THE ARCHITECTURAL REVIEW VOLUME CXXV NUMBER 744 JANUARY 1959 FIVE SHILLINGS

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preview 59

TANNIN protected them through centuries from corrosion . .

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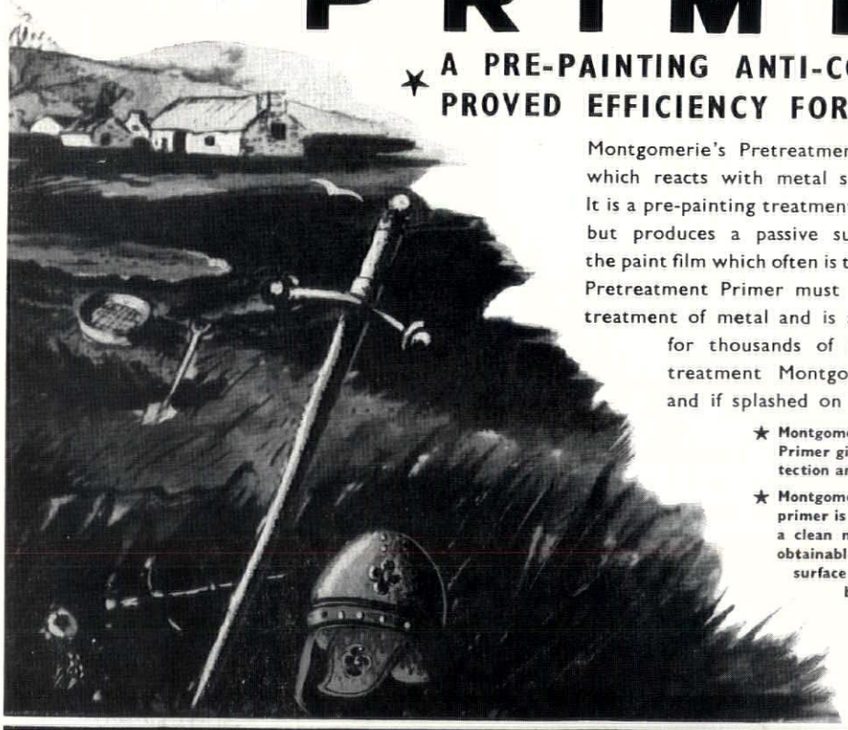

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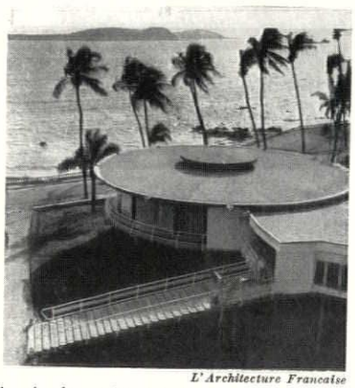
MARGINALIA

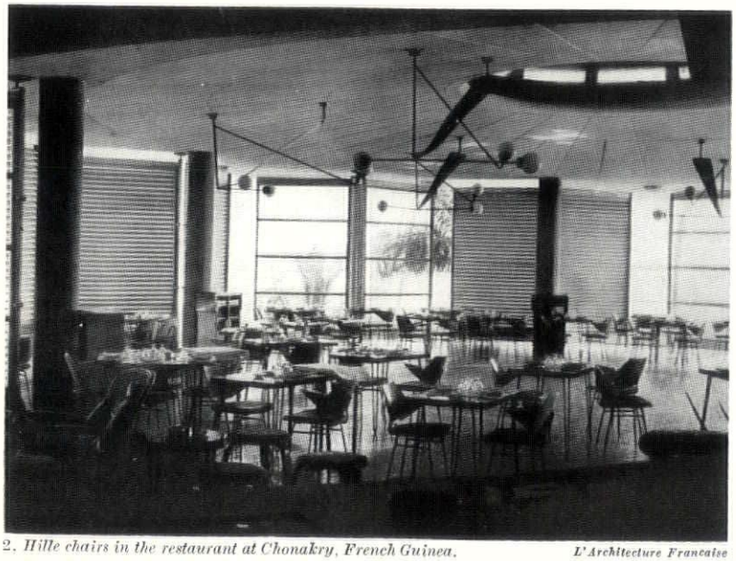
Atlantic Coast Rotunda

An off-lying geometrical feature seems to be mandatory for Hotels Fabulous, but France, in spite of a fair number of *Hotels Fabuleux*, has not contributed much to this branch of the architecture of pleasure so far. Some redress to the balance of prestige has now been made, however, by the Hotel de France at Chonakry on the Guinea Coast (architects: Lagneau, Weill and Dimitriev). This has an almost free-standing circular restaurant, 1, within twenty metres of the Atlantic breakers. In both the design and the detailing of this rotunda one senses the active collaboration of the architect's consultants, particularly Charlotte Perriand and Jean Prouvé; notably a characteristically Perriand use of carefully selected furniture by designers other than herself, such as the Hille chairs in 2, and the ingenious system of outward folding double doors, alternately of grillage and glass, that permit optimum presentation to the view, and maximum natural ventilation.



L'Architecture Française

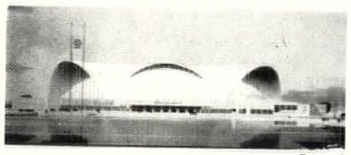
1, *circular restaurant at Chonakry, French Guinea.*



2. *Hille chairs in the restaurant at Chonakry, French Guinea.* *L'Architecture Française*

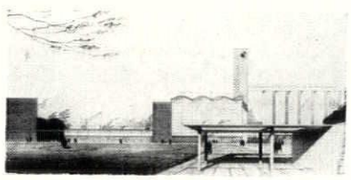
Atmosphere in Moscow

The fifth congress of the International Union of Architects was held in Moscow in July, and was concerned chiefly with town-planning. As was more or less inevitable with so large an organization—and one that has never ceased to maintain contact across the iron curtain—progressive good will had to be nurtured by the realities of diplomacy, and the agreed resolution on town planning problems that has finally emerged is a cautious and middle-of-the-road document, valuable chiefly for the way in which it sums up the points and attitudes on which the majority of world architects can be taken as unanimous on town planning questions: overall national plans, regional plans, master-plans for individual towns, neighbourhood as basic planning unit, rationalized circulation, a humane aesthetic of urbanism, compulsory purchase, local administration of local planning, need for research, the need for architects to take control coupled with the belief that architects are, by their education, especially qualified to do so.

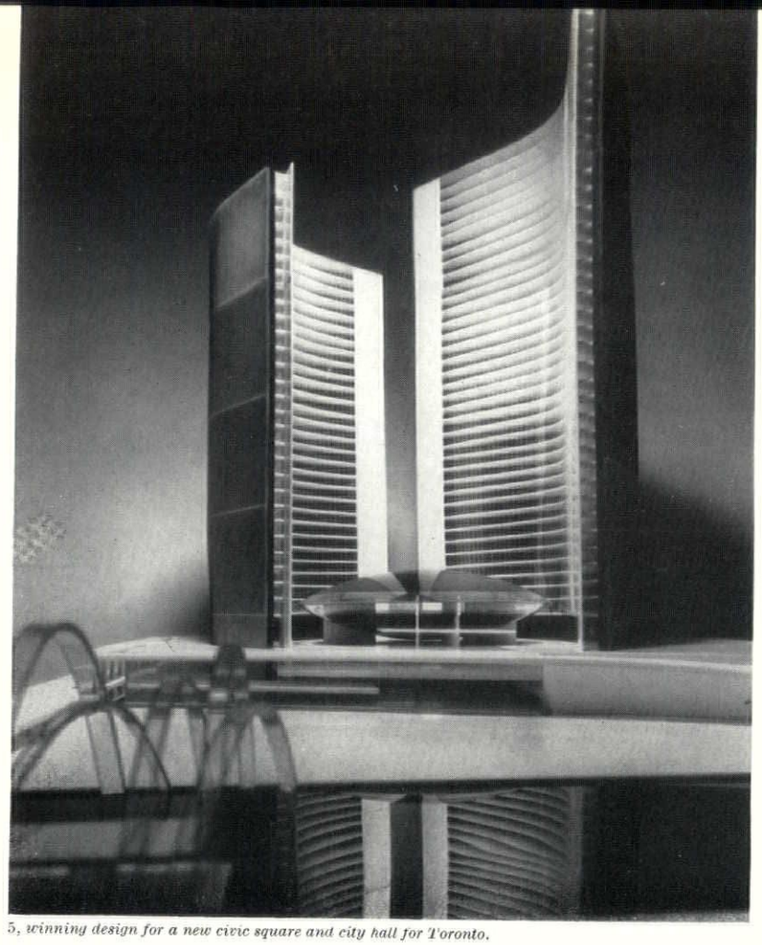


Bauwelt

3, *student diploma scheme shown at the IUA.*



4, *another student scheme.* *Bauwelt*



5, *winning design for a new civic square and city hall for Toronto.*

Over and above the official business of the congress there was, of course, the opportunity to make personal contacts, to see how Russia's early monuments of the modern movement were surviving (very well, in most cases) and to appreciate the extent and progress of *the thaw*—which has proceeded at a remarkable pace if the student diploma-schemes, 3 and 4, that were shown are anything to go by.

Toronto City Hall

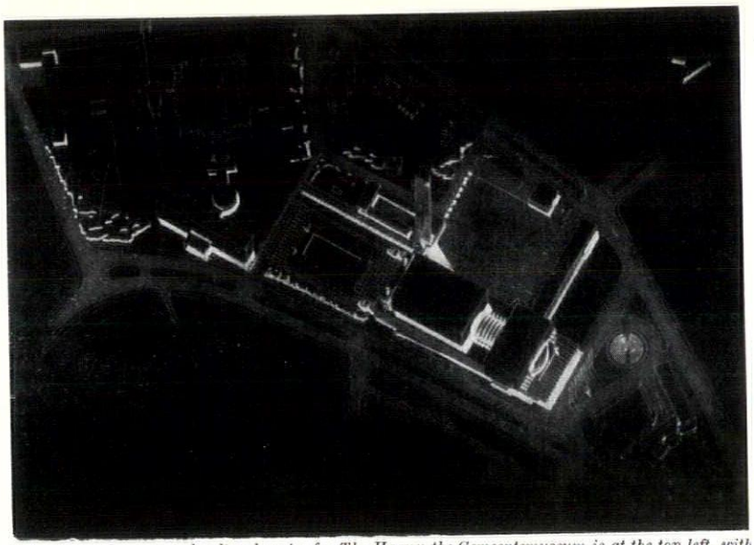
The winning design in the second phase of the two-stage competition for a new civic square and city hall for Toronto, 5, is the work of the Finnish architect Viljo Rewell; collaborators, Heikki Castren, Bengt Lundsten and Seppo Valjus. As the model shows, the hall when completed will comprise three main structures — a circular council-chamber in the centre, standing above a circular hall for the execution of civic business, and partly enwrapped by two tall slabs of boomerang-plan, housing office accommodation. The floors in these slabs are cantilevered forward from a solid reinforced-concrete back wall, and the fenestration is all on the inner faces of the slabs, looking into the partially-enclosed space above the council chamber. In the foreground of 5, is the pool that will occupy a large part of the unbuilt area of the square, on the axis of the old city hall, which would lie off to the right in this view.

In spite of its outstanding originality, and the unanimity of the jury in making the award to this design, Rewell's scheme was fairly sharply criticized by some of the assessors, and a minority report, accompanying the 'Unanimous' award, and signed by Sir William Holford and Professor Gordon Stephenson, drew attention to the following points: the orientation of the blank back walls of the office towers towards the surrounding streets, long and complicated internal communications, excessively bare and open piazza, poor views out from the council chamber, and serious doubts as to the possibility of erecting so advanced and complex a structure within the price-limits proposed. However, the minority report goes on to suggest that the city of Toronto should be prepared to increase the financial appropriation allocated to the city hall, in order to 'realize the design and preserve its integrity,' rather than attempt to trim the building to fit the finance. The situation has a familiar ring—good architecture costs money, the best architecture costs a lot of money—but in a competition where a need for reasonable economy had been urged, one does not envy the plight of the assessors.

Cultural Centre for The Hague

Acting upon a recommendation made by W. M. Dudok in his studies for the replanning of the area near Berlage's *Gemeentemuseum*, on the edge of the Scheveningse Bosjes, the town council of The Hague decided in 1956 to put in hand the creation of a Cultural centre, on a site adjoining the museum. The design was entrusted to J. J. P. Oud and his solution is seen in 6—an extension to the back of the *Gemeentemuseum*, at the left ; a large complex block, containing concert-hall, theatre, conference rooms, indoor sports facilities, etc. ; an open square, between these two main structures, with a seventeen-storey hotel tower at the corner furthest from the museum extension ; double-deck car-parking facilities, the upper deck at ground level, forming a further open square at the back of the main block, partially enclosed by a low block on its northern side, containing a small cinema at its extremity.

The relatively wide-open quality of the planning enables a fair amount

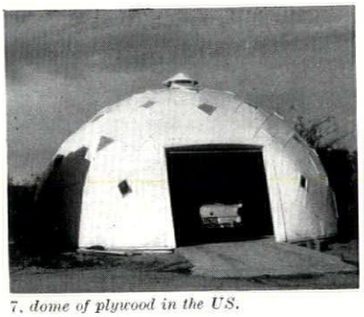


6. layout of the proposed cultural centre for The Hague: the Gemeentemuseum is at the top left, with its extension linked to it by the rotunda. The new work lies to the right of the open square and has another square for car parking on two decks, behind it.

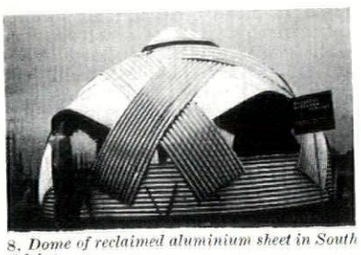
of building to be put on (or rather, round the edges of) the site without breaking the relatively low-density development pattern of the area, and also facilitates, within a fairly free system of grouping, a high degree of axial formality within the individual blocks.

Domes from Sheet

Until recently the structure of geodesic domes designed by Buckminster Fuller has appeared to consist of metal struts occupying the lines of the geometry, or metal plates occupying the spaces between the lines. The results have been sophisticated and have lost the do-it-yourself quality of some of his earlier work. Now, however, that quality has returned in a most spectacular way, in a series of smallish domes in which the structural material is used in untrimmed sheets overlapping like scales. In the US, a number of recent projects inspired by Fuller have been realized in plywood in forms like 7, and in South Africa a Fuller Seminar in the Department of Architecture of the University of Natal produced the version seen in 8, in reclaimed aluminium sheet. Both illustrate with crude force that Geodesic is neither an aesthetic nor a particular way of using particular materials. However, the characteristic approach to geometry remains, in an unobvious way, and is to be found in the laying-out of the holes through which pass the bolts or pegs used to hold the structure together and, simultaneously, to determine its form.



7. dome of plywood in the US.



8. Dome of reclaimed aluminium sheet in South Africa.

CORRESPONDENCE

Liturgical Brief

To the Editors,

Sirs, To an outsider the attitude implicit in some of the correspondence under this heading appearing in your August issue, namely that works of art are desirable in a church or cathedral because they may turn the casual visitor into a worshipper, seems peculiarly misconceived from the artistic, and, one might also have thought, from the religious, point of view. True worship must surely depend on inner conviction, not on external stimuli (as to the Christian attitude to works of art, see Ruskin's Stones of Venice, volume 2, para. LVIII, at pp. 94 and 95 in the Everyman Edition). And to evaluate the merit of the works in a church by any reference to their potential effects as means to encourage the beholder into a particular religious fold is surely an aesthetic, if not a religious, heresy.

In such matters the Church must be in the same position as any other individual or institution who, in building and decorating his premises, gives expression to his functions, his tastes, his feelings and his convictions. If the result is the creation of beauty, we are duly thankful, as we are for the gothic cathedrals, the churches of Wren, or the minarets of Kairouan, irrespective of whether or not we happen to subscribe to the particular forms of belief or worship that inspired them. And, while we may also tend to think more highly of an institution capable of causing such beauty to be created, we will only do so if we feel that its members' proper pride and pleasure in their creation is not in any way based on an assessment of its potential efficacy as an engine of propaganda.

Yours, etc.,
Brian H. Bliss.

London, S.W.10.

Definitions

To the Editors,

Sirs,—You would oblige me very much indeed by giving exact definitions of the following terms, which occur regularly in your excellent periodical.

For your convenience I give for each term one of the places where they can be found, all in No. 122 (1957).

Controlling Partners, p. 301.
Architect-in-Charge, p. 264.
Partner-in-Charge, pp. 338, 371, 407.
Assistant-in-Charge, p. 338.
Associate Architect, p. 407.
Executive Architect, p. 99.
Assistant Architect, p. 407.
Project Manager, p. 323.
Associated Partner, p. 371.

Yours, etc.,
D. van der Kellen,
Documentation Scientist.

Delft, Holland.

After some research, the Editors reply:—

Dr. van der Kellen's difficulty, which is shared by a number of our overseas readers, stems from the variety of different types of administrative organization that have grown up in the last few years in architects' offices. The old concept of a single architect at the head of a pyramidal hierarchy of assistants has now virtually disappeared—except, curiously enough, in municipal and other local government offices which are still, legalistically speaking, directed by a single person designated by some such title as 'County Architect,' or a similar form of words to fit the type of authority concerned.

Otherwise, even an office headed by a well-known personality tends to be registered as, e.g. 'Sir Top Person and Partners,' and practically all major offices are now partnerships. A large number of these profit-sharing arrangements were founded over ten years ago, and have recently added a second group of partners, almost equal in rank, partly to deal with an increased volume of work, partly to reward outstanding services to the office, or to prevent valued assistants from moving about from office to office, by giving them a stake in the profits. Thus an assistant who was the 'Assistant in charge' when first assigned to a particular building may have become the 'Partner in Charge' by the time of its completion.

Bearing in mind that almost all the terms about which Dr. van der Kellen has enquired are incapable of exact definition because they reflect only grades of prestige that are incommunicable outside the office to which they refer, one can nevertheless assume a hierarchy of roughly the following shape. Ultimate control will be vested in a small group of 'Senior Partners,' supported by a group of 'Junior Partners' or 'Associates,' all of whom have some stake in the profits. Next comes the highest grade of salaried employees, the 'Senior Assistants,' supported by lower grades of assistants. A building designed by such an office will, however, usually be credited in approximately the following form:—

Pleasure Dome in Xanadu. Architects: Corbel, Bracket and Partners. Partner in Charge: Herbert Bracket. Associated Partner: William de C. Console. Assistant in Charge: Dennis Dripstone. Assistant Architects: George Gargoyle, Sidney Spout.

This can fairly safely be interpreted as follows: Herbert Bracket, a Senior Partner, took general administrative responsibility and approved the design, and Console, a Junior Partner, still young enough to insist on his romantic middle initial, made decisions in Bracket's absence, and probably dealt with day-to-day contacts with the clients. The actual conception of the Dome, however, was Dripstone's work—he produced the original sketch designs, briefed the engineers, dealt with the contractors on the site and supervised the detail-work of Gargoyle and Spout. In another office external responsibilities might have been differently distributed, and Dripstone might have been described as 'Project Manager' or 'Executive Architect.' On the other hand, these terms might equally have been applied to Console, or Bracket and Console might together have been described as 'Controlling Partners.'

As will be seen, the exact meaning of these terms can only be given in the context of a particular office and a particular building, but it is hoped that the description given above affords some general sense of the approximate relative rank of the various titles. No such approximation can be given for 'Associated Architect,' who might rank equally with Bracket, Console or Dripstone, and is likely to be an outside designer, or one borrowed from a collateral partnership. In a local government office, however, 'Architect in Charge' is not likely to apply to anyone but an architect discharging Dripstone's responsibilities.

INTELLIGENCE

The LCC is considering a site near Hook, Hants, which they have selected from 70 possible ones, for their first New Town and has approached the Hampshire County Council and Hartley Wintney RDC to investigate its suitability.

A competition for designs for small houses is being sponsored jointly by *Ideal Home* and the RIBA. It is open to corporate members of the RIBA and the closing date for entries is January 30, 1959.

Benthall Hall, Shropshire, has been given to the National Trust who will carry out repairs and open it to the public during 1959.

The British Pavilion from the Brussels Exhibition will be on view at the Ideal Home Exhibition next March.

More than £4,000 in prizes are offered to the winners of a competition, open to anyone, for a long term plan of highway development in the London area organized by the Road Campaign Council. The closing date for preliminary entries is April 30, 1959.

ACKNOWLEDGMENTS

Cover: Galwey, Arphot. Marginalia, pages 1–2: 7, Buckminster Fuller; 8, Kodak Ltd. Frontispiece, page 4, Toomey, Arphot. Preview, page 11, top, page 15, bottom, page 33, bottom, page 39, page 49, top three, Alfred Cracknell; page 11, bottom, page 12, top left, page 50, top, page 56, bottom, LCC; page 12, top right, page 24, bottom, page 34, bottom, page 61, bottom, Sydney W. Newbery; page 12, bottom, de Normanville Studio Ltd.; page 15, top and centre, Photofinishers (Sheffield) Ltd.; page 16, page 27, top, page 28, page 31, page 34, centre, page 40, top two, page 46, page 50, bottom, page 55, top, page 56, top and centre, page 62, page 66, bottom, Galwey, Arphot; page 23, bottom, Lewis and Orgler; page 24, top, Colin Tait; page 27, bottom, M. of W.; page 33, top, Colin Westwood; page 40, lower two and page 41, Tella Co. Ltd.; page 45, top two, Philipson Studios; page 61, top, Studio Cole; page 61, centre two, W. E. Middleton and Son; page 65, top and bottom right, Archie Handford Ltd.; page 66, top, Bedford Lemere and Co. Ltd.; page 68, Wallace Heaton Ltd. Counter-Attack, pages 71–78, Nairn, Arphot.

THE ARCHITECTURAL REVIEW

Volume 125 Number 744 January 1959

SPECIAL PREVIEW ISSUE



This Month's Cover previews a new block of flats (further described on p. 63 of this issue) designed by the city architect of Coventry, for a site in Queen Street in that city. The importance of this design lies not only in its quality as architecture, but also in its location, in a comprehensive development area near the centre of the town—a mark of the shifting of emphasis in housing from the fringes of our cities to their hearts.

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4 **Frontispiece**

5 **Foreword**

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21 Retail Market: Sheffield *J. L. Womersley*

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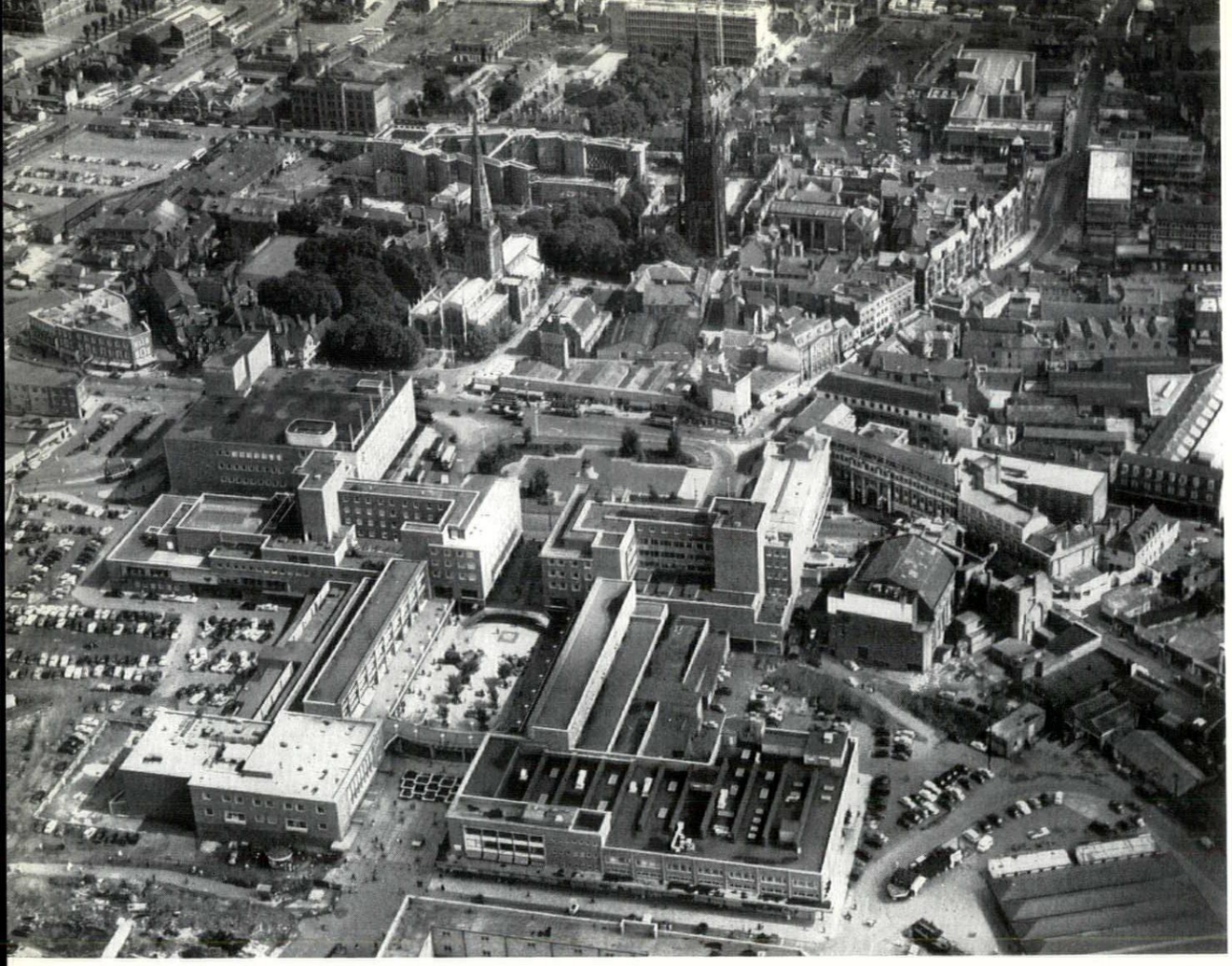
FIVE SHILLINGS





The variable progress of modern architecture in this country is the subject of the article that begins opposite. This variability is illustrated on the left by a contrast between two cities: Coventry and Hull, photographed recently by the REVIEW's aerial team. They are about the same size, both were severely damaged in the war and both have made one formal axis the pivot of their reconstruction. But while Hull's axis (lower picture) remains a geometrical exercise, not conceived in three dimensions nor related to the pattern of the city and the life that goes on there, Coventry's is a living centre of the city's life. Pedestrian and motor traffic are separated but not segregated, there are multi-level shops, back-area parking and a first-rate hotel, and the spire of St. Michael's gives a meaningful end to the view where Hull can manage only a misunderstood *rond-point*. All this is the result of the vision and dogged persistence shown by Coventry's city architects and those who have given them support.

In spite of a degree of clumsiness in some of the architecture (which is almost irrelevant in this context) Coventry's is the one rebuilt city-centre Britain can be proud of. Apart from some good things about Canterbury, we can take no pride at all in any of the others. Hull, Exeter, Swansea, Plymouth (though this city may be rescued by its bold new project for a pedestrian civic square), Liverpool and Southampton are all melancholy places to visit. The standard of design is dreary, and such cities as did lay down an intelligent plan after the war failed to implement it successfully.

But if the great planning opportunities have been missed, it is still not altogether too late, as several recent projects show (Hull technical college: AR Preview issue, January 1957—closing the main axis pictured here; Plymouth's proposed civic offices; Sheffield's central-area housing illustrated in this issue), to inject some architectural distinction into these cities, given the right architects in the right places, intelligently supported by their councils and committees.

FOREWORD

The contents of this annual issue, which is designed to provide the reader with a glance ahead at new buildings now going up or in the early stages of construction, also serves as a barometer recording the progress modern architecture is making in this country. In particular it indicates, year by year, the speed at which modern ideas are establishing themselves in buildings of different types, and it naturally invites questions about the reasons why one building type shows itself more progressive than another, as well as the reasons behind progress or lack of progress generally.

It has been a noticeable feature of the architectural scene since modern architecture first reared its iconoclastic head in the nineteen-twenties, how some types of building reacted to it immediately, while others have hardly reacted to this day. At first, one seems to remember, it was chiefly private houses (which, incidentally, are not included within the scope of these issues) that led the way. That was only to be expected. The ideas that had been developing on the Continent of Europe during a couple of decades first took root in Britain in the minds of members of the intelligentsia or individuals with cosmopolitan connections, for whom to build a house for their own occupation embodying these ideas was an obvious way of expressing their interest. It was an equally obvious move for architects to build houses for their own occupation. Another reason was that those who, whether they themselves understood the principles of modern architecture or not, wished to give an architect of the modern school a chance, found in the private house an opportunity of doing so without risking large capital sums or involving other people in an enterprise which—to them as well as to others—was essentially experimental.

Later, a few industrialists and commercial developers became experimental patrons of modern architecture, chiefly out of conviction or out of interest in it æsthetically; there was very little appreciation in the early days of the practical contribution modern architects could make to the economics of building, either through planning or structure. Perhaps the fact that the first examples had been mostly private houses, which served a wholly traditional purpose and demanded little in the way of structural innovations, was partly responsible for this.

Up to 1939 the modern buildings that were not private houses were mostly flats, hotels,

small shops, department stores and factories, the result of private patronage, exercised individually or through the influence of far-sighted members of boards and committees. What persuasive powers the architects themselves were able to exercise were likewise individual; they had no public opinion behind them or support from an informed press—other, of course, than the professional press. Moreover there was virtually no official patronage of modern architecture, either on the national or the municipal level.

Things changed a good deal after the war, but not because of any greater interest in modern architecture shown by the organizations that mould public opinion, such as the press. Modern architecture was beginning to prove itself, although slowly; that is, the pre-war propaganda about the practical utility of its ideas was beginning to have some effect, aided by the discipline that post-war financial stringency imposed. More important, public authorities, in whose hands was the responsibility for the bulk of post-war building, became less cautious about allowing free expression to modern methods of planning and modern building techniques. Schools, as we are still so continually aware, were in the lead, and it can hardly be overestimated how much modern architecture owes to the fortunate fact that some of the most energetic school-building authorities (notably Hertfordshire) had architects at their disposal with intelligent and up-to-date ideas and a firm grasp of principles.

The work they did in the years after the war opened floodgates through which the water is pouring still. And it does not much matter that all the water is not as pure as that which first bubbled out of the Hertfordshire springs. The important thing is that modern design in school buildings is now regarded as normal even by the least adventurous local authority members. In addition, the fact that increasing numbers of the next generation are being educated in buildings that will accustom their eyes to the language of modern architecture may have an enormous influence in the future. The chief exception is those being educated in public schools, where the few genuine antique buildings are still being supplemented by the imitation antique. The rule seems to be : the higher the education the fewer the good architects employed.

