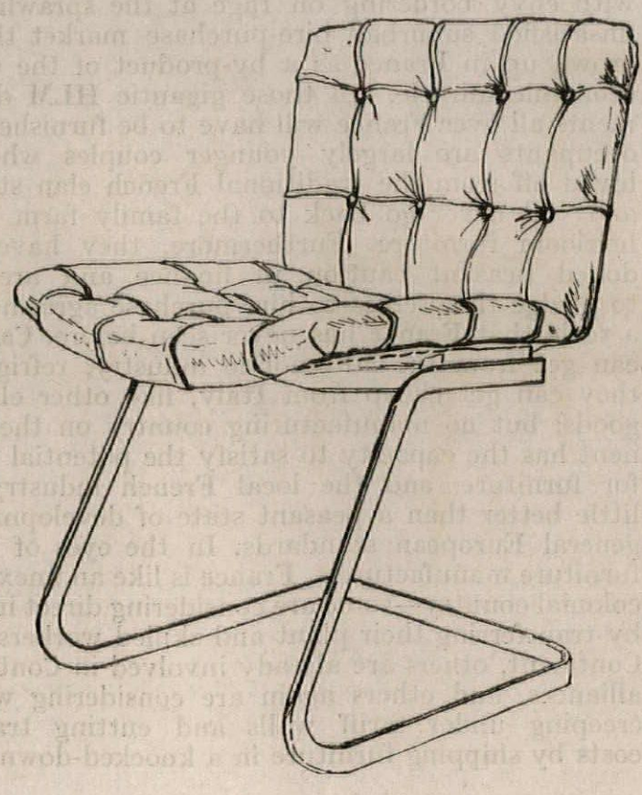
economies, the market is wide open to the international furniture buccaneer with a wild product and a specialized clientele. The trade requires stamina and a manic temperament, ability to take risks and highly distinctive goods to sell—the type is summed up in the image of a personable British manufacturer striding through the rain at le Bourget with a briefcase in each hand and the frame of an Eames chair over his head. Men like these have not waited for any Common Market, their interests and objectives have always been, not merely European, but world-wide, and local lowerings of tariff barriers may boost the volume of their trade here and there, but without altering its patterns.

This, at least, appears to be true for the expensive, status-symbolizing furniture—some less ponderable factors operate in the case of very cheap furniture, and concern chiefly the economics of transportation. It is one thing to have a cane-bottom chair at rock-bottom price at the workshop door in Brnö or la Spezia, but another thing to deliver it to the point of sale and still keep the price as keenly competitive as it was. The fact that it can be done at all, and still give the importer a reasonable cut of the proceeds, serves to show just how rock-bottom the prices can be, when the quantities involved are large enough. But if tariff barriers are removed or seriously lowered, then transportation will become a bigger proportion of the final price and the margins, where goods are hauled long distances, will become perilous.

For many manufacturers the answer is thought to be CKD (completely-knocked-down) shipment and re-assembly at point of sale, taking full advantage of whatever gains may arise from the reduced bulk of the knocked-down goods in transit. But will this work in practice? Leaving on one side the objections of at least one established High Wycombe manufacturer, who insists that reassembly compromises the craftsmanly quality of the product, there are economic and logistical difficulties that may carry greater weight. Beds and tables are commonly shipped knocked down, and conceived for such handling even before the drawing-board stage, so there is no fresh economic advantage to be gained there. Chairs are rarely structurally suitable for such treatment, and shipping in pairs, seat to seat, usually offers all the transit advantages than can be looked for.

The great CKD mirage, however, is the hope of shipping carcase goods—wardrobes, kitchen units, sideboards, etc.—reduced to their basic planks. While there have been some admitted successes in this field, notably in Scandinavia, the 'planks' are apt to prove almost as bulky, when properly packed and protected, as the original piece, and the reduction in transportation cost is not sufficient to offset the charges for reassembly at the other end. Over and above this, there are also organizational and purely physical problems concerned with disassembly-reassembly which are not fully appreciated. On the first point: who is to reassemble the product on arrival—the consumer, the shop, or a subsidiary of the manufacturer? In logic and logistics, the shop is indicated as the last reasonable place for this process, but most retail outlets will not consider maintaining the skilled staff and the area of workshop floor required (wardrobe assembly is particularly space-consuming, but one British manufacturer, who keeps all carcase goods CKD inside the factory, has to assemble them in the dispatch bay). Manufacturers, understandably, see no point in having, themselves, to organize the reassembly of a product they have already built





Typical chairs in European trading: this page, the de luxe models—Arne Jacobsen's 'egg' chair (left) and Robert Haussman's dining chair in chrome strip and black leather; opposite, two of the simple chairs—Gio Ponti's Chiavari *variant and the timeless Thonet—and (centre) a hybrid, base made in Finland, seat in Britain, sold by Conran.*

and unbuilt, at a special plant which may now be two stages away from the point of sale, and thus leave them with at least part of the handling and transportation problems that they had hoped to avoid. Ideally what the manufacturer hopes to find at the other end is a compact outlet organization with low overheads, such as another manufacturer who also does direct contract furnishing, thus eliminating the retail stage. Such an organization should be able to direct the CKD goods to the building they are to furnish with the minimum of loading and unloading, and assemble them on the site. This is a very rare occurrence.

The consumer, even a fairly skilled do-it-yourself craftsman with power tools, cannot expect to do much in the way of reassembly, except in the case of goods designed with such a consumer in mind, and there again most of the possible advantages have already been taken—the average bed is assembled on site with the aid of a hammer and a wife, most householders can fix and bolt up the legs of a kitchen table, and a man with more skill and tools than that will probably incline to build his own furniture from semi-finished materials, rather than fully machined and polished parts. But there are two further difficulties, of a purely physical kind, that militate against on-site reassembly by amateurs, or even workshop reassembly by professionals. One concerns the structural methods of modern cheap furniture, the other concerns the material most commonly employed to make it.

Much reasonably priced furniture today achieves its reasonableness by way of the economies of stressed-skin construction, or at least by exploiting the edge-beam effect where two panels meet at right angles. In either case the jointing techniques are inclined to be sophisticated and the structural stability of the whole piece depends on the absolute security of the join. Both conditions make disassembly and reassembly unadvisable, and reassembly without direct supervision by the original manufacturer extremely risky. In addition, the furniture trade's prime material, wood, is all too apt to get into a condition where reassembly is virtually impossible. Packed on a mild afternoon in Tottenham Hale, it could emerge in high summer in Nice or deep winter in Helsinki as a kit of parts whose dimensional relationships are more a matter of historical record than physical fact. Warped, shrunk or even split, it might not assemble square, joints might not close, or would fail to hold, and its reassembly—if feasible—could require almost as much skilled carpentry as the original manufacture. Wood's lack of dimensional stability is the source of many frustrations to an industry endeavouring to raise its level of mechanization and automation; in the attempts to mobilize the economies of CKD shipment it may prove for some time to constitute a major block to progress.

These problems may yet be licked—they may *have* to be—but present methods of side-stepping them by using more reliable materials and simpler jointing techniques will normally produce furniture so expensive that it moves into the status-symbol class, and the whole business of competitive margins on low-cost goods becomes irrelevant. The Common Market in furniture, whatever its geographical extent, seems certain to continue the character of the present international market, and to be restricted to goods in which, as has been said, desirability sensationally outweighs bulk. Where changes could come about is in the factors that make furniture desirable, either

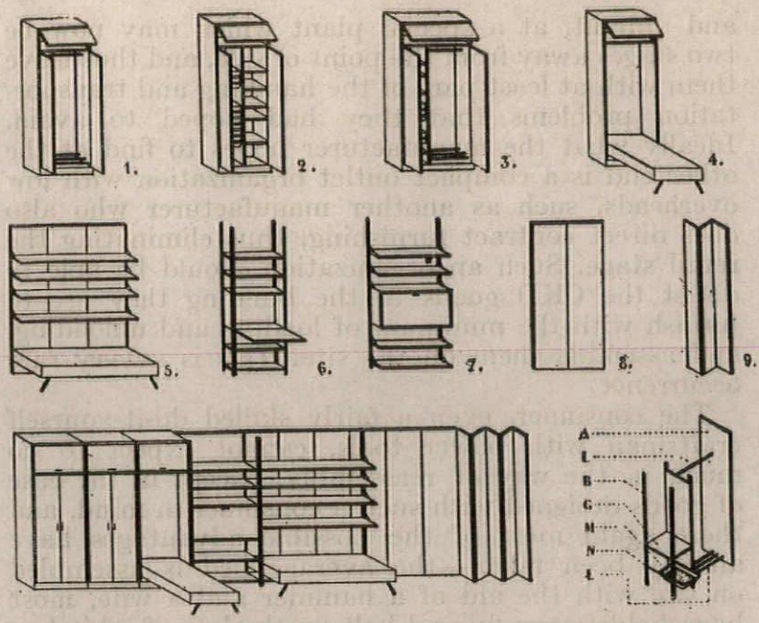


through an extension of the presently increasing sophistication of mass taste, or in the appearance of new types of furniture appealing to specialized markets that have been untapped hitherto.

On the first point one can do little more than note that the level of sophistication is visibly rising, and with it a demand for keener styling, which occasionally becomes so keen as to approximate to better design—the virtual disappearance of the so-called 'Continental' style of radios, with their dark wood and gold trim has taken only five years. On the other point, one can indicate a new class of furniture that is likely to be of considerable interest to British architects—modular storage systems. To be historically honest, the basic conception is not new, since there is a direct parentage from office filing furniture and from unit book-cases, etc., but what is unprecedented is the range of functions covered, components offered and varieties of dimensional modulation, the integration of the style and materials of the different pieces of furniture that may arise, the aims and aspirations of the designers and manufacturers, and the implied consequences for interior design, since many of these systems add up to environments off the peg.

The simpler systems, such as those designed by Dieter Rams for Vitsoe and Zapf, are basically domestic storage-walls, distinguished by the elegant neatness of their structural connections, and by a style which reflects (as also in Rams's work for Max Braun AG) the influence of the Hochschule at Ulm. At the other extreme, systems such as Heinrich Roepstorff's (marketed in England as Intercraft), with its enormous complex of storage units, book-cases, filing cabinets, desks and partitioning, is a promising bid to take over the entire office environment, within a modular discipline so refined and extended that practically any carcase may be made to accommodate practically any of the various kinds of storage and filing offered, and tolerances fine enough to enable a drawer or file to be taken out of one fitment in the confident expectation that it will go straight into any likely-looking space in another. Such a system is, clearly, a very sophisticated re-working of the kind of storage that has traditionally been available in noisy green-painted metal cabinets, but here it has been raised to the level of front office furniture, on the one hand, and architect-designed partitioning on the other. At least one other system approaches, even if it cannot equal, Roepstorff's all-embracing completeness; Holzapfel's *Inwand* system, designed by yet another member of the Braun/Ulm circle, Herbert Hirche.

Britain has yet to produce any system even remotely comparable to these German and Danish 'instant environments,' in spite of some of the entries in the recent *Daily Mirror* International Furniture Competition (e.g. Clive Latimer's winning scheme) which showed that designers were already thinking along these lines. Only a few manufacturers, as yet, seem particularly interested—but international traders are already fully involved with three continental systems. Holzapfel is available here, and may shortly be made in Britain; and the full Roepstorff range is available through the Intercraft concern who have put their name on it (though they also import goods by other Danish designers and manufacturers). Bofinger is also available now and other traders are interested in the Vitsoe and Zapf system, so there may shortly be four systems of varying degrees of complexity available on the English market. Their appearance here makes sense in the present state of architecture—on the one hand, they seem a natural complement to system-building, of the CLASP or Scola type; on the other they are yet further development in the increasing specialization of interior and environmental design. In addition, they fit very naturally into *both* the categories of goods in which the international furniture trade for preference deals. Until their presence has been noted, they are unobtrusive servants of man, like the peasant-built chair; and when they are recognized for what they are, they become as status-rich as any expensive *machine-à-s'asseoir*. At once symbols and servants, these environments off the peg are one of the most attractive propositions that the Continent has to offer British furnishing.



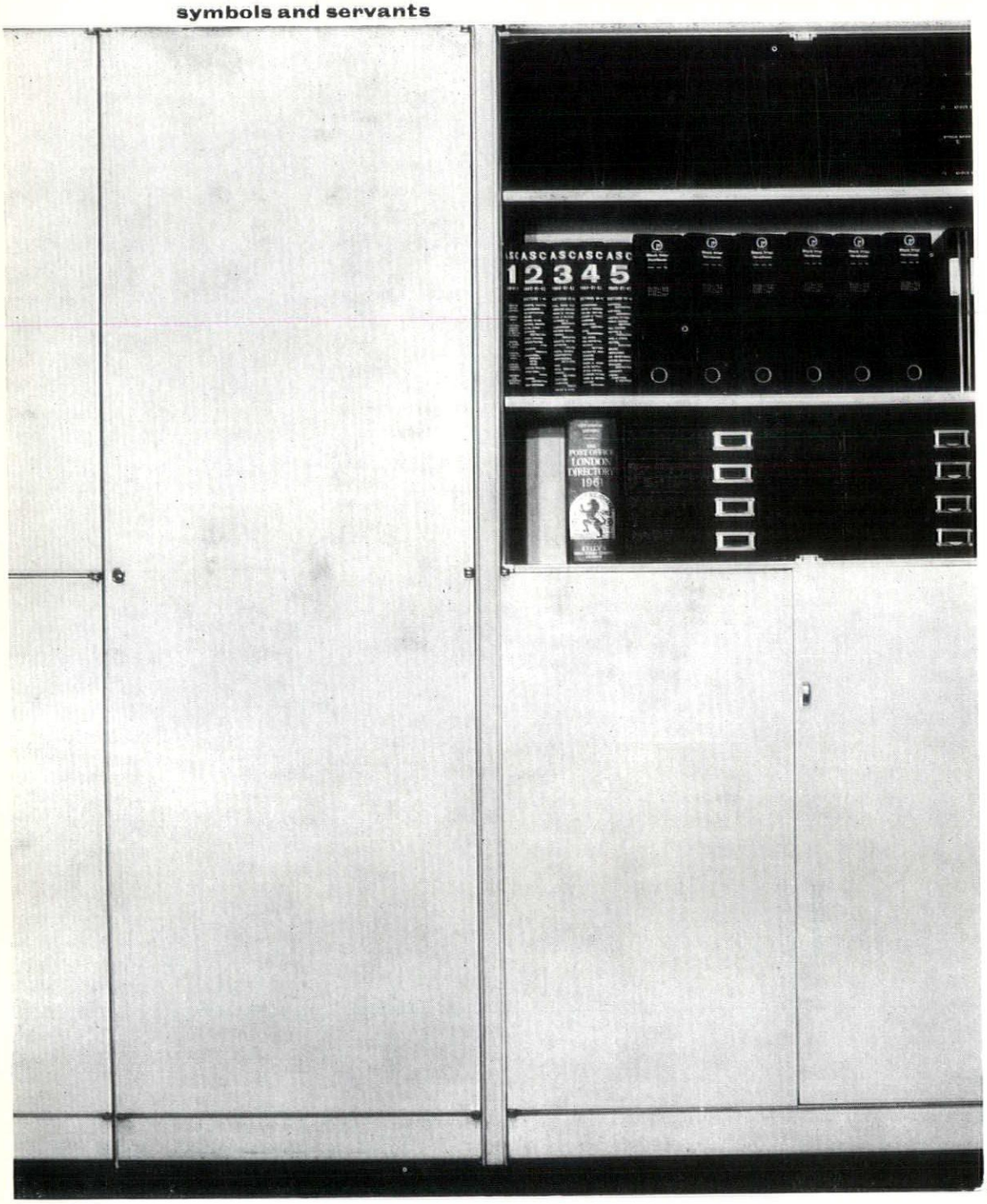
Modular storage systems are not unique to Western Europe—these typical components and assemblies are from the Polish Sady *project, intended to modulate the interiors of standard flats to accommodate varying family needs.*



1

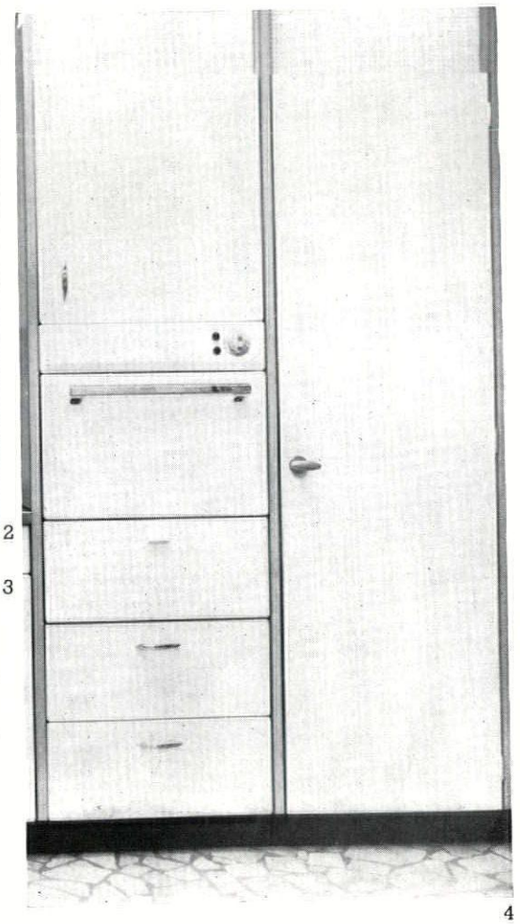
holzäpfel

1, temporarily installed in a relatively neutral setting, Holzäpfel partitioning and storage-walling operates as a space-controller in the manner of Mies van der Rohe's famous project for an auditorium in a giant aircraft-hangar. Designed by Herbert Hirche, these *Interwall* units are seen here in conjunction with other Holzäpfel furniture, also imported by Ryman's, of Dover Street, London, W.1. The partitioning and storage-walls are, however, to be manufactured in Britain under licence.



holzäpfel

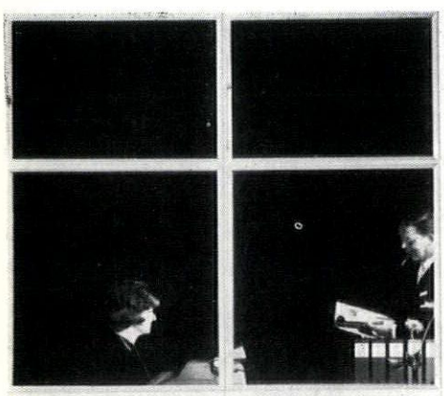
2, close-up of Holzäpfel Interwall, showing joiners, catches, etc.; modulation is by units of 12.5 cm. in width, 7.5 cm. in height and the cupboards are of two standard depths, 38 and 58 cm. The range of possible uses is large, but the types of internal fittings supplied are little more specialized than shelving, hanging-rails, file rails and drawers. Assembly is dry, by means of knock-down fittings.
3, Interwall partitioning with door and glazing.

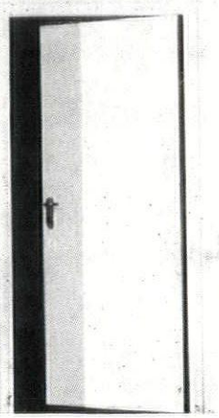


4

therma

4, detail of cupboards of Swiss Therma *Kombinationen-Küchen*, a modular kitchen-fitting system based on a 30 cm. module, and related in basic conception to storage walls such as Holzäpfel.





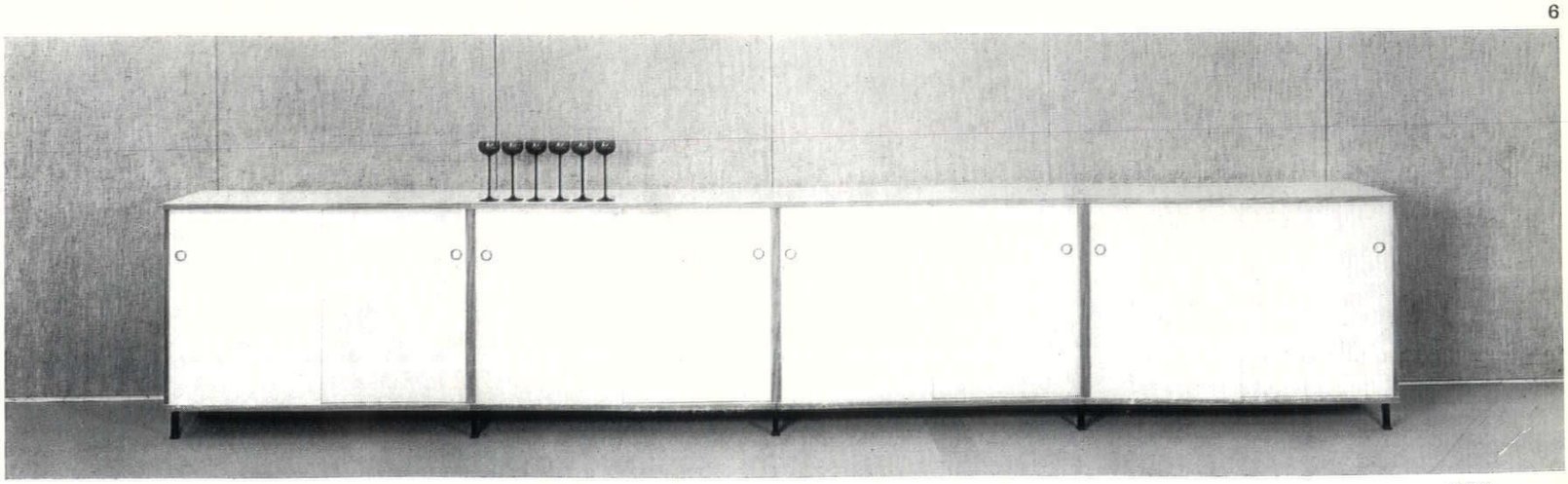


5

bofinger

5, total environment built up from units of the Bofinger M125 system, designed by Hans Gugelot of the Hochschule für Gestaltung, Ulm, and marketed in England by Edward Bull of Guildford. As its name implies, this system is based on a module of 12.5 cm., though only three standard widths of unit are in fact made.
6, sideboard units of the Bofinger system, which also includes tables and desks.

6





7

roepstorff

7, complete office interior by Roepstorff, marketed in England by Intercraft of Berkeley Square, London, W.1. All the movable and fitted furniture in this picture is by Roepstorff and the storage units are all on the module, which in its turn is based upon the 'A' series of paper-sizes, the actual storage units being designed specifically to accommodate a3 to a7 plus foolscap.

8, close-up of Roepstorff wall-storage units, opened out to give some idea of the range of different kinds of filing, plan-storage and other accommodation which the system affords. All the storage in this view can be closed off by sliding tambour shutters, made of fabric-backed veneer cut with hair-fine slots that are almost invisible to the naked eye.

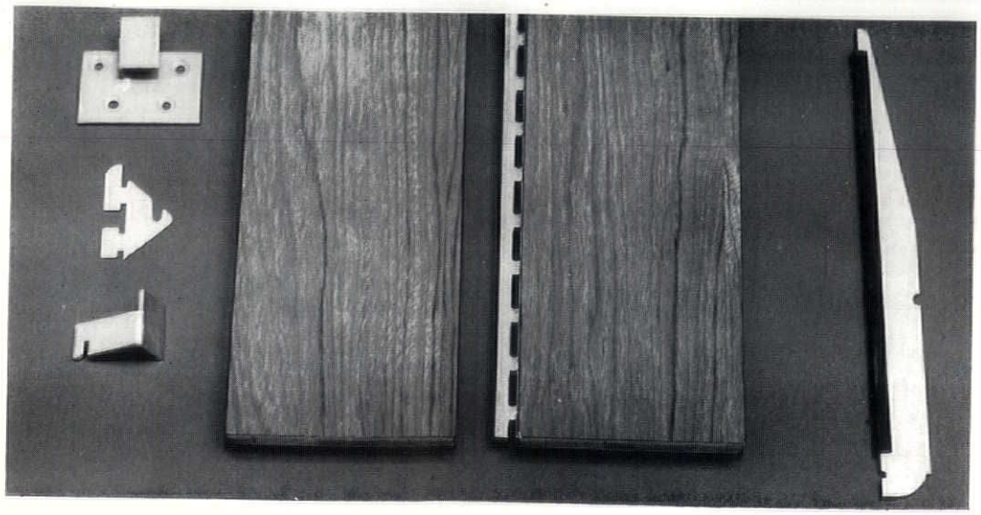
9, Roepstorff details—slotted metal strip in joins of standard wall-panelling to carry a variety of brackets—some of which are shown here—that can be hooked-in to support the appropriate storage units. A similar system of standard legs supports the movable furniture of the system.





8

9



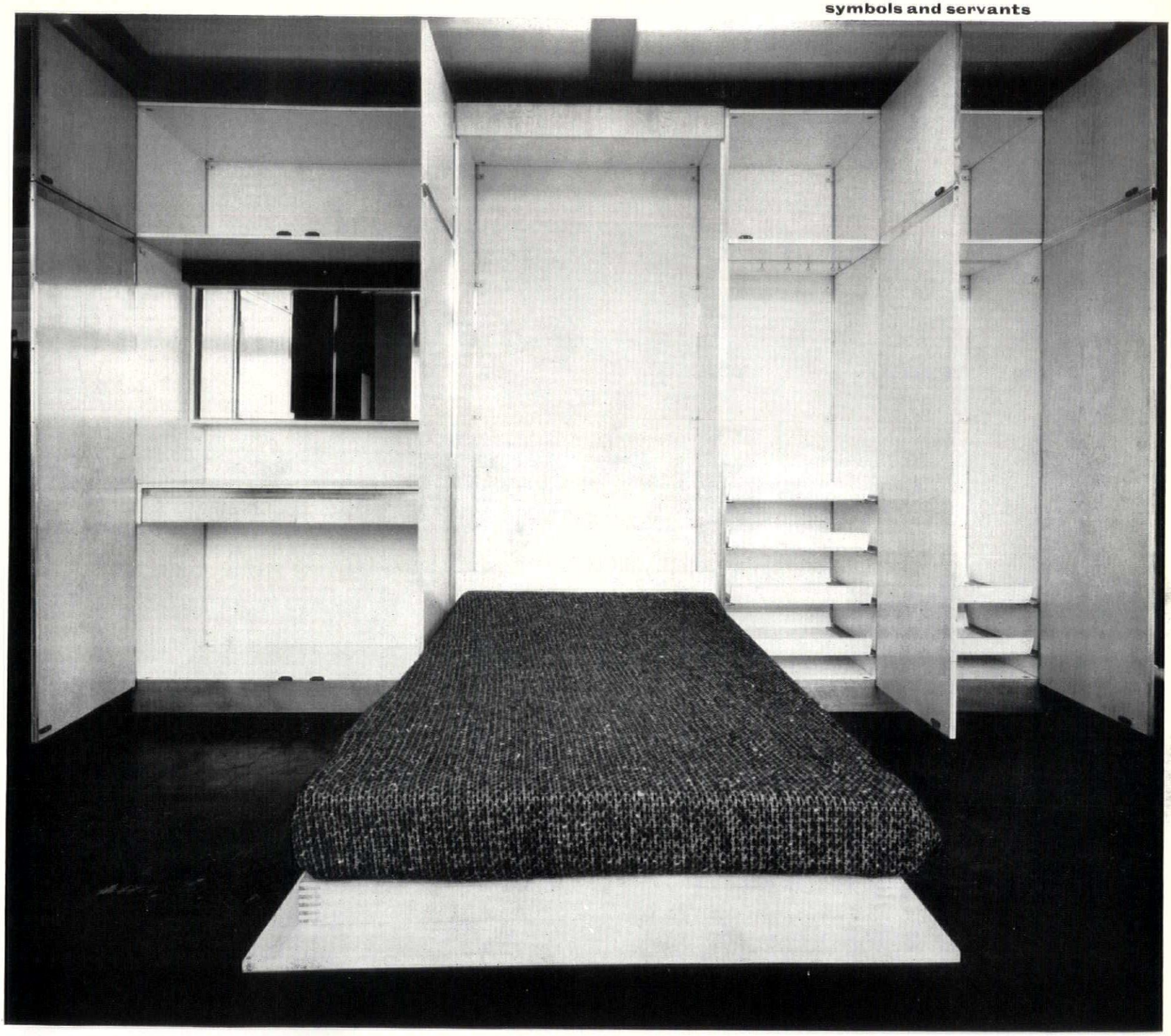
roepstorff



10

roepstorff

10, a close-up of standard Roepstorff drawers, and the removable slotted members that carry them in the standard storage units. As can be seen, the quality of workmanship is unusually high—high enough to make for a degree of interchangeability of parts that is equally unusual in wooden construction. The standard woods in which they are available are teak, oak and mahogany—a far cry from the metal filing cabinets, etc., which these units displace functionally as well as in terms of appearance. From the point of view of office use, this is the most exhaustive system currently available, but it is less effectively adaptable to domestic needs than other systems.



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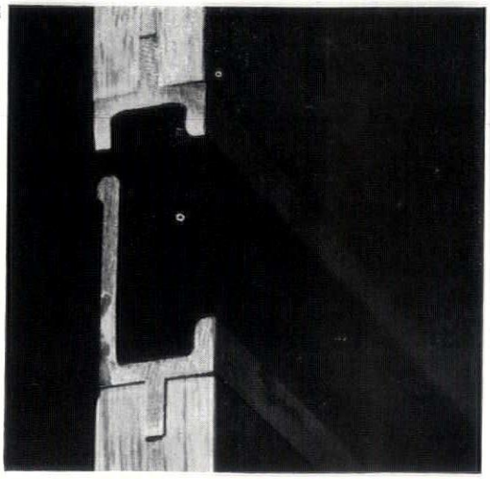
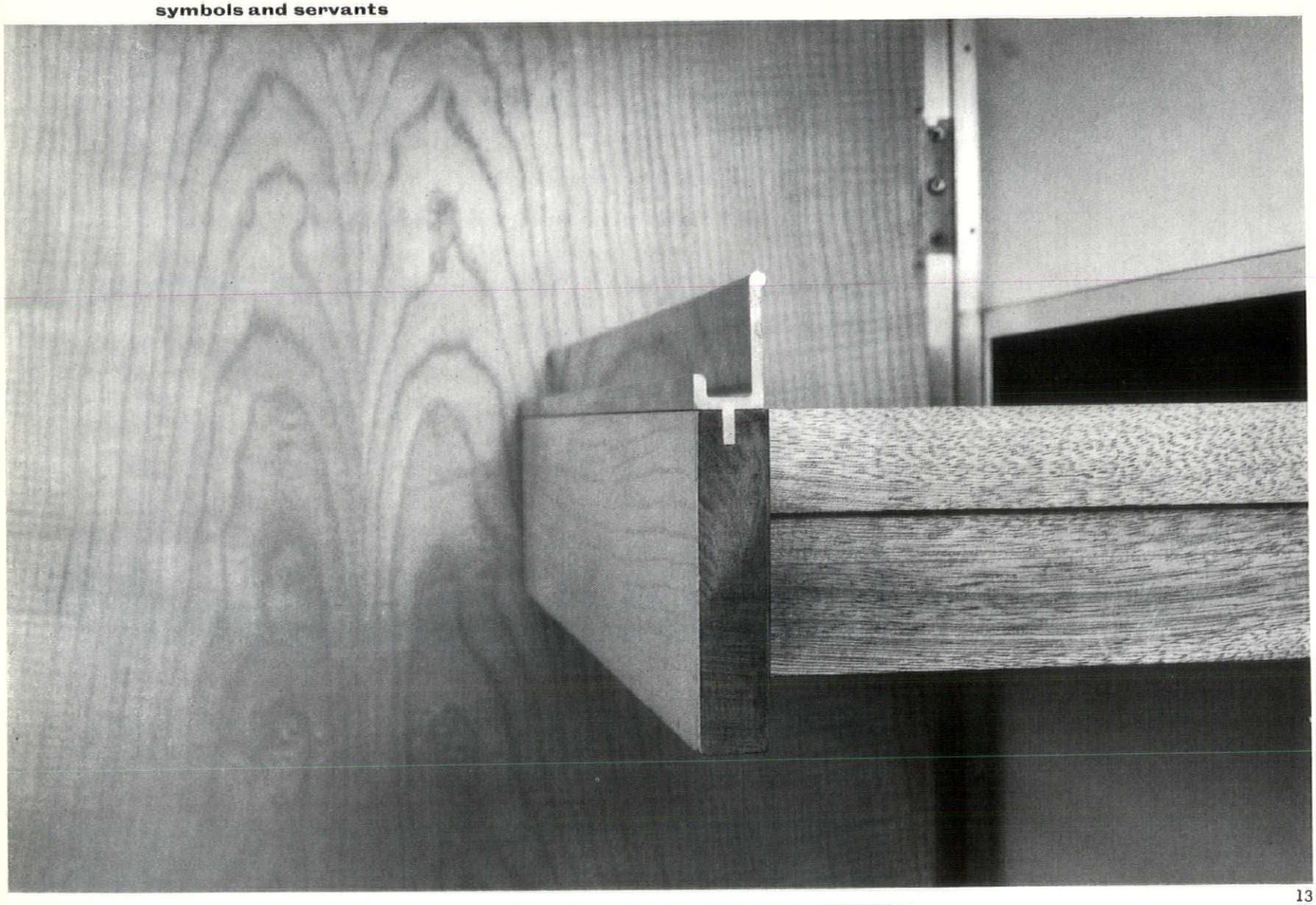


12

11, derived from the winning design in the 1962 *Daily Mirror* International competition, and built up in prototype form by Hille of London, Clive Latimer's storage-wall system is the only British design to date which matches either the capacity or the technical ingenuity of the leading Continental systems. Currently conceived as a system for university study-bedrooms, it is seen above fully opened out.

12, the structure depends on the extensive use of aluminium sections slotted into wooden panels, and further details appear over the page.

latimer/hille



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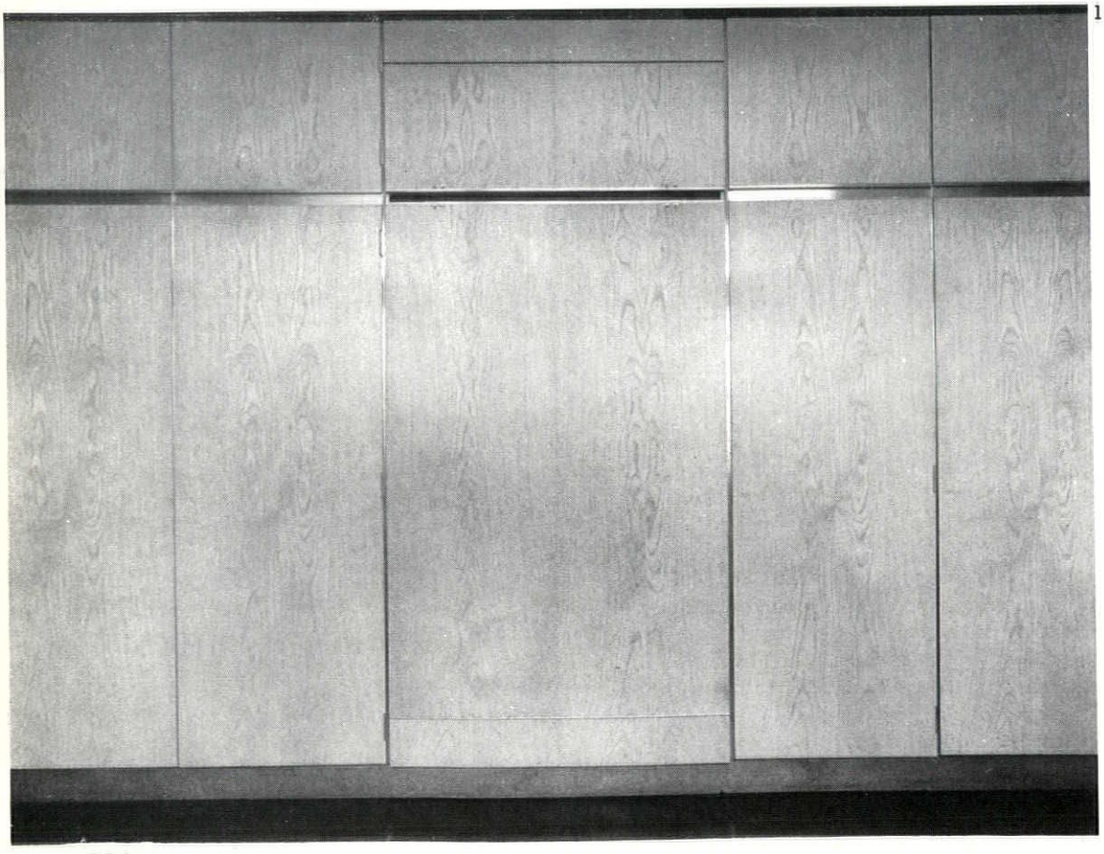


14

latimer hille

13, drawer of the vanitory unit pulled out, showing the use of the extruded aluminium section as a drawer-pull, and—in the background—hinges pop-riveted to another extruded section which forms the edge of the cabinet structure. Finishes here are in ash veneers.

14, part of the system with doors closed—the central section which accommodates the folding bed is distinguished by the absence of hinges at the side and (among other points) the use of a different exposed metal section at head-level to accommodate the bed's folding legs. The use of the system is not restricted to the version shown here and a variety of other combinations of this, and other, types of accommodation has already been prototyped.

the united cities

Of all British professional men, architects are the most European in their mental attitudes and preferences. As long as there has consciously been architecture in Britain, it has taken more or less—usually more—of its inspiration from Continental sources, even at the height of Victorian self-assurance or Edwardian arrogance. Whatever the new-born English modernism of the nineteen-thirties may have owed to the 'English Free Building' of Voysey and Lethaby, that vernacular had to go abroad and acquire a German accent from Behrens and Gropius before it could persuade the British—and even today, so-called Americanisms in British architecture generally derive from such native sons of God's own country as Mies van der Rohe, Marcel Breuer or Richard Neutra. For two generations, the oracle whose cadences echo through architectural discourse like those of the Authorized Version in common speech, has been that European of Europeans, le Corbusier. For architects there can be no talk of 'going into Europe,' because they have one foot there already.

They were into Paris behind the liberation armies in search of Corb almost as soon as Roland Penrose in search of Picasso. The English rediscovery of Italy was largely pioneered by a new generation of architects and architectural historians nurtured on Pevsner and Wittkower. Gaudi fans were into Spain as early as lovers of the *corrida*, and in Holland and Scandinavia, architects are often the most conspicuous breed of British tourists. The reopening of Germany to the British mind has been slow, but would have been much slower without architects and designers—it is a pretty safe bet that more Britons know the plastic box by Max Braun than the *Tin Drum* by Gunther Grass.

British architects tend to feel that they know their Continent and are in touch with European movements. But they do not yet seem to have much of a grip on the foreseeable consequences of the forthcoming unification of Europe, including Britain, that is beginning to take place quite independently of the legalities of the Treaty of Rome. Europe has riveted the attention of generations of British architects primarily as a dream-Continent, a place where 'they manage these matters better' and architectural lore tends to remember only the sunny places. Europe, for architects, is Italian craftsmanship, but not the semi-colonial life of the *Mezzogiorno* that makes that (often overrated) craftsmanship cheap; it is the orginality of le Corbusier in France, but not the town-planning laws that have occasionally driven that originality nearer to neurosis than genius; it is the legend of Swedish furniture and domestic design, but not the egalitarian social economics that is reducing the market for them; it is the organized precision of German architecture, but not the professional situation that makes an adding machine more useful than a drawing board (see p. 318). Europe can be a dreary

place, much like Britain, but twenty-two miles of sea lend enchantment to the view.

Experience of the Continent can bring its disenchantments, but not necessarily the wisdom that should follow from it. Sadder but not wiser, Britons returning from Europe in the last few years have



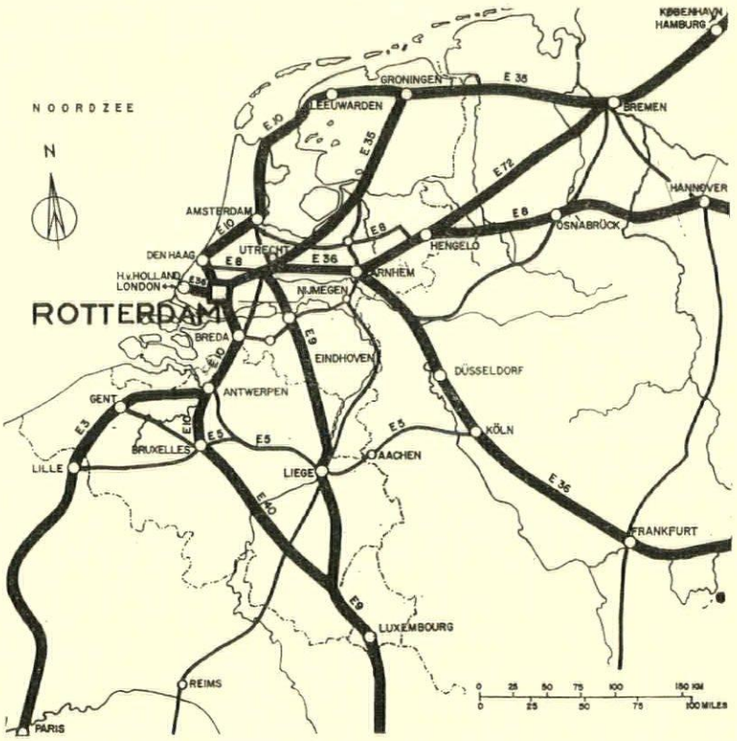
The road runs on; southward extension of the Autostrada del Sole *towards Naples, bringing the south of Italy into motorized Europe.*

draped their reminiscences over a repetitive infrastructure of '. . . and when we got there the bloody place was full of Germans.' (Or Danes, Belgians, Dutchmen, Deutsch-Swiss or Swedes, according to distaste.) The English determination that Mediterranean culture should begin just beyond Calais takes ill to the presence of hearty blondes enjoying themselves in Germanic or Scandinavian accents. But these people are the most significant phenomenon in Europe today, because they have driven there in their own cars, citizens of Volkswagen-Europa.

The Danes in Dubrovnik, the Germans in Gerona, Spaniards in Uppsala and Romans in Rotterdam strike the eye at once, it is the north-south vacation migrants who put in the most conspicuous mileage. But East-West movements are there as well—less noticeable perhaps because of the relative shortage of private cars in the Peoples' Democracies than for political reasons, and because few of us have yet had a chance to observe the cars with French or Dutch registrations in Black Sea resorts like Nessebur or Mangalia. At holiday time, motorized Europe convulses, turns itself inside out, hurries to the other end of the landmass.

Now, this development of long-haul international mobility is not only a tribute to the convenience and ubiquity of the automobile, but also to an increasing ability to *think European*. It used to be said, for instance, that German towns suffered from their remoteness from the seaside, but this makes sense if one speaks only of *German* resorts. Once one begins to over-think national boundaries, then the cities of the Ruhr are no farther from the seaside than the Black Country is from the coasts of Wales or East Anglia. It is true that Central Europeans, particularly before 1914, maintained a good all-round concept of the European coast-line, but motoring and first-class roads bring with them a kind of accessibility that never existed in the days of portmanteaux, wagon-lits, nannies, Baedekers, porters, diligences and 'in inclement weather, umbrellas left at the entrance to the Uffizi will be carried up to the Pitti for the convenience of visitors.' All that is gone; a mildly determined Düsseldorfer can now breakfast at eight, spend the afternoon in the sea at Scheveningen, and be back at his own door at ten, having dined or lunched his family on the road.

Rotterdam's view of the north-western spiderweb of European motorways emphasizes the accessibility of the Dutch Coast from industrial Germany.

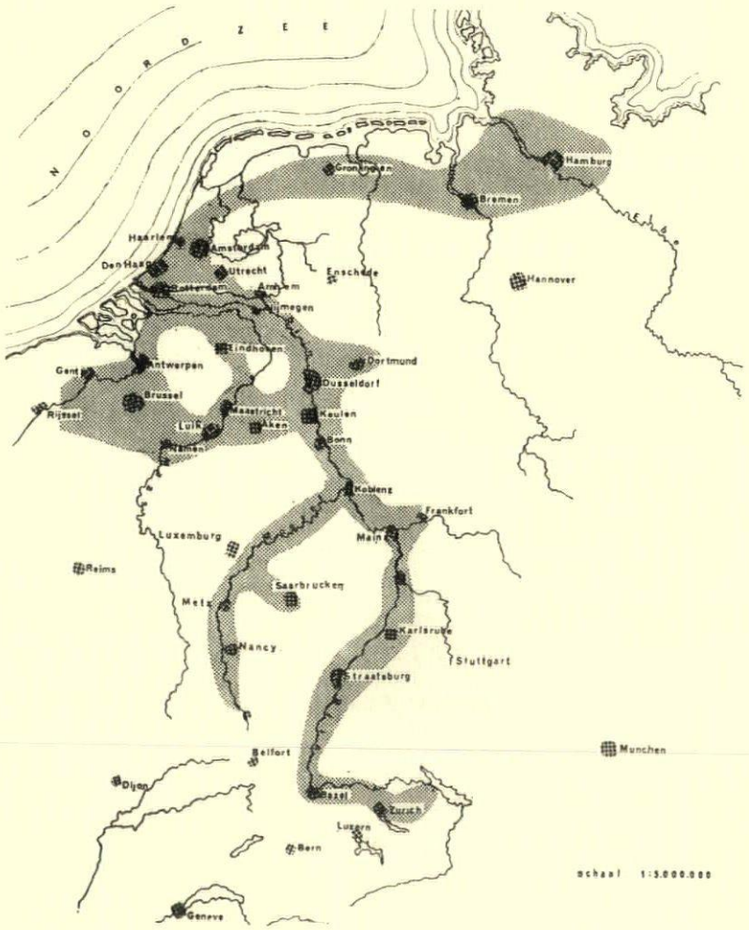


Of course, it is the professional classes who have created this attitude. They have the cars that are big enough, they have the linguistic experience to get around, but, above all, they have the kind of jobs that have led them to acquire the habit of making long hauls by autostrada, route nationale or Autobahn. To quote from the REVIEW ten years ago '. . . other recent works have included a factory near

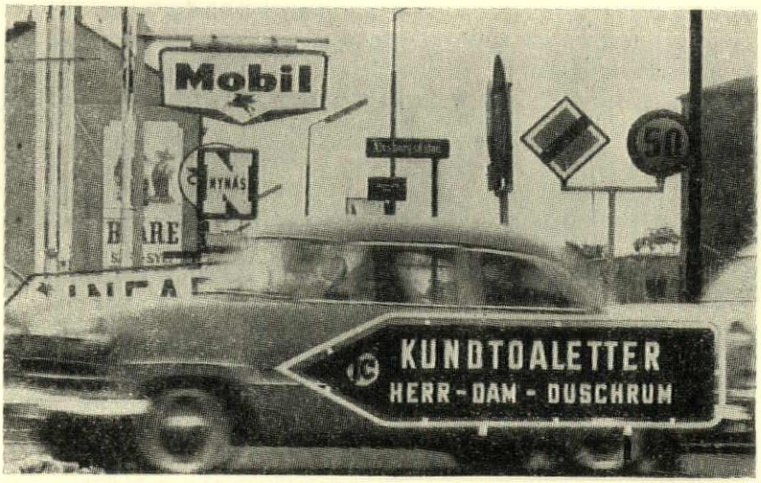
the Swiss frontier and a large scheme at Krefeld, between which two jobs, a distance of 500 km., he commuted in one of the first Porsche coupés.' That was Eiermann of course, and in those days we still had the habit of saying *frontier* when all we meant was *administrative boundary*. Once the five hundred kilometres began to stretch over such boundaries, the present situation began to emerge—Danish designers with factories in Germany, French system builders with plant in the Low Countries, Belgian chemists acting as consultants in Yugoslavia, German ergonomists with clients in Turin—a network of professionals who think little of driving over the Alps two or three times a month.

But if they are commuting, they are doing so in a highly specialized manner. Rather than shuttling to and from the same suburb, and the same city-centre, day after day, they shuttle between a network of major metropolitan centres, for the great cities of Europe are now no farther apart, time-wise, than were the market towns of horse-and-carriage Britain before the railways. This has had some of the obvious consequences—those who complain that Vienna begins to look like Rome and Bremen like Lyons have some

Dutch warning; linear city, stretching from Zurich to Rotterdam and Hamburg, seen as possible consequence of motorization, by Professor J. T. P. Bijhouwer.



justification, for a high degree of motorization seems to bring with it an inevitable proliferation of standard or similar objects: BP signs, parking meters, Volkswagen-buses and yellow stripes on the road-surface. But to dismiss this as 'Americanization' is to miss a point loaded with explosive and revolutionary potentialities. Because each city in a network such as Lille - Ghent - Brussels - Liège - Aachen - Cologne - Düsseldorf - Eindhoven - Rotterdam - the Hague represents a culture with millennial roots in widely different economic, political and ethnic circumstances,



The 'sign jungle,' as Johan Hillbom has called it: Continent-wide by-product of motorization, but not yet proof of standardization of European life.

they will never be assimilable in the way that the cities of an equivalent area of a younger or more unified culture will be—say, those of Connecticut and Rhode Island, or those covered by the Midland Region of the BBC, both of which are areas of about the same size as that comprising the Belgian, German and Dutch cities mentioned above. A close association of proud, history-grounded cities, each with the cultural and monumental equipment of the state capital it once was or will shortly cease to be, is the fulfilment of a basic European dream and nothing like it has been seen since the days of the Lombard League.

The re-united city-states of Europe represent a cultural and intellectual potential more explosive and less ponderable than that of the enormous unified markets for goods and services on which they hope to feed. Political progress may facilitate the workings of the union, but this commonwealth of former capitals, university towns and manufacturing metropolises exists already, is the firm organizational base of the European Economic Community and can be expected to outgrow it. By way of the increasingly unified European network of mass-communications, it is already making its impact felt on the life and times of the Continent's inhabitants.

But it is important not to confuse the increasing sophistication of mass taste—portentous though its consequences may be—for what is at stake here, nothing less than the creation of a unified, mobile, polyglot managerial élite, young and keen (the equivalent of America's 'up-beat generation') for whom all Europe is their oyster. Their top men, the great proconsuls of the Common Market civil service, currently based on Brussels, have already made the culture pages of the English Sunday supplements, but the type is everywhere, the first citizen of the united cities. He will be stimulating company and a tough

competitor; the architectural profession begins to know his face already, because he is present, urbane and enthusiastic, at every major congress or exhibition of international status.

The architectural profession has, in fact, become one of Britain's best contacts with these new united Europeans, partly because architects tend to meet them under less competitive conditions than do business men or politicians, partly because these united citizens tend to be animated by professional aspirations tinged with admiration for their British colleagues (see p. 317). Thus, the work of the Liaison Committee for architecture, required, like all such limbs of the Rome Treaty to achieve standardization by levelling up, not down, seems to be moving continental professional status for architects nearer to the model represented by the RIBA than towards existing European models—even if we join after all the rules have been formulated, they will be rules somewhat in our own image.

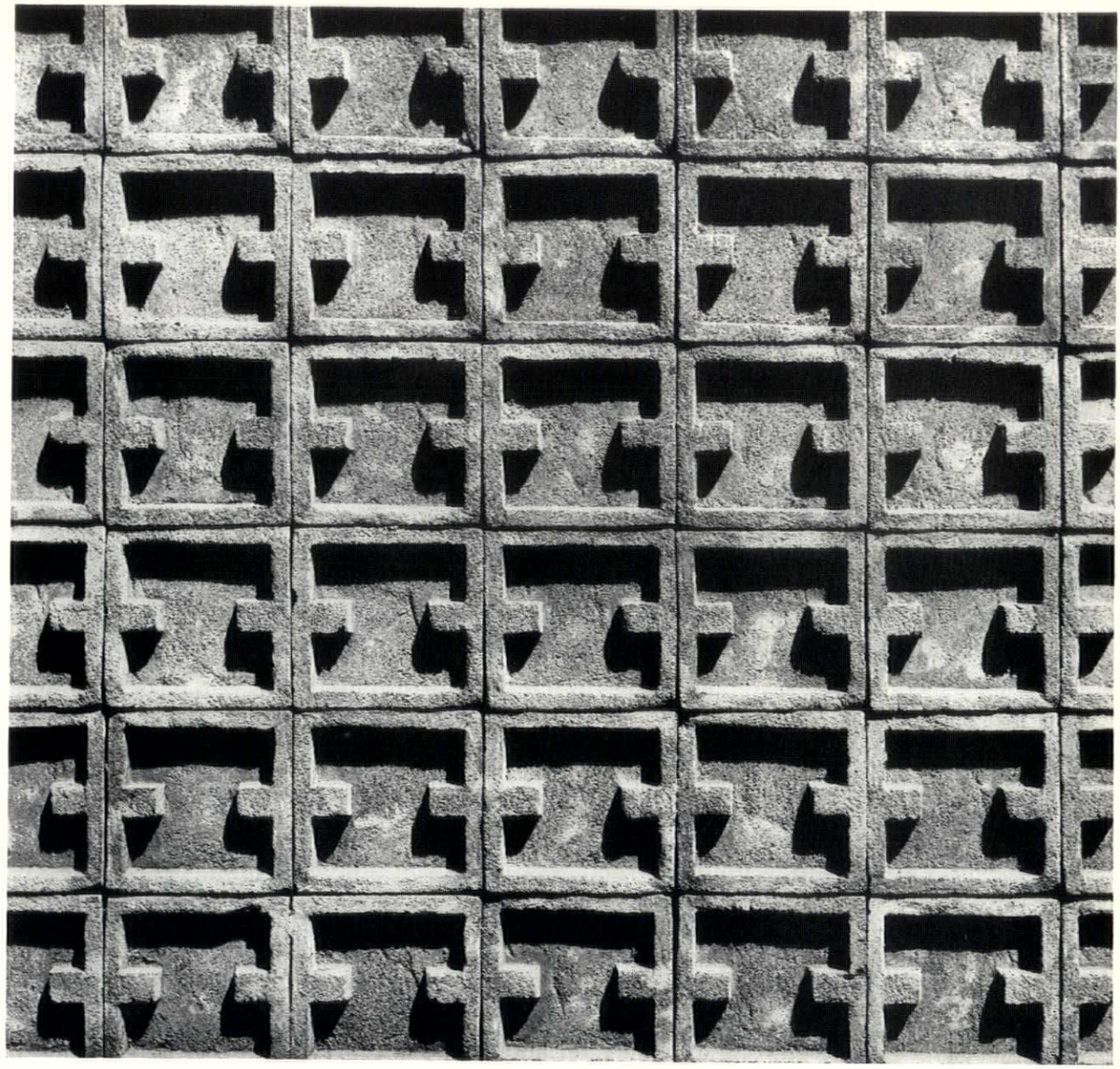
But whether we join late or soon, we shall be poor relations of the united citizens for some time, simply because inconvenient communications cut us off from the Continental road-net, the Englishman in his Miniminor is not plugged into the European Volkswagen circuit. 'Modern-living' publicists may point out till they are blue in the face that air car-ferries (p. 312) already make it possible to drive to Amsterdam overnight, or that the Channel bridge or tunnel will make it so in the near future, but the fact remains that the journey from London to Amsterdam will always be twice as long and/or inconvenient than the equivalent two hundred crow-flown miles to Amsterdam from Nancy or Hamburg. This may be a tricky problem for professionals and administrators, for there is a chance that the improvement in the circulation of brainpower and skill may not keep pace with the relative acceleration in the movement of goods such as building components and materials. A Channel tunnel or bridge will considerably improve lorry movement, and innovations such as Rhine barges that can cope with North Sea weather may make an even more startling improvement in the circulation of heavy materials between Britain and the inland ports of the Continent, but we shall still be cut off from the possibility of throwing a dozen rolls of working drawings, or a bread-board mock-up, into the back of the car and dashing off to Munich or Milan at a moment's notice. Even BEA's Trident Jets will not be able to offer a service comparable to one's own car and a good motor road.

The glittering prospects of better workmanship and materials may prove to be a will-o'-the-wisp; super-congestion in south-eastern England may prove to be a hollow threat because British manufacturers may be better advised to leapfrog new plant deep into the Continent, and Continentals to jump theirs right through to the development areas of Britain. But the challenge of prospective membership of the united cities of Europe remains acute, for London and Edinburgh, Glasgow and Manchester, Birmingham and Belfast, because the real common market may prove to be one of intellect and professional skill.

It can't stop there—
even as these words are being written
business-men from all over Europe
are crowding the Leipzig fair.
In September they will be in Brno
for the fifth trade fair there.
At one or the other
they will encounter the air-taxis
of CEDOK—neat Morava four-seaters



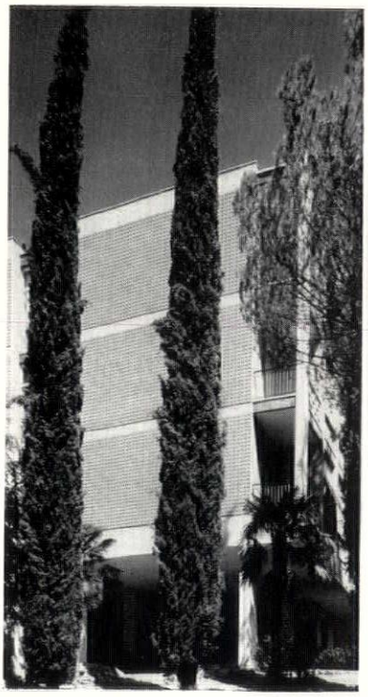
operated by the Czech Travel Services.
In them, the managerials of
the more advanced East European countries
are acquiring habits of mobility
rivalling that of their opposite numbers
in Western Europe. Already, the two
networks of command are beginning
to overlap and connect—
politics notwithstanding, the unifying
mood in Europe extends far
beyond EEC and EFTA to embrace COMECON.
Europe is an expanding concept
(as it always has been)—
even if its geographical limits
have now been fixed by the expansion
of neighbouring concepts such as Asia.
The present expansion is in depth
and intensity, organization
and communication, in the ability
to think European.



1, 2, *Italy. Decorative brickwork that makes maximum effect of the play of light and shade, which over a large scale gives a delicate texture. These bricks are a mass-produced item and measure approximately 5 in. square.*

1

SKILL



2

EUROPEAN BUILDING CERAMICS

Europe's oldest manufacturing industry, perhaps, and certainly the oldest supplying building components deals in fired clays, glazed or unglazed. From bricks and hollow tiles to facing and flooring ceramics, the range and resources of this industry are prodigious, and its continuing vitality a proof of technological adaptability that would be difficult to equal. In the article that follows, Tarquin Cole surveys its achievements and potentialities on a Continental scale.

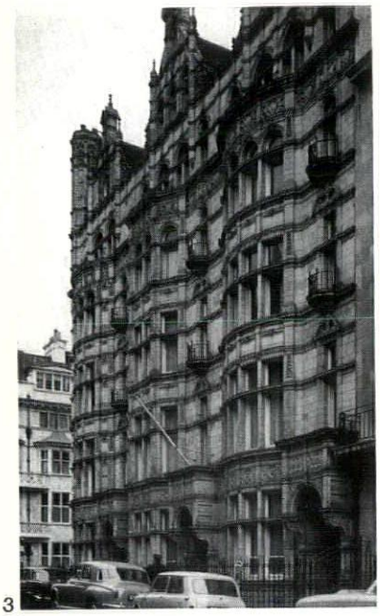
The basic problem of the clay industries is common to both England and Europe. It is the difficulty of evolving new thinking—new ideas and technology—for an industry nearly as old as man himself.

The tradition for bricks and tiles goes back many centuries, whilst that for terracotta and faience is mainly rooted in the nineteenth century needs for a facing for the new structures of cheap mass produced bricks or concrete. Bricks long were the very best building material and can be judged among the greatest inventions in the history of man; the brickmaker had the field to himself, evolved efficient manufacturing methods and produced a quality product. The faience and terracotta manufacturer, the floor and wall tile manufacturer did the same and, by the end of the last century, the quality of their materials was excellent and the embellishments of many buildings of this period bear testimony to the high regard in which architects of the period held their products.

Today this industry with such a rich heritage is contracting into fewer and bigger units, in common with many other ancient craft industries. One should not say that it was a shrinking industry, but it is not expanding in the same virile manner as some other industries have done. These large units must necessarily concentrate on cheap mass-produced items to sell in bulk, and therefore have only a little room for manoeuvre; but the more specialized market that was so rich in the nineteenth century has largely died out. It is developments in this latter field that need to be explored; it will be from these developments that the architect will find new and exciting uses for clay, and it will be from these ideas that the cheap mass produced products of the future will generate.

In England in the years since the second World War the industry has

suddenly realized that drastic changes are necessary and that as well as making a good product it is necessary to be thinking ahead, to be abreast of modern building developments; and this after concrete had been in use as a structural material for the best part of a century! Somehow the belief that concrete was an ugly finish and would always need to be faced with bricks or tiles had led to a sense of security. Quite large sums have now been spent on technical research and development of new plant, but the finished product has changed very little from that of fifty years ago. It is just beginning to be realized that this is not good enough in itself and that it is also necessary to keep abreast of architectural fashion. Unfortunately at the present time only a very small amount of research has been carried out to produce an aesthetic in keeping with present architectural trends. Nevertheless the need has been realized, but there are at present few training facilities that can develop designers in this field in the way that the North Staffs Technical College has



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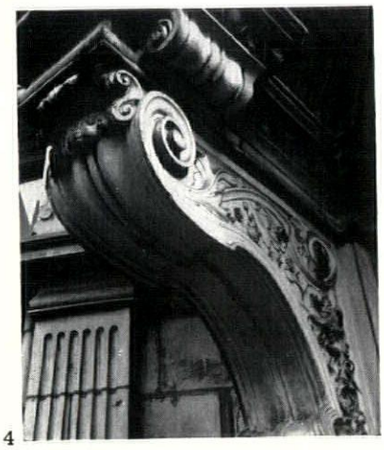
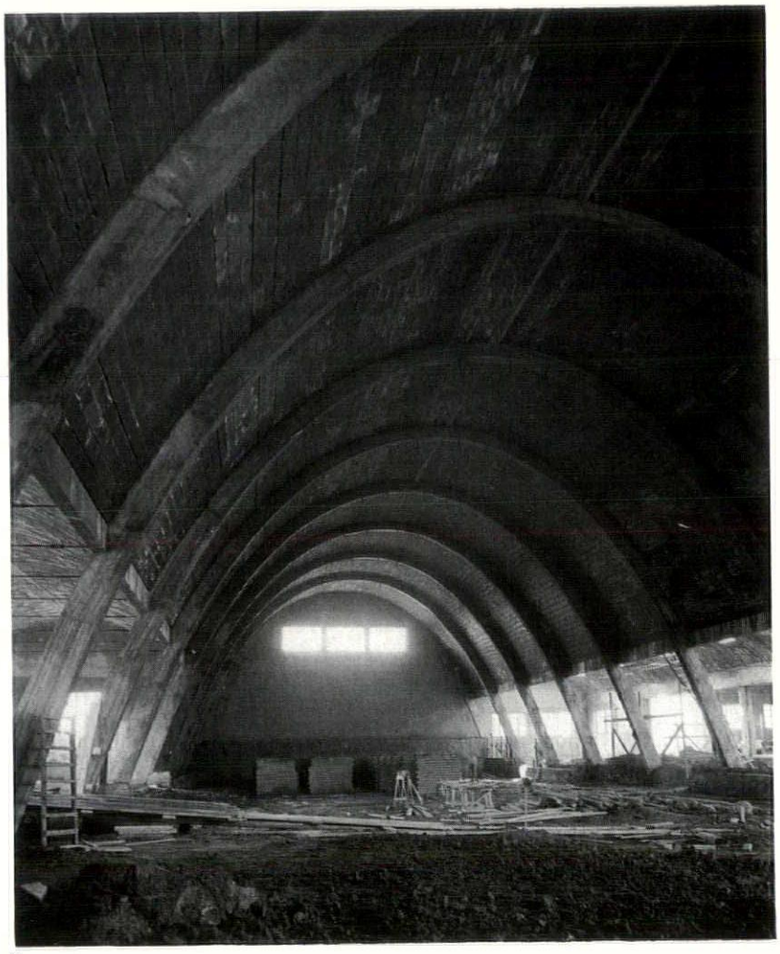


4

3, 4, Gt. Britain. A very rich example of terra-cotta work from the late nineteenth century on a house in Wimpole Street. This shows what richness has been obtained in the medium in the past, and, if translated into a modern idiom, could still be achieved today. It is interesting to note that the prices for faience and terracotta work at this time were not low, but compared very favourably with the carved stone buildings put up previously.