But schools are a special case; in no other type of building are modern ideas accepted with so little questioning—except perhaps in the case of shop-fronts and showrooms, where the vagaries of fashion have linked a somewhat flashy version of the modern idiom with the role played by architecture as one of the instruments of sales-appeal. In offices, housing, industrial building and other types, there is such confusion of aims as to make it quite clear that when modern ideas are given an opportunity it is not because of any general belief in them but because a particular combination of circumstances has resulted in intelligent instructions being given to the architect or in a good architect being given a free hand.

This applies especially to housing, which has, along with schools, made the greatest advance since the war. Much good housing has been done where a first-rate architect (as in London and Coventry) has been in charge, supported by a progressively minded local authority, and improvement of a general nature is also to be found where local authorities have allowed themselves to be influenced by the intelligent guidance of the government's housing manuals. But it is depressing that all such improvements are identified with the near monopoly of house-building exercised by public authorities in the years immediately after the war. Since private-enterprise housing was resumed, the standard (with the honourable exception of the products of one single firm) has dropped alarmingly.

Nevertheless, a glance at the projects illustrated herewith shows that in most categories of building a quantity of honest contemporary work is now being done—even in the case of office blocks and university architecture, which a few years ago lagged most noticeably behind the others. A walk round any of our cities shows, however, how far from typical the reasonably designed buildings still are, and the lack of conviction and understanding on the part of those responsible is indicated by the fact that it is not necessarily the old fashioned, traditional businesses that have old-fashioned tastes and remain blind to the absolute necessity, on practical and cultural grounds, of modern architecture. Go-ahead firms, whose activities are part of the modern world of which modern architecture is itself one of the products, like English Electric, Hawker Siddeley and Associated Electrical Industries, occupy or are about to occupy new buildings dressed up in some fancy style that, apart from being inappropriate, effectively prevents them from taking advantage of modern techniques and ideas.

The failure is simply one of understanding, on the part of the business-man, the bureaucrat and indeed the man in the street, of what modern architecture is all about. They are unaware of it as a vital activity inseparable from the other vital activities of the contemporary world. Of course in the long run good architecture depends on having good architects, but these are produced in proportion to the opportunities they get. The subject of this introduction is not the quality of architects in

Britain now, but the degree of support the best architects are given; and in particular why a consistent demand for what they have to offer has not developed faster.

It is not primarily a matter of the individual client, because he cannot be expected to act differently from the way the prevailing climate of opinion leads him to act. So we must lay most of the blame on those whose business it is to create a climate of opinion. It is not to put it too strongly to say that modern architecture has developed in this country not only without support in the quarters where it might have been expected, but in the face of apathy and suspicion, and the only grounds we have for some optimism at the present moment is that in these quarters—in the press, on the radio and television, in the voices of the intelligentsia (whose influence is exerted in all sorts of ways) and, to a more limited extent, in the educational world, some flicker of interest is beginning to show itself.

There is at last some realization that architecture is a subject on which an intelligent man should hold opinions, and a meet subject for argument. Arguments about contemporary architecture are still, however, bedevilled by the long-standing British bias in favour of the literary rather than the pictorial, which the educational curriculum in our schools assiduously fosters, and which affects our attitude to all the visual arts. The British are just as notorious for looking first for the story a painting tells rather than for the message it communicates in terms of its own medium, as they are for judging the merits of a building by its age or the associations its style possesses. This bias has found itself in alliance with the philistinism that comes natural to the British temperament and is exemplified in the brutish attitude of some popular papers, which take a pride in labelling culture as extravagant and sissy.

One must not, however, expect too much of the daily press, trained as it is to concentrate on human-interest stories, sensational or otherwise. A bigger failure in the past has been that of the so-called intellectual papers—especially the weeklies—which claim to form opinion instead of catering for existing opinion, actual or estimated, and which pride themselves on taking the rational rather than the conventionally prejudiced view. The literary weeklies have a big influence on the views of the educated man, yet it is notable that they have never given a fraction of the attention to architecture that they give to painting, poetry or music, and when they do venture some architectural comment there is revealed not the well-informed observer but the anti-modern literary dilettante. To support the Georgian Group is about the most venturesome thing the intellectual pundit of the literary weeklies has hitherto been capable of.

The new interest in architecture shown by such publications is still disappointingly slight, as is the interest shown in university circles, which ought to set the intellectual standards of the whole country, but both as patrons of architecture and as centres of opinion about architecture, have for many years shown themselves reactionary and disinterested. Nor have they seemed in the least ashamed of being so, though they would feel thoroughly ashamed if the same could be said of their attitude to poetry, music or the theatre.

For the fact that there now exist grounds for optimism we can thank first of all broadcasting, where architecture has lately been given generous attention, and television, though the best means of using this medium to convey ideas about architecture are only beginning to be studied. But beyond this, perhaps through the influence of the radio, perhaps as the long-delayed result of years of propaganda on the part of architects themselves, perhaps simply because modern design, accepted as a matter of course in most parts of the world, no longer looks strange even to English eyes, a general willingness to meet the architect halfway is discernible in many quarters: among educationists, among the more intelligent members of local government committees, among civil servants and business men and in the conversation of the more civilized men in the street.

Is this the beginning of the informed public opinion for which modern architecture has long been waiting, and without which the informed client can hardly be expected to emerge—in place of the client who shows such depressing vagaries of taste and unequal progress in comprehension of what modern architecture is about?

These vagaries are exemplified in any number of interesting questions that must occur to everyone who keeps his eyes open in our cities—questions too complex, however, to be investigated here: why are the banks adventurous patrons of modern architecture in America but among the most conservative in this country? Why do the insurance companies, who develop property as an investment, take so little trouble about quality of architecture as though that did not affect the long-term value of the investment? Why do so many factory-owners regard it as the role of the architect to design the new office block that will be seen from the road, but not to replan the factory that rambles away behind it? Why does the ambassador who regards it as his job to present Britain as a power in the modern world prefer to do so, or so it is said, from an embassy that looks architecturally backwards and not forwards? And so on.

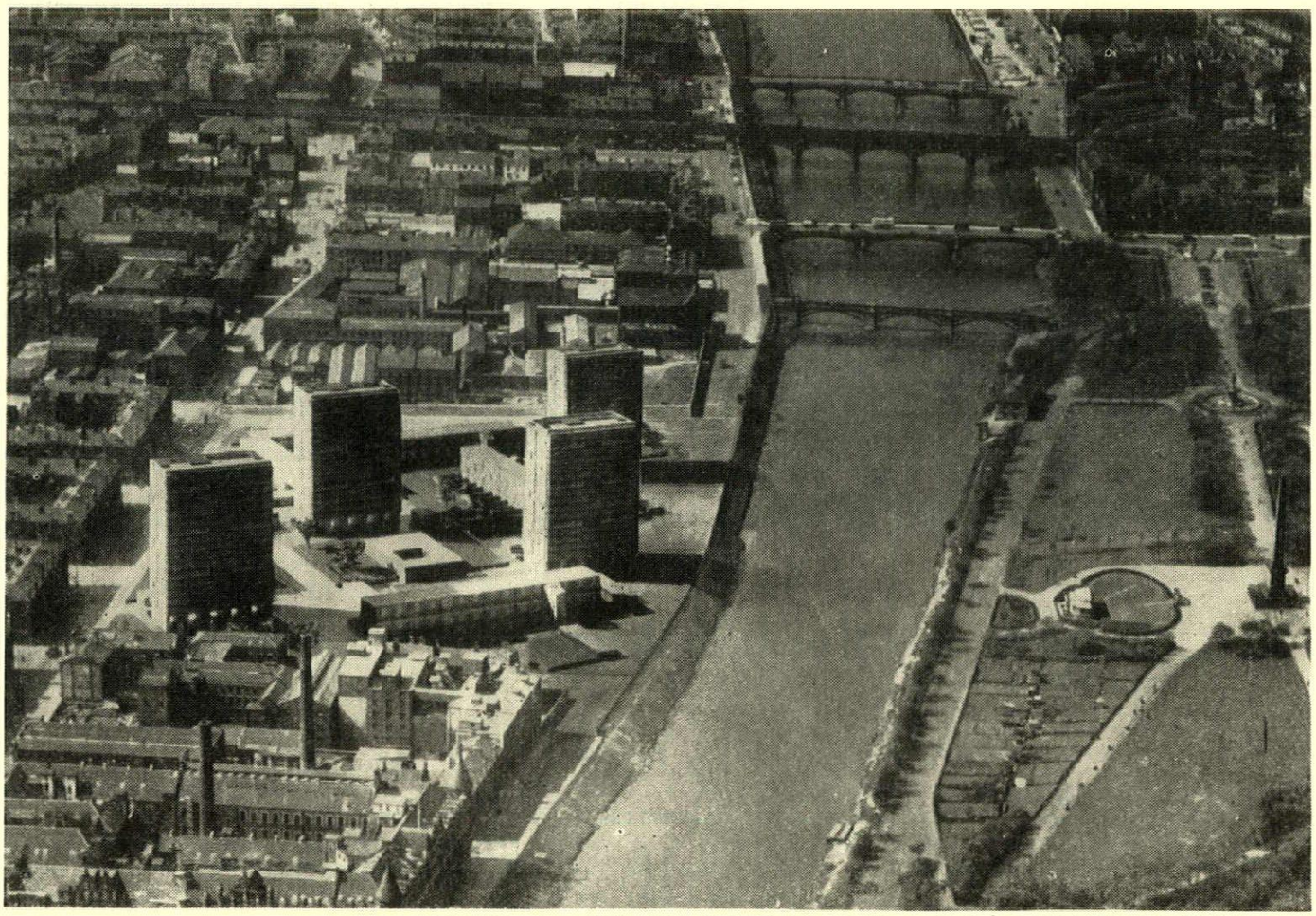
That such questions, indicating again the irrational and spasmodic nature of architectural progress, need asking is further evidence of much confusion of thought and failure of comprehension on the part of the architect's clients. Some of the failure can no

doubt be blamed on the architect himself, who has helped to create apathy and misunderstanding by making a professional mystery of what should be comprehensible and straightforward. But this is a natural tendency among all specialists, for which the sure remedy is full and free discussion by the non-specialists.

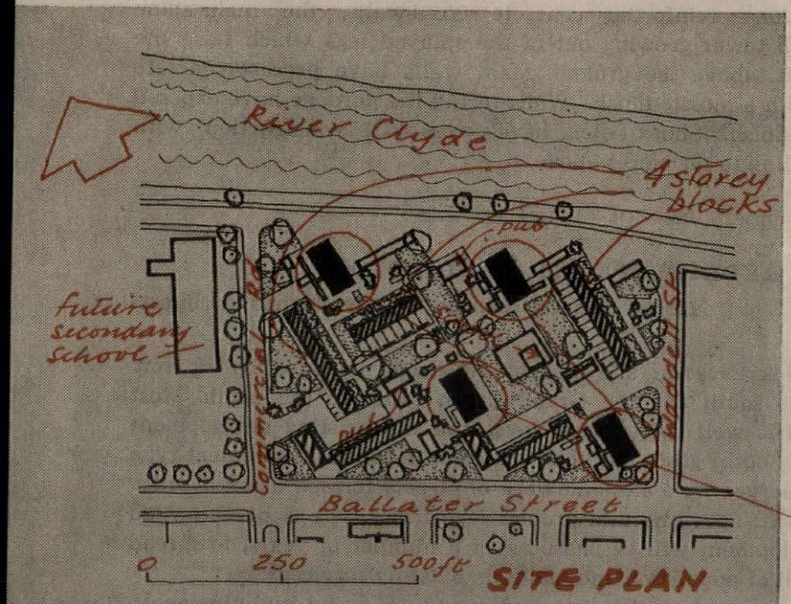
In spite of all the advances it has made in recent years, modern architecture is still a closed book to all but those who practise it. The good buildings are not there because people want them, but because for one reason or another their architects have been allowed to do what it seems right to them to do, irrespective of whether anyone else is interested. But how long can modern architecture survive in a healthy state while it remains an architect's architecture? Are not architects becoming almost satisfied to have as their incentive the opposition of those who don't understand? The incentive they should hope for is the criticism of those who do.

THE EDITORS

1 PLANNING SCHEMES



Seventeen-storey blocks of flats in the Gorbals redevelopment scheme on the banks of the Clyde at Glasgow. This is the area designed by Robert Matthew and Johnson-Marshall—see facing page.



REDEVELOPMENT SCHEME: GORBALS, GLASGOW

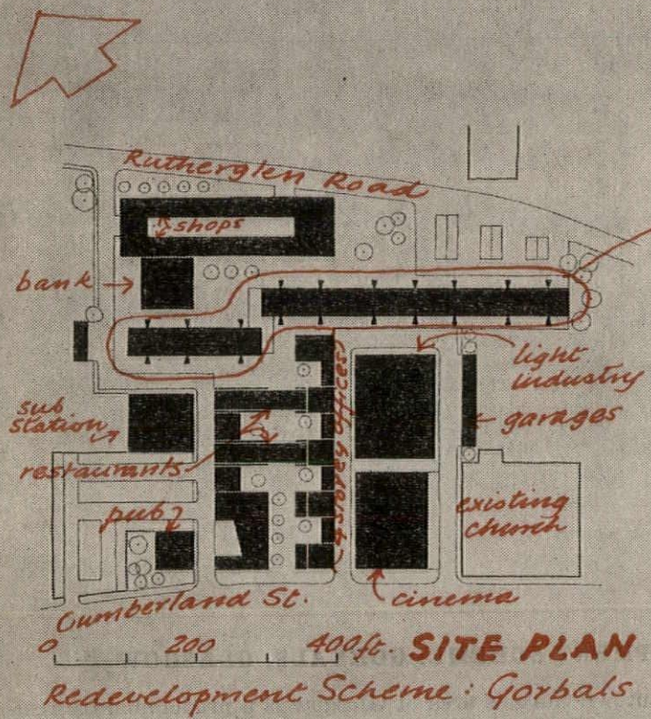
The Hutchesontown-Gorbals area of Glasgow is a predominantly residential district of 111 acres, with an average density of 450 persons per acre, on the south bank of the Clyde. It was designated in 1957 as a comprehensive development area, to be redeveloped in four 5-year stages. In the first stage three areas are dealt with. The first, providing 96 dwellings in 4-storey maisonettes designed by the Glasgow City Architect, was completed last summer. The second, by Robert Matthew and Johnson-Marshall, and the third, by Basil Spence and Partners, are illustrated here. The third area includes the main shopping centre.

Robert Matthew and Johnson-Marshall

Work began at the end of last year. The site, of nine and a half acres, is flat and featureless, but the Clyde with Glasgow Green beyond forms an attractive north boundary. To the west is the site of a future secondary school and to the east industry. The southern boundary is a new arterial road, from which access is limited.

The scheme provides 428 dwellings at a density of 133 rooms per acre in four 17-storey blocks of flats, three 4-storey maisonette and flat blocks and two 2-storey flat blocks. 49 per cent have three rooms, 40 per cent two rooms and the remainder one or four. Included in the scheme are a nursery school, eight shops, thirty garages and two pubs. Small shops or community rooms are associated with the ground floors of the higher blocks. In the space between blocks grass and planting is limited to fairly large areas raised above the general circulation level. Vehicular movement is kept to a minimum. There is no formal road system, hard-standings normally for pedestrians and recreation will be used by essential vehicles following routes defined by bollards and low walls.

The 17-storey blocks have a reinforced concrete structure divided laterally by cross-walls and longitudinally by a spine containing



vertical services and circulation. Either side of this spine floor levels differ by half a floor. Internal access corridors occur on alternate sides of the spine at intervals of two and a half floors. Through ventilation is maintained and all living-rooms have a west aspect. Each corridor gives access to twelve flats (five above, five below and two at the same level). They are reached by lifts, with escape stairs at each end. Half the flats have internal bathrooms. The 4-storey maisonettes are of brick cross-wall construction. Each dwelling has a private balcony or garden. All dwellings in the scheme have under-floor electric heating.

Project architects: T. R. Spaven, J. E. Arnott and J. Paterson. Structural engineers: F. A. Macdonald and Partners. Quantity surveyors: John Dansken and Purdie.

Basil Spence and Partners

Work will probably start on this area in the spring of 1960. It is the visual centre of the whole scheme and is given a dominating spine by the staggered 20-storey block containing 400 dwellings illustrated here. At the base of the block is a comprehensive service area containing shops, offices, pubs, restaurants, post office, police station and possibly a cinema or assembly-hall, with some provision for light industry. This area has a centre open only to pedestrians.

The dwellings in the staggered block are of the cross-over maisonette type, with all living-rooms and dining-kitchens facing south-south-west, with access to gardens from the kitchens, and all bedrooms facing north-north-east. Bathrooms are on external walls. There are 300 three-room maisonettes, the remainder being either four-room maisonettes or one-room flats. Access is from three main staircase towers, with lifts. Each maisonette, at whatever level, has a small garden, furnished with earth and drained so that plants and grass can be grown. The gardens of four dwellings are grouped together, providing an outdoor area of 44 ft. by 18 ft.

Construction: reinforced concrete cross-walls, the main spine wall in each tower growing out of the splayed legs which raise the towers 16 ft. above the ground. Main walls have precast concrete cladding with a mosaic finish. Walls facing the gardens have exposed aggregate finish. Shops, etc., have cross-wall construction with curtain-walling to the offices above.

HOUSING REDEVELOPMENT: PADDINGTON

Hubert Bennett (London County Council Architect)

The Warwick Crescent site of some 44 acres, bounded by Harrow Road to the south and the Grand Union canal to the north. Most of the land is well below canal level and the existing development consists of both good and bad nineteenth-century basement-type dwellings, served by a close network of streets formed at an average height of 8 ft. above natural ground level. The area is overcrowded and redevelopment will be phased over a number of years, to spread the overspill of population and maintain existing services.

The eastern sector of the area contains much sound mid-nineteenth century work, including Warwick Crescent. Most of this will be restored with internal improvements, to meet present standards. The centre section is redeveloped to retain something of the street façade character of the earlier work, with internal communal gardens. This has been achieved by the use of 4-storey staircase-access flats, designed to meet the unusual relationship between road and ground levels. The intimate character of Delamere Terrace and the interest of Westbourne Square have been preserved. The western sector, exhibiting the worst features of late nineteenth century over-development, includes churches to be retained and schools which must be extended or rebuilt. The scheme for this sector shows three 21-storey blocks of a compact plan which, with two similar blocks projected

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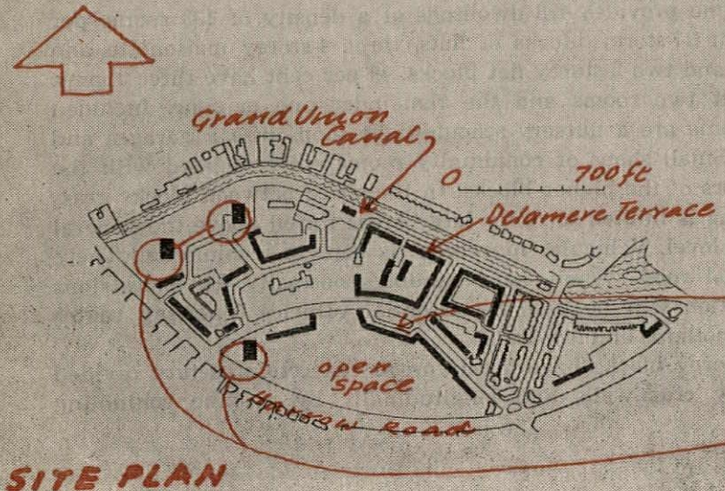
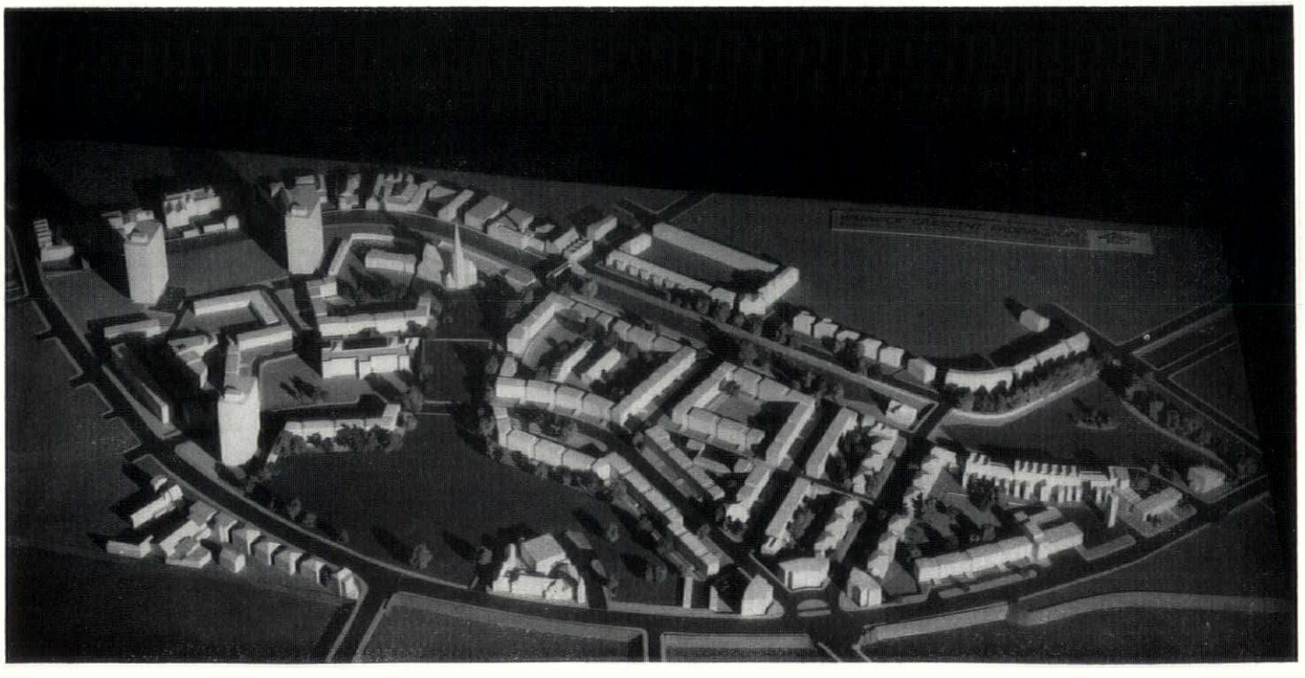


SITE PLAN

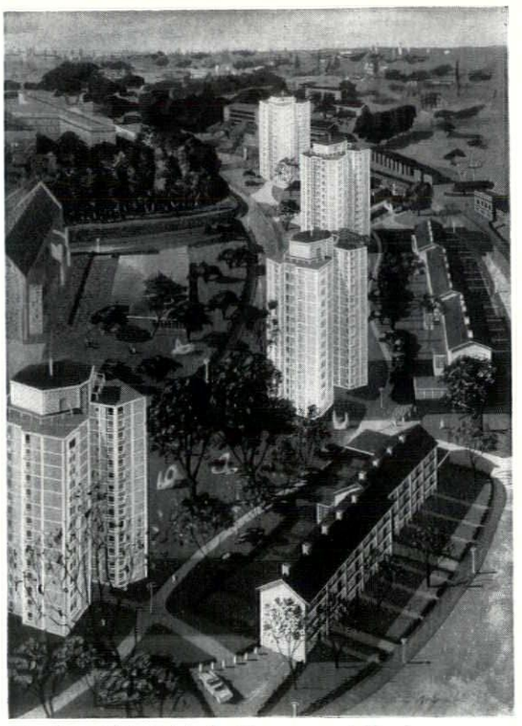
The Gorbals (Glasgow) redevelopment scheme: area designed by Basil Spence and Partners. In front of the twenty-storey blocks, with tiers of maisonettes separated by balcony-gardens, are low buildings containing shops, offices, pubs, etc.

yout of the War-ck Crescent site at ddington, alongside Grand Union nal. The tall block shown in detail over-f.



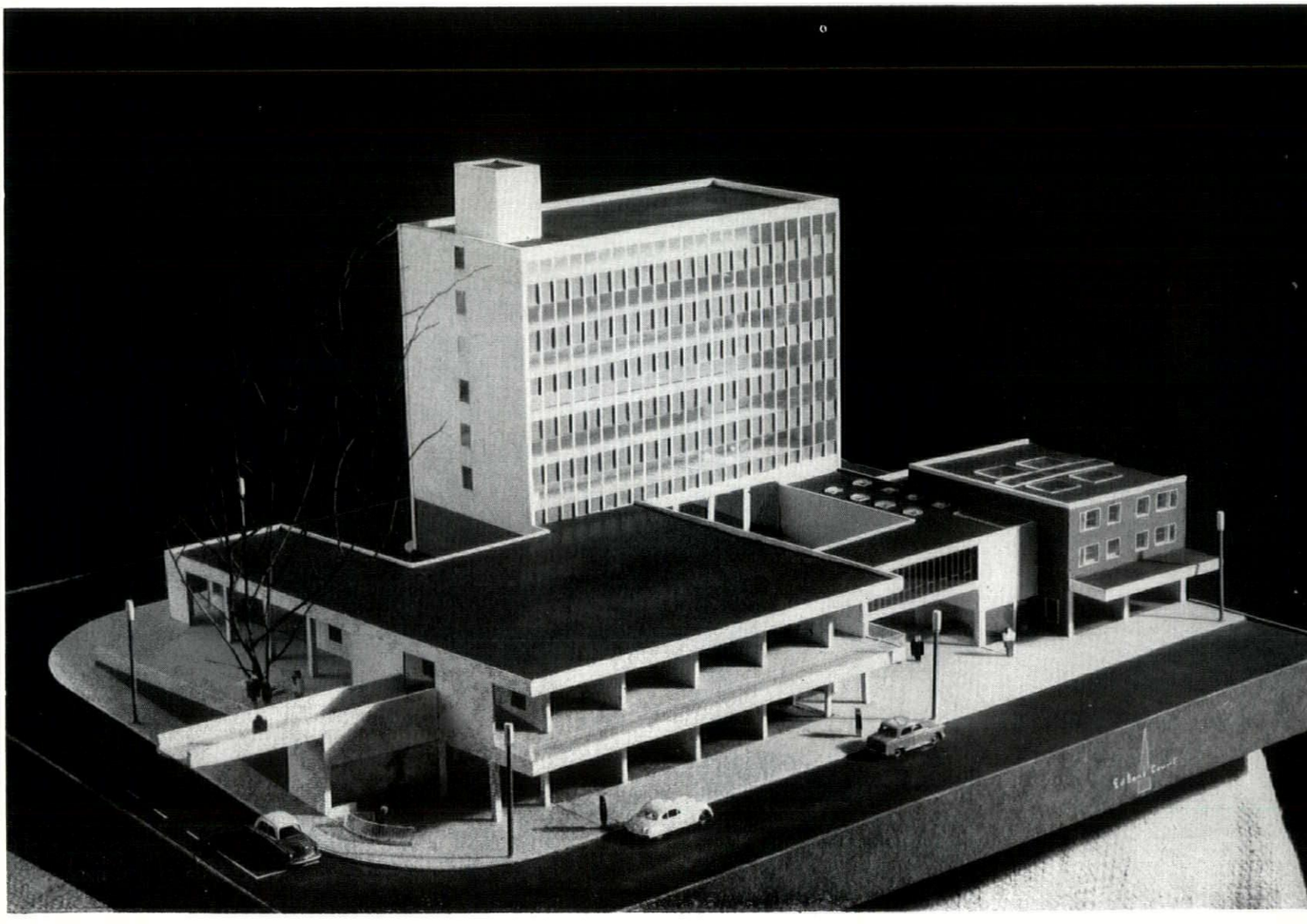


One of the twenty-one-storey blocks forming part of the LCC's Warwick Crescent (Paddington) redevelopment—see the two preceding pages.



Housing at Woolwich, by Norman and Dawbarn.

Below, the centre of the east side of Hemel Hempstead town centre, showing the seven-storey office block.



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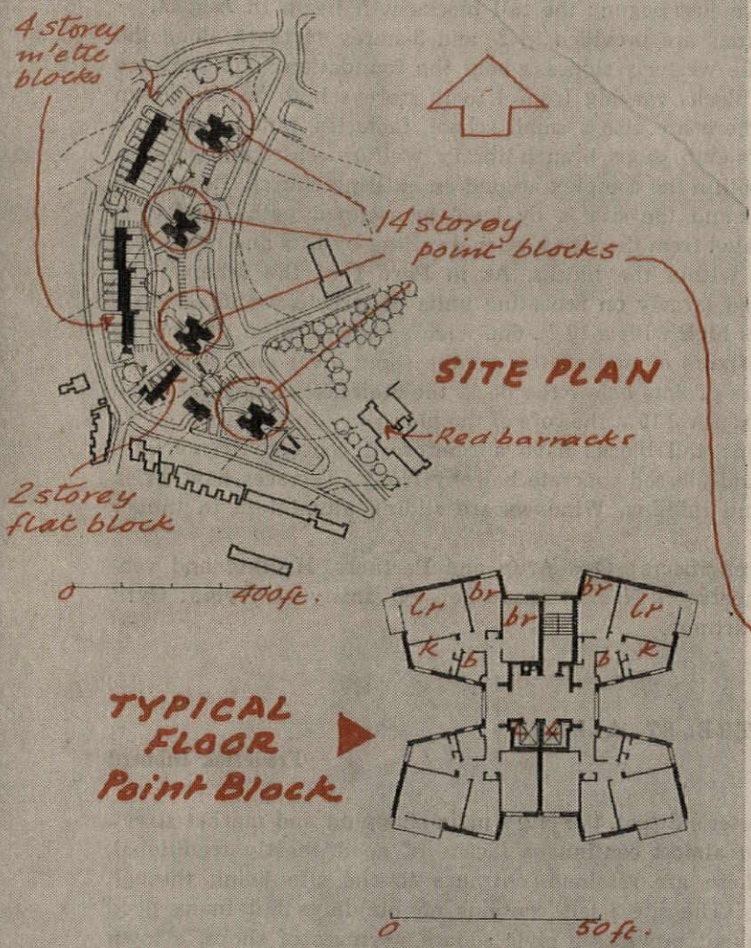
for the adjacent site to the west, will overcome the dull uniformity of Harrow Road and allow the canal to be seen. Each tall block provides 125 dwellings. The redevelopment will provide nearly seven acres of public open space, sited to separate housing from the railway and Harrow Road, giving an unbroken vista to Street's church and linking with a canal-side walk at towpath level. The scheme uses approximately 28 acres, to provide 1,127 dwellings, at a density of 138.5 persons per acre. Provision has also been made for an old people's home, a divisional fire station, a club-room, a youth centre and sufficient shops for the daily needs of the population.

The tall blocks are of reinforced concrete construction with timber intermediate floors to maisonettes. Cladding is brick or concrete panels. Low blocks have load-bearing brick cross-walls, concrete floors and brick-faced cavity panel walling.

Architect in charge: E. F. Moholi (formerly O. J. Cox). Assistants: J. N. Wall, J. Macdonald and M. S. Perring.



HOUSING REDEVELOPMENT: WOOLWICH

Norman and Dawbarn

On an island site of just over six acres, forming part of the St. Mary's comprehensive redevelopment area. The scheme provides flats, maisonettes, garages and shops, the latter replacing shops already on the site. They will be let as part of the living accommodation to which they are attached. The housing density will be 141 persons per acre. Work will probably start this spring.

A paved walk links the living-units in the interior of the site and there are paved play-areas for children. The housing consists of four 14-storey point-blocks (two possessing communal laundries), providing a total of 219 one- and two-bedroom flats, a 2-storey block containing eight one-room flats for old people and a house for a shopkeeper, and five 4-storey blocks providing 37 three-bedroom maisonettes and 13 one-room flats. The shops are in these blocks. There is also a four-bedroom doctor's house and surgeries.

The point-blocks have reinforced concrete frames with brick infilling and cast concrete panels under windows. Windows are metal. Balconies have asbestos sides and wired glass fronts in metal frames.

TOWN CENTRE (EAST SIDE): HEMEL HEMPSTEAD

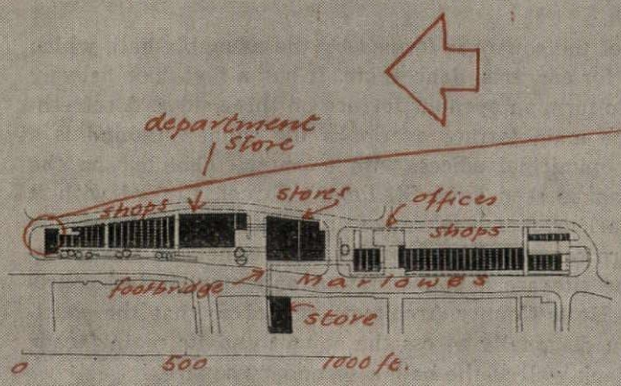
H. Kellett Ablett (Chief Architect, Development Corporation)

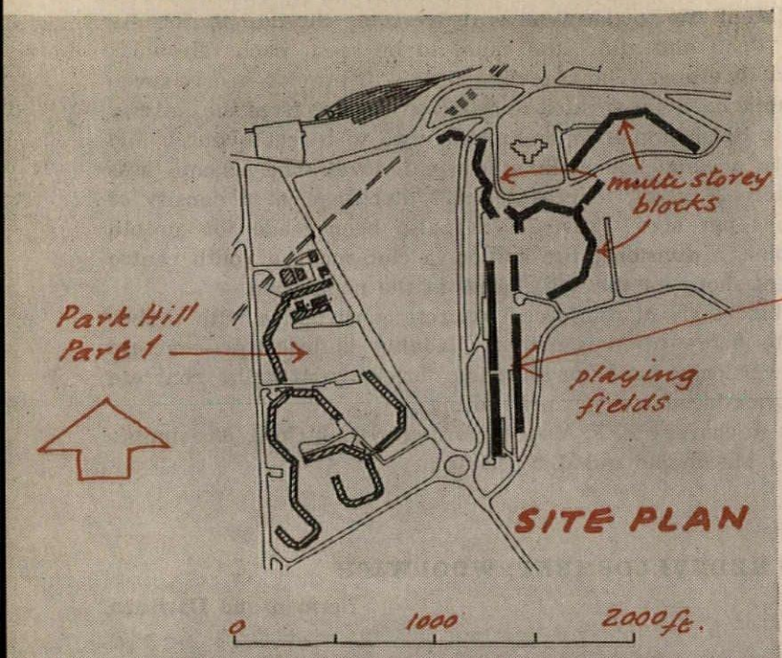
The second half of the new town's main centre, the first half of which is now nearly complete. It includes the redevelopment of Marlowes—the main central road—along a 1,750 ft. frontage. Provision is made for 60 shops with maisonettes and flats above, an hotel, car parks, a 7-storey office-block, department store and a hostel for nurses working in the adjoining hospital. Work began last April.

The site slopes steeply, and this has been exploited to provide a system of footpaths giving access from the car-park behind the shops to their upper floors and to a footbridge across the main road. The flats and hotel are combined in a 10-storey block at the north end, opposite the market-square. Nearby is a 3-tier car-park (see page 20). The offices are at the south end, in 9-storey and 6-storey blocks, the latter being planned round a small square.

Construction: precast concrete frames. The upper floors of the offices and nurses' hostel are of precast construction. External claddings are brick, artificial stone, vitreous enamel panels or aluminium.

Deputy chief architect: T. Cartlidge. Section architect: H. R. Morris. Group architect: J. Noble. Structural engineer: F. J. Samuely. Electrical consultants: Hoare, Lea and Partners. Quantity surveyor: A. E. Seaden.





HOUSING REDEVELOPMENT: SHEFFIELD

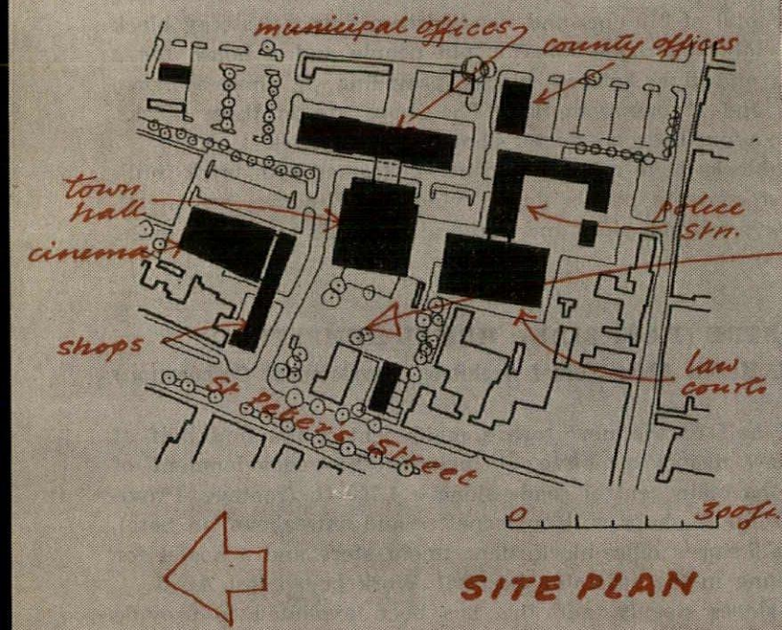
J. L. Womersley (City Architect)

The second part of the Park Hill redevelopment scheme sited on a steeply sloping spur east of the city centre. Part 1 began in March, 1957, and will be completed at the end of 1961. The 3-storey terraces in Part 2 have just begun; the tall blocks will begin in August.

1,293 dwellings are provided in 2- and 3-storey terraces along the contours of the westerly slopes, where the foundation conditions are poor, and in blocks varying from 4 to 18 storeys high on the crown of the hill. There are also a small school, factories, public houses, a working men's club, shops, branch library, welfare centre and garages, all planned within the complex around an existing church. Pedestrian movement around the site is by level or ramped paths, and it is possible to travel from the city to each dwelling by lifts and horizontal access decks within the blocks. As in Part 1 of the scheme, the design is based largely on repeating units of structure and services, a unit 3 floors high with a 10 ft. 6in. wide access deck on the middle floor, serving pairs of maisonettes on the same level and above the deck and pairs of flats below the deck, the staircases being arranged within the structural H at the core of the plan.

Construction: tall blocks have a reinforced concrete frame with brick walls and pierced concrete balcony fronts. Terraces have brick cross-walls and infilling. Windows are sliding aluminium in timber frames.

Structural engineers: Ove Arup and Partners. Heating and ventilating engineers: G. N. Haden and Sons. Quantity surveyors: Cyril Sweett and Partners.



CIVIC CENTRE: ST. ALBANS

Frederick Gibberd

East of St. Peter's Street, the city's main shopping and market street, which has an almost continuous façade of good, mostly traditional, buildings. These are retained, entrance to the site being through existing gaps. The site itself contains no buildings but many good trees. The layout provides a civic square, terraces of shops, a town hall, municipal offices, police headquarters, a courthouse and a cinema. The scheme was approved in 1947. The first part to be started will be one of the shopping areas, but no date has been fixed.

Access from St. Peter's Street is either side of a Georgian house, retained as offices. The northern entrance is flanked by a terrace of shops, ending in a cinema, which forms the north side of the civic square. The southern entrance leads to a small piazza, also with shops. The main vehicular approach to the centre is by a cul-de-sac on the east, which also gives access to car parks and service roads, the civic centre itself being for pedestrians only. Pedestrian ways link the civic square to public gardens on the north and Victoria Street on the south.

The south side of the square is formed by the assembly-hall, which will also be used for concerts, dances, etc. It has a first-floor balcony cantilevered out to form an open-air terrace on three sides. A refreshment room on the main terrace overlooks the square. Behind is a 4-storey block of municipal offices, with a council chamber on the roof, so that it can be seen from St. Peter's Street. Linked with it are the mayor's parlour, members' rooms and roof-gardens. Assembly-hall and offices are connected by a bridge and tunnel. At the south-east corner of the site are a police station and magistrates' courts (designed by the Herts County Architect), placed so that the court-house can be seen diagonally across the square and its main façade forms, with the flank wall of the hall, a secondary square.

The civic centre has been designed in conjunction with the City Engineer and Surveyor and the County Planning Officer.

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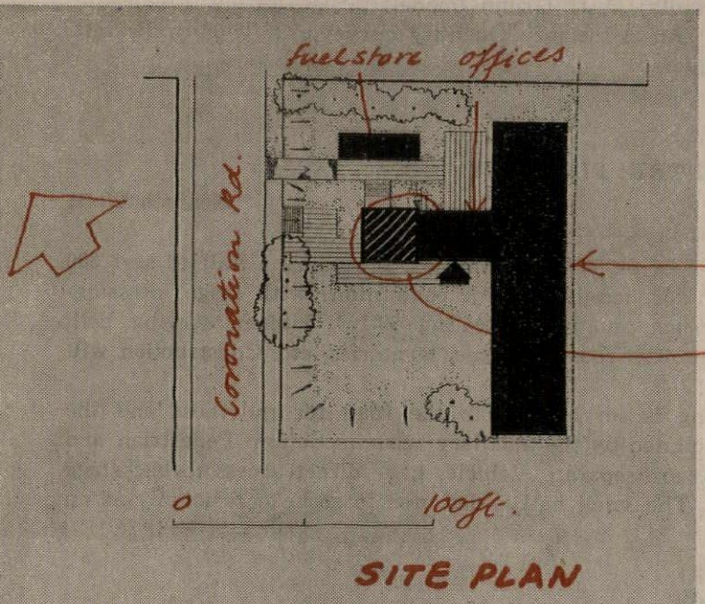


SITE PLAN

BATHHOUSE: COVENTRY

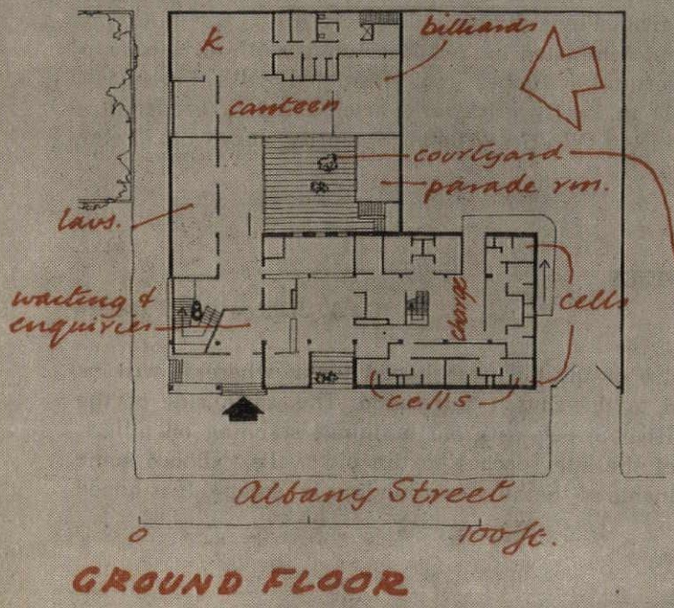
Arthur Ling (City Architect)

To replace, on the same site, the dilapidated late Georgian house adjoining Primrose Hill Park containing the corporation's slipper-baths. The new building, which will be finished in May, provides 25 slipper-baths (of which 10 are for women), 10 shower baths (all for men) and 6 wash-and-brush-up basins.

It comprises four blocks: rectangular baths block, boiler-house tower (containing boiler-room just below ground level, water tanks at the top and caretaker-engineer's maisonette between, with 4 ft. void insulating his upper floor from water noises), entrance and office-block linking baths with tower, and partially underground fuel store separated from main building and connected by underground duct. An electronic signalling system indicates whether a bath is occupied and whether a bather is exceeding his allotted time. Each waiting-area has an indicator board.

Construction: precast concrete frame, untreated, with infill panels of various materials including patent double glazing, colour-rendered brickwork and (on the gable walls of baths-block and fuel-store) glazed tile murals. To minimize maintenance materials are 'self-finished,' paint is almost absent and the small amount of timber used is largely plastic-faced. Windows, door-frames and suspended ceiling supports are anodized aluminium. The main floor-finish, bath-cubicle partitions, seats, shelves, etc., are terrazzo, which can be easily hosed down. The baths themselves are stainless steel. Internal walls are glazed coloured tiling. A ceiling-level duct containing the water-supply pipes passes from the boiler-house to the main central service duct. The baths block has an air intake and extract system, thermostatically controlled.

Principal architect: W. G. Sealey. Job architect: D. R. E. Hutchings.



GROUND FLOOR

POLICE HEADQUARTERS: ST. PANCRAS

J. Innes Elliott (Chief Architect, New Scotland Yard)

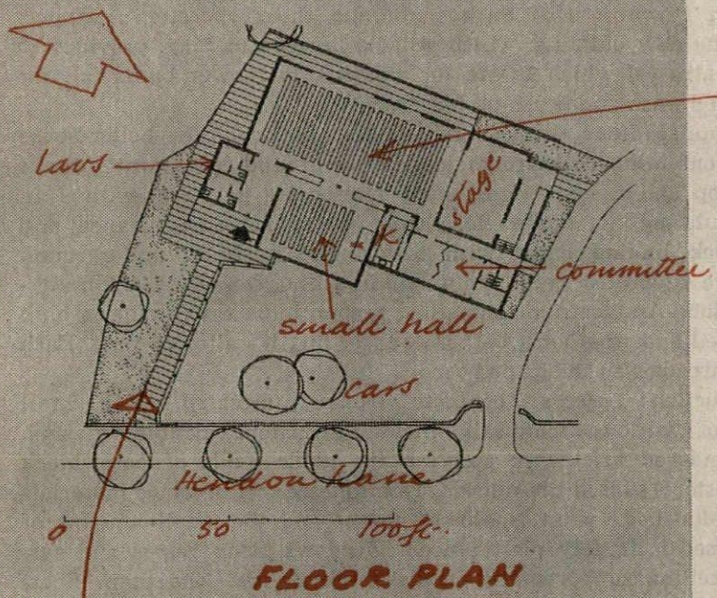
Comprising divisional headquarters and a sub-divisional police station. In Albany Street, Regent's Park, a short distance south of the existing police station, the site of which has to be vacated (half by January, 1960, and half by January, 1961) to make way for borough council housing development. It is hoped to begin construction by April.

The area is being replanned as a series of linked squares with pedestrian priority, and the new police building will share the square at its south end with the existing mission hall and a public house. The widening of Albany Street will bring it up to the police-station building line. Behind the station is a courtyard surrounding which are a recreational wing (with garage and car-parking beneath) and the parade-room, canteens, staff-rooms, etc. The garage accommodates 16 cars, 20 motor-cycles and 60 bicycles. The offices required for the divisional headquarters are on the first and second floors

above the police station. They are subdivided by demountable partitions. On the same level, but separately planned, with direct access to the station, are the C.I.D. offices. Also on the upper level is the special constables' accommodation which includes a classroom.

The lower floor of the station building is faced with concrete; above is curtain-walling consisting of aluminium sash windows, fixed lights in hardwood frames and plastic-faced asbestos panels. The whole façade is framed in reconstructed Portland stone. The end wall has concrete cladding faced with the same material. The rear buildings are clad in concrete with aluminium windows and cedar boarding to the gable end. The pitched roof is covered in copper.

Executive architect: S. J. Hanchet. Assistant architect: I. G. Mowat. Assistants: D. H. Griffin (model); P. V. Farley. Engineers: W. V. Irwin and Associates. Quantity surveyors: Thomas Barrett, Sons and Partners.



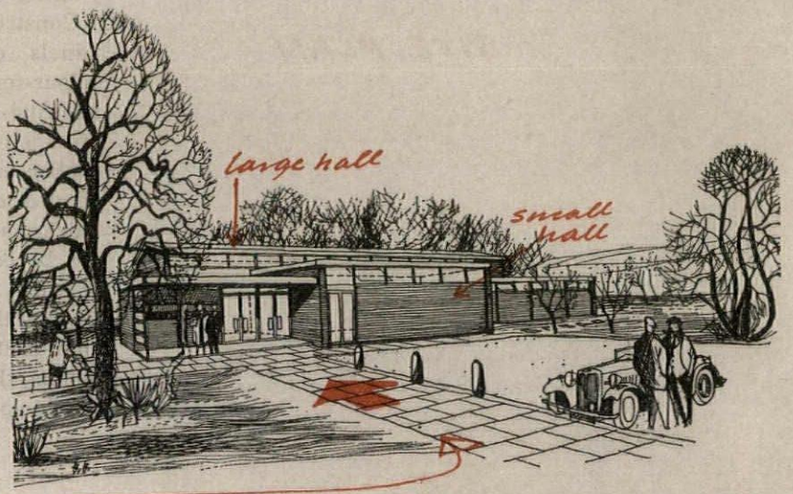
FLOOR PLAN

SOCIAL CENTRE: FINCHLEY

Kenneth Wood

For the parish of St. Mary-at-Finchley, providing a hall to seat 300 (suitable also for non-tournament badminton) with stage, dressing-committee rooms, small hall seating 80-100, kitchen serving both halls and committee-rooms, storage, lavatories, etc. Construction will begin shortly.

The building is set back from the road for quietness and the main hall insulated by the ancillary accommodation. Pedestrian and vehicle access are separate. Vehicles have direct access to backstage loading dock. The small hall is designed to serve occasionally as an



ante-room to the large, but has a direct exit to the open air. Committee-rooms are divided by a sliding-folding screen.

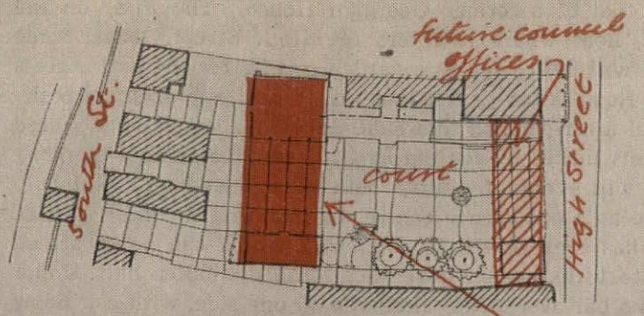
Structural frame: laminated hardwood columns with stressed-skin box beams supporting a timber roof insulated with fibre-glass. External walls: 11 in. cavity brickwork, brick faced or rendered.

Structural engineer: W. H. Willatts. Quantity surveyor: Peter Rance.

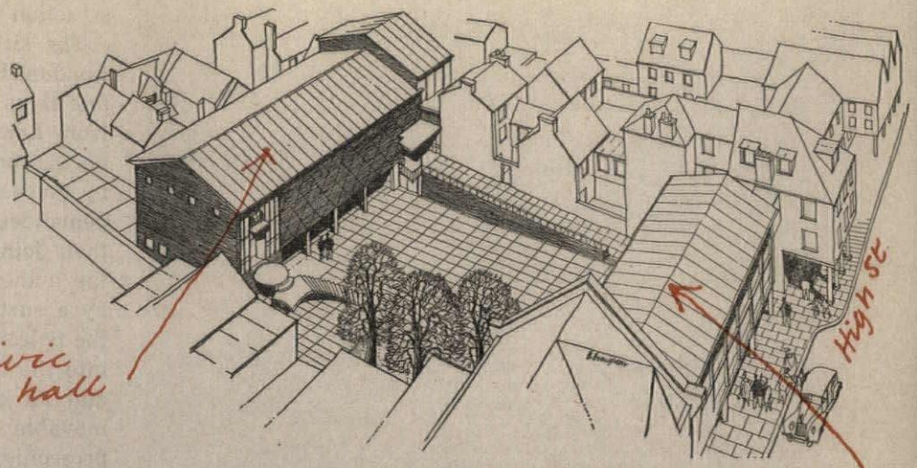
CIVIC HALL: TOTNES

G. A. Jellicoe and Partners

Sited in the centre of the old oval-shaped town, where it will be agreeably related to the church and castle. The north side of the site adjoins the High Street, with old buildings standing on pillars. The south side of the site reaches to the old walls, whence some view is still obtainable of the hilly surrounding landscape. It is hoped



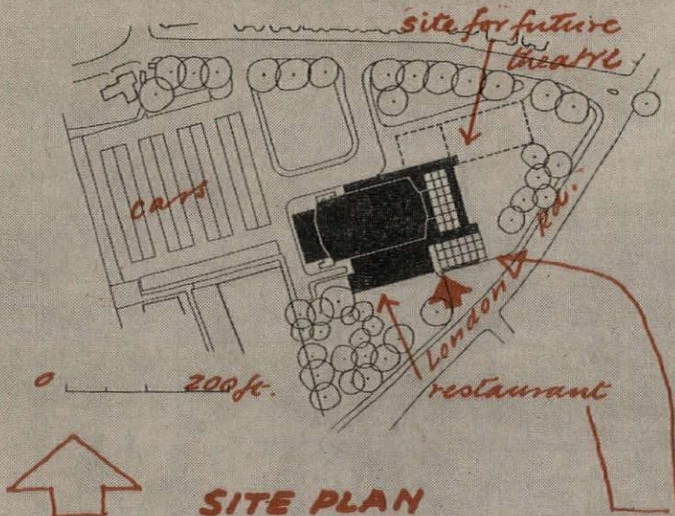
SITE PLAN
Civic Hall: Totnes



to start work next month and complete it in a year.

The site is at the moment derelict and used as a car-park. Thanks to the gift of land on an adjoining site, presented by an architect-member of the Council, the hall can extend across the site rather than along its length, freeing land for a civic forecourt. Ultimately the street front will be built up, probably with council offices on stilts. One of the requirements was a pannier market, and this has made it practicable to lift the hall upon piers in the traditional Totnes manner. The main approach is by an external ceremonial stair. Accommodation consists of a small foyer and reception room, separated by glass partitions, with a ceiling painted by Mary Adshead and Hans Tisdall. The main hall is equipped as a repertory theatre to seat 334 persons. It is, however, primarily an all-purpose hall designed for exhibitions, conferences, etc. Scenery and exhibition material arrive by a ramp made by materials already existing on the site. The stage dovetails into the adjoining property, and use is made of adjoining buildings for storage, dressing-rooms, etc.

The building has a copper roof and slate-hung walls.

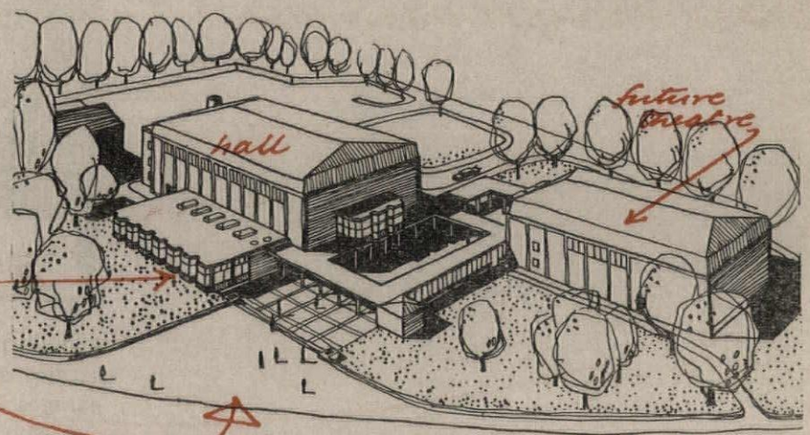


SITE PLAN

CIVIC HALL AND RESTAURANT: GUILDFORD

Bridgwater and Shepheard

A multi-purpose hall to seat 1,000, with a restaurant for 200, to be used for civic functions, banquets, concerts, dances and conferences. The hall above can also be let for boxing matches and meetings, and there will be separate lettings of the restaurant for smaller



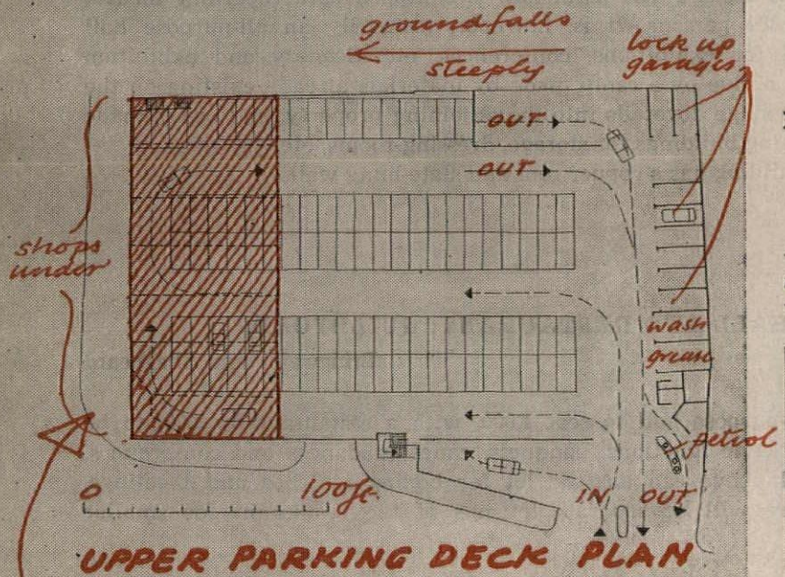
functions. The restaurant will serve light refreshments when not let for other purposes. It was decided not to attempt to cater for drama in a flat-floored hall, but a site has been set aside for a theatre to be built later as an integral part of the scheme. Con-

struction will start this spring.

The site is that of a former Georgian House, 'The Firs,' on the London Road, near where it enters the High Street. It has some fine trees and will be treated as a garden setting for the hall. Access from London Road is for pedestrians only; cars approach from the north, and find a car-park on that side. A colonnaded patio sheltered by glass screens makes up for the small-sized foyer which economy demanded. It will eventually serve both theatre and hall, and help their joint use as a conference centre. In planning the hall, part of the audience has been placed in a balcony which can be separated by a curtain to turn the flat lower floor into a smaller hall. Under the balcony is a bar overlooking the patio on one side, with a window into the foyer on the other. The stage has seating for a choir of 200 and an orchestra of 60, with apron. Part of the choir seating is movable to give a larger orchestra space if needed. There is a proscenium curtain which disappears completely for concerts, and a demountable gantry holds lights, borders and curtains for an opera stage.

Construction: concrete columns and frame, with precast steps in the balcony. The roof is of copper on steel trusses and there are walkways over the ceiling to service ventilation, lighting, and spot-lights. Externally the frame is stone-clad; the panel infill is brick. The windows, intended mainly to allow meetings to be held in daylight, are fixed and double glazed.

Engineer: F. J. Samuely. Acoustic consultant: Hope Bagenal. Quantity surveyors: Gleeds.



MULTI-STOREY CAR-PARK: HEMEL HEMPSTEAD

Fuller Hall and Foulsham (with H. Kellett Ablett, Development Corporation Chief Architect)

Adjoining the new town centre, with seven shops occupying the ground floor of the whole frontage to the main street. The shops have their own stores and garages. The car-park accommodates 203 cars



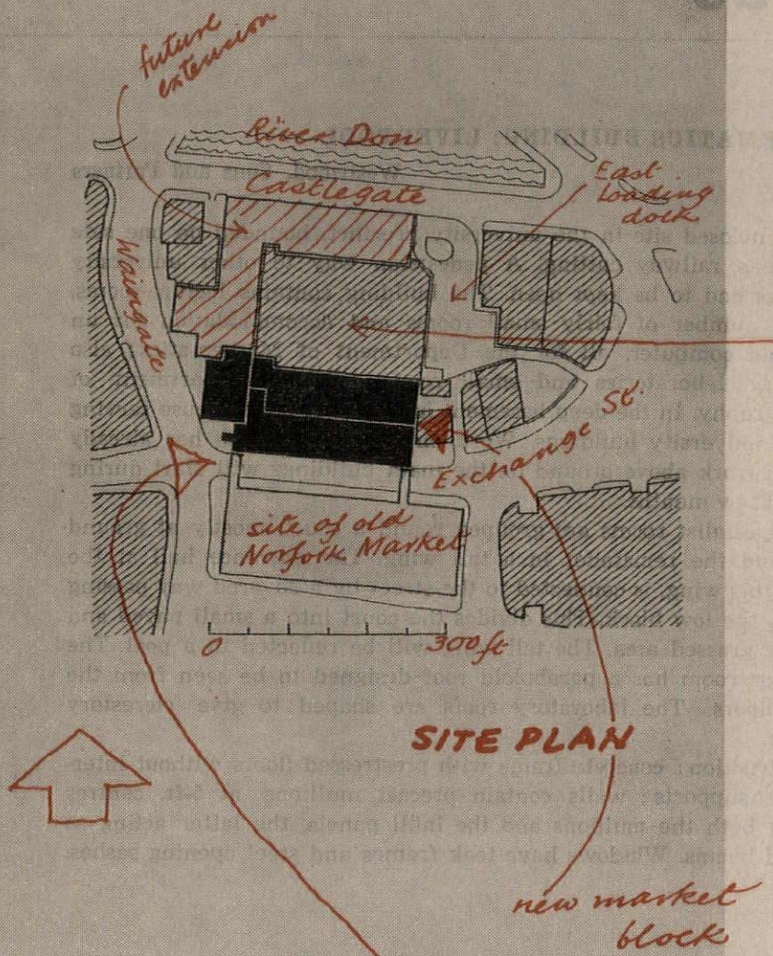
and 23 motor-cycles on three levels. There are also a petrol and service station with washing and greasing bays and eight lock-up garages. Work begins this month.

A sloping site has been utilized to gain easy access to the parking ramps, and a side road gives access to the top slab from the back of the car-park. There are no steep entry ramps such as are sometimes unavoidable in similar buildings. The building is designed on a grid that permits a free flow of cars between columns and a one-way

circulation. Cars are parked on slabs which have a maximum slope of 1 in 20 at right-angles to the access gangways. A system of illuminated and painted signs and slab markings ensures that the driver knows where parking space is available and how to get there. After parking his car and locking it he descends to the pavement by one of three staircases.

The reinforced concrete structure is partly supported on the hillside which rises behind. The front is an open screen patterned with coloured panels.

Structural engineers: W. V. Zinn and Associates. Quantity surveyors: Norman J. Cole and Partners.