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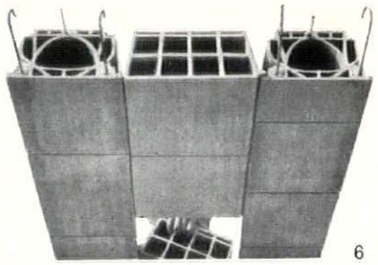
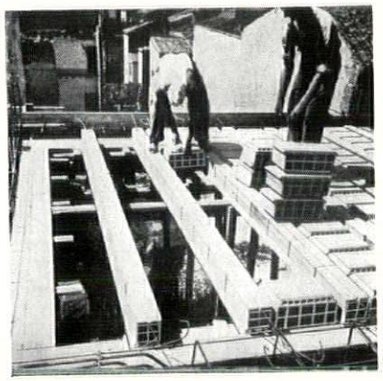


6

5, 6, 7, Italy. Barns such as 5 are produced from prestressed clay beams made up in a similar fashion to the more usual clay floors shown in the other photographs. The possibilities of clay materials used in this fashion are limitless. It is unlikely that this form of construction would even compete in price with concrete structure in this country, but if decorative surfaces were applied in the firing a completely decorated wall could be produced in one construction. This could produce a lower overall cost when decorative surfaces have to be applied to a concrete structure.



7

Table showing ceramic products of European countries

Country	*Leading Products*	*Description*
Italy	Mosaic Wall tiles Mural techniques Hollow clay blocks Peasant tiling	The greatest diversity of shapes, glazes and finishes to be found anywhere in the world. The range of colours is very comprehensive and many of the designs imaginative. The plasticity of the clay body provides a tremendous potential that Italian designers have understood and exploited more than any other country in Western Europe. The technical standards have sometimes in the past not been as high as they should be, but this has largely been corrected—it was part of the penalty of being experimental. The prices are almost uniformly low over the whole range of products available. The techniques used for building with clay blocks are very similar to those employed in the construction of the roof of the Roman forum, and these have been adapted to give the flexibility that modern fluid forms demand.
Germany	Floor tiles Wall tiles Faience Industrial ceramics	As one would expect, the technical standards of German tiling are extremely good and the products excel where this is of greatest importance. Non-slip flooring, high precision ceramics and larger units, which are the most difficult to achieve, are the most interesting features.
Sweden	Mosaic Floor tiles Wall tiles Mural techniques	The Swedish ceramic industry has only recently been of interest to architects and designers in Great Britain, due mainly to the efforts of two firms of importers. Following up the snob tag of 'Scandinavian' the ceramic manufacturers are offering some of the most imaginative floor and wall coverings obtainable. They combine fairly uniform high technical standards with greater aesthetic sensibilities than most other bulk manufacturers.
Switzerland	Brickwork	1870 was the last year in which the Swiss used a solid brick for building anything but chimney stacks. The Swiss architects have used calculated brickwork and hollow clay blocks to very good effect ever since.
France	Peasant tiling Floor tiles Hollow clay blocks Mural techniques	There are almost no French manufacturers actively represented in Great Britain, due to the fact that most of their products are relatively more expensive than a comparable product from neighbouring countries. Nevertheless several traditional types of tiling, which fill a gap in the domestic market, are now beginning to appear. There are also many examples of ceramic murals produced by some of the world's leading painters.
Belgium	Roofing tiles Cheap bricks	Before the war quantities of cheap bricks used to be imported from Belgium. This has largely ceased, but quantities of the more interesting roofing tiles are imported from here.
Holland	Facing bricks	Holland produces the most interesting selection of facing bricks on the Continent.
Luxembourg	Mosaic	The material from the one famous factory in Luxembourg is one of the best ceramic products available to-day.
Austria	Stoves	These old-fashioned stoves, although still made to-day, are very little known in Great Britain. They are a form of heating that has been used on the Continent for centuries and are a great decorative addition to interiors.
Spain	Peasant ceramics	The ceramics industry in Spain is modernizing hard and the quantity and quality of the products have very much improved. The items of greatest interest for the moment are the charming hand painted tiles that have been used in Spain for centuries. There is a fantastically wide range of traditional patterns available, and they are widely used. 'To have a house without tiles' at one time was a proverbial expression of poverty.
Great Britain	Wall tiles Floor tiles Industrial ceramics Facing bricks	The technical standards of British ceramics are extremely high, but many of the finishes unimaginative. The best in all fields are where traditional craft techniques have dictated the pattern or texture. There is a very rich range of shadings available for facing bricks. The standard of the English interior wall tile is superior to many of the Continental competitors, but not as cheap. If some of the Latin vitality could be infused into the existing qualities the results could be some of the most exciting in the world to-day.

been geared to cope with the new standard of technology required.*

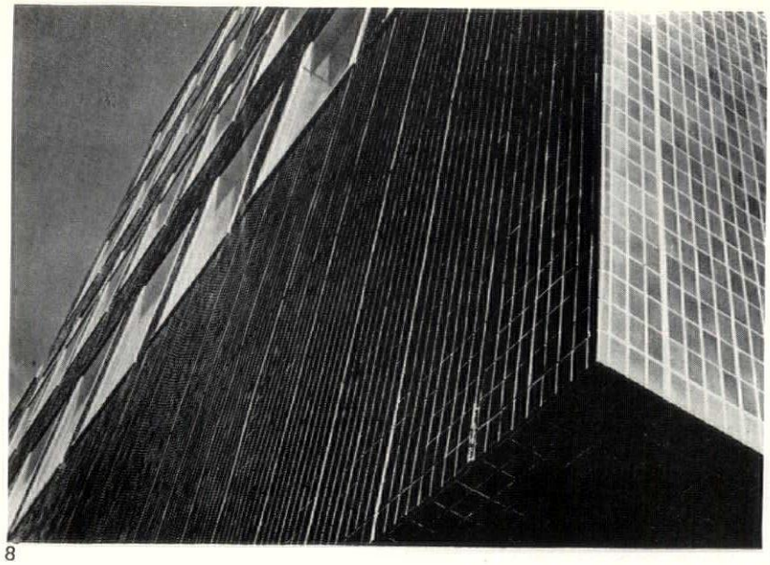
The advent of any form of customs union or Common Market in Europe will not affect member firms very directly or quickly. The problems that apply in Great Britain will apply only more so; and as these already exist, it will merely accelerate a process that is already taking place. Continental firms suffer from very much the same problems, but the acceleration is perhaps in a slightly more advanced state: firms that have already developed imagination and drive and who have carried out a programme of reorganization and reinvestment will survive and progress, whilst those who believe that they can continue as before will go under, perhaps a little bit faster. There will be little difference in the attitude of mind necessary to design for the British market or for the Continental market, when an increasingly international design standard is evident throughout European Architecture.

It is to be hoped that British firms will maintain their national characteristics in their bricks and tiles, because the heritage is extremely rich, but I see no reason why this should conflict with the requirements of the architect be he English, Swiss or Italian. The British ceramics industry, which produces annually some £200 million worth of clay products, is divided roughly into four categories:

1. Pottery — comprising domestic ware, glazed tiles, sanitary earthenware, vitreous china and electrical ware.
2. Refractories — comprising firebricks and blocks, silica bricks and blocks, insulating bricks and refractory cements.
3. Technical Ceramics — comprising insulators, stoneware and porcelain with high alkali/acid resistance for the chemical industry, grinding wheels, pure oxide materials for high temperature work, ceramics for the electronic industries to withstand electrical stresses at very high temperatures in such things as rockets.
4. Heavy Clay Products—comprising building bricks, roofing tiles, drain pipes and hollow clay blocks.

If one considers the uses to which these are put in modern building one has a formidable list—flooring, walls both interior and exterior, roofs, infilling panels, partitions and precast wall units, murals, brise soleil, sanitary ware, drainage, fireplaces, stoves, plant holders, electrical insulators, whole chemical plant, the linings of furnaces and rocket nose-cones, to name only some of the more widely known uses. In terms of exporting, the problems will only apply to the first three categories. Costs become prohibitive on cheaper items such as bricks when they have to be carried long distances; but, even this may change should the Channel Tunnel project or improved waterborne transport ever materialize. Then British facing bricks could become very competitive in Northern

* In the field of modern advertising methods the publicity value of the industry is very low and is rarely given editorial space outside of its own trade papers. This is not lack of interest on the part of journalists or the public, but a failure on the part of the industry to project what they are producing in the form of news or new ideas. There seems to be a very real ignorance amongst architects and the general public on even the simplest problems of clay manufacture, and this is in spite of the very great popularity of pottery classes in art schools and evening institutes. There needs to be some stimulus and excitement in the method and presentation of the problems and the designer and public relations officer have a very important role to play in an industry that is little understood.



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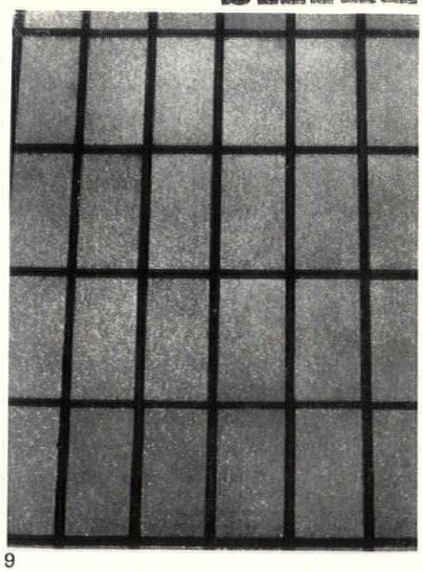

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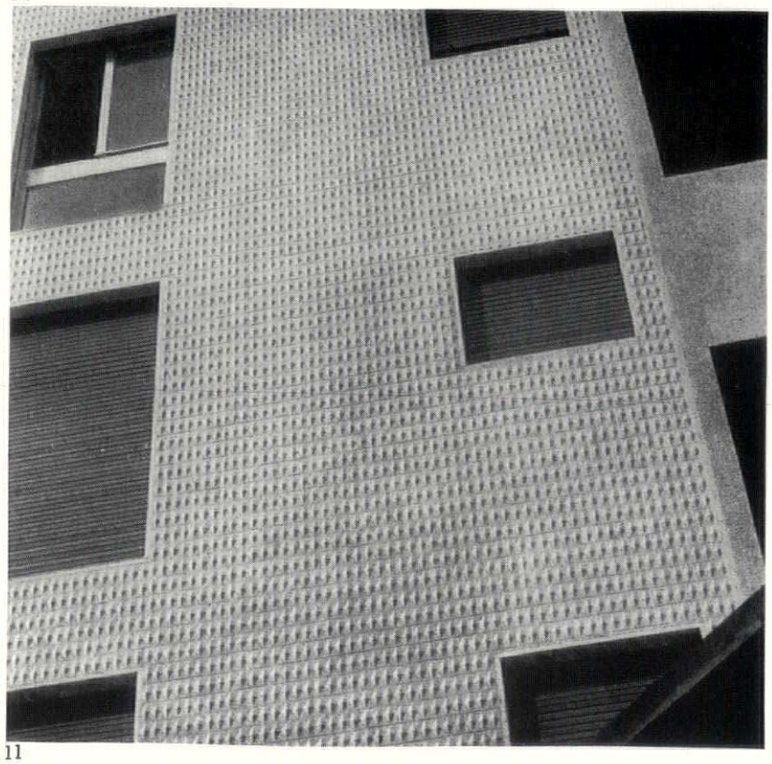
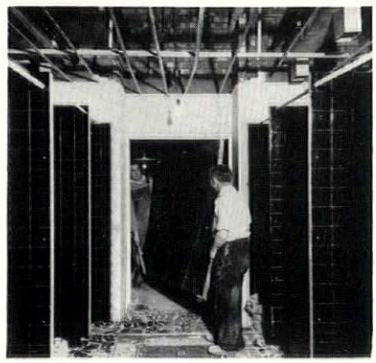


11

8, 9, *Sweden. The new 'Palazzo' mosaic from Ifö, 4 in. by 2 in. giving a change of shape and type of glaze to the standard mosaic that has been used so much in England in the last few years.*

10, *Germany. An example of large 'Elemental' faience screen units made by Baukeramik, approximately 2 ft. by 2 ft. used on new buildings being built by a group of stores in Wen, Germany. Screen walls with such large units have not been commissioned in this country, but the scope of using faience on this scale is capable of very dramatic effect.*



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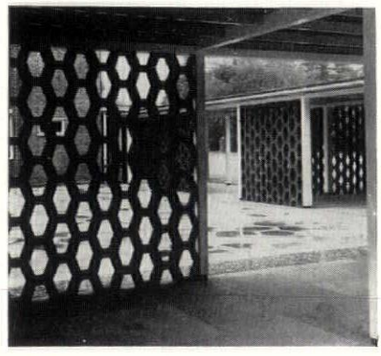

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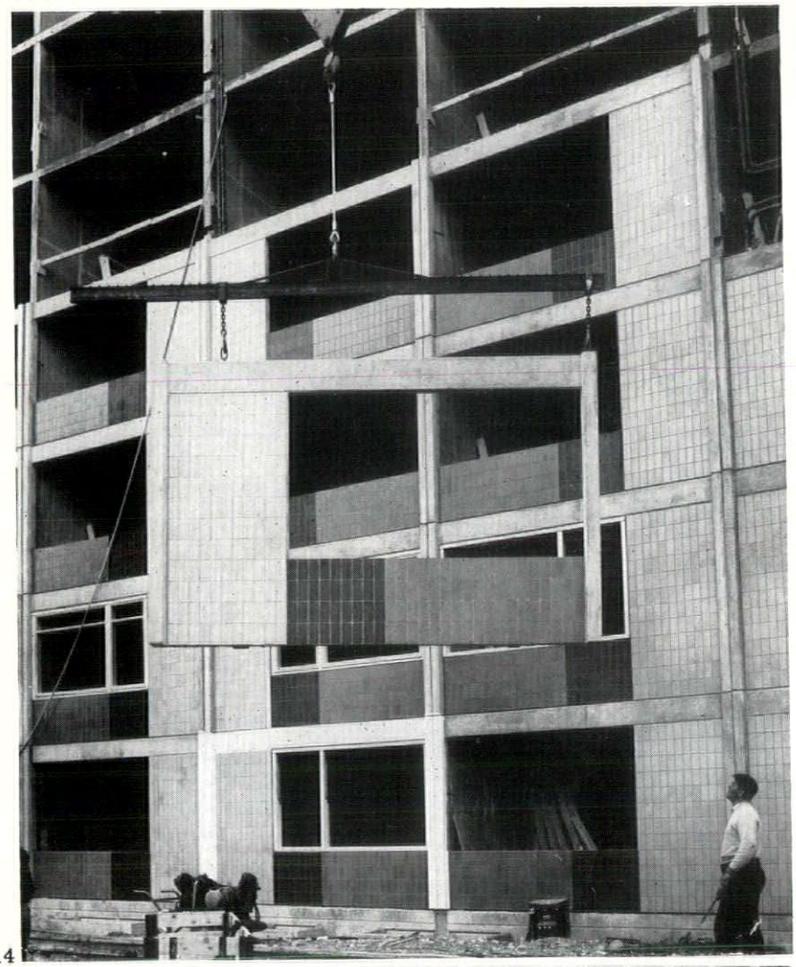
11, *Italy. An example of a building clad in a mosaic by Ceramica Joo and imported by Milano Mosaics, showing the very rich texture possible on this small-scale unit.*

12, *Gt. Britain. Carters at Poole are now producing, in common with other British manufacturers of interior wall tiles, prefabricated partitions which greatly facilitate construction and if used imaginatively would be capable of great diversity of effect.*

13, *Gt. Britain. An example of the high decorative value of brick screens at low unit costs produced by the Sussex & Dorking Brick Co.*



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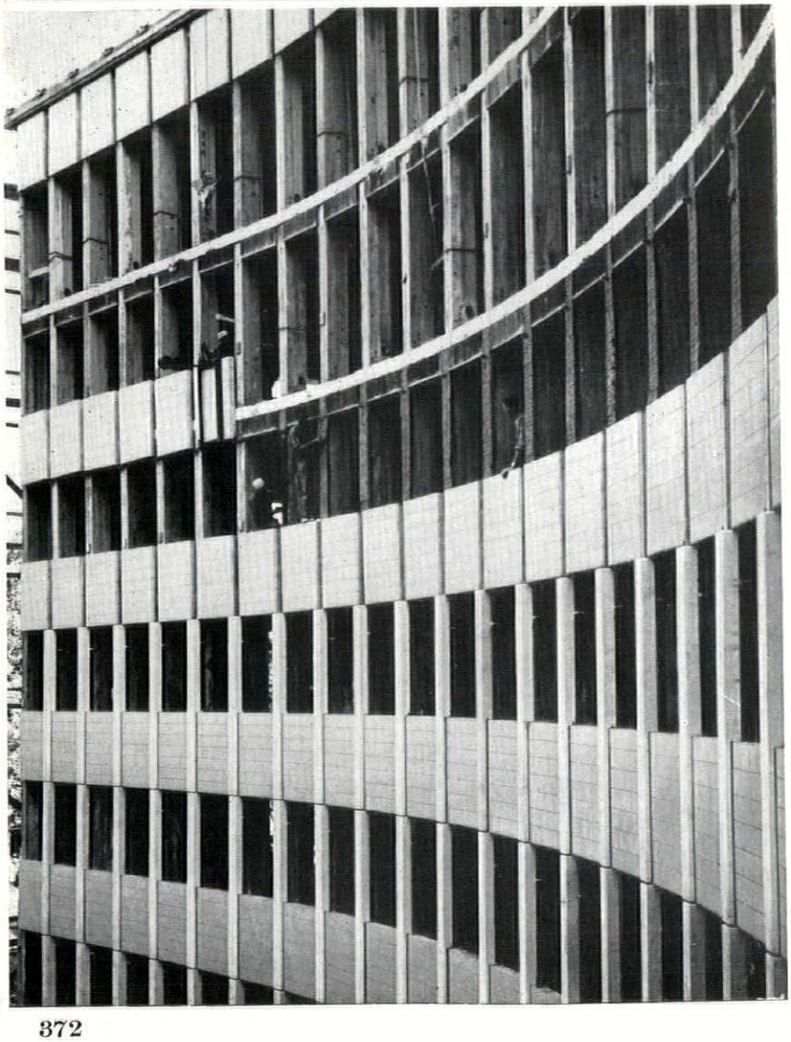
16

14, 15, *Sweden. Examples of prefabrication in building construction achieved with Hoganas exterior tiling. Langleys, who import these tiles to this country, are equipped to advise on the erection of similar units.*

16, *France. The display pavilion used by the French brick and tile industry to demonstrate products and their uses. With the tremendous variety of such products in this country a display like this could be linked with a Research Centre such as the Clay Products Technical Bureau to promote and publicize the possibilities of using materials in new and exciting ways, as well as those traditionally associated with brick and tiles.*



15

France and Dutch and Belgian bricks would have the same advantage in Southern England or near Northern ports. We have the skills and some firms have the products that can easily overcome the difficulties of marketing abroad, though wall tiling firms in Britain may suffer from strong competition in price though not in quality.

The problems, then, are not those of importing or exporting, but rather of attitudes of mind; the breaking down of traditional barriers and building up a spirit of co-operation. To this effect the European Ceramic Association was formed in 1948, and although its fields of operation have so far been very limited, it has made some progress and expanded its membership and scope.

The sort of developments that we can expect in the future are prefabrication and greater standardization and in this countries like France and Sweden have advanced further than Britain. Building systems such as the Camus and the Coignet in France have overcome many of the problems of utilizing tiling in complex domestic units and the Allbetong system in Sweden has overcome the problems of precasting lavatory/bathroom/kitchen units. In Britain we are greatly handicapped by more stringent building standards, but I am sure that this could be overcome with specialized research. We have achieved some component industrialization with co-operation between the Federation of Clay Industries and the RIBA, but this does not seem to have made a very great impact on the architectural world. The interest seems to be for modular systems, but without a far greater degree of national or international co-operation throughout a very wide range of industries and professional bodies this does not seem a practicable proposition for bricks and tiles. There is a need for specialized finishes in keeping with present day architectural trends; this demands a continual stream of new ideas and treatments of existing materials. An increase in 'tile consciousness' is needed in our own home market, where the possibilities are only just

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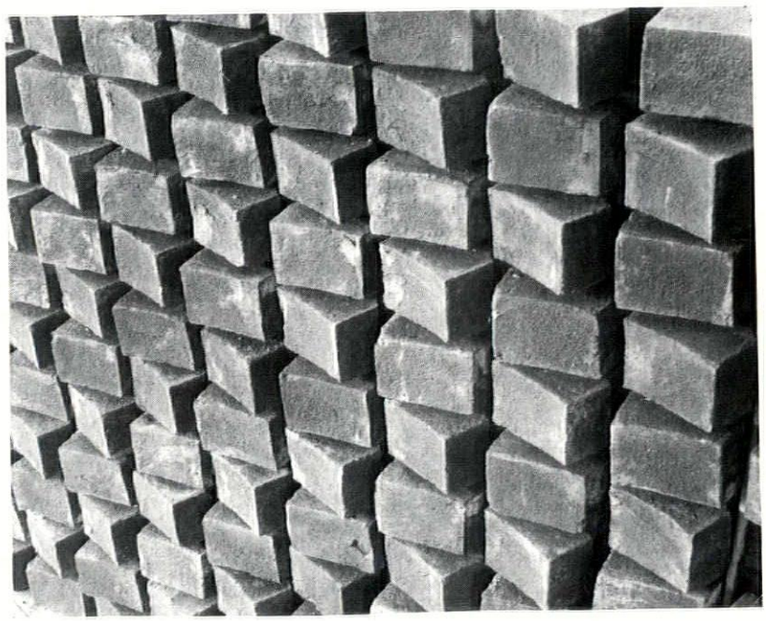

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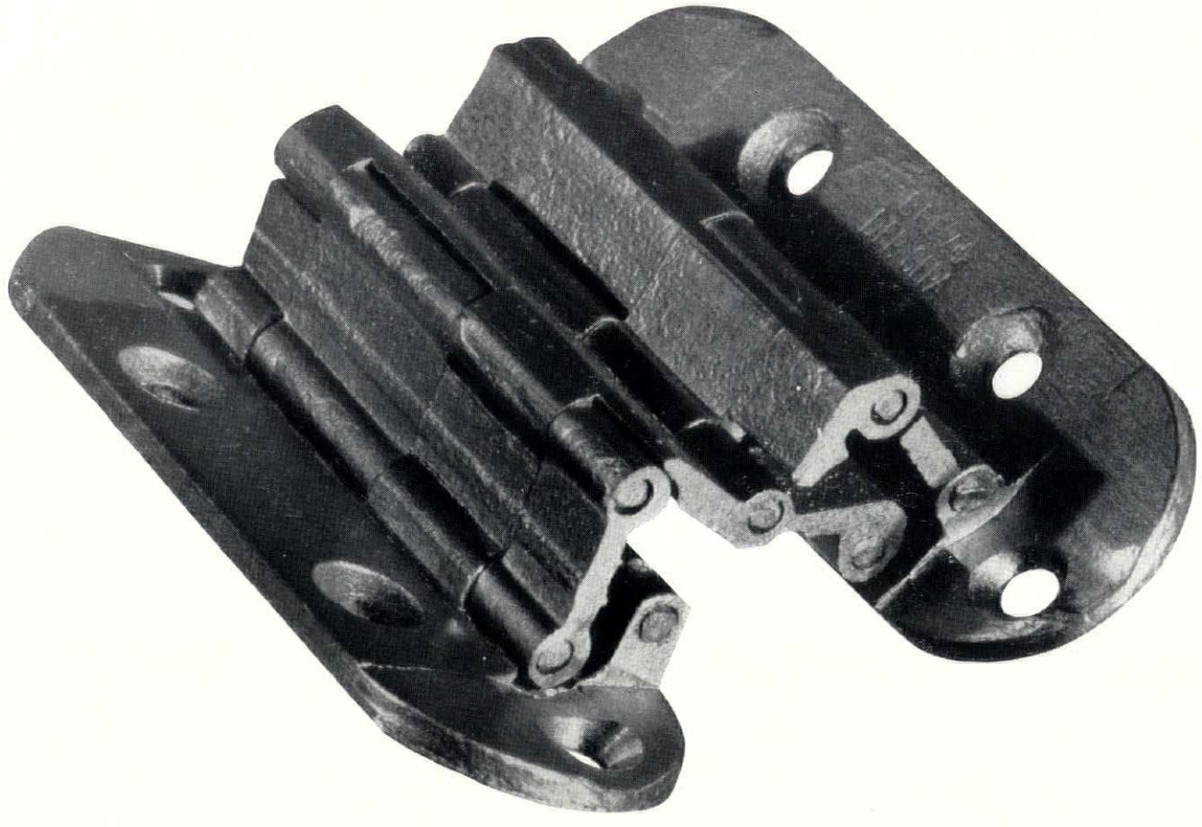
17, *Gt. Britain. One pattern from a range of acoustic brickwork designed by Hans Coper for Maidenhead Brick & Tile Co. This is one of the few imaginative uses of the material available.*



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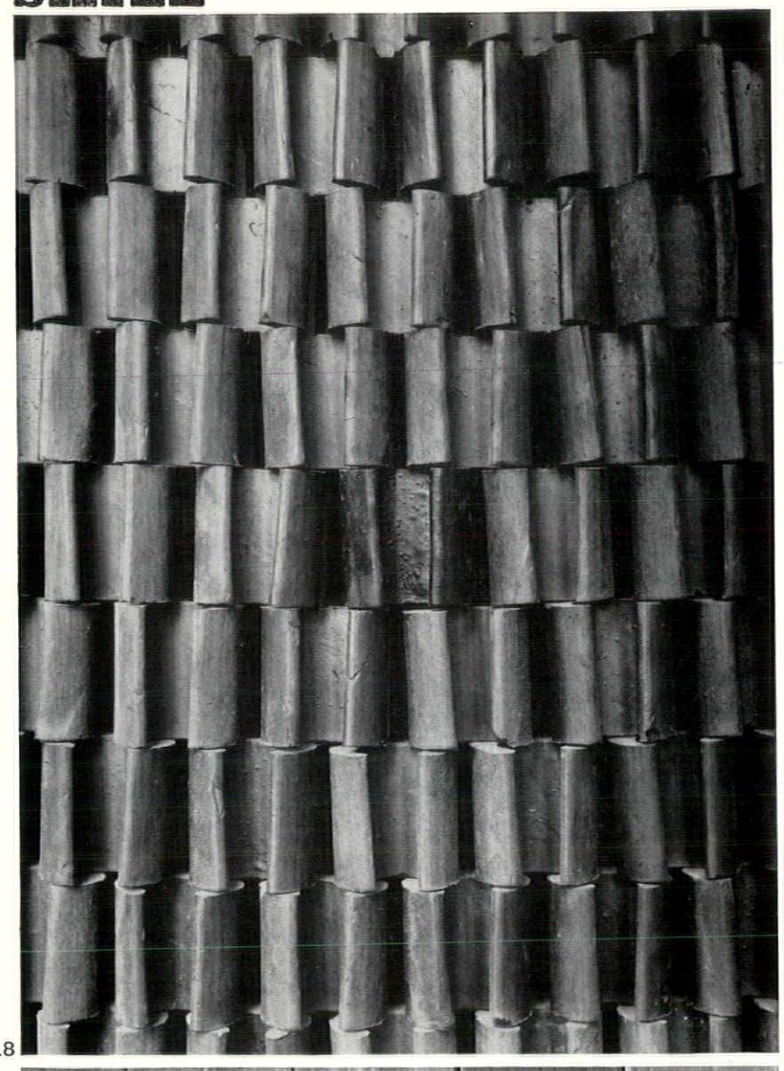

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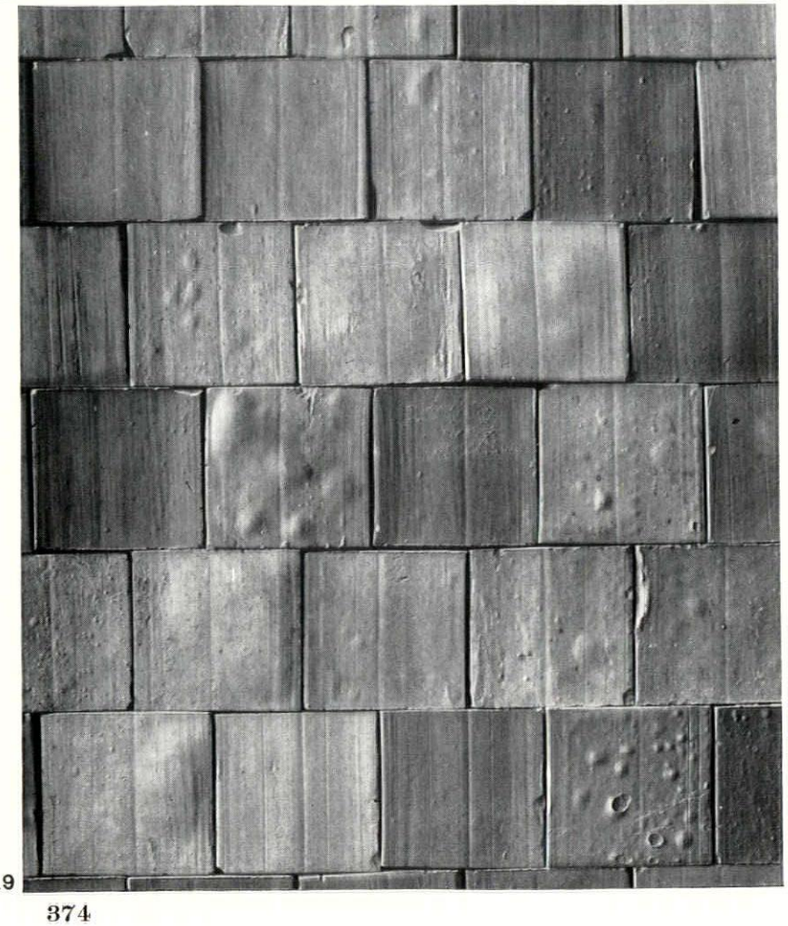

19

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beginning to be exploited in a modern idiom. On the Continent a wide range of new facing surfaces could be produced with the advent of English slip brick tiles that would be cheap to transport. At present the uses are reversed—the richnesses of facing bricks are widely used in Britain, whilst tiling is used as a matter of course in Europe. We can expect an increase in the use of structural clay blocks, not as an alternative to concrete as in Italy, but in a combined form to produce lightweight prefabricated wall units with decorative facing. Nevertheless the ex-

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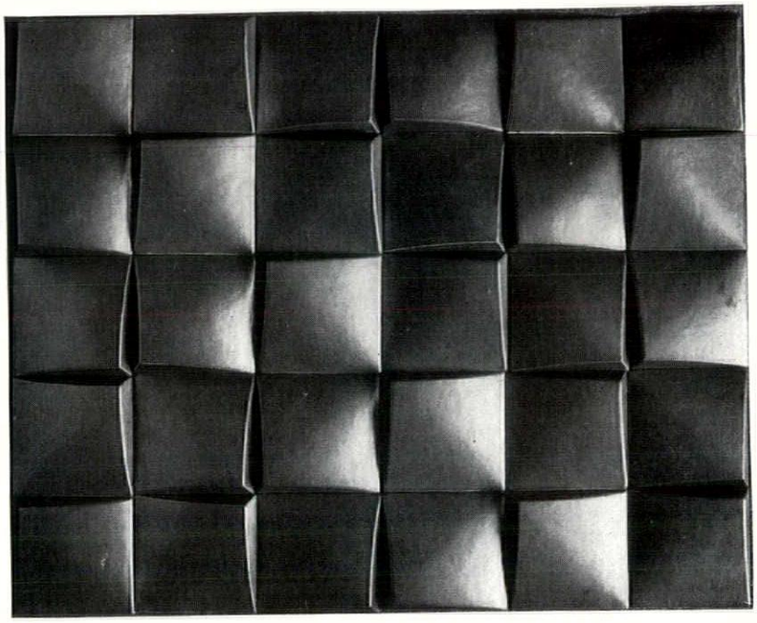

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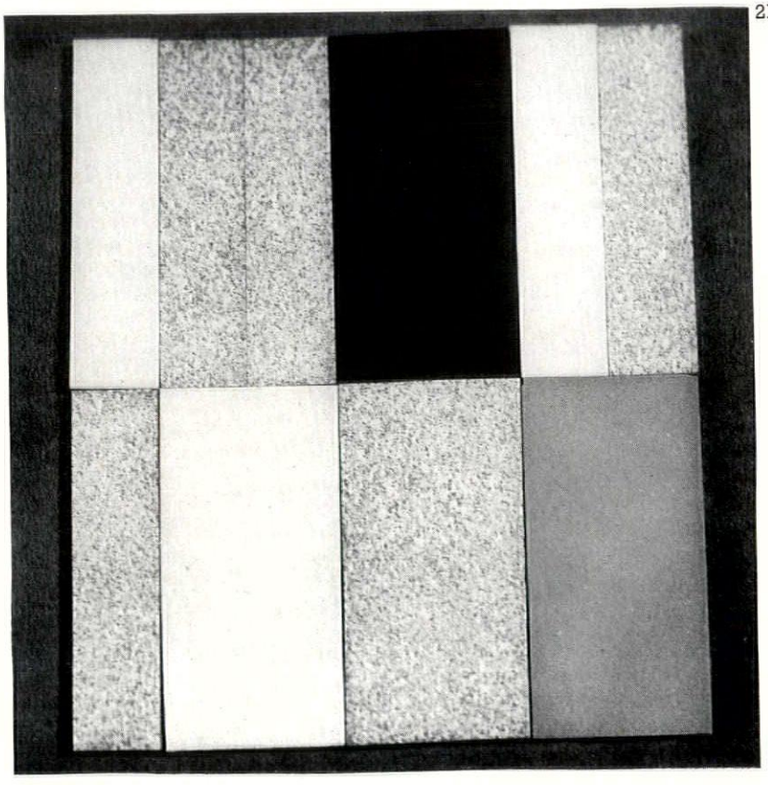
18, 19, *Gt. Britain. Textural wall surfaces in the Hilton Hotel, London, designed by Ceramic Consultants Ltd. in conjunction with Timothy Rendle in association with Sir Hugh Casson, Neville Conder & Partners. Manufactured by Hathernware.* 18, *the small horseshoe shaped units were designed with an acoustics consultant to be as sound absorbent as possible in the Roof Restaurant with a band playing in front of the wall. They are fixed from floor to ceiling on a continuous curving wall all round the core of the building—even across doors, so that weights were also a critical factor.* 19, *these small flat clay units 2 in. by 2½ in. are all slightly varying shades of brown and terracotta and no attempt has been made to refine the natural clay qualities.*

20, *Gt. Britain. A faience tile designed by Hans Coper for SGB, Dudley. This is one of a new range of motif tiles that this company are producing, giving a very rich surface.*

21, *Sweden. Floor tiles that are now being imported by Swedecon from Ifö. They have great quality both technically and aesthetically for what must be a standard product. The tiles are extremely tough and hard-wearing and provide a fine non-slip surface.*



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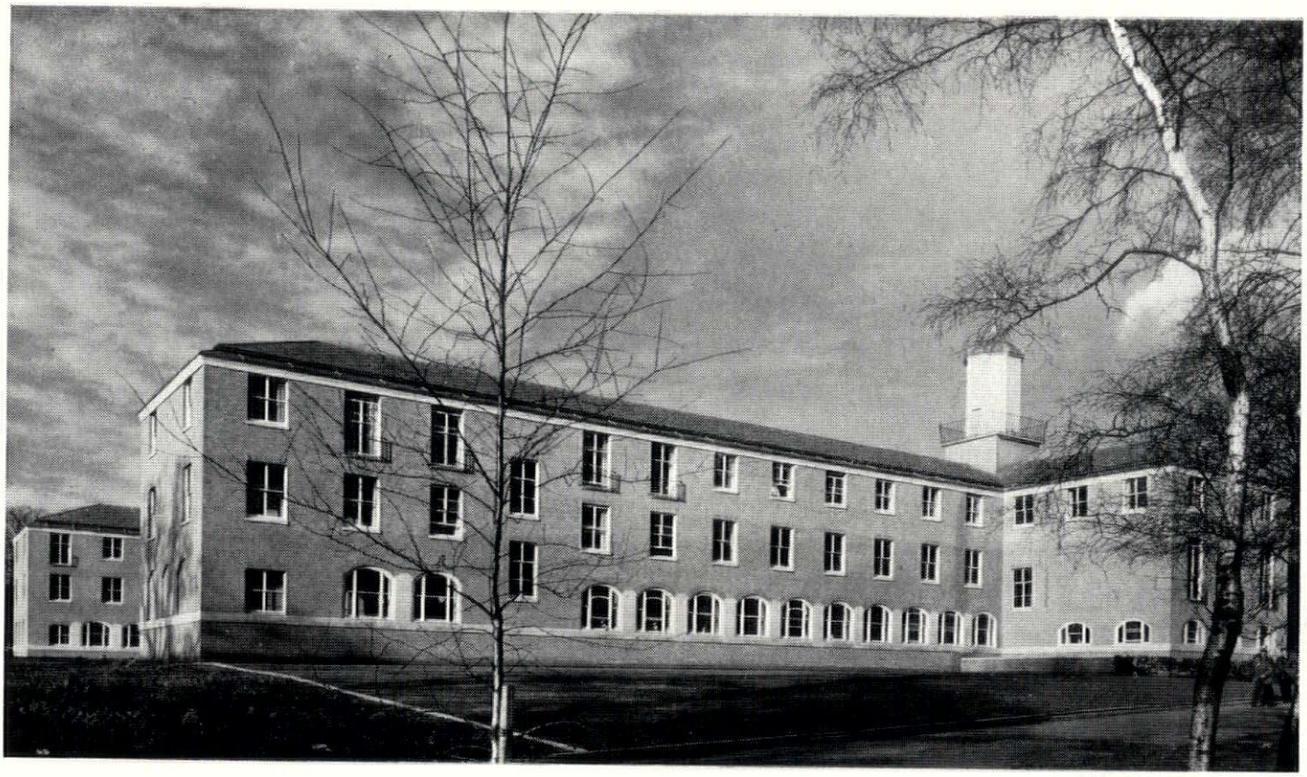

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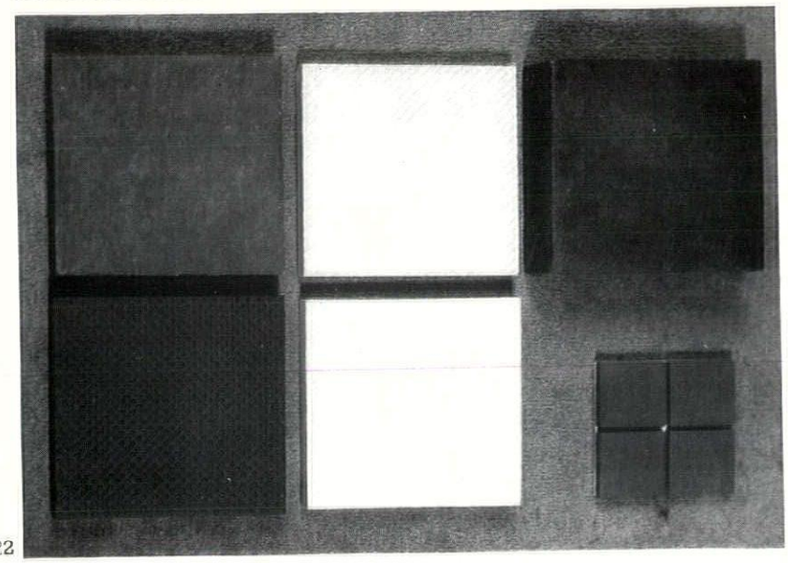

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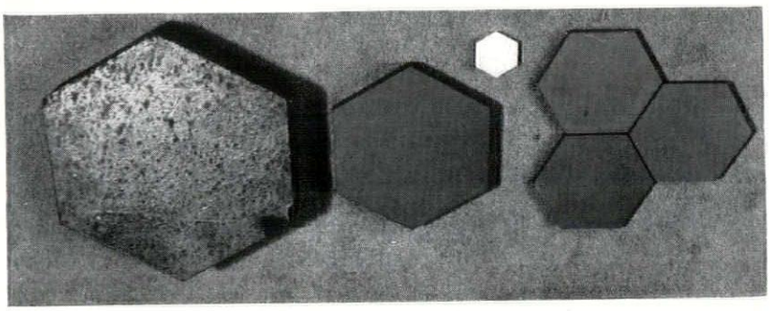

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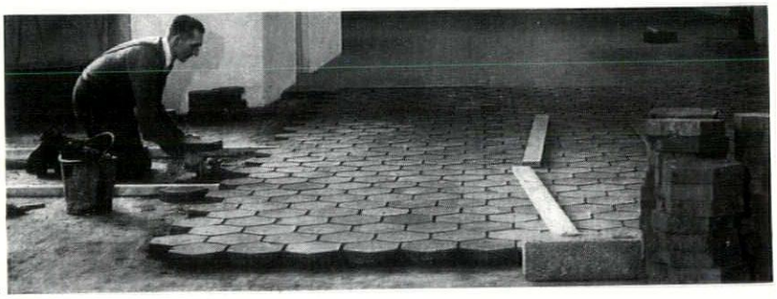

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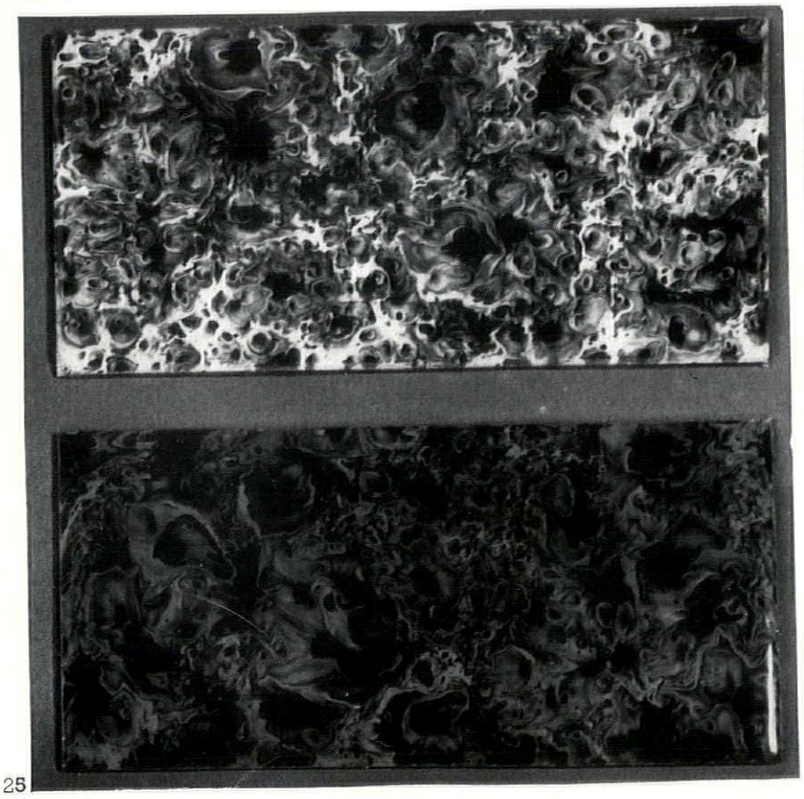

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perience gained by the countries of southern Europe in prestressing clay beams should provide invaluable experience. Interior wall-tiling manufacturing methods are likely to alter so radically that prices may be drastically cut. Tiles may then be applied to many schemes where the high unit cost has previously outweighed the other great advantages.

To achieve the fullest exploitation of the possibilities—and it is a vast field for a ceramic design team to contemplate—there are still several factors that must change. The architectural world must be very much better educated in relation to Clay Products; this is a matter for public relations, the architect and the developer must be made to understand the versatility of ceramics, of the wide variety of finishes possible, of the high durability and low maintenance. The possibilities of calculated brickwork have not begun to be exploited in this country. Much more emphasis should be put on research. At present the British Ceramics Industry only spends approximately 0.16 per cent of its turnover on research projects, compared with a national average of 1.8 per cent and even greater figures

[continued on page 378

22, *Luxembourg, Gt. Britain, Sweden. A variety of flooring finishes available in blacks, browns and whites giving a textural effect.*

23, *France, Italy, Gt. Britain. Examples of Provencal tormettes, Italian mosaic and British hexagonal units.*

24, *Gt. Britain. Heavy Staffordshire pottery made by Henchwood Brick & Tile Co. and laid by the Coventry Tile Co. for the crypt of Coventry cathedral. An example of the high decorative value of the natural English clay materials when used imaginatively.*

25, *Italy. Examples of floor tiles with a coloured marble finish from Ceramica di Scandiano. These have a harder glaze than most Latin tiles for firing and should withstand domestic wear in this country.*

26, 27, 28, *France. Examples of the traditional tiling used in French domestic architecture for centuries. All the tiles are interlocking in repeat and produce some very rich textures. These are now being imported by Eaton Wholesale and Ceramic Consultants.*

29, *France. Tiles similar to the flooring interlocking shapes in brilliant reds, turquoises, greens and browns are now available for the first time in this country. They are not frost-resistant or craze-resistant, but would greatly enhance interiors.*

30, 31, *Austria. These massive stoves are a superb feature around which to build an interior. At present only occasional examples of these stoves are being imported by a few London interior decorators.*



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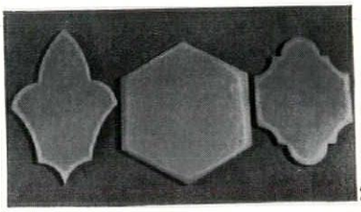

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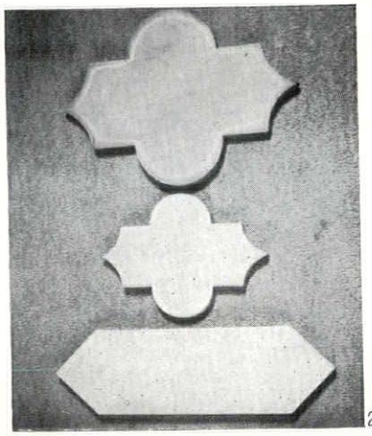

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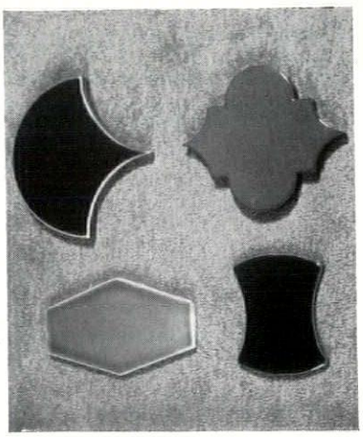

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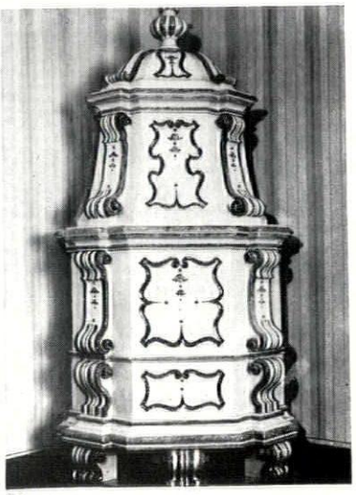

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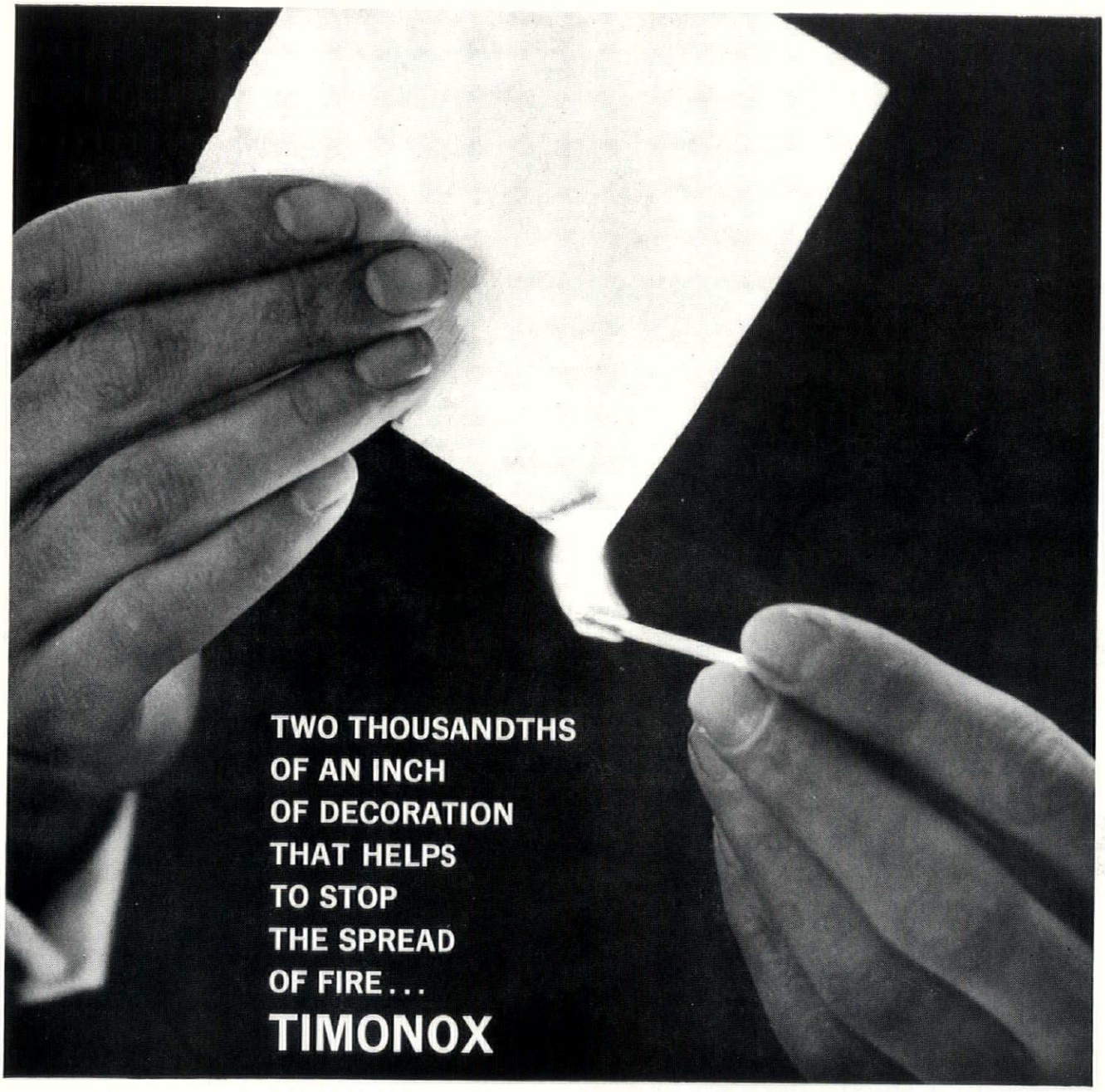

TIMONOX is a flame-retardant paint that has been officially tested at the Fire Research Station and their findings are set out in a leaflet that is available on request. But it is also a paint that anyone with an eye for sheer decorative quality would choose on that account alone.

This combination of flame-retardant and decorative qualities represents a major advance in paint technology. Timonox is at present made in two forms. As an emulsion paint in a wide variety of colours and as a pure white alkyd-resin enamel. In both forms it has quite exceptional opacity so that a high spreading rate is combined with excellent covering power. In both the finish is impeccable. It is an easy paint to use, drying without brush marks.

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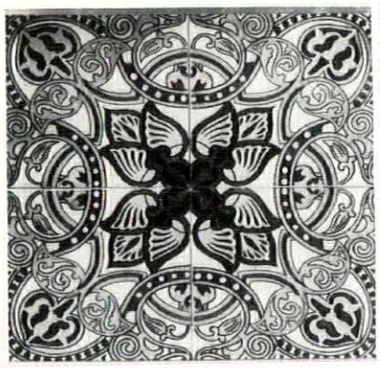

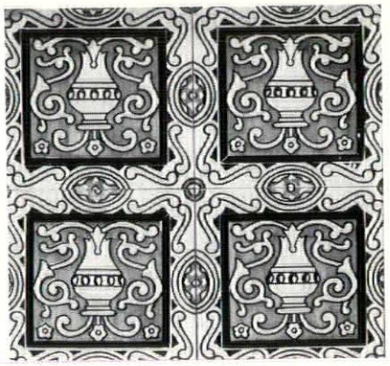

32
33

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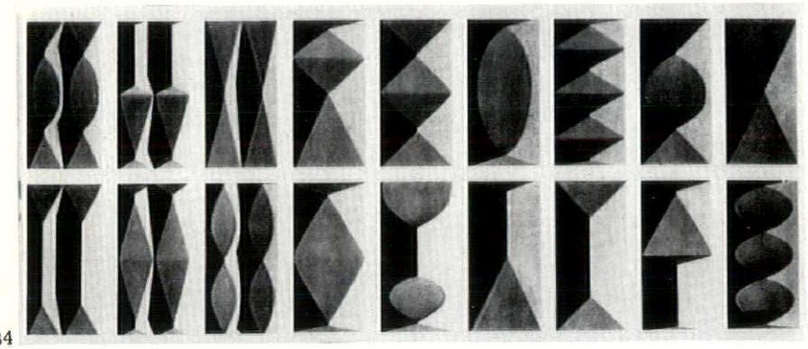
from competitive industries such as cement and concrete. It is not sufficient to catch up with competing materials, it is imperative to search out new advances, and these advances should come from within the clay industry. At present it is probably only the electronics industry that has really forged ahead with research into new fields and it would be a pity if further market potentialities were captured by other industries such as plastics.

Thus, we have an industry, both in Great Britain and in Europe, that has tremendous potential for the architect. The scope and uses of ceramic materials could be almost unlimited. The main problem to overcome is the breakdown of communication between what the architect/designer requires and what the manufacturer has always made; each must educate the other to his needs. I am sure that this change will soon come. In the next few years we shall see many new and exciting uses of ceramics from this collaboration and the clay industries will have added another chapter to their long history of service to building.



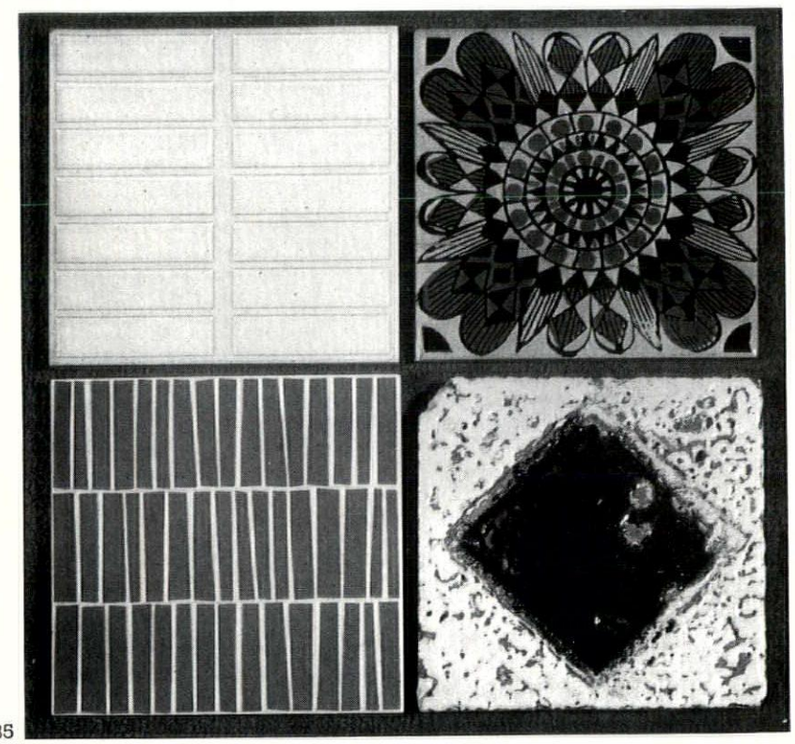
34

32, 33, Spain. Two examples of the hand-painted tiles now available from Casa Pupo of London and distributed by Ceramic Consultants. Once again these tiles, although not frost-proof, would add great richness to interiors.

34, Sweden. Feature faience tiles imported by Langleys with a very wide variety of deep relief geometric patterns.

35, top left: Gt. Britain. Motif tile 6 in. by 6 in. from Candy & Co., Devon; bottom left: Gt. Britain. Silk screen pattern from Carter Tiles Ltd., designed by Ivor Kamlish; top right: Sweden. Silk screen pattern from Upsala—Ekeby, imported by Swedecon; bottom right: Gt. Britain. Hand-made tile in rough white glaze and brilliant turquoise made and designed by Kenneth Clarke Pottery.

36, left: Gt. Britain. Three hand-painted tiles from Rye Pottery which have many of the qualities of hand production with some of the sophistication required for modern interiors; right: Spain. This balloon tile is one of a series of hand-painted tiles with characteristic peasant interpretation from Casa Pupo and Ceramic Consultants.



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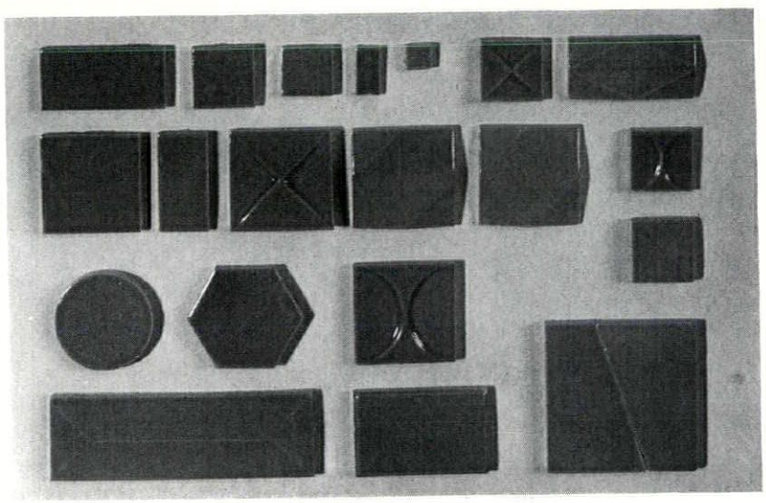

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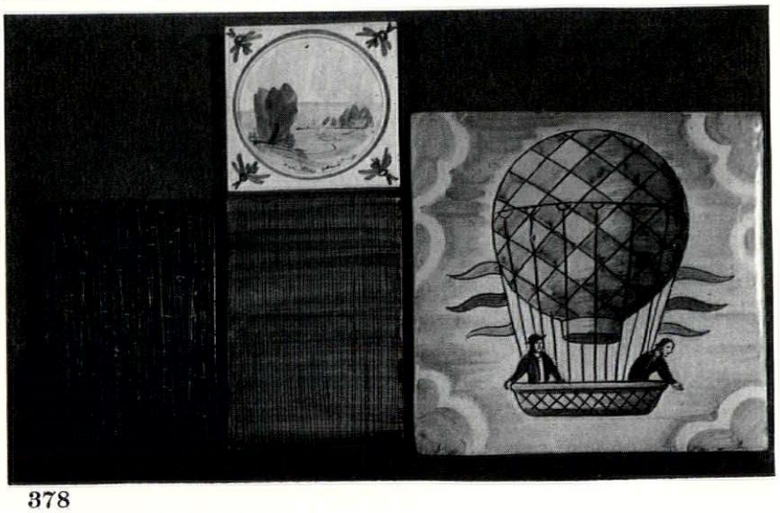

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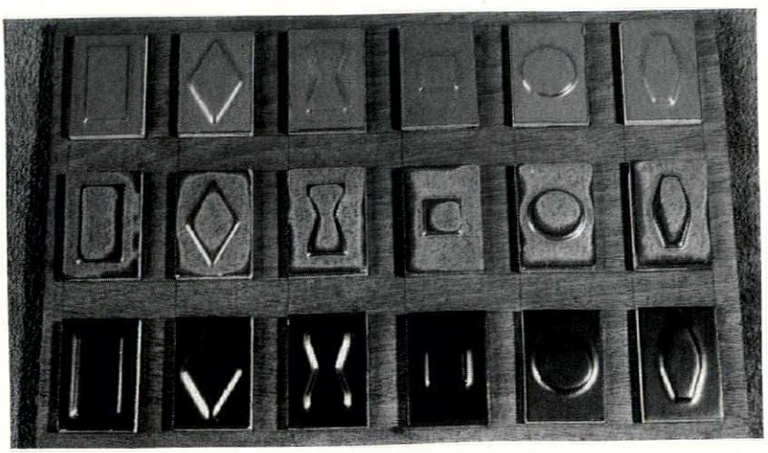

38

37, Italy. Examples from Ceramica Nova of some of the many motif tiles that this country provides. These examples are in a metallic black, green and bright red.
38, Italy. Shaped mosaics from Joo Gresite showing further shallow relief mosaics.



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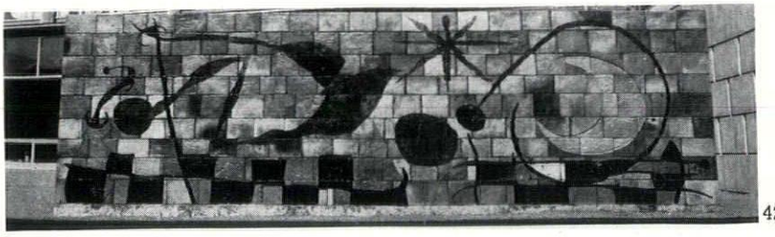

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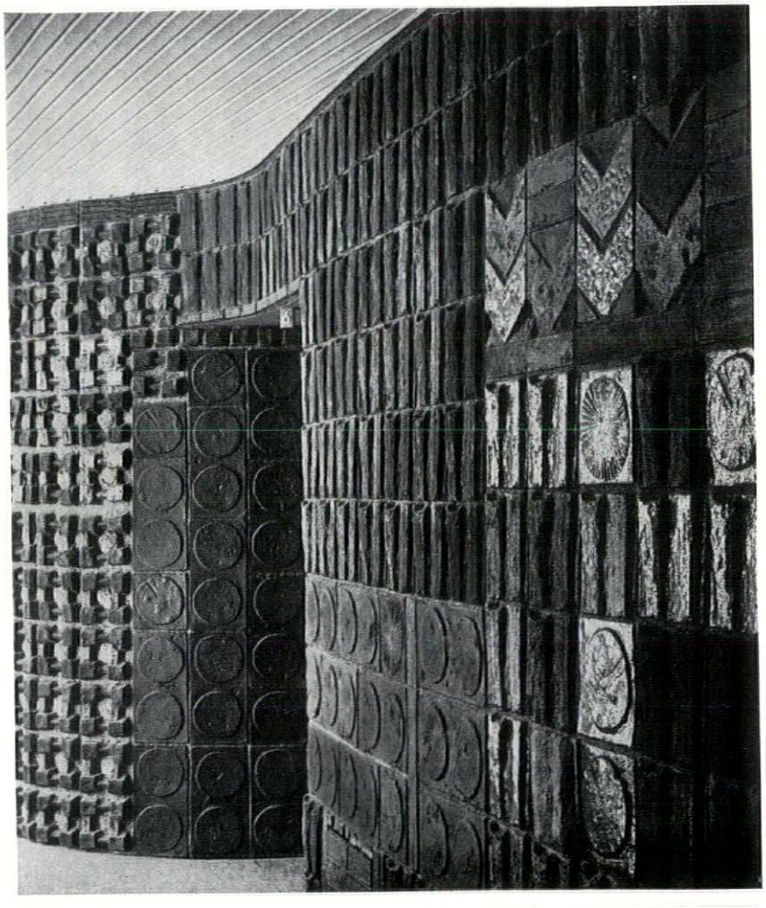

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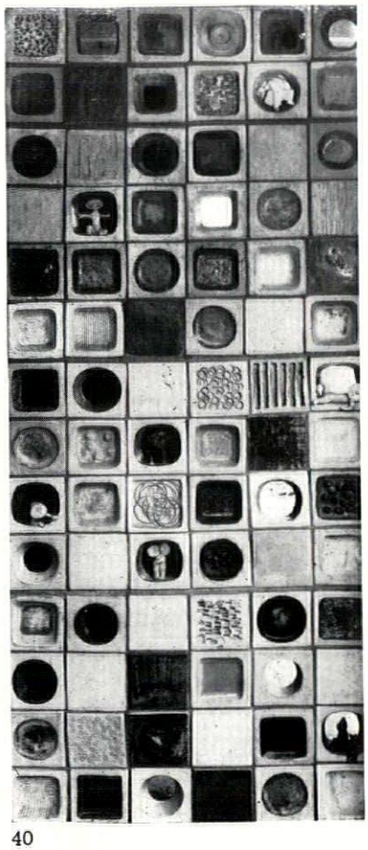
39, *Gt. Britain. An example of broken-tile mural designed by Antony Holloway—a type much used by the LCC. This gives the designer considerably more freedom than normal when using standard tiling as it avoids the obligation to work with the limits of the square module.*

40, *Gt. Britain. Pierced tile wall by Ruth Duckworth. 6 in. brick stoneware tiles both glazed and unglazed. Some of the tiles are pierced right through, others are in intaglio and a few are natural clay.*

41, *Gt. Britain. This small porcelain frieze by Wilfred Gibson has a wonderful European peasant character. Although expensive (£1 per tile) small quantities would enrich bathrooms or kitchens and make a feature of small areas. The artist is capable of a wide variety of themes for schools, houses or restaurants. No two tiles, even when of the same subject, have the same character.*

42, *Spain. Ceramic mural 'The Wall of the Moon' by Miro and Artigas. This panel on the Unesco headquarters in Paris has the exciting combination of natural coloured glazed clay tile with bright red, black and blue shapes superimposed. The possibilities of this type of treatment are considerable and overshadow the mural itself which is a little uncomfortable in its setting.*

43, 44, 45, *Sweden. Three mural techniques developed by Signe Persson-Melin and Anders Liljefors with Ifö. The possibilities here and abroad for the collaboration of forward-looking manufacturers and leading ceramic artists is considerable. If the argument that such work interferes with normal day-to-day production is put in perspective, the comparatively small quantity of such commission could well fit into any manufacturer's advertising and publicity budget.*



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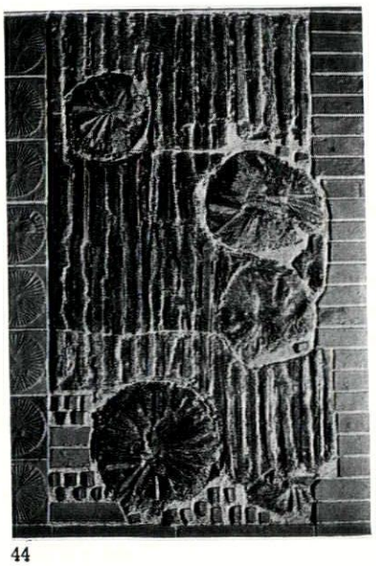

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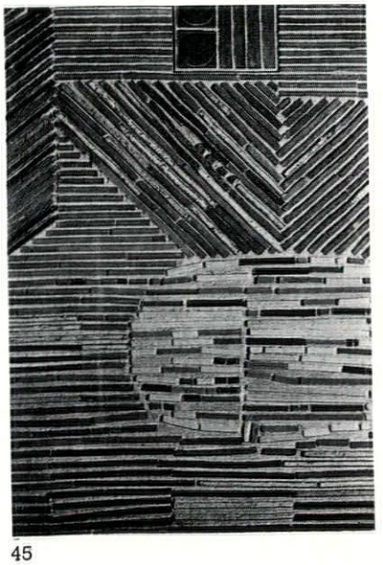

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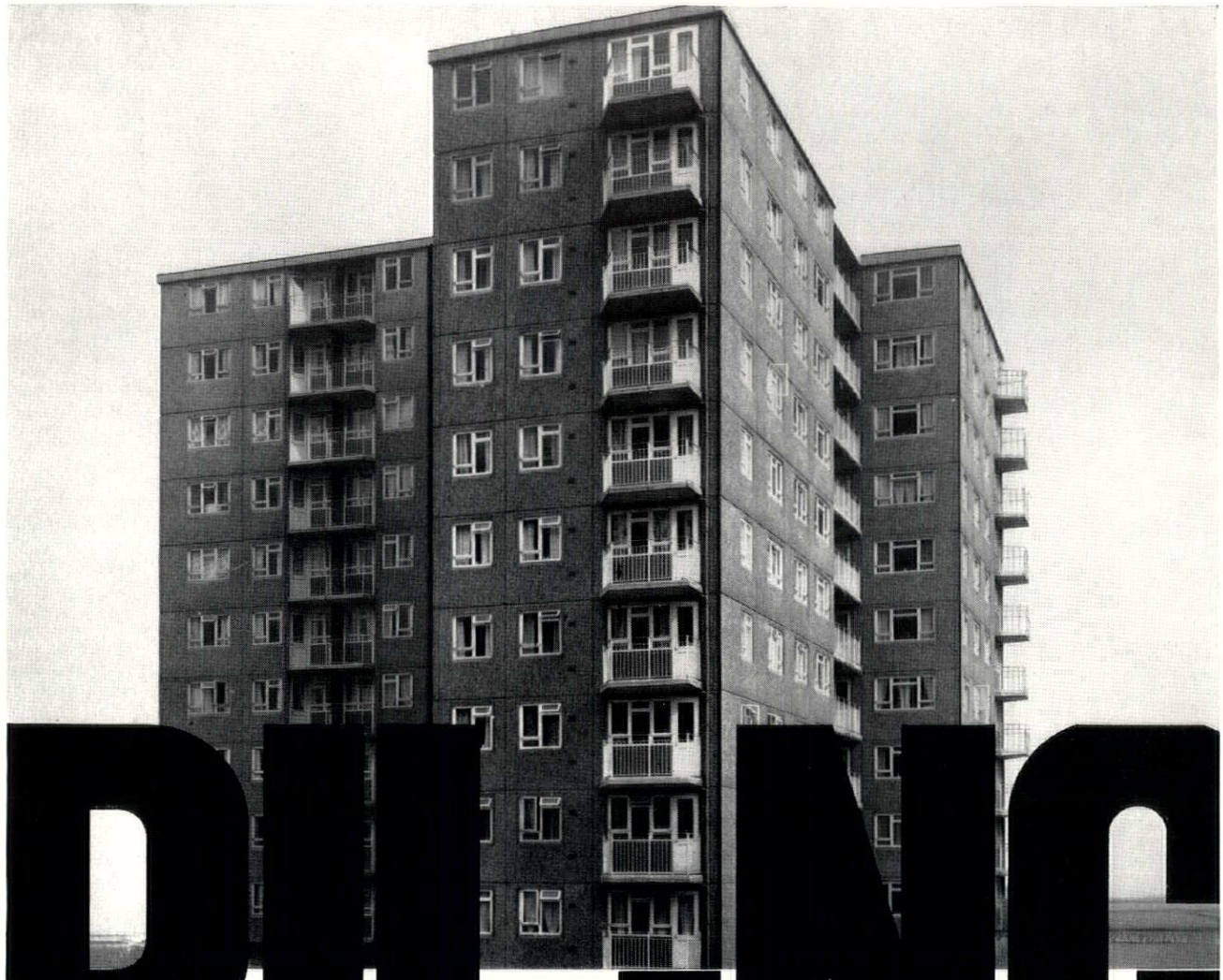

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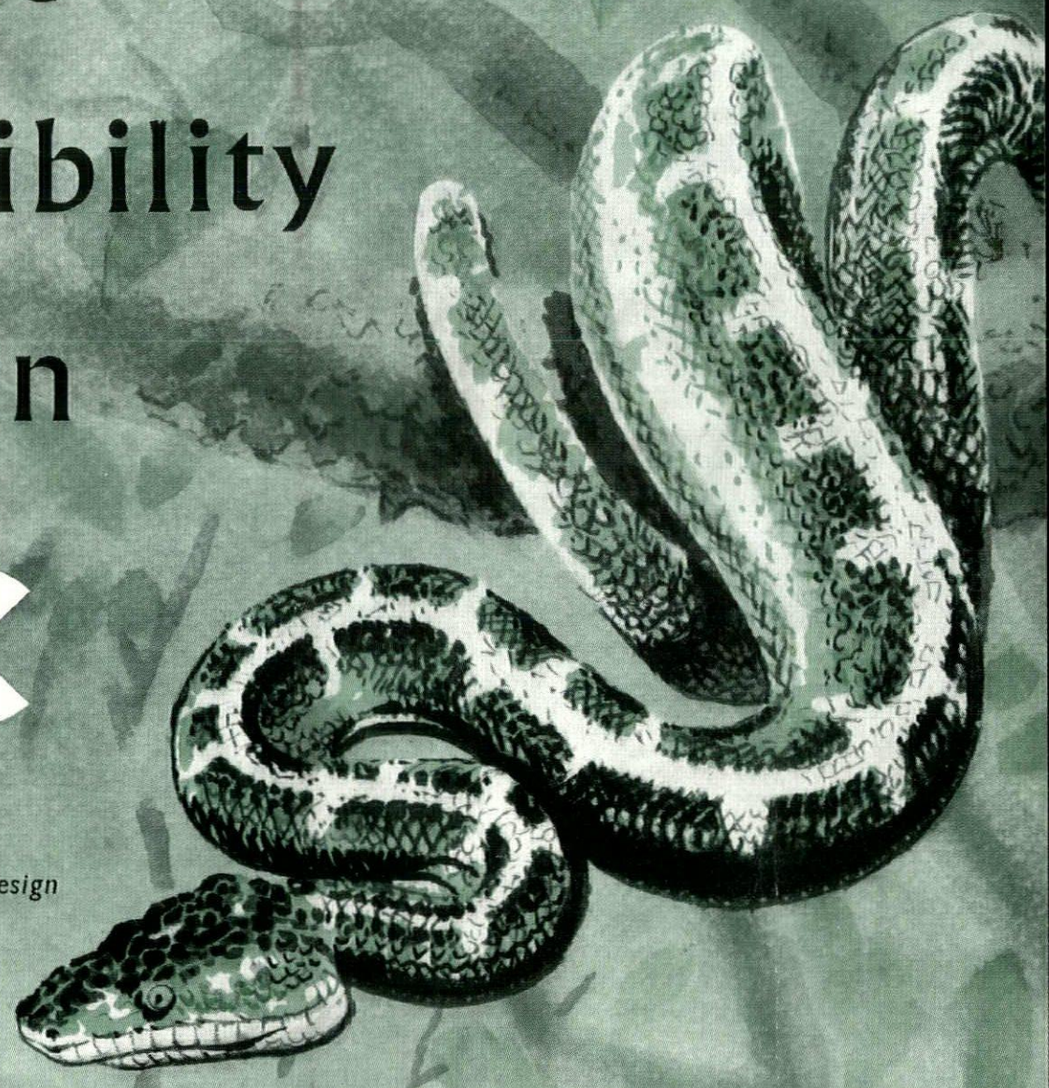

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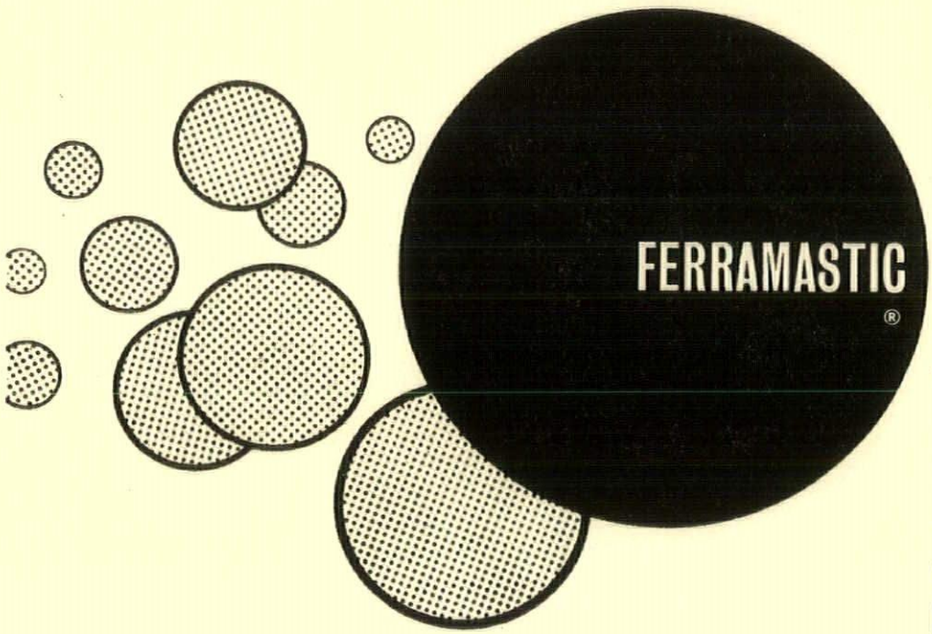

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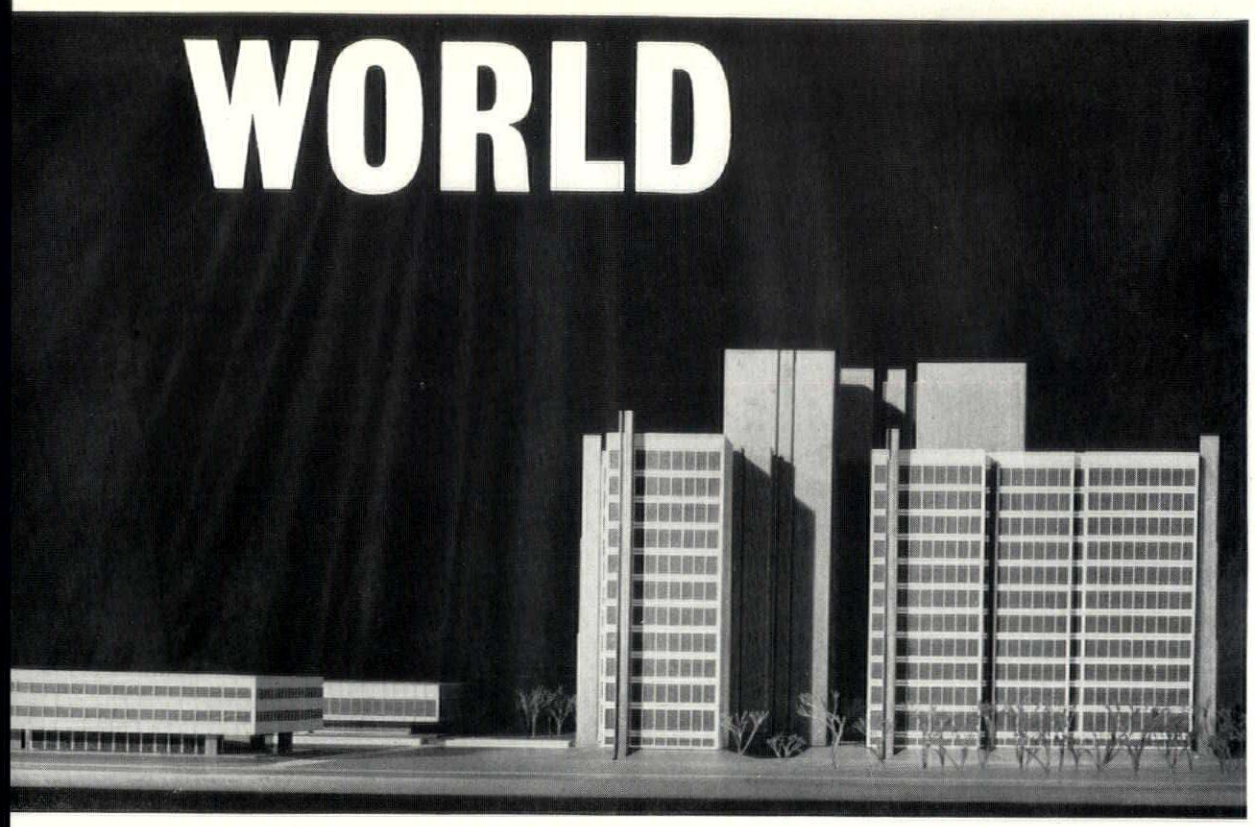
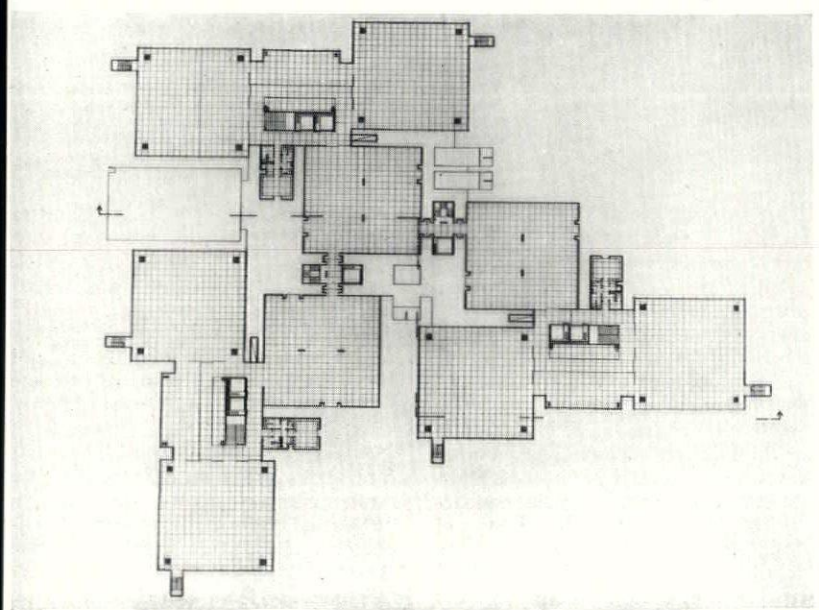


TOWERS OF PHARMACY

From Hungary comes an example of revisionist thinking that should be welcome anywhere in the Eastern or Western world—the first functional, as opposed to formalistic, reworking of the theme of Louis Kahn's Philadelphia laboratories. The projected pharmaceutical plant at Debrecen, designed by Zoltan Gulyas and Jeno Szendroi, 1, starts with the justification that its functions (unlike those of many imitators) are, at the least, analogous to those of the Richards labs, but then handles those functions in a manner that is richer, clearer and more subtle than Kahn's take-it-or-leave it breakdown into servant served spaces (a concept presumably anathematical to philosophically minded communist architects anyhow!) Examination of the plan, 2, shows a diverse hierarchy of usable volumes, grouped in three main clusters, each of which represents one phase of the building programme. In the centre of the plan are three storage towers (one to each building-phase) which are blank-walled, and linked by two vertical services and circulation units rising their full height. Attached to each storage tower is a double laboratory tower with a central space containing the main vertical circulation—this space has a different structure to its flanking laboratories and purists will doubtless complain that this fact is not expressed on the elevations—and attached to each laboratory complex are three 'servant spaces' (to use the bourgeois term) of sharply differing form, as may be seen in 3: two slim towers for escape stairs and one fat tower for toilets and ancillaries.

Although this scheme is open to the same objections as Kahn's on the score of difficulty of expansion—a



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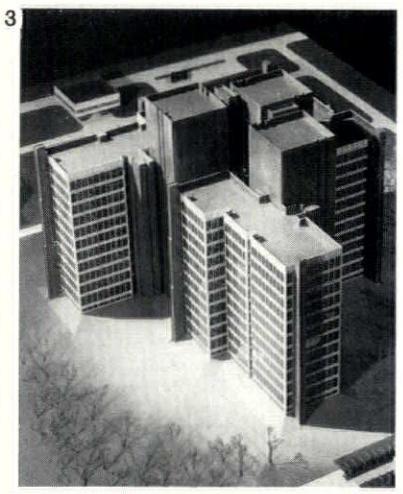

fourth phase exhausts the potentialities of this *parti* for extension—the clear discrimination of the forms of each tower or sub-tower according to the performance expected of it, should gratify all functionalists. As at Philadelphia, however, the choice of the tower form has its justifications in the nature of the site—in this case a green belt whose amenity values were to be nibbled away as little as possible—and also in the economic consideration of cutting mechanized horizontal circulation to a minimum. The lower, offlying blocks, 4, house canteen, reception and laboratory animals, and the service road for incoming semi-finished products and outgoing packaged goods runs under the storage-towers at pavement level.

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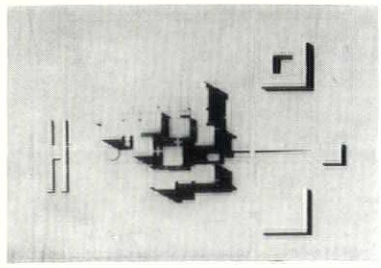
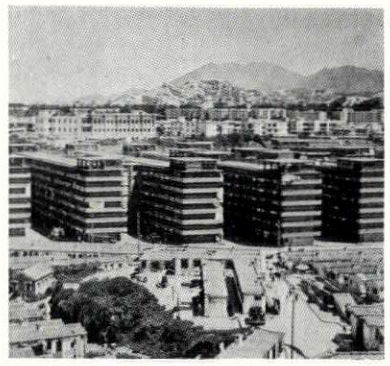


HONG KONG BUILDS

Mass housing under extreme pressure

Like West Berlin, Hong Kong is one of the free world's most exposed shop-windows of the Western concept of the democratic way of life, but Willy Brandt's problems are negligible compared with those facing the administration of Hong Kong. The influx of refugees and the natural increments of population brought on by trading and manufacture—the birthrate is equal to the population of two British new towns per annum—have created a demand for housing that would tax even a city that had the space to build houses, and Hong Kong has had to solve its problems by building minimal accommodation at a density that would make even Jane Jacobs pause—each H-plan block in 5 contains on an average 2,300



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persons and was built in about sixteen weeks. The bulk achievement compels attention and respect, when given simply in round figures: half a million persons rehoused in under nine years.

Naturally, not all this has been as well done as even coarse, let alone squeamish, social critics might desire but the recently published report *Building Homes for Hong Kong's Millions* shows that room and finance for shops, welfare organizations and schools was also found, and two community centres, such as that at Wong Tai Sin, 6, have been built from World Refugee Year funds—com-

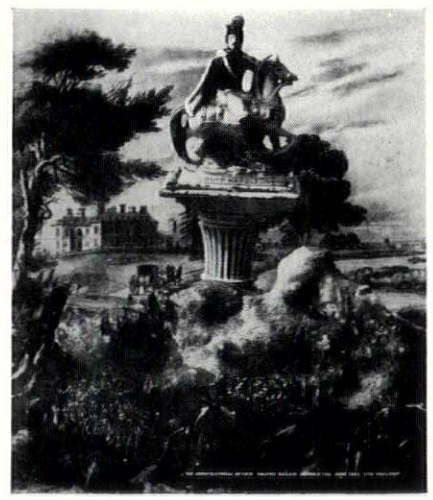


6

munal relationships follow specialized patterns among a Chinese population and pose additional problems. What is fantastic is that any architectural sense has survived these unprecedented pressures, and that the architects of the PWD and the Hong Kong Housing

ACKNOWLEDGMENTS

COVER: Ivy de Wolfe. WORLD, pages 381–384: 1–4, Küldemény; 8–12, *Architectural Forum*; 13–17, *Domus*; 22–26, *Bauwelt*. VIEWS AND REVIEWS, pages 385–387: 2, Annan. FRONTISPIECE, page 388: Jack Zehrt. STAG BREWERY SITE, LONDON, pages 392–399: 1–12, Galwey Arphot; 13, Aerofilms. POELZIG, pages 400–405: 4, 5, 9, 10, Albert Vennemann. PLANETARIUM, ST. LOUIS, USA, pages 406–409: 1, Jack Zehrt; 2, Art Fillmore; 3–6, George Harris. IRONBRIDGE, page 410: Browne Arphot. INTERIOR DESIGN, pages 415–420: 1–8, 10, 11, Galwey Arphot; 9, John Maltby; 12–16, Robert J. Anderson. THE SCULPTURAL SCREEN, page 424: Susan McCartney. LOOK OUT, pages 425-426: 1, 5-12, 14, 15, Nairn Arphot; 4, Toomey Arphot; 13, RIBA. EXPLORING EYE, pages 427–429: Eric de Maré. FLATS AND HOUSES, OAK HILL PARK, HAMPSTEAD, pages 430-434: 1, Henk Snoek; 2–5, 7–9, Galwey Arphot; 6, Vogue Studios. MISCELLANY, pages 437–446: Exhibitions, 7, 8, Robert David; History, 1, Kenneth Ross; 2–7, David Moore; Shrubs, 2, Lawrence E. Perkins; 3, 4, J. E. Downward; Popular Art, Nairn Arphot. THE INDUSTRY, pages 452–454: 5, Freddie Squires.



This month's cover *shows in suitably baroque terms, a classic English Staffordshire pottery figure against the background of an eighteenth-century print of Stapleford Park — a juxtaposition which is explained in a note on page 385*

THE ARCHITECTURAL REVIEW

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

VOLUME 133 NUMBER 796
JUNE 1963

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. Subscribers may have their copies bound in half-yearly volumes at the price of 27s. 6d. Postage 2s. 9d. extra on the completed volume.*

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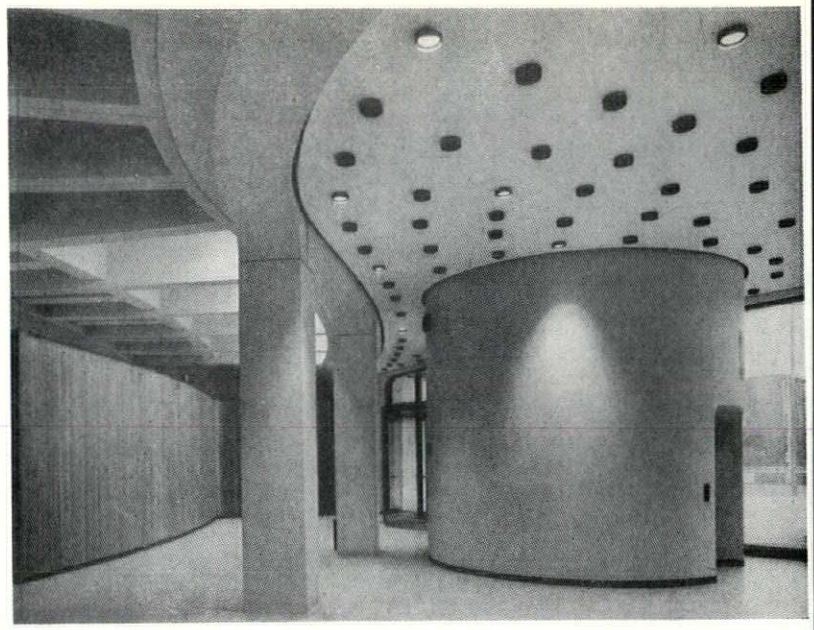
HONG KONG

7



Authority have come through without mass nervous breakdowns. Yet many visitors to the city commented that the resettlement blocks, for all their population density, managed to look quite convincing buildings in their stark functional simplicity, and wonder if the attempt to 'add more architecture' seen in recent works such as 7 is not effort misapplied—all that the report has to offer in justification of the revised treatment is that it gives 'a more pleasing appearance,' but this surely is neither the time nor the place for cosmetic styling. One can forgive much in the light of what has been achieved, but it is hard to accept anything that smacks of deviation from the fundamental problems of accommodation facing the Colony.



SERPENTINE HQ

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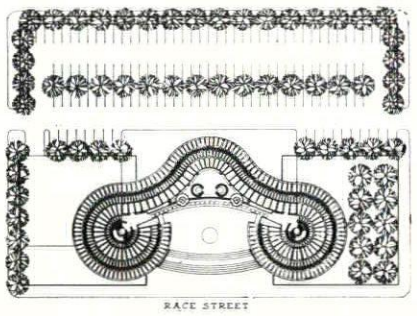

Having implied criticism of the seriousness of its planning (AR, June 1962) *World* owes it to the architect Robert Geddes to illustrate how his new Police HQ for Philadelphia has turned out in finished fact. The multi-curved plan, 8, tends to reveal itself elevationally as isolated drums, 10, and it is only frontally that the almost baroque complexity of the curvature registers fully. Internally, the serpentining of the spaces seems more worrying and more irrational, 9, than the irregular and non-rectangular planning wedges that result from radial partitioning—though any resulting sense of disorientation wears off, it seems, as the *parti* of the plan becomes understood. However, it is generally admitted, and *Architectural Forum's* fine photographs (February 1963) underline the fact, that it is in close views of the exterior, 12, that the building really packs punch. August Kommendant's structure, with its *portée* of twelve unsupported feet from the columns to the precast facade is a masterpiece not only of statics but also of prefabrication, 11, that deserves the closest inspection.



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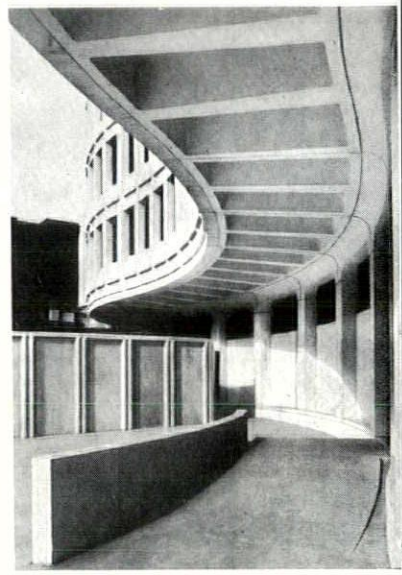

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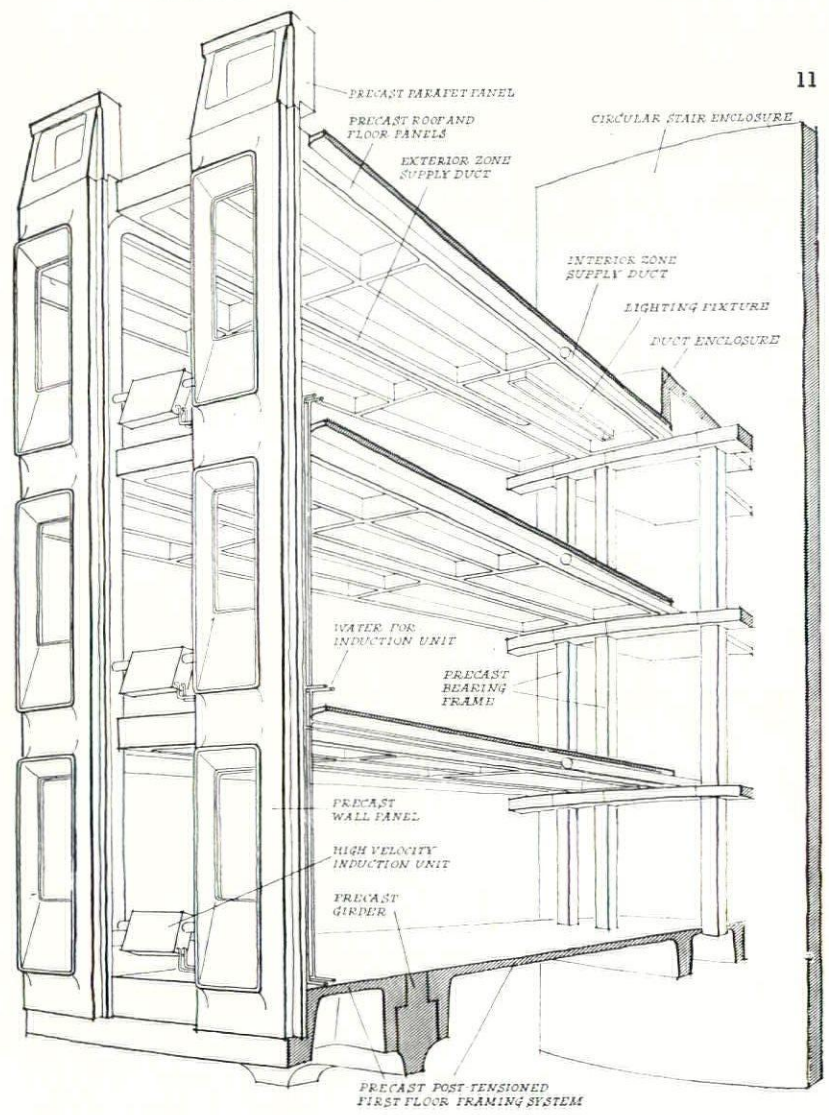

domus x 400

thirty-five years of modern Italian architecture

A landmark in the history of architectural journalism that all architectural journals will welcome is the 400th issue of *Domus*. Started in 1928, this prime organ of *gusto Milanese* has always been one of the pace-makers of the rise of Italian modern design, and has at times been well out in front of world design as well. In the early nineteen-fifties its dominance among world architectural journals was almost beyond dispute and not to have seen the current issue was to be disastrously out of touch with the designs and designers that 'people were talking about.' The subsequent diversions and excursions of Milanese design and the declining prestige of Italian modernism have not left *Domus* untouched, but under Gio Ponti's shrewd direction it has survived these storms, and is currently overhauling its image.

The basic contents remain as they ever were—striking buildings and interiors whose selection reveals the dominant tastes and interests of Ponti, lavishly illustrated, with a quantity of artfully composed colour-blocks that any other magazine might envy. The star building of issue 400 (March, 1963) is undoubtedly Enrico Castiglioni's school at Gorla Minore, on the Olona. A straightforward two-over-three-storey plan with classrooms on

one side of a corridor, and ancillaries on the other, 14, it shows Castiglioni's unpredictably original hand in the

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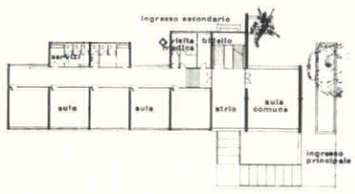
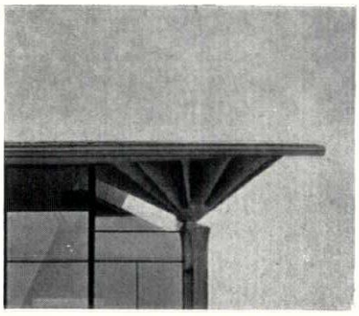


management of the structure's slim concrete columns and branching roof-structure, 15, and the panelling out of

15



the facade, 16. At the end of the block where the two halls are located, however, the walling becomes almost completely glazed, 13, with extremely slender glazing bars.

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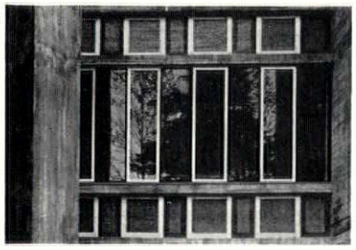

But *Domus* has always had wider interests than this: issue 400 also illustrates the incomplete frame of Nervi's bus-station in New York, 17, and

17



reports on the LCC scheme for its raft-villages at Erith, Kent. Industrial design is as well represented as ever, but it is in the fine arts that the revised image of *Domus* has been most clear of late. This has always been a major editorial interest, of course, but recent numbers have carried unusually full articles by Pierre Restany and the inimitable Ettore Sottsass on such subjects as the junk-realists and the New American Dreamers in the US, and Joseph Rykwert on the recent Kitaj exhibition in London. Not only are the subjects of these articles a good way off the narrow path of *bella pittura* (Campigli, Rosai, and so forth) previously trodden by *Domus*, but the extent and depth of critical discussion accompanying the illustrations is new —and welcome.

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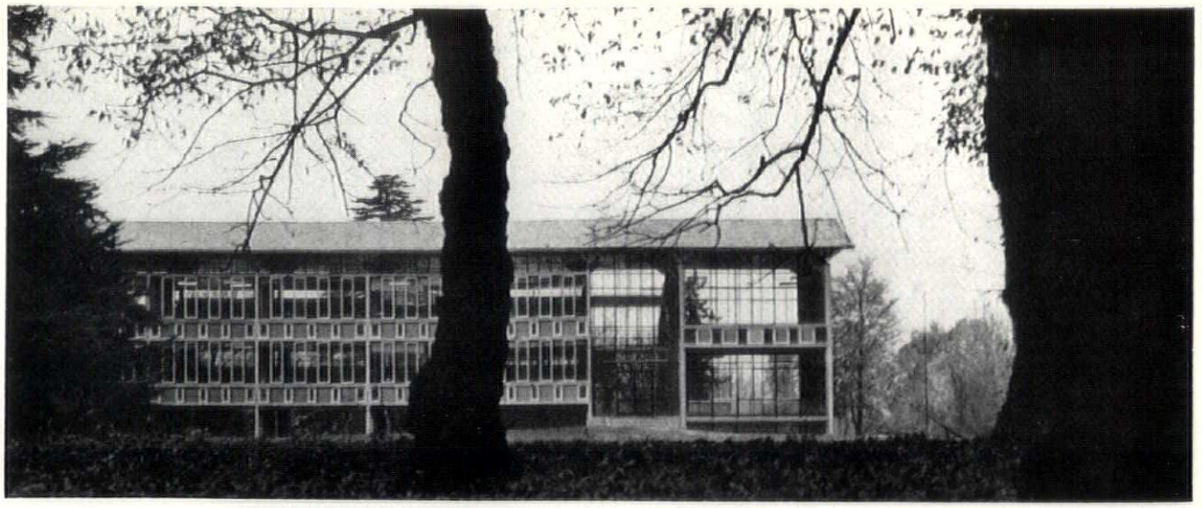

CITE PAQUEBOT

Family life under Sahara conditions

The French, it is said, have the Sahara the way other countries have outer space. Certainly it seems that the desert has replaced deep pot-holes and the bottom of the sea as the most-favoured unfavourable environment for French research and study—no doubt because it contains oil and usable proving grounds for nuclear arms. A great part of the available building-research talent in France is currently bent to the problem of making the desert habitable, and a typical recent *cahier* from the Centre Scientifique et Technique du Bâtiment, entitled *Comment Construire au Sahara*, manages to cram a vast amount of quantifiable and graphical information on the subject into barely eighty pages, including a sample bibliography of quite fantastic range, from Groff Conklin and Hashimshoni, to Cloudesley-Thompson to the Olgyays.

Among all this useful material one distinguishes the echoes of a strange intention, the French equivalent of 'We have to make astronautics safe for Aunt Martha.' It seems that the Sahara is not to be simply a land fit only for heroes, demobbed *Paras* and deserters from the Legion to live in, but 'les vrais problèmes sont posés par l'habitat familial permanent au Sahara.' Without pausing to consider whether or not this concept is politically probable, chapter IV plunges into the techniques and design methodology required to make it possible for European families to reside permanently in comfort in the desert. The exhaustive examination of conditioned and non-conditioned alternatives in single units and multiple dwellings need not detain us here—it is the pay-off that strikes the mind and eye and recalls the fantasies of science-fiction.

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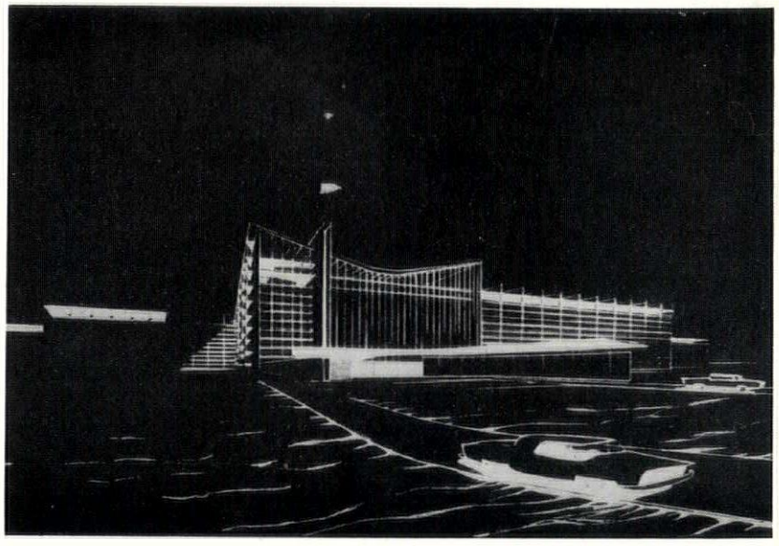
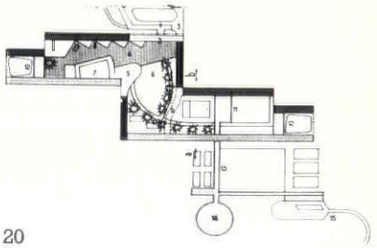




19

The *cité paquebot* project, 18, is for a complete conditioned town, intended to make it possible to 'accomplir a peu pres tous les actes de la vie sans s'exposer au climat.' The paquebot comparison is made because all reasonable social and mechanical facilities are 'on board' as on an ocean liner, 19, but the comparison that springs to Anglo-Saxon minds is surely Moon-Dome One, or some similar pressurized haven to which wandering space-men return in search of an opportunity to 'get out of this stinking suit and relax.' The plan, 20, of the cité-



20

SAHARA

paquebot, with the irregular outlines of its far from minimal envelope, suggests how much less hostile than the dome-enforcing conditions of space are those of even the worst desert, but this very irregularity in some ways illustrates one of the other problems thrown up by this total-conditioning proposition. For a varying number of months, according to latitude and local causes, the desert climate is not intolerably hostile—sun and tempered heat are very attractive to Europeans—and for these periods a degree of outward exposure for the dwellings is psychologically and physiologically desirable. To this end, it is proposed that most of the dwellings should have a literal 'winter-garden' exposed at the outer end of the plan,

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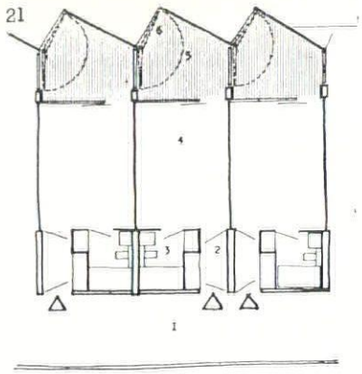
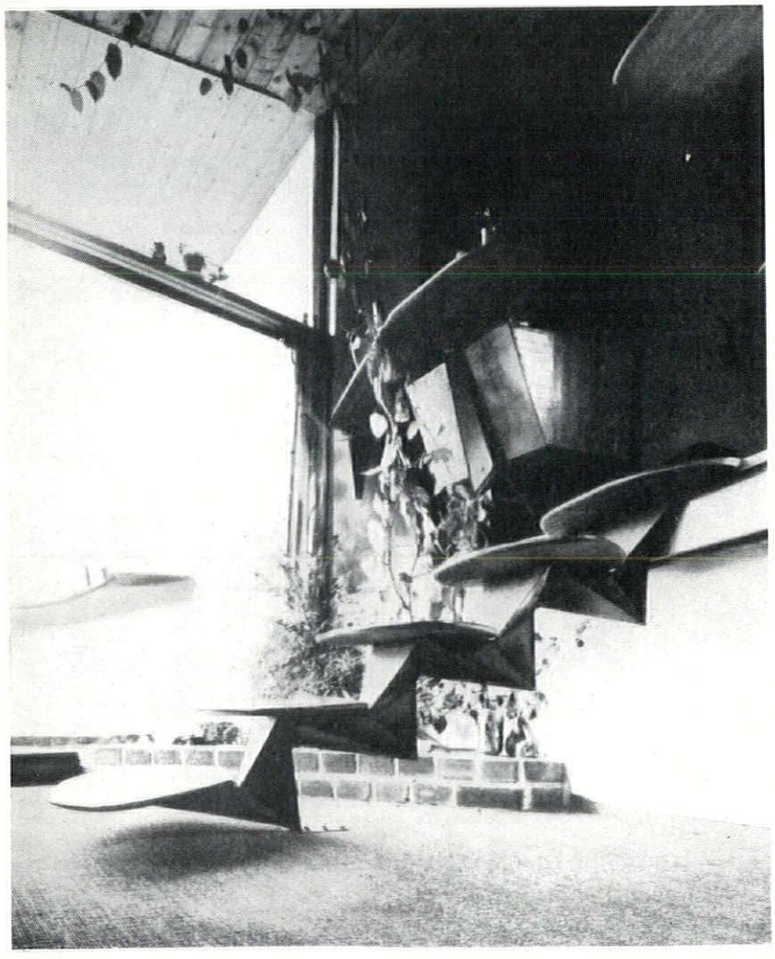


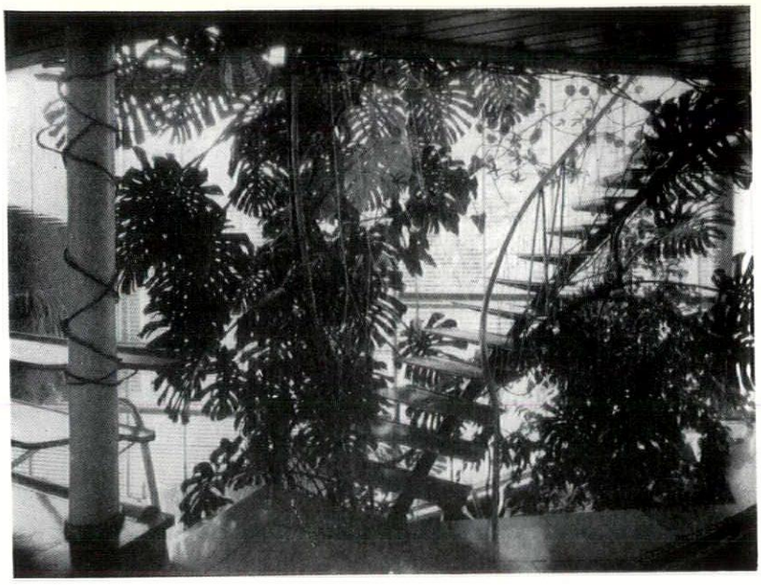
21, for use in the months of tolerable weather, but that this could be closed off by a substantial folding screen as a heat barrier during the Saharan summer.

THE THIN BENT STAIR

In spite of Jean Prouvé, the structural manipulation of metal sheet in light gauges for architectural purposes has languished. The reasons are clear enough—the resultant arrises and radiuses are rarely fat enough to satisfy architectural sensibilities, the ability to think straight about stressed skin structures is a prerequisite (but very rare among architects still brought up on mass-vaulting and pin-jointed frames) and the tolerances required in manufacture are a shade too fine to be considered in normal building practice. Even so, it is surprising not to find more rebels fighting against the tide. Two who recently came to light (Bauwelt, 45, 1962), are Heinz Schudnagies, responsible for the short stair in 22, and Chen Kuen Lee, designer

22





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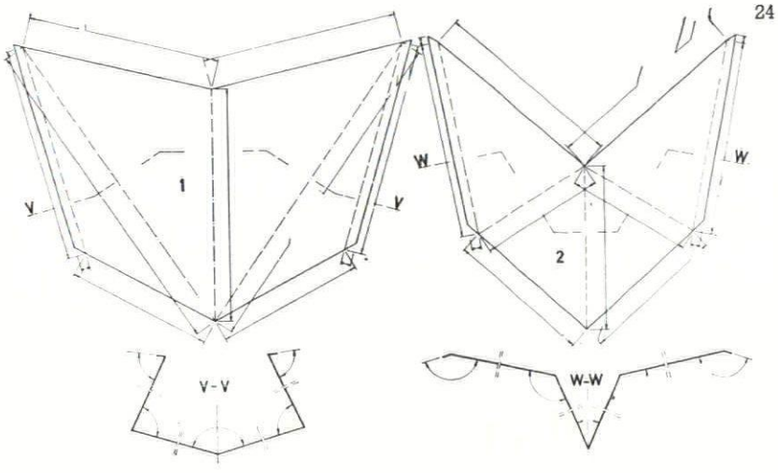

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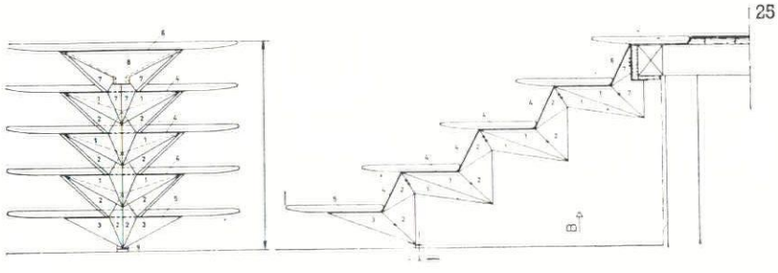
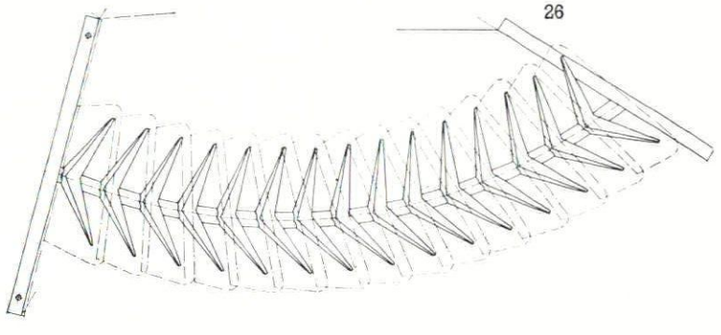


25

of the rather longer one lost amongst the foliage in 23. Both architects, however, relied heavily on a single organization—Leichtbauelelmente Günter Ssymaank, of Berlin—for the construction and detailing. Some expertise was clearly needed as the developments, 24, of the sheets to be folded for the shorter stair, 25, amply demonstrate, and specialist skill in sorting out the torsional loads both at the point of juncture between stair-bracket and tube, 26, on the longer one, and the torsional loads on the tube itself. Such high old ingenuity is pretty uncommon even in Germany, but there may be pressure towards a wider exploitation of such skills in view of the fact that there is *Feinblech im Überfluss* (a spate of thin sheet) looking for employment in Germany at present, as Heinz Günter Kemmer noted in an article discussing the background conditions in which these stairs were conceived, detailed and eventually fabricated.



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views and reviews

MARGINALIA

GROPIUS AND VAN DE VELDE

In connection with Professor Pevsner's article on Gropius and van de Velde in our March issue, it may be of interest to repeat a letter Professor Gropius sent last November to the *Journal of Architectural Education* in reply to the article by Howard Dearstyne in the October issue of that journal, the article to which Professor Pevsner referred in the last footnote of his own article. Professor Gropius in his letter compares the system of education of van de Velde at Weimar with his own of some time later at the Weimar Bauhaus. He writes: 'van de Velde, ingenious, inventive artist of world renown and full of stimulating enthusiasm, followed his conception that a unity of the arts could be achieved by disseminating his own personal vocabulary of form, his "line" as he called it. He considered his school in Weimar to be the proper instrument with which to consolidate his own form pattern into a "style." Almost without exception, the work of his students shows the personal form character of the master.

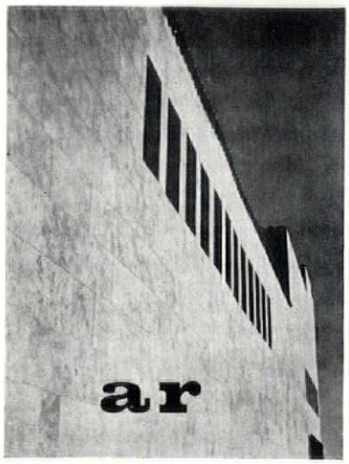
'In order to underline the educational importance of an *objective* method as built up in the Bauhaus in contrast to the subjective one of van de Velde, I should like to give a second example of the results of an autocratically-run architectural school of fame: Last year I visited Frank Lloyd Wright's school in Taliesin which his widow valiantly carries on after his death. I saw the work of several scores of students turning out without exception designs in the vocabulary of their great master. No independent approach could be found. This experience assured me again that such a method of education cannot be called creative, for it invites imitation and results in training assistants, not independent artists in their own right. Surely the contact of the student with a great radiating artistic personality like Frank Lloyd Wright or van de Velde is, of course, an invaluable and unforgettable human experience, but here I try to compare educational *methods* and *goals* which must not be confounded with the artistic potency of the teacher. A great artist is not off-hand a great educator. . . .

'When I started the Bauhaus as its responsible Director, I had come to the conclusion that an autocratic, subjective approach must block the innate budding expression of differently gifted students. . . .

'I had convinced myself that a good teacher must abstain from handing out his personal vocabulary to his students, but rather let him find his own way even via detours; that he should encourage the growth of independence in the student, and vigorously destroy his imitative reactions, or at least make him aware that he tries to harvest on foreign soil. I succeeded in convincing great artists like Kandinsky, Klee, Feininger, Moholy-Nagy, that altogether we should humbly try to find a supraindividual *objective* method, a teachable common denominator for all which would be conducive to creative work. We scoffed at the arrogant idea of establishing a "style." As a basis for the creative process, we tried to study objectively natural phenomena, observing psychological and biological facts, laying the foundation, so to speak, for a science of design and experimenting with the facts we had collected. This approach we found gave an organic and *unifying* background to all our activities. Personal expression thus became, in each individual creative process, related to the same principles recognized by all, while imitative attempts were taboo.

'Accordingly, handicraft in the workshops was, right from the start, not an end in itself, but laboratory experiment preparatory to industrial production. If the initial products of the Bauhaus looked like individual craft products, this was a necessary detour for the groping student whom we avoided to prod with a foregone conclusion.'

Professor Gropius's letter was published in the *Journal of the American Institute of Architects* and is being published again in the June issue of the *Journal of Architectural Education*. Professor Whiffen, the Editor of the latter, has promised a reply by Mr. Dearstyne.



If imitation is the sincerest form of flattery, then the AR *is flattered indeed by this cover,* 1, *on a recent number (December* 1962) *of the Spanish architectural magazine,* Arquitectura, *the official organ of the Madrid faculty of architects. This is only one among a number of recent signs that British magazines and British writers are enjoying an increasing prestige among Spanish architects.*

LIVING ARTS

With the appearance of the first number of *Living Arts*, the London Institute of Contemporary Arts has achieved a long-standing ambition and has a magazine of its own. Somewhat resembling in both format and contents previous ventures by its co-editor, Theo Crosby (the other editor is John Bodley), *Living Arts* is intended to be a running commentary on the work of the ICA, though no one doubts that it will also develop a line of its own if it flourishes, and on this score the magazine promises well—the first issue offers a transcript of David Sylvester's notable Third Programme interview with the late Franz Kline, recent work by William Turnbull, accompanied by a characteristically personal statement on sculpture by Turnbull himself, the long-awaited definitive essay by Lawrence Alloway on Danish neo-primitive painters like Asger Joern, and a variety of other pieces, on music, photography, etc., together with a long sequence of prose and poetry by Roy Fisher, entitled *City* and evoking the visual imagery of the urban scene with remarkable power. The typography throughout is generously straightforward, without either the extravagances or the institutional airs that so often beset magazines of this kind, and the whole production has been beautifully machined by Tillotson's, the printers (who are also the co-sponsors of the venture). At first sight, the price may seem high at 7s. 6d. (or $1.20) but it is difficult to see how presentation as good as this could be made available at any lower price without the kind of gigantic mass-circulation and high-pressure advertising that would completely destroy the object of the exercise.

THE BALSTON COLLECTION

Stapleford Park, near Melton Mowbray, Leics., has now become the home of Thomas Balston's justly celebrated collection of Staffordshire pottery figures, which will be on show there on days when the house is open to the public. There is a special appropriateness about this which justifies this month's cover, since the house is one of those which comes more within the 'popular entertainment' category (there is even a miniature railway in the grounds) than that of specialist exhibits, and although the Balston collection will undoubtedly attract specialists in Staffordshire to the house, it should be remembered that these figures constitute one of the earliest types of mass-produced popular art in Britain. Though now admired and collected by connoisseurs, they originally had the direct appeal and topical reference that characterizes 'Pop Art' today—standard pieces were often re-titled with names like *Garibaldi* to catch a passing mood or political sentiment. Unlike much of today's popular art, however, the best of Staffordshire has proven to have qualities of durable aesthetic merit that justify the formation of collections such as Mr. Balston's and their public exhibition.

CORRESPONDENCE

WIRES UNDERGROUND

To the Editors.

SIRS,—Your excellent article 'Wires underground' illustrates once again the complete lack of planning of the major resources, fuel power and transport, on which the life of this country depends.

There are many ways of transmitting energy. By coal in railway wagons, oil or gas in pipelines, electricity through overhead or underground cables, and it would seem that the latter is one of the least efficient. A 30 in. methane pipe-line operating at 1,000 p.s.i. costs about £30,000 per mile installed, has a life without appreciable maintenance of 30 years or longer, is invisible and can be tapped by means of simple valves and regulators at any desired point, and carries energy at a rate equivalent to ten or more 400 kVA quadruple transmission lines as used on the new supergrid (pylons 160 ft. high, spread 65 ft.).

In spite of the fact that a national methane grid and a network of oil pipelines is being established—largely on Transport Commission property—it seems that no government agency has examined the relative merits of pipeline versus supergrid as a means of energy transmission.

Already small gas-turbine generating stations are being installed in remote areas. Clearly the government should immediately start detailed assessment of alternative schemes of transmission in which energy is distributed as gaseous, liquid or solid fuel which is converted into electricity in small stations near the point of use.

Yours, etc.,
R. J. FLETCHER.
London, S.W.10.

THEATRES: STAGE & AUDITORIUM

To the Editors.

SIRS,—Having had experience both as an architect and as a practical worker in the theatre, I found Mr. Jay's article on Theatre Design extremely valuable; but I am a little disappointed that he decided not to discuss what is perhaps the most important of all the factors affecting the choice of stage. I mean the actual *plays* to be performed upon it, and the extent to which their style and content will be conditioned by the arrangement of the bricks and mortar.

Although it is probably true that any good play can be placed with some degree of success upon any shape of stage (e.g. 'Uncle Vanya' at Chichester, or a satisfactory Shakespeare production in the West End), we should realize that the contrast between open stage and picture-frame stage reflects an even stronger contrast between the psychological approaches of dramatists to their material.

The proscenium of the picture-frame stage, as Mr. Jay says, is a hole in the wall through which the audience peers; and this in itself implies a type of play which is essentially *imitative*, and in which the visual relation of characters to their scenic background is two-dimensional only. However fantastic or 'poetic' this background may be, a naturalistic illusion must in some way be achieved, in dialogue and action as well as in decor.

On the open stage, however, the actors are clearly within the same room as the audience, and their stage cannot pretend to be other than it is. Any 'scenery' more elaborate than furniture or small props will take the form of an '*emblem*' of the real thing rather than its imitation; and is bound to be a three-dimensional object set *among* the actors rather than a background *against* which they move. Thus the language and action also become emblematic.

If open stage theatres are to be built in any quantity, for economic or other non-literary reasons, we need to be very sure that audiences and

writers are going to be able to adapt themselves to the 'emblematic' plays that must logically result. If they do not, there will be a great deal of dissatisfaction and it will perhaps not be understood for some time what has gone wrong.

Let me declare my own interest: I personally prefer the open stage and I find it easiest to write in an 'emblematic' manner. But, let's face it, most modern dramatists do not: nor do most audiences relish being compelled to modify all their preconceptions when they go to the theatre. I am afraid, indeed, that the 'emblematic' style is not only currently out of favour, but that it belongs in general to the age before Galileo. It is scarcely a coincidence that the 'imitative' arts of cinema and television are the vital dramatic forms of this present epoch. Our contemporary world-picture is perhaps too vast and too confusing to be neatly packed down into poetic or theatrical emblems and microcosms, even though some of us persist as an act of faith in trying to do so.

The design of theatre buildings therefore involves more than architectural economics, more than technical solutions, more even than styles of acting and choice of plays—it is fundamentally concerned with the philosophical and religious interpretation of life, and if we find it hard to evaluate the new Cathedral at Coventry in terms of the twentieth century, we are going to be just as perplexed by the National Theatre, whenever it should materialize.

I agree with Mr. Jay that 'adaptable' theatres are bastards and we had best have nothing to do with them. We have no choice but to build both sorts of stage and wait to discover which we can live with best. We must expect to 'waste' some money, but, I hope, not too much.

Yours etc.,
JOHN ARDEN.
Kirbymoorside, York.

P.S.—Mr. Jay has a lot to say about the problems of lighting and decoration in open stage theatres. The consistent way of solving these is to keep the house-lights *on*—as was invariably done until the end of the Georgian period (i.e. until the remains of the old open stage finally disappeared within the proscenium). It will take much patient experiment to make this work today, but I do not see how an 'emblematic' theatre can hope to function properly unless it is attempted.

GLASGOW AGAIN—THE ST. ANDREW'S HALLS

To the Editors.

SIRS,—The marvellous acoustics of Glasgow's St. Andrew's Halls have perished in last year's blaze, but the walls still stand at least for the moment as the last great monument of *ancien régime* neo-classicism in these islands. At any date they would have been outstanding, but this final flourish in the thick of the Gothic revival makes them doubly so. Neither the halls, built in 1873-80 in property agents' phrase, regardless of cost (£100,000), nor their architect James Sellars, have ever had their due outside their native Glasgow.

Sellars was not as one might think an elderly Cockerell when he designed the halls, but a young man of thirty, only seven years off his apprentice's stool, noted for his progressive ideas. When he died in 1888, his days had been other men's weeks and he had some sixteen churches, twenty-one public buildings, ten blocks of business premises and half-a-dozen large houses to his credit, to say nothing of the Glasgow Exhibition, which saw him into a Lambhill grave at the tragically early age of forty-five. His versatility was outstanding—Pearsonesque at Belhaven Church, High Renaissance at 24 George Square, French Renaissance at the New Club, Moorish at The Exhibition—but his style par excellence was Greek based on Greek Thomson's (though he was not a pupil) expurgated of its less Greek elements and generally re-Schinkelized. Of this style St. Andrew's Halls were by far the greatest example.

The halls are not being rebuilt on the same site for good reasons (car-parking and demands beyond the limits of the site) nor, unfortunately, were they burned out amid discerning regret: 'ugly Victorian' and 'too many columns' (the familiar British fear of anything too good for us) were among the descriptions on press and radio from commentators whose qualifications, needless to add, were not of an architectural nature. But the shell yet remains and no decision has been taken about the site: however, at present it seems likely that the site will be cleared, with possibly only the John Mossman sculpture rescued, if that.

Part of the site will almost certainly be required by the Mitchell Library with which it occupied the North Street, Kent Road, Elderslie Street and Granville Street island. Free development for a bold modern building will be hampered by the exposed back wall of the Mitchell which commits any new building to the same width and height. One fears for some dismal attempt at 'keeping-in keeping' with the Mitchell which sets a standard of opulence beyond modern means. The shell is big and many-windowed: there seems no reason why it could not be reconstructed as a library extension probably plus something else. No doubt it will need some repair—even before the fire its condition did not reflect much credit on the city—but surely to preserve so impressive a piece of townscape, one of Glasgow's half-dozen best buildings, is worth the effort and ingenuity, especially when it is unlikely that we shall get a new building either equally satisfactory in its relationship to the Mitchell Library or equal in interest to the old without greater expense than is now likely to be laid out on this site with the halls being rebuilt elsewhere.

Yours, etc.,
C. D. & S.
Glasgow.



2, *St. Andrew's Halls, Glasgow, by James Sellars (see letter 'Glasgow Again').*

BEVERLEY

To the Editors.