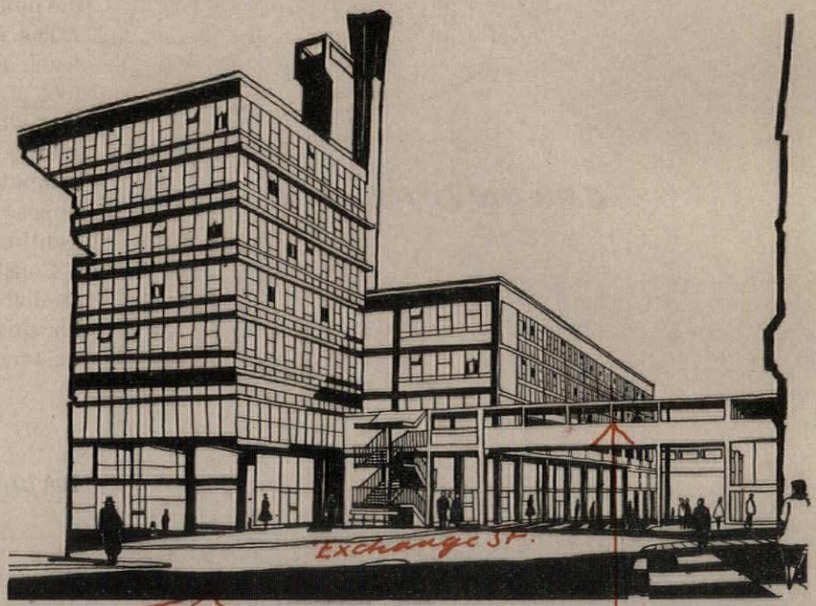


RETAIL MARKET: SHEFFIELD

J. L. Womersley (City Architect)

Part of a programme of regrouping central markets, facilitated by the removal of the wholesale market (see AR Preview, January, 1958) to the outskirts. This new market on Castle Hill amalgamates the old fish and meat market on the same site with the old Norfolk Market for dry goods, the site of which (opposite the new market) is being privately developed for a department store, shops and offices. Construction has already begun.

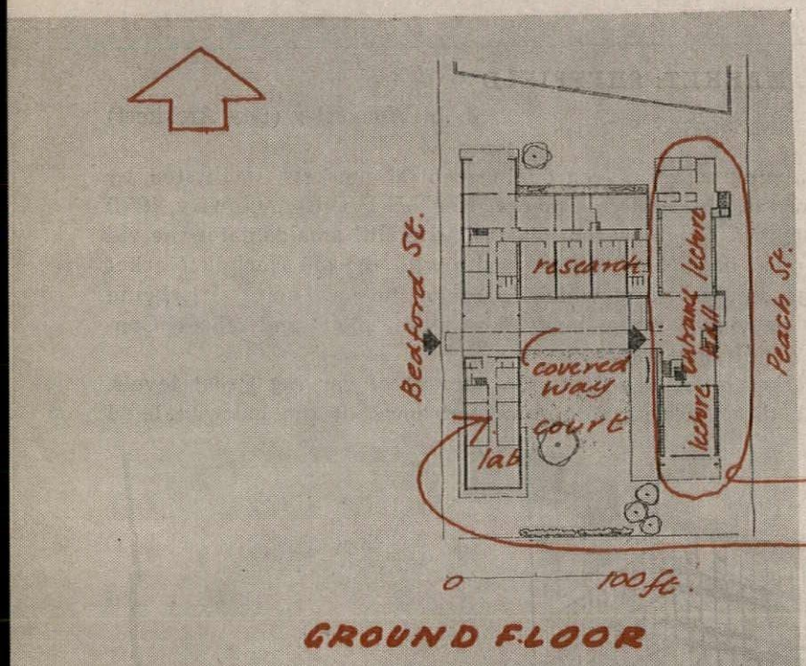
The market is on two floors, on account of varying street levels, each with direct access. Additional entrances at the halfway level



allow each floor to be reached up one flight of steps. The perimeter of the site, where there are street frontages, is occupied by shops which have two or three (and in one case four) floors and access from the subway that also serves the loading dock at the lower market level. Each market floor has a mezzanine containing lavatories, stock-rooms, etc. These encircle the market area and enclose five subsidiary market spaces which will allow the grouping of different trades. Above the upper market level is a gallery with additional sales space and a restaurant, and from here a bridge leads across Exchange Street to the new department-store building. Above are five floors of offices, planned as two separate blocks on different street frontages, allowing top-light to reach the main market area.

Construction: reinforced concrete frame with in-situ ribbed concrete floor slabs for market and shops, and beamless hollow-tile floors for offices. External cladding: precast grey terrazzo slabs used as permanent shuttering, and brick infill panels. Both levels of the market have a mechanical ventilation system.

3 UNIVERSITY BUILDINGS



GROUND FLOOR

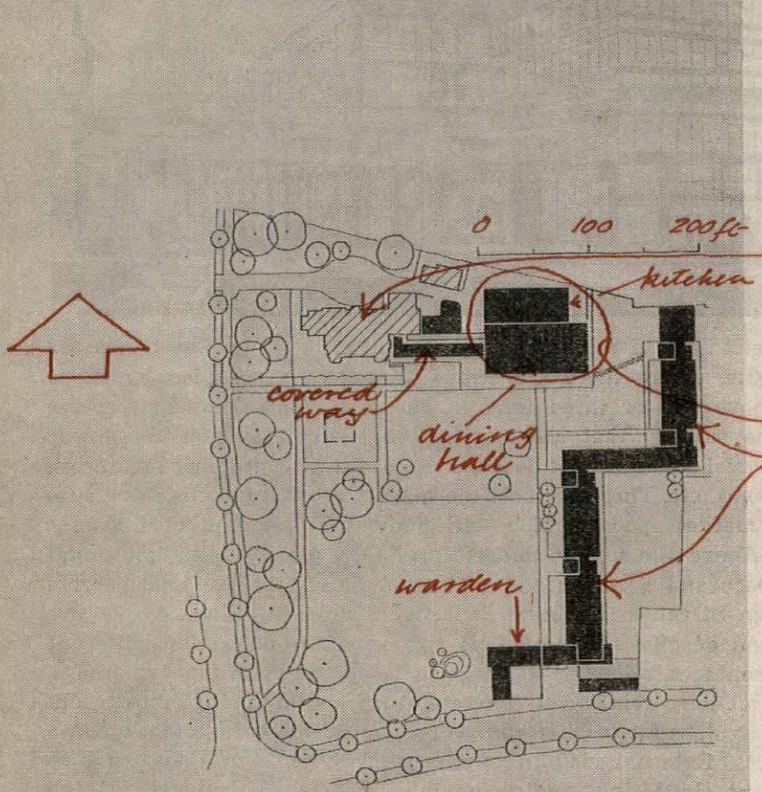
MATHEMATICS BUILDING: LIVERPOOL

Westwood, Sons and Partners

On an enclosed site in the university precinct, bounded on one side by a deep railway cutting. A pedestrian way to other university buildings had to be kept open. The building contains lecture-rooms, a large number of fairly small rooms and accommodation for an electronic computer, all for the Department of Mathematics; also a library, laboratories and small rooms for the Department of Oceanography. In the deep basement is a central boiler-house serving several university buildings. Work on the boiler-house has already started; work above ground on the main buildings will start during the next few months.

The specialist rooms are grouped round a court, mostly at ground level, and the remainder in a tall wing. The entrance hall at the foot of this wing, is connected to the street by a covered way passing through the low block. This divides the court into a small paved and a larger grassed area. The tall wing will be reflected in a pool. The computer room has a paraboloid roof designed to be seen from the upper floors. The laboratory roofs are shaped to give clerestory lighting.

Construction: concrete frame with prestressed floors without intermediate supports; walls contain precast mullions at 5-ft. centres housing both the mullions and the infill panels, the latter acting as upstand beams. Windows have teak frames and steel opening sashes.



SITE PLAN

HALL OF RESIDENCE: LEICESTER

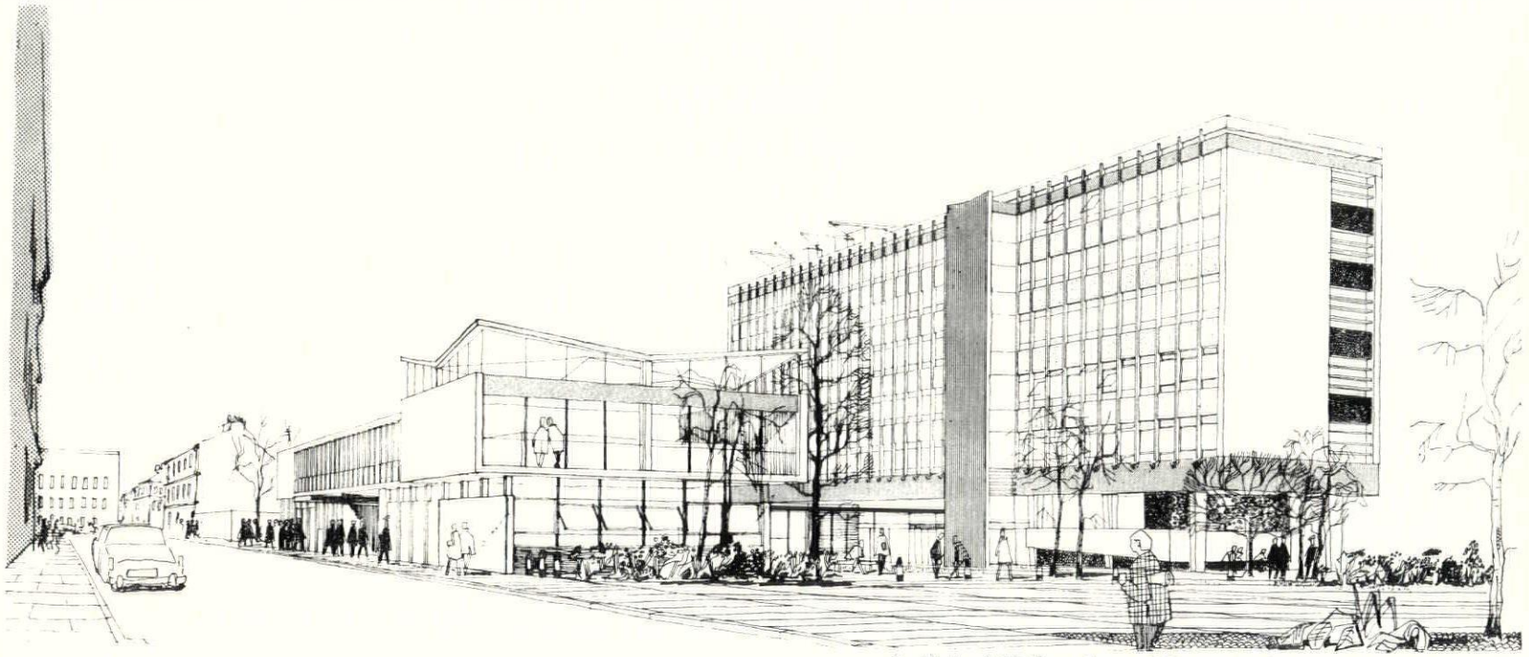
Richard Sheppard, Robson and Partners

An extension to Digby House, an Edwardian mansion in a large garden on the southern outskirts of Leicester. The house is at present used partly as living accommodation for students and partly as common-rooms. The extensions are in two stages: first a dining-hall with kitchen, staff quarters, a boiler-house, some small additional common-rooms and a warden's house; secondly new hostel blocks. Work on the first stage is just beginning; the second is scheduled for next year.

The dining-hall, seating 200 plus a high-table, is linked to Digby House by a covered way. The warden's house at the southern end of the site will eventually link up with the zig-zag layout of the second-stage hostel blocks. These contain 114 study bedrooms in units of six, each with a sanitary core, and are further grouped into blocks of 24 on two floors.

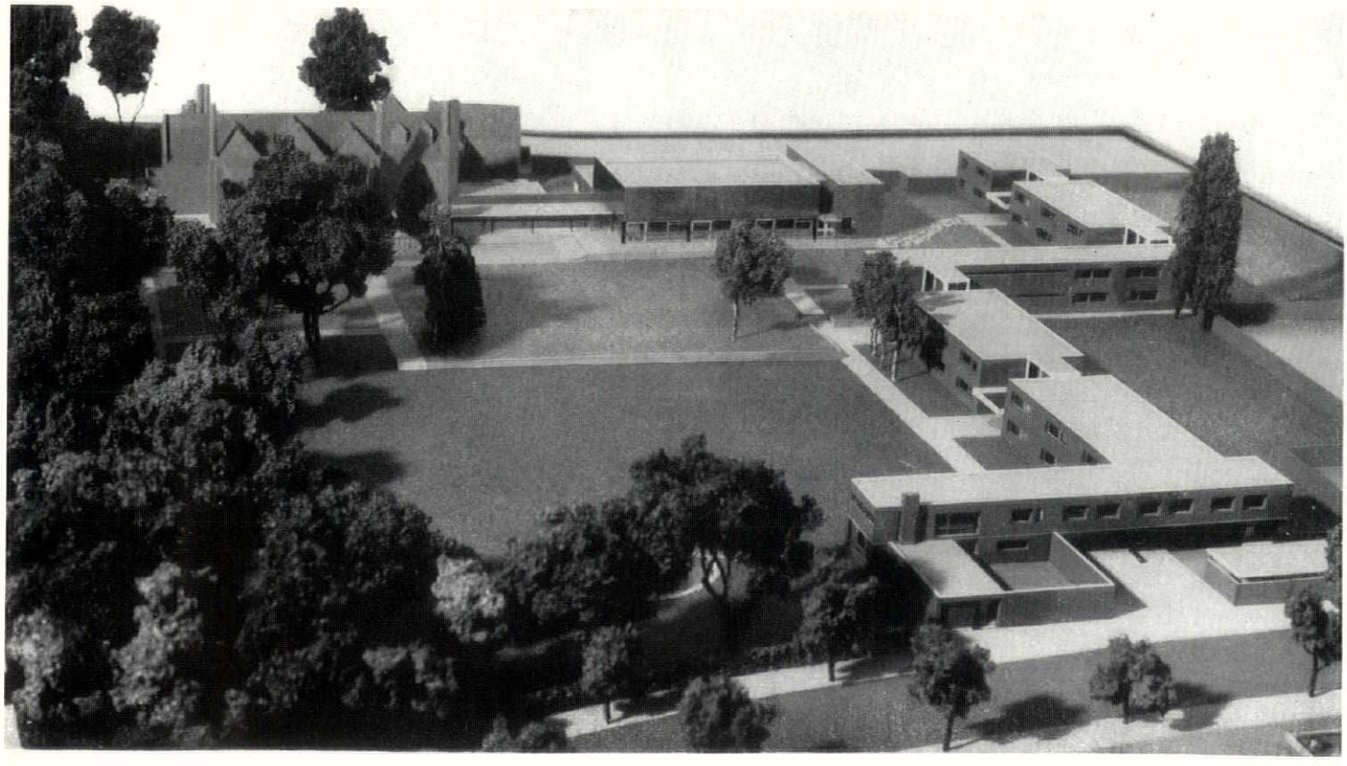
The dining-hall has glazed walls and a folded timber roof covered in copper. The hostel blocks are of load-bearing brick with timber floors and roofs.

Structural engineer: Stephen Revesz. Quantity surveyors: E. C. Harris and Partners.

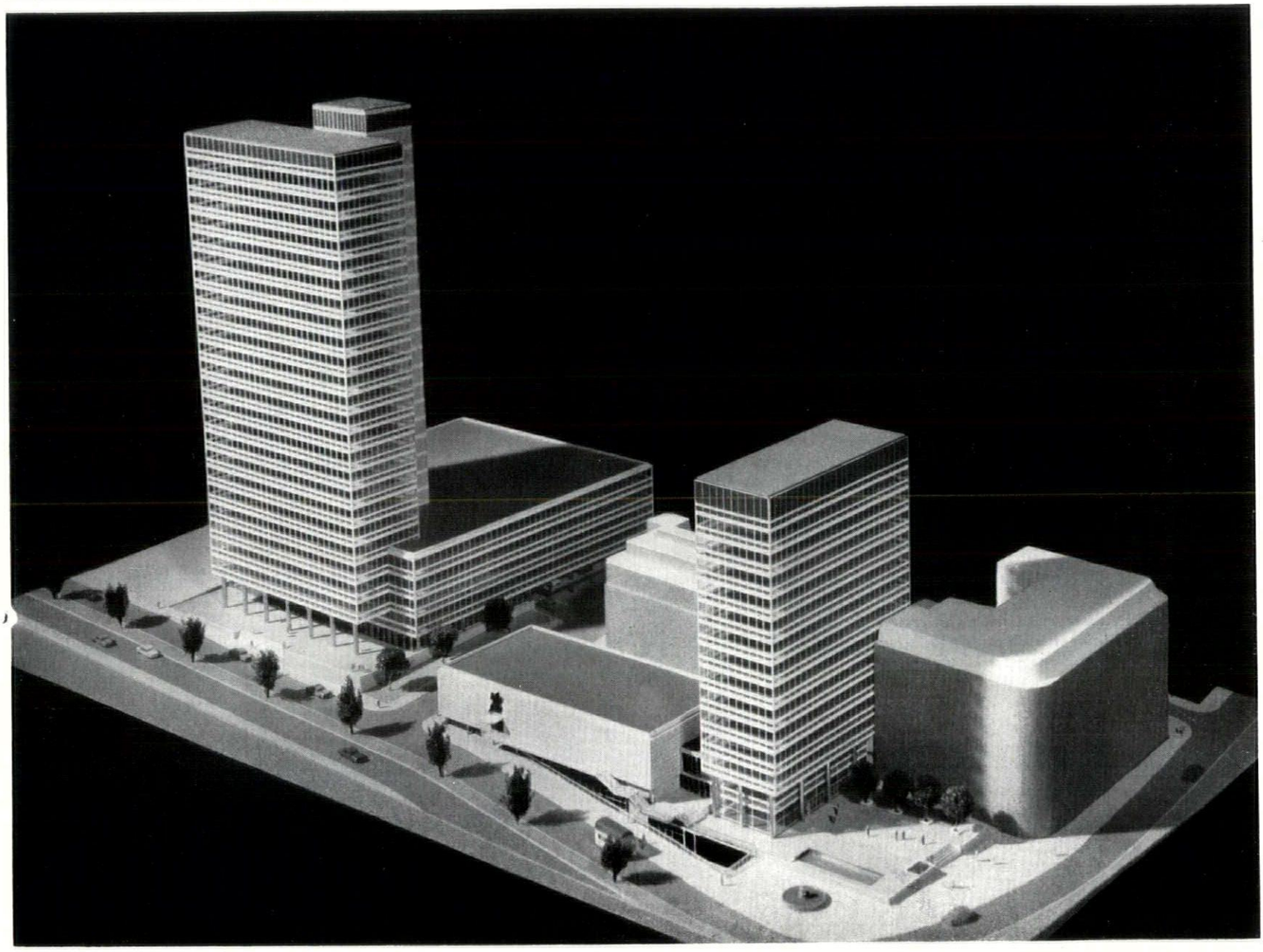


Institute of Mathematics and Oceanography, University of Liverpool.

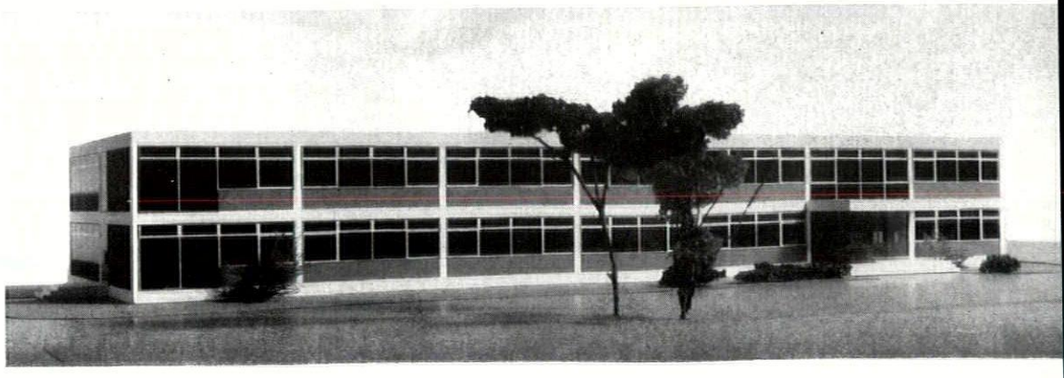
Below, hall of residence for Leicester University. The existing mansion is in the top left-hand corner, adjoining it is the dining-hall, etc., and in the foreground the hostel blocks.



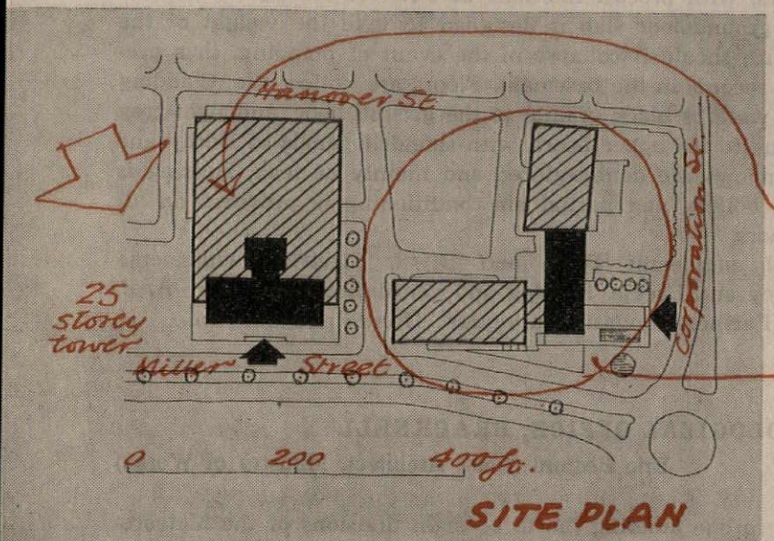
4 OFFICE BUILDINGS



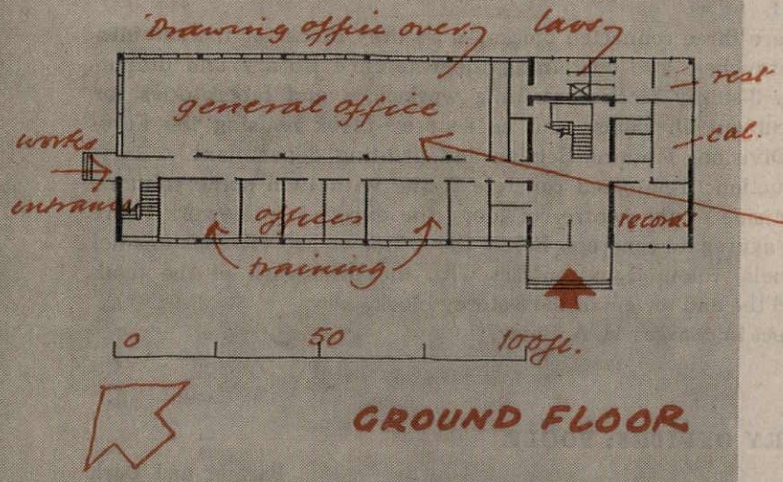
Two co-operative society office buildings sharing one site in Corporation Street, Manchester.



Office building at Grimsby: an addition to an existing pharmaceutical factory.



SITE PLAN



GROUND FLOOR

CO-OPERATIVE SOCIETY OFFICES: MANCHESTER

G. S. Hay (CWS Architect) and Sir John Burnet, Tait and Partners

Two office buildings sharing the same site between Miller Street and Corporation Street: one for the Co-operative Insurance Society, the other for the Co-operative Wholesale Society. Site work will begin next month and work on the superstructures in November.

The main accommodation in the Insurance Society building is in a 25-storey tower, which will be fully air-conditioned. Staff circulation between ground and fifth floors is by twin escalators operating in the same direction during peak hours. Floors above this level are served by eight lifts. The Wholesale Society building has 14 storeys. Linked to it at the rear are a meeting-hall with stage, seating 1,500 people, and a staff and visitors' dining-room with basement kitchen.

Construction: steel frame on concrete basements, clad with curtain-walling with double-glazed windows.

Structural engineer: A. E. Beer. Mechanical and electrical engineer: G. K. Medlock (C.W.S. Engineer, Manchester).

FACTORY OFFICES: GRIMSBY

J. Douglass Mathews and Partners

For CIBA Laboratories Ltd.: the first stage of an administrative unit for an existing pharmaceutical factory. Work began last August.

The site is on low-lying land behind a sea-wall of the Humber river. The building is on the south-east side of the main entrance to the site, and consists of two floors of offices with provision for future expansion to the south-east. There is a central corridor with private offices on the south-west and general offices and drawing offices on the north-east.

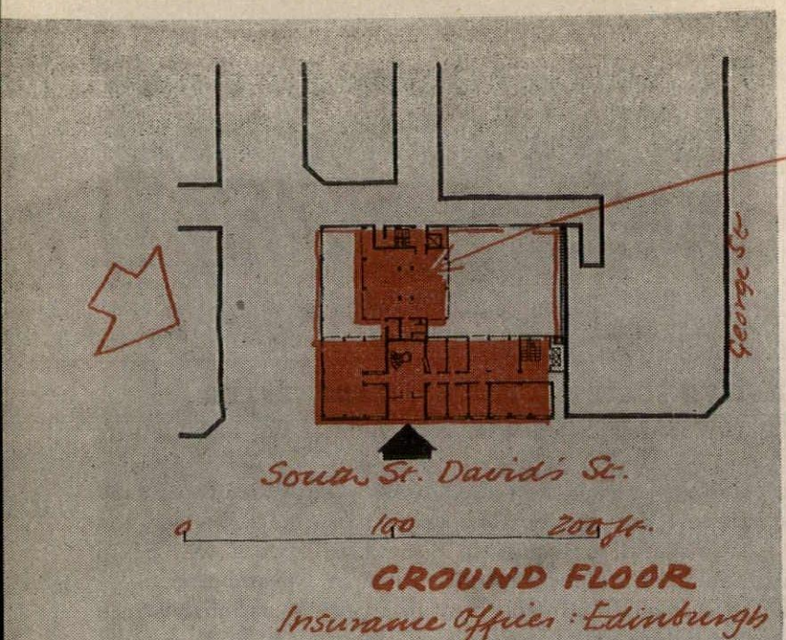
Construction: exposed reinforced concrete frame left untreated with the shutter-marks showing. Floors are precast prestressed concrete. Infill panels are 2 in. wire-cut dark grey facing bricks, with timber windows with metal opening lights. Panels and windows are flush with the face of the concrete frame.

INSURANCE OFFICES: EDINBURGH

Basil Spence and Partners

In St. Andrew Square: a new head office for the Scottish Widows' Fund and Life Assurance Society on the site of their present head office, which the Society has occupied for 100 years, and which adjoins the head office of another insurance company completed in 1939. Demolition of the existing building will start late this year. The new building will be completed by the end of 1961.

Planning restrictions governed plot-ratio and overall height, and



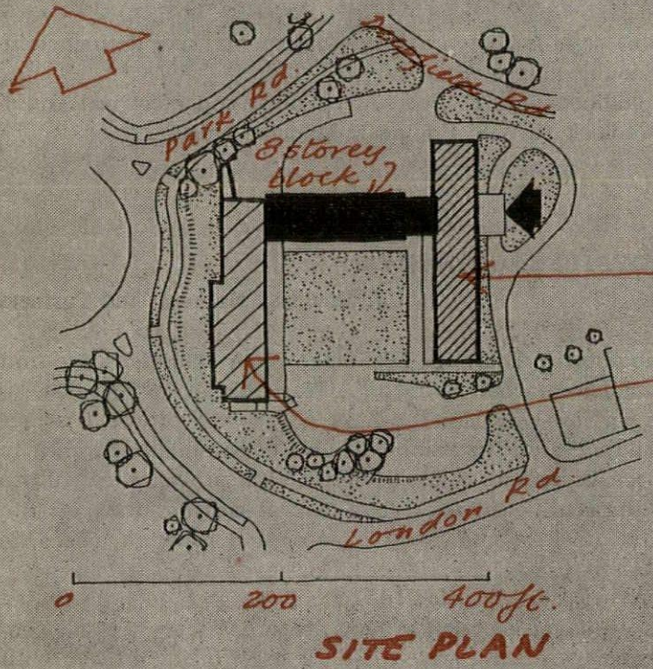
GROUND FLOOR

Insurance Offices: Edinburgh

provision had to be made for parking 14 cars. This is achieved by altering the level of a narrow lane at the back of the site to form a ramp leading to a car-park at semi-basement level. The building has been planned on a 60-ft. grid with the ground floor covering the whole site. Above is a 5-storey block, 'T'-shaped on plan, the two upper floors of which will probably be let. The sixth floor, set back somewhat, contains a canteen and caretaker's flat, tanks and lift motors being housed in a penthouse above. The entrance hall, two storeys high, has a circular lift shaft clad in stainless steel, the core of a spiral staircase leading to the board and committee rooms and officials' offices on the first floor.

Frame structure consisting of columns at 15-ft. centres bounding the corridors, with precast mullions at 5-ft. centres on the outside walls. The ground-floor slab is designed to take the weight of the superstructure should it collapse in the event of bombing, thus preserving the records in the basement. Floors are hollow tile. Cladding of external walls is black granite to the ground floor, and light-grey Hadene stone to the upper floors, with spandril panels of Derbydene marble. Windows are double-glazed and mainly of teak. Heating is by oil-fired boilers, and partial air conditioning is provided on all the office floors.

Structural engineers: Blyth and Blyth. Electrical engineers: Mitchell, Dey and Lackie. Heating and ventilating engineers: A. F. Myers and Partners. Quantity surveyors: Gibson and Simpson.



SITE PLAN

METEOROLOGICAL OFFICE: BRACKNELL

Eric Bedford (Chief Architect, Ministry of Works)

To rehouse in one building the three main divisions of the Meteorological Office, at present quartered at London, Harrow and Dunstable. The site faces a large roundabout on the west, and is near the approach from London to the new town. Work has begun. Partial occupation will begin in June, 1960, and final completion will be in June, 1961.

There are three connected blocks: a 5-storey block for the administrative branches, also containing the reference library and dining-rooms; a 3-storey block containing workshops and laboratories for the Instrument Divisions; and an 8-storey block housing the Forecasting Division, Training Section and printing department.

Construction: reinforced concrete frame with twin spine columns on either side of the centre corridors, the exposed framework being of white aggregate concrete. Below the windows are vitreous enamel steel panels, coloured to contrast with the brickwork of the flank walls and the end towers of the 8-storey block.

Architect in charge: H. A. Snow.