SIRS,—I was very pleased indeed to see Ian Nairn's article 'Beverley's Lifeline,' and I am sure his suggestions for by-passing the beautiful old town of Beverley are quite right.

I am glad to say that some improvements are being carried out on the wide lane between Bentley and the York road, but there is still a great deal of it less than 18 ft. wide, when really the whole route from the York road into Hull should be a minimum of 24 ft. wide.

North of the York road the narrow lane leading to B.1248 should be widened and straightened with a new junction with B.1248. This would enable a great deal of traffic to use this route from Hull to Middlesbrough, and even now it is quicker by car to go via Malton and Helmsley, as the distance between Beverley and Stokesley is 63 miles compared with the main road via York which is 73 miles.

The former route could be greatly improved by using the old railway track from Wetwang to Helmsley, which would by-pass Malton, a whole string of villages, and cut out some very steep hills and bad bends. If this was done, instead of saving about 20 minutes by going over the Wolds, it would save over an hour and Beverley and Malton would be by-passed, and York, Thirsk and Stokesley would be relieved of a great deal of traffic.

Yours faithfully,
A. I. WATKINSON.
Harrogate.

BOOK REVIEWS

DRAWINGS BY THE MASTERS

THE NOTEBOOKS AND DRAWINGS OF LOUIS I. KAHN. *Edited by Richard Saul Wurman and Eugene Feldman. Falcon Press and Wittenborn & Co., New York.* $14.50.

THE DRAWINGS OF FRANK LLOYD WRIGHT. *By Arthur Drexler. Thames & Hudson.* 105*s*.

Two royally priced, king-sized books of drawings by two securely enthroned sovereign architects. Loyal, not to say reverent, tributes both . . . devotedly introduced, accurately annotated and indexed, most handsomely and lovingly presented. Books built for a large bookshelf, nice (or nice-ish) to have, nicer still perhaps as such books so often are, to give away. Assuming, with some reluctance, that either job was worth doing at all—other than from a sense of piety—it is difficult to see how it could have been done better.

The first, by Louis Kahn, is the fourth of a series of limited editions published by the Falcon Press. It is divided into two sections—a handful of travel sketches from Egypt, Italy and Greece followed by a fistful of sketches and studies for recent buildings realized or projected. Both groups of drawings, varying in style from the vigorous to the crumbly, are strongly personal, wholly fascinating, sometimes painfully awkward. Mr. Kahn refers in the foreword to 'a delight in drawing,' but his pleasure must be hard-won. As a draughtsman he seems not so much to grope as to tunnel towards his target. (Come to think of it, there is something mole-like about the artist himself—the questing troll-like features, the strong stubby fingers, the life-long modesty, the secret undeviating tenacity of aim.) The supporting text consists of sayings selected by the editors from past speeches, and re-written—often, alas, deep-frozen in the process—by Mr. Kahn himself.

These sayings, wise or platitudinous, penetrating or pompous, illuminating, provoking or arch, suffer, as such aphorisms so often do when left to float in too much page space—from over-dramatic presentation. Great thoughts do not become the more impressive by being thrust into a visual echo chamber. Nevertheless, it would be ungracious and unjust not to admit that the Falcon Press has done Mr. Kahn proud, and he is an artist worth doing very well indeed.

The Wright volume contains no text except the quite brilliantly perceptive and sympathetically interpretative introduction by Arthur Drexler. Here are 300 of the 8,000 drawings preserved in the Taliesin archives. They are practically all of them perspectives (regrettably few plans), and they include studies for most of the famous masterpieces. As a record of a lifetime's work by a great artist it is quite staggeringly impressive, triumphing (just) over what, to this reviewer at least, is a determinedly unalluring style of draughtsmanship. (Think in comparison, for instance, of William

Walcot.) Nevertheless, it is easy to forgive Mr. Wright for his strict dependence upon the mechanical set-up and the box of instruments, for the ruled skies, the Brangwynesque, stage-flat foliage, the obsession with geometry and page-pattern, even the total absence of fresh air and daylight in his drawings, because unlike so many architects he did at least draw exactly what he intended to build and succeeded in building exactly what he had drawn.

A puzzled postscript: at what magic point in the career of a great man—assuming he is not himself a conceited squirrel—does it suddenly occur to somebody to preserve doodles, to record sayings, to keep letters, to rifle note-books and studio waste-paper baskets for scraps? Who first hears the horn of immortality faintly blowing and hurries to the scene? (There are those, Cyril Connolly has written, who are so sensitive to the sound of a breaking marriage that they can hear the clump of a suitcase a couple of miles away.) Whose is the sharp eye that detects the first crack in the clay feet and passes relentlessly by? And where are they all busily at work to-day? Or—tragic thought—are they reduced to grave-robbing?

Hugh Casson

LETTERING GUIDE

LETTERING FOR ARCHITECTS AND DESIGNERS. *By Milner Gray and Ronald Armstrong. Batsford.* 63*s*.

This is a book for industrial designers and for architects employing industrial designers. In this sphere it is eminently practical. There is an excellent and most informative chapter on the various materials in which lettering can be made today and the techniques involved, including those of illuminated lettering. A section on road signs summarizes the direction and results of recent research. The largest section of the book is, however, given over to the discussion of the 'corporate image,' which is illustrated by examples of the house style of nine organizations, from letter-head and package to street fascia. In fact, for the designer given a job of lettering to do, this book is a guide as to how he can meet the needs and wishes of his client with efficiency and style, how he should place and space, how make up his specification and circumvent regulations and legal snags.

The one thing that he is not told about is letter design. For that he is referred to his type-specimen book. He will certainly need that, because though the authors include 'a working list of letter-styles' (that is, type designs) only a few letters of each face are reproduced, and the classification is very muddled. I fail to see the point, in such a book, of including *type* designs as 'pen letter forms,' 'lapidary' or 'engraved style,' or of getting involved in the jungle of *old style* and *old face*. The list includes some very poor designs, and many are quite unsuitable for outdoor architectural use—though this book is also concerned with interior lettering for shops, offices, etc.

I had hoped that the two eminent designers who have produced this book would have given us a selection of really good alphabets, adapted maybe from type design, but worked up from their wide experience into material really suitable for architectural usage. But the only working alphabets which they give—apart from W. H. Smith's Trajan and Johnston's Sanserif in the historical section—are those recently designed for Watney.

I would advise the reader to skip the first chapter on 'origins.' As the authors appear to think that the only lettering since the Romans is either calligraphic or printed it is largely irrelevant to their subject; it is also full of errors. One is amazed to see a type face designed by Zapf reproduced to illustrate Persian script—in which there are superb architectural inscriptions; also to see Greek lettering exemplified by a tablet of AD 300-500, while the text refers only to archaic inscriptions, and writes of the Romans introducing regularity. If the authors do not know about the classical Greek *stoichedon* (checker-board planned) inscriptions it would be better to omit the subject.

The book is profusely illustrated with examples of lettering *in situ*, most of them good, or informative. Some, however, are sub-standard; Shell and BP signs for instance, and the Piccadilly Circus Coca Cola. Captions are often inadequate, as one unfortunately so frequently finds in architectural and lettering books; designers' names are well supplied, but some examples lack any location, and more dates would have been valuable.

Nicolete Gray

LANDSCAPE IMPROVER

HUMPHRY REPTON. *By Dorothy Stroud. Country Life.* 84*s*.

A handsome, generous book, this: a triumphant successor to the author's scholarly work on Lancelot ('Capability') Brown, which appeared in 1950. During these past ten years or so, there have been moments, I imagine, when the sheer weight of information, fruit of prodigious research and countless expeditions, must have seemed pretty daunting. For Repton was a man of almost alarming energy from the hour when he decided, at the age of 36, to become a 'landscape gardener.' One career was already behind him, a quiet country gentleman's pattern of life was well established, but thirty years of exacting creative work lay ahead. When he was not 'amending' and 'improving' the setting of Woburn, Cobham, Carlton House, Ashridge, Uppark, or any other of the hundreds of estates listed at the end of the book, he was planning great London squares, writing his treatises on changing tastes and practices, painting with distinction, or quarrelling in his mannerly way with Uvedale Price and Richard Payne Knight and any theorist who equated picturesqueness with 'litter and thistles.'

Then there was the brief partnership with John Nash, with compromises over crenellations and some heart-burnings connected with Brighton Pavilion; there were Repton's collaborations with his famous sons; and always those wearisome journeys to great houses, and the delicate necessity of persuading owners to modify their Kent, Brown or Le Nôtre inheritance coherently, to prefer balustraded terrace to haha, to abandon all hope of compelling water to meander uphill. Best of all, perhaps, there was the loving confection of his morocco-bound Red Books, many of which survive, their 'before improvement' and 'after improvement' views in water-colours irresistible looseners of purse-strings. Finally, there were some of the most irascible, entertaining or bigoted characters of the day to help or hinder, not one of them expendable, all vociferous *dramatis personae*.

So we might have expected a breathless résumé, fragmentation of artist and achievement, and footnotes galore to hold up the story. We have instead a vivid narrative of admirable texture, with fine balance of comment and quotation throughout.

Repton knew his own limitations, and his much-reiterated description of architecture as 'an inseparable auxiliary' to his own art of 'putting under taste' need not be shaken out of context and torn to ribbons! He loved loggias, and reproductions of the Abbot's Kitchen at Glastonbury, and 'beautiful shapes in the ground,' and fair play for those whose work he was invited to 'adjust' in the interests of 'propriety and convenience.'

Failing the reappearance of his vanished *Memoirs* it is unlikely that many more details of Repton's life and labours will ever come to light. (As Miss Stroud points out in her Introduction, these might well have summarized 'conversations with Horace Walpole at Strawberry Hill on Gothic architecture, or with the Prince of Wales at Brighton and Carlton House'.) It is, however, equally unlikely that any future study of Repton will more attractively interpret for us the proportions, perspectives and 'nice gradations' involved in his life story.

E. M. Hatt

VICTORIAN VOLUMES

VICTORIAN BOOK DESIGN. *By Ruari Mclean. Faber & Faber.* 45*s*.

Mr. Ruari McLean has already contributed much to our knowledge of book design and illustration. In the present work, as he states clearly in his foreword, his subject is 'the design of books as a whole, not illustration.' This aim is firmly adhered to: bindings, type, lay-out, size and use of colour are the principal topics, and many of the most famous pieces of Victorian book production, famous for their illustrations rather than the co-ordination of their various parts, receive no mention. Instead some much less familiar by-paths are explored.

It will be difficult for most readers fully to share Mr. McLean's enthusiasm for the work of H. Noel Humphreys, but undoubtedly his highly individual, intricate designs, his skill in chromolithography and black papier maché bindings (as intolerable to handle as impossible to place on the shelf) are a significant and essential feature of the Gothic revival, and one that has so far been much neglected. How far chromolithography, with its sudden brilliance of achievement and many limitations, affected the Victorian sense of colour is an interesting speculation. Mr. McLean writes so persuasively of its virtues that one cannot but regret that some of its finest products, such as Joseph Nash's *Mansions of England*, are excluded by their format of loose plates in portfolios, but everyone whose book shelves stretch back into the last century will have their own particular favourites and miss them from the selection here. Leigh Hunt's *A Jar of Honey from Mount Hybla*, for instance, illustrated by Richard Doyle, printed by Henry Vizetelly (1848), with a binding blocked in blue, green and gold on glazed paper boards, is as charming a book as could be wished for. No one, however, can quarrel with Mr. McLean's estimate of Henry Shaw's *Dresses and Decorations of the Middle Ages* as having 'considerable claim to be called the most handsome book produced in the whole of the nineteenth century.' The hand-coloured copper plates, the decorative initials copied from manuscripts and printed in colour from wood blocks, the beautiful and varied lay-out of the pages make this one of the finest triumphs of Charles Whittingham and William Pickering at the Chiswick Press. The brilliance of the colours, still entirely undimmed, gives to the manuscripts they represent a new incarnation, and one that for all their accuracy has a pleasing period sense about them. The examples from MS. Nero C.IV (in the St. Swithun Psalter) with their vivid blue backgrounds restored are a pleasure worth looking for, and it is noticeable that everywhere the wood blocks surpass in richness of tone the hand-coloured copper plates.

The implications in the subject are, perhaps, even more fascinating than the technical details. The collaboration between Edmund Evans and Birket Foster left a long enduring influence on the 'image' of England, and Evans's introduction of his Yellow Backs must have affected the literary inclinations of the time and foreshadows many later and frequently painful developments. The present reviewer can well remember in his youth a cupboard full of Yellow Backs: *Ready Money Mortiboy*, *The Golden Butterfly*, *Lorna Doone*, *The Cloister and the Hearth* and many others; and today the memory of the covers remains much more vivid than that of the contents. Already disintegrating, they must by now have largely disappeared, and not the least value of Mr. McLean's book is its stimulus to the collecting impulse. To the general reader, who might easily join in the work of preservation, little concession, however, is made. Much of the terminology is that of the expert, and a glossary of typographical terms would have been of much assistance. With less strict adherence to the problems of technique and with some closer attention to literary presentation, this could have been a book of much wider interest. Perhaps some day Mr. McLean will write it. The present volume is well illustrated, though inevitably the colour plates, over which much care has clearly been taken, cannot, particularly when considerably reduced in scale, do real justice to the products they represent.

T. S. R. Boase

BOOKS RECEIVED

YOUR BOOK OF BRIDGES. *By Eric de Mare. Faber & Faber.* 10*s*. 6*d*.
PRODUCTION AND PLANNING APPLIED TO BUILDING. *By R. J. Hollins. George Godwin.* 18*s*. 6*d*.
STRUCTURAL MECHANICS. *By W. Morgan and D. T. Williams. Pitman.* 30*s*.
THE GREATER ANGLO-SAXON CHURCHES. *By E. A. Fisher. Faber & Faber.* 168*s*.
CEMENT CHEMISTRY AND PHYSICS FOR CIVIL ENGINEERS. *By W. Czernin. Crosby Lockwood.* 25*s*.



The lunar orb, trapped under the curve of a hyperboloid of rotation, opposite  *, might seem to be no more than a cliché-symbol for the engineering of the space age, or some similar rhetorical flourish. In this case, however, the symbol makes almost literal sense—the hyperboloid covers the new planetarium at St. Louis, designed by Hellmuth, Obata and Kassabaum, and the association between architectural form and heavenly body is therefore direct. The planetarium is described and illustrated on pages 406–409, and the propriety of its form is discussed in the first of the AR's new monthly* criticism *supplements on page* 421.

Ian Nairn

WHAT NEW TOWN?

John Nash built a linear new town once, in the middle of London. He called it Regent Street, and his sense of the rhythms of places was so acute that it defined exactly the borderline between Soho and Mayfair. The demolitions and rearrangements involved must have been enormous, but London never feels it to be a scar. Yet Northumberland Avenue, cut fifty years later, is as silly and unreal now as the day it was built.

In other words, time does not heal all town planning wounds, but only those that are treated with sympathy and skill. A botched piece of bone-setting can give a lifetime of pain. Ignore the rhythms existing in things and places and the best of schemes will fail; respond to them, and the sympathy and good sense will survive any amount of alteration and mutilation.

This is organic planning. It is something which is not a convenient extra, but a basic requisite, yet it seems to be the one factor which to-day's boundary makers and technical specialists never take into account. None of the first group of new towns had any more internal reality in them than the marking out of arbitrary lines on placid stretches of the Home Counties. Only Cumbernauld has a live, coherent site; the long whalebacked hill makes you accept the town immediately. It would still be viable even if the buildings in it were going to be as timid as at Bracknell—which, of course, they will not be.

But none of the mistakes, or rather gestures of formlessness, perpetrated at Harlow or Hemel Hempstead measures up to what has happened at the recently designated new town at Dawley in Shropshire. The organic boundaries of the place have just about been scuppered before a single architect has been appointed.* It is still possible to sort things out, but only just; and the few solutions which will not do violence to both the existing inhabitants and the exportees from Birmingham are only an echo of what could have happened if the boundary line had been different.

How has a good idea gone wrong? For, basically, the idea of a new town at Dawley was a good one. It is the southern end of an old industrial area that includes Oakengates and Hadley. Half-built streets straggle across hillsides, cottages nestle in the innumerable dimples of old pit workings. Oakengates is a town that has never formed itself, split into high and low by a hundred-foot cliff which is still not built on. It would be the natural centre; but Oakengates is not part of the new town. The northern line stops short, arbitrarily, at the line of an eventual by-pass road. A natural unit has been hacked in half.

One can guess at the train of thought that led up to this. The new town was designed from the start to take a certain number of exportees. To have added them to Dawley and Oakengates combined would have brought the population up to beyond the eventual ceiling figure of 90,000. The figure of 90,000 is arrived at because 100,000 might make the place into a county borough, with a separate administration; and this is something which the surrounding county is not fond of because of the inevitable drop in rateable value. One can see the county's point of view well enough; but surely the way out at Dawley would have been to take ten thousand fewer people.

One piece of inorganic planning begets another as inevitably as the development of a Greek tragedy. To provide the area that Dawley and Oakengates together would have possessed, but Dawley alone does not; a big bite was taken out of the open country to the east towards Shifnal. This is unfortunate, but not disastrous. But, also, the area was extended south to the Severn to take in Madeley and the extraordinary landscape of Coalbrookdale and the Ironbridge gorge.

The intentions here were undoubtedly good. The edges of a new town automatically become subject to pressure; by taking them into the New Town they could be safeguarded. But will they be? The consultant's report showed residential areas flowing over

* A consultant's report has appeared, prepared by A. G. Sheppard Fidler, but this was produced merely as a guide to the Ministry.

the hills at the top like a flood, and tying Ironbridge and Madeley to places which are completely different in feeling. For, just as much as Dawley and Oakengates are one unit, Dawley and Madeley are as different as could be. Ironbridge is a different problem again.*

Now a third tragedy comes to light. Another new town would be possible around Ironbridge, of a very exciting and very remarkable kind. But this would involve taking in more land on the south side of the Severn, to include Broseley along with Ironbridge and Madeley and produce a spectacular three-centred area with a deep wooded gorge in the middle of it. Bridges could be thrown across from lip to lip and from hill-town to hill-town, as up to date for today as the original Iron Bridge was in 1775; they could even be Rialto bridges with shops on. The result could have been a new town really worth coming to see. But there is no hope of this now; again, the chances have been ruined by over-intellectual fiddling with boundaries—the mind doing the heart's job.

What is left in the wreckage of this senseless, avoidable derailment? First of all, Dawley itself, with its endearing, idiosyncratic landscape of continuous slight undulations from the old mine workings. One of the best of these areas is immediately east of the present High Street, and the existing axis could be prolonged easily and naturally to become the new town centre, with the shops taking advantage of the changes of level instead of obliterating them. Beyond this, there is a shadow valley, and here the new town should turn northwards, and behave as though Oakengates were in fact part of it. However untidy it may look on the master plan, the new Dawley must crowd right up to its northern boundary, like a building which anticipates extension by leaving the ends of the reinforcing rods showing. And it must be

* Described in detail on pages 410-414, where Kenneth Browne analyses its townscape.



South-east Shropshire, from Oakengates to Ironbridge: the solid lines, 1 and 2, define the potential new towns in the area, either reclamation between Oakengates and Dawley, 1, or a three-part hill town around the Severn Gorge at Ironbridge, 2. The dotted line, 3, shows the muddled hybrid that was finally selected. Wellington, on the north-western boundary, is a self-contained town with a distinct character of its own and is therefore not included in area 1

Reproduced from the Ordnance Survey Map with the sanction of the Controller of HM Stationery Office

met by a locally-inspired renewal and filling-in of Oakengates. But what a cumbersome way to engineer something which should have happened naturally!

The southern half ought to stay almost untouched: a little infilling of a very special sort carried out by designers with a real understanding of the very different natures of Madeley, Coalport, Ironbridge and Coalbrookdale. The villages must be treated separately and stay separate. The strips of greenery between Ironbridge and Madeley, and especially between Madeley and Dawley, divide different worlds. God forbid that they should ever be merged in tidy, anonymous areas with names like The Withies or Pollards or Rushmead.

At Dawley itself the land on the east side of the valley is 'just countryside' and can be treated as a whole; but the areas to the north-west are something quite different. In its way, the landscape here is as extraordinary as at Ironbridge. Innumerable slight firry hills, the old pit workings, with cottages tucked away in them, and sudden coagulations of battered old cottages all seeming to have several pubs: cantankerous places with highly individual inhabitants. In both human and townscape terms it would be quite wrong to swamp them with a flood of new buildings. Units must be accommodated in ones and twos, fitted into the dumbles to follow the wayward pattern that is there already. So, ironically, the largest part of this new town is set to become an outstanding piece of arcadia. Some of it has to wait for subsidence to settle down; but if the stabilized part (Oldpark and Malinslee) were built up first, using prefabricated house-types for speed, the town could slide imperceptibly and rapidly from old to new: there is enough land here to take several thousand people without effort. This is not an undifferentiated slice of Hertfordshire but a place where twenty thousand people are living already and have built up a rich and exciting balance between industrial and rural life.

That's it. Nothing earth-shattering, but a patient working together of old and new. Nothing else is now possible, and a grand gesture on the scale of Cumbernauld or Hook would be utterly wrong. Dawley must be played softly and gently, whilst the tantalizing steep slope at Oakengates remains a might-have-been.

How about the other new towns? Two more are named but not delineated—Runcorn for Liverpool and Redditch for Birmingham. A third must be found somewhere near Manchester. Alas, several more seem likely to be designated in south-east England, still too near London even if they are fifty or sixty miles away.

The catastrophic mistake of Dawley must never happen again, and the investigators of sites must listen to their natural feelings for the shape of places first and their political or administrative preconceptions a long way second. A quick look at Runcorn shows that the new town should be built in a crescent shape right up to the Mersey, because inland the site is chopped into inorganic parcels by main roads, main railways and proposed motorways. A similar look at Redditch shows that the new town ought to be long and thin along the ridge like the present built-up area, leaving free the countryside in the valleys on either side. The town seekers from Manchester would do better to look east at such magnificent sites in the Pennines, already industrialized, as Saddleworth and Glossop, rather than to take another bite out of the Cheshire plain. These comments are elementary, perhaps hardly worth making; yet not as elementary as was the need to treat Oakengates and Dawley as one unit.

In the end, however, the basic fault at Dawley was a rigidity in the conception of a new town—especially, as in this case, when there are twenty thousand old townees there already. To call Dawley 'new' rather than 'expanded' is an administrative distinction rather than a real one. What is needed is a national assessment of the capabilities of town sites, just as Lancelot Brown did for his country parks in the eighteenth century. And it must operate on a graduated scale, not in jerks called 'village infill,' 'expanded town' and 'new town'. The problems are the same whether the site is a hamlet of fifty people which could take twenty more, a country town which can be expanded by ten per cent, or a half-built area like Dawley and Oakengates which could comfortably double its population. In each case, there is a natural capability for expansion and a natural way of expanding, growing out of the site itself.

Zero on this graduated scale is the place which has reached its ideal size so that further expansion ought to take place by splitting in two like an amoeba. Rye, for example, simply cannot spread further around its hillside without defying its whole essence. That is its shape; but there is space at Rye Harbour and at Winchelsea. One hundred per cent on the scale is the rare case in Britain of a magnificent town site on which nobody has thought to build a town already—the only true new town. Cumbernauld is our only example so far. The LCC's scheme at Hook was a splendid abstract idea of such a town but would have been an imposition on the specific Hampshire site, because such a town was not in the site's nature.

In between are hundreds of sites, some wanting a few people, some wanting a lot; enough sites, altogether, to cope with all the overspill and all the natural expansion. But they must be approached organically and creatively—not 'how many people can I dump down here' but 'how many people is it in the natural rhythm of this place to accommodate'.

To judge by the results, this attitude is something quite foreign to our administrators and planners. Many architects, too, would prefer to impose rather than to submit—though submitting to the needs of a site like Edinburgh brings out naturally more grandeur than imposition would even think of. But, in the end, organic planning is the only planning there is. The buildings may go up according to any man's whim, but the topography is not mocked.

Two thousand years ago some bone-headed Roman ran his road straight up the side of the cliff at Lincoln. They are still trying to sort out the mess, and Lincoln is still unsatisfactory; all because somebody made an inorganic decision. The architect of Dawley New Town will need all his wits and skill to avoid a similar epitaph, for the real needs of a whole area have been sold away for a few pieces of administrative cupronickel.

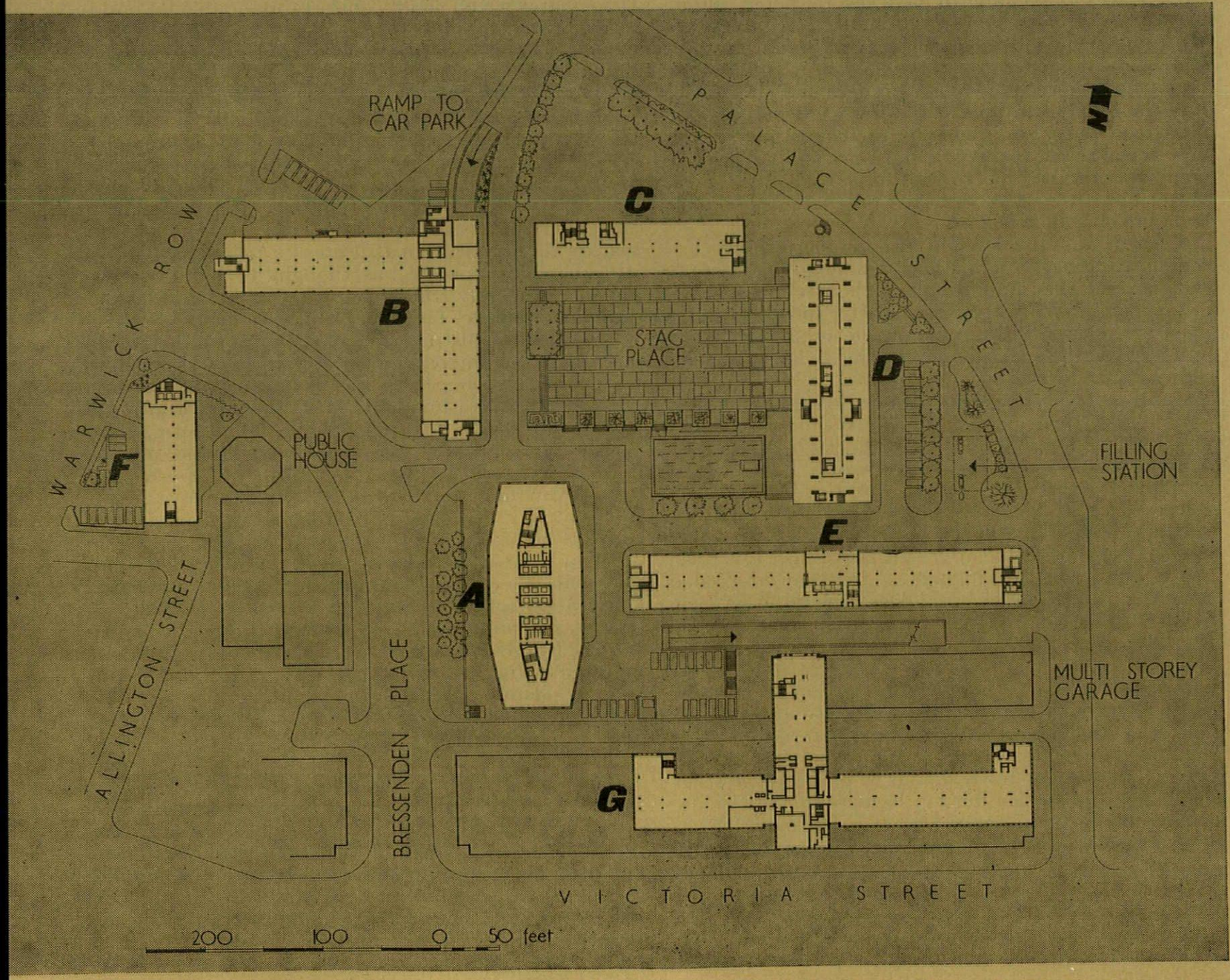
THE NEW VICTORIA

STAG BREWERY SITE, LONDON

This is a new business area, with some residential accommodation, on a site formerly occupied by an old brewery lying between Victoria Street and Buckingham Palace, in a part of London now being extensively rebuilt. Seven new buildings are illustrated here: five of them (A to E on the site plan below) surround a pedestrian square, to be known as Stag Place, which has been formed in the centre of the old brewery site, slightly raised above the general road level; the sixth, F, is on the farther side of a new curved road, to be called Bressenden Place, which has been built west of the square to link the interior of the site with Victoria Street and Buckingham Palace Road; the seventh, G, is on the Victoria Street frontage. Also facing the new road, but still under construction, is an octagonal public house. Other new buildings are under construction farther along Victoria Street and in Buckingham Palace Road, and still others are being planned, notably along the opposite side of Victoria Street. The seven buildings represent development by four property companies, each of which was responsible for its own area but conformed to an overall site layout and building heights laid down by London County Council. There is a parking garage beneath the whole central area.

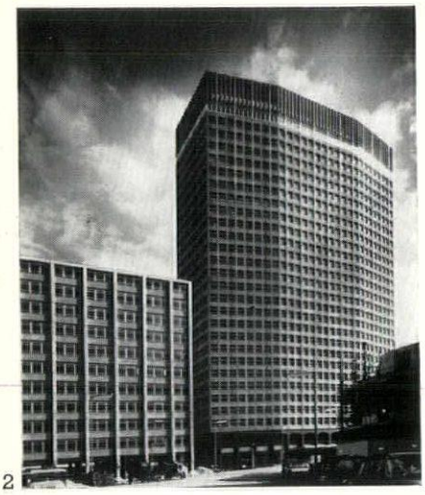
A typical upper floor of each building is shown on the plan below except in the case of block D (the only block of flats) where the plan is that at ground level, the planning above being shown on page 396

key
A, Portland House
B, Eland House
C, Watney House
D, Roebuck House
E, Glen House
F, Carrier House
G, Esso House



1 (facing page), looking east from Warwick Row. Portland House (A on layout plan above) is in the centre, with Eland House (B) on the left and Carrier House (F) on the right.





2



3

STAG BREWERY SITE, LONDON

A PORTLAND HOUSE

Architects: Howard, Fairbairn and Partners, for the City and Victoria Property Co.

This is a twenty-eight storey building, the tallest in the area, an elongated octagon in plan, 202ft. long and 82ft. maximum width. It occupies a corner of the new square, with its west side facing the new link road from Victoria Street. The ground and mezzanine floors contain entrances, banks, etc., and the ticket offices of British United Airways (interior illustrated AR April, 1963). The upper floors consist of open office space arranged round a lift and service core. The basement contains storage, restaurants and kitchens.

The structure is a reinforced concrete frame on piled foundations, with columns at 14ft. 6in. spacing up to the first floor and 7ft. 3in. above. Cladding of the upper floors consists of precast concrete units with exposed aggregate of grey Cornish granite. These units cover both the columns and the below-cill window panels. Above the head of the windows the edge and soffit of the floor-beams is clad with a precast unit with blue shap aggregate. Stainless steel guide-rails for a window-cleaning cradle, of oval section, run up alternate columns. The ground floor and mezzanine columns, up to a height of 30ft., and their arched lintels are faced with dark grey mosaic. Windows are aluminium. At the top of the building is a viewing gallery with continuous windows. The roof structures are screened by vertical concrete units with narrow unglazed openings.

Structural engineer, John Mason. Services engineers, Barlow, Leslie and Coombes. Quantity surveyors, E. Howard and Partners.

B ELAND HOUSE

Architects: Howard, Fairbairn and Partners, for the City and Victoria Property Co.

An L-shaped office building with its north-south wing forming the western side of the new square. This wing is eleven storeys high, and its ground floor is open, with access to the square through it. The other wing



4

2, Portland House from the west. 3, looking north-east into Stag Place with, from left to right, Eland House, Watney House (C), Roebuck House (D) and the base of Portland House. 4, looking north past the entrance to Portland House towards Eland House. 5, looking north-west inside Stag Place with Eland House on the left and Watney House on the right.



5



6. the south elevation of Watney House seen from underneath Roebuck House.

has nine storeys, with shops on the ground floor. The entrance and lifts are at the junction of the two wings.

Construction is reinforced concrete, with external columns spaced at 15ft. and twin rows of columns at 7ft. 6in. along the centre of each wing. Cladding of columns and floor edge-beams is of precast units with exposed aggregate of Derbyshire spa. Window panels, cast as one unit to span between columns, have a grey granite aggregate. Windows are aluminium. The columns at the entrance are faced with white Sicilian marble. There is a projecting canopy with a green marble fascia and a soffit lined with white mosaic.

Consultants, etc., as for block A.

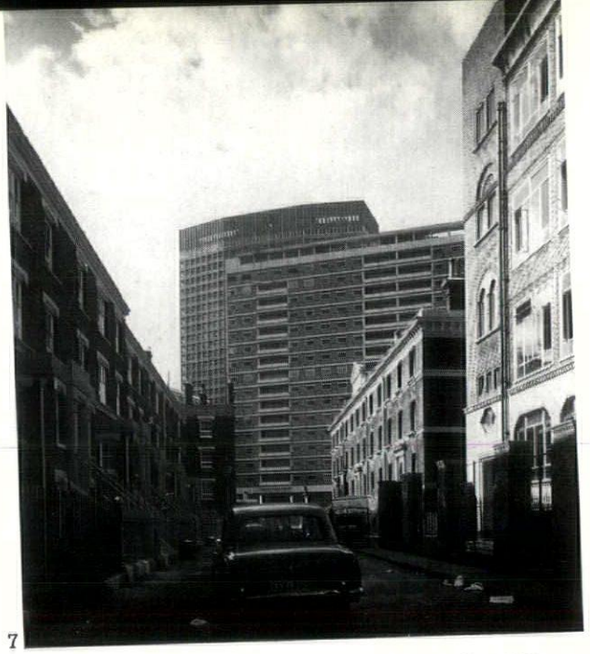
WATNEY HOUSE

Architects: Trehearne and Norman, Preston and Partners, for Watney, Mann Property Co.

A ten-storey building forming the north side of the new square but without access from it, the entrance being from Palace Street on the other side. From the entrance forecourt on this side a ramp leads down to the underground garage which extends beneath the pedestrian square. Watney House is occupied by Watney, Mann Ltd., owners of the brewery which formerly stood on this site. On the ground floor, which is partly open, is an entrance and exhibition hall designed by Design Research Unit. The first to seventh floors contain offices and the eighth and ninth directors' rooms, with interiors by Clifford Wearden.

The building has a reinforced concrete frame with external cladding of Portland stone. This has been given a ribbed surface on the north and south façades, designed to accelerate the tonal contrasts produced by weathering. Windows are aluminium. The eighth and ninth floors have an aluminium curtain-wall with dark grey glass infill. Ground floor columns are faced with green marble. Entrance halls are enclosed by aluminium glazed screens. Paving is travertine.

Structural engineers, T. C. Durley Hill and Partners. Landscape consultant, Jupp Dernbach-Mayen. Quantity surveyors, Cyril Sweett and Partners.



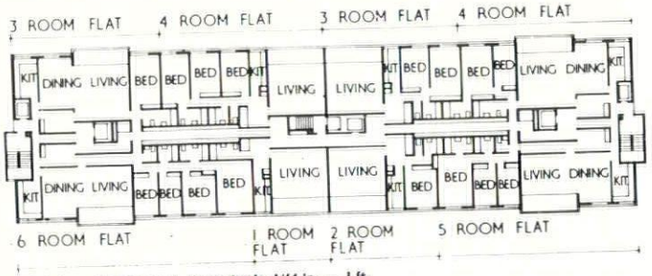
7

7, Roebuck House from the east, with Portland House behind. 8, from Stag Place. The sculpture is by Bainbridge Copnall.

D ROEBUCK HOUSE

Architects: City of London Real Property Co. architects' department (W. H. Rogers, H. D. Krall, R. S. Fleming and W. H. G. Keal) for the City and Victoria Property Co.

This is the only building in the newly developed area devoted to flats rather than offices. It faces on to the eastern side of the new square but vehicular access is from Palace Street on the other side. The flats face wholly either east or west with, normally, eight flats on each floor. The internal planning, with three vertical circulation areas, avoids access corridors, except as means of escape.



typical floor plan, Roebuck House (scale: 1/64 in. = 1 ft.

8



9

9, the entrance to Roebuck House from Stag Place. The mezzanine contains restaurants. 10, Glen House from the corner of Stag Place.

Flexibility has been achieved by limiting the number and position of structural walls. In a mezzanine above the ground-floor entrance halls, and in the basement, are public restaurants. Tenants have separate access to the car-park under Stag Place. The reinforced concrete frame is clad with precast units with white spar aggregate and grey glass panels. Windows are aluminium.

Structural engineers, John Mason and Partner. Services engineers, Barlow, Leslie and Partners; Coombes and Laverack. Quantity surveyor, E. Howard.

GLEN HOUSE

Architects: Howard, Fairbairn and Partners, for the City and Victoria Property Co.

Another office block, forming the south side of the new square. It is 337ft. long, 50ft. wide and consists of seven floors of offices over a ground floor of shops. Behind is a service road with an access ramp to the underground car-park. Construction and finishing materials are similar to block B.

Consultants, etc., as for block A. The architects of this block and blocks A and B were also responsible for the layout of the square they enclose.



10



11, the west elevation of Carrier House seen from Warwick Row.

F CARRIER HOUSE

Architects: City of London Real Property Co. architects' department (see D) for the same company.

This is the only one of the seven buildings illustrated here that lies on the western side of the new link road, from which it is separated by a low octagonal public-house—see layout plan. It has been rented to the Carrier Engineering Co. (for whom the CLRP architects also acted) as their headquarters. The building was originally designed for conventional heating, with sliding sash windows, but had later to be converted to air-conditioning. The reinforced concrete frame is clad externally with precast concrete units and glass. The ground floor columns are in-situ concrete, bush hammered.

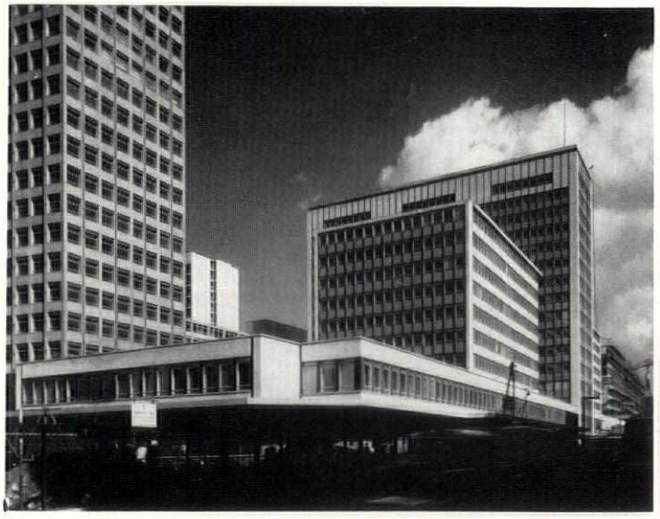
Structural engineer, D. Laird Hair. Quantity surveyors, E. Howard and Partners.

G ESSO HOUSE

Architects: T. P. Bennett and Son, for the Land Securities Investment Trust.

This office building, occupied by the Esso Petroleum Co., fronts on to Victoria Street along which it continues as far as the corner of Palace Street. It backs on to the service road between it and Glen House—block E on the layout plan. At the eastern end of this road is a three-storey garage to take 145 cars. Also forming part of the Esso House development is a two-storey terrace of shops continuing the main building westwards and interrupted by the new link-road, Bressenden Place.

The main building is T-shaped, the short stem of the T, at right-angles to Victoria Street, rising to sixteen storeys and bridging the rear service road. The remainder is ten storeys high, with the upper office



12

12, looking along Victoria Street with Esso House on the right.

floors set back behind two storeys of shops, banks, etc. The offices are planned on a 4ft. 6in. module.

The structure is a reinforced concrete frame clad in Portland stone, with granite window panels in the high central block and granite mullions between the windows in the wings.

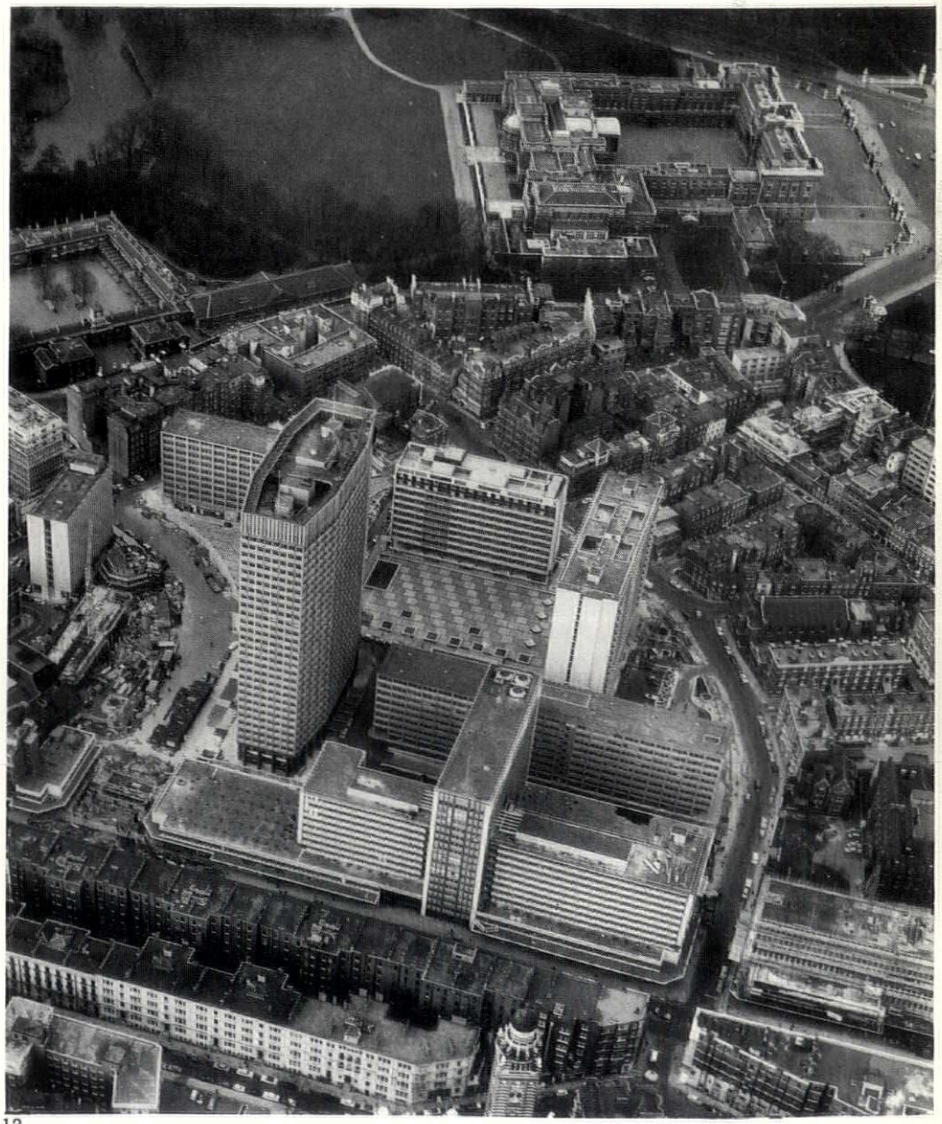
Structural engineers, Bylander, Waddell and Partners. Quantity surveyors, Gardiner and Theobald.

STAG BREWERY SITE, LONDON

photographs by H. de Burgh Galwey

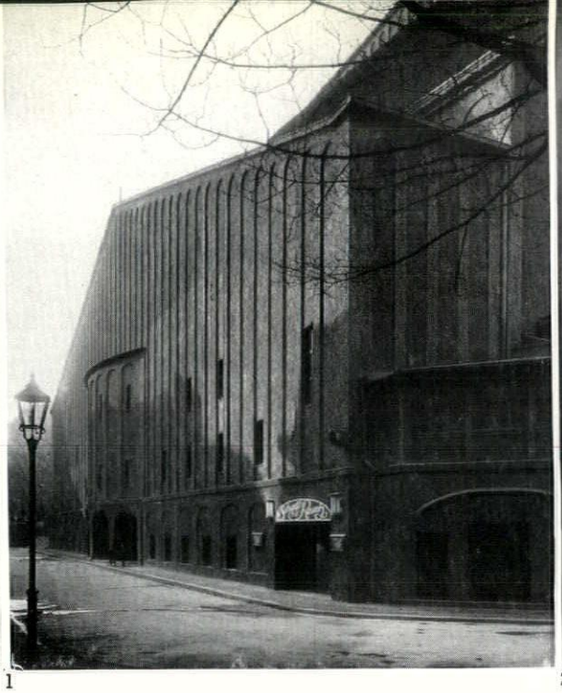
for criticism see page 421

13, aerial view of the whole development from the south; Buckingham Palace is at the top of the picture. (Photograph by Aerofilms.)



13

The Grosse Schauspielhaus in Berlin, represented here by its exterior, 1, foyer, 2, and auditorium, 3, is the acknowledged masterpiece of Hans Poelzig, another of the German masters of the Expressionist Twenties currently in course of rediscovery by younger generations of architects. But the design for the Schauspielhaus dates from as early as 1919; Poelzig had a substantial pre-War career and was one of those who helped to form the style of the Mendelsohn generation. In the personal memoir by Julius Posener which begins on the page opposite, Poelzig appears, in the early 'twenties, as a Master already well-established in the Berlin scene, already exercising a decisive teacher's influence on the generation younger than his own, and even on a generation beyond that for—as Professor Posener points out—even architects like Hentrich and Eiermann are Poelzig products.



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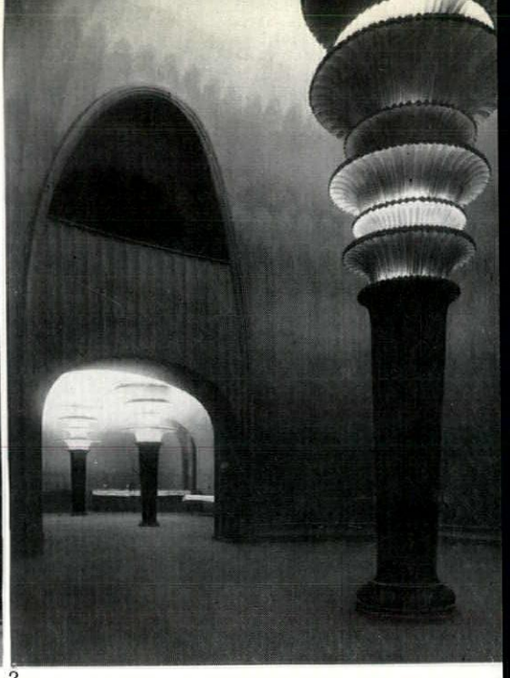

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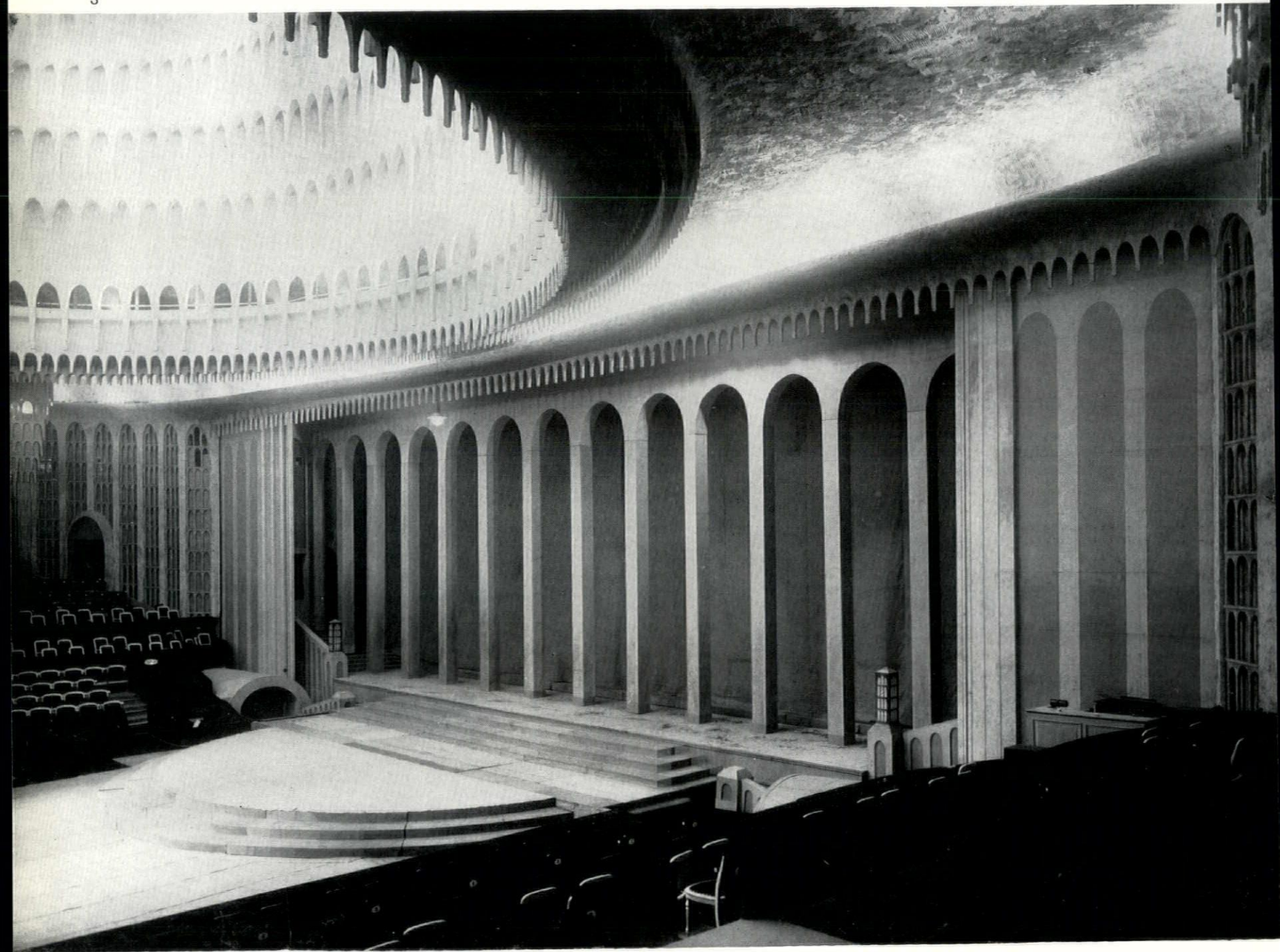


POELZIG



Julius Posener

When I presented myself for interview at Brixton for my first teaching job, only one question was asked: the essential one—'So you want to teach: HOW?'

For a reply, I described the methods of the man who taught me in Berlin, Hans Poelzig. He was indeed a teacher of teachers, and in Berlin, Karlsruhe, London, Leicester, Kuala Lumpur, Melbourne, Shanghai, we have trained young people, whether they know it or not, as pupils at one remove of The Master.

Yet there is no 'School of Poelzig,' as there is a school of Mies and a school of Le Corbusier; for it was quite possible to be Poelzig's pupil—and an enthusiastic pupil—without being in sympathy with his own architecture. I can talk about this with assurance, because it was my own case. I was rather hesitant about joining his class when I had the chance to do so in 1927. I was at that time keen on the English country house and Muthesius; I did not like the new architecture, and I did not even like Poelzig as a man. In fact I had tried another master first, a very north-German, conservative architect who dubbed any student who would produce a scheme with a flat roof 'modern,' meaning not far removed from bolshevist. The experience made me try Poelzig as a possible lesser evil.

I had already seen him once or twice giving 'crits': Somewhere, against the display wall, a straight blue column of cigar smoke could be seen rising from the middle of a cluster of youngsters of the long-haired type, and a voice could be heard from under the cigar smoke discussing, discoursing, incisive, loud, very articulate and more than slightly tinged with Berlin Cockney.

When he rose from his stool to move to the next scheme, one would become aware, first, of his head. He wore horn-rimmed spectacles under a forehead which rose like a tower, though its extreme height was somewhat mitigated by the Poelzig cut, a fringe of dark hair cut pony-fashion. From this summit immediately above the forehead the cranium sank steeply down to a broad neck. It did not at all 'stick out at the back' like Jeeves's. He had a broad nose, a wide mouth, somewhat rubbery. He was heavily built, but not fat. And while one watched him giving 'crits' one became aware that he was two things which usually tend to exclude each other: he was both very vivacious and very calm, his liveliness resting, as it were, on a ground of assurance of himself.

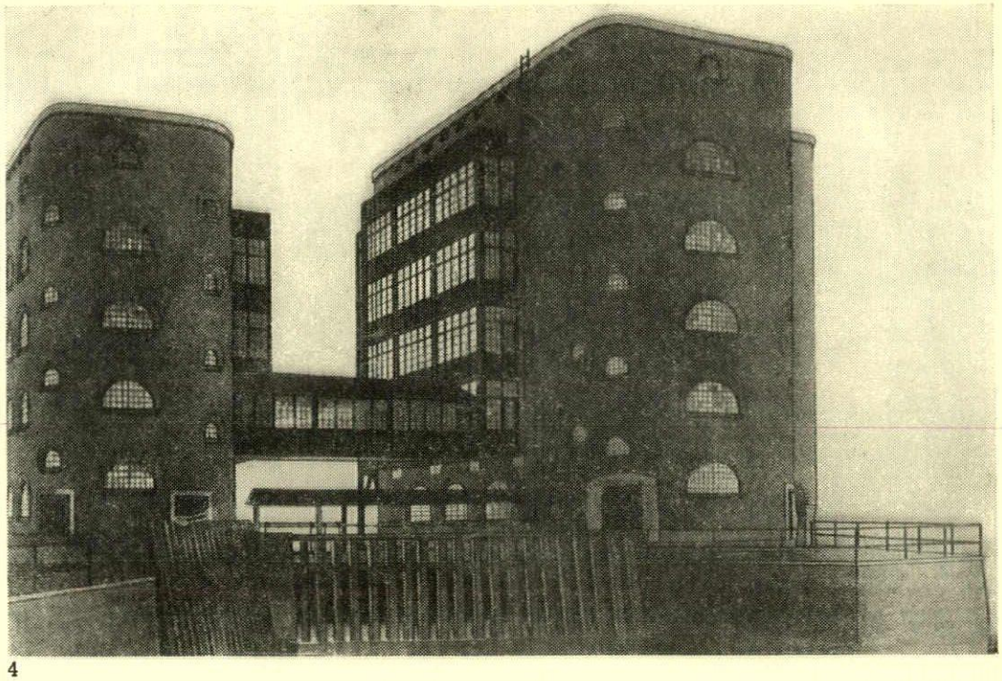
He used to say that he was the son of the driver of a brewer's dray and of the Countess Poelzig. I thought at the time this was a joke, and a fitting one, because there was in him something of the Cockney and of the aristocrat. But he *was* the son of the Countess Poelzig. His father was an Englishman, G. A. Ames, and he never appeared at all in Poelzig's life. His father and mother separated before Poelzig was born, and Ames obtained a Court injunction that his youngest son was not to carry his name. So he was called Hans Liese, after his foster-father, a village schoolmaster in whose house he grew up not far from Berlin. Later he adopted his mother's name, but she also vanished out of his life almost immediately. All this, to some extent, was to the good. It is the sort of story one finds at the beginning of the biography of men of vitality and independence. With those antecedents one either becomes such a man or one succumbs.

Poelzig's way of breaking me in was characteristic. He had, in one of the first 'crits,' accepted my scheme and been rather positive about it. So I went to the clay room to make a massing model—he insisted on this—where he joined me after a day, took the scheme to bits mercilessly and dismissed me with the advice not to kill him yet but to have two beers and a long walk and then start the thing again from scratch. The jolt was administered consciously. It formed part of his method, and it helped.

He used to give us short programmes, ranging in time from one to three weeks. Often, they formed part of a project he had in hand at the time: 'If I had not tried my hand at it myself, I could not know how difficult it really is,' he would explain. If a student found a solution he had not thought of, he would adopt it and mention the student's name in the publication. It seemed as though he himself rarely had a preconceived solution. In his special Master Class at the Academy—which was distinct from his studio at the College of Technology—he let pupils go on quite a long way with a scheme and then gradually take over and shaped it in his own way.

A student asked him once if a certain programme should be treated in one block or in pavilions. 'How would I know?' he asked: 'If I had the answer pat I would not be a teacher.' His own work never entered into the discussions. When someone would say: 'But you have done such a thing in the Capitol Cinema,' he would reply curtly, that the Capitol was not what they were talking about. Different architectural idioms were spoken in his class, ranging from Schinkel to Gropius. He would not interfere. I once heard him recommend a design of a certain 'dryness, full of character'. His own work was exuberant and fantastic. One acquired an appreciation of what he did. It was inevitable, knowing the man as we came

POELZIG



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4, the Werdermüehle, Breslau, 1907.
5, water-tower, Posen, 1912.
6, department store, Breslau, 1910.
7, chemical works, Luban, 1911-12.

to know him. Even imitation crept in. But the last thing he wished to produce was little Poelzigs. He wanted to help us to proceed in our own direction.

When a programme was finished, he took the better part of two days to criticize it. It was a cumbersome process. He would begin at one end of the display wall and ask the student to explain his scheme. The man whose scheme came next had to criticize, after which a general discussion ensued which he would sum up. If the scheme was accepted, the student would proceed with it; if not he went in for the next programme. The 'crit' was conducted in such a way that every aspect of a certain programme was put to the discussion, and at the end of the two days we felt that we had come to grips with this particular type of building. This was his method, and the discussion among students supplemented it. We students who became teachers—and I think it has become obvious by now *why* we did become teachers—have tried, subsequently, to adopt it according to our abilities and temperament, and it is my hope that it may not end there, and that some Chinese in Kuala Lumpur or Croat in Zagreb may carry on the Poelzig tradition of teaching into the next generation.

To many of us, Poelzig's own architecture remained a matter of indifference. The influences which were to shape our work came in almost every case from outside his class. This is one thing. One's approach to design is quite another. This came from Poelzig. Segal and Koenigsberger, Eiermann and Wachsmann, Müller-Rehm and Hentrich: it is difficult, judging by their work, to find a common denominator among them. Yet none of them has ever denied his debt to Poelzig.

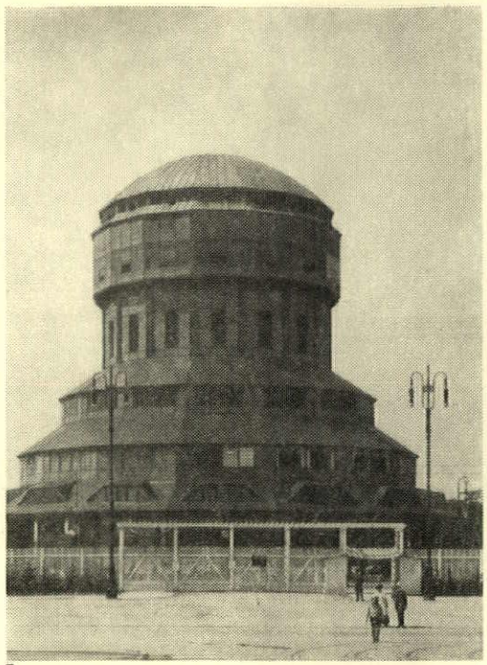
Where does Poelzig stand in present-day architecture? He was born in 1869. So he is of Behrens's generation; but his work never gained the influence of Behrens's industrial buildings. In those books which describe the evolution of our architecture one finds the work of Wagner, Loos, Voysey, Behrens, Gropius, Mies, Le Corbusier; mention is made of the influence of Mushesius; but Poelzig, if mentioned at all, is only represented by a few early works such as the Posen water-tower, the chemical works at Luban and the Breslau department store.* He is treated as an 'also ran'. Was he a German Lutyens, a man whose artistic capacity is beyond doubt, but whose work remains outside the stream of the movement? This is not entirely the case.

For one thing it is significant that Lutyens never tackled industrial architecture, whereas Poelzig did. For another, Lutyens followed tradition even in his early country houses, while Poelzig's designs hardly ever did. A comparison between Lutyens's 'Orchards' and Poelzig's design for the Werdermüehle, Breslau, of 1907, speaks for itself. At the same time, a comparison between this design and the almost contemporary industrial architecture of Behrens and Gropius shows why Poelzig's work was denied the immediate influence those works exerted. In Behrens's and Gropius's work, elements which have become fundamental in the new architecture were for the first time convincingly treated by architects: the steel framed structure with glass panels, the curtain wall. There is a framed part in the Werdermüehle, but it might as well have been built in timber. Certain timber frames with glass infilling in old English inns look rather similar. And anyhow, this framed structure is only an aside in the Werdermüehle, whose main structure is load-bearing walls of brick.

The same is true of the Luban factory; and even the Posen tower, which is a steel-framed structure, has not the quality of the steel and glass architecture of Behrens and Gropius. The three lower steps look as though they were built of timber. The big steel piers stand inside and appear only in the tall stage above the third roof, and here again the panels between these steel supports are subdivided into small sub-panels including high and narrow windows. The last stage, which projects again, might be called a curtain wall with a continuous ring window; yet here also is applied the small-scale panel which is characteristic of the whole building. Behrens's turbine factory has large windows between visible steel supports. In Gropius's Alfeld and in the Werkbund factory the curtain wall is shown as a continuous glass sheet held up only by glazing bars. In Posen, on the other hand, Poelzig played a game of recessions and projections which conceals and reveals the main structure, and the large, unified surfaces of contemporary architecture are nowhere in evidence.

This is an analysis, not a criticism. Poelzig's building may be more interesting than the turbine factory and it is probably better than Gropius's Werkbund structure which—let us admit it—is not solved architecturally; the entrance part in particular, that unrelated bit of 1914 Schinkel, can hardly be defended. Yet the building points forward beyond its period; Poelzig's tower uses current elements of industrial building of that time, such as those of railway sheds or workshops, and combines them into a monumental structure.

* Posen and Luban are illustrated in Dr. Banham's *Theory and Design*; Breslau and Luban in Professor Pevsner's *Pioneers*.