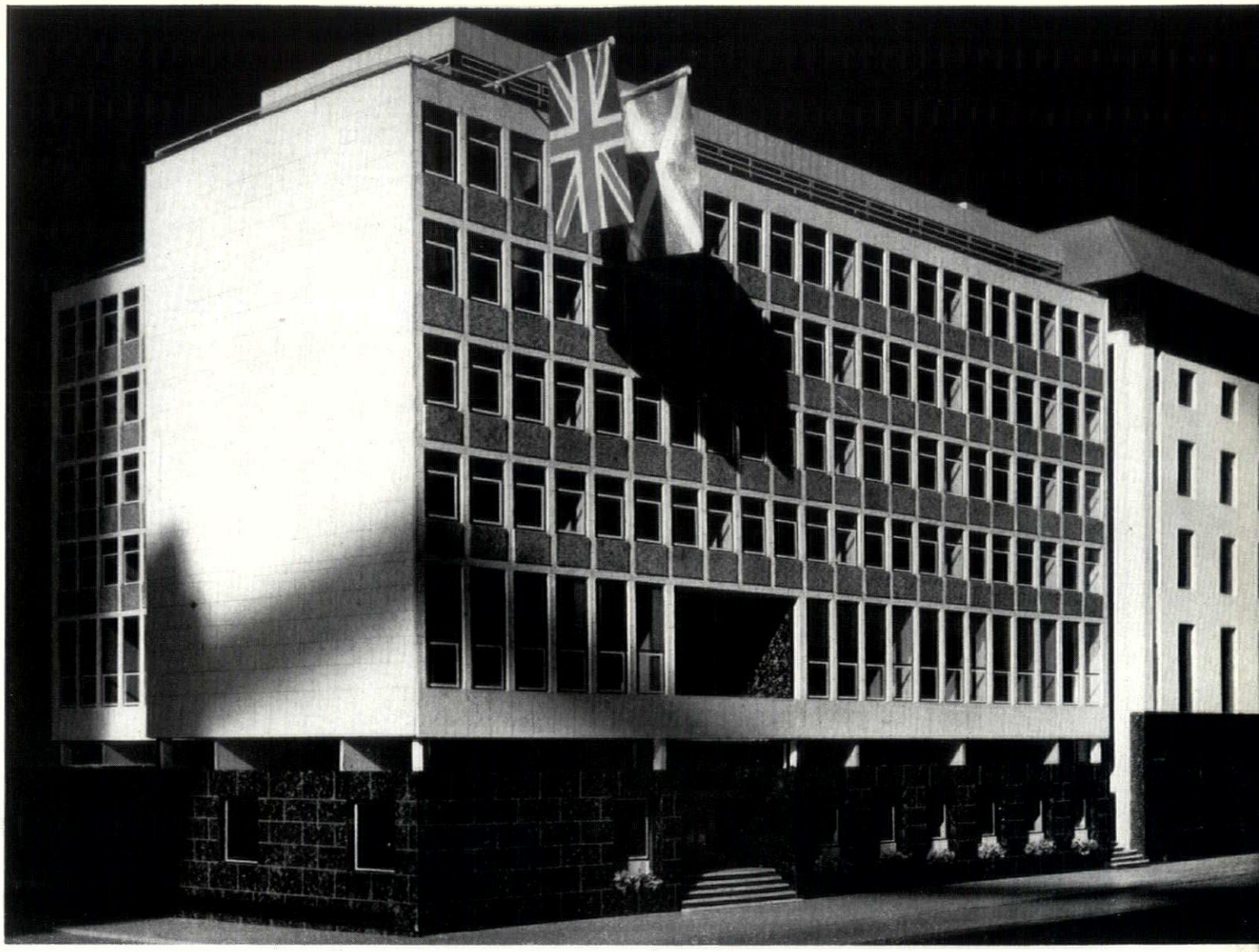
FACTORY OFFICES: POOLE

Farmer and Dark

A 2-storey block for the British branch of Max Factor and Co. The new building lies alongside a new access road to the existing factory at West Howe. It consists entirely of administrative offices, divided by glazed demountable partitioning, grouped around a central core which contains storage rooms, lavatories and cloakrooms. Work began last September.

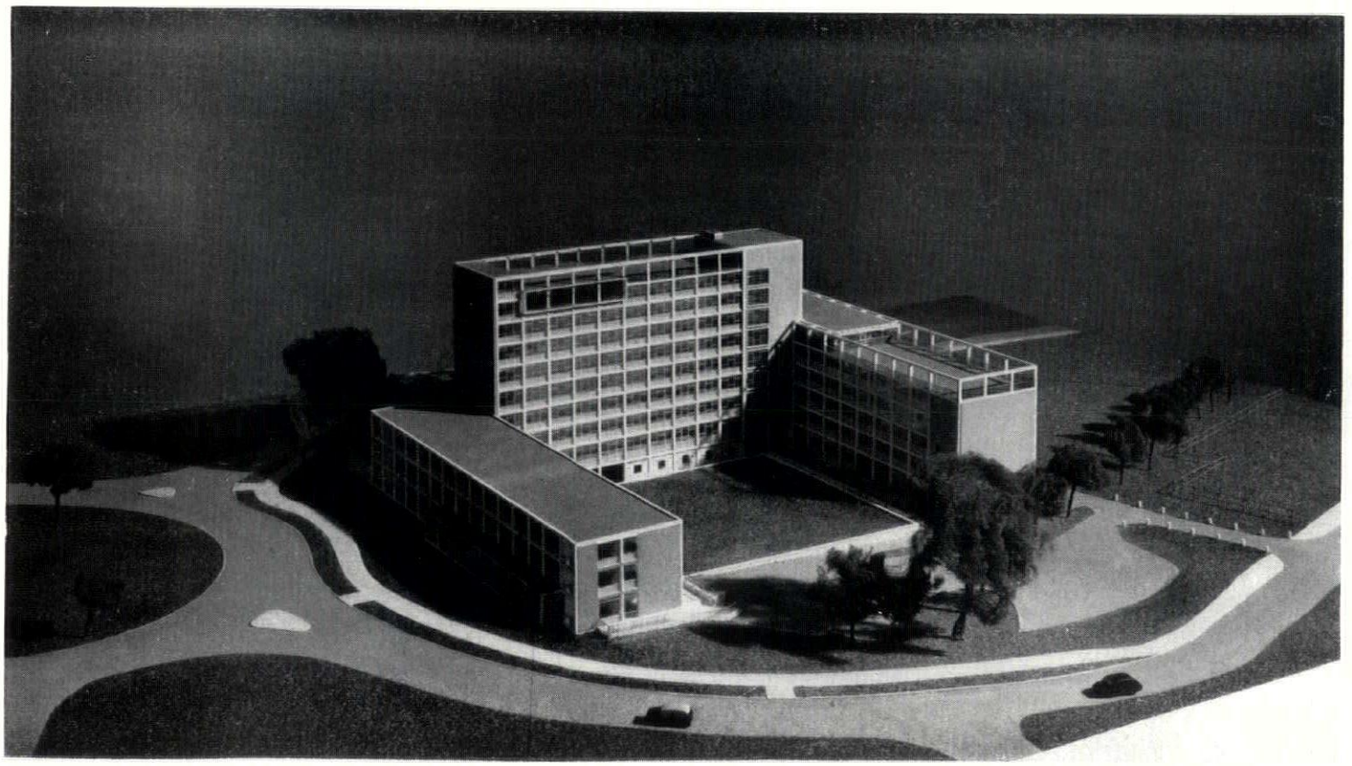
Construction: precast concrete frame with in situ floor slabs. Main beams at 20-ft. centres and secondary beams at 3 ft. 4 in. centres are prestressed. Perimeter columns are at 10-ft. centres, and are left fair-faced and painted, as is the precast concrete patterned fascia. Cladding is all aluminium framed, with one aluminium double-hung sash to each 10-ft. bay. Panels under the opening lights, which are set

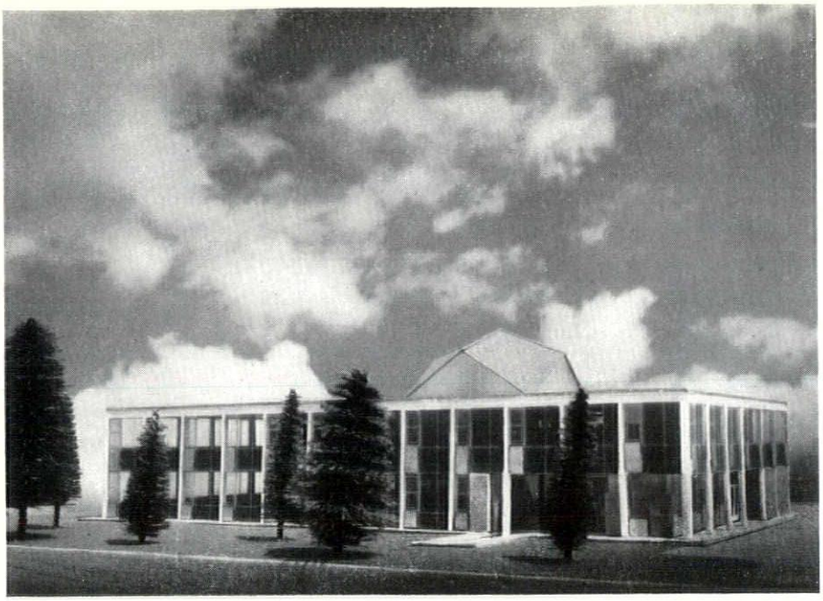
[*continued on page* 29

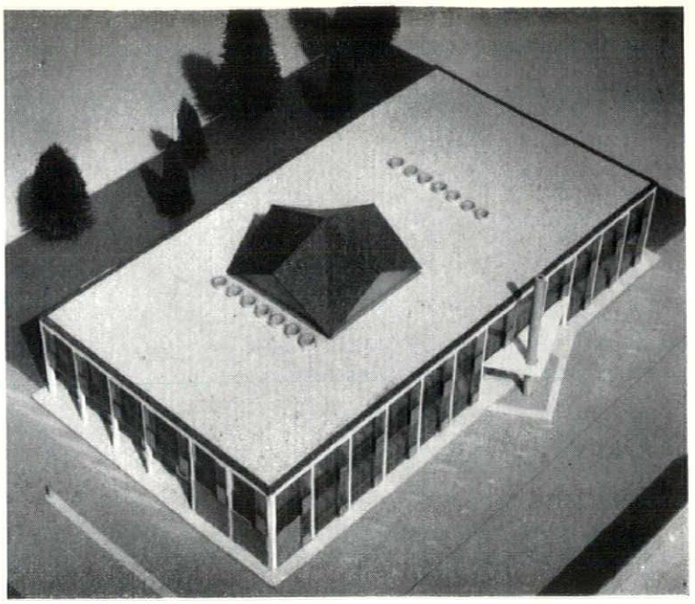


Insurance offices in St. Andrew Square, Edinburgh, by Basil Spence and Partners.

Below, meteorological office at Bracknell new town: looking from the south-west into the courtyard.

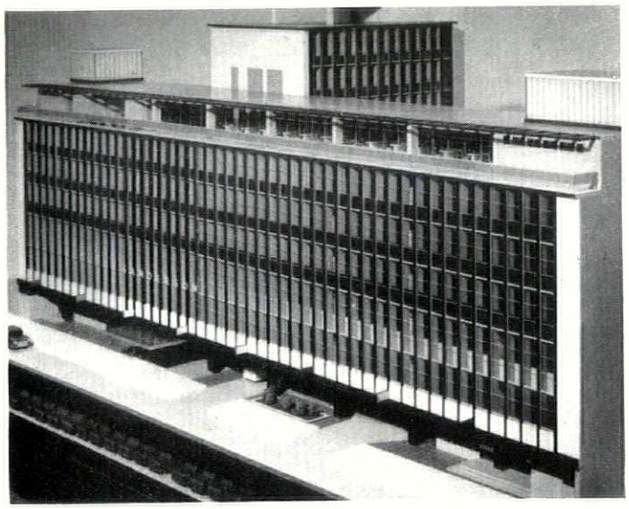






Above, offices at Poole for the British branch of Max Factor and Co., by Farmer and Dark: the entrance front, and view from above showing roofing of the central core.

4. OFFICE BUILDINGS

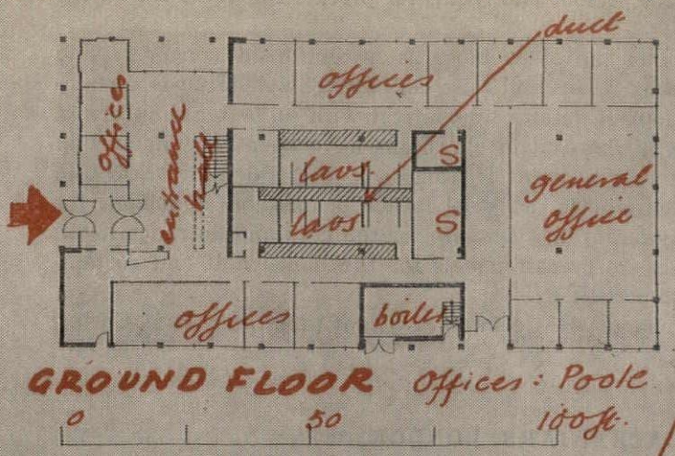


Offices and showrooms in Berners Street, London: above, the street façade; right, detail of fenestration, showing also way through, beneath the block on the street front, into the garden-courtyard.



continued from page 26]

forward, are grey embossed aluminium ; under the fixed lights, which are set back, blue-black asbestos sheets. Heating is by ducted warm air, extracted through the central core, with radiators in recesses beneath the opening lights. Lighting is by fluorescent tubes recessed into the false ceiling of acoustic board, the whole being completely flush to allow the partitions to be refixed on any 3ft. 4in. grid line.



OFFICES AND SHOWROOMS: BERNERS ST., LONDON

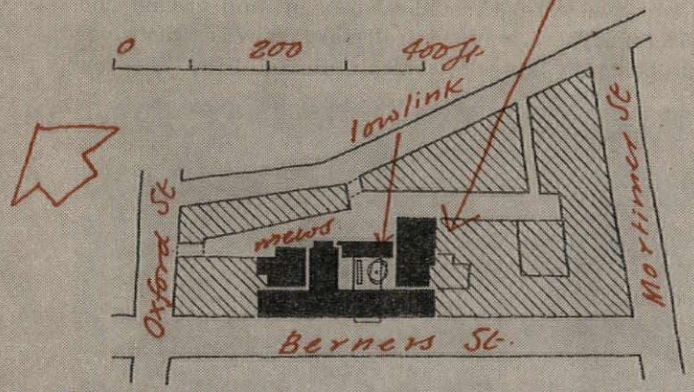
Slater and Uren

For Arthur Sanderson and Sons, wallpaper manufacturer, on the site of the company's old premises: a 9-storey building with a ground-floor garden-courtyard and entrance, showrooms on the first and second floors (which are united to form 2-storey display areas), offices on the third, fourth and fifth floors, dining-rooms, canteen and kitchens on the sixth and studio on the seventh and eighth. In the basement is a garage for 70 cars and in a sub-basement a stock-room of limited capacity, since it has been decided to move the main trade stock out of central London. Completion date is May, 1960.

The showrooms have been designed with the maximum of natural light. As well as the staircase approach to the showrooms from the court, there are lifts direct from the parking garage. The mews at the back is widened to serve as a goods approach. The superstructure takes the form of 45-ft.-deep blocks round three sides of the court, with a low link on the fourth.

Construction: reinforced concrete frame based on a 27 ft. by 27 ft. structural bay, subdivided into 9-ft. units. The 45-ft. blocks consist of a central bay plus 9-ft. cantilevered margins. The curtain-wall cladding is based on vertical aluminium ducts at 4 ft. 6 in. centres (accommodating ventilation and service pipes) which also serve as mullions. Between them are double-hung aluminium sash windows. Solid wall areas are faced with faience, brick or stone. The showrooms are air-conditioned.

Display designer: Beverley Pick. Structural engineer: W. A. Mitchell. Heating, ventilating, electrical and mechanical engineer: I. F. McVicker.



SITE PLAN
Offices & Showrooms: Berners St.

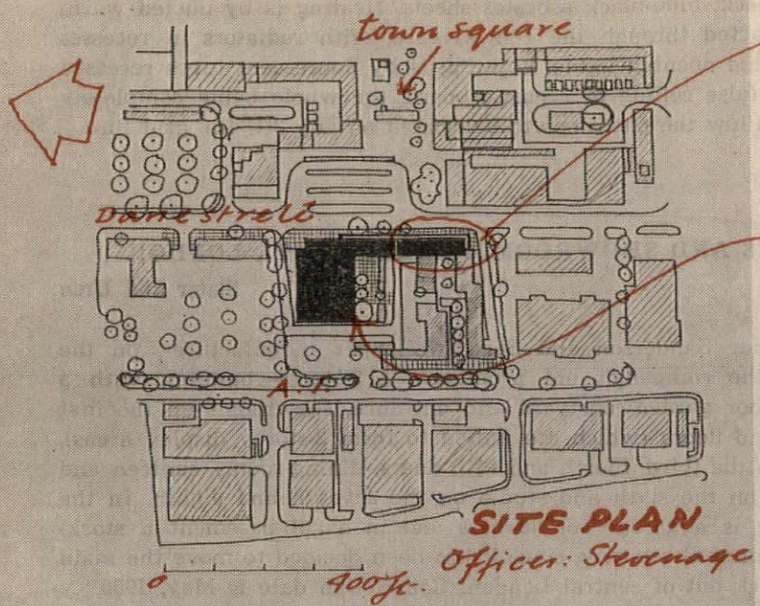
OFFICES, SHOPS AND DANCE HALL: STEVENAGE

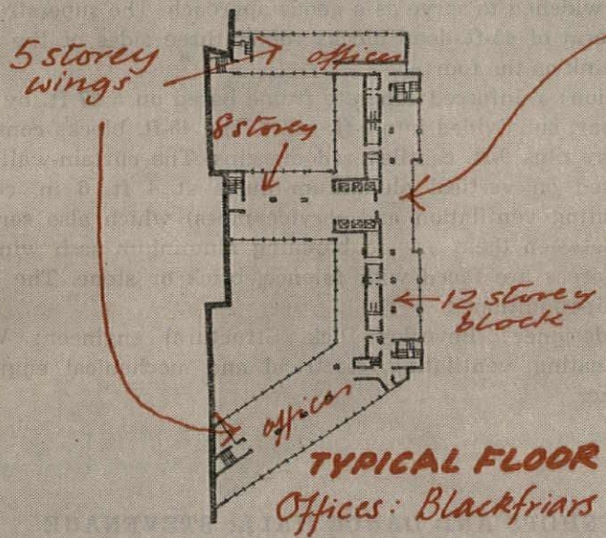
L. G. Vincent (Chief Architect, Development Corporation)

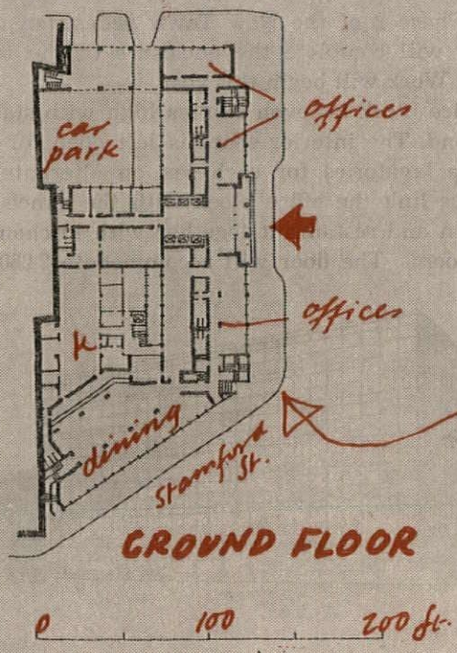
Part of Phase 2 of the New Town pedestrian centre. The group of buildings will complete the enclosure of the town square and bus terminus. Work will begin this year.

The office block is seven storeys high with staircase and lift access at each end. The interior space is left open for flexible partitioning. There are lavatories for each sex on alternate floors. The ground-floor shops link the office block with the dance hall, which includes a ballroom and restaurant together with kitchen accommodation and powder rooms. The floor will accommodate 2,250 dancers. A club for









approximately 500 persons and rooms for private functions are on the first floor.

The structure of the office block is a reinforced concrete plate system eliminating beams and false ceilings. The cladding is curtain-walling on all four elevations, to contrast with other building blocks in the new town, where main elevations have been in window-wall and the ends in solid material. Heating is by embedded electrical coil. The remaining structures are steel lattice beams and stanchions for the hall and restaurant and concrete for the club and entrance foyer. Facing materials are precast panels for the dance hall and curtain-wall for the club portion.

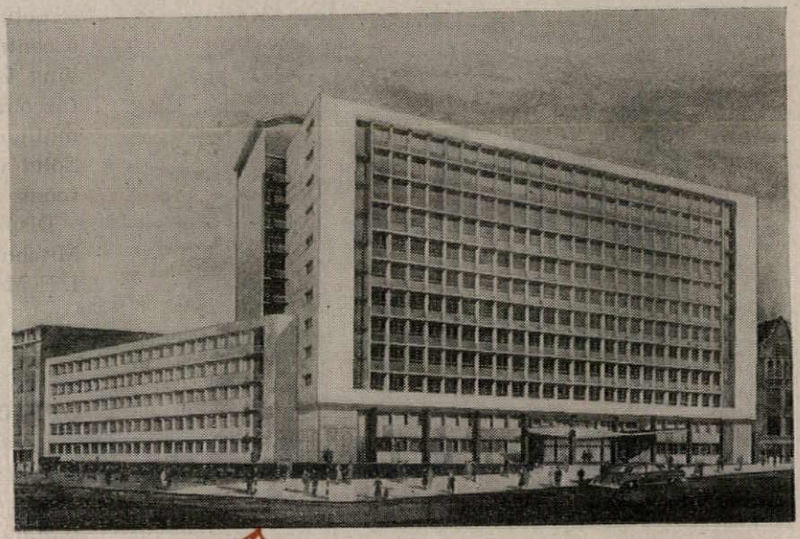
Architect in charge: R. Gorbing. Assistant architect: T. D. Carter.

OFFICES: BLACKFRIARS, LONDON

Kenneth Wakeford, Jerram and Harris

At the southern approach to Blackfriars bridge (corner of Stamford Street), for the Norwich Union Insurance Co. for lease to Unilever for occupation, as their headquarters, by the United Africa Co., whose offices are now scattered, mostly in London buildings, including Unilever House. Completion date: early 1960.

A gross floor-area of 200,000 sq. ft. is contained in the main 12-storey block, facing Blackfriars Road, and subsidiary wings of eight and five storeys. A two-level car-park in the basement and ground floor accommodates 72 cars. There is no central main staircase, main vertical circulation being by six electronically-linked lifts. The four



escape stairs also provide single-floor intercommunication. Offices are linked by a pneumatic tube system.

Construction: reinforced concrete frame with hollow-tile floors. Ground-floor columns and plinth are marble faced. Above, the facing is Portland stone with load-bearing mullions at 6-ft. centres. Below each window of the main block are mosaic-faced panels.

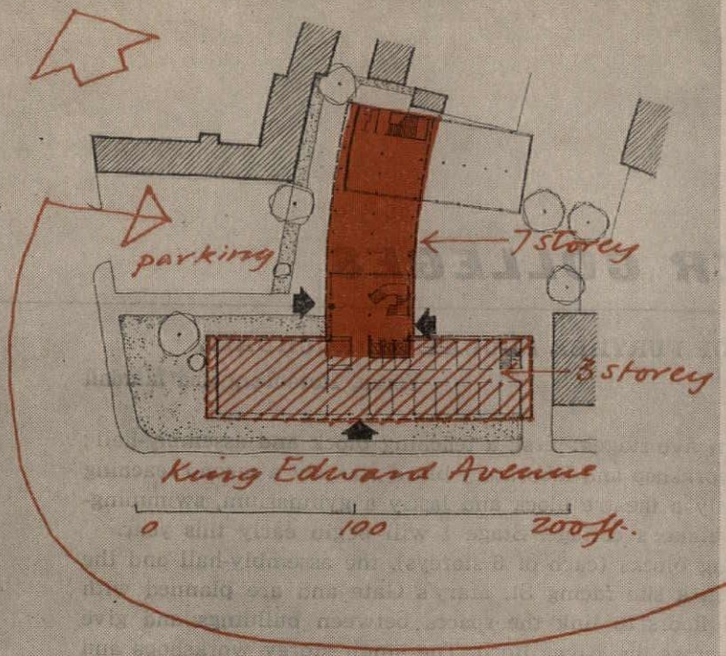
Quantity surveyors: W. G. Edwards and Avery Hall.

COUNTY OFFICES: CHELMSFORD

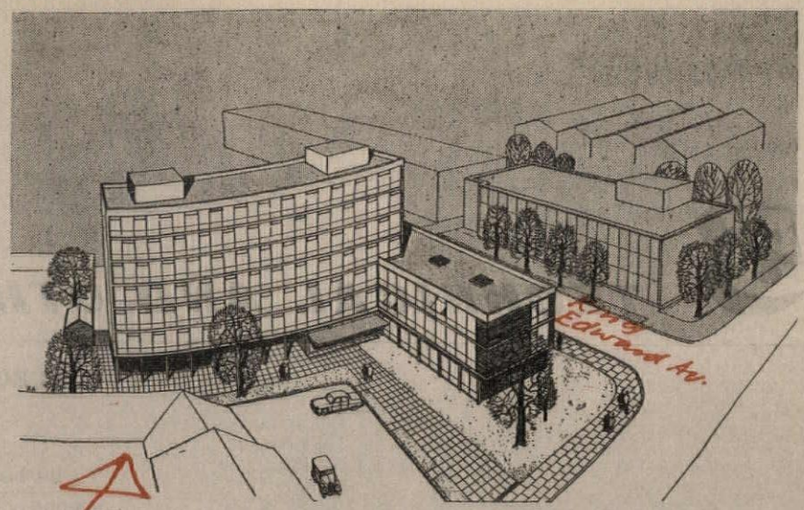
H. Conolly (Essex County Architect)

An office block adjoining County Hall to provide additional accommodation in connection with a scheme for centralizing County Council departments. Though the building is self-contained, the design provides for future extension. Work will start at the end of this year.

A 3-storey wing parallel to King Edward Avenue has a 7-storey



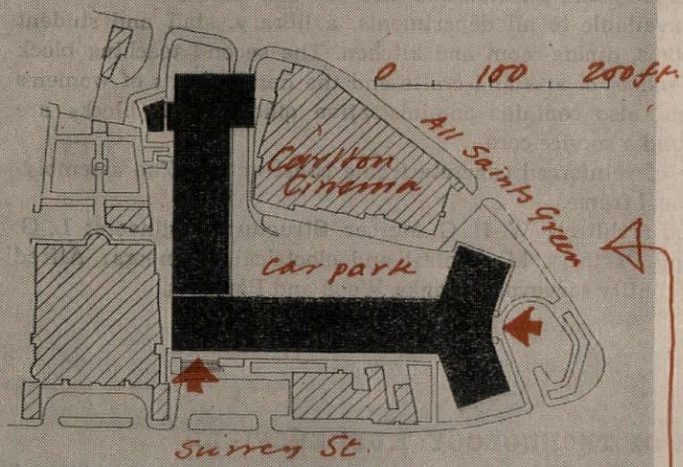
SITE PLAN County Offices: Chelmsford



wing at right-angles to its centre. The building will house the County Treasurer's and the County Medical Officer's departments; also the Road Fund offices, which are planned so as to be accessible to the public and include a machine-accountancy section requiring air-conditioning and vibration-absorbents.

The frame structure is clad with curtain-walling and a, yet unspecified, textured infilling.

Deputy County Architect: D. Senior. Assistant County Architect, K. D. Box. Assistant: G. Beighton.



SITE PLAN
Insurance Offices: Norwich

INSURANCE OFFICES: NORWICH

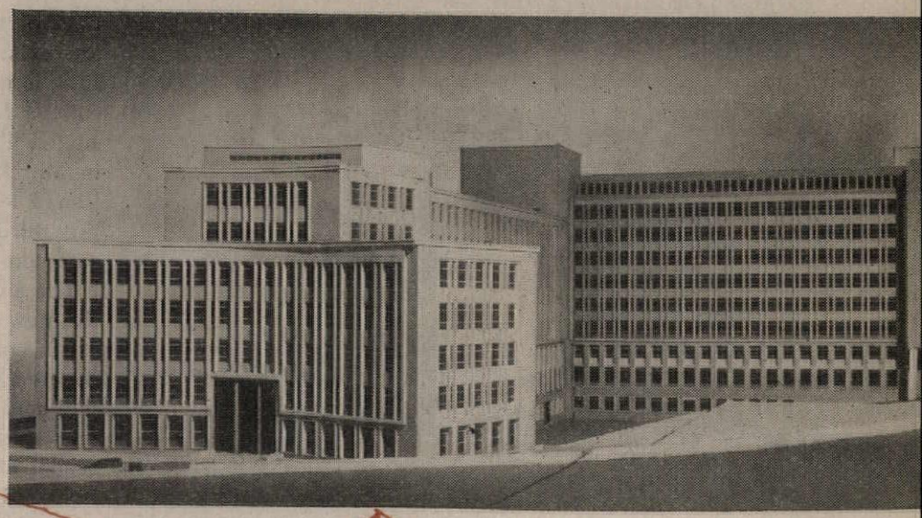
T. P. Bennett and Son

For the Norwich Union Insurance Societies, on the site fronting All Saints Green and Surrey Street. The completed building, which is to be constructed in stages, will provide approximately 175,000 sq. ft. of office area. It is 'L'-shaped on plan and will eventually stand in an open setting. It is hoped to start work towards the end of this year.

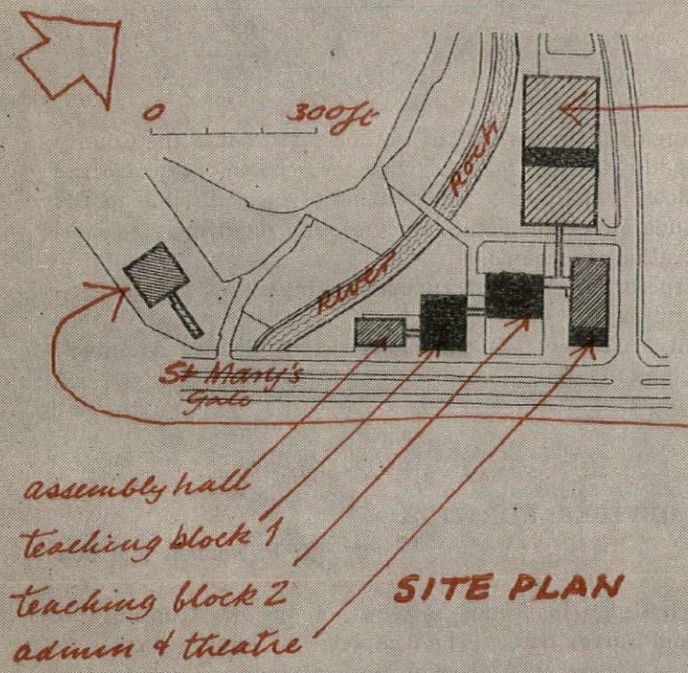
Part of the building has seven floors and two basements, part nine floors with one basement. The plan is based on an office layout giving a 7-ft. module of sub-division, which has a sub-module on the upper floors of 2 ft. 4in. and 4ft. 8 in.