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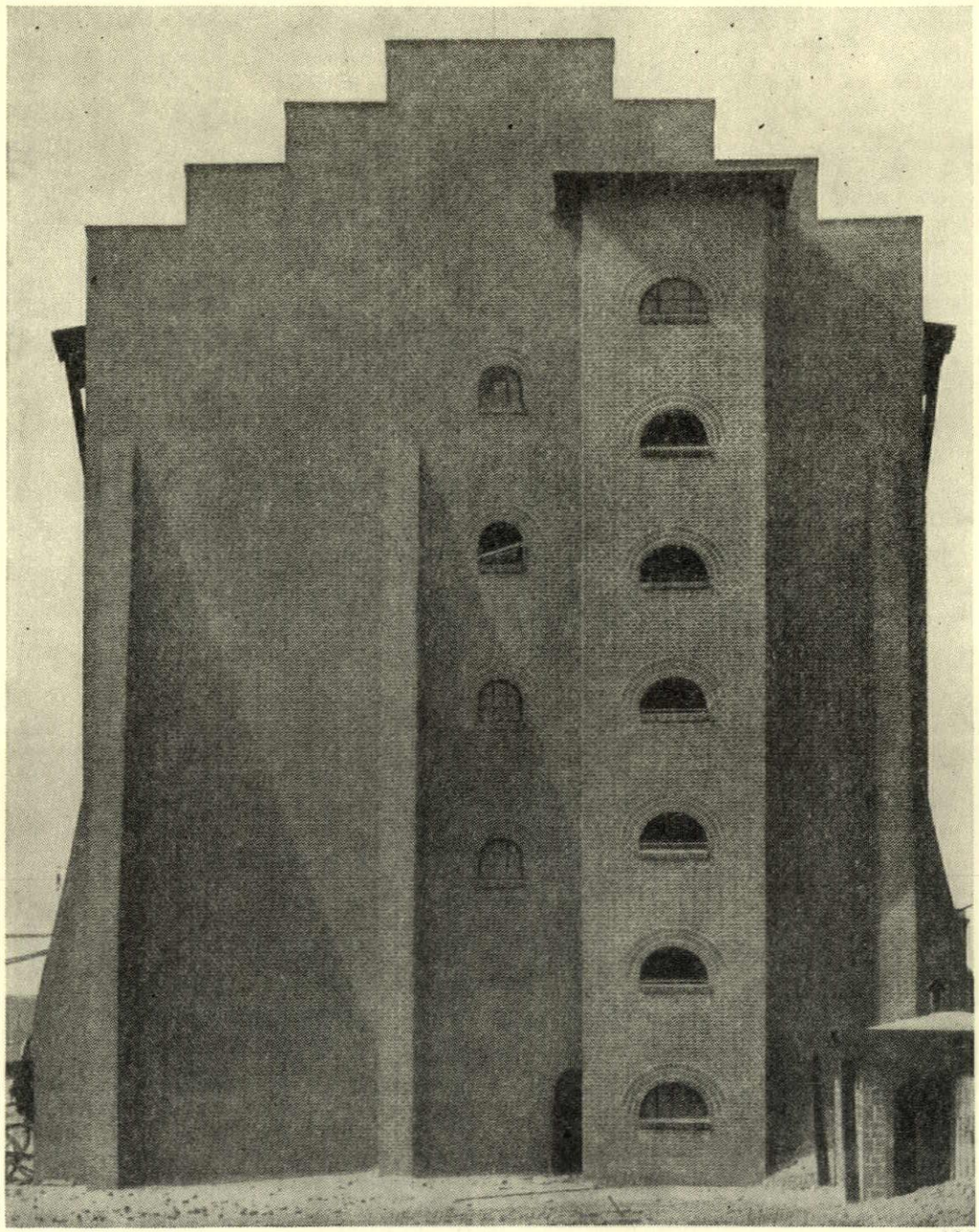
And this is, I think, characteristic for the man. He may have been aware of new possibilities, but they did not, fundamentally, excite him. He was even on his guard against them. In 1919, he became, for a short while, chairman of the *Deutscher Werkbund*; but it was for a short while only. Again, in the later 'twenties, he joined the *Ring*, a group of progressive architects; but there again he soon found himself in opposition. He might have said, with Napoleon, that to a master doctrines serve only to carry on in one's own direction.

Looking again at the Posen tower and the Luban factory one cannot deny that he did follow a direction and that his use of existing everyday elements of industrial buildings was highly original. Nor can it be called traditional, unless one thinks of the functional tradition of, say, the London Docks. However, what separates them from even that tradition is their massing and the contrast between parts within the group which is very much his own way of shaping a project.

With this approach an architect was not well placed in a period of fast transition. When he built his industrial buildings he was in the lead. He did not invent, it is true; but nobody before him had considered those humble units of the industrial shack and lifted them on to the plane of architecture. Neither his structural conceptions nor his elevational treatment appear to have contributed anything essential to the architecture we have accepted today. It is almost painful to compare his buildings for the Breslau Memorial Exhibition of 1913 with Max Berg's Centennial Hall built on the same occasion. Poelzig's designs, using always the means at hand, developed towards those great spatial phantasies, the House



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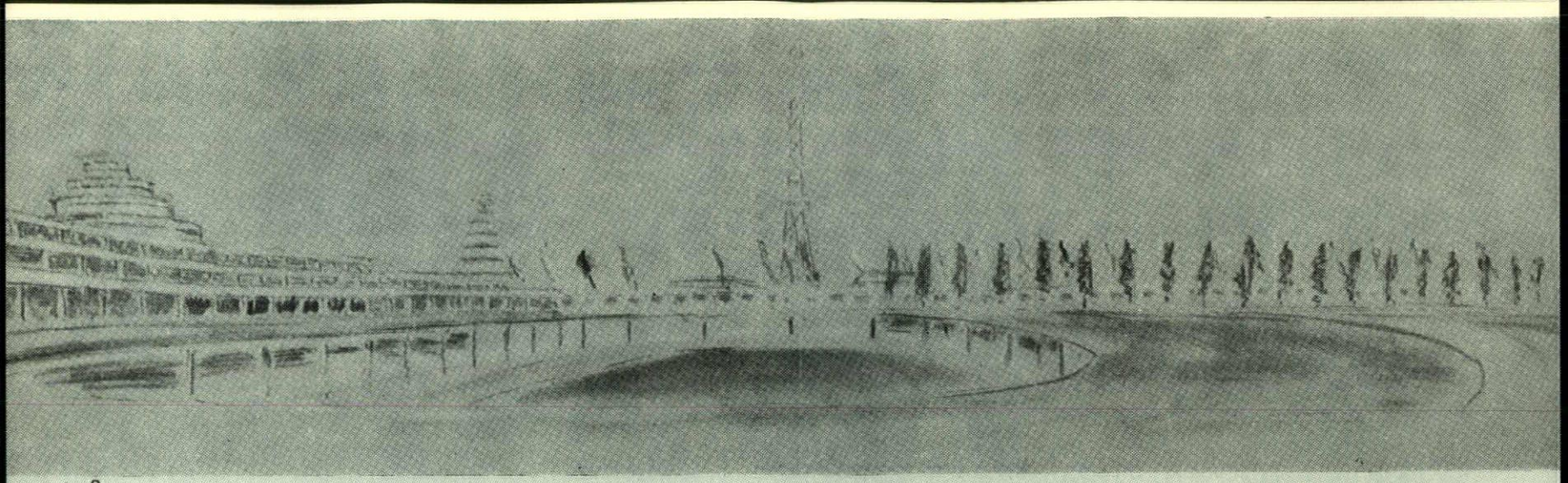

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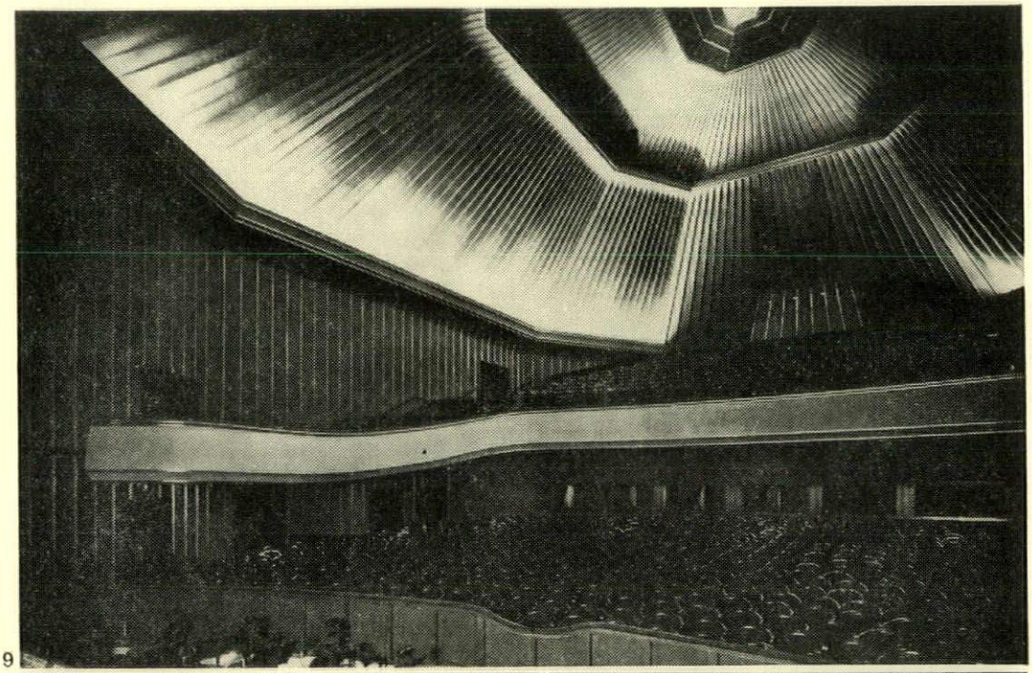
8, sketch for stadium with radio tower, Berlin, 1927.
9, auditorium and, 10, 11, staircase, Capitol cinema, Berlin, 1925.
12, sketch for Festival theatre Salzburg, 1920.
13, still from film, *Golem*, 1920, designed by Poelzig.



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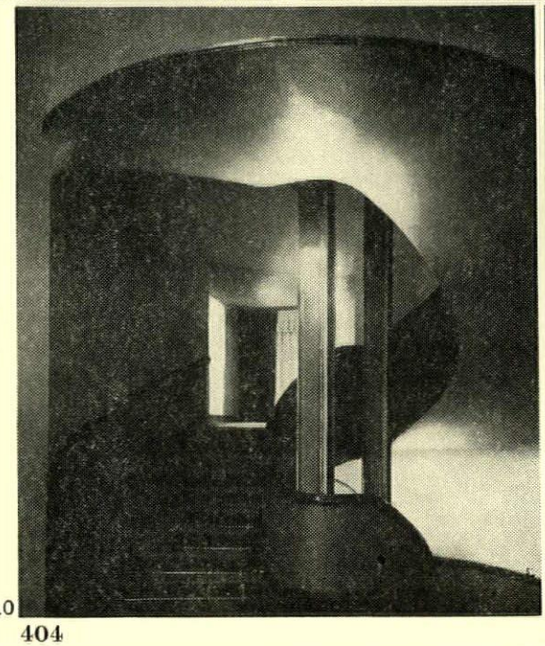

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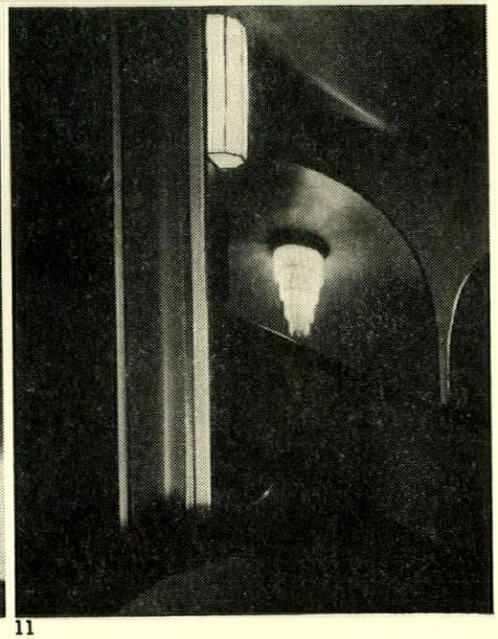


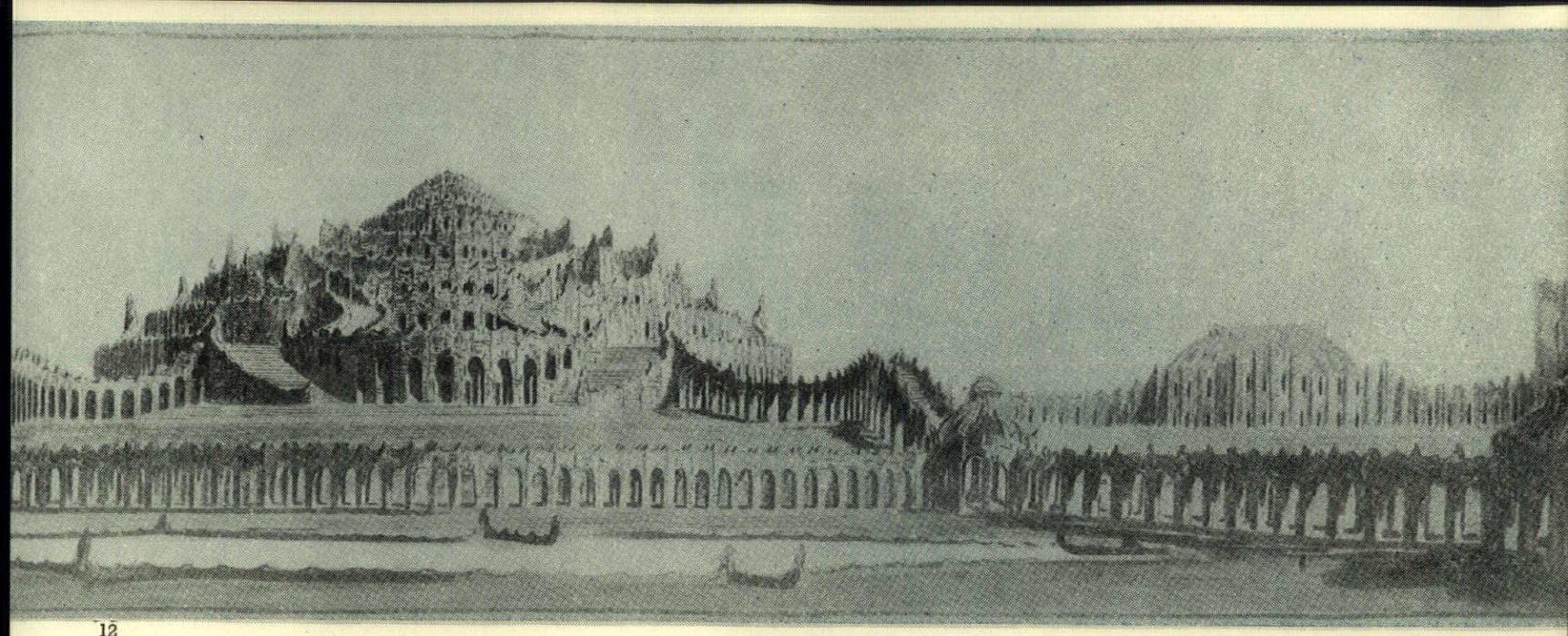
11

of Friendship in Istanbul and the Salzburg Festival Theatre. Neither is more than a project, but they are the culmination of his work in the war and the years immediately following it. When, towards the end of the 'twenties, he had again to design industrial buildings, he fell back upon a schematic verticalism already used by Messel and others at an earlier period. But at this time, not only were his own earlier factories in existence, but Mendelsohn had built Luckenwalde.

However, Mendelsohn belonged to the next generation, that of Gropius, Mies and Le Corbusier, the generation which created the new architecture. None of Poelzig's generation has been able to progress beyond the point they had reached about 1910, and Behrens is no exception. This holds good at least for the great architects in Germany. The summit of Perret's work lies in the early twenties. But after Le Raincy, he too was eclipsed by the next generation and, even more than the Germans, fell back upon set formulae.

More than the Germans: neither Poelzig nor Behrens ended by presenting one frozen, immutable type of design, as Perret did. Behrens submitted to the impact of 'periods.' Poelzig, more consistent, proceeded to realize his own architecture and in so doing proved an even greater liberating force.* It is difficult for us, after the event, to enter into the problems of that deeply agitated epoch. Looking back from the middle of the century, with the revolution in architecture, in art in fact, closed and digested, we see a straight road, leading from Wagner to Gropius, Mies and beyond. In the early 'twenties, these same architects produced slices of utopia: the *Pavilion de l'Esprit Nouveau* and the early

* This aspect of the 'twenties has recently been stressed in THE ARCHITECTURAL REVIEW, à propos Finsterlin.



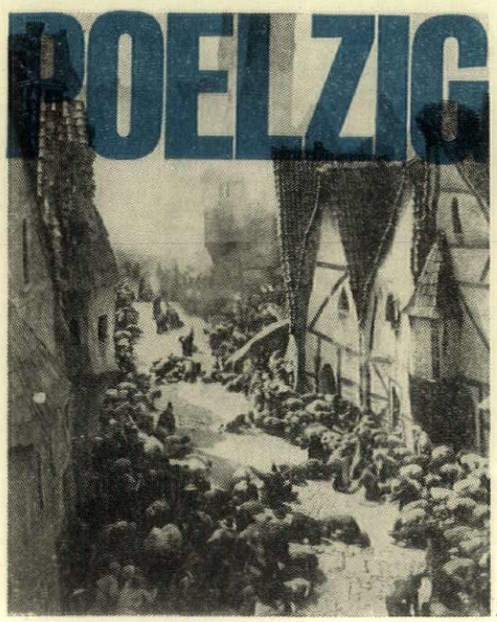
12

villas of Le Corbusier, the Einstein Tower and Luckenwalde, Mies's brick villas and models of glass towers. They were essays, experiments, but as they stood they were not much use to their owners, who invariably maltreated them in order to adapt them somehow to their needs. Thus it happened that the villa in Garches was filled with Victorian furniture and the villa in Poissy left to rot from the day it was built—and these two are utopian buildings of the *late* 'twenties even.

Poelzig's contribution may be summed up in the designs for Istanbul and Salzburg by which he is still best known. In both, an important urban-or-landscape-situation is crowned by architecture. The huge chunk of steps, hanging gardens, which, incidentally, contains a perfectly workmanlike plan—Poelzig used to stress the fact—would have introduced a new element into the skyline of Istanbul. It was designed in 1916, and is certainly the best and one of the earliest of those stepped buildings with which architects experimented in the 'twenties. The building is in one block, with different levels carved out of it. The lateral walls in particular are almost Mendelsohnian in the way in which different levels are contained in one surface.

The baroque zikkurat of Salzburg appears more utopian, and it may be doubted if the interior of the first version, in particular, could have been carried out to convey the impression of the drawing. This, of course, is 'frozen music'—Poelzig liked to quote the tag. He used to say that he would examine his pupils in music, not in drawing, before admitting them to his class. But a conception of this kind requires ornamental detail as exquisite as that of the rococo, and for this reason, not because of any technical difficulty, the scheme was bound to remain on paper. This is not necessarily the case with the third version of the interior whose galleries successively projecting further into the theatre space anticipate later solutions by Mendelsohn and Gropius. Poelzig's spatial phantasies never appear false, never become *Kitsch*; but they invariably threaten to become just this when carried out. in this century—i.e., two hundred years after Neumann—witness the luminous columns in the foyer of the Grosses Schauspielhaus of 1919. One need not include in this judgment the stalactite roof which crowns the auditorium. The dome had been specified by the client before Poelzig took over the alteration of the old Circus Schumann into a 'Theatre for Five Thousand,' and the stalactites were, in the first place, an acoustic device. Poelzig went so far as to try to take out a patent for it. I am not denying, of course, that the resulting shape was very welcome to him; that it makes the cupola truly Poelzig. It was a modern auditorium with amphitheatrical seating sloping down towards the forestage under the cupola, where the arena of the circus had been. It was not merely an imitation Alhambra.

Looking again at the illustrations of the buildings I have here discussed, I would, faithful pupil though I am, not consider it altogether desirable if architects should start playing around with Salzburg Festival Baroque; nor, for that matter, would Poelzig. And yet we have experienced, have we not, a return to sculptural architecture; witness the later work of Le Corbusier. And although nobody would dream of designing a bank like Poelzig's project for Dresden of 1921, or an office building like his fire station of 1917, for the same city, conceptions like these touch us more closely now than they did in the years of unchallenged functionalism. So, also does the fenestration of the Luban factory and even that of the Werdermuehle. We have followed the way of frame and bay structure until we had reached a dead end, and for fifteen years now we have been trying to regain our freedom, to mould, diversify, enliven, rhythmicise these schematic buildings. Poelzig never lost his freedom. It is the very nature of the man. This is why he never followed a doctrine, be it functionalism, classicism or even expressionism as Behrens did. This, also, is why he was a sovereign teacher, and why he has never formed a 'school of Poelzig' though nobody—with thirty-five years of teaching—had more ample opportunity of doing so. From his freedom modern architecture can still learn something.



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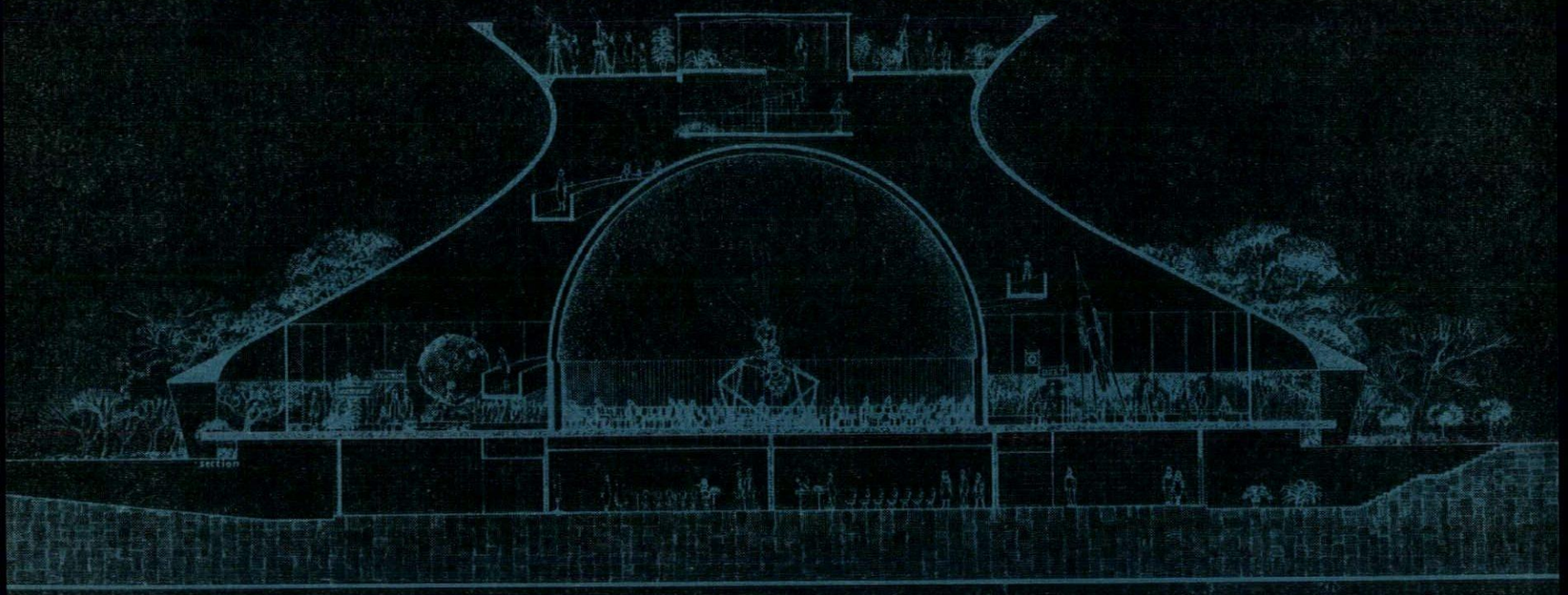

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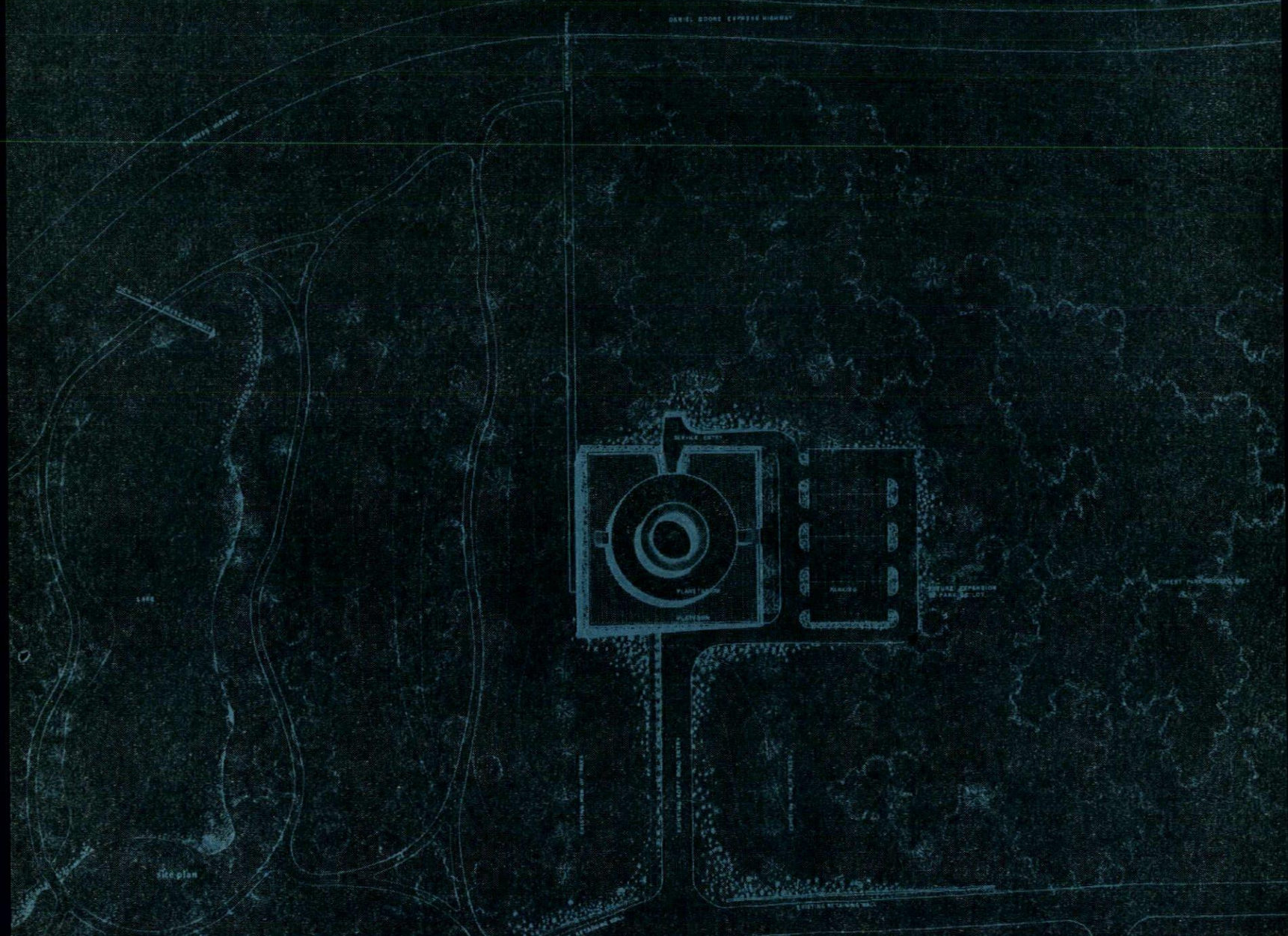
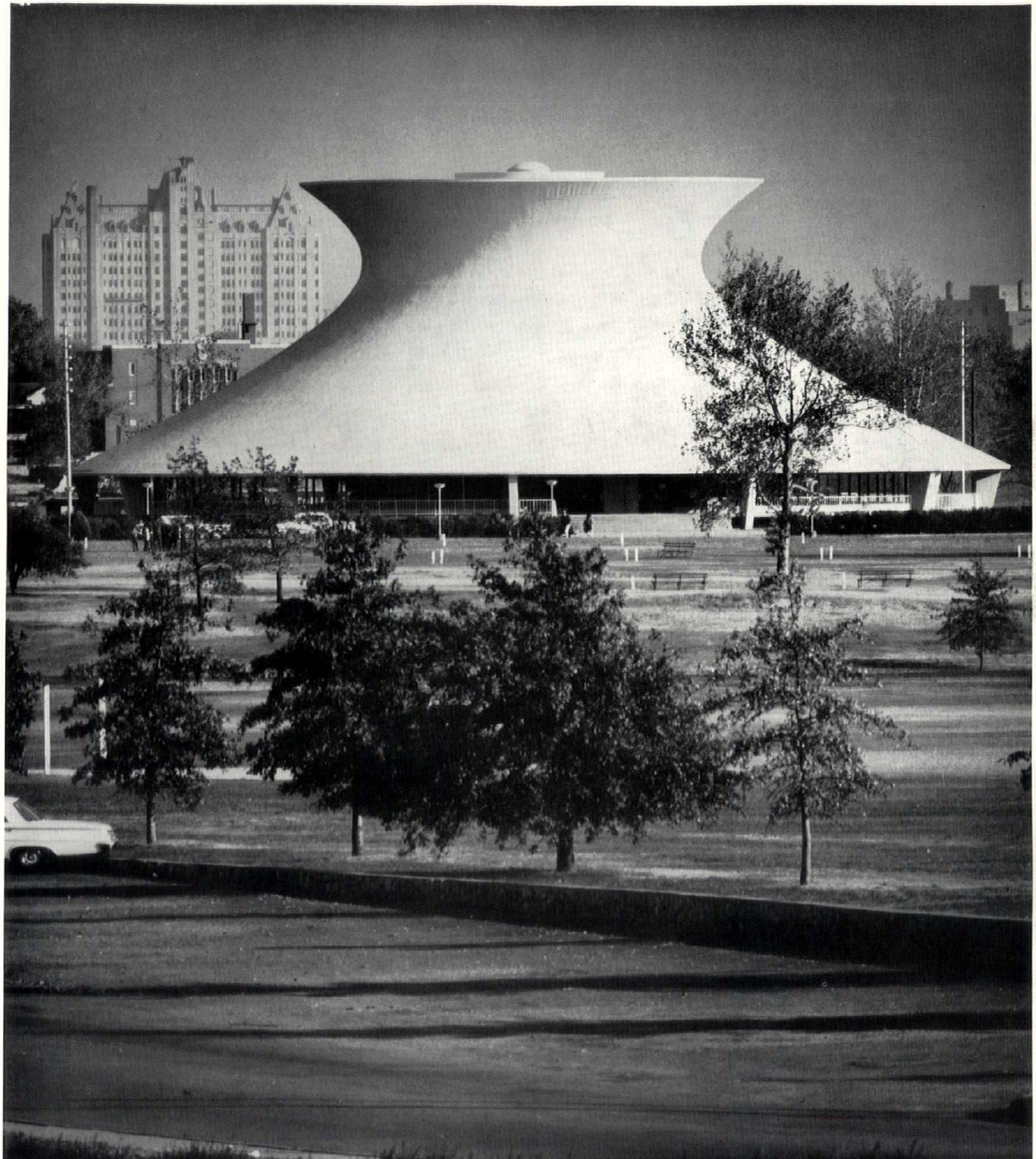


site plan

PLANETARIUM, ST. LOUIS, USA

ARCHITECTS | **HELLMUTH, OBATA & KASSABAUM**

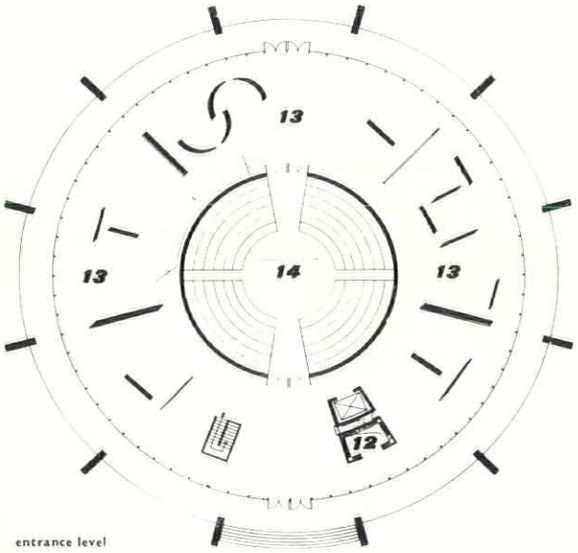
1, from the north-east.



Designed for the city of St. Louis, Mo. The site is one of the highest points of Forest Park, overlooking a lake. Alongside the site is a major express-way to downtown St. Louis.

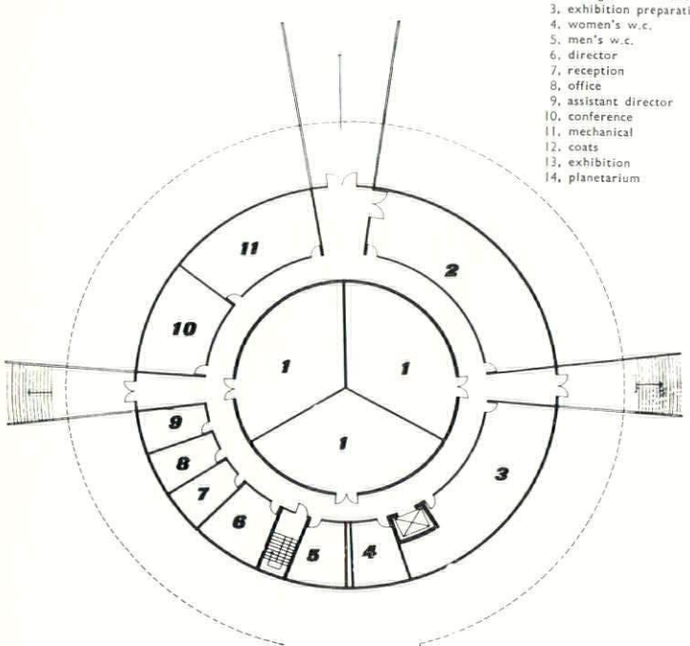
The programme differed from that of most planetariums in that the building had to house not only the usual circular auditorium for the planetarium instrument, but also exhibition galleries, and provide an external platform from which the stars could be studied through a telescope. The form of the building arose directly from these requirements. The auditorium, which seats about 450, is surrounded by a circular exhibition hall within which, on the outside of the auditorium wall, a ramp winds up to the roof and gives access to the external platform. The whole is enclosed by a hyperbolic shell, the platform being placed at the waist of the hyperbola, 45ft. above the ground, so that the outward curving upper walls shield the telescope viewer from the city lights. Beneath the auditorium and exhibition galleries is a floor containing offices, workshops, classrooms and storage space.

The external structure is a hyperboloid in one sheet, giving an exact hyperbola in silhouette. It is of shell concrete 3in. thick, with a special neoprene plastic coating on the outside. This provides the insulation; it is



entrance level

key
1. classroom
2. storage, maintenance
3. exhibition preparation
4. women's w.c.
5. men's w.c.
6. director
7. reception
8. office
9. assistant director
10. conference
11. mechanical
12. coats
13. exhibition
14. planetarium





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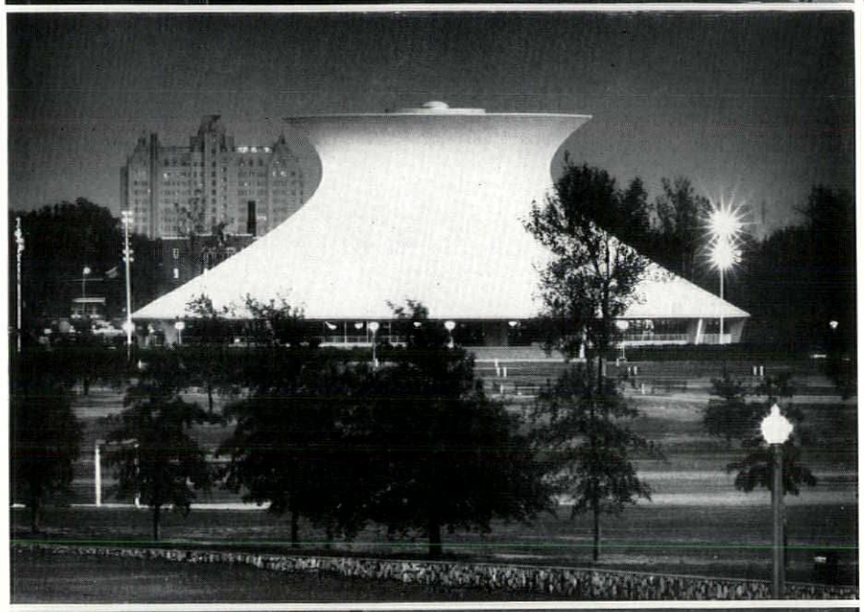

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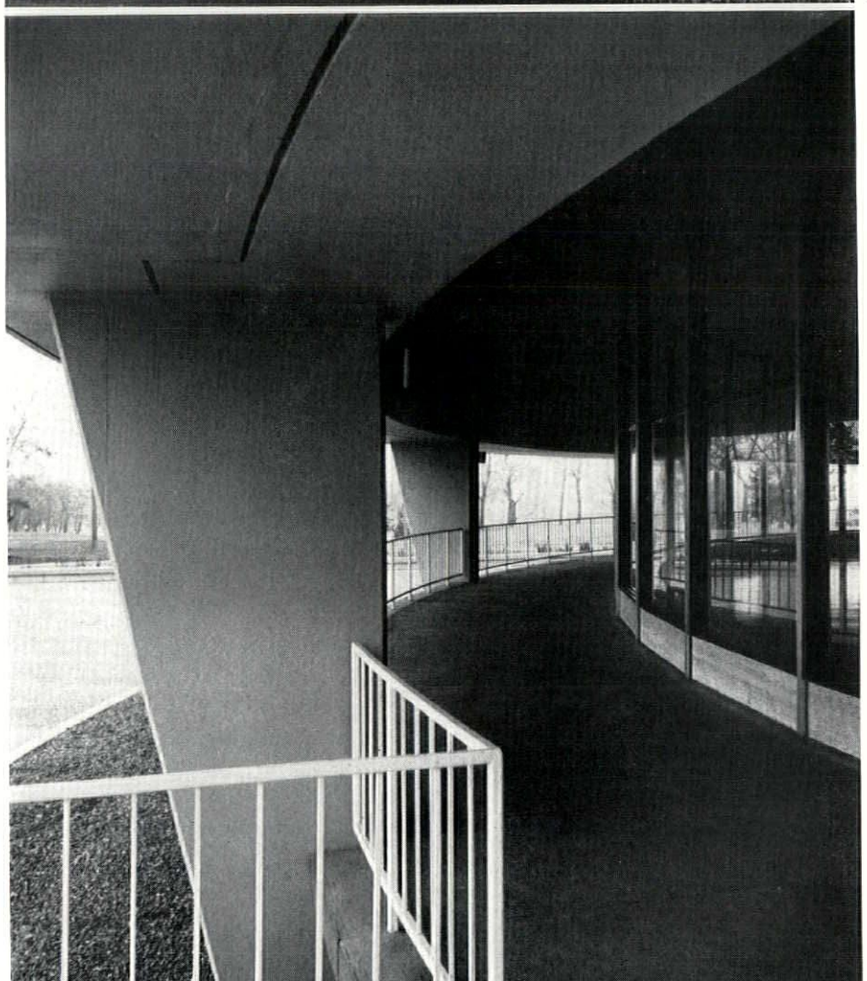




5



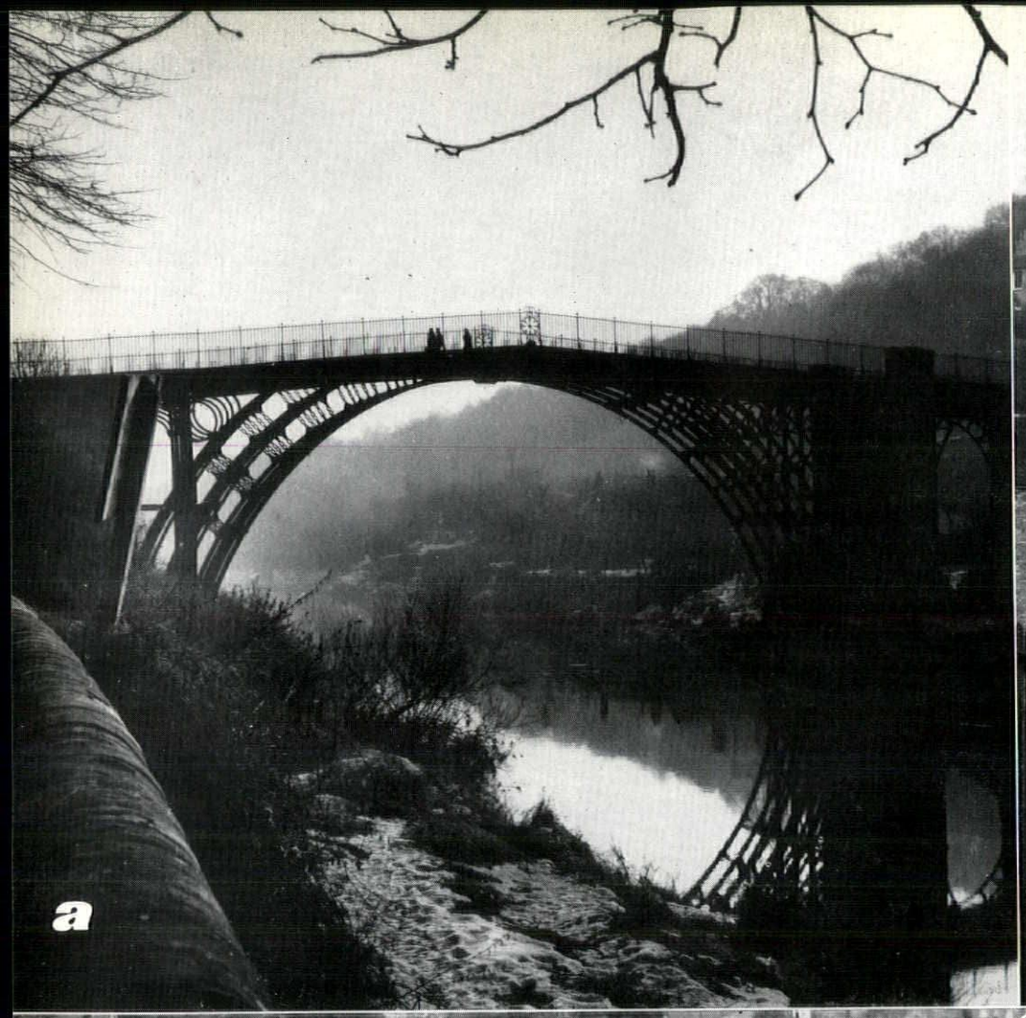
6

Facing page: 2, sunrise seen from the west; 3, the planetarium floodlit at night; 4, detail of the entrance gallery. Above: 5, the ramp round the auditorium; 6, the exhibition gallery. The interiors were photographed before installation of the exhibits.

for criticism see page 422

applied in seven layers and plastered on top. There are tension beams at the top and bottom of the hyperbola, as well as the diaphragm slab at platform level. The circular structure rests on a square platform supported on equally spaced rectangular perimeter columns. Inside these is a glazed screen forming the outer wall of the exhibition area. The planetarium dome is steel-framed with an inner wall of concrete blocks, lined with aluminium. The projection machinery is Japanese.

Partner in charge, Gyo Obata. Structural engineer, Albert Alper (consultant, Milo Ketchum). Mechanical engineer, Harold Brehm.



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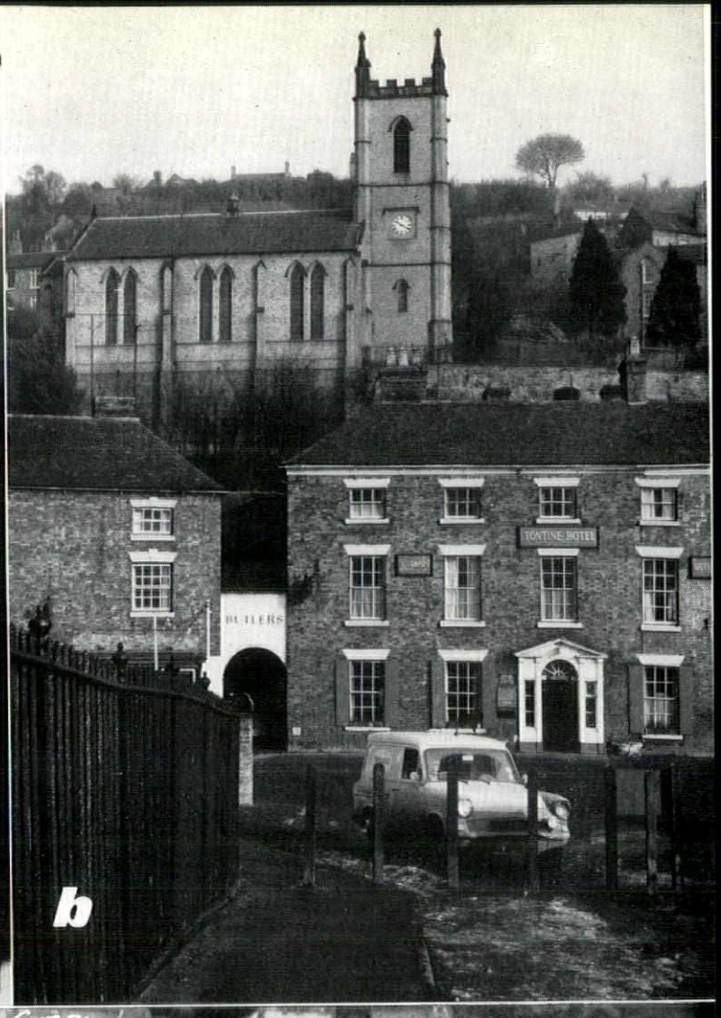


b

For many people, Ironbridge means nothing more than a famous piece of engineering, a. But the town on the hillside to the north, b, is as remarkable as the bridge; and the way uphill is a magisterial sequence of steps and stops. The route from bridge to hilltop is shown on the air view, c, and described in the article opposite. It is now inside the designated area of Dawley New Town, and the danger is that the planners, out of wrong-headed kindness, will want to clean up the slope and take all the people away.

c

IRONBRIDGE

TOWNSCAPE

or .....HOP.....STOP..& UP

churchyard B

the ironbridge

market square A

1 section

river Severn

Kenneth Browne
Ian Nairn

The Iron Bridge seen not as an isolated object but in its setting. On one side, unfettered woods; on the other, a hill slope stressed by all the means man has at his disposal. Not separate places but a unity: man and nature united by art.

The Iron Bridge is a bridge of bridges. Ironbridge town is a hill of hills, as expressive of 'up' as the bridge is of 'across.' For a hundred and fifty years it has matured in cask, growing more idiosyncratic and individual. It has produced a kind of person whose responses, knowing yet openhearted, are a permanent advertisement of the value of throwing town and country at each other head-on: not a flavourless average, chateau Hemel Hempstead, but the best of both. Hygienic sterility is beginning to catch up with it, but so far Ironbridge is a long way ahead.

It could have been part of the missing town suggested on page 389; the centre up on the hill with bridges thrown across the top of the gorge to Broseley, the slope below slowly stoked up with people as stupid, i.e. marvellous, as those who enjoy it already. People who actually want the inconvenience and splendour of clinging to a hillside which gets all the sun there is, looking across at an unbroken bank of trees. Incurable romantics, maybe. But who isn't, somewhere?

The hill is now part of an artificial area called Dawley New Town. Spilt milk. No disaster, if it is kept gently alive with new blood. But other monsters are peering over the horizon. 'Provision should be made in the new areas for 2,500 persons who might ultimately be displaced by the demolition of slum houses in Coalbrookdale and Ironbridge. It is considered that no new houses should be built in this area as replacements.'

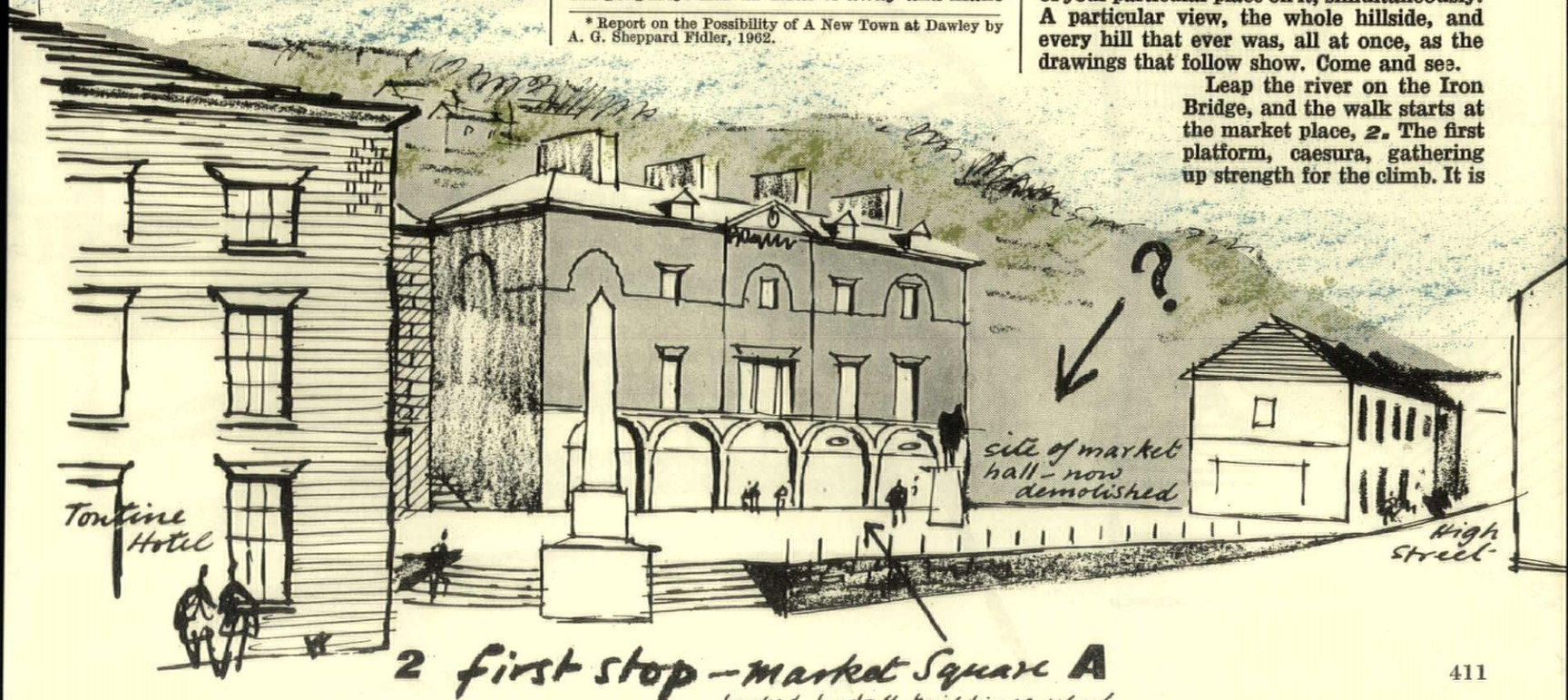
So-ho. Even though the quotation is from a consultant's report,* and not necessarily what is going to happen, the thinking is clear. What a mess, how untidy, all this old property. Let us clear it away and make an architectural feature of the bridge, that hallowed monument in iron technology.

What nonsense, and what a shocking splitting up of life into 'untidy' (for living in) and 'amenity' (for looking at). The bridge is made to be used, literally and spiritually. It needs people to walk across it, an inhabited hillside behind it, and a through road on the south side of the river, not the north. A parkway amongst the woods, with picnic places landscaped to the n'th degree of Swiss elegance, and car parks purified in the Design Centre's refining fire.

Just an inconvenient slope? Slum property? Outworn? This is a hillside made articulate, expressive and noble. Three platforms: bottom, top and half-way. A church at half-way, taking on a dozen personalities as you climb the hill. Always, a sense of the whole hill and of your particular place on it, simultaneously. A particular view, the whole hillside, and every hill that ever was, all at once, as the drawings that follow show. Come and see.

Leap the river on the Iron Bridge, and the walk starts at the market place, **2**. The first platform, caesura, gathering up strength for the climb. It is

* Report on the Possibility of A New Town at Dawley by A. G. Sheppard Fidler, 1962.



2 first stop – Market Square A

backed by tall buildings which make this a command.

an essential part of Ironbridge; the market hall must be put back, instead of the prodigious widenings which are in the air.

The left-hand corner at first appears to lead nowhere. Then, around the corner, the church turns up like a battlemented bar of yellow soap, *3*, halfway up the hill. The way there, throwing itself straight at the hillside in a frenzy, is a Jacob's ladder, *4*. Truly theological, it gets harder as you go up, as the church disappears behind its vast retaining wall and the gloomy black slit claims you. Only the daylight and curve at the end give any hope of release (the opposite of the Marble Arch underpasses where there seems to be no hope at all around the corner).

When you get there, because of the turn and the light, you stop. Whew, that's that; where have I been? Every reaction on this hillside is supercharged; Jacob's ladder augments the perspective like a Baroque stage set, *5*, and you seem to be ejected back to the space at the bottom. The figures on the river bank feel as big as yourself. Because you have looked down, you look up. Instead of empty sky, there is an apparition, *6*: the tower-top, without base or body, shooting straight up out of your tomb-like space.

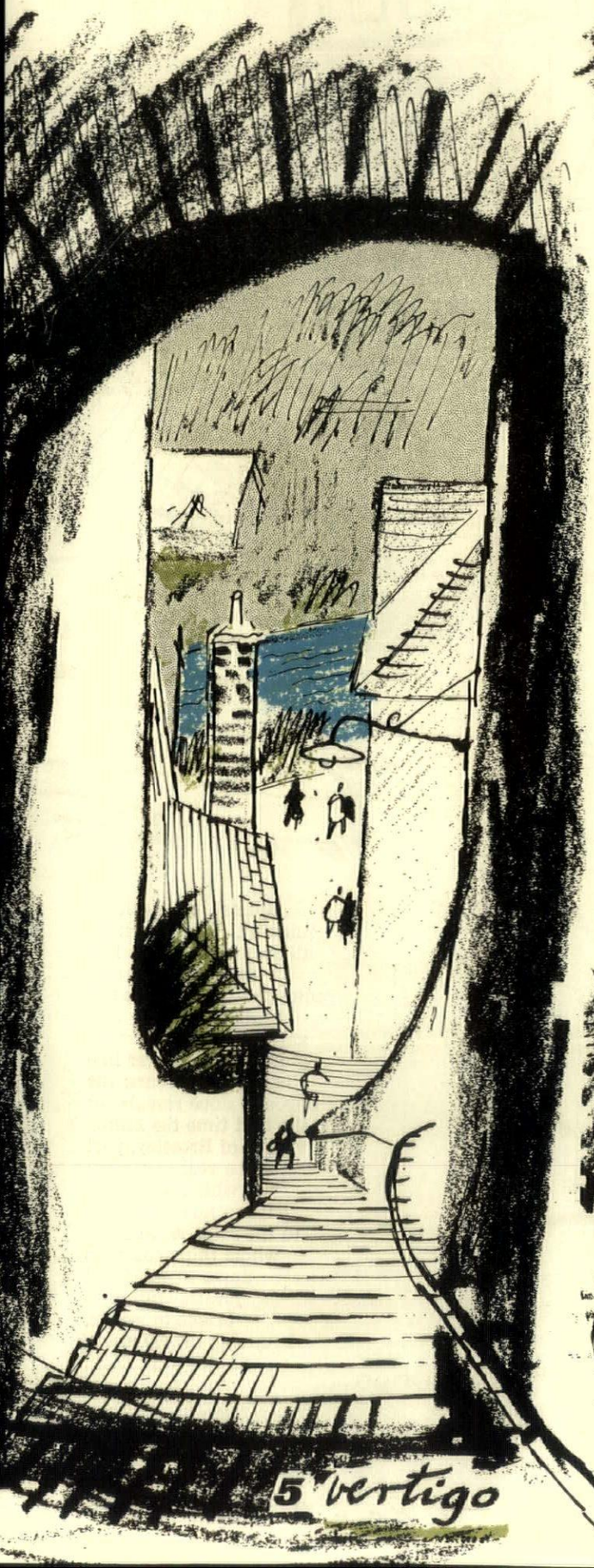


The steps lead out on to a road, and then, with an inimitable flourish, into the churchyard, the midway belvedere, *7*, the level space which emphasizes the hill and isolates the experience, discharging your involvement without diminishing it. The Greek play is over.

The first half of the hill belongs to the Gods, the second is mortal and



6 resurrection



5 vertigo

domestic, though it may not be for much longer if the clean-up men have their way. Next to the churchyard half a dozen houses step downhill, *8*. Each has a garage or cellar burrowed into the hill, with a level quarter-deck above outside the front door: every man his own captain. The pattern is so strong that individual designs can do what they like. The total quality of the pattern, functional and spiritual together, is as good as it could be.

On the rest of the way up there are a dozen hillside inflections, less dramatic than the steps but no less revealing. In all of them, it is not just a hillside, and not just buildings. Where you live on the hill is part of your signature. Houses crouch and creep along the slope like a

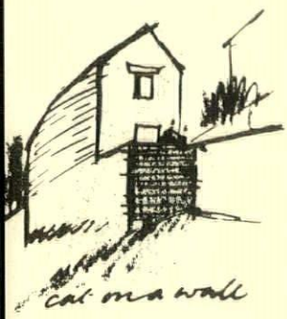


½ way (the second step, **B**)

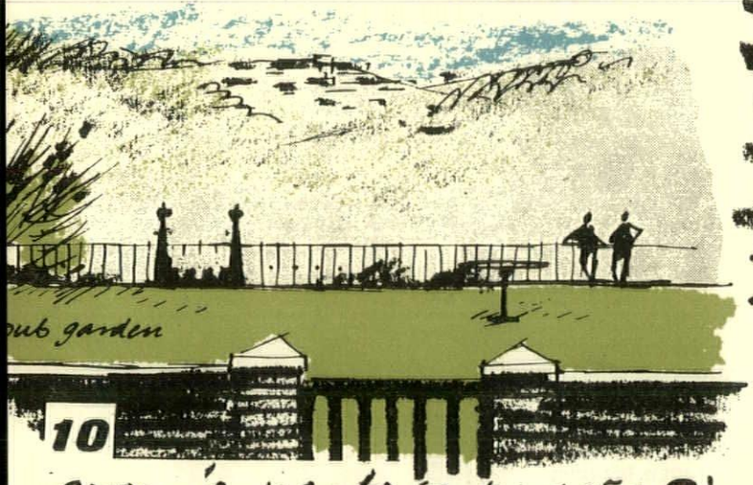
7



8 Slope expressed



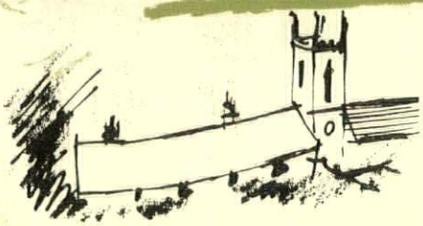
cat on a wall, left, and the church comes down from the clouds to be the village steeple. It is so much in the rhythm that the roof pitch follows the slope of the hillside behind quite naturally. A bit further up, a house matches the church which matches the hillside, ***9,*** the same principle at work. Not



10

Crow's nest (the third stop **C**)





'animal, vegetable or mineral,' but everything all at once. And the last stage of this gentle education in design is the third platform, a pub garden, ***10.*** The church pinnacles peep over like wicked animal ears; the opposite slope reveals for the first time the hilltop village of Broseley, part of a real new town which will never happen now. Move up to the rails, ***11,*** and the whole thing cascades down in skips and jumps, church to bridge to woods, bouncing off chimneys all the way. Ecco!

ID

a monthly review of interior design

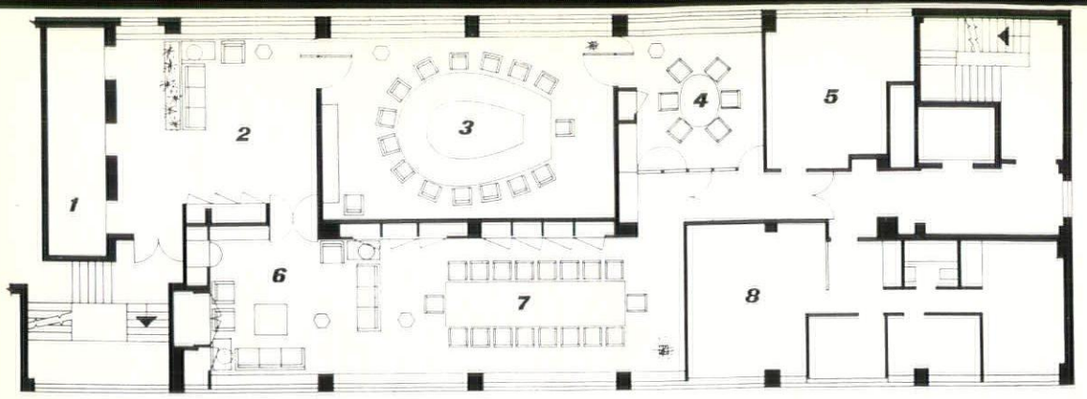


1, view from the board-room of British Oxygen Company, Hammersmith House, into the lift lobby, with one of the doors swung fully open.

Company Offices, Hammersmith

architect: Francis Pym
chief assistant: Kenneth Duncan

Company Offices, Hammersmith

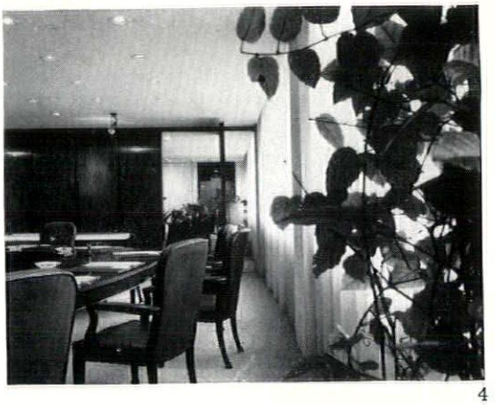


key: board-room floor
1, lifts
2, lift lobby
3, board-room
4, private dining room
5, kitchen
6, anteroom
7, main dining room
8, private flat

The programme entailed the insertion of executive and prestige areas into a straightforward developer-built office block known as Hammersmith House, and comprised the main entrance hall at street level, a board-room/dining-room suite on the top floor of the block and a suite of executive offices on the floor below it. Finishes throughout the scheme are lavish, and the treatment is extremely luxurious, but the heart of the design, especially on the board-room floor, is the use of cupboarded partitions both as space-dividers and to furnish the necessary 'servant spaces' to make this luxury workable.