Construction: a reinforced frame designed to provide clear floor space without projecting beams. Facing will be mainly brick, but the ribs and the tower feature are Portland stone.

Engineers: Ove Arup and Partners. Quantity surveyors: Philip Pank and Partners.



5 TECHNICAL AND OTHER COLLEGES



SITE PLAN

COLLEGE OF FURTHER EDUCATION: ROCHDALE

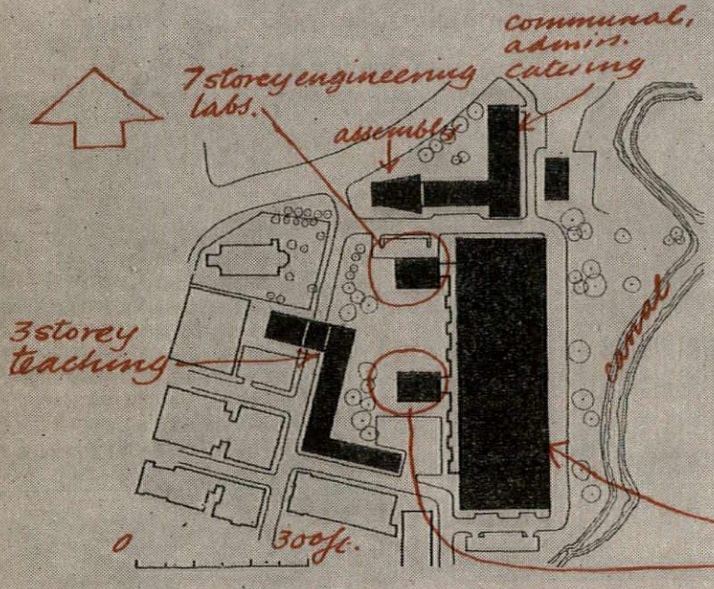
Yorke, Rosenberg and Mardall

To be built in five stages: first, a teaching block and assembly-hall; secondly, a workshop and laboratory block; thirdly a second teaching block; fourthly a theatre block and lastly a gymnasium, swimming-pool and caretaker's cottage. Stage 1 will begin early this year.

The teaching blocks (each of 6 storeys), the assembly-hall and the theatre are on a site facing St. Mary's Gate and are planned with open ground floors to link the spaces between buildings and give open views across the River Roch. The single-storey workshops and the adjoining 3-storey laboratory tower (for the engineering, building and textile departments) are on a large open site provided by a diversion of the river, which will take place while Stage 1 is building. The gymnasium, swimming-pool, etc., are on the further (south-west) side of the river, on land to be acquired later. The first teaching block houses the departments of electrical engineering, commerce, chemistry and physics, and also contains non-specialist teaching-rooms available to all departments, a library, staff and student common-rooms, dining-room and kitchen. The second teaching block houses the school of arts and crafts and the departments of women's subjects and also contains administrative offices. Both blocks are planned round a service core.

They are of reinforced concrete frame construction. The assembly-hall has a steel frame.

Associated architect: W. H. G. Mercer. Structural engineers: L. G. Mouchel and Partners. Mechanical and electrical engineers: Alfred J. Smith. Quantity surveyors: Banks, Wood and Partners.



SITE PLAN

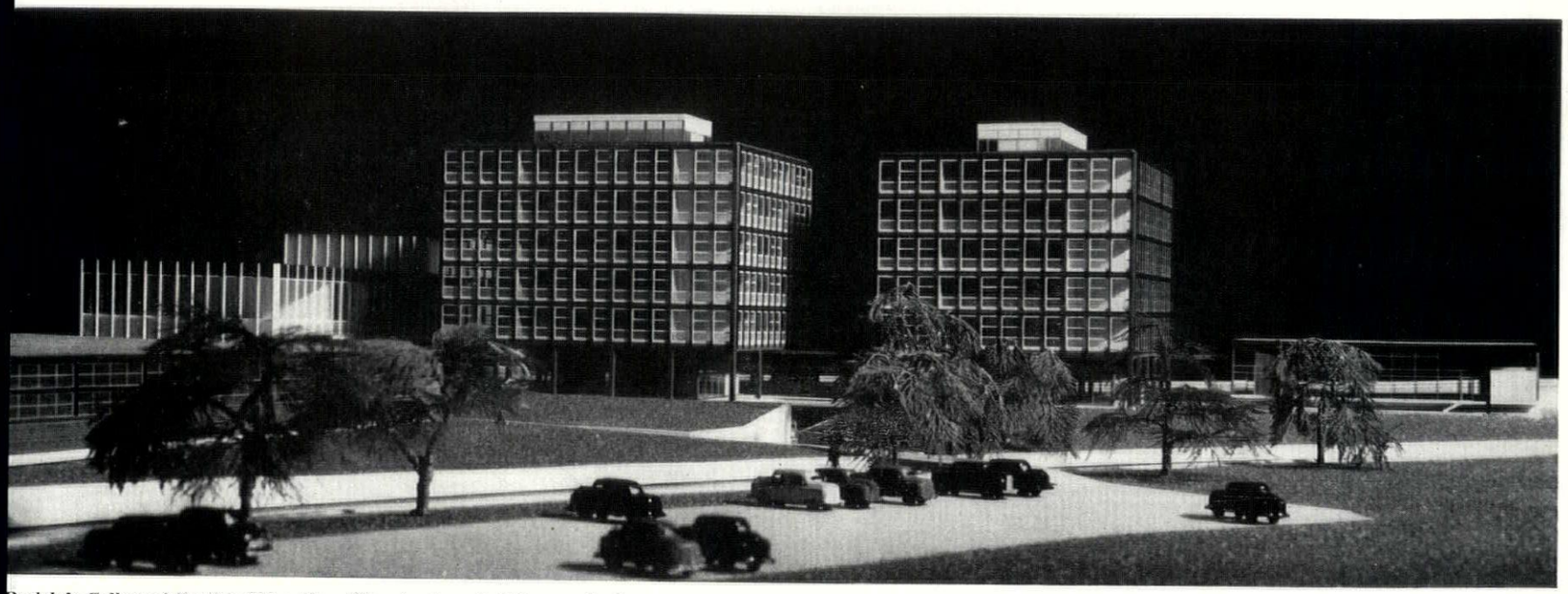
COLLEGE OF TECHNOLOGY: HUDDERSFIELD

Frederick Gibberd

Part of the city's central redevelopment area. The site is alongside the existing college, of which the chemistry building, dating from 1939, is to be retained and the main building (1884) used as a branch college for junior students. The new college is being built in three stages. The first, providing teaching accommodation only, was begun in March, 1957; the second, providing further teaching accommodation, a lecture theatre and staff room, was begun in December, 1957; the third, providing the remaining teaching accommodation, hall, common-rooms and gymnasium, is expected to begin next year.

The site was previously occupied by Victorian workers' houses and the new layout maintains the rectangular pattern. On the east and south, in a deep ravine, is the Huddersfield canal whose banks, covered with derelict gardens and old buildings, will be cleared and laid out as gardens for the college. Here are sited the gymnasium and games court. In the north-east corner is the site of a future school of art. A single-storey workshop block adjoins the canal and is linked to a 7-storey block of textile laboratories, one of the largest

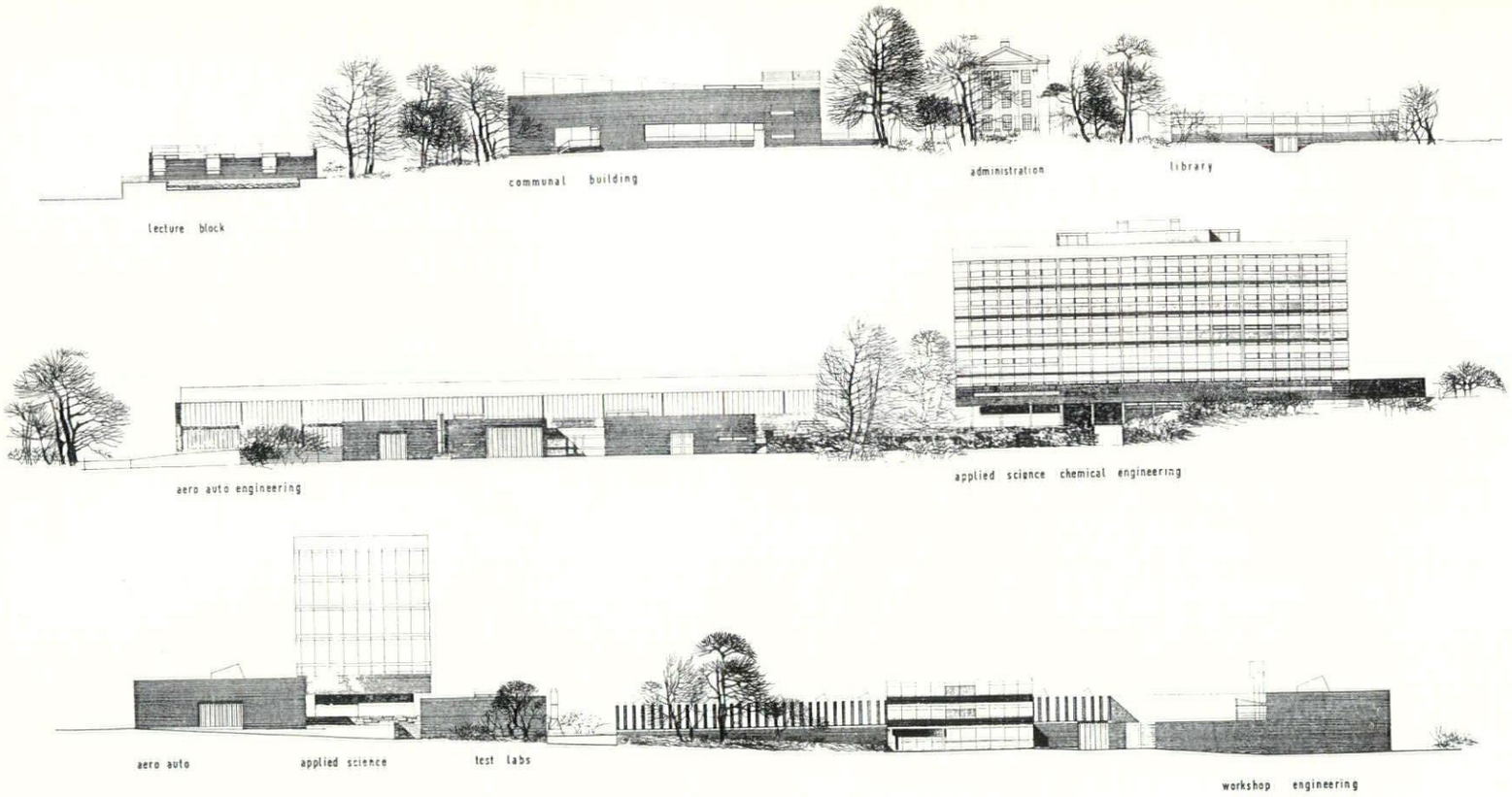
[*continued on page* 35

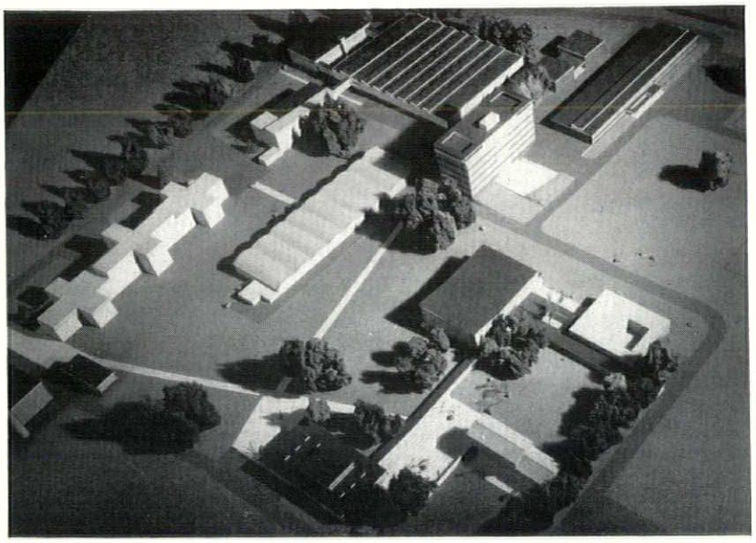


Rochdale College of Further Education. The six-storey buildings, raised on columns, are the two teaching blocks.

Below: College of Technology, Huddersfield. In the foreground are the workshops, and on the far side of them from the bank of the canal are the two seven-storey laboratory blocks.

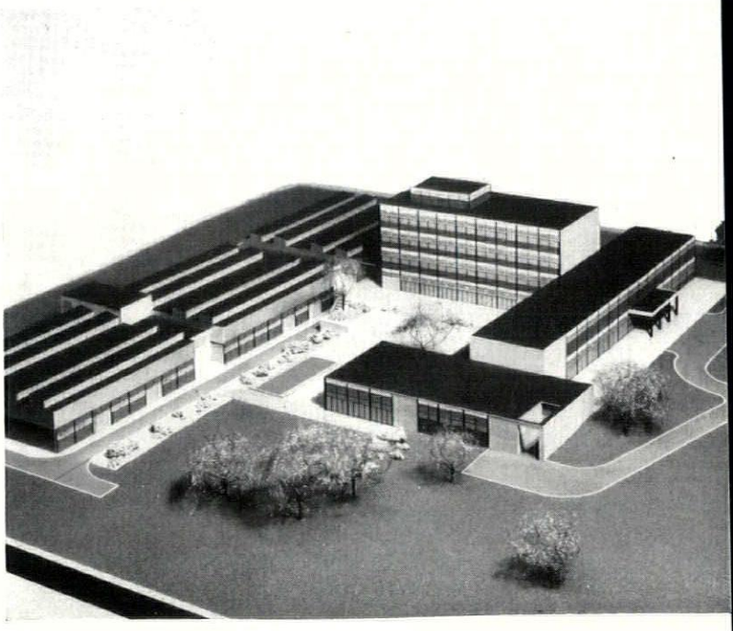






Loughborough College of Technology: above, from the air; top of page, elevations of the main buildings including (centre of top drawing) the existing Georgian mansion.

Below, Stafford College of Technology. The workshops (for electrical and mechanical engineering) are separated from the library, lecture-theatre, etc., by an open-sided courtyard. The entrance is on the right.



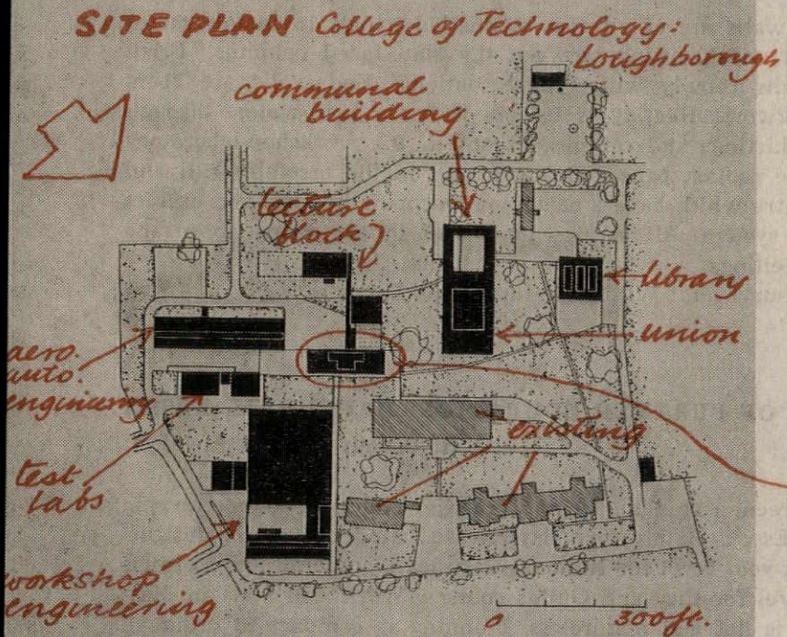
5. TECHNICAL AND OTHER COLLEGES

continued from page 32]

departments being that of textile industries. A similar block of engineering laboratories is also linked to the workshops. On the north boundary, adjoining a ring road, are the assembly-hall and a communal and administration block. The catering department occupies a 3-storey wing at right-angles to it so that students can cook and serve in the refectory. Classrooms and laboratories of other departments occupy another 3-storey block opposite the the workshops to enclose the central space of the college precinct.

The workshop block has a reinforced concrete frame with tubular steel roof-trusses. External walls are stone faced. The 7-storey blocks have exposed precast concrete wall frames from which prestressed floor units span to central in-situ spine beams. Window panels are stone faced. The administration and catering blocks are similar without the central columns and spine beams.

Partner in charge: G. T. Goalen. Assistant architect: J. A. Graham. Structural engineers: F. J. Samuely and Partners. Services engineers: Brandt and O'Dell. Quantity surveyors: John Watson and Carter.



COLLEGE OF TECHNOLOGY: LOUGHBOROUGH

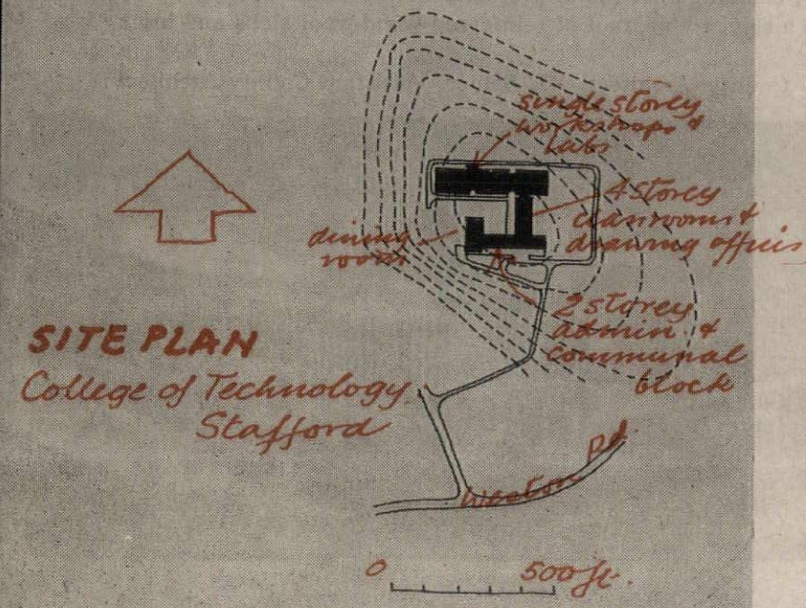
Richard Sheppard, Robson and Partners

An expansion of the existing college, which is to become one of the eight National Colleges. The present buildings are scattered over the site and other accommodation is dispersed through the town. This development plan, designed to concentrate the accommodation, provides for a group of educational buildings, all of which will be started early in the new year.

The existing buildings are at the foot of a small hill topped by a Georgian mansion. The new buildings occupy the slope between. The mansion will be used for administration and has the union buildings, assembly-hall and library immediately below it. Further down are the new teaching buildings. These consist of a 6-storey laboratory block for general science and chemical engineering, a lecture-hall block connected to it and an engineering department (for aeronautical, automobile and general workshop engineering). The laboratory block has a central service core, with laboratories on either side. They include a ground-floor chemical engineering laboratory with an open gallery rising through three floors. Nuclear energy and radiation laboratories occupy a separate one-storey block to give greater safety. The 2-storey engineering building combines workshops and teaching accommodation under the same roof. The library will serve the whole college and is planned in relation to the students' union, the assembly-hall and the residential buildings over the hill. The sloping ground allows entrance at two levels. The main assembly-hall can be combined with two large lecture-rooms to seat 1,200 students.

Construction: single- and 2-storey buildings are steel framed with timber roofs. The science and nuclear building has a reinforced concrete frame clad with precast panels with an exposed white marble aggregate. Otherwise all external walls are brick. Windows are timber with aluminium opening lights.

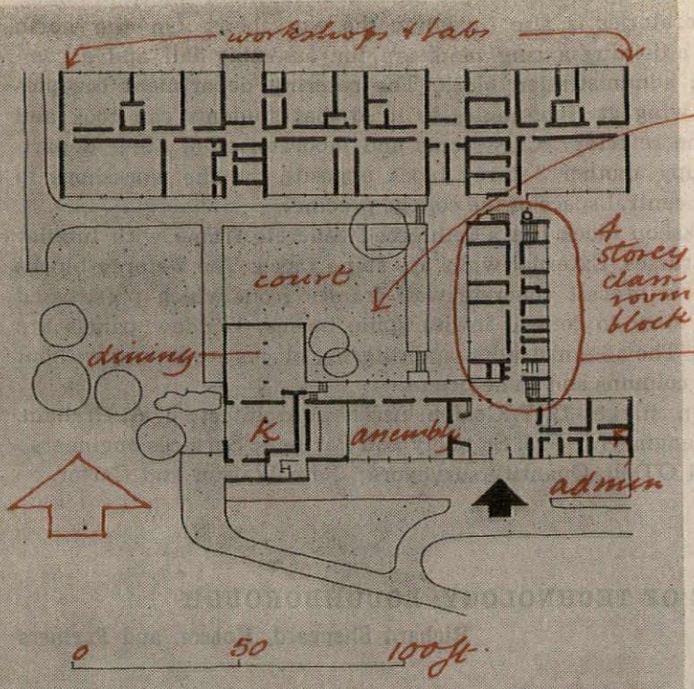
Structural engineers: Hajnal and Myers. Services engineers: Oscar Faber. Quantity surveyors: E. C. Harris and Partners.



COLLEGE OF TECHNOLOGY: STAFFORD

Norman and Dawbarn (with A. C. H. Stillman, Staffs County Architect)

About two miles from the centre of the city. The principal subjects to be taught are advanced electrical and mechanical engineering, and a large proportion of the total area of 67,000 sq. ft. is allotted to



GROUND FLOOR
College of Technology: Stafford

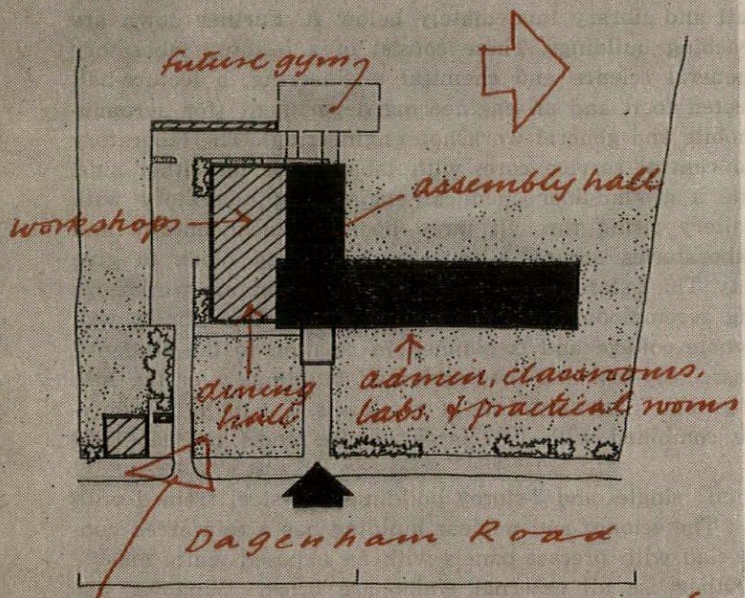
workshops and laboratories. Work will start late this year.

The building occupies the crown of a hill and the steep contours are utilized to provide the necessary variations in headroom. The site is somewhat exposed, and the planning is round a sheltered court to give a feeling of enclosure. This plan-form also allows for large-scale extensions and keeps the more noisy workshops and laboratories away from the classrooms, library and lecture theatre. The main entrance-hall on the south side gives easy access to the classrooms, administration unit, assembly-hall and lecture-theatre. The two latter will be available for outside functions.

Construction: a reinforced concrete frame based on a 12 ft. 2 in. grid. The 4-storey classroom block has in-situ columns supporting hollow-tile floors and roof without projecting beams; the 2-storey administration and communal block has a roof of steel decking on prestressed beams spanning the full width, with a first floor similar to that of the classroom block. Both the single-storey dining-room and the workshop-laboratory group have precast frames roofed with steel decking. The laboratories and workshops have a monitor rooflight system.

External walls are of vitreous enamelled panels in metal frames of standard width, fitting between the slate-faced columns. Brick back-up walls comply with fire regulations. End walls are 11-in. cavity brickwork. Heating is by low-pressure hot water through radiators, skirtings and ceilings, except in the workshop-laboratory block where radiant panels are used, and in the assembly-hall and lecture-theatre which have a combined warm-air heating and extract ventliation system. All service pipes run in the voids above the suspended ceilings.

Quantity surveyors: William C. Inman and Partners.



SITE PLAN
workshops

COLLEGE OF FURTHER EDUCATION: DAGENHAM, ESSEX

H. Conolly (County Architect)

At Rush Green, a branch college of a major technical college serving south-east Essex. Mainly for "day-release" students, giving instruction to first-year level for National Certificate students and to intermediate level for City and Guilds courses. Work will start in May.

The site is flat and featureless. Planning is compact to bring all communal and administrative accommodation within easy reach of one main entrance. The assembly-hall is to be used for physical training until a gymnasium is built later.

Construction: reinforced concrete frame for the multi-storey block, with concrete floors. Ground-floor external walls (slightly recessed) are brick; cladding above is of precast concrete units. The workshop block has a steel frame, roof of reinforced wood-wool slabs and brick walls.

Deputy County Architect: D. Senior. Assistant County Architect



(Education): W. C. B. Smith. Principal assistant architect: N. P. Astins. Assistant architect: Mrs. D. M. Nichols.

COLLEGE OF ART: BROMLEY, KENT

Pite, Son and Fairweather (with E. T. Ashley Smith, County Architect)

On the Maidstone-Sevenoaks road. The site is shared with a technical college, now under construction, which also has a large dining-hall and assembly hall which the Art College will use. A school of building and a gymnasium will be built later on the same site. It is hoped to begin the Art College this year.

It consists chiefly of a 5-storey block designed as a linear extension of the main technical college block. The sculpture and modelling



departments are on the ground floor and extend beyond the main block to form working courtyards. The cabinet-making and industrial design department is also on this floor in a small workshop block linked to the main block. The administration and communal accommodation is on the first floor, with access on this floor to the communal accommodation shared with the technical college. On the second floor is the department of commercial design, with the school of dress on the floor above. The drawing and painting studios are on the top floor and have varying sizes of north-east lights to give different light conditions.

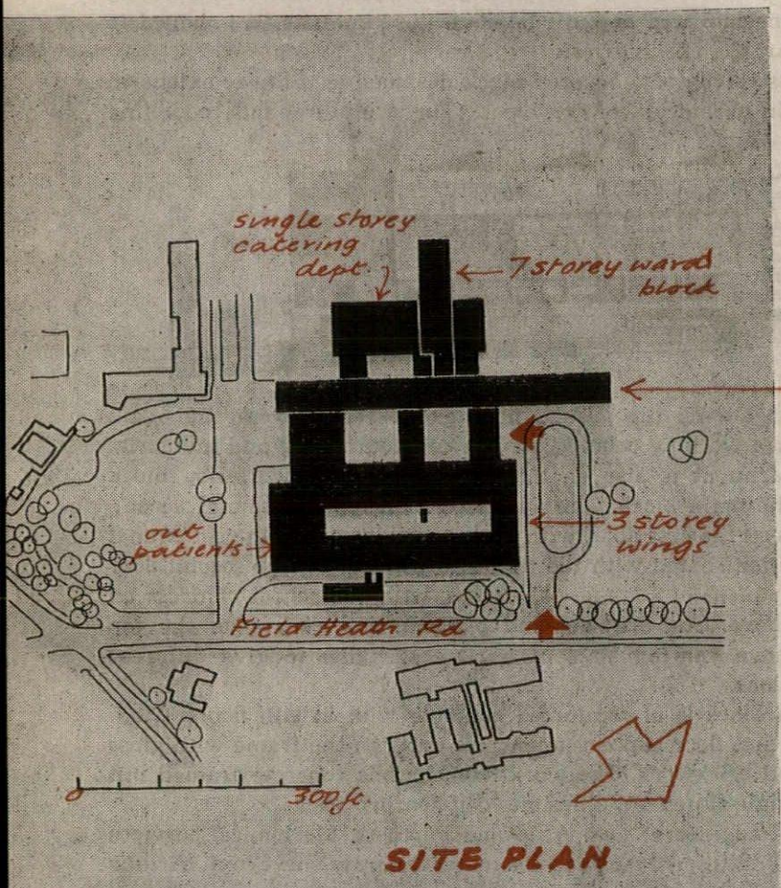
The main block is of reinforced concrete with in situ floors. Cladding above first floor is precast concrete units on the frame with glass infilling, and brickwork. The workshop block is concrete framed but the other single-storey buildings are load-bearing brick.

Structural engineers: Ove Arup and Partners. Mechanical services engineers: J. Stinton Jones and Partners. Quantity surveyors: Arthur J. Willis and Thompson.



Above, from the north (workshops on the right); below, from the south, showing working courtyards extending the ground floor sculpture studios.

6 HOSPITALS



SITE PLAN

GENERAL HOSPITAL: HILLINGDON, MIDDLESEX

Gollins, Melvin, Ward and Partners

For the North-West Metropolitan Regional Hospital Board, to replace accommodation built at various times from 1700 up to the last war, the greater number of the wards being in temporary huts. The site adjoins the new maternity department, now under construction. To be built in two stages. Stage I comprises practically all the ancillary departments and 210 beds; Stage II the remaining wards and additional storage. The first stage will probably begin this autumn.

Sixteen of the wards, each with 30 beds in a modification of the open type Nuffield pattern, are planned in line two on each floor in the 12-storey spine block with end access from the central staircase and lift core. The remaining wards, some of which are smaller and earmarked for special purposes, are in a lower block at right angles, approached also from the central vertical circulation. The ancillary medical departments are grouped partly on the lower floors of the spine block and partly in a formation of 3-storey wings and courtyards to the north of the spine, to which they are linked by corridors. On the lower ground floor are staff cloakrooms, pharmacy and central sterilizing departments and stores. The fall of the land allows entrances to this floor at natural ground level. The ground floor contains the departments of physio- and occupational therapy, X-ray, casualty and some out-patients' clinics. The main hospital entrance is at this level, leading direct to administration and the main lift and staircase hall; also the ambulance and walking case entrances for out-patients and casualties. On the first floor are most of the out-patients' clinics, the operating theatre suite, the pathology department and the greater part of the medical administration. The kitchens, which serve both the wards and dining-rooms, are at lower ground-floor level to the south of the spine. An underground passage connects the kitchens to the detached maternity department. Heating and hot-water installations are fed from the calorifier chamber on the lower ground floor, which is served by steam mains from the central boiler-house in the old hospital.

Construction: reinforced concrete frame. The 2- and 3-storey wings have curtain-walling on a 4-ft. module; the multi-storey block on a 5ft. module, both with infill panels of opaque glass.