2



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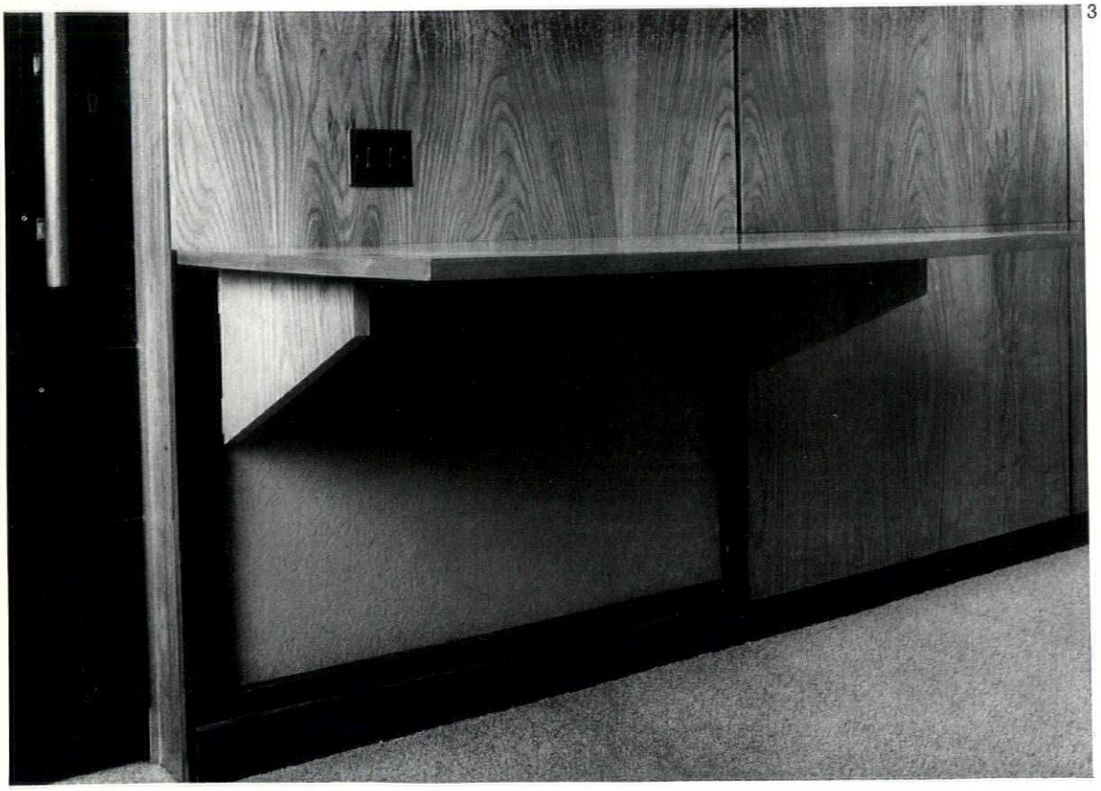


3

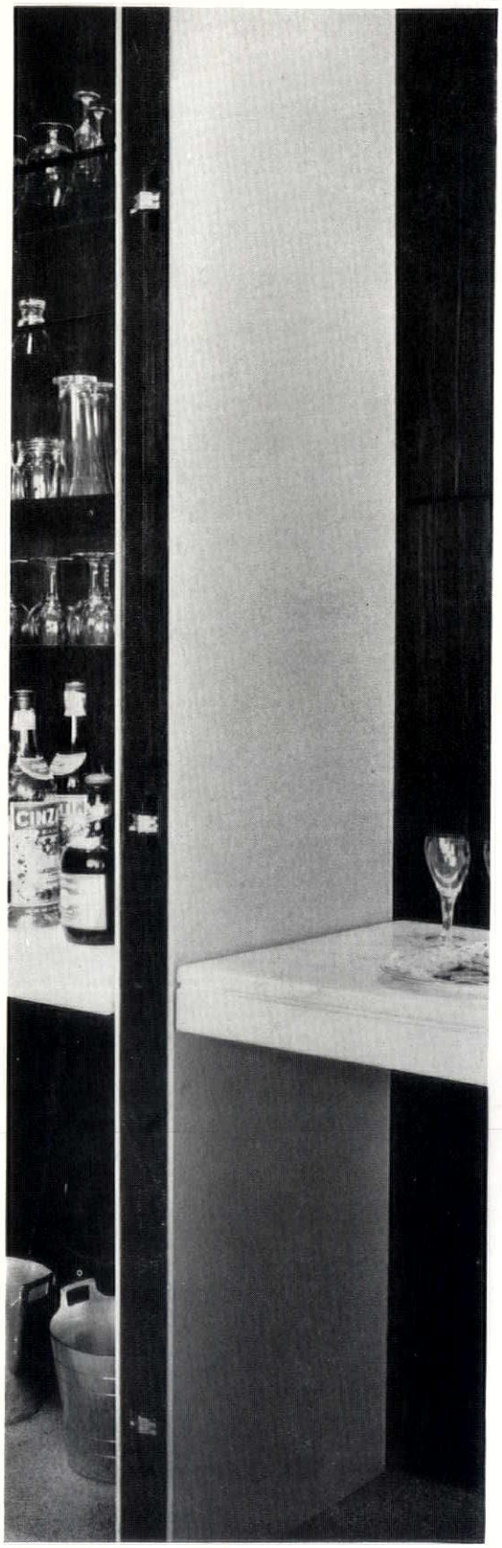
2, view from the lifts towards the board-room entrance—the way in which the door pivots clear of the wall, in order to increase the sense of continuous space, can be seen here, as well as in 1 (previous page).
3, occasional shelf flapped up out of the fruit-cherry panelling alongside the door—the hinge lines can be distinguished in 2, above. These shelves can be brought into use when needed (e.g., for documents or drinks, etc.) but dropped flush with the panelling when not in use, leaving the wall smooth and uninterrupted.
4, partial view of the board-room; the movable furniture was brought in from the previous offices, and is something of a company tradition.

5, the main dining room—fruit-cherry panelling again conceals a run of cupboards which can be used for storing the extension units for the macassar-ebony topped dining table, and other tackle, as well as providing concealed roll-away space for the curtain between the dining- and ante-rooms.
6, 7, open and closed views of the panel door concealing the drinks cupboard in the corner of the ante-room (the marble shelf can also be seen in the background of 5). The ingenuity of the way in which the door can be folded and slid away is typical of the use of the panel systems throughout the scheme.

5



6



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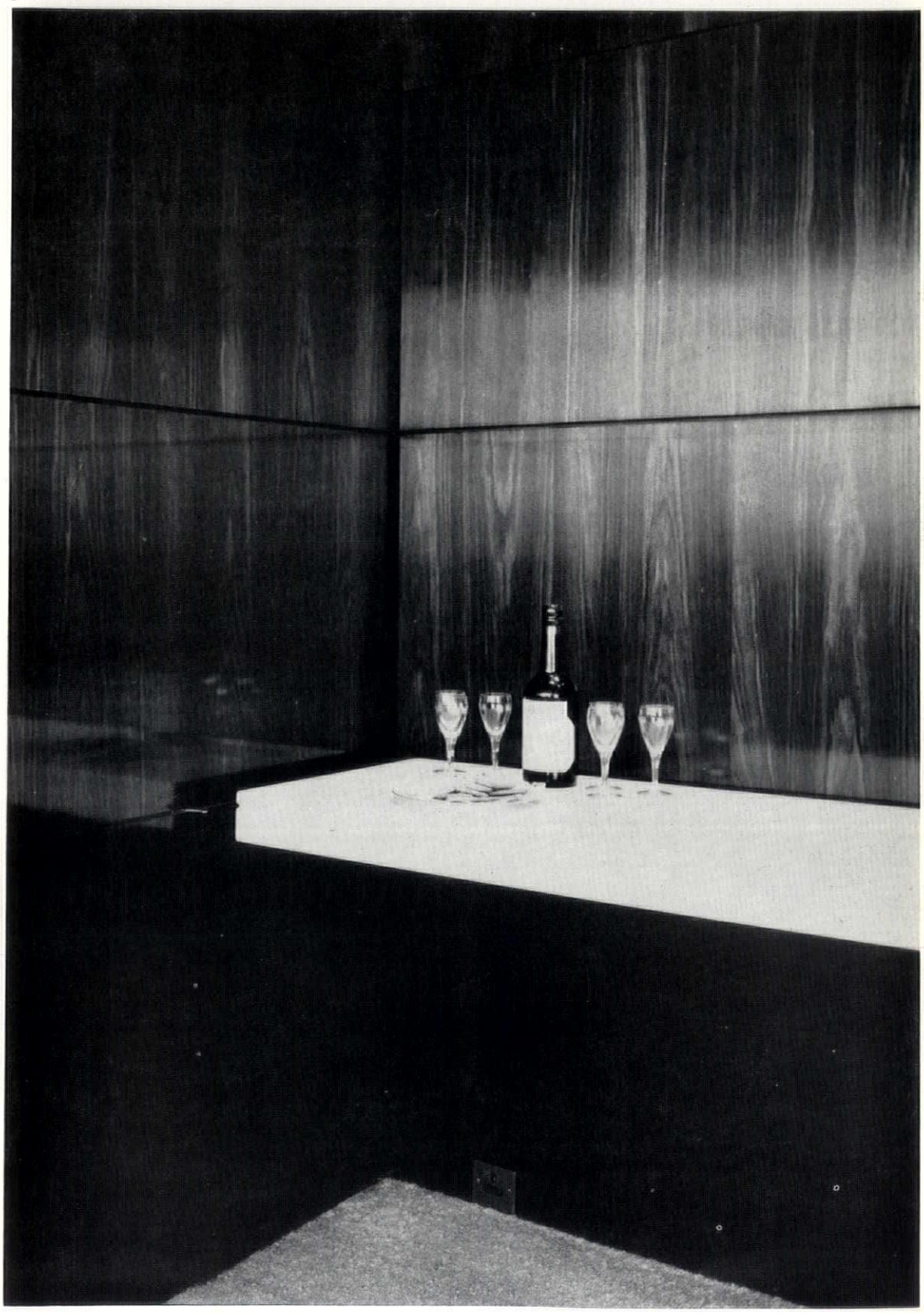
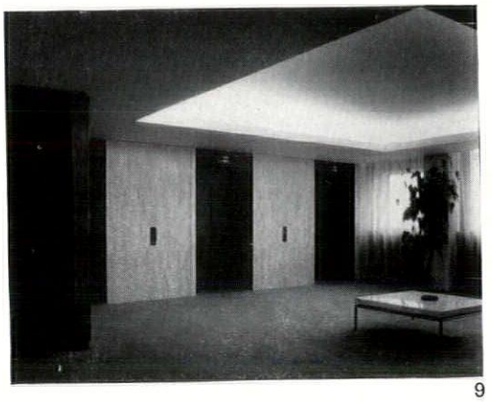




8

8, the lift lobby of the executive-office floor ; the wall facing the lifts is of Bleu Belge marble, the table has a white marble top like all other tables of this type throughout the building.
9, another view of the same lift lobby ; on this side, the wall is panelled in unfilled travertine.



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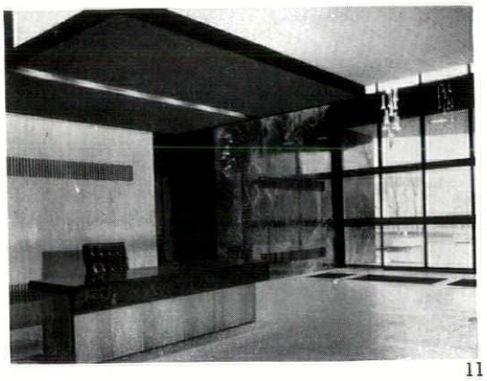
10





11

10, the commissionaires' desk in the main entrance hall at street level, with its marble top and side panels. The overhead canopy, which is carpeted on the underside, helps to focus the visitor's attention on the desk as he enters, and contains lighting which shines down on to the desk, and also helps to floodlight the ceiling.
11, the entrance hall, looking back toward the main entrance.

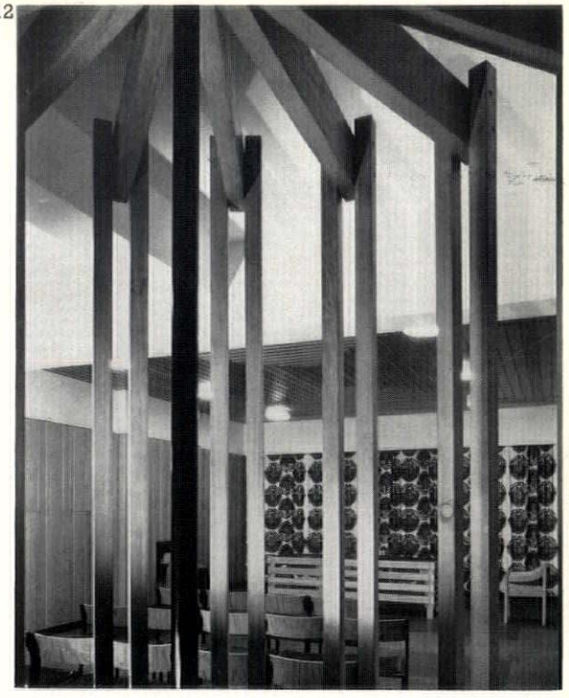
for criticism see page 422

Boy Scout HQ Belfast

architect: Ian Campbell

A headquarters for the scouting movement in Northern Ireland has been made by converting a late-Georgian town house, in order to provide a shop, conference room, club room, offices and ancillary spaces. The materials throughout are straightforward and simple, occasionally relieved by strong patterns or bright colours.

12



12, looking into the conference room from the wooden cage formed by the upper parts of the hangers of the spiral staircase, which gives access to this room from the ground-floor below.
13, close up of the staircase structure ; the risers are threaded over the central post (which is, in fact, a steel rod) and are supported at their outer ends by pairs of square hangers in clear Douglas fir.

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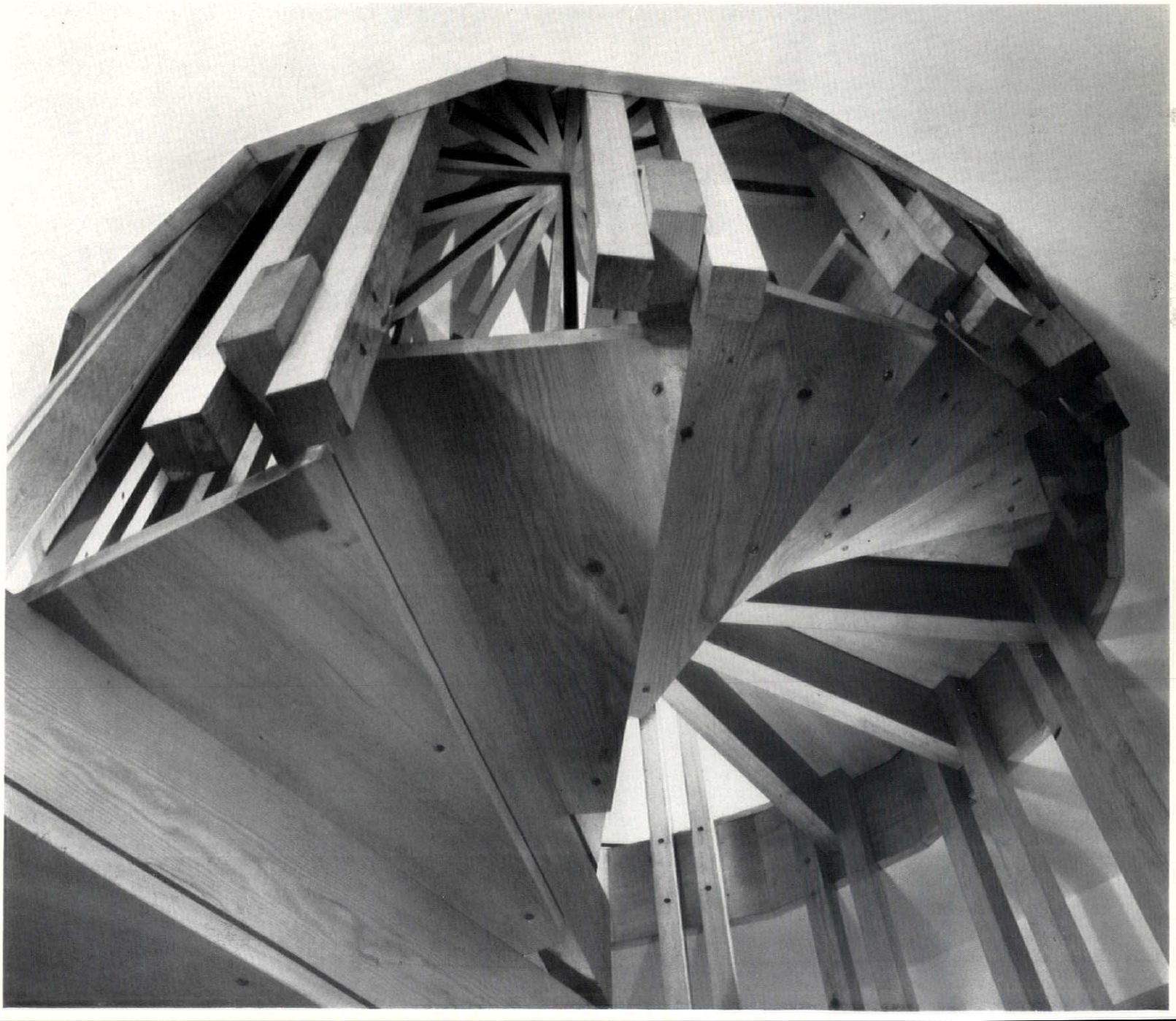
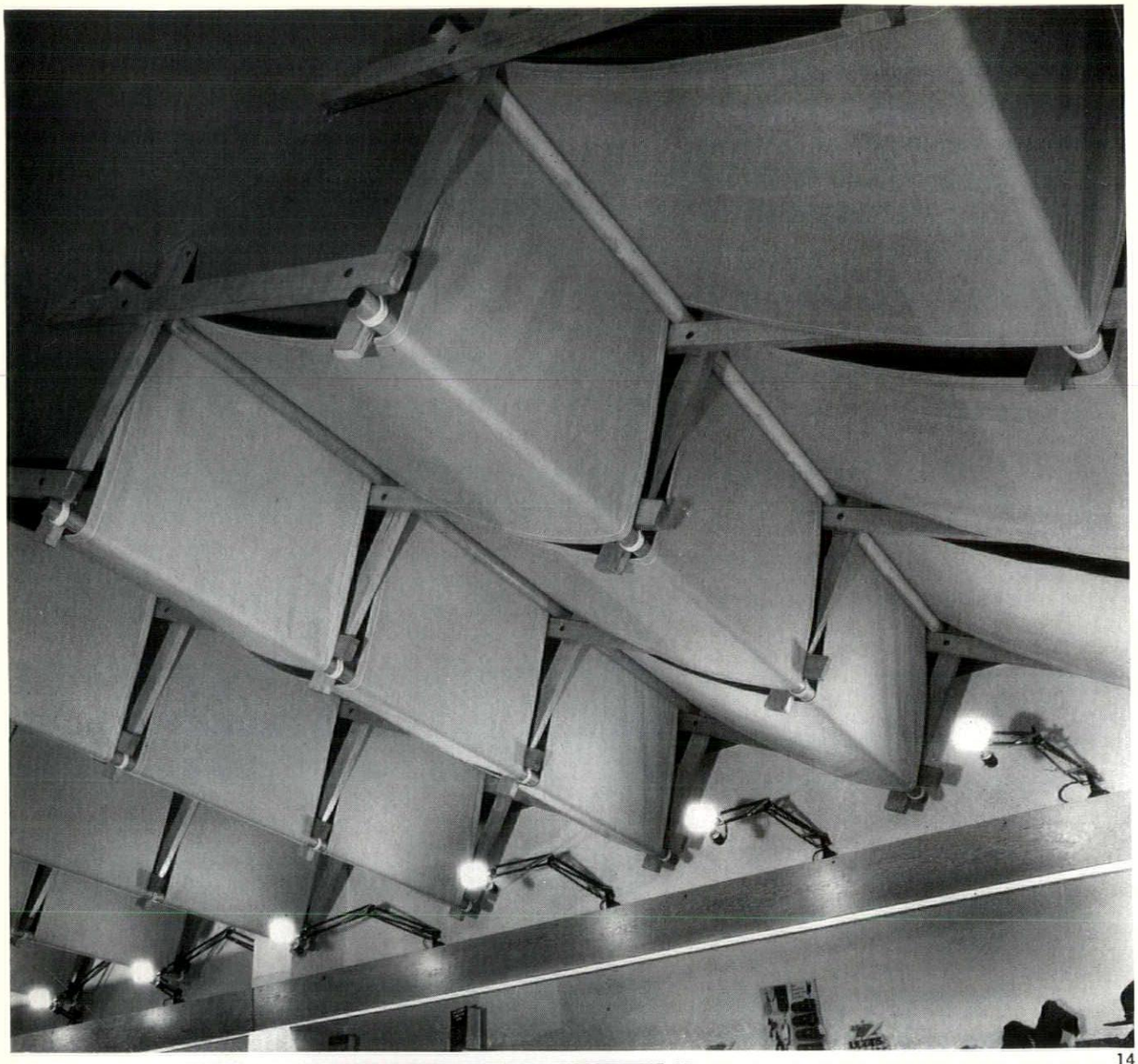
13





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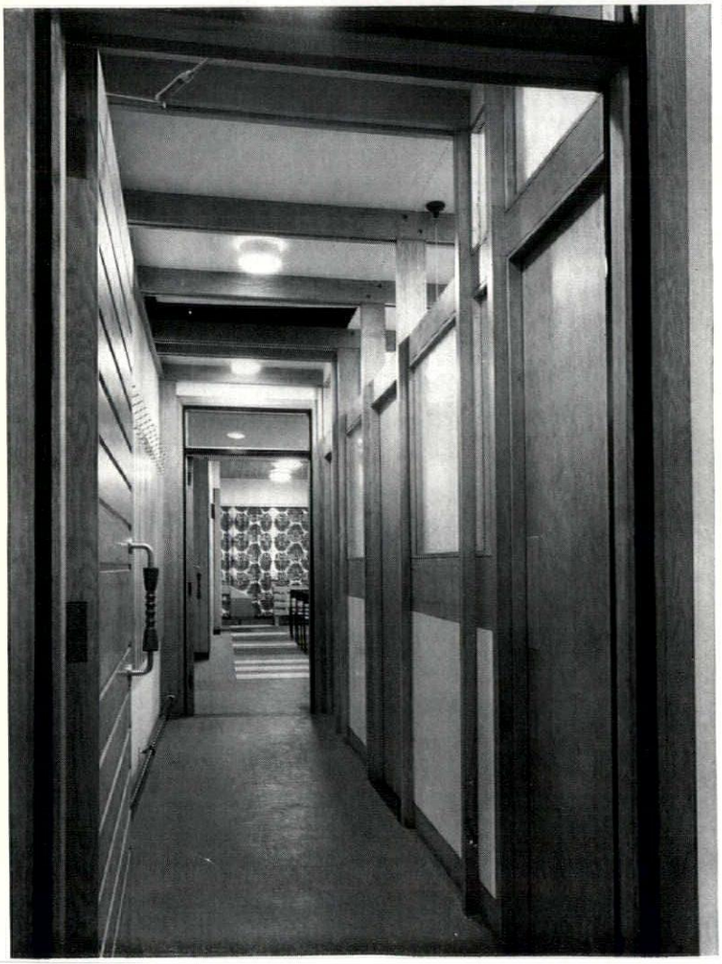
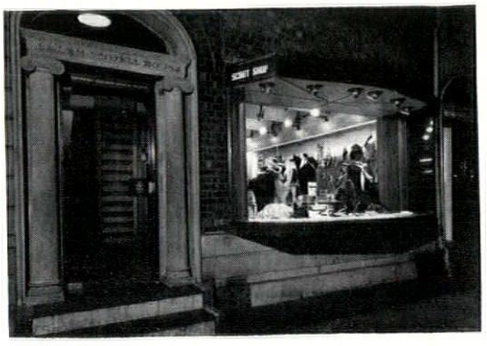


15

14, the camp-bed ceiling of the scout-shop area is in orange canvas, carried on pine frames.
15, partitioning to corridor leading to the conference room with its dramatically patterned curtaining on the end-wall. The use of wood here should be compared with an earlier work of Campbell's, the public house in Portadown illustrated in AR, April, 1961.
16, the exterior by night—the original door has been replaced by one in armoured glass, and a cantilevered display window serves the shop.

16



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Scout Headquarters

photographs by Robert J. Anderson

for criticism see page 422

STAG BREWERY SITE, LONDON (pages 392-399)

Here is a whole new business quarter suddenly added to London. It isn't often that an area as big as this—not far short of ten acres—and especially one so near the centre, becomes available for rebuilding all at one time. When it does it presents an opportunity for comprehensive and imaginative planning. There are some imaginative touches in the scheme as built and evidence of a belated attempt at some sort of overall view, but there is little evidence of the whole complex of buildings and the spaces they create being conceived as a positive example of urban design—as a work of metropolitan improvement in the Regency sense. It must still be rated as an opportunity missed.

The initial trouble was that too many separate developers were involved, and that only when it was clear how confused the result was going to be did the London County Council (under pressure from the Royal Fine Art Commission) step in and impose whatever the scheme possesses in the way of an overall plan. The LCC also reduced the permitted plot-ratio from 5 to 3½, which saved the site from being disastrously over-built. But, as it is, 5,000 office workers are still probably too many from the point of view of overcrowding the area and its transport services, in spite of the nearness of Victoria Station. The LCC would have preferred a higher proportion of flats. The developers wanted it all offices, and the LCC only felt able to insist on the one block of flats that has in fact been incorporated in the scheme.

Even with the reduced plot-ratio, the site would have been overcrowded if evenly built over. Hence the high block (Portland House), which has been much criticized because of its intrusion into familiar views around St. James's Park and Buckingham Palace and because its upper windows overlook the Palace garden. There is much point in these criticisms—the high block is disastrously unrelated to the London views in which it now plays a dominant part—and yet the opening up of a large interior square, which building high at this point made possible, has endowed the scheme with its one feature of civic value and spatial interest. This was one of those difficult occasions when the best solution for a particular site (given a volume of building that the planning authority cannot forbid without involving itself in huge claims for compensation) conflicts with the best interest of the larger scene—a conflict that can only be resolved by the kind of long-term planning and control of land-use that the present system of developing sites commercially makes it almost impossible for the planning authority to exercise.

The conflict in this case being inescapable by the time plans came up for approval, a long struggle took place behind the scenes. Models were prepared of two alternative schemes; one with a high block and central open space, favoured by the Ministry of Housing and Local Government; another with the high block reduced, resulting in more of the site being covered with buildings, favoured by the Ministry of Works, who came into the argument because they have to be consulted about any project that affects the view from one of the Royal parks or palaces. The Ministry of Housing won the decision, and the LCC thus won their case in their role of a planning authority attempting to introduce some order, and establish some space standards, in a site threatened with piecemeal redevelopment, even if they lost their case in their role of moulders and guardians of London's townscape.

The interior square, which is the principal fruit of the LCC's and the Ministry of Housing's victory, has several intrinsic virtues as well as providing the right kind of largely traffic-free core for a built-up business area of this kind. It is given an appropriate identity by being raised slightly above the surrounding streets, which also expresses the fact that it has a parking garage underneath it. It has good scale and sense of enclosure—the space doesn't leak out too much at the corners; the relative heights of the various buildings as seen from it is satisfactory. The detailing, on the other hand, is a little clumsy in places, and the effect of this is aggravated by a peculiarly scale-less and insensitive work of sculpture in the middle. For property developers to become patrons of sculpture is a trend one can only welcome; but now the trend is becoming an established practice the next thing is for them to begin to discriminate between good sculpture and bad. Stag Place, finally, suffers from a certain bleakness, but this will be at least partly remedied when the shops that are intended to occupy the ground floor of the southern block (Glen House) have been installed. The open ground floor (whether glazed-in or literally open to form a pedestrian passageway) is a useful planning device which has been used in nearly all the buildings surrounding this square and gives an agreeable sense of connection with a wider world beyond; but it does deprive the lower storeys of buildings of their capacity to enrich the foreground by filling it with busy detail.

Outside the central square space has not been nearly so well handled—in fact it doesn't seem to have been handled at all so much as allowed to occur. The spaces between buildings simply wander away and there is no sense of positive architectural decisions being taken. The general failure to tie the development in visually with surrounding London is particularly evident in the western part of the site—that is, west of the new link road (Bressenden Place) that cuts across it, and the fault must partly lie in the planning of this road.

It curves across the site without any apparent relationship to the building plots, and looks to be an example of road engineering totally divorced from town-planning and architecture, making it almost impossible for the several architects to produce coherent designs. It emerges into Victoria Street simply by breaking through the two-storey westerly extension of Esso House, at a point which does not seem to have even any traffic-planning significance and, in the other direction, disappears equally arbitrarily round the corner into Warwick Row and thence into Buckingham Palace Road. Its frontages may bear slightly more architectural meaning when the low buildings under construction on its western side are finished, but the design of the road must bear the main responsibility for the whole redevelopment area being so unsatisfactory as a piece of townscape.

To come to the individual buildings, they are typical of the increasingly (and not necessarily undesirably) standardized style of big city office blocks, and judged by current standards are very respectable examples, the dingy cladding of two of the buildings excepted. It is, perhaps, a little unfortunate that Esso House in Victoria Street, the one that faces outwards and therefore the only one fully seen by the public without penetrating inside the newly developed area, is the least distinguished of the seven buildings. It is the most commonplace in the handling of its geometrical elements and the most insensitive in detail.

It is also unfortunate that the view into the site from Victoria Street should be closed by the rear wing and the rather drab end elevation of Eland House, which from this direction looks curiously unfinished. Both Eland House and the very similar Glen House suffer from the quality of the precast units with which they are clad, which are poor in colour and texture. They have nothing like the crisp assurance of Portland House by the same architects. Were they perhaps restricted to a lower budget? Portland House (leaving aside its defects as an element in views outside the site) is well proportioned, good in scale—notably the double-height base provided by treating ground and mezzanine floors as one unit externally—and the precast cladding system is well handled.

Taken all round, however, Carrier House and Roebuck House show the highest architectural quality, especially Roebuck House, the only block of flats. This has a slickness and sophistication missing elsewhere. Watney House also has a degree of slickness, but a fussy treatment of its façade panels, and the change to a curtain-wall treatment three-quarters way up the façade, designed apparently to give distinctiveness to the directional floors, in fact gives them a rather bleak industrial character. The bases of Portland House and Roebuck House are given interest by the skilful manipulation of mezzan-

ine floors, and in the other buildings the bases gain enormously by the open planning already referred to. The problem of finishing off buildings of this type at the top has in no case been quite satisfactorily solved (the vertical screening at Portland House perhaps comes nearest in spite of its somewhat makeshift appearance); in some cases there seems to have been hardly an attempt to solve it.

PLANETARIUM, ST. LOUIS (pages 406-409)

As a functional concept, a planetarium is little more than the dome needed to provide an artificial sky, and a machine to project heavenly bodies upon it. In practice, a number of ancillary functions attach themselves to the dome and clutter the conceptual image, so that most architectural solutions that keep the dome in view for the sake of the concept finish by visually confusing the image. Even the London Planetarium, comparable with St. Louis in size and seating capacity, which has the bare commercial minimum of ancillaries simply gathered under the dome, still fails to produce a convincing image.

Part of the trouble stems from dome not being as simple as the concept—it has to be sound-proofed and weatherproofed, and Gyo Obata has undoubtedly made a bold decision in deciding not to weatherproof the dome separately but to bring it within the general shelter of the whole functional complex. The exterior hemisphere of the artificial sky now becomes part of the private spectacle offered to the visitor once he is inside, not part of external image seen by the passer-by in the park. But this decision once taken, the problem of the architectural form of the general shelter becomes crucial—and wide-open.

It is possible to imagine a number of solutions, not all of them symmetrical, and all with functional justifications as convincing (or as unconvincing) as those that could be made for Obata's retention of a circular plan-form. Few of these alternatives would give so striking or comprehensible an external image from all points of view in the park, however, and few would offer the same apparent logic of vertical circulation by spiral ramps and stairs, related to the external surface of the artificial sky in the lower parts, and to the internal surface of the sheltering form nearer the summit.

Given this circular solution, how far does the use of a hyperboloid of rotation closed by a diaphragm at the throat, justify itself? Constructionally, as a ruled surface generated by straight lines, it is probably simple to produce; structurally, the form contributes stiffness to a thin shell; and as a sculpture in a landscape, it amply justifies itself visually, in spite of some doubts about the placing and form of the supporting legs under the rim of the shell. Yet the form seems to argue with the conceptual dome-image (which persists in the mind), and one may wonder if a domical form was not consciously avoided because Buckminster Fuller (with whom Obata is well acquainted personally) has already provided St. Louis with an impressive public example in the shape of the Climatron. In this case, the telescope-deck on the diaphragm may be the unearned increment, so to speak, of a purely formal decision, for it would have been difficult to provide so neatly on the standard dome-form. All in all, HOK are to be congratulated on the first really original contribution to a building type that will certainly become more numerous as the 'space-age' proceeds.

BOY SCOUT HEADQUARTERS, BELFAST

COMPANY OFFICES, HAMMERSMITH (pages 415-420)

Both this month's interiors are pure examples of the interior *genre*—environments created within the space provided by an existing structure. Beyond this common point of departure, the two designers have pursued diverging methods, however. Campbell's adaptation of a Georgian-type house is frankly a conversion, and the means of adaptation are clearly on view, no attempt having been made to adapt the aesthetics of the inserted structures, which show a clear separation in style from the given walls and spaces. On this contrast the whole success of the conversion hinges—obviously so in the case of staircase and the 'camp-bed' ceiling of the shop, more subtly but no less emphatically in the case of the planked ceiling and aggressive wall-treatments of the conference room.

In Francis Pym's interiors for British Oxygen, and particularly the board-room floor, the opposite is the case: undifferentiated bulk-space, with no given features except the structural columns and vertical services, and the runs of windows and radiators round the perimeter, has been reduced to visual and functional order, and raised to the level of an executive suite, by an essentially invisible aesthetic. Admittedly there are rich woods, lavish planting and textured ceilings, but the main device for controlling and servicing the spaces is a system of storage walling, revealing itself externally as comparatively anonymous panelling which conceals services, storage, serveries, fold-away screens, disappearing curtains and whatever else is needed to make luxury felt as well as seen.

Such a treatment, of course, applies only to space-dividing structures within the plan of the floor, and the situation at the perimeter is more difficult. The given cill-height is not a comfortable one, visually, for interiors of this kind, being too high to afford really large areas of glass (and thus spectacular views even to seated members of the board) nor high enough to give much sense of security and enclosure. Semi-transparent curtaining is not really sufficient to overcome the feeling that the designer is losing control of his spaces toward the perimeter, and one wonders if, budget permitting, something more structurally definitive and visually less vague, such as *shoji* screens or even a form of oriental *mushrabiyyah*, would not have given the feeling (and the fact) that view and daylighting had been as firmly dealt with as the other factors conditioning this interior environment. The problem is one that becomes ever more pressing as the construction of bulk-office-space for rent continues, and awaits a definitive, or even a pace-setting solution.

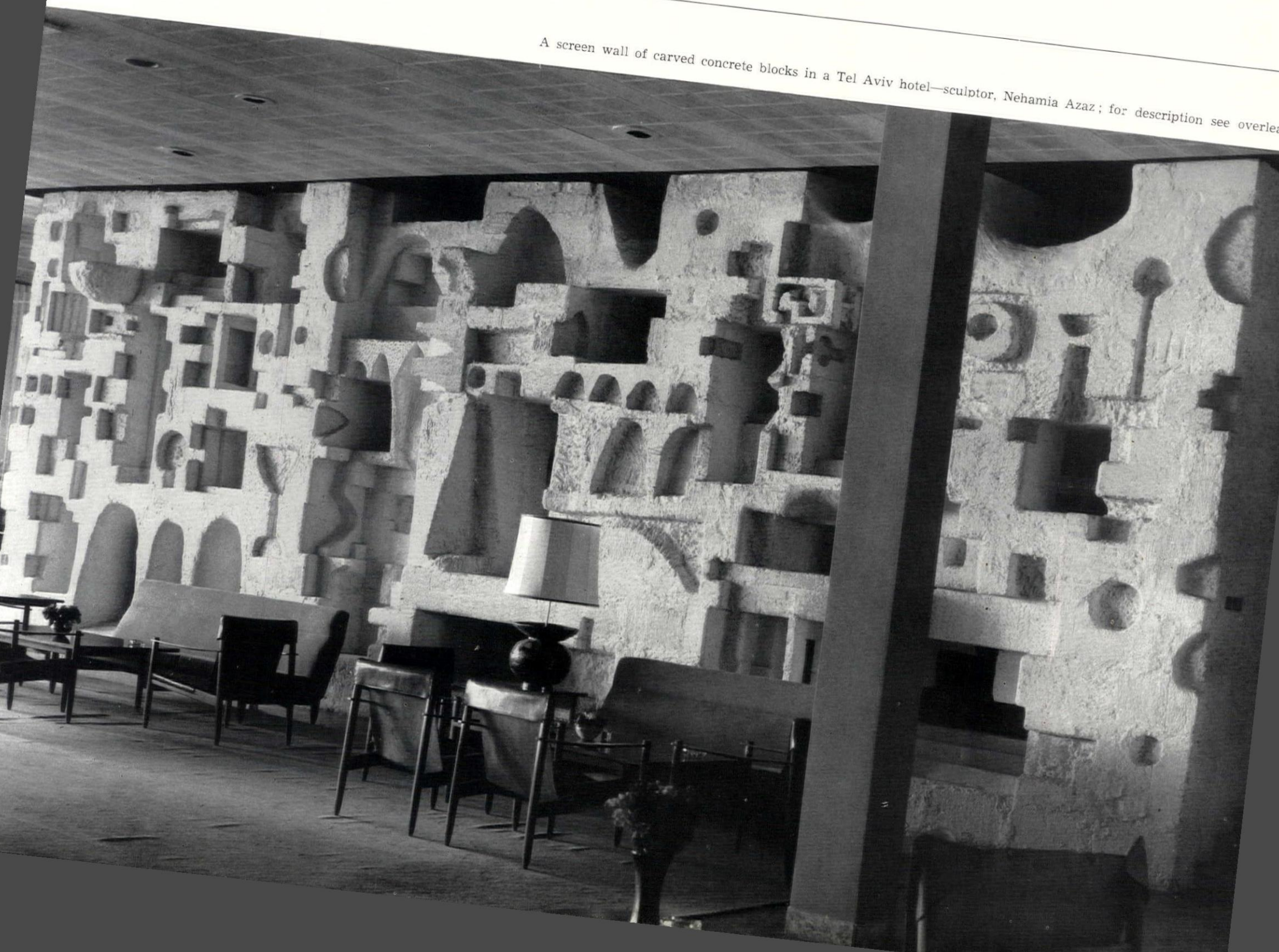
FLATS AND HOUSES, OAK HILL PARK, HAMPSTEAD (pages 430-434)

What matters most about this project is the way the buildings are placed on the site, which is a unique one—several acres, well wooded, in the middle of Hampstead; undulating and with its highest point dominating the whole district. This cannot be fully judged until all is finished (the buildings illustrated in this issue represent not much more than half the whole programme) but it is already clear that the terrain has been well and imaginatively used, both from the point of view of the occupants of the buildings and of the changing prospects one obtains moving about the site, in which trees, hillocks, roadways and buildings group and regroup very agreeably. The one private house is particularly well sited and suitably secluded.

Two criticisms might be made: the three blocks of flats already built are more or less identical, which does not altogether suit their very different relationship to the landscape—one placed in a hollow, another on the crown of a hill, and so on. Some variation in their height and silhouette might have fitted them even more snugly into their surroundings. And related to this is the question of the actual height of the blocks. They are treated as tower blocks, but to the eye they have not the proportions of towers. At least one or two of them could, with benefit, have been several storeys higher. The apparent need for this is emphasized by the abrupt termination of the blocks as they stand, which makes the number of storeys look more arbitrary than perhaps it is.

One striking virtue of the scheme is that the service areas are well screened. It is often a difficulty, when free-standing blocks are placed in a landscape, to avoid obtruding service yards and paraphernalia of that kind; there is no back area where they can easily be hidden. Here the problem has been unusually well solved by using the lie of the land and well placed screen walls. The flats get their architectural character from the strong horizontal layers of brickwork at each floor level, the panels between windows being faced with glass and therefore reflecting trees and the sky, completely detaching one floor from another. The effect is just saved from being over-emphatic by good detailing. The entrance halls are also nicely detailed and the internal planning economical in space with enough flexibility to allow variation in the sizes of flats within the fixed envelope.

THE SCULPTURAL SCREEN

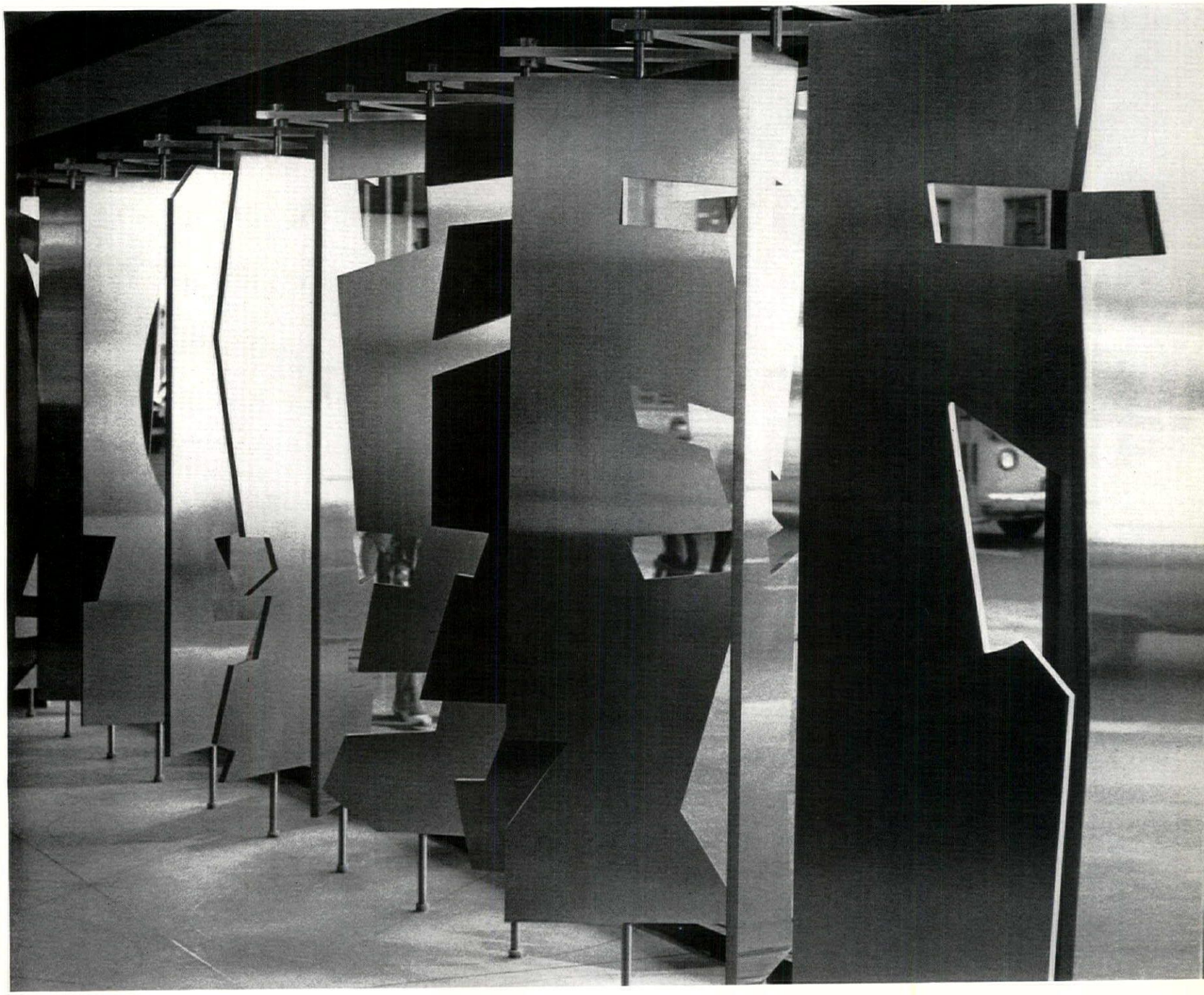


A screen wall of carved concrete blocks in a Tel Aviv hotel—sculptor, Nehamia Azaz; for description see overlea

On this and the preceding page are two examples, one from Canada and the other from Israel, of non-structural dividing walls, whose function requires some degree of transparency, that have been treated also as decorative works of sculpture.

The photograph overleaf shows a wall in the Sheraton Hotel at Tel Aviv. It is the work of Nehamia Azaz, an Israeli sculptor who at one time lived in England, studying pottery. The wall separates the hotel lounge from a passage leading to the dining-room, and reflects and absorbs light from a large window-wall opposite. It is nearly 36ft. long, 12ft. high and nearly 4ft. thick. It was first designed for carving in stone, but for reasons of economy was eventually constructed out of concrete blocks, 160 in number, of the kind used in local domestic building. As the blocks were laid the main cavities and projections were formed, Azaz then completed the design by carving it by hand and it was finally whitewashed.

The photograph on the right shows the screen-wall that occupies the whole of the ground-floor window-space in the Montreal Trust Company building (architect, James Gordon Law) at Montreal. It is the work of a young Belgian painter and sculptor, Robert Helsmootel, who now works in New York (he has also done murals for Idlewild Airport and the Time-Life building). The Montreal screen, composed of 30 aluminium panels each seven feet high, is the culmination of 18 months' experiment with the material, including experiments in cutting and lacquering techniques. The cutting was by an electrical saw. The screen is designed not only to make up a continuous 60ft. frieze, but by daily adjustment of the individual panels to provide a never-ending series of different relationships. The panels, some of which have a matt and some a polished surface, are supported on steel rods fitted into floor sockets. Each can be turned to take up any one of six positions; the adjustment is a simple mechanical process and the sculptor has worked out a graph of permutations to guide the porter who has charge of the operation.



Screen wall of aluminium by Robert Helsmootel in a Montreal office building.

A monthly anthology from all over Britain of townscape problems, outrages and opportunities, compiled by Ian Nairn and illustrated by Kenneth Browne

LOOK OUT

SOS

NORTHWICH, CHESHIRE
A former chapel in the best kind of eighteenth-century provincial architecture, 1. Used a long time as offices, now 'sold for development' as a supermarket. There would still be time to convert



1

rather than demolish it, as Woolworths did at Honiton.

Apart from the parish church, this is the best building in Northwich and should never have been allowed to get into these straits.

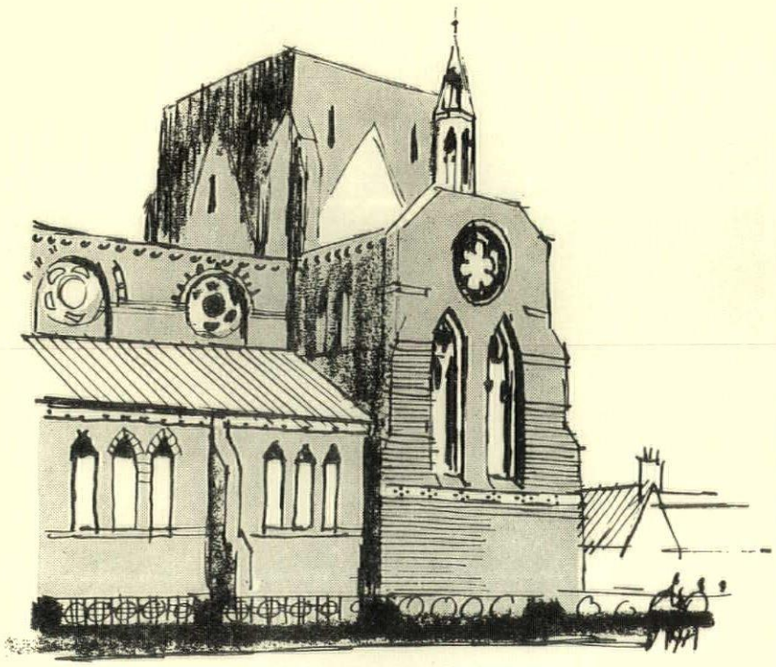
ST. MARGARET, ANFIELD
By W. G. Audsley, 1873, the best Butterfieldian church in Liverpool, 2. Burnt out in 1961 and now a gaunt ruin the replacement involves total demolition. But as this is a really strong, noble building, could not the east end be re-roofed, with a light modern frame, whilst the nave is left open? Cologne did exactly this, with great success, in the church of St. Mauritius by Fritz Schaffer.

PRESCOT, LANCS
A Georgian town hall that has been derelict for years, 3. It should have been rehabilitated, for the site is hilly, attractive, and bypassed by through traffic. Instead it is to be demolished without any replacement: one more prairie where the town centre was.

OUTRAGE

PETERSFIELD, HANTS
The old sprawl going on unchecked, and on a site (at Sheet), 4, which is a mile away from the small town. Imagine the difference if the houses had been related, and the absurd shapes of the gardens had been equalized to make a central green space.

ARCHITECTURE AS SHE IS SPOKE
A new house at Shipton-under-Wychwood, Oxfordshire, 5, and a new factory at Buckingham, 6.



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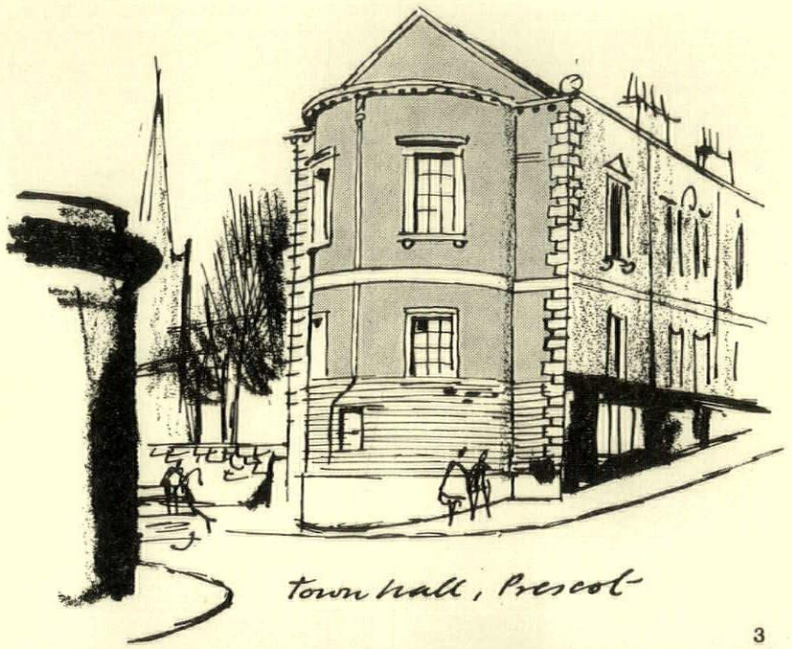

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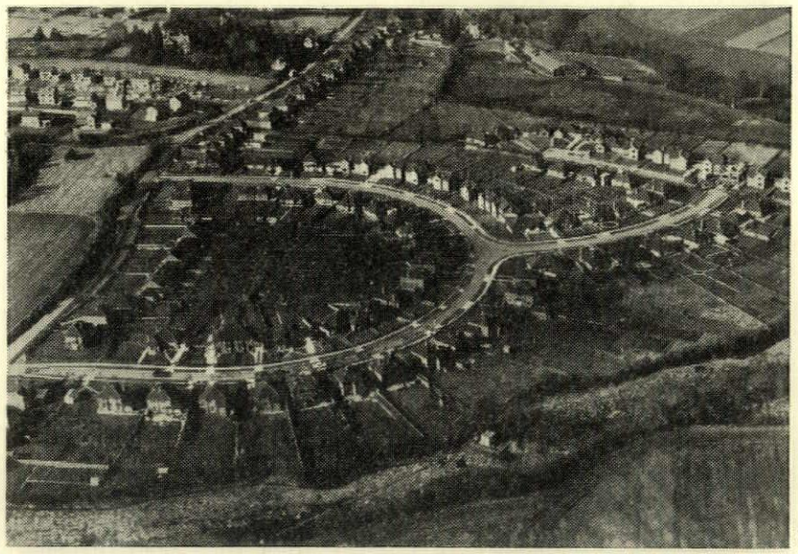

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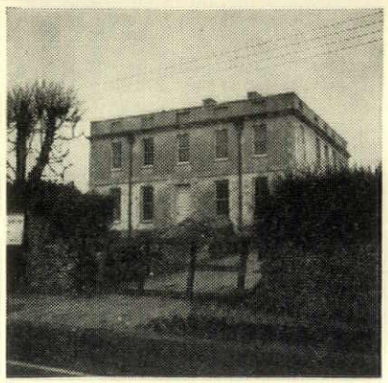

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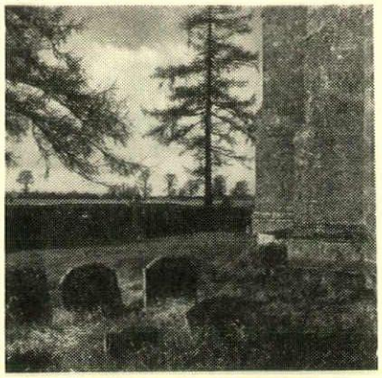
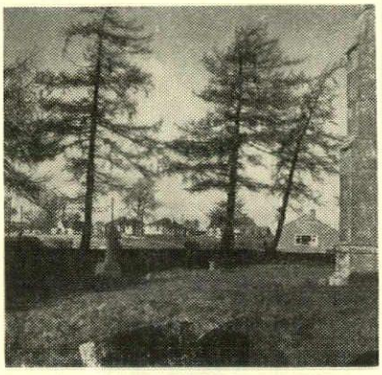
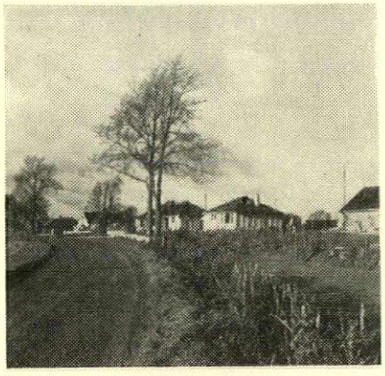
6

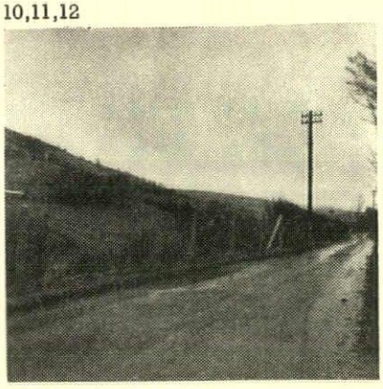
7,8,9

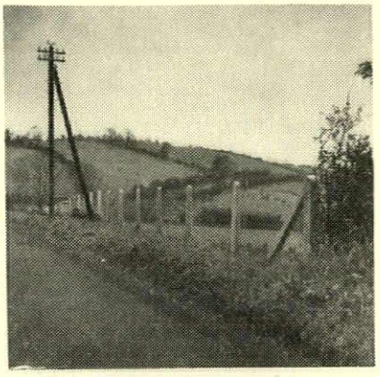


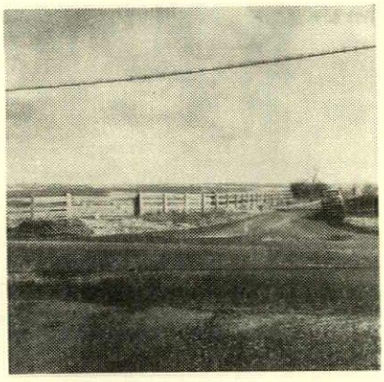




10,11,12





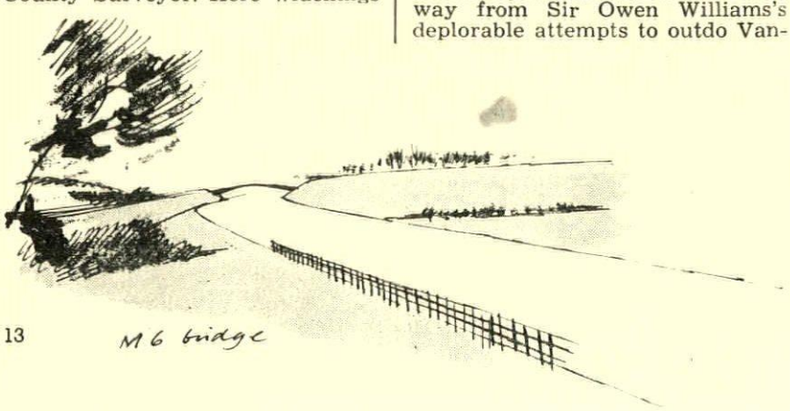


NEW HOUSING, OXHILL, WARWICKSHIRE
Oxhill is a pleasant and wholly rural village south of Stratford, and the first scene, 7, looks happy enough. But turn the corner, 8 and 9, and there is a chaos of new buildings. This would have been a good site for new housing of the right sort, with some relationship between the units, and some respect for the site. Other counties have done it; but Warwickshire, which has a bad record in adding to villages, has failed again.

RURAL FENCING, RADNOR AND COUNTY DOWN
The prettiest places often get the roughest treatment from the County Surveyor. Here widenings and sightlines have been provided in the crudest way possible, and not on main roads, but small lanes whose complete rurality is their biggest asset. The Radnor road, 10, is between Cregrina and Glascwm; the Ulster road, 11, is between Dromara and Ballynahinch. What should have happened is shown in a view from the more sophisticated Cotswolds, 12—a crossroads above Colesborne in Gloucestershire.

CREDIT

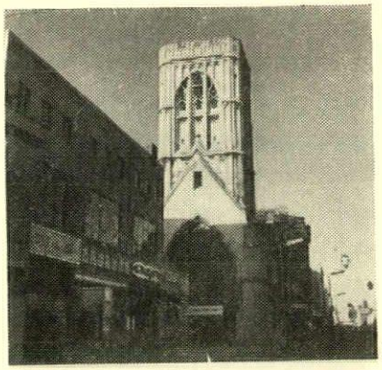
M6 BRIDGES, STAFFS
Motorway design has come a long way from Sir Owen Williams's deplorable attempts to outdo Vanbrugh on the M1. This new footbridge, 13, on the M6, near Newcastle-under-Lyme, which carries farm traffic, is just about perfect in shape, lightness and the way in which the curve takes up the rhythms of the hillsides around.



13

CENTRAL CROSSROADS, GLOUCESTER
Except for the tower, St. Michael's church was demolished a few years ago. The building which has replaced it is terrible (on the left in 14). But the net result could be a townscape gain, because the ground floor of the tower has been glassed in to become a tiny shelter in the very heart of the city, 15, in a place to stop and feel the whole place rushing around you. A good idea has been spoilt by dowdy glazing, and dowdy seats inside, sloppily arranged—a German or Dutch town would have managed something very different. But better details could still make this a true improvement.

TRAWSFYNYDD, MERIONETH
One of the best shots in a disappointing recent exhibition by the CEGB was this view of Trawsfynydd nuclear power station, 16, (Sir Basil Spence, consultant architect; Sylvia Crowe, consultant landscape architect). Ironically, the most notable feature—the overhead crane—is only temporary and will shortly be dismantled. It points the way to a nobler reconciliation of ultra-wild and ultra-modern than mere camouflage.



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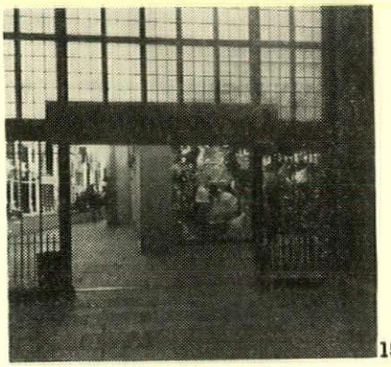

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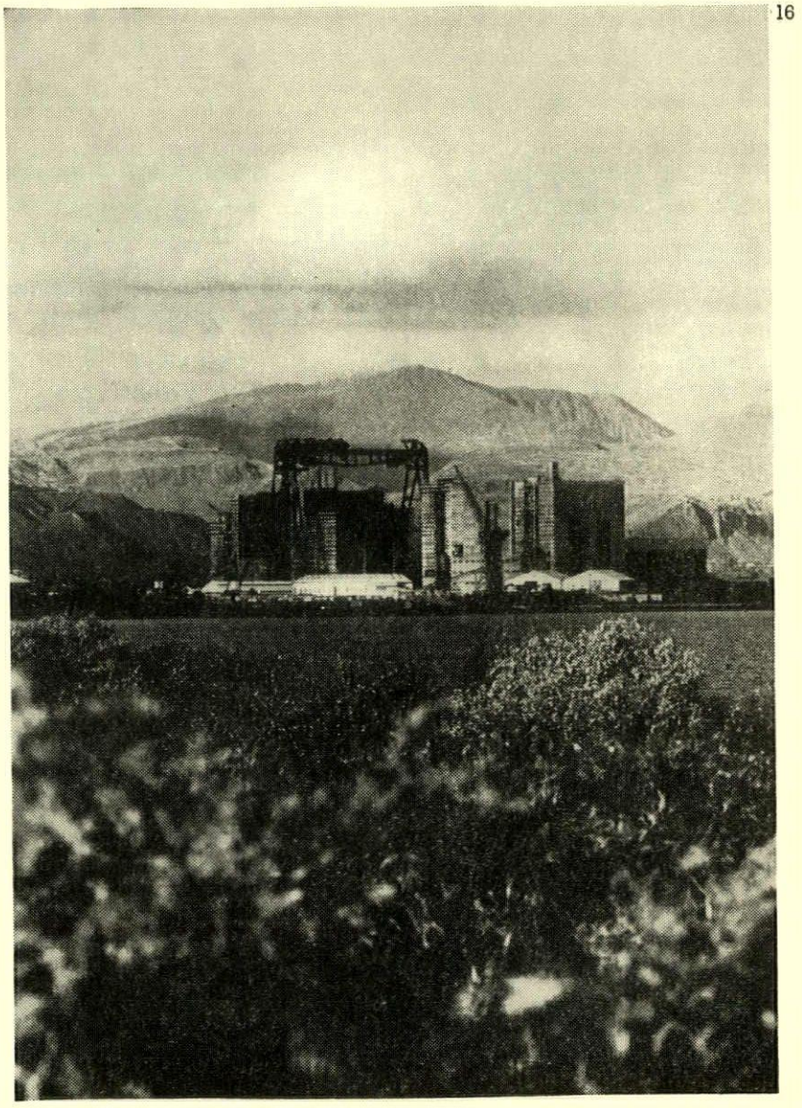

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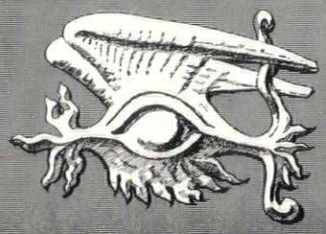
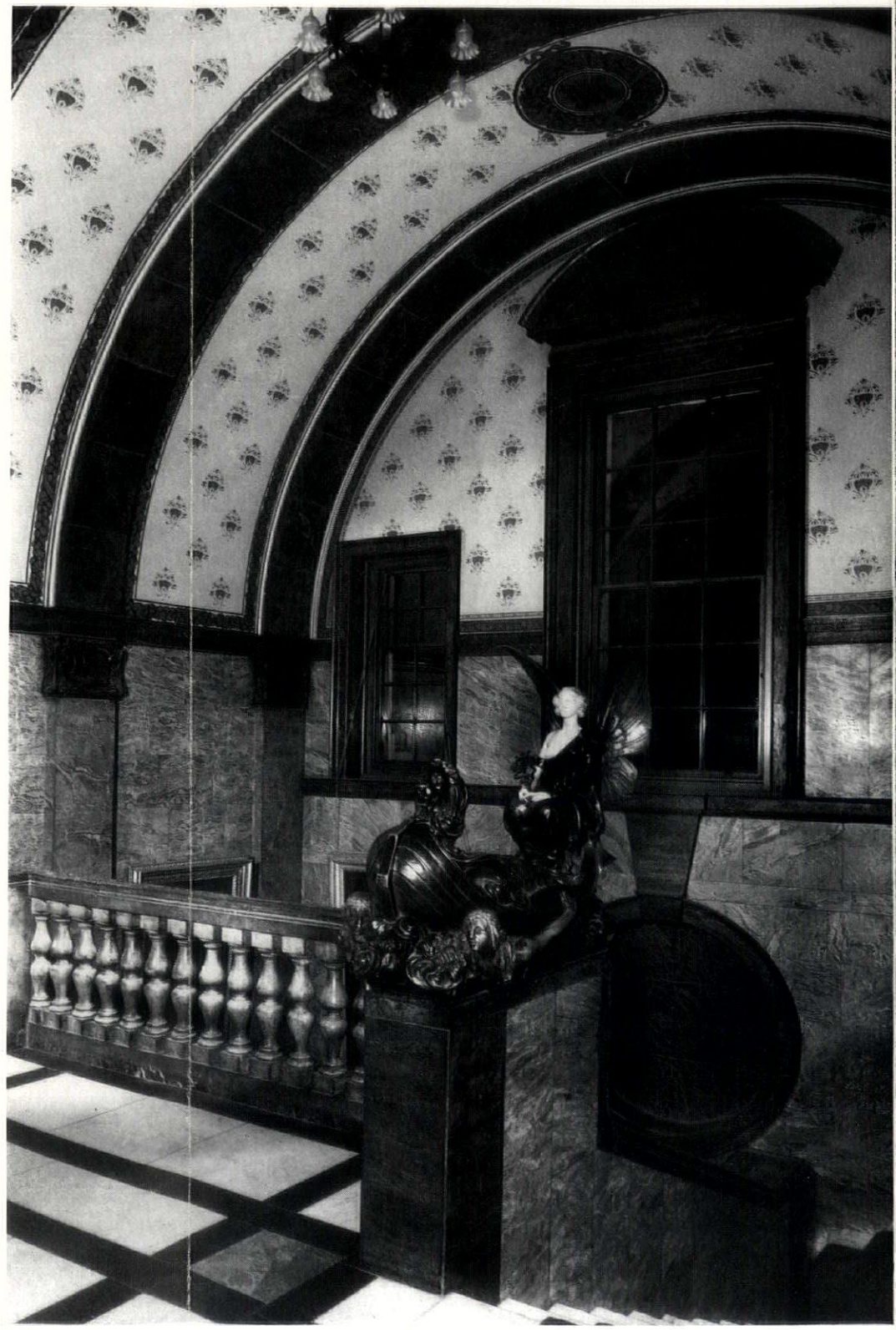


the exploring eye

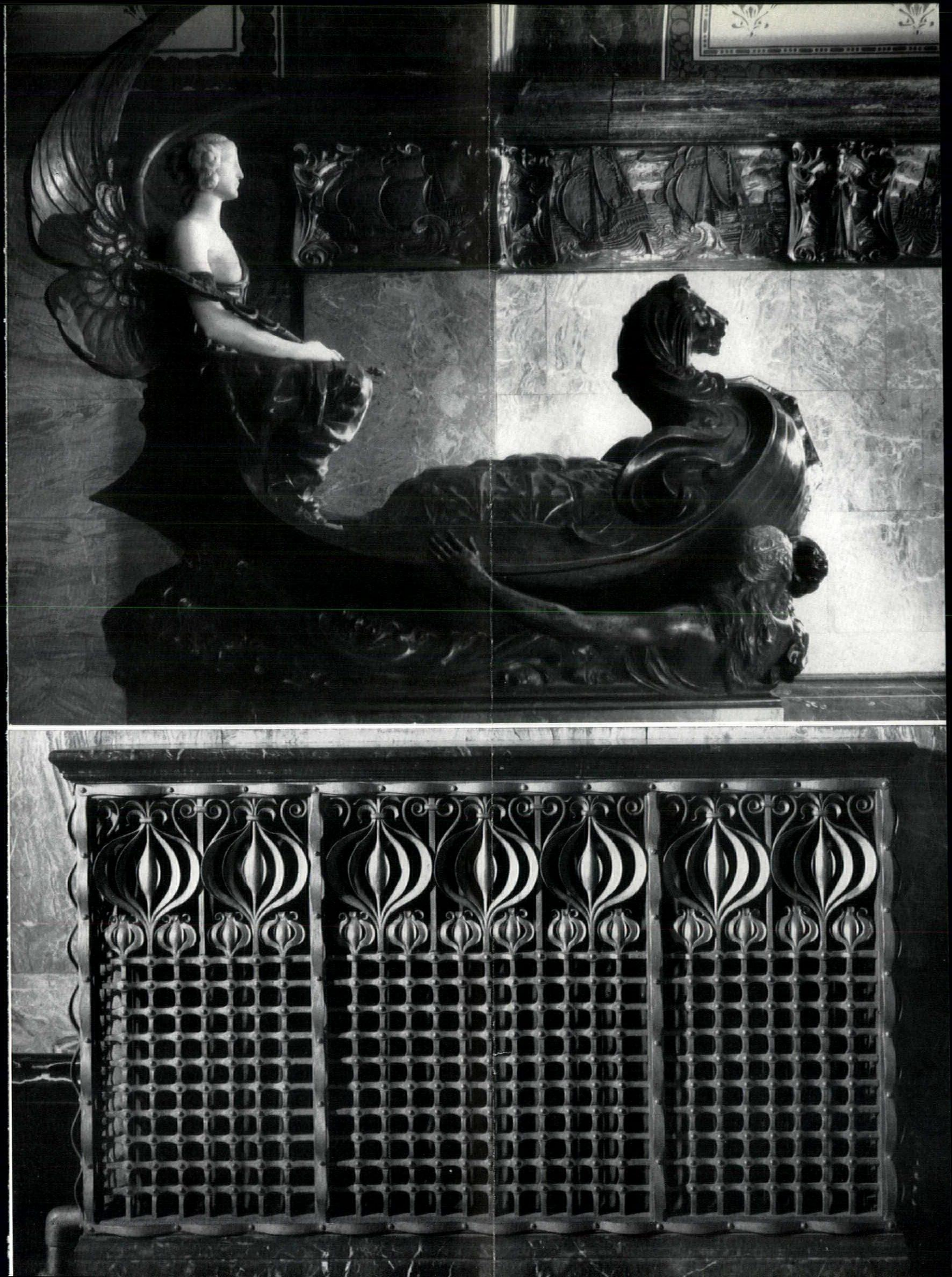
In some ways as fantastic, and to the public as inaccessible, as the vaults of Isfahan or the domes of Samarkand, are the board-rooms and other sacred places of the palaces of commerce of the City of London. Some of them perished by bombing during the war, others are now being replaced in the normal processes of rebuilding, and may vanish unvisited, unphotographed and unrecorded. One which still stands, and has also been recorded in magnificent photographs by Eric de Mare, houses Lloyd's Register of Shipping, the body of assessors and inspectors who deem boats to be A1 (or otherwise) at Lloyd's, and help to fix load lines and other factors of safety.

Their sanctum is a smallish building by City standards, completed late in 1901 to the designs of T. E. Collcutt. Even then it was regarded as outstanding for its decorative work, with rich external sculpture by George Frampton and ornamental carving by J. E. Taylerson. But the interior, which is illustrated here, is even more remarkable. Conceived in an immensely self-assured style that is transitional between a Barriesque Victorian Renaissance and full Edwardian Baroque, it accepts flourishes of Art Nouveau like a sovereign receiving tribute. Many talents were employed in this rich blend of styles—Gerald Moira, E. J. Lambert and Brangwyn painted ceilings and walls, Herbert Pegram executed the marble overmantel to the boardroom, and—in a setting already rich in Devon marbles and Carrara—Lynn Jenkins designed and carried out the intricate frieze of bronze and ivory that is the chief ornament of the staircase, as earlier a section of it had been the sensation of the Royal Academy in 1900.



1

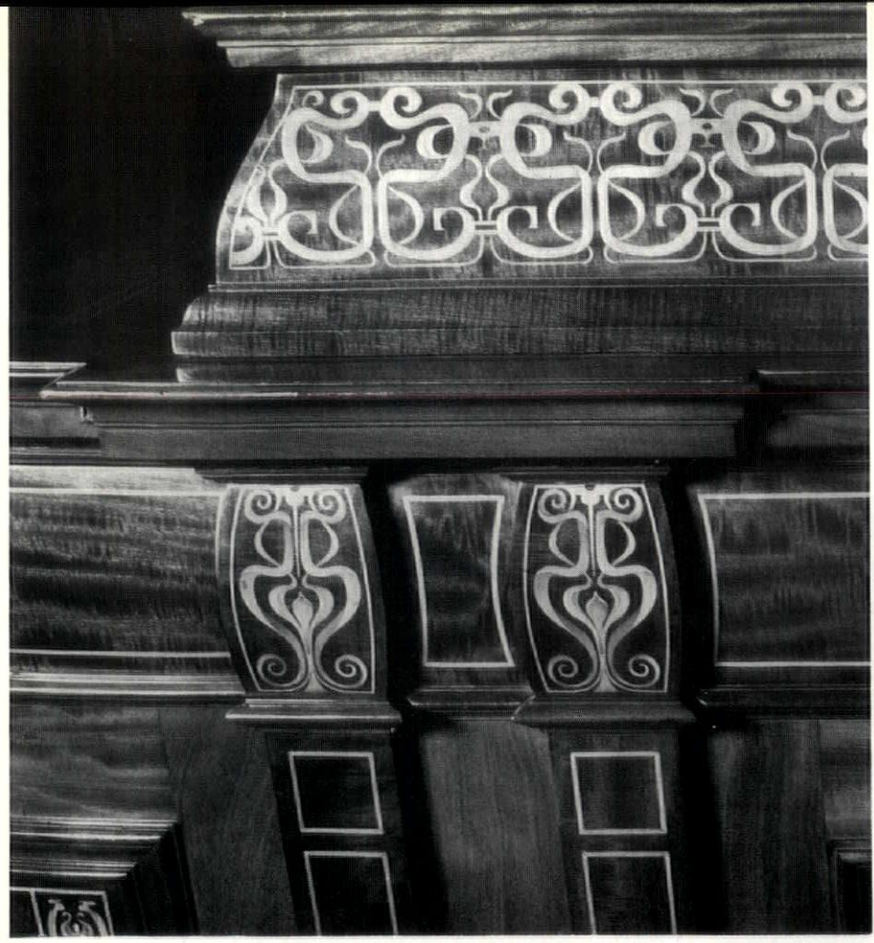
1, *the top of the main staircase.*





2

2, *general view of the council-chamber.*
3, *African mahogany, with Art Nouveau inlay, on the end of the desk on the council-chamber dais.*
4, *classical learning and* fin-de-siècle *inventiveness on the painted ceiling of the library.*
5, *Quattrocento fantasia in bronze and ivory: Lynn Jenkins's newel and frieze to the main staircase (see also illus.* 1).
6, *the Arts and Crafts in the service of technology: gilt radiator grille in the first-floor concourse.*



3

5
6

4

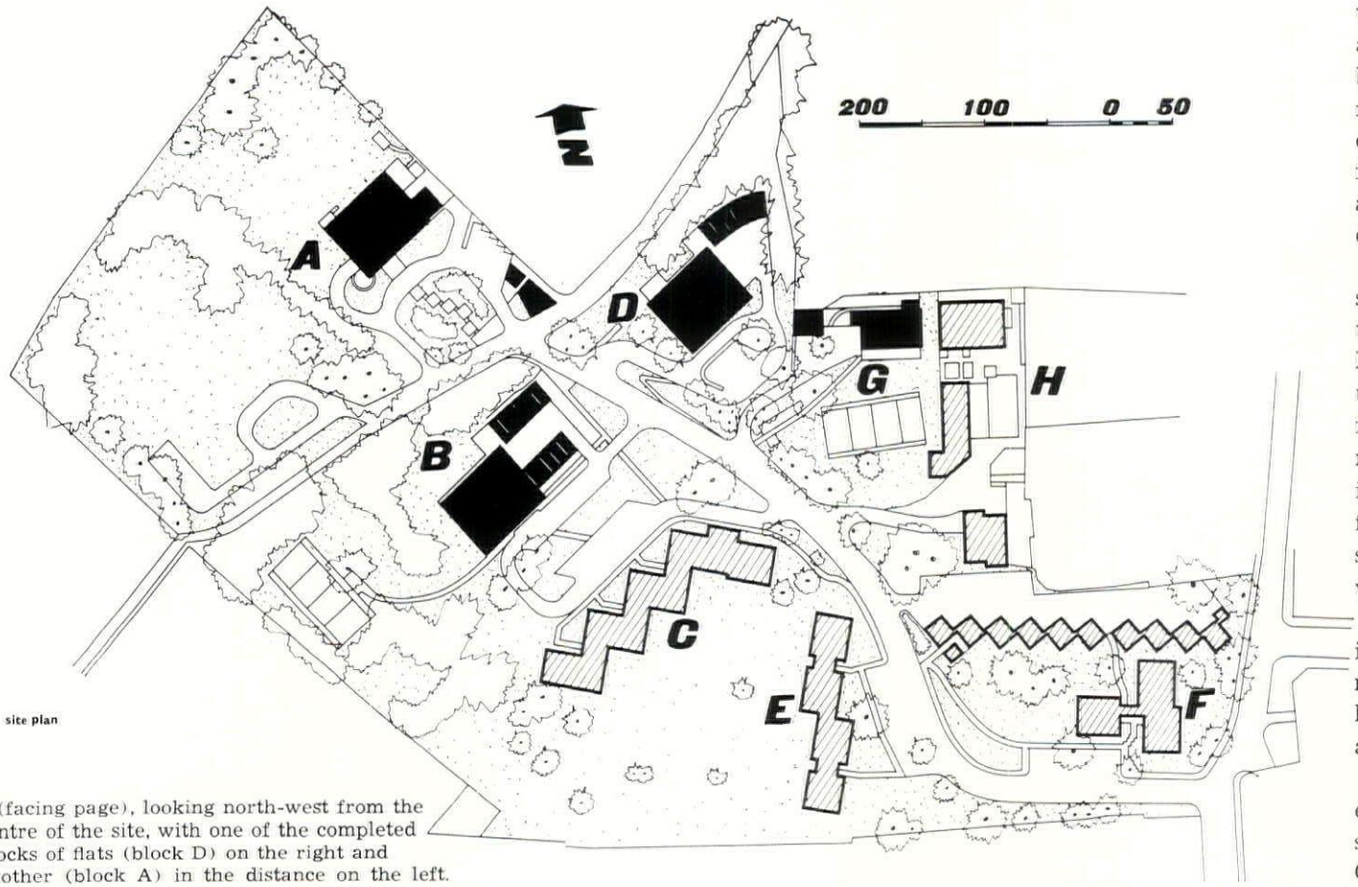


FLATS AND HOUSES, OAK HILL PARK, HAMPSTEAD

ARCHITECTS | **MICHAEL LYELL ASSOCIATES**

The redevelopment, by Elsworthy Ltd., of an 8½-acre site, which is being carried out in two stages. The first stage, illustrated here, consists of three identical seven-storey blocks of flats (marked A, B and D on the site plan), single-storey rows of garages adjoining each block and one private house with its own garage (marked G). The house has been built for Sir Stanley Unwin, the publisher. The second stage, now under construction, consists of three more blocks (C, E and F), together with the line of garages and the electrical sub-station laid out in staggered formation immediately to the north of block F. Also under construction, but the subject of a separate contract, is the mews development in the north-east corner of the site, marked H.

The use of tower blocks for the flats allowed the wooded character of the site to be preserved and maximum use has been made of existing old walls and other landscape features. The total number of flats provided in the three blocks is 36, made up of four penthouse flats (two duplex and two all on one floor), seven five-bedroom flats, fifteen four-bedroom, nine three-bedroom and one two-bedroom. Normally there are two flats per floor in each block, with caretaker's and storage accommodation on the ground floor. The main services and vertical circulation are in the centre, the latter including passenger and service lift, a semi-circular staircase for residents and an escape and service stair. Each flat has two bathrooms and two balconies.



site plan

1 (facing page), looking north-west from the centre of the site, with one of the completed blocks of flats (block D) on the right and another (block A) in the distance on the left.

Construction is reinforced concrete, which was chosen largely for acoustical reasons. In-situ columns and central core walls support precast slab floors 10in. thick with no downward projections. Ground floor columns are faced with white marble, and the ground floor brickwork is 2in. purple handmade facings with recessed joints in black mortar. The horizontal bands of brickwork above are of 2in. Dutch pale brown facings with raked joints. Panels between the windows are aluminium in varnished hardwood frames. Cills and copings are purple-grey quarry-tiles.

The house, with its chauffeur's lodge and garage, stands on a plateau overlooking its own garden and tennis-court. There is special provision for the owner's large number of books. Double glazing is extensively used, and large frameless sliding panels of plate glass form the external walls of both sitting and dining rooms, which are separated by a partition that slides into the wall. An open-rise staircase leads to the upper floor, of which the landing and bathrooms are southlighted from a clerestory window running the whole length of the house.

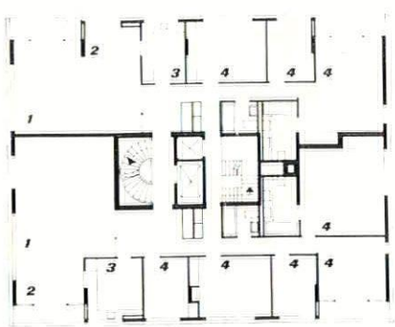
Construction is load-bearing white brickwork (exposed internally), with the overhanging upper storey clad in natural cedar boarding. The roof is of aluminium. The house has a ducted warm-air heating system served by a gas-fired boiler.

Associate-in-charge, Edwin Hoenig. Consulting engineers, Kenchington, Little and Partners. Quantity surveyors (flats), Reddick and MacDonald; (house), Gardiner and Theobald.

2

2, the lower part of block B (see site-plan on page 430) and, on the far side of the road that runs north-westwards across the site, block D.
3, 4 and 5 (facing page), typical details of entrance halls and canopies in the three completed blocks of flats.

FLATS AND HOUSES, OAK HILL PARK, HAMPSTEAD



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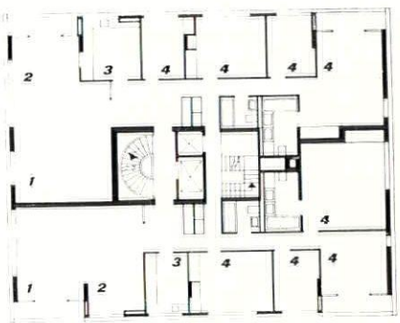
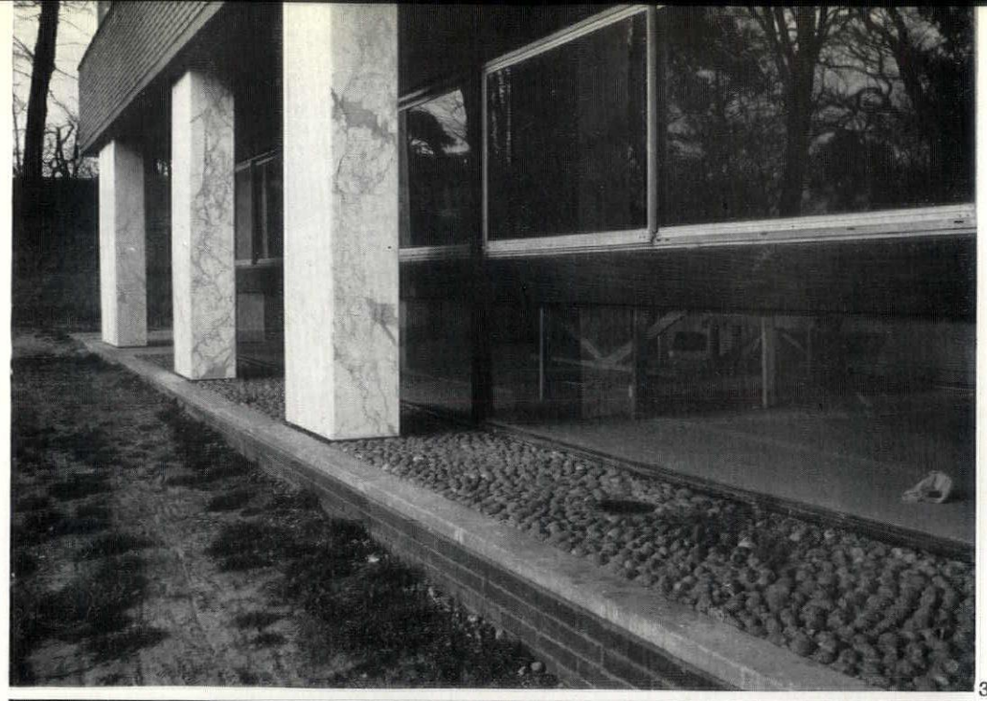
upper floor plan, block B, 3- and 5-bedroom flats



upper floor plan, Block B, 4-bedroom flats

key
1. living room
2. dining area
3. kitchen
4. bedroom



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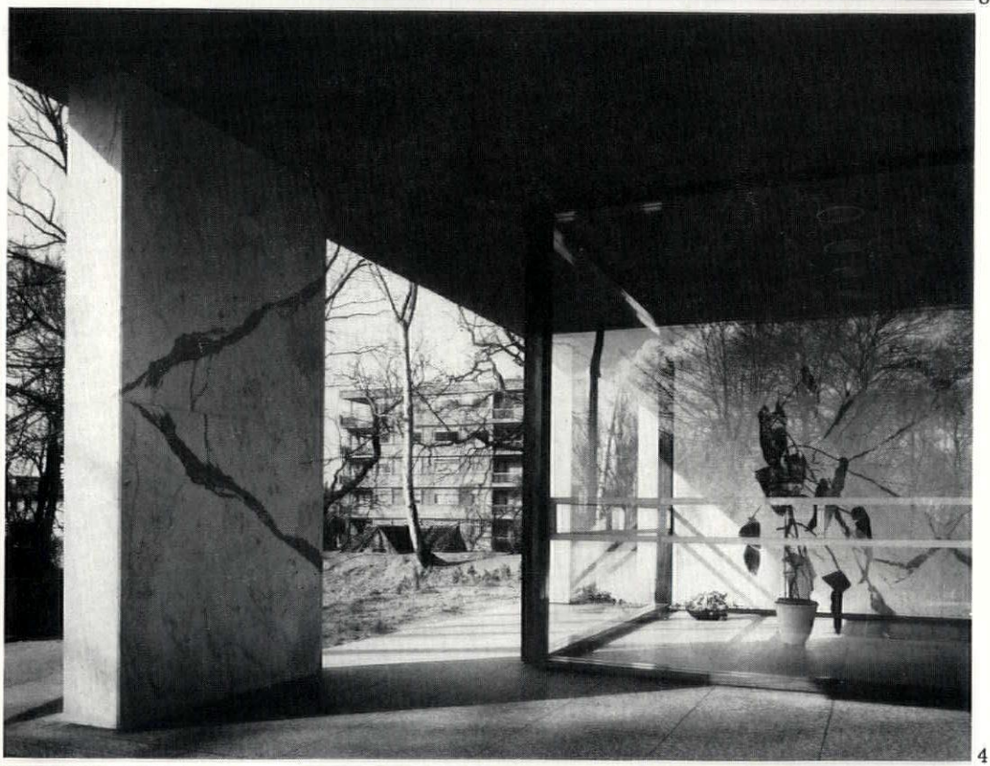

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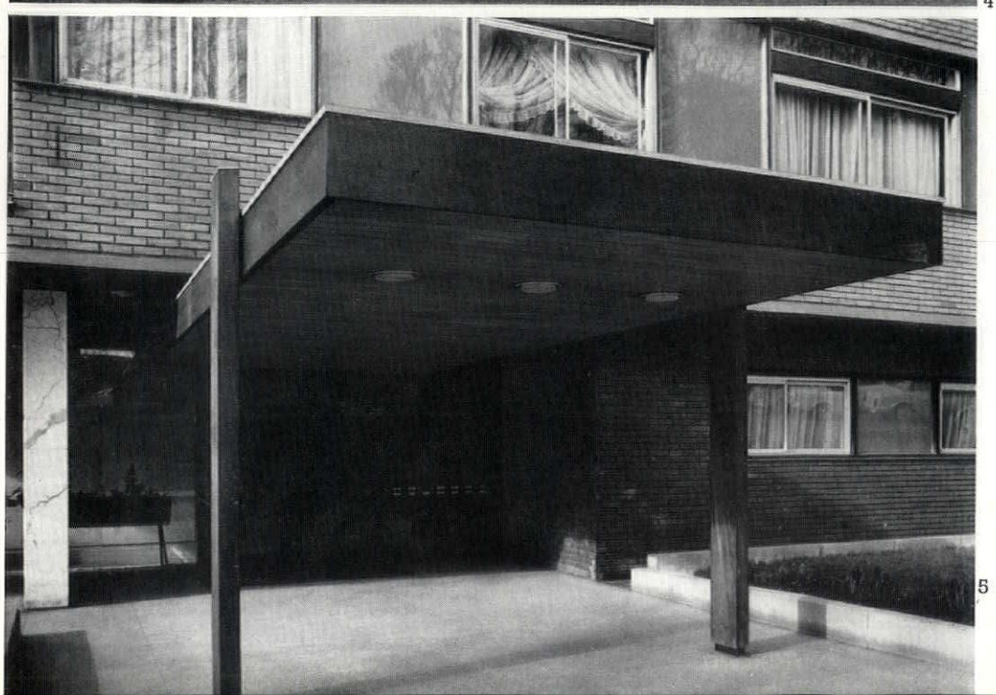

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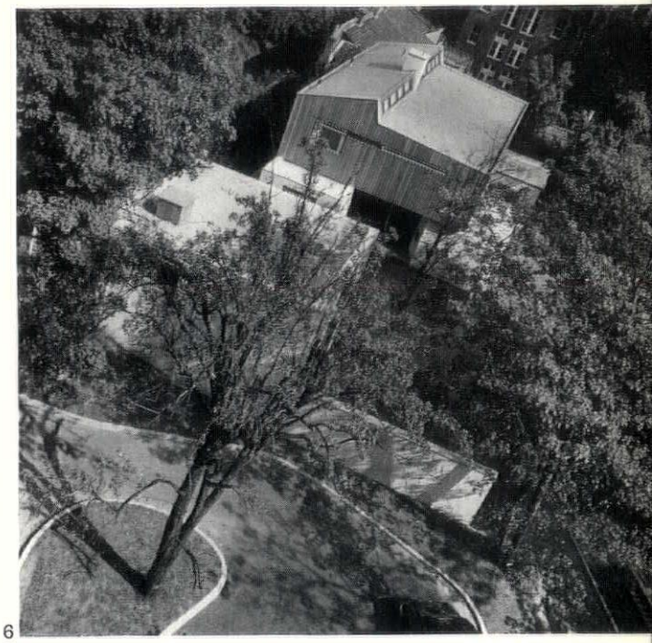
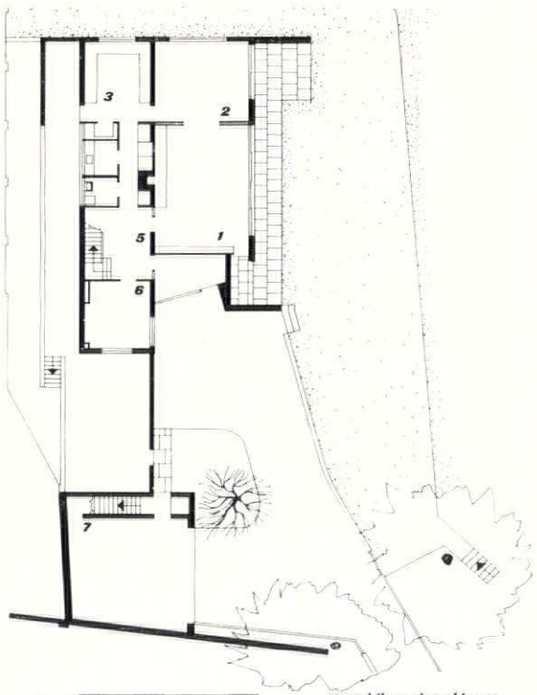
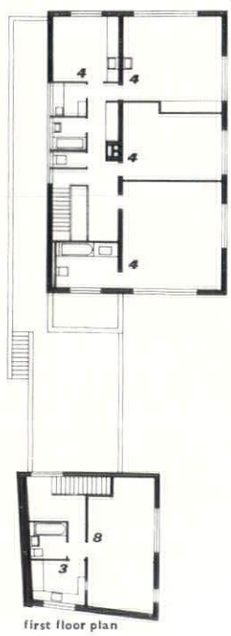


6

6, the house for Sir Stanley Unwin (G on site-plan) seen from the roof of the nearest block of flats.



ground floor plan of house
(scale: 1/32 in. = 1 ft.)

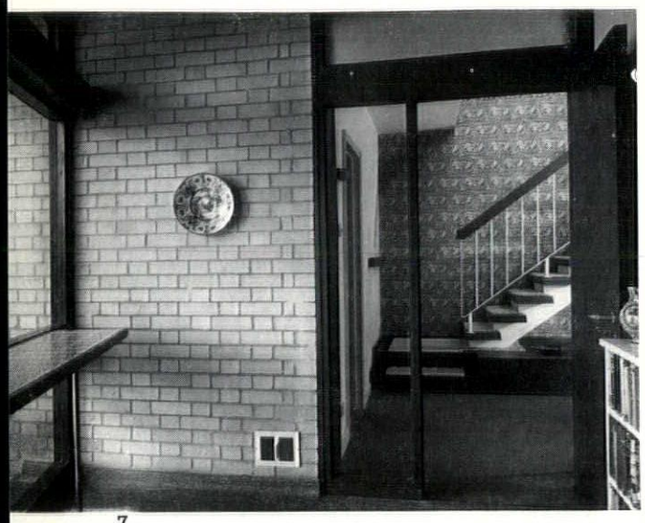


first floor plan

key
1, living room
2, dining room
3, kitchen
4, bedroom
5, hall
6, study
7, garage
8, bed-sitting room

7, entrance and staircase hall of Sir Stanley Unwin's house. 8, the house from the south-west. 9, looking along the terrace outside the living-room windows, with one of the blocks of flats (block D) beyond.

for criticism see page 422



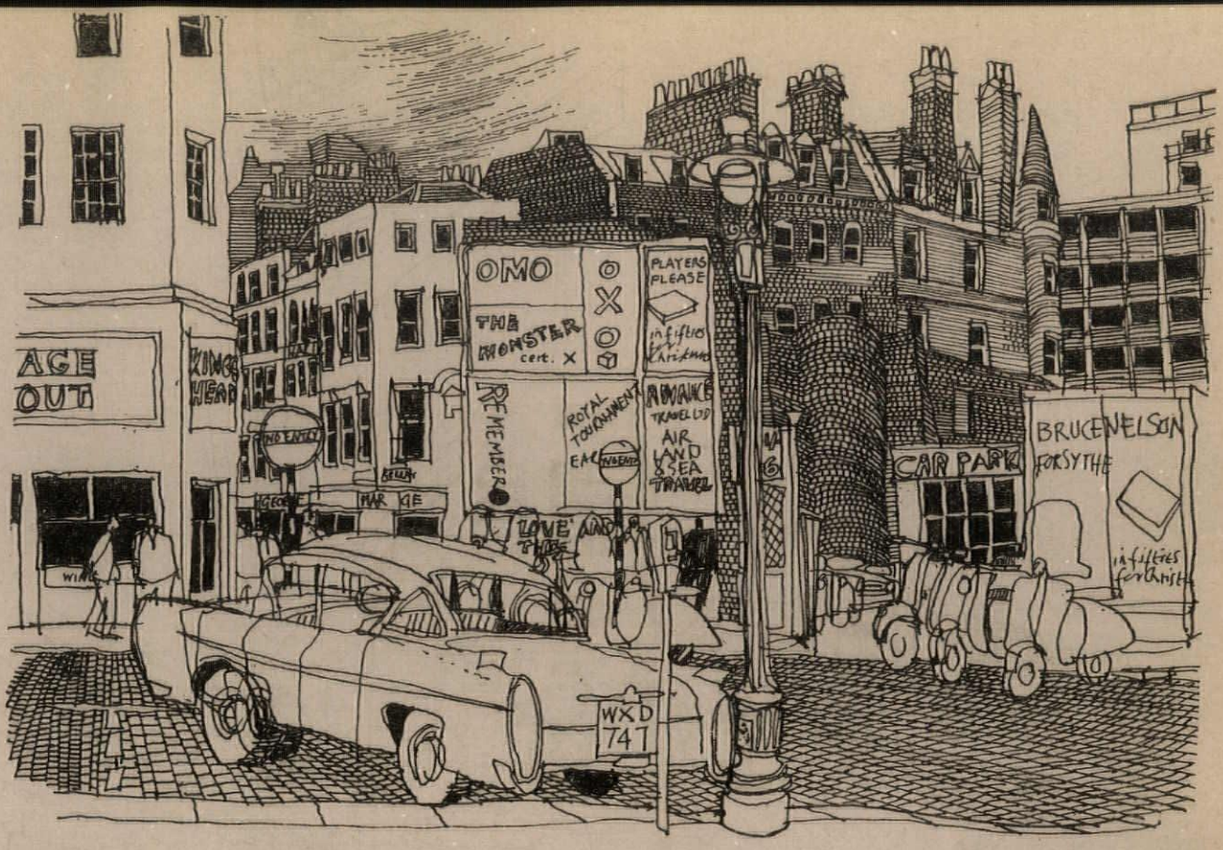
7



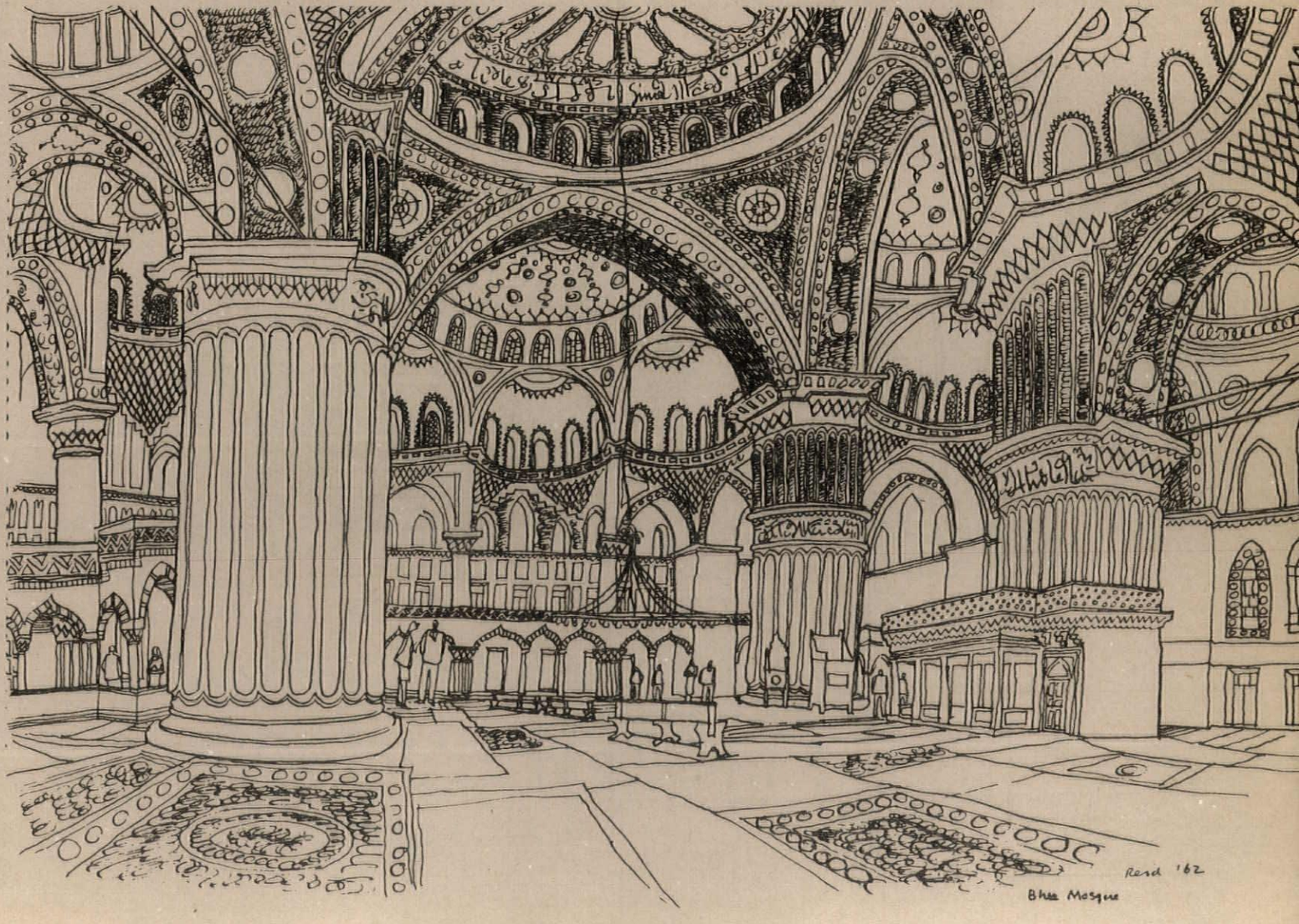
8

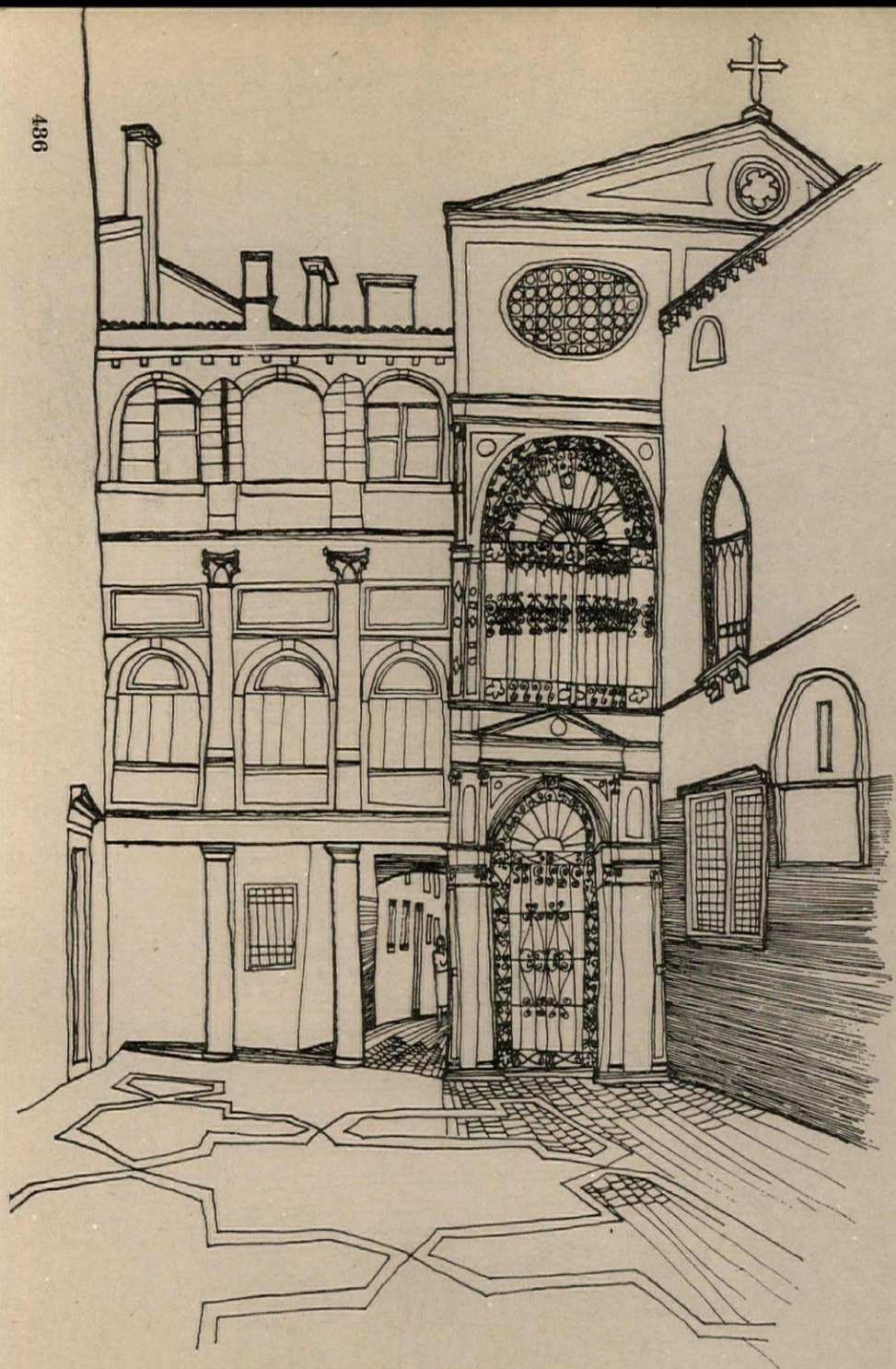


9



The drawings of Gerrard Street, London (above), and the blue mosque at Istanbul (below) and the two drawings overleaf of Venice are by Richard Reid, the third artist to be represented in this series designed to show the work of the younger architectural draughtsmen. Richard Reid is 23, lives at Sevenoaks, Kent, and is a final year architectural student at the Northern Polytechnic.







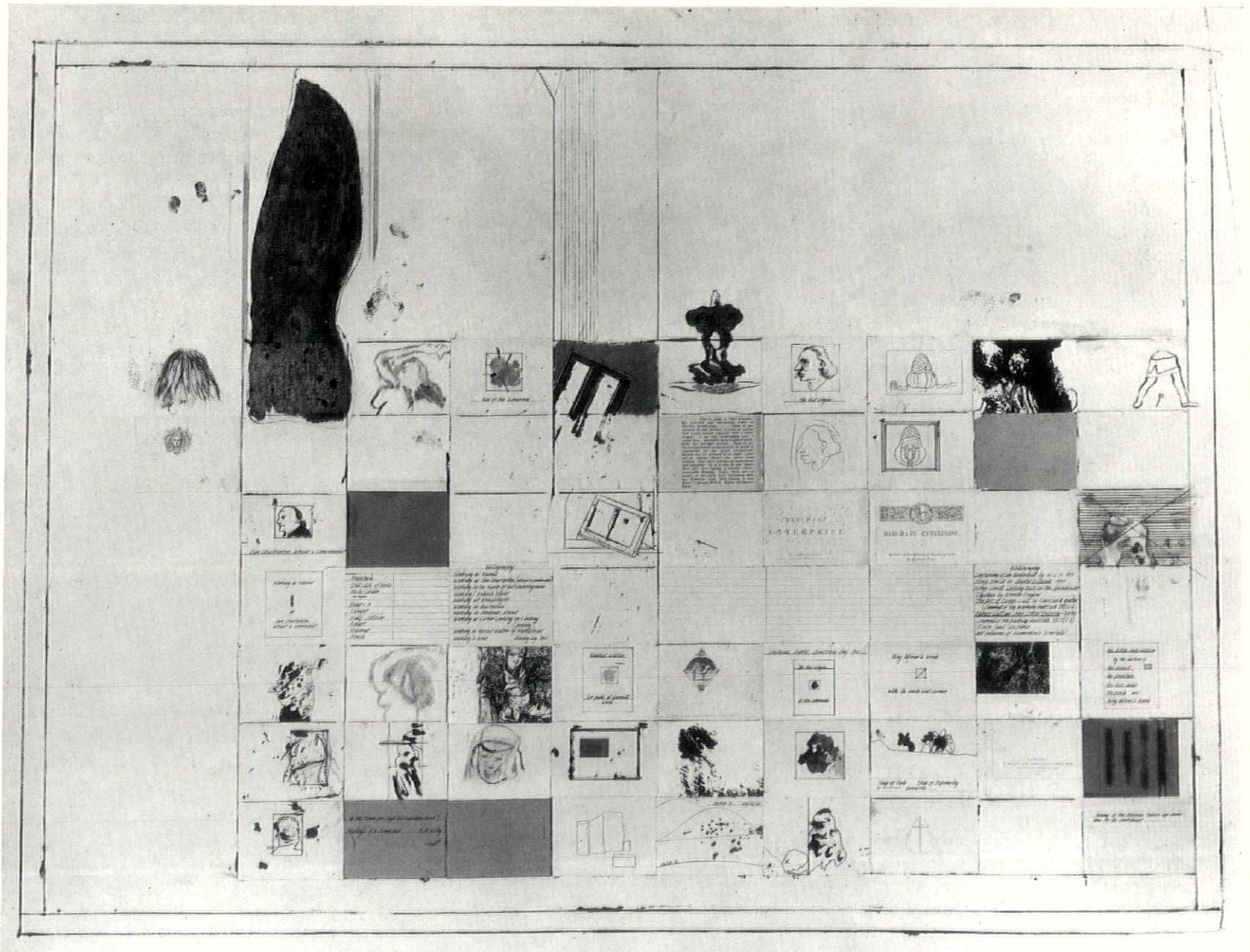
CONTEMPORARY DRAUGHTSMEN: 3 RICHARD REID

EXHIBITIONS

PAINTING

R. B. Kitaj, the young American painter who lives in England and has just had his first one-man show at the New London Gallery, is very fond of books and attaches so much importance to his reading that he filled the catalogue of his exhibition with quotations from some of his favourite authors, with bibliographies, and with lists of projects that looked and read like free verse. A glass case in the gallery contained some of the rarer books from his collection.

I read the catalogue before going to see the exhibition and found it fascinating. The references to Rosa Luxemburg, Sorel's 'Reflexions on Violence,' Babel's 'Red Cavalry' and to various books on the Spanish Civil War suggested that he was nostalgic for the golden age of the class-struggle, and two of the reproductions and the titles of some others conveyed the impression that his pictures might be celebrating in an elegiac mood the past splendours of the fight for socialism. The long quotation from Saxl on Warburg's visit to New Mexico, where he gained an insight into classical paganism by studying the pagan rites and symbols of the Indians, appeared to propose the idea that the triumph of socialism might lead to an understanding of life as poetic as that of classical paganism. The idea for a painting that was not in the exhibition came out of Kitaj's reading of the quotation from Saxl and may carry the meaning that socialism can only triumph if it rediscovers the necessity of violence. But I don't think Kitaj wants us to know. A section of the painting was reproduced in the catalogue, and the theme is 'Warburg as Maenad.' This curious notion is based on Saxl's statement that Warburg suddenly realized when watching a festive display of the Zuni Indians that the Renaissance artists who painted the Christian theme of Judith with the head of Holofernes were really concerned with the 'Frenzied maenad of Dionysus.' Judith 'the head-huntress' and the maenad represent 'the frenzied woman in her triumph over the male.' Kitaj only reproduces the maenad-like head of Warburg in the catalogue and for all I know he's holding his own head under his arm, but I can't imagine that Kitaj's image merely implies a sex-change. Warburg is his chief culture hero so the image must mean that Warburg avoids the fate of Holofernes and Orpheus by incorporating into himself the destructive energy of his adversaries. It's all very arcane and far-fetched and the use of Warburg for such



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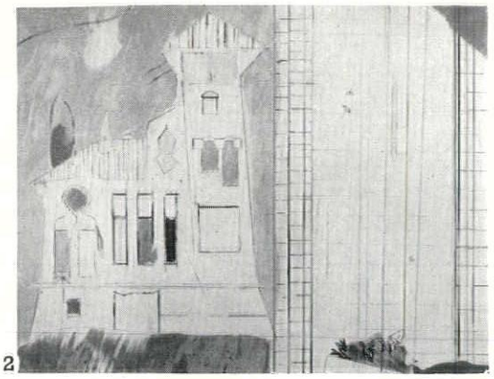
goings-on is slightly farcical, but the implication for gradualists seems obvious enough.

Like many other American literary men since Whitman, Kitaj is in love with lists, and one such list recounts the themes that he has treated in a picture called, after Sorel, 'Reflexions on Violence.' There are twelve of them, including such intriguing subjects as The Lunacy Doctor, The Angel of Doubt, When Nuns may use Birth Control and The General Strike Is. But to my great disappointment I couldn't tell which was which when I looked at the picture.

In fact, the catalogue took on quite a different atmosphere after I had been to the exhibition. It remained a fascinating document but lost its value as an announcement of intentions, was practically useless as a gloss for the images and became instead an elaborate literary demonstration of the collage technique employed in many of his paintings. A great deal of it now seemed obscure and pretentious because in the pictures themselves communication is persistently and ruthlessly sacrificed to aesthetic effect. He runs no risk of being called a literary painter because the ideas that occur to him when reading are never allowed to make difficulties for his picture-making.

Many of his pictures afford great pleasure to the eye, especially those charming, off-beat, de-centred compositions like very refined comic-strips. The neatly sectionalized canvas called 'Specimen Musings of a (Democrat) (interim title),' 1, is a delightful example, with its carefully assorted mixture of fizzy little drawings, written ideas for paintings, unexplained symbols and pasted cuttings. The 'blank' sections are intended to give the impression that it's a work in progress, but they've been treated in various ways and have received as much attention as the others and its quite obviously an accomplished, sophisticated, highly finished piece of abstract picture-making.

There is another charming work called 'Yamhill (interim title),' 2, in deliciously mild and pretty colours. One half of it is devoted to a fanciful façade suggested by a 'line illustration in a forgotten edition of a forgotten Victorian publication called *Portfolio*' and is 'meant to stand for an American County Courthouse.' The other half is a linear abstraction which looks like a badly ruled cash book and is 'based on a reproduction of a portion of an 11th-century manuscript.' The head with a padlocked mouth at the foot of this half represents 'Nobody,'—'the subject of a German legend the transmutations of which are traced in' (guess where)—Volume XXIII, 1–2, of the Journal of the Warburg Institute. To my mind, this image is a ham-handed intrusion upon a



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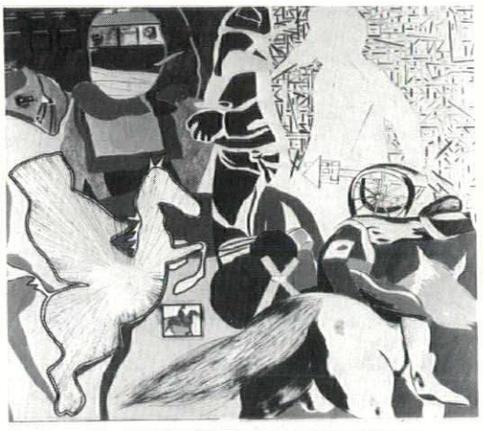

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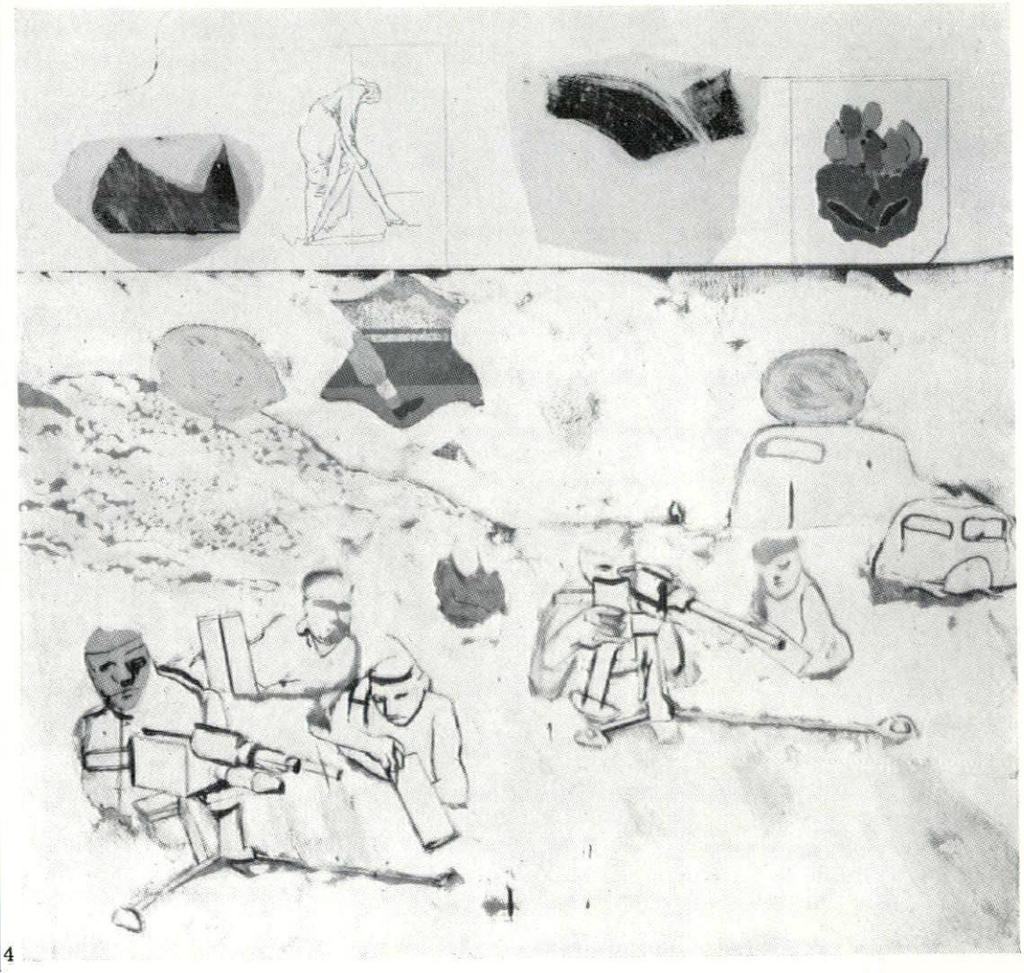
poetic and lightly poised work, and one of many signs of his tendency to think that his subjective evaluation of a 'find' automatically gives it a powerful expressiveness. Its proper place is in one of the little compartments of 'The Musings of a Democrat,' where it could have been an interesting little image because it had not been 'taken up.' In the last compartment of that picture there is a written statement which reads 'Many of the themes taken up here are to be continued,' but this picture was a success within its own limits precisely because the themes were 'touched on' rather than 'taken up.' He is better at 'touching on' a dozen themes at once than 'taking up' one theme and developing it. His 'Isaac Babel Riding with Budyonny,' 3, is an example of the attempt to take up a single theme. Babel's account of the Russian civil war in 'Red Cavalry' rises to a tremendous occasion, and it seems to me that Kitaj as a serious reader should have realized that such a book is not well served by a smart jig-saw puzzle of horse-and-rider images in various styles and sizes. There's a hint in the treatment of the horse-and-rider in the lower right-hand corner that with more tenacity of purpose he might well have risen to the same occasion. This corner has the look of being based on a photograph of the period, and perhaps it's asking too much of a modern



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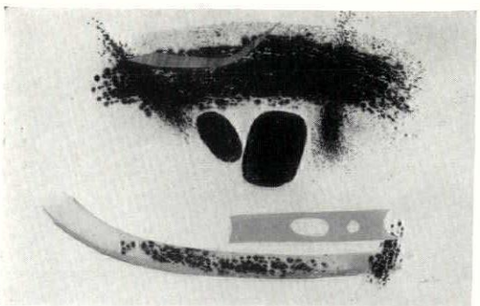
painter to project a whole scene from a given fragment.

He was probably more fortunate in the visual aid which led to the painting called 'Kennst du das Land?' 4, which was the finest picture in his exhibition and of a strikingly different order to his collage-like put-togethers. It's a white and grey scene of machine-gunners in a hilly landscape, and by depicting the figures as if they were fading Kitaj conveys very movingly the impression that they are about to die. This central image is powerful enough to override the inconsequential additions and even Kitaj the literary man seems to have been influenced by its direct emotional impact, for the catalogue entry, too, is moving and unpretentious. It quotes the lines from Carlyle's translation of Goethe's 'Wilhelm Meister' that open with the phrase 'Know'st thou the land,' and under the heading 'In Memoriam' lists six places where battles were fought in the Spanish Civil War.

If he can somehow keep his rather irresponsible intellectualism out of his paintings Kitaj will, I think, become a great maker of images.

At the same Gallery, John Piper has been holding an exhibition of elegant and well-composed abstracts, and they are a reminder that in the early thirties he was much concerned with abstract themes. The most interesting works in his latest show were those that almost succeeded in detaching themselves from landscape associations, 5. Some of the others, 6, brought



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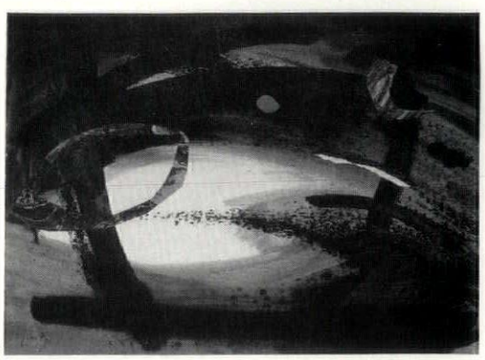

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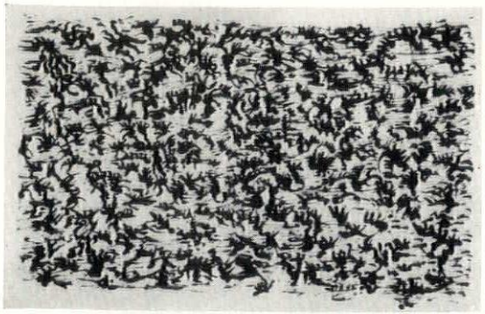
to mind the Cornish abstract school with its mystique of caves and waves and such-like. It's a school that has too many adherents already, and Piper had something more thoroughly contemporary and more profoundly personal to say in his paintings of Venice and Rome. What I miss in his abstracts is his superb gift for writing a complex façade across a coloured



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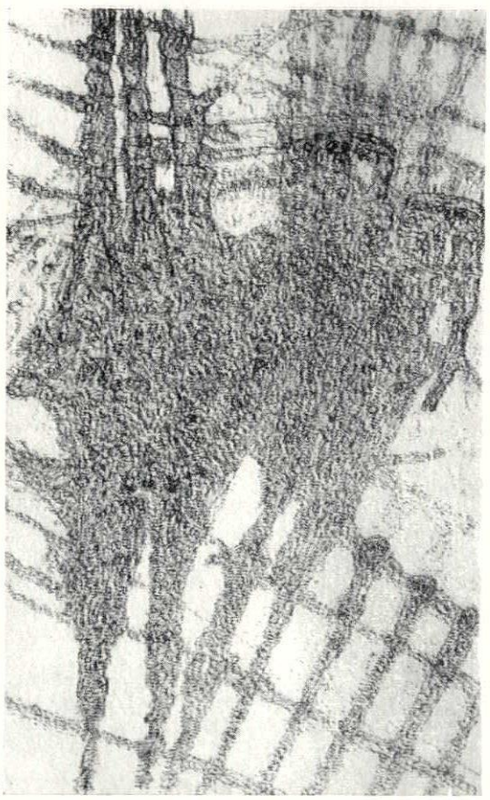

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and textured ground. He has created a notational system for depicting architectural ornament that not only brings well-loved places to mind in terms of a flickering and poignant mirage, but lives a life of its own as magic signs. The exhibition included a group of the cartoons for the Baptistry Window at Coventry and in this great work, whose theme is the spreading of the light, abstraction is a means and not an end, and when one is confronted by the window itself it isn't the forms that one apprehends but a sense of glory.

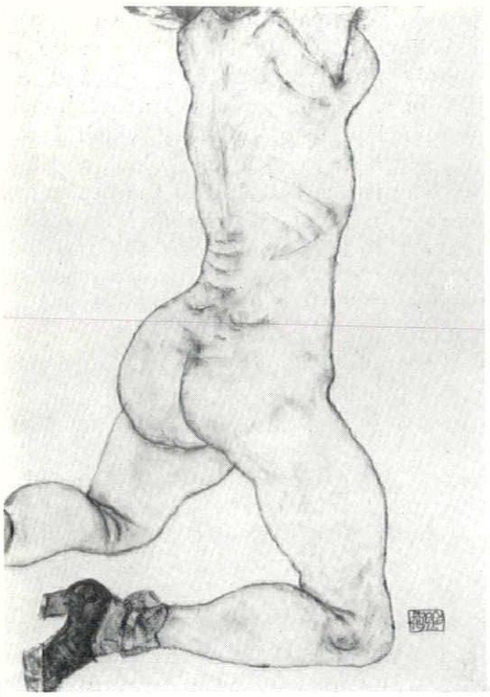
A remarkable retrospective exhibition of Henri Michaux's drawings has recently been held at the Robert Fraser Gallery. Michaux has a very high reputation as a poet in France and he has contributed a preface to his catalogue which is so brilliant an expression of personal experience that it is quite uncontroversial. He says that he would like to paint the inner ferment, and I believe him. He is an aficionado of quietly frantic states of mind and his drawings, 7, express a monotonously sustained pitch of intensity which I can scarcely bear to witness. To look at them for long is like listening to the beating of one's own heart, wondering how it can keep it up day in and day out and half expecting it to come to an explosive stop. The mescalin drawings, 8, are more flaccid yet more teeming. The lines are less active and have less shape-value than the others, but they cluster and swarm alarmingly like a plague of insects or, as Michaux puts it, 'in unpreventable accumulations.' He says that the experience of mescalin is stranger than any drawing can be, but he has caught wonderfully and uselessly enough the process of 'infinitization through the infinitesimal.'

When the frantic state of mind latches on to the world of appearances it usually results in distortion, but a group of drawings by Egon Schiele which was included in an exhibition of nudes recently held at the Jeffress Gallery remained fantastically faithful to the model although as thor-



9

oughly drenched in the rage and torment of being as Michaux's galvanic blots, 9. The fact that Schiele was looking outward at an object of desire and succeeding, so to speak, in taking entire possession of it, doesn't in any way mitigate the expression of a sense of frustration: it rises from the drawings like a wave of heat. Schiele's desperate stare becomes almost tangible, and in his drawing of a back view of the nude the model seems positively to have been flayed by his eyes, 10. There is an intensity of eroticism in these drawings



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that gives them a tragic significance. He was demanding more of life than life had to offer.

Robert Melville

LANDSCAPE

A NEW TOWN WATER GARDEN

The new towns around London all look much the same, but Hemel Hempstead has one feature, just completed, not possessed by the others: a water garden, achieved by exploiting the small existing River Gade, on a narrow strip of land between the service road to the main shopping street and the new through road (A.11).

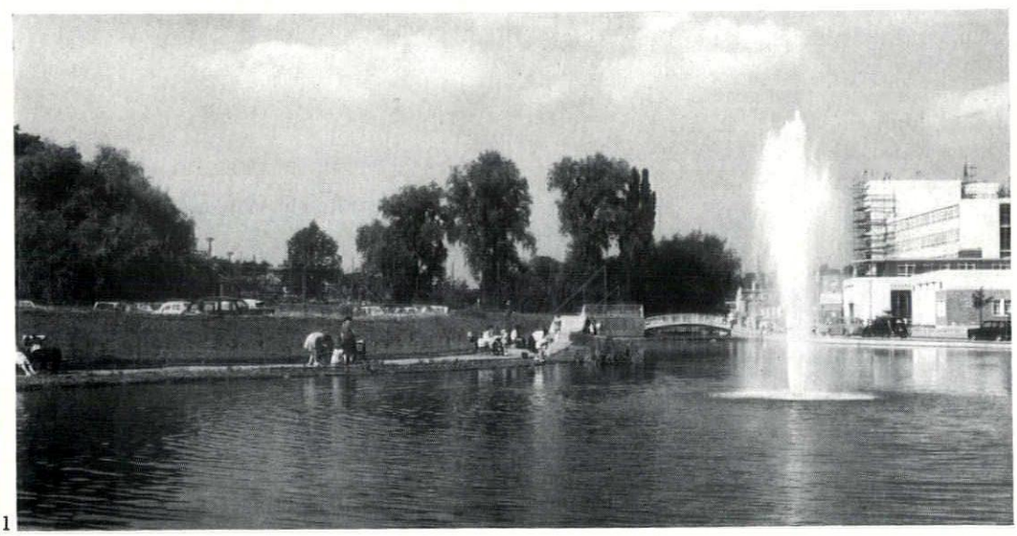
The aim of the garden, which has been designed by Mr. G. A. Jellicoe,* is to create a sense of space within a restricted area, to give some visual unity to the buildings of the town centre and to conceal the car parks that had to be provided in this area. The idea of a town park was from an early stage in the mind of the new town corporation's chief architect, Mr. H. K. Ablett.

The layout of the garden is best described by saying that the river has been converted into a giant water-serpent, carrying on its back a howdah, formed by the flower gardens and their trappings. Apart from Bridge Street, which cuts the serpent in half rather unnecessarily (see plan), and the unforeseen but well composed huge new building at the south end, which throws the fountain and the sculpture out of scale, the scheme in practice has followed the original idea consistently. Soil from the canal has been used to form a low continuous hill to obscure the car parks, and the west bank becomes (or will become in a few years) a densely planted romantic landscape. The tail rests against an artificial hill; the fountain represents the eye (or, perhaps, the spout) of the serpent, and the mouth is where the river continues on its course over the weir; the soft underbelly of the beast is stressed with a subtle curve given to the east bank.

In more direct visual terms the endeavour has been to increase a sense of space by the following means: (a) false perspectives, i.e. the canal narrows to the north; (b) no apparent boundaries to west and north, and the suppression of all buildings, car parks and roads from the scene; (c) association of land and tree forms with any existing outside the actual site; (d) slight reduction in scale of eye-catching architectural features such as hand rails, etc.; (e) elimination of the main road by tilting the flower gardens and connecting them visually to the green hill and school buildings to the west; (f) the reduction as far as possible of the Bridge Street cut (i.e. the vertical pattern on the retaining wall tends to create an illusion of water falling over a weir).

The planting throughout is very complex, since the site includes areas that are either water-logged or too dry. It will be ten years before the planting scheme fully matures, and its immaturity is most noticeable today in the planting of the banks, the clipped limes that will frame the flower gardens and carry on the classical

*Mr. Jellicoe was assisted by Mr. F. Tuson. The work was carried out with the help of Mr. N. J. Clarke, the Development Corporation's landscape architect.