Structural engineers: W. V. Zinn and Partners. Mechanical engineers: J. Stinton Jones and Partners. Quantity surveyors: Davis, Belfield and Everest.

MATERNITY HOSPITAL: CORBY

Richard Llewelyn Davies

Adjoining the Nuffield Diagnostic Centre at Corby new town, and forming part of a planned development to provide medical care for the new town in conjunction with the nearby general hospital at Kettering. It will cater for mothers whose confinements are expected

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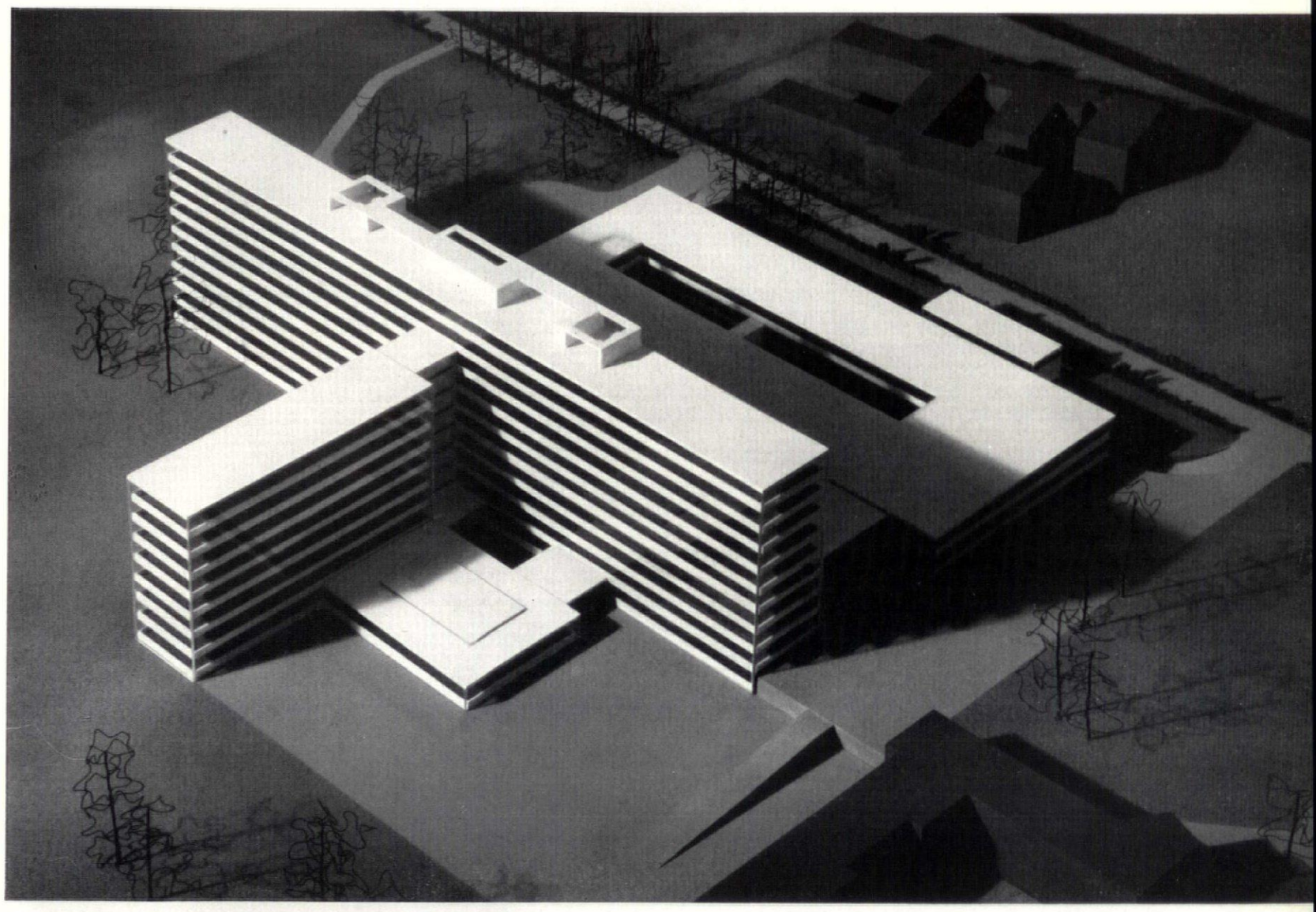
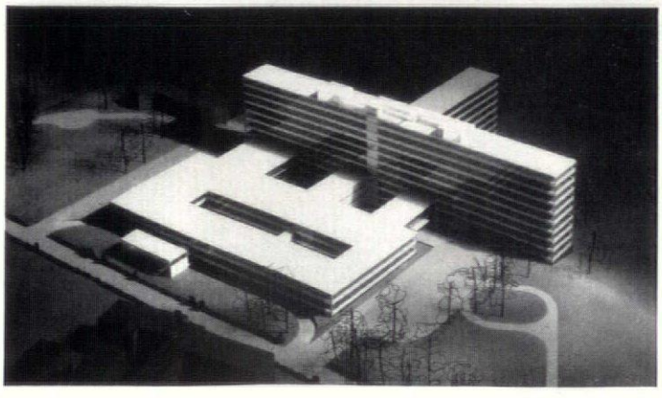
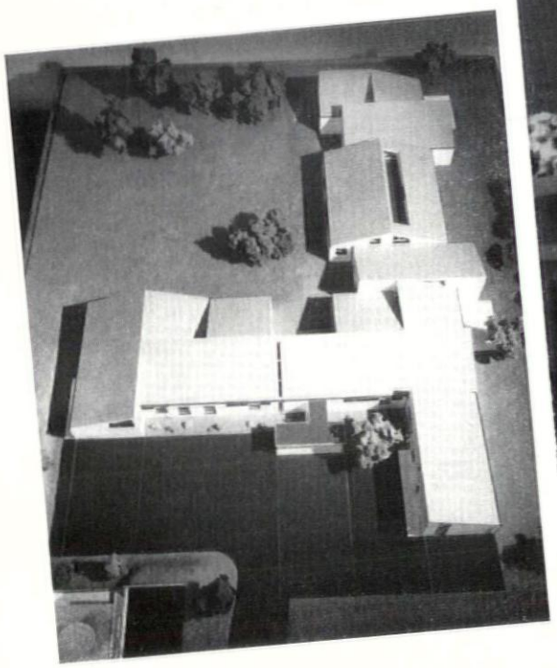
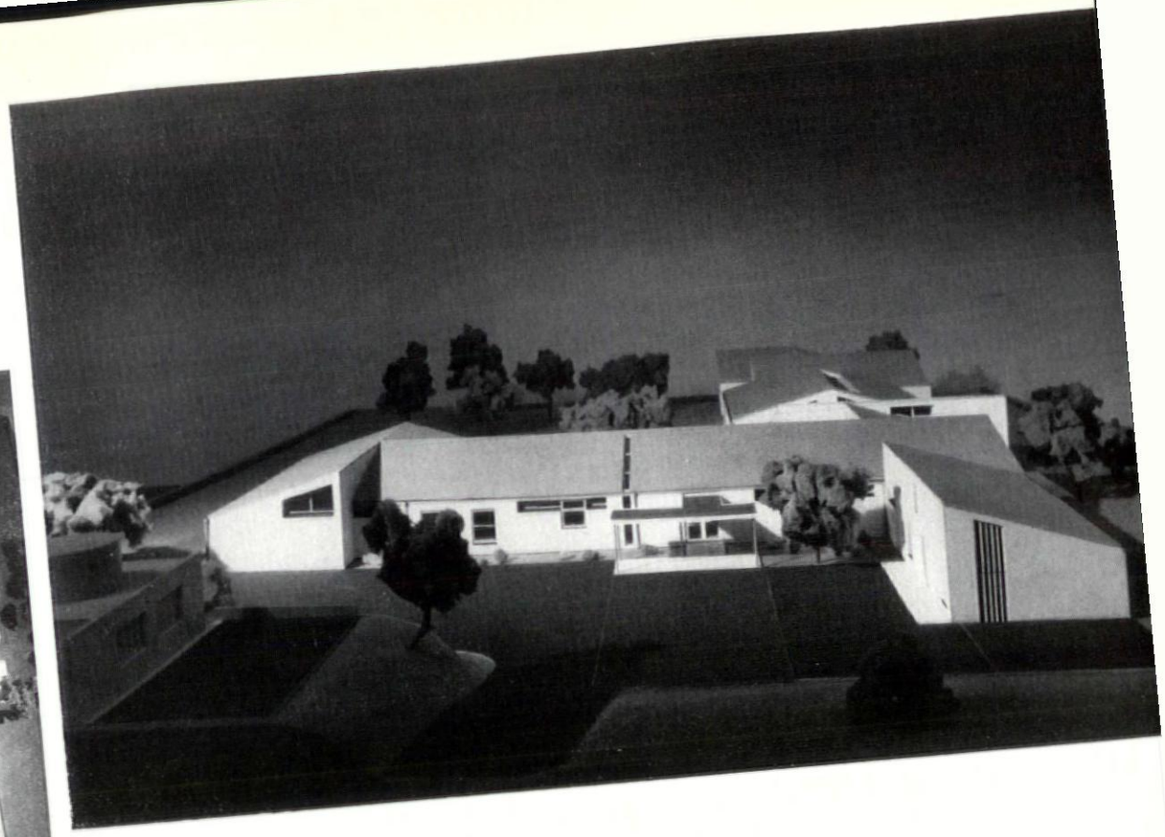




Hillingdon hospital, Middlesex: above, the two main ward blocks; left, from the opposite direction showing, in front of the ward blocks, the ancillary departments in lower buildings grouped round a series of courtyards.



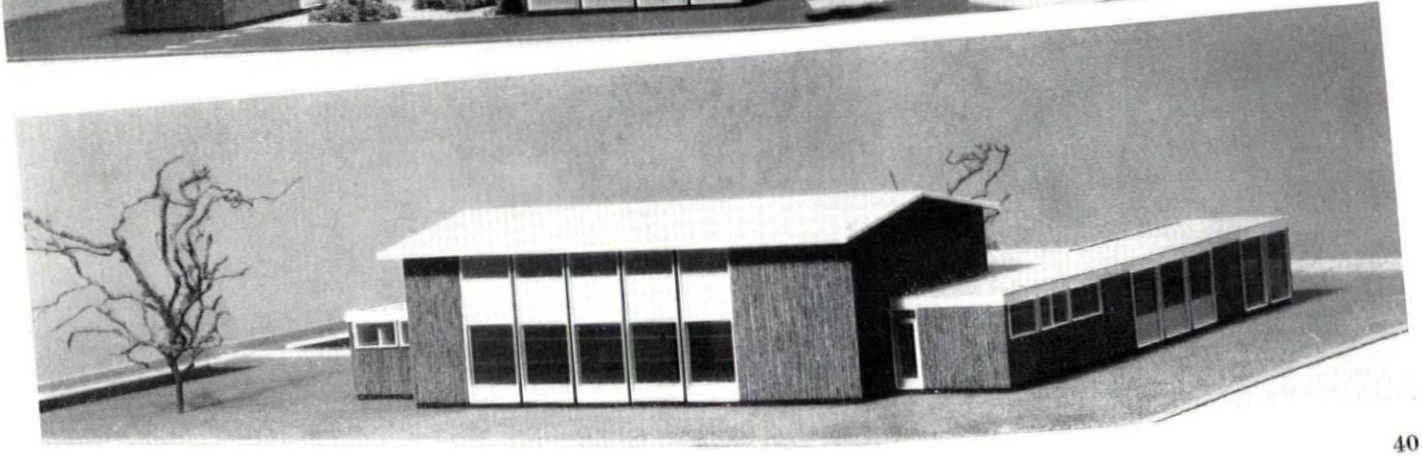


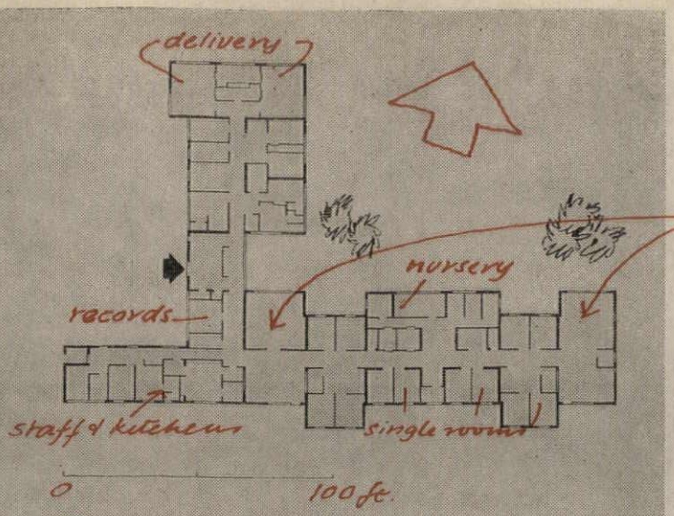
Maternity hospital at Corby, Northants, by Richard Llewelyn Davies: left, from above, showing roof treatment designed to be seen from neighbouring buildings and high ground; above, looking toward: the main entrance.

6. HOSPITALS

Below, social therapy unit at Nottingham: top, looking from the west into the garden courtyard; bottom, from the east, with the hall in the foreground.







FLOOR PLAN
Maternity Hospital : Corby

continued from page 38]

to be normal, and who remain under the care of their general practitioner during confinement. It is hoped to start building in March of this year.

The site is considerably lower than the approach road, from which, and from the Diagnostic Centre, it is possible to see over the roofs of the new building, which have therefore been designed with special care: in effect, a landscape in themselves. There are 20 beds, mostly in single rooms, but two four-bed rooms are provided for those who prefer company. Babies will normally remain with their mothers both by day and by night, although a night nursery is provided for emergency use.

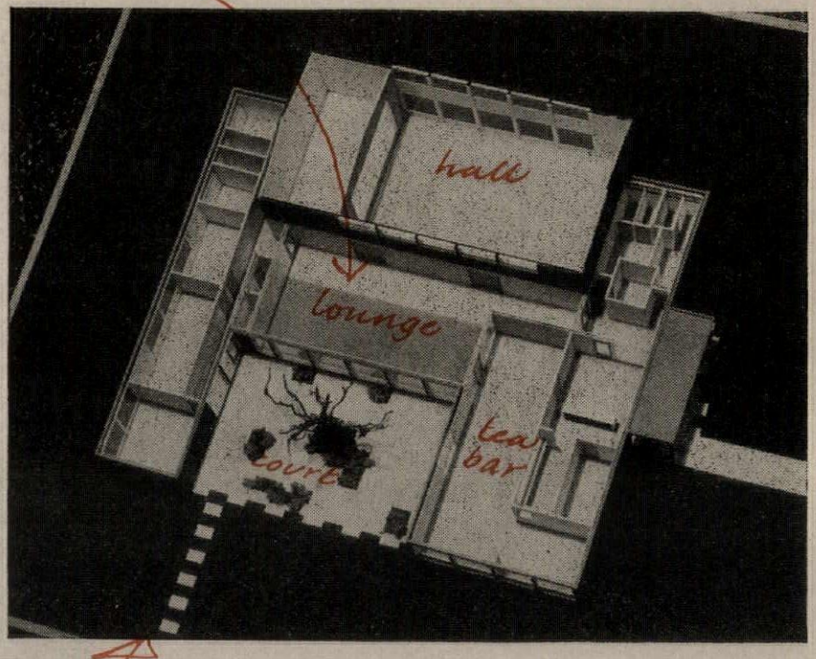
Construction: white flint lime brick walls; roof coverings and gutters in sheet zinc.

SOCIAL THERAPY UNIT: NOTTINGHAM

Booth, Ledeboer and Pinckheard

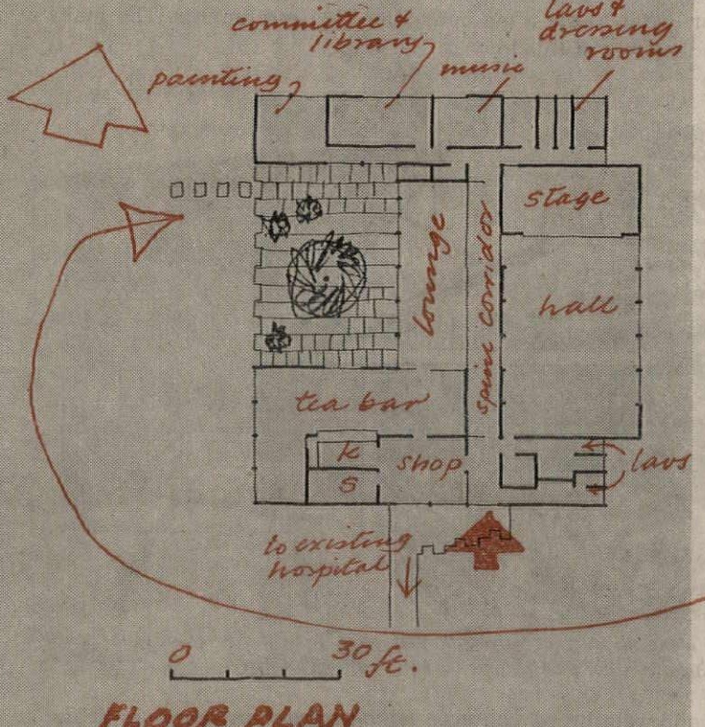
An experimental unit for the Nuffield Provincial Hospital Trust, sited in the grounds of the existing mental hospital. It is a single-storey building detached from the main hospital, where patients can congregate and enjoy recreation and social activities. Construction is just beginning.

The building is planned round three sides of a west-facing terrace. Entered from the south, a spine corridor serves a hall, seating 130 people, to the east and a series of activity rooms to the north. A lounge, the centre of social functions, opens directly off the spine



corridor and is planned to take advantage of views across the courtyard to the west. The south wing contains two tea-rooms, the kitchen and a shop.

Construction: designed to suit a proprietary prefabricated timber system. Cladding is cedar vertical boarding and painted ply panels. Central heating and hot water are provided by the boiler plant in the adjoining hospital.

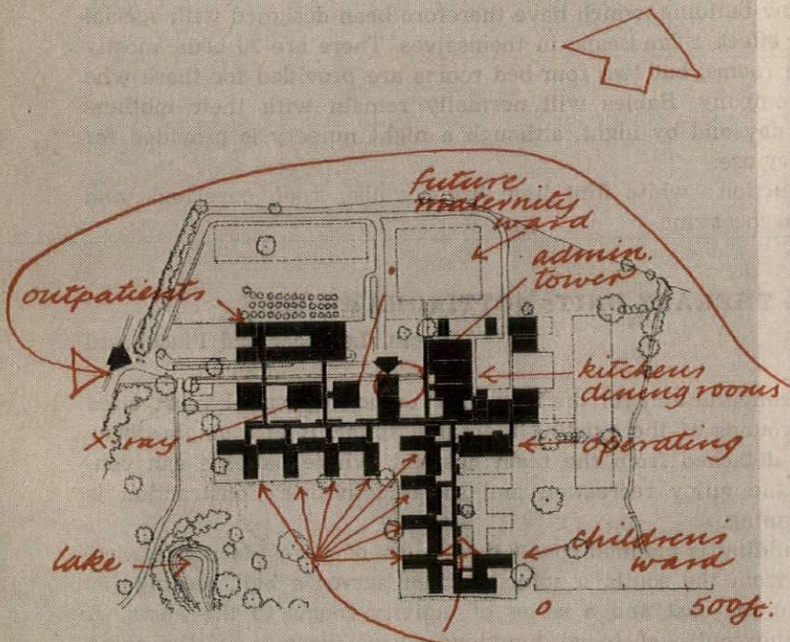


FLOOR PLAN

GENERAL HOSPITAL: SLOUGH

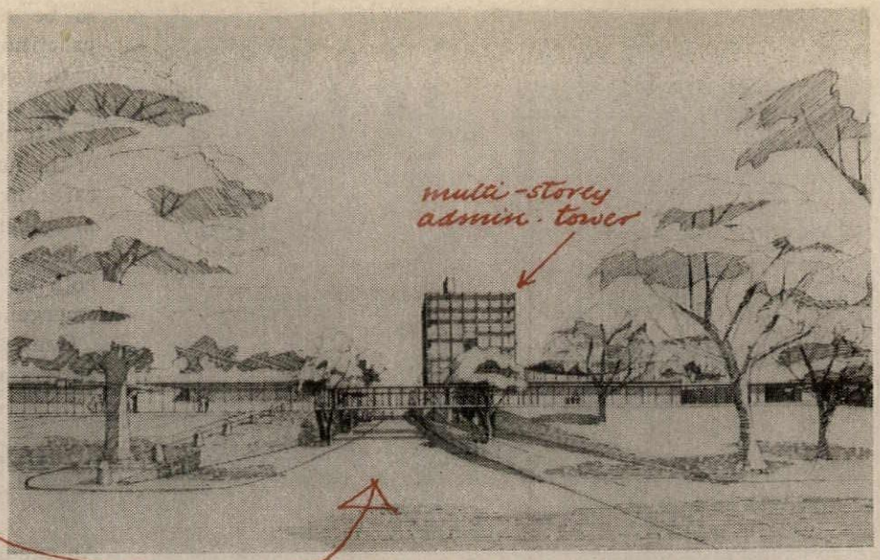
Powell and Moya

For the North-West Metropolitan Regional Hospital Board, to serve a population of 140,000. The site is the grounds of Wexham Park, a Victorian mansion 1½ miles north of Slough. The scheme will provide



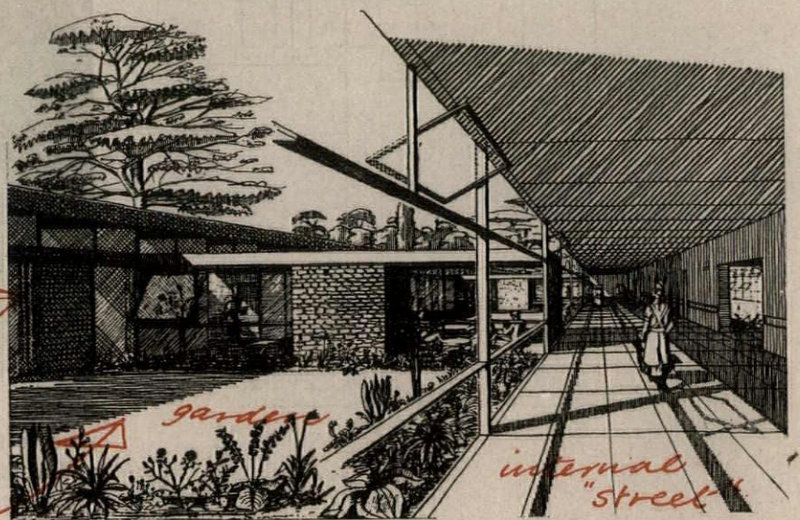
SITE PLAN

General Hospital : Slough



in the first place 300 beds, out-patients', casualty and X-ray departments, operating theatres and the usual services; at a later date another 100-125 beds, providing a maternity unit and gynæcological wards, and perhaps a hospital laundry, may be added. Work will probably begin on the first stage at the end of this year.

The plan consists of three main groups: main hospital building, service buildings (kitchens, boiler-house, etc.) and residential buildings. The eight standard ward units contain 30-32 beds; a ninth is for children. They are laid out on one floor to facilitate later extensions, in the form of separate pavilions enclosing small gardens, linked by corridors to form two wings at right-angles. The remaining accommodation, spread out to the north, is also single-storey except for a centrally placed multi-storey tower containing the administration and some accommodation for resident medical staff. The tower has split floor-levels to maintain convenient ceiling heights. The main entrance is at the foot of this tower.

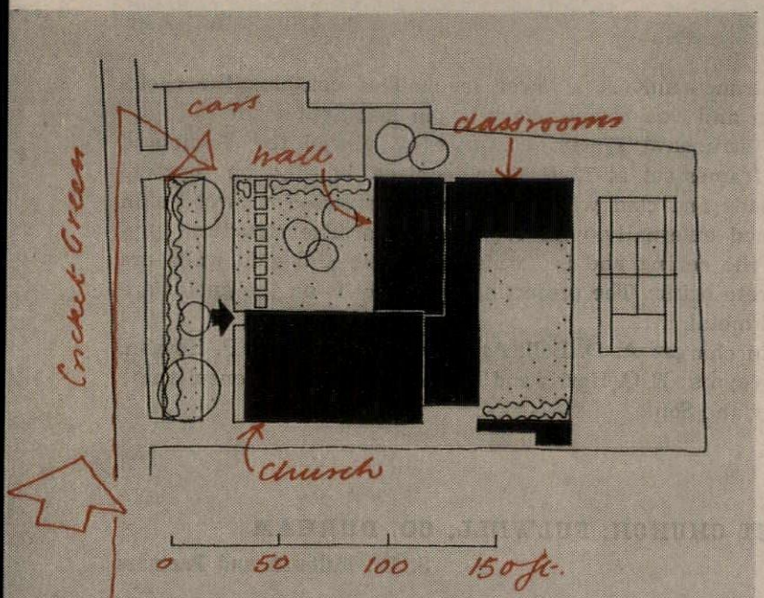


Above, looking along the internal 'street.' Top of page, from the direction of the main entrance, showing a corridor passing over the sunk approach road.

Construction: reinforced concrete frame except in the case of the wards and hostels which have load-bearing brick cross-walls with reinforced concrete floors and roofs.

Associated architects: R. Llewelyn Davies and John Weeks. Assistant architect in charge: R. Henley. Assistant architect: D. Acton Stow. Structural engineer: F. J. Samuely. Mechanical services engineers: J. Roger Preston and Partners. Quantity surveyors: Davis, Belfield and Everest.

7 CHURCHES

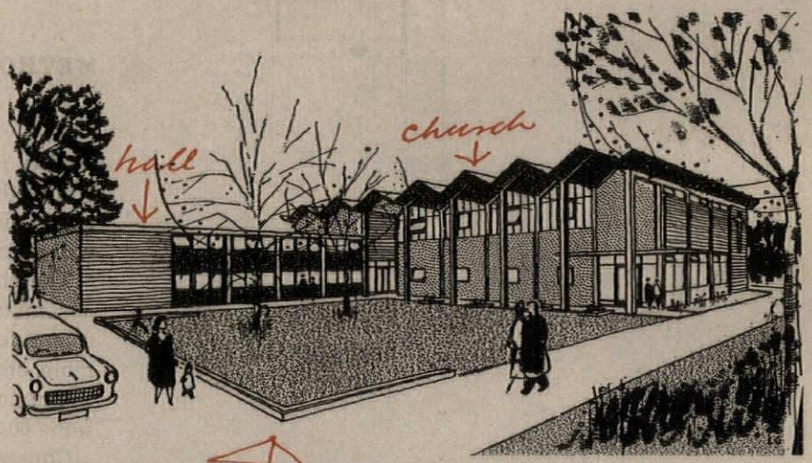


METHODIST CHURCH: MITCHAM

Edward D. Mills and Partners

To replace the design illustrated in the AR Preview issue, January, 1956, for a building on the site of the original church destroyed in the war. This site has since been sold and a larger bought on Mitcham Cricket Green half a mile away, adjoining a 19th-century chapel already owned by the trustees. Work has begun, and when the new church is complete in June the chapel will be demolished to make way for a car-park.

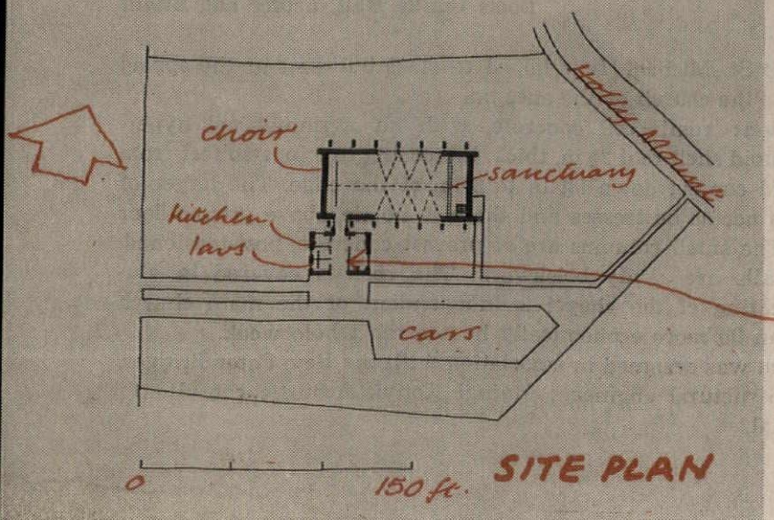
The new buildings include a church seating 300, a church-hall seating 200 with stage, three large classrooms (two of which are separated by folding doors), kitchen with service counter to allow the joined classrooms to serve as a youth-club canteen, dressing-



rooms, vestries, church-vestibule with cloakrooms and boiler-room. Church and hall have separate access from the same covered way.

Construction: church, reinforced concrete frame with brick infill walls, hardwood windows and folded slab roof; hall and classroom unit, load-bearing brick with timber roofs. Heating throughout by hot air run in floor ducts.

Assistant architect in charge: Rachel Moulton. Consulting engineers: Ove Arup and Partners. Quantity surveyor: Leslie W. Clark.



PRESBYTERIAN CHURCH: BELFAST

Munce and Kennedy

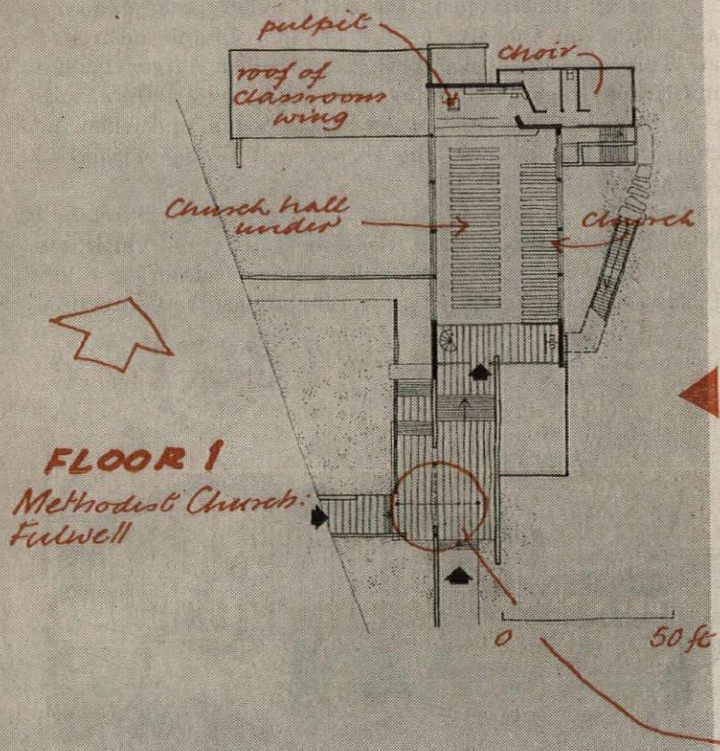
In the Northern Ireland Housing Trust estate at Dunmurry. The main requirements were accommodation for a congregation of 300 and a choir of 30, a sanctuary with vestry adjacent, entrance hall, choir/meeting room and ancillaries, together with provision of temporary facilities for social functions within the church proper until the erection of a future hall. The main axis of the church is set parallel to the contours. It is entered through a connecting stair link



from the entrance unit at a lower level. This contains the choir-room, kitchen and cloakrooms. Work began last September.

The main structural system comprises 7 pin-jointed, laminated timber 'A' frames set at 12 ft. 6 in. centres, bearing on concrete foundation pads and clad with prefabricated stressed plywood skin panels, finished externally with cedar shingles. The structural plywood forms the ceiling and is varnished. Gable and side walls are of 2-in. concrete bricks. The projecting cross motifs on the gables are of hammered metal.

Architect in charge: A. D. Bell. Assistant architect: B. P. Horgan. Quantity surveyors: E. C. Harris and Partners. Electrical consultants: G. McCartney and Son.



FLOOR 1
Methodist Church: Fulwell

METHODIST CHURCH: FULWELL, CO. DURHAM

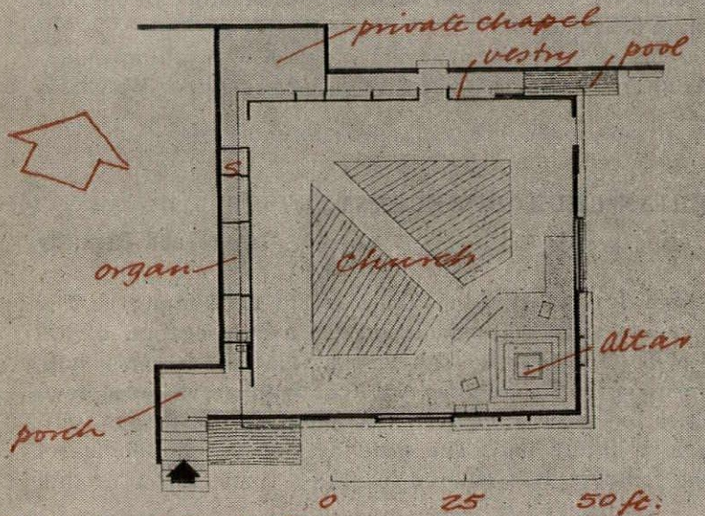
S. W. Milburn and Partners

At the junction of three roads with the apex of the triangular site, where the building is placed, at the highest point, enabling it to form a prominent feature in the surrounding new housing estate. Work will start early this year.

The church, which seats 300, is placed above the church-hall, which accommodates 340 and has a stage. Alongside are a kitchen and classrooms for Sunday school and other church purposes. In front of the main entrance to the church, which also closes the vista provided by the main approach road, is a hanging cross, elevated on metal supports some 60 ft. above ground level.

Construction: load-bearing brick walls and laminated timber trusses carrying a one-way sloping roof covered with copper.

Assistant architect (and model-maker): Denis Wilkinson.



GROUND FLOOR
Church: Welwyn

CHURCH: WELWYN

Denis Clarke Hall, Scorer and Bright

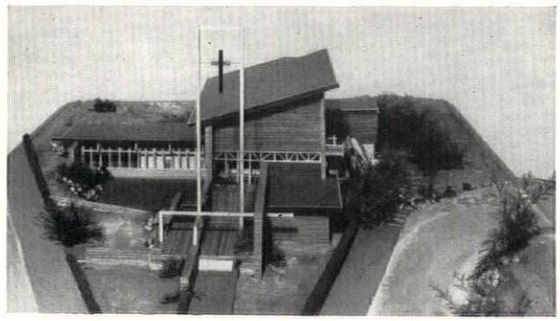
Dedicated to St. Michael. It is hoped to start building in the spring and complete the church by the autumn.

Construction: reinforced concrete, with an asymmetrical hyperbolic paraboloid shell roof 2½ in. thick, increasing to 9 in. two feet from the edge and coming down again to 6 in. at the edge. The larger of the columns act as buttresses and there is no tie above ground-floor slab level. The small columns are of precast concrete, post-tensioned. External walls are cavity brickwork. The roof is covered in aluminium. Heating of the chapel is independent of the main church so that it can be more economically heated the whole week.

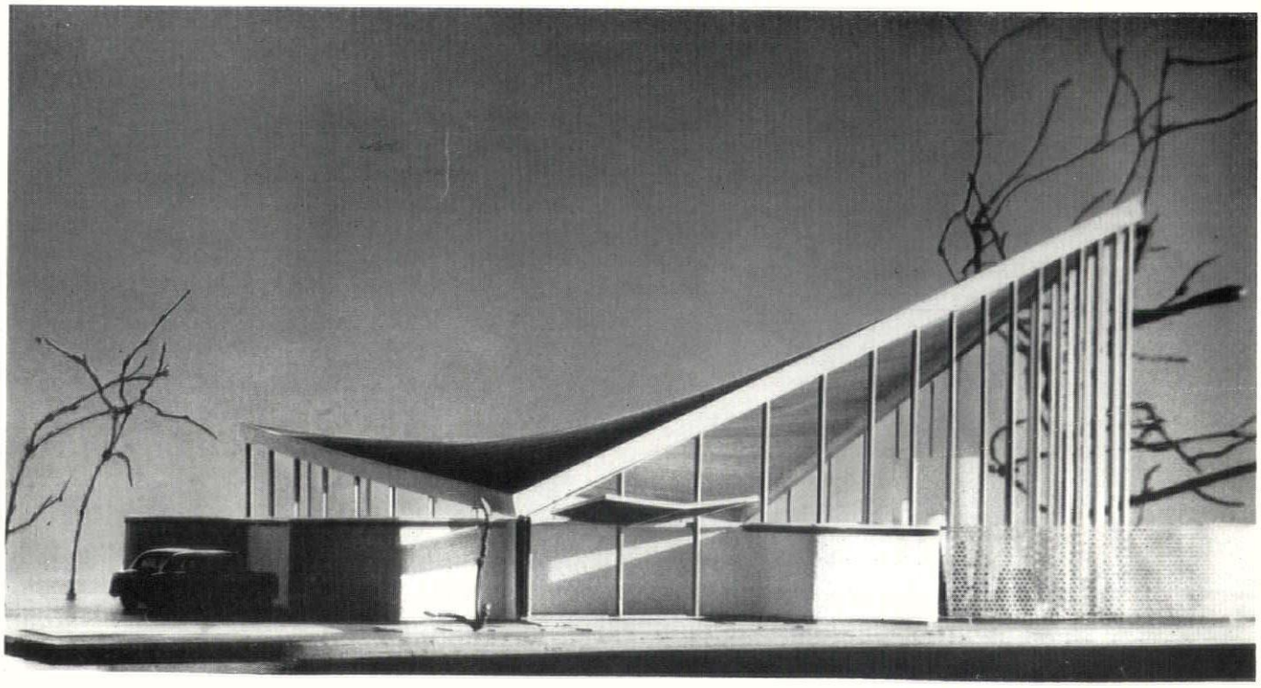
The church was designed in association with the Rev. Peter Bridges, A.R.I.B.A. Structural engineer: Hajnal Konyi. Acoustic consultant: Hope Bagenal.



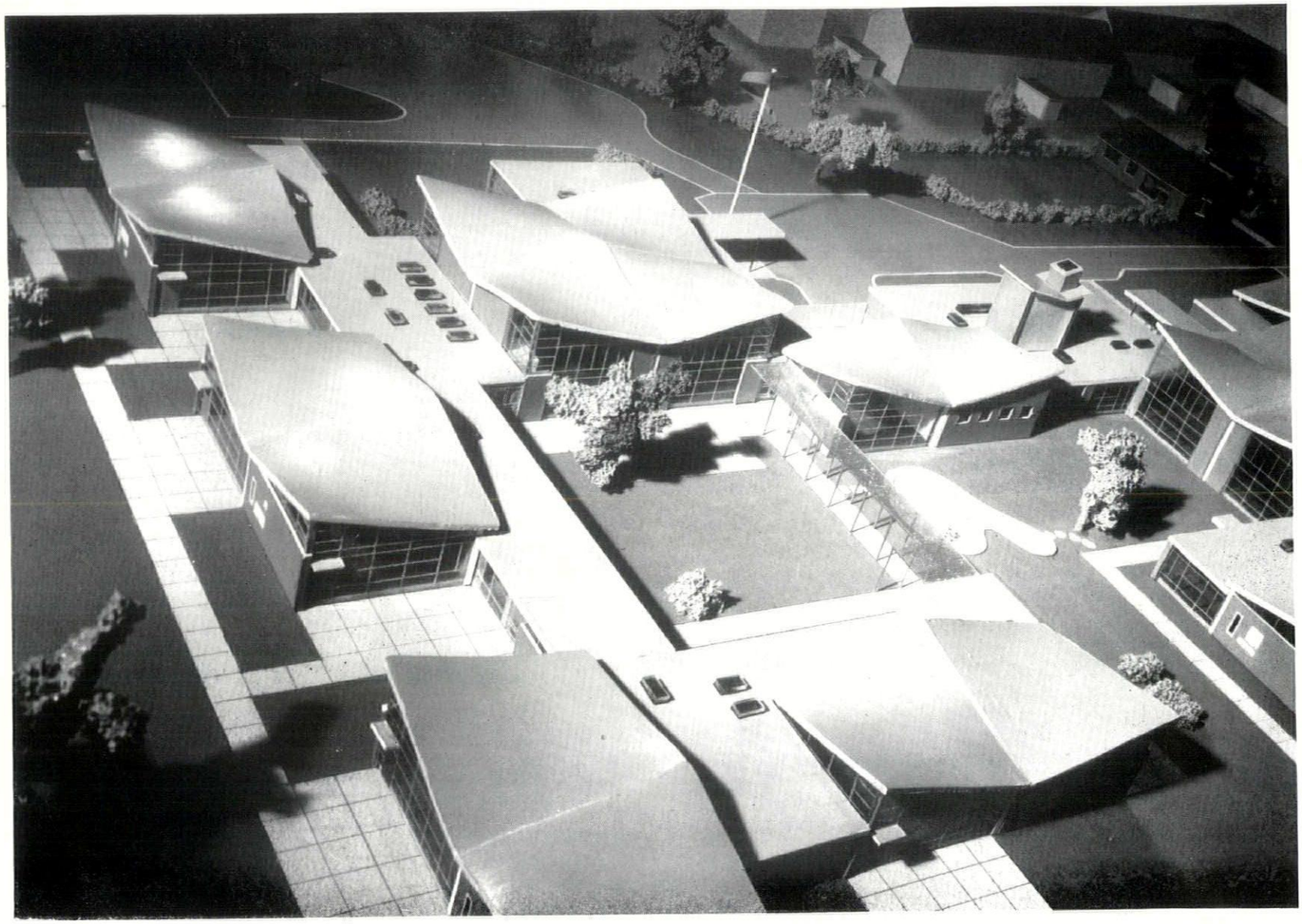
Methodist church at Fulwell, with the church superimposed on the church hall and reached by a flight of external steps. At the foot of these, on the axis of the main approach (from the direction of which the photograph on the right is taken) is a cross hanging in a metal frame.



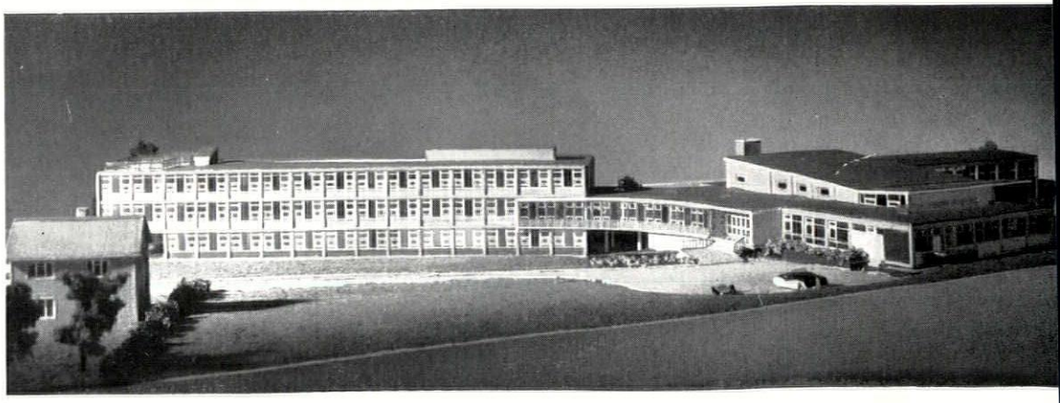
Church at Welwyn, Herts. showing both outside and inside surfaces of the asymmetrical shell-concrete roof.



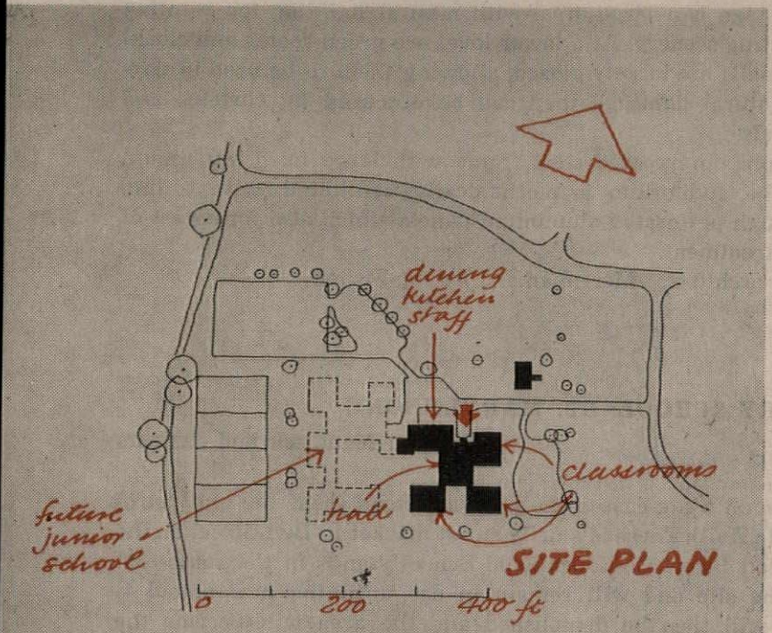
8 SCHOOLS



Above, looking down at the Ipswich primary school, showing planning in separate pavilions round a garden court, eliminating corridors; also the use of paraboloid timber roofs.



Friern Barnet secondary school, with teaching block (on the left) linked to assembly-hall block by curved wing, open at ground level, providing staff accommodation above.



SITE PLAN

PRIMARY SCHOOL: IPSWICH

Johns, Slater and Haward

To serve an expanding new council housing estate on the outskirts of the town at Sprites Lane. It provides for 240 infants and 320 juniors. Work on the infants' section began last June and will finish in July. The junior section will begin in April and finish a year later.

The planning eliminates all corridors and provides practical spaces adjoining junior as well as infant classrooms (floor area per class: 800 sq. ft.) ; also changing-rooms for the junior school.

Construction: in-situ concrete columns carrying laminated timber hyperbolic paraboloid roofs over classrooms and assembly-halls. These have local brick panel walls and timber-framed glazed walls with aluminium sash windows. All other areas have load-bearing brick walls and timber roofs. Undersides of paraboloid roofs are exposed timber, clear varnished. Heating is from oil-fired boilers.

Architect in charge: H. Fleck. Quantity surveyors: Caston and Porritt.

SECONDARY SCHOOL: FRIERN BARNET, MIDDLESEX

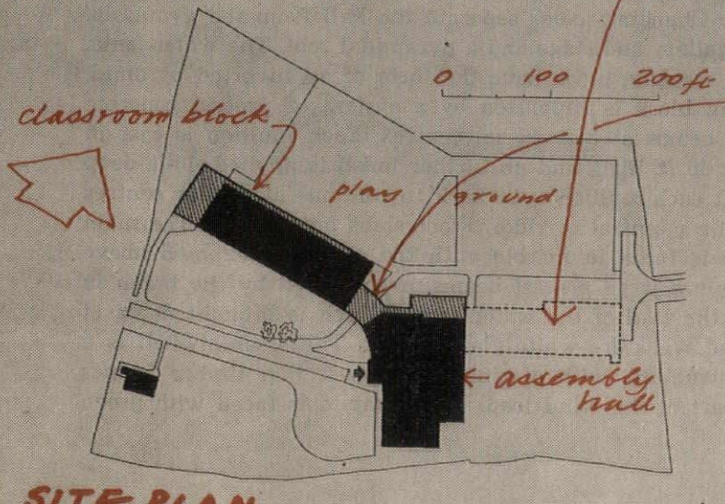
C. G. Stillman (County Architect)

A four-form entry secondary modern mixed school in Crescent Road, to be built in two phases ; when complete, it will replace the existing Holly Park secondary modern school. Phase 1 is a 3-storey teaching block, assembly-hall, small hall/dining room, kitchen, and administration. Phase 2 is the gymnasium and workshop block. Work began last October.

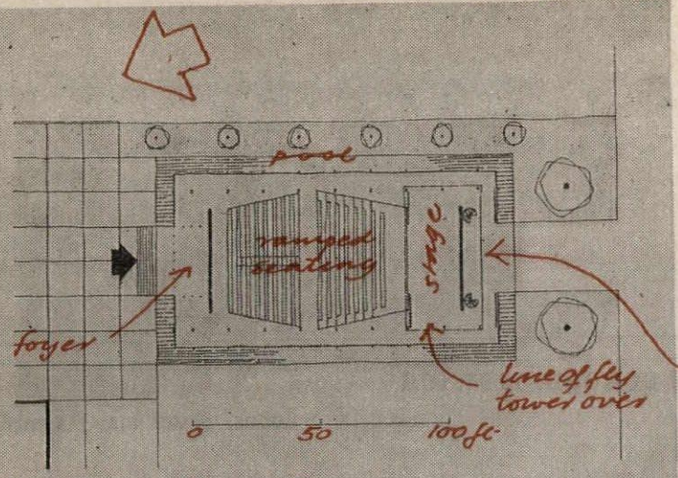
The site falls steeply from north to south. The buildings are placed parallel with the contours, to reduce excavation and filling to a minimum. The teaching block runs from east to west and contains all the teaching rooms with the exception of the music-room and workshops. The main cloakroom accommodation is on the ground floor, with additional lavatories on each floor. Owing to the slope, the floor-level of the central assembly-hall is the same as the first floor of the teaching block. The covered link between them provides staff accommodation and the open space below affords a way through to the playgrounds, and also gives access to the ground-floor level proper of the teaching block. The small hall/dining forms an extension of the assembly-hall at a higher level with the adjoining kitchen, which is served from the approach road. The gymnasium is at assembly-hall stage level, with access between both the gymnasium and the hall. The changing-rooms are immediately beneath.

Construction: reinforced concrete frame for main teaching block ; steel for remainder ; concrete roof to the teaching block and timber elsewhere ; external walls mostly brick, with some rendering and timber cladding. Windows metal in timber frames.

Assistant architects: E. L. Gunston (area architect) and P. F. Piper.



SITE PLAN



GROUND FLOOR

ASSEMBLY HALL: RADLEY COLLEGE

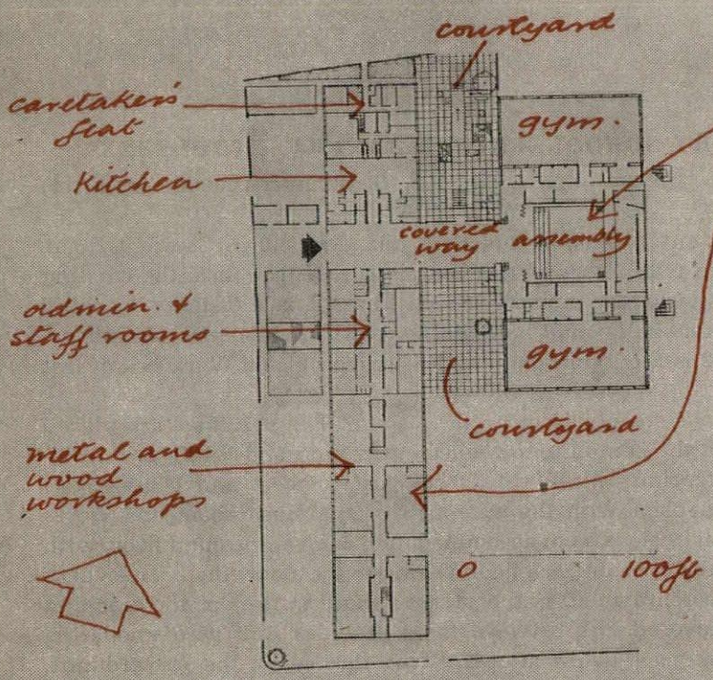
Gollins, Melvin, Ward and Partners

The dominant element of a future group of new buildings planned to increase the teaching accommodation of the college. Work will probably start this spring.

The hall, which will seat 500, is designed for the production of plays and for concerts as well as a school assembly-hall. Since the school already possesses halls for use when a flat floor is required, it was possible to give this hall conventional auditorium form. It has a proscenium stage that can be modified to make it suitable for choral and orchestral works and for classical plays requiring a large apron. Behind the stage is a large area, with natural lighting, for painting and constructing scenery. At a lower level are green-rooms and cloakrooms. The walls are largely glazed, allowing them to be used in daytime with natural lighting; they can be obscured by curtains and venetian blinds.

Construction: an exposed steel frame with large fixed aluminium windows. The auditorium is mechanically ventilated, with ceiling heating through perforated aluminium panels which also form part of the acoustic treatment.

Associated architects: Merriman and Knapp-Fisher.



GROUND FLOOR

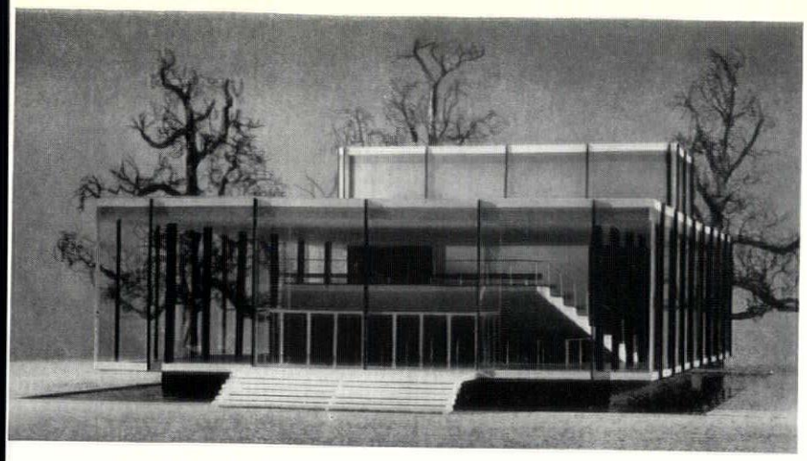
SECONDARY SCHOOL: ST. MARYLEBONE

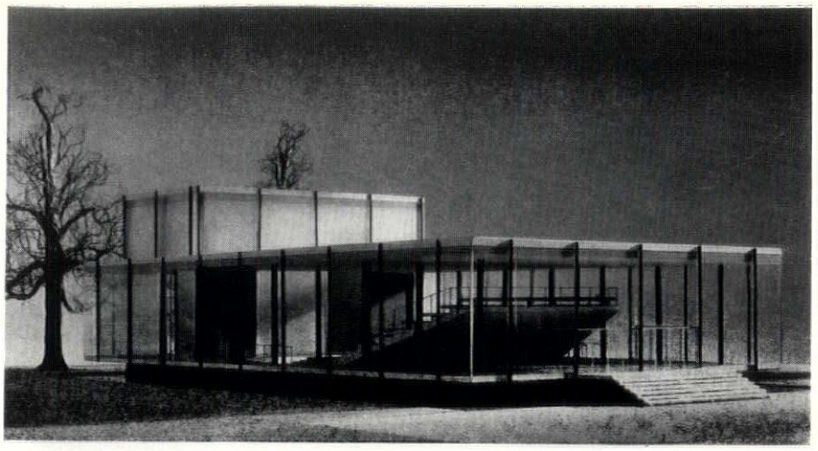
Leonard Manasseh and Partners

For 780 boys, on a site east of the Edgware Road (near the old Metropolitan Music Hall). There is a daily street market in Bell Street on the south and Bell Street Co-Educational School stands in the south-east corner of the site and will remain in use until the new school is finished. It will then be demolished and the area will become the school playground. Construction began last September.

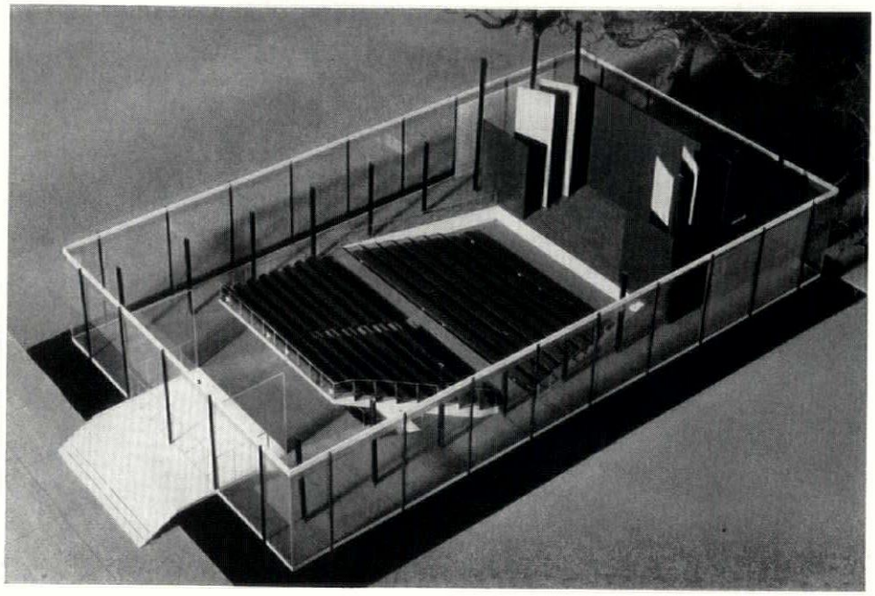
The assembly-hall and two gymnasia together form one block; everything else—even the caretaker's house—is contained in a 3-storey teaching block, nearly a hundred yards long. The two blocks are connected by a covered way, which continues through to the main entrance. The school employs the decentralized 'House' system. The four house-rooms are on the first floor, where meals are also eaten. Two serveries each serve a pair of house-rooms by lift from the ground-floor kitchen. The ground floor contains the caretaker's flat, the upper part of the 2-storey boiler-room, the kitchen, the administrative and staff rooms and, separated by a baffle lobby and a 9-in. brick wall, the metal and wood workshops. The first floor contains, besides the House Rooms and serveries, the main cloakroom accommodation, an Evening Institute and, above the workshops, all the laboratories. The top floor contains the library, the classrooms and the art room. The assembly-hall-gymnasia group is arranged symmetrically on the entrance axis. Changing-rooms separate the hall from the gymnasia. The hall has gallery and stage and a pyramidal roof. The water-tanks on top of the teaching block have the form of an inverted pyramid.

The teaching block is supported by a system of precast concrete mullions and beams at 3 ft. 8½ in. centres. Each mullion is cast in one lift about 40 ft. high, and no further finish is applied. 15-ft.-deep floor beams at each mullion span back to columns at similar centres on each side of a central corridor. Floor slabs are precast. The main entrance hall is faced in marble with the structure exposed above it. Here there are large precast beams, necessitated by the break in the grid and the load of the water tanks which is brought down at this point. End walls are white glazed brick. The assembly-hall is a steel frame structure, with glazing in heavy-section timber frames which take part of the wind load. The pyramid is faced with green slates.

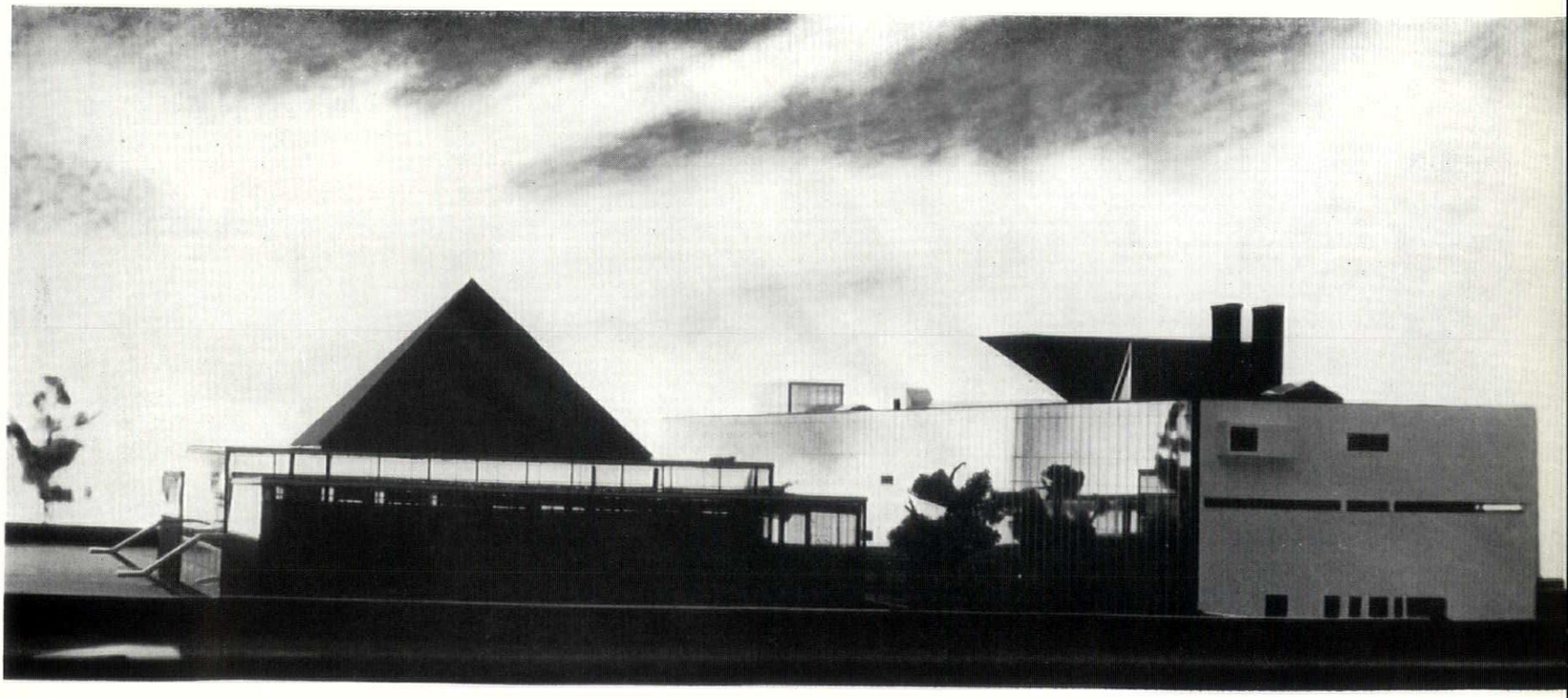