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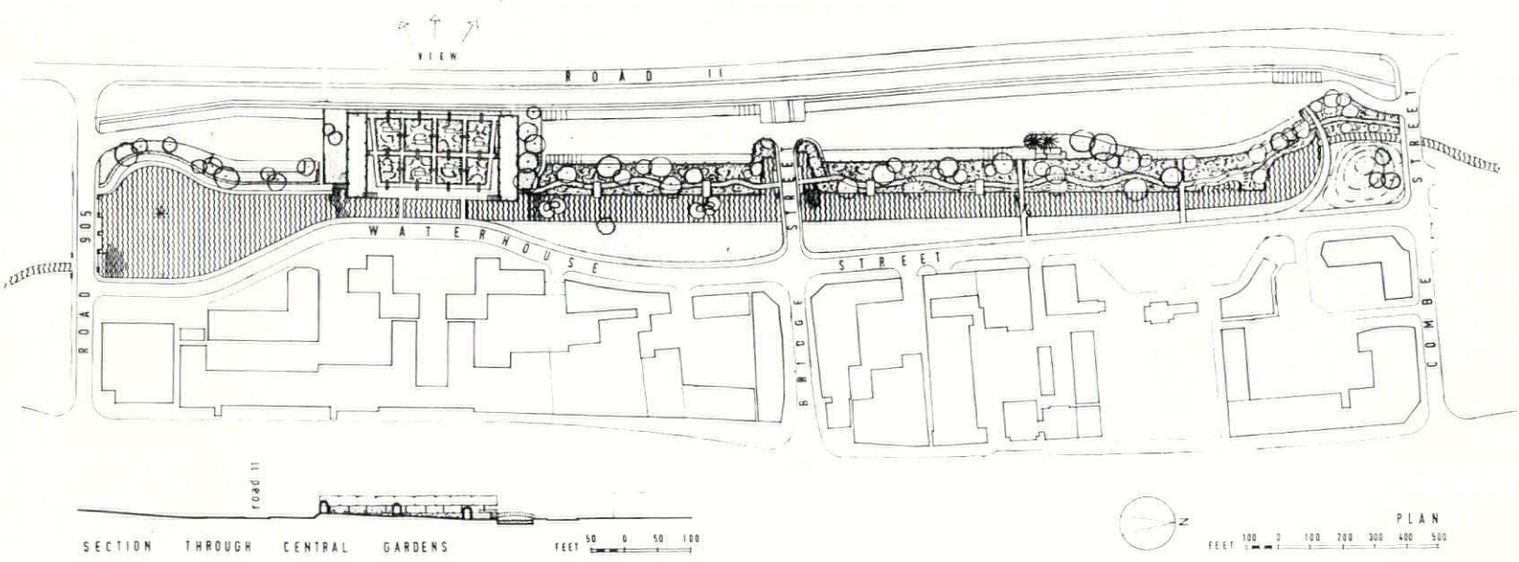

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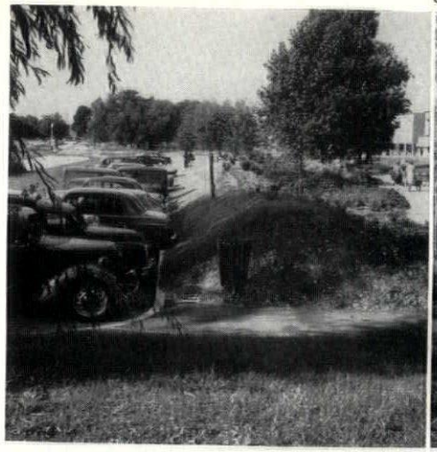

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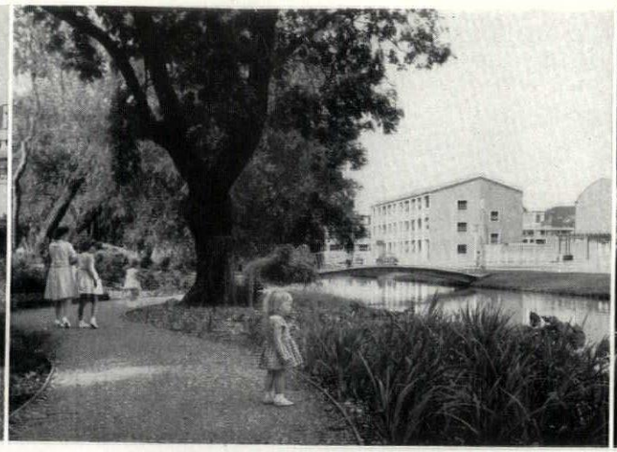

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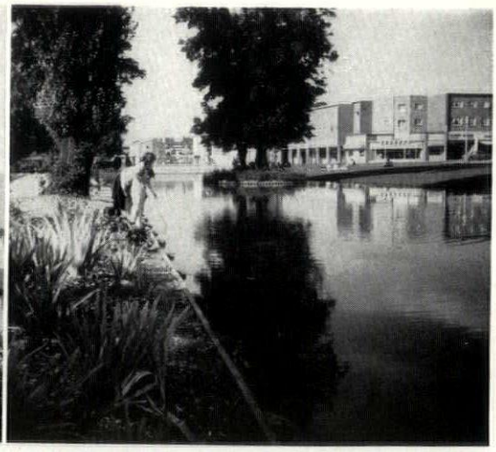
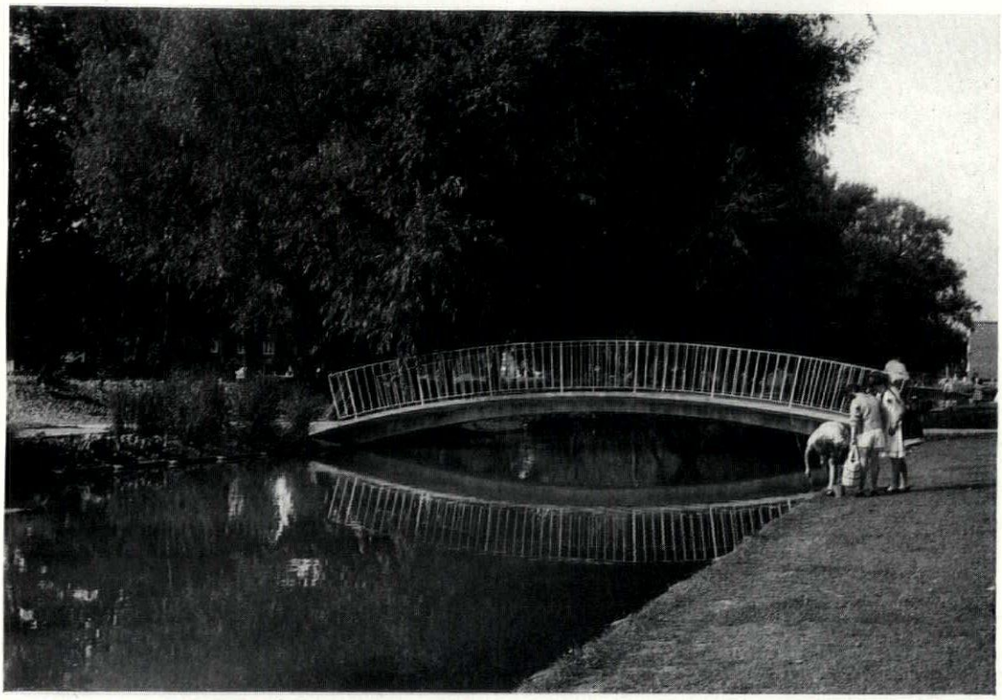


axis from the main shopping street, and the yews that will form the arches. In the view looking north across the water, 1, a clipped beech-hedge 8 ft. high will eventually conceal the cars whose roofs can be seen on the left. 2 shows how cars are also concealed by building up a bank out of soil from the canal. The bank is also heavily planted. 3, the informal waterside walk: water-loving plants on the right; dry shade-loving plants on the artificial banks; in the central gardens the planting is mainly herbaceous to suit normal conditions (planting adviser, Susan Jellicoe). 4, midway along the garden. Note the artificial island to retain existing trees and the treatment of the distant wall, carrying the cross-road, to give the illusion of a weir. 5, one of the four footbridges that connect the car parks with the town centre. 6, close-up of a weir. The heavy foliage of the *Rheum Palmatum* contrasts with the delicate *Sorbaria Aitchisonii*.

5



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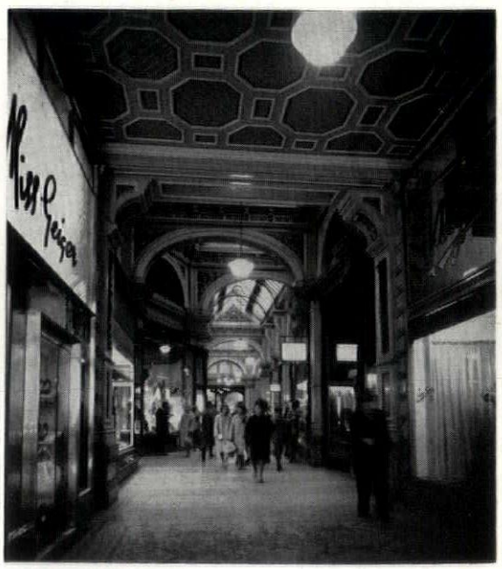
HISTORY

AUSTRALIAN ARCADES

In any accounting of the townscape resources of the Commonwealth, Aus-



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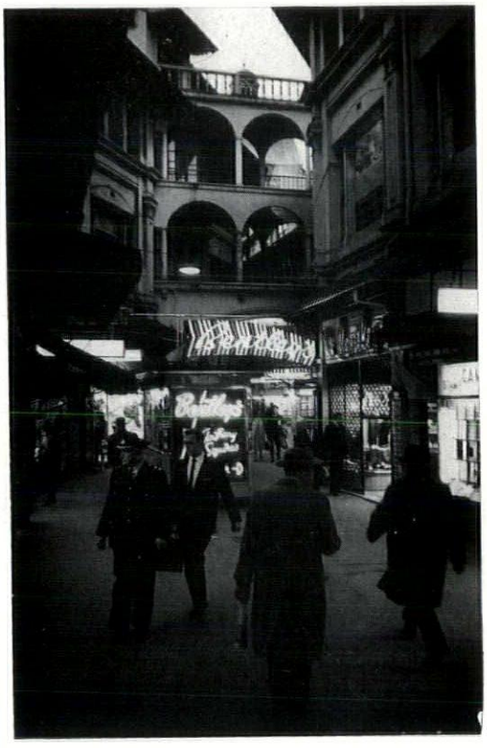
tralia deserves to rank high — the pedestrian arcades of her major cities are among the finest flowers of the Anglo-Saxon tradition of urbanity. They are found right across the country,

from Perth to Sydney, but it is in the south-east that they flourish most spectacularly, and although Melbourne can boast her Royal, and the 'Block,' 1, off Collins Street, the palm must—in this matter if no other—be conceded to her eternal rival, Sydney. Nothing in Sydney, it must be admitted, is as grand or as large as the Galleria in Milan, but their intensity of use is far greater and is accentuated by their rather narrow dimensions. Above all, in Sydney alone of the great cities of the world it can be said that there is a continuous tradition of arcade-building, from the eccentric and dog-legged Royal Arcade, 2, built in 1882 to the designs of Thomas Rowe, to the



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Boulevarde of 1959, also dog-legged, 3, and designed by Gordon Byron. The bent plans of this Alpha and this Omega of Sydney's arcades are a-typical—the



3

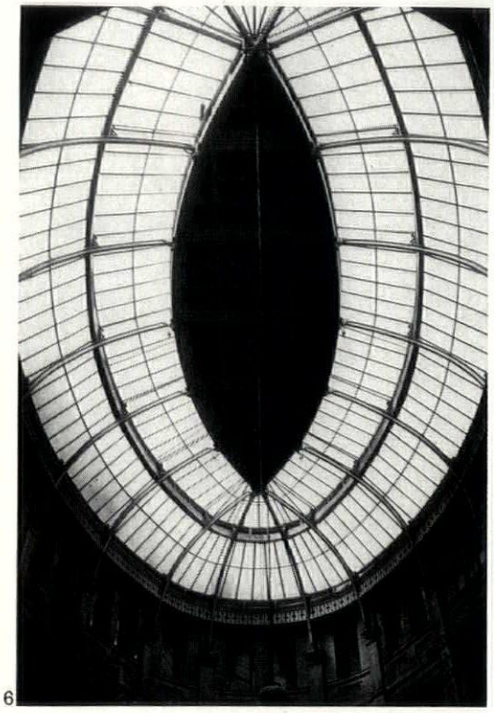
majority of these many-storeyed and many-splendoured shopping halls are as straight in plan as they are deep in section. Their epitome is the Imperial, also designed by Rowe, 4 (and dated 1891 in a recent study of the arcades by Tom Heath and Tony Moore). Although the Strand, 5,



4

designed by John Spencer in the same year as the Imperial out-tops it by a clear storey, and Harding's Victoria Arcade of 1887 has a unique oval plan, 6, the Imperial need fear no comparison (for all the Strand has its partisans) and its generous arcading, lost in the relative gloom of its upper spaces, and the stepping up of its section in five short lifts to follow a ten-foot rise in the site, give qualities of unpredictability and small, subtle surprise to its internal views.

But these cast-iron and stucco extravaganzas are not to be taken simply as ingenious solutions to problems of marketing and display—they are part of the distinctive antipodean pedestrian culture. In spite of their Holden motor cars, Australians remain great strollers, leaners and standers-about; they live on their feet as the French live in café-chairs, and as a result they have turned their sidewalks, particularly in Sydney, and particularly at night, into a window-shoppers' paradise, 7, in which the ubiquitous provision of projecting canopies against rain and sun, traps the bright commercial light of publicity and display in an open-sided corridor of fluorescent euphoria, above which rise the towers and domes of a



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sleeping city, only rarely interrupted by a tall slim band of illuminated lettering.

Edward Ancrum

FORTIFIED FOLLIES

The countryside around Forkhill in South Armagh has been called The Balkans of Ulster. It is indeed wild land, and a dramatic setting for some extraordinary architectural follies, extraordinary because they were fortified in a practical manner. In such a bandit world the gentry never knew if they might not meet 'the opposition' when out shooting game. They built folly towers so that they could retire to them and, while munching aspic pie and cracking a bottle of claret, blaze away in safety at any borderland outlaws.

The Jacksons and Alexanders seem to have been the big families in the neighbourhood; but all further enquiries about the dates of their folly construction are met in official quarters with the Irish reply that 'nobody ever went to the trouble to record such nonsense.'

An eighty-year-old local telegram 'boy,' however, was full of legends when I met him. He told me about a squire who had sold a neighbouring mountain to buy his lady a tippet and 'put trees round her neck.' This was not a popular move, and the gentleman had also been driven to build a fortified folly. In an attempt to propitiate the village, he'd given them a new graveyard and had offered £10 to the family of the first man to be buried there. Sure enough, he'd been the first to go into his own graveyard!

Many of the Forkhill towers have now disappeared completely, or are marked only by stumps; but some still stand intact, and one above a lake with an irascible wild swan. The interior has a nice stone banquette and fireplace as well as strategic slits for the guns.

Oswell Blakeston

One of the remaining fortified towers at Forkhill





1

SHRUBS

TREES AND SHADOWS

It is unfortunate that in this country trees and buildings do not go close together. Our most prevalent sub-soils, particularly those of a clayish nature, and the soft, misty quality of the light, conspire with a widespread and deeply ingrained mistrust of trees to keep them well away from any form of structure, but one has only to visit Scandinavia to see how much we lose by this. Even when one does find a tree near a building, it was always the tree which was there first.

There are, however, quite a few small trees which will give the essential contrasts of light and shadow and whose fine tracery of branches can add so much to a plain wall surface behind them, without fear of disrupting foundations. *Rhus typhina*, the sumach, 1, is a large shrub or small tree whose sparse, rather gaunt habit of branching and long finely cut leaves make it particularly suitable in association with buildings. Growing happily in the most trying conditions—even in an outsize flowerpot in a London courtyard—its roots are not invasive and its foliage has the additional

attraction of turning to rich shades of red and orange in the autumn.

Somewhat similar, but with completely straight stems and enormous fern-like leaves, is *Aralia elata*, the angelica tree, used so well in the South Bank gardens for the Festival of Britain and still magnificently grouped near the river front of the Royal Festival Hall. It will grow up to 30 ft., but as its habit of growth is to send up suckers from the roots, one can ensure stems of different heights to give a convenient range of variations. Happy on a poor soil, it will grow more lush in rich conditions, but is thereby more likely to suffer from frost.

Of quite a different nature is the winter-flowering cherry, *Prunus subhirtella autumnalis*, 2. An elegant small tree, either grown as a standard or large bush, it has a fine tracery of slightly drooping branches which give it the elegant appearance of a tree in a Chinese painting. If given a dark background, the cloud of tiny white or blush-pink flowers, 3, appearing in mild intervals of winter and spring, is particularly effective, as are the rich reds and yellows of the autumn leaves. Providing the ground is prepared beforehand, it will grow happily in any reasonable soil.

Most trees and shrubs labelled *contorta* or *tortuosa* have the appearance of writhing in agony, but the corkscrew willow, *Salix matsudana tortuosa*, is a notable exception. With spiralling branches and twigs like Victorian ringlets, it is a pleasant study in relaxed curves and the perfect foil to severe geometrical backgrounds or hard courtyards. The small leaves, of a pale golden green, introduce a feeling of lightness, and unlike most of the willow family it does not appear to need so much water, so that the roots are not a danger on clay soils.

The native silver birch, though apparently ideal in many ways, seldom looks happy in a purely artificial setting, but the purple-leafed form, *Betula verrucosa purpurea*, is ideal where its plum-coloured foliage and more restrained habit of growth make it suitable. A larger but very elegant tree is the cutleafed Swedish birch, *B. verrucosa dalecarlica*, with pendulous branches and finely cut leaves which look particularly well when seen against large plain surfaces or walls of glass. Both these trees will grow in a poor soil as long as it is not too heavy, and the second has been grown for many years in a courtyard tub, so that the roots are not too invasive.

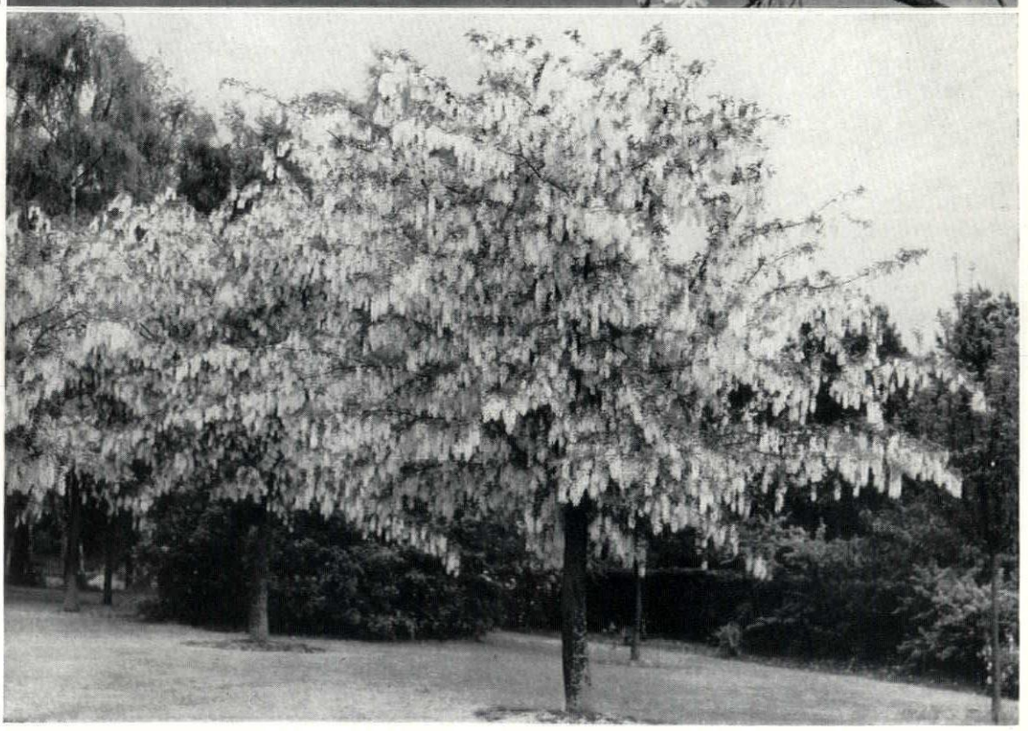
If only the laburnum could shake off its suburban associations, it would have much to offer the architectural planter. Established trees, first started as bushes rather than stiff little standards, grow into most interesting shapes, 4, the foliage is light and pale, and if the flowers are a rather hard yellow they are much more suitable in



2



3



4

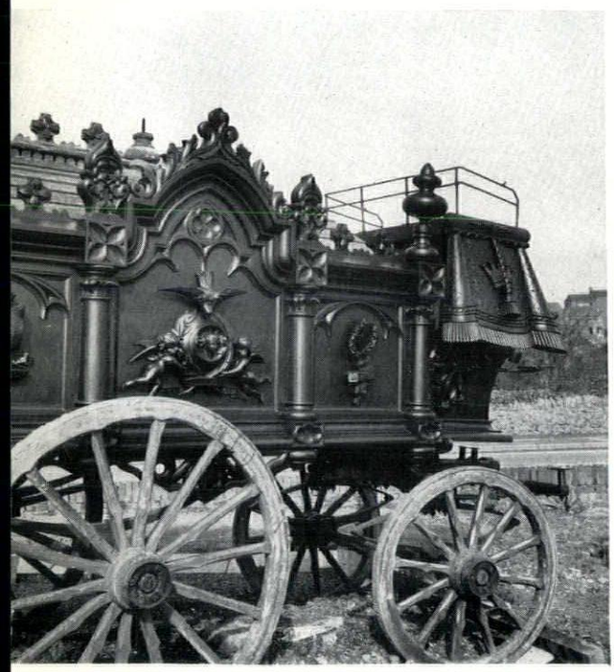
a purely artificial setting adapted to such colouring than they are in the open garden. Even the bunches of seed pods, though dangerous to children, are extremely decorative. Providing lilac bushes and pink flowering may trees are kept well out of sight, there is much to be said in favour of the laburnum.

A. du Gard Pasley

POPULAR ART

FUNERAL BAROQUE

Travellers westbound along the Shropshire part of the A5, after they have passed through what should have been a new town (see page 389), may be brought up short by an intimation



1

of mortality. It lies on the outskirts of Wellington, 1, and is used as an eye-catcher for a firm which sells garden sheds and other prefabricated buildings. As man's next-to-last prefabricated building, a hearse, it was in use until the beginning of this century. It was locally made, and is painted so black that it looks like a stray product of Coalbrookdale instead of a wooden carriage, 2.

It could easily slip into a Neapolitan funeral; and beneath all the fascinating parlour games of identifying the stylistic influences is the sombre thought that the worm brings out excess and Baroque celebration in all of us, Anglican or Catholic, atheist or believer. 'Thy will be done,' 3.

I.N.



2



3

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SKILL

SHUTTERING

1, Design Techniques

Reinforced concrete is well established as a material for framed structures, but architects are inclined to be a little less than knowledgeable about the site techniques used in the production of the building. Full economic use can only be made of any material if the working technique is fully appreciated. In this series of articles by Graham Lewis an attempt is made to shed some light on this subject. The first article deals with some problems of detail design which can affect the shuttering and hence the quality of the finished products.

As a general rule it can be said that the architect or engineer engaged in reinforced concrete construction seldom designs or is, in fact, expected to design the shuttering which will be used throughout the contract.

In the majority of cases the only reference the contractor has to shuttering at all is contained in a form of measurement in the bills of quantities, whereas to be fair to the contractor, shuttering should be more fully specified, and, although it seems that no standard method has yet been developed for the specification of formwork or shuttering, certain factors should be taken into account whether or not actual instructions as to the specific and detailed method to be adopted by the contractor are included in the specification.

The general clauses for formwork in the specification should be phrased to ensure that the concrete placed is good concrete when the formwork is struck.

To this end the architect and engineer should give consideration to the following factors:

1. Shuttering and supports should be constructed in such a way as to be easily adjustable to the levels and positions required.
2. Shuttering should have sufficient strength to withstand compaction and vibration.
3. All jointing should be sufficiently tight to prevent leakage of grout from the concrete.
4. The designs should allow for the sides of beam shuttering to be removed without disturbing the soffit and supports to the shutter.

Special mention should be made of cases where abnormal accuracy is necessary, and any permitted after-treatment, such as spinning off and the filling of holes after the shuttering is struck, should be specified.

The specification should also give information on cambers required to beams, chamfers or special fixings.

The engineer should, as a matter of course, include the necessary clauses relating to strengths, curing times and temperatures.

The section of the specification to which the architect should give his main attention, however, is that relating to surface finishes, which of course bears a direct relationship to the standard of finish in the shuttering to be used.

As qualities of concrete specified are classed Quality A, B, C, etc., so formwork can be similarly classed.

The materials to be used for the various classes can be specified as follows:

Class A—sawn boards, sheet metal panels or other suitable material.

Class B—wrought and thicknessed boards of uniform width with square edges. In addition, if required, the boards should be tongued and grooved and should be arranged in an approved uniform pattern. If sheet metal panels are used they should be true to shape and free from defects which would tend to detract from the general appearance of the finished concrete surface.

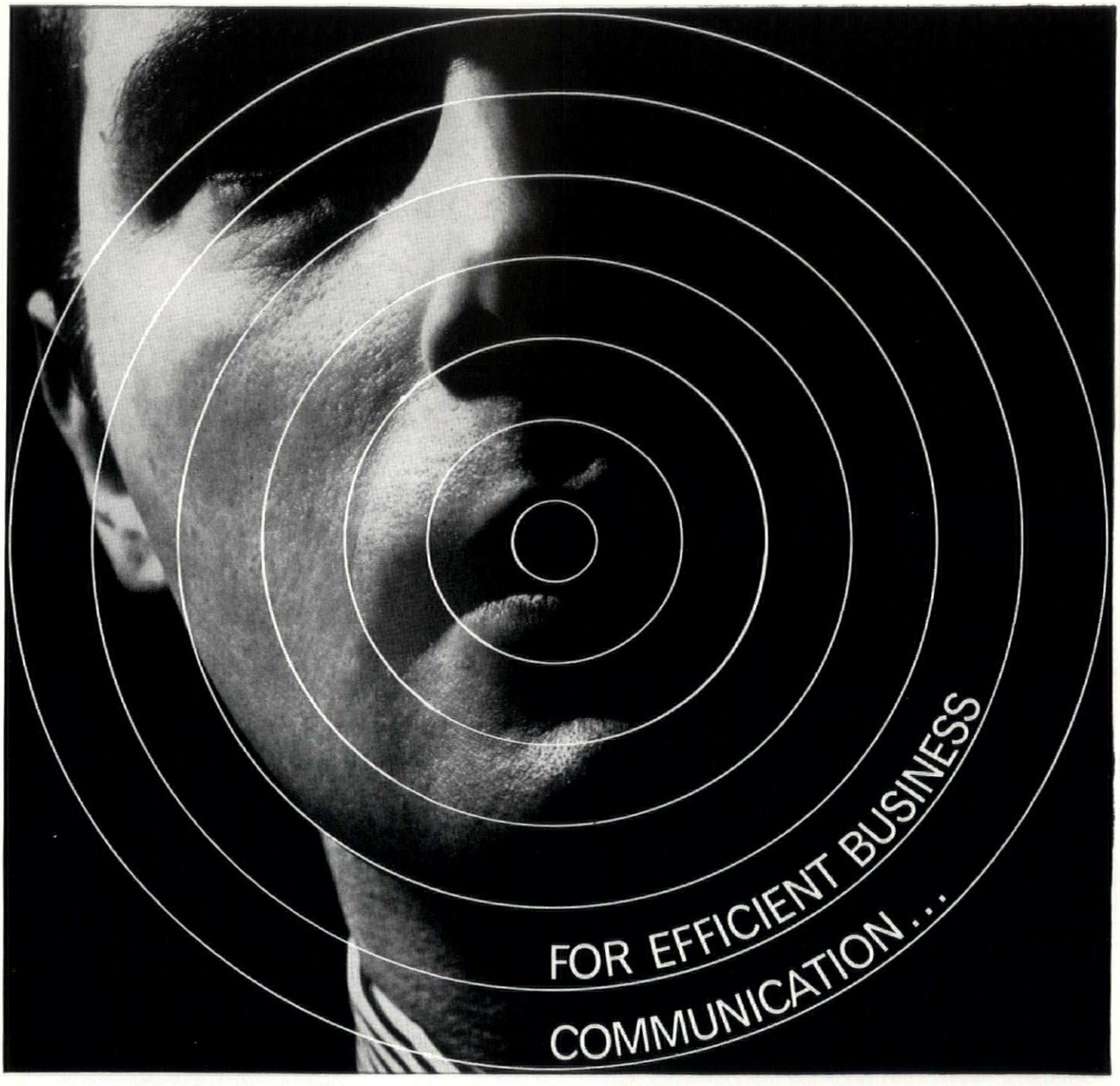
Class C—plywood or other suitable material in large sheets with the minimum number of joints and laid to an approved pattern with joints in unobtrusive positions. All joints should be rebated to maintain an accurate alignment from sheet to sheet.

This form of specification allows the contractor freedom of choice in the actual methods to be adopted, for individual firms who regularly do their own shuttering have, by and large, developed their own individual methods; the men are practised in these methods and, because they have by usage become accustomed to them, they have achieved speed. So it would obviously be unwise for them to deviate from the practised method except in cases of unusual circumstances, where special shuttering has to be employed.

It is, therefore, in the interests of economy that second thoughts should be given to designs requiring special treatment to see whether, without destroying the concept, simplicity cannot be achieved. This point needs to be underlined because, from the very outset, any multi-storey reinforced concrete project depends on simplicity for its economy.

The architect in the sketch plan stage should take care that the engineer is properly instructed as to materials to be used in the scheme, for sketch plans showing in outline floor areas, lift shafts, staircase wells and lavatory blocks can be misinterpreted by the engineer and walls which could so easily be built of brick or other non-loadbearing material may come out of the engineer's office as reinforced concrete giving the building more stability than is required, at increased costs both in material and formwork. Reinforced concrete walls should be used as sparingly as possible, for, although walls are only in effect elongated columns, they are far more costly in shuttering than columns. They require individual support for shuttering at either side and at either end, whereas a column can be

[continued on page 450



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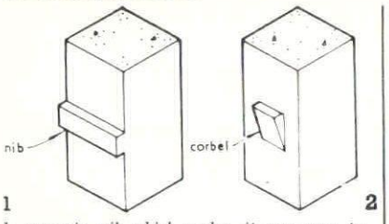
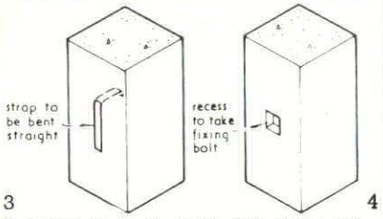


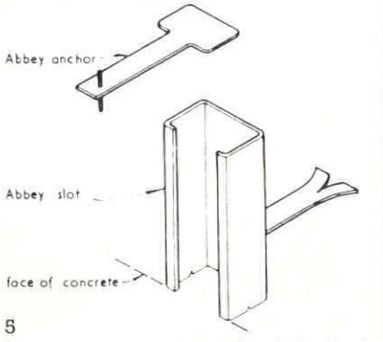
1 2

1, *concrete nib which makes it necessary to stop off the shutter both below and above the nib and allow for extra timber to be planted-on outside the shutter.*
2, *concrete corbel calling for a hole in the shutter which complicates building up both in and around the hole.*



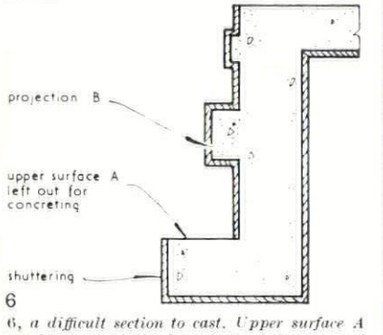
3 4

3, *a strap fixed to the inside of the shutter with the tail cast into the concrete. When shuttering is removed, the strap can be bent upwards for a fixing.*
4, *a recess can be easily formed, into which a fixing bolt can be grouted.*



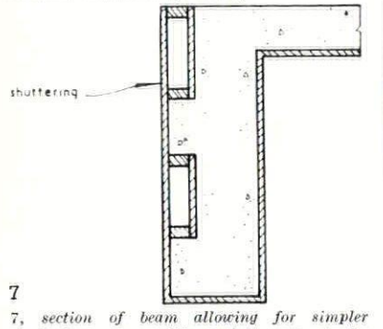
5

5, *Abbey slots are easily fixed to the inside of the shutter with the recess filled with soft board to exclude the concrete; when the shutter is struck the soft board can be removed leaving a slot suitable for many varieties of anchor fittings.*



6

6, *a difficult section to cast. Upper surface A would undoubtedly have to be left open and the beam cast in two pours, the first pour being up to the line A, the rest poured when this concrete had set. With this section of beams it is doubtful whether projection B would come out without honeycombing.*



7

7, *section of beam allowing for simpler shuttering and providing a better opportunity for proper placing and vibration.*

continued from page 448]

banded or column clamps can be used to hug the shuttering in position, reducing the number of lateral supports to a minimum.

This over-emphasis on structural walls could be reduced if the structural plan alone were given to the engineer and the infilling, wherever possible, could become brickwork or other panel material.

Laxity or inattention to this point, as the detail plan takes shape, can result in such things as housemaids' cupboards forming reinforced concrete pockets and projections from shafts and staircase wells, while, in fact, still remaining part of the structure of the building. This sort of situation can, of course, be avoided by the simplicity of plan shape and good sense on the part of the engineer.

As for columns, they too can be economical, or the reverse. Many different column sizes at one floor level, with individual variations from floor to floor will produce nothing but complexity and lack of economy. Standardization in size may demand additional concrete, but the saving of labour in shuttering would certainly offset any extra cost of material.

It is a normal condition of reinforced concrete design for the columns to decrease in size as they rise through the building. This is a simple process and is easily dealt with by cutting the shutter as the columns reduce. To increase shuttering sizes out of sequence is obviously more costly.

In considering economy, thought should be given to fixings, and provision for them should be designed in such a way as to reduce the cutting of formwork to a minimum. So it would be wise, where possible, to avoid fixing by concrete nibs, 1, and corbels, 2. Instead, a form of fixing should be used which fits inside the shutter and does not require the shutter to be cut to allow for its projection, 3.

In this respect it is far simpler to leave a recess in the column to take a fixing grouted in afterwards than to have fixing bolts projecting through the shuttering, 4.

An abundance of abbey slots cast into columns, 5, is always an advantage in case special cladding for columns is required as an afterthought—to suit a tenant in the building, for instance.

Edge beams can, by virtue of a complex silhouette, become most difficult and uneconomical to shutter up. Upper surfaces have to be left out to allow for concrete placing, 6, and so it follows that thought expended during design on the shuttering operation itself can result in a saving of labour and material, which must all be reflected in the builder's price.

When designing an edge beam, the designer should try to face up the projections to one plane, 7. This is not always easy or possible, but it is simpler to form a recess in the concrete than a projection, but if the faces of at least two projections are in one plane, this can form the basis of the box in shuttering.

It is appreciated that certain heavy stone copings and cornices require substantial nibs in concrete edge beams, but careful thought by the architect on how the shuttering is to clad the beams and from what angle the concrete is to be poured can and must result in stronger concrete, less honeycombing and a simpler shape altogether.

In the general layout of beams and slabs, it is worth while noting that upstand beams are cheaper to cast than downstand beams. This can easily be seen when it is realized that the shuttering to the soffit of an upstand beam is in effect only a continuation of the shuttering to the slab. The shuttering to the soffit of a downstand beam, on the other hand, is a separate piece of shuttering at a different level from the underside of the slab and requires separate supports.

Plate floors show an overall saving in costs over the traditional beam and slab floors so far as shuttering is concerned. There is, however, an increase in thickness of slabs and in the quantity of steel used. Shuttering for plate floors which have the soffit all at one level can be made up as large components which can be easily moved from bay to bay and lifted in one piece by crane to the floor above.

Now that plywood is again readily available, most contractors consider that it is more economical to use the more traditional method of ply, bearer and waling piece, supported by adjustable props, rather than patent methods involving heavy metal sections which, due to mishandling in erection and striking, sustain damage and so require considerable maintenance. Apart from the cost, this takes valuable time which cannot be spared, particularly when the programme is tight.

The plywood in most common use for shuttering is ¾ in. Douglas Fir resin bonded. Hardwood faced ply will stand up to more uses, but experience shows that both types are limited in their use by damage sustained in striking. Nowadays, however, the use of patent forms of shuttering is increasing but gangs of men have to become accustomed to the erection and striking of the components, and it is unlikely that the skill acquired in handling these components will be of particular use to them on their next job.

Loadbearing brick walls can be an irritating source of delay in the erection of tall buildings. The bricklayers are unable to keep pace with the shuttering and concreting gangs who must wait for the loadbearing walls to rise and go off before the casting of the next slab. In a properly balanced and organized job the carpenters on shuttering, the steel fixers and the labourers in the concreting gang should all be fully employed all the time with no waiting for other trades. So it is essential that the designers on the drawing board should be able to visualize the work in progress to allow this desirable continuity to proceed.

It so often happens in the ordinary course of building contracts, because trained labour is so difficult to obtain, that it is simpler to sub-let all shuttering to a specialist firm. But it is essential from the contractor's point of view that control and a continuity of work should be maintained throughout the contract. Where shuttering is sub-let it inevitably leads to a loosening of control, because even the foreman-in-charge is not employed by the general contractor. Thus it often happens that a second foreman must be employed to co-ordinate the work of the various specialist gangs. Another effect is that other—equally important—commitments of the specialist firm result in men being moved away from the contract in hand to help out on other contracts which have fallen behind. How, under these circumstances, can an agent be expected to maintain the control or continuity which is required to keep his own programme moving?

To achieve continuity of labour much of the steel fixing, particularly in cages, can be carried out on the ground and the finished components hoisted by crane into position, whether it be column, beam or wall reinforcement. There is a great advantage in working on the ground. When the men arrive at work in the morning, if they are working at ground level, there is the minimum of delay in getting to the job. It is inevitable also that there must be breaks in a working day when all the men leave their working positions. In a lunchtime break, for instance, by the time a man has left the 22nd floor and got to the canteen, it is almost time for him to go back again. This obviously means an extension of the break with consequent loss of productive time. Many contractors are giving considerable thought not only to casting reinforced concrete components on the ground and hoisting into position, but also to reinforced concrete factory made components which can be brought to the job and hoisted straight from the lorry and bolted into position. The architect could well investigate these comparatively new methods and design accordingly.

Modern design in reinforced concrete requires in addition to simplicity a degree of accuracy higher than was envisaged ten years ago. The setting out of columns, widths of beams and slab levels must be accurate or the factory made components, such as windows, sliding doors, metal screens, will not fit the openings and floor to ceiling heights allowed for them. It is recommended that tolerances of ⅛ in. either way should be called for. Bad setting out and in reinforced concrete work this means the setting out of shuttering, can lead to untold trouble, particularly when the error is progressive. Stone cladding, cut in the quarry many miles away, can by virtue of progressive error be many inches out by the time roof level is reached.

Inaccuracy results in dubbing out, variations in thickness of render and plaster to make up the deficiencies of accuracy, all of which take time—and material.

In order to achieve a high degree of accuracy it is essential that the type of shuttering used should be capable of being easily formed and easily fixed to the accuracy required, and it is the author's contention that, to maintain accuracy with economy, the ideal material for normal shuttering requirements, and one which can be struck and re-used with the minimum of maintenance, is plywood and timber; but in subsequent articles various alternative methods will be studied, for, although patent forms of shuttering are beginning to come more and more into use, it is not always possible or indeed desirable, merely because these methods exist, that they should be adopted indiscriminately.

If it is considered at the outset that a proprietary form of shuttering is suitable for the job, the architect should make himself aware of the limitations involved. For instance, this may mean that all beams run one way only and further limitations may be dictated by the module of off-site manufactured components. If indiscriminate use is made of any particular patent form, costs can increase far beyond that which could reasonably be expected from conventional forms, for, as yet, no company has succeeded in producing a proprietary form of shuttering which can be exclusively used throughout a job, and in the majority of cases, particularly in large towns where the shape of the site dictates plan-shape, shuttering has to be made up on the site.

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THE INDUSTRY

Central heating radiators

A new type of radiator for central heating systems has just become available in this country. The type has been marketed in Europe for some eight years, but only recently have arrangements been made for manufacture here.

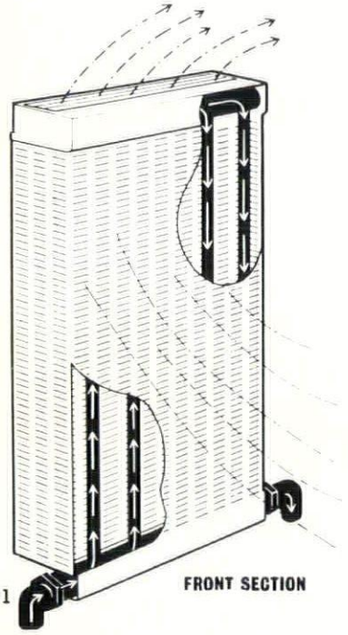
The Thermalrad is a radiator and convector as shown in the diagrams, 1, 2, which illustrate the water and air flows. It is claimed that this heat exchanger arrangement permits a more rapid response to be obtained from the system allowing, presumably, a slightly more efficient use of the boiler capacity.

The units do seem to present a neat appearance with none of the awkward corners of the more traditional type of cast radiator. The method of fixing also avoids another of the snags normally encountered with radiators, that awkward space behind the unit which cannot be cleaned or decorated without considerable trouble and inconvenience.

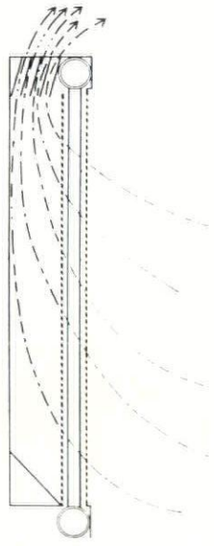
Fixing is achieved by keyhole slots on wood screws and no brackets have to be built in or heavy sections supported during connection. The sides and base are fixed to the wall to carry the heat exchanger unit. This consists of vertical $\frac{3}{4}$ in. mild steel tubes with 1 in. horizontal headers top and bottom. To the vertical tubes, louvred plates are welded continuously to provide an extensive heat exchange surface as well as providing ingress for air into the enclosed space and escape through the top louvres.

Thermalrads are manufactured in 11 lengths ranging from $7\frac{1}{2}$ in. to 7 ft. and in three heights 13 in., 19 in. and 23 in. The total projection is $3\frac{3}{4}$ in. The radiator illustrated in 3 is rated with an output of 8,000 Btu/hr.

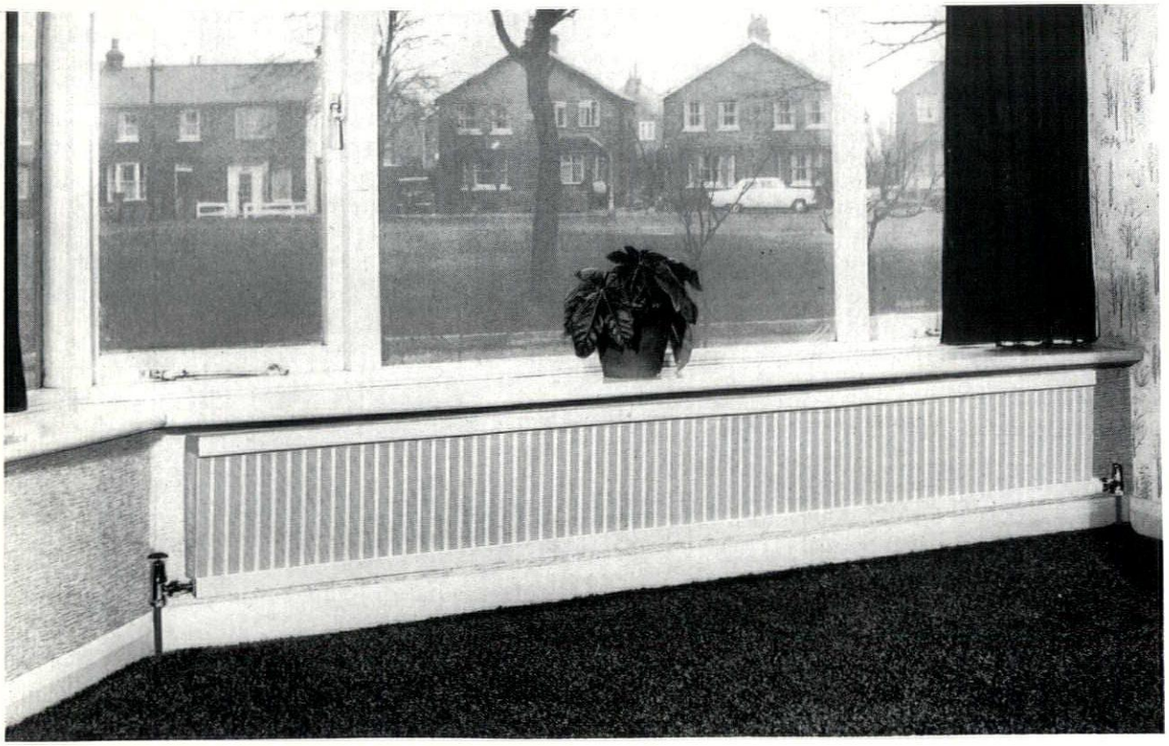
Thermal Radiators Ltd., 54 Cheam Common Road, Worcester Park, Surrey.



1 FRONT SECTION



SIDE SECTION 2



3



4

Drafting desks

Thornton, well known in the field of drawing office equipment and instruments, have announced a new dual purpose desk specifically designed for use in schools and colleges. General dimensions of the desk are based on British Standard recommendations.

The idea is somewhat reminiscent of the 'vanishing typewriter' type desk. It has a flush fitting top which, when reversed, reveals a drawing board attached to the underside. This board can be set with an angular adjustment up to 50 deg. and there is a positive locking device in the open or closed position to obviate unwanted movement in use either as a desk or a drafting unit.

The range covers three basic sizes. The first is $33\frac{3}{4}$ in. long and $22\frac{1}{4}$ in. wide with a half imperial board for use with a Tee-square or with parallel motion fittings.

The second size is $40\frac{1}{4}$ in. long with the reversing top fitted to right or left of centre to provide a flat 10 in. wide space for books and instruments at one end, 4. This, too, has a half imperial board with or without parallel motion fittings.

The third size is 42 in. long and $29\frac{1}{2}$ in. wide again with the reversing top at either end and this time with an imperial board with or without parallel motion.

All units are $27\frac{1}{2}$ in. high and prices range from £19 10s. for the smallest without parallel motion to £29 10s. for the largest with these fittings.

A. G. Thornton Ltd., PO Box 3, Wythenshawe, Manchester, 22.

Cisterns

All-plastic w.c. cisterns are evidently becoming more and more popular at least to judge from the number of new designs that are being announced every month. This, of course, is probably very understandable since the use of these plastics permits the design of really silently operating units with little of the old splash and gurgle and even clang of the older designs. It also

[continued on page 454



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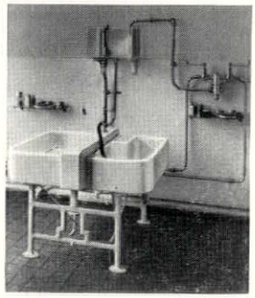

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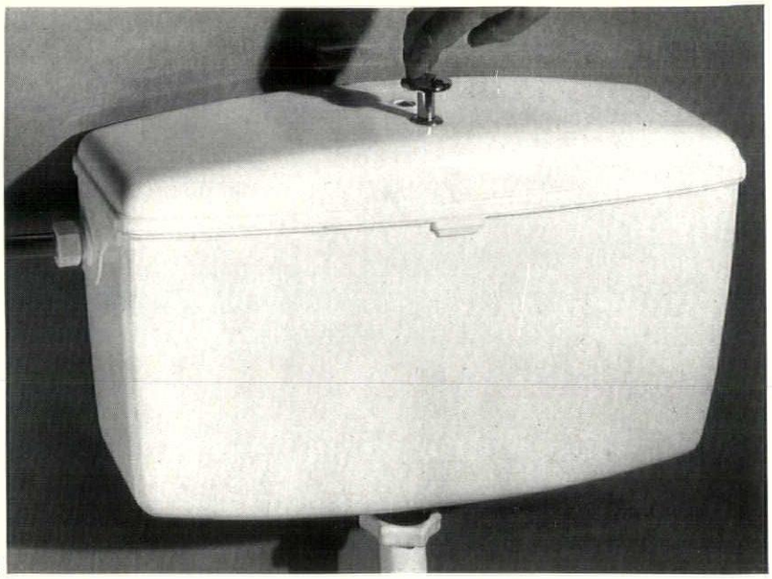

5

continued from page 452]

has the great advantage of not rusting.

Most of the designs are, of course, nothing more than a direct translation of old iron castings into plastic but occasionally a newer idea breaks through. The 'New Eterna' cistern by Fordhams shown in 5 illustrates one such idea. In shape it has little more to offer than any other unit, but thought has been expended on the operation of the flushing unit and has resulted in their new push button control.

The whole cistern weighs only 7½ lb. and projects 7 in. from the wall. It is produced in 2, 2½ and 3 gallon sizes and is marketed by *Fordhams Pressings Ltd., Dudley Road, Wolverhampton.*

CONTRACTORS, etc

Stag Brewery Site

Portland House. *Architects:* Howard, Fairbairn & Partners. *General contractor:* Sir Robert McAlpine & Sons Ltd. *Sub-contractors: Cylinder foundations:* Economic Foundations Ltd. *Granolithic:* Johnson Floor Co. *Heating, ventilation, fire protection:* Norris Warming Co. *Lightning protection system:* J. W. Gray & Son Ltd. *Tiling:* W. B. Simpson & Sons Ltd. *Roller shutters:* Haskins. *Lavatory cubicles, joinery:* William Verry Ltd. *Aluminium windows:* Allan H. Williams (Chester) Ltd. *PVC floor tiles:* Holmsund Flooring Ltd. *Feltwood flooring:* Vigers Bros. Ltd. *Revolving doors:* T. B. Colman & Sons Ltd. *Lifts:* Otis Elevator Co. *Roof gantry and vertical guide rails:* Mills Scaffold Co. *Pavement and roof lights:* Luxfer Ltd. *Cladding panels:* Girlings Ferro-concrete Co. *Bricks, floor blocks:* London Brick Co. *Partitions:* Holoplast Ltd.

Eland House. *Architects:* Howard, Fairbairn & Partners. *General contractor:* Sir Robert McAlpine & Sons Ltd. *Sub-contractors: Cylinder foundations:* Economic Foundations Ltd. *Granolithic:* Johnson Floor Co. *Cladding panels:* Kendells Stone & Paving Co. *Lightweight roof screeding:* Alan Milne (Plastering) Ltd. *Plastic wall finishes:* Plastic Surfaces Ltd. *Heating, ventilation, fire protection:* Norris Warming Co. *Lightning protection system:* J. W. Gray & Son Ltd. *Tiling:* W. B. Simpson & Sons Ltd. *Roller shutters:* Haskins. *Lavatory cubicles, joinery:* William Verry Ltd. *Travelling trolley system:* Palmer's Travelling Cradle & Scaffold Co. *Paint:* Roffe Ltd. *Aluminium windows:* W. James & Co. *Marblework:* Walter W. Jenkins & Co. *PVC floor tiles:* Holmsund Flooring Ltd. *Feltwood flooring:* Vigers Bros. Ltd. *Pavement and roof lights:* Luxfer Ltd. *Bricks, floor blocks:* London Brick Co. *Entrance doors and screen:* A. Davies & Co. (Shopfitters) Ltd. *Clocks:* English Clock Systems. *Lifts:* Otis Elevator Co.

Watney House. *Architects:* Trehearne and Norman Preston & Partners. *General contractor:* Tersons Ltd. *Sub-contractors: Lifts:* Otis Elevator Co. *Portland stone cladding:* Wandsworth Stonemasonry Works. *Marble and granite:* J. Whitehead & Sons Ltd. *Metal windows, curtain walling:* The Crittall Manufacturing Co. *Entrance hall glazed screens and doors:* G. Johnson Bros. Ltd. *False ceilings:* The Expanded Metal Co.; Draftsele (London) Ltd.; Horace W. Cullum & Co. *Terrazzo cills and mullions:* Art Pavements & Decorations Ltd. *Terrazzo staircases:* Malacarp Terrazzo Co. *PVC flooring:* The Acme Flooring & Paving Co. *Service lifts:* The London Lift Co. *Piling:* The Cementation Co. *Mosaic:* The Camden Tile & Mosaic Co. *Roof cradle track:* Palmer's Travelling Cradle & Scaffold Co. *Wall tiling:* W. B. Simpson & Sons Ltd. *Spiral staircase:* The Safety Tread Ltd. *'Paropa' paving, roof terraces:* Frazzi Ltd. *Signs and illuminations:* Pearce Signs Ltd.; Haywards Ltd. *Slate cladding:* Setchell & Sons Ltd. *Coloured glass panels to waterfalls:* James Powell & Sons (Whitefriars) Ltd. *Garden works:* William Wood & Son Ltd. *'British Werno' office partitions:* Richard Savage (Contracts) Ltd. *Sliding-folding partitions:* Esavian Ltd. *Entrance hall fittings:* John I. Thornycroft & Co. *Metal staircase:* Allen & Greaves Ltd. *Hardwood strip flooring:* Horsley Smith & Co. *'Louvredrape' blinds:* Venetian Blinds Ltd. *Fire extinguishers:* Minimax Ltd. *Incinerators:* The Hygienette Manufacturing Co. *Sanitary fittings:* Shanks & Co.; John Bolding & Sons Ltd. *Kitchen fittings:* John Bolding & Sons Ltd. *Reconstructed stone:* Atlas Stone Co.; Girlings' Ferro Concrete Co.

Roebuck House. *Architects:* City of London Real Property Co., architects' department. *General contractor:* Sir Robert McAlpine & Sons Ltd. *Sub-contractors: Lightning protection system:* J. W. Gray & Son Ltd. *Lifts:* Otis Elevator Co. *Pavement and roof lights:* Luxfer Ltd. *Heating, hot water, ventilation, fire protection:* Matthew Hall & Co. *Aluminium windows, cills and rooflights:* The Crittall Manufacturing Co. *Refuse disposal system:* Broads Manufacturing Co. *Shutter doors:* G. Brady & Co. *Lightweight roof screeding:* Cheecol Processes Ltd. *Bricks, floor blocks:* London Brick Co.

Glen House. *Architects:* Howard, Fairbairn & Partners. *General contractor:* Sir Robert McAlpine & Sons Ltd. *Sub-contractors: Granolithic:* Johnson Floor Co. *Lightweight roof screeding:* Alan Milne (Plastering) Ltd. *Cladding panels:* Kendells Stone & Paving Co. *Plastic wall finishes:* Plastic Surfaces Ltd. *Tiling:* W. B. Simpson & Sons Ltd. *Heating, ventilation, fire protection:* Z. D. Berry & Sons Ltd. *Lightning protection system:* J. W. Gray & Son Ltd. *Roller shutters:* Haskins. *Lavatory cubicles, joinery:* William Verry Ltd. *Travelling trolley system:* Palmer's Travelling Cradle & Scaffold Co. *Paint:* Roffe Ltd. *Black granite plinths:* Cooper Wettern & Co. *Aluminium windows and doors, steel windows:* W. James & Co. *Marblework:* Walter W. Jenkins & Co. *PVC floor tiles:* Holmsund Flooring Ltd. *Fletwood flooring:* Vigers Bros. Ltd. *PVC handrail:* Marley Tile Co. *Lifts:* Otis Elevator Co. *Pavement and roof lights:* Luxfer Ltd. *Clocks:* English Clock Systems. *Bricks, floor blocks:* London Brick Co.

Carrier House. *Architects:* City of London Real Property Co., architects' department. *General contractor:* Myton Ltd.

Esso House. *Architects:* T. P. Bennett & Son. *General contractor:* Taylor Woodrow. *Sub-contractors: Asphalt:* Ragusa Asphalte Paving Co. *Canopy soffit:* Cinemetals Ltd. *Drainage, gas installation:* Ellis (Kensington) Ltd. *Facing bricks:* Cape Building Products Ltd. *Glazing:* Faulkner Green & Co. *Granite facings:* Cooper Wettern & Co. *Lifts:* Otis Elevator Co. *Metalwork:* Clark Hunt & Co. *Natural Portland stone:* Stone Firms Ltd. *Paint:* Hadfields (Merton) Ltd. *Pavement lights:* J. A. King & Co. *Sprinklers:* Automatic Sprinkler Co. *Windows:* Crittall Manufacturing Co.

Company Offices, Hammersmith. *Architect:* Francis Pym. *Planning consultants:* Lethbridge Bergson Associates. *General contractor:* Richard Costain (Construction) Ltd. *Sub-contractors: Joinery:* H. H. Martyn & Co. *Decorations:* King's (BDJ) Ltd. *Electrical:* T. Clarke & Co. *Carpet and curtains:* Andrew Bruce & Co. *Heating and ventilation:* Norris Warming Co. *Ceilings:* Roof & Lining Construction Co. *Furniture and 12th floor dining tables to design of Francis Pym:* H. H. Martyn & Co. *Veneers:* W. W. Howard & Co. *Kitchen equipment:* Moorwood-Vulcan Ltd. *Carved lettering:* Alan Breese. *Plate glass doors:* Aygee (Glass) Ltd. *Furniture, 11th floor private offices:* Cook's (Finsbury) Ltd. *Venetian blinds:* Stilsound Vertical Blinds Ltd. *Light fittings:* Rotaflex (Great Britain) Ltd. *Clocks specially designed by Francis Pym:* IBM United Kingdom Ltd. *International telephones:* The Reliance Telephone Co. *Paint:* Lewis Berger (Great Britain) Ltd. *Marble:* Mander & Germain Ltd. *Ceramic floor tiles:* Langley London Ltd. *Light fittings specially designed by Francis Pym:* Hiscock Appleby & Co. *Felt coverings:* Bury Felt Manufacturing Co. *Planting:* Coverwood Nurseries. *Furniture:* Hille of London Ltd. *Furniture and fabrics:* Interiors International Ltd. *Chairs to design of Moseelle Meals Inc. Ohio, and Maria Bergson Associates, New York:* Archie Shine Ltd. *Cork linings:* Armstrong Cork Co. *Light fittings:* Atlas Lighting Ltd. *Leather:* Bridge of Weir Leather Co. *Ceilings:* S. Burgess Products Co. *Skirting:* Cape Asbestos Ltd. *Fabrics:* Conran & Co. *Wall lining:* Edgar Bros. Ltd. *Expanded metal:* Expanded Metal Co. *Plastic laminate:* Formica Ltd. *Light fittings:* The General Electric Co. *Ironmongery:* James Gibbons Ltd. *Acoustic ceilings:* Gyproc Products Ltd. *Sliding door gear:* E. Hill Aldam & Co. *Metal grilles:* G. A. Harvey & Co. (London) Ltd. *Glazed wall tiles:* H. & R. Johnson Ltd. *Blockwork:* Lignacite (North London) Ltd. *Light fittings:* Merchant Adventurers of London Ltd. *Socket outlets:* MK Electric Ltd. *Drawer runners:* Charles P. Moody Ltd. *Radio call system:* S. Multitone Electrics Co. *Leathercloth:* Poulter & Nicholson Ltd. *Curtain tracks:* Silent-Gliss Ltd. *Switches and socket outlets:* Wandsworth Electrical Manufacturing Co. *Shelving:* G. R. Speaker & Co. *Ironmongery:* Wilkes Berger Engineering Co. *Locks:* Joseph Kaye & Sons Ltd. *Arlinghide wallcovering:* Arlington Plastics Development Ltd. *Lionide door covering:* James Williamson & Sons Ltd. *Light fittings:* Fluorel Ltd. *Hot plates:* Denton's. *Glazed doors:* Plyglass Ltd.

Boy Scout Headquarters, Belfast. *Architect:* Ian D. W. Campbell. *General contractor:* Thos. McKee & Sons. *Sub-contractors: Flooring:* Apuana Flooring Co. *Aluminium windows:* Alumin Building Components Ltd.

Flats, Oak Hill Park, Hampstead. *Architects:* Michael Lyell Associates. *General contractor:* A. T. Chown & Co. *Sub-contractors: Heating installation, hot and cold water and sanitary services:* Lorne Stewart (Heating) Ltd. *Heating installation and boiler house, block B:* Taylor Engineering (Heating Services) Ltd. *Electrical installation:* Iverson Electrical Ltd. *Lifts, block A:* Express Lift Co. *Lifts, blocks B and D:* Maryatt & Scott Ltd. *Hardwood windows, blocks A and D:* West London Timber Manufacturing Co. *Hardwood windows, block B:* A. F. Taylor Ltd. *Aluminium windows:* Quicktho Engineering Ltd. *Opaque window panels:* Hills (West Bromwich) Ltd. *Steel windows:* Ideal Casements (Reading) Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Ironmongery:* Comyn Ching (London) Ltd. *Wardrobe fittings:* J. C. Richards (Cabinet Makers) Ltd. *Balustrading:* George Wright (London) Ltd. *Fire escapes:* F. A. Norriss & Co. *Terrazzo:* Great Metropolitan Flooring Co.; The Arcanum Terrazzo & Stone Co. *Roofing:* Pilkington's Asphalte Co. *Facing bricks and decorative tiles:* A. & W. T. Richardson Ltd. *External rendering:* Glamorock Ltd. *Omnia floors:* Atlas Stone Co.; Omnia Constructions Ltd.

House, Oak Hill Park, Hampstead. *Architects:* Michael Lyell Associates. *General contractor:* A. T. Chown & Co. *Reinforced concrete floor and staircase:* Kleine Reinforced Concrete Ltd. *Heating installations:* Broad & Co. *Electrical installation:* Renouf & Calvert Ltd. *Aluminium roof:* Freeman Morrison Ltd. *Hardwood joinery:* A. F. Taylor Ltd. *Aluminium windows:* Quicktho Engineering Ltd. *Plyglass:* Plyglass Ltd. *Naco louvres:* Crittall Manufacturing Co. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Ironmongery:* Standard Range & Foundry Co. *Balustrading:* George Wright (London) Ltd.; H. & C. Davis & Co. *Bricks:* A. & W. T. Richardson Ltd. *External rendering:* Glamorock Ltd.

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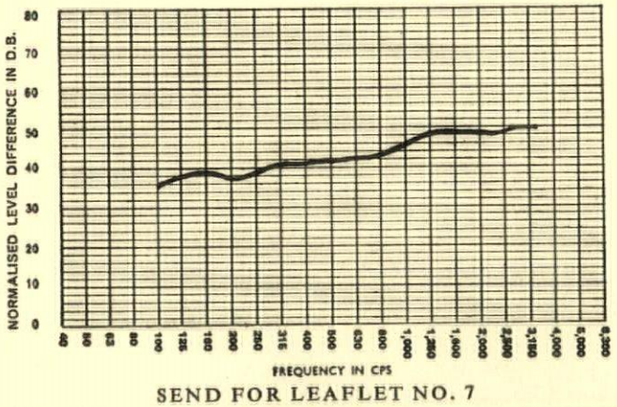

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Printed in Great Britain for the Proprietors of "The Architects' Journal," of "The Architectural Review," and of "Specification" (The Architectural Press, Ltd.) 9-13, Queen Anne's Gate, Westminster, S.W.1, by Knapp, Drewett & Sons Ltd., by appointment 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



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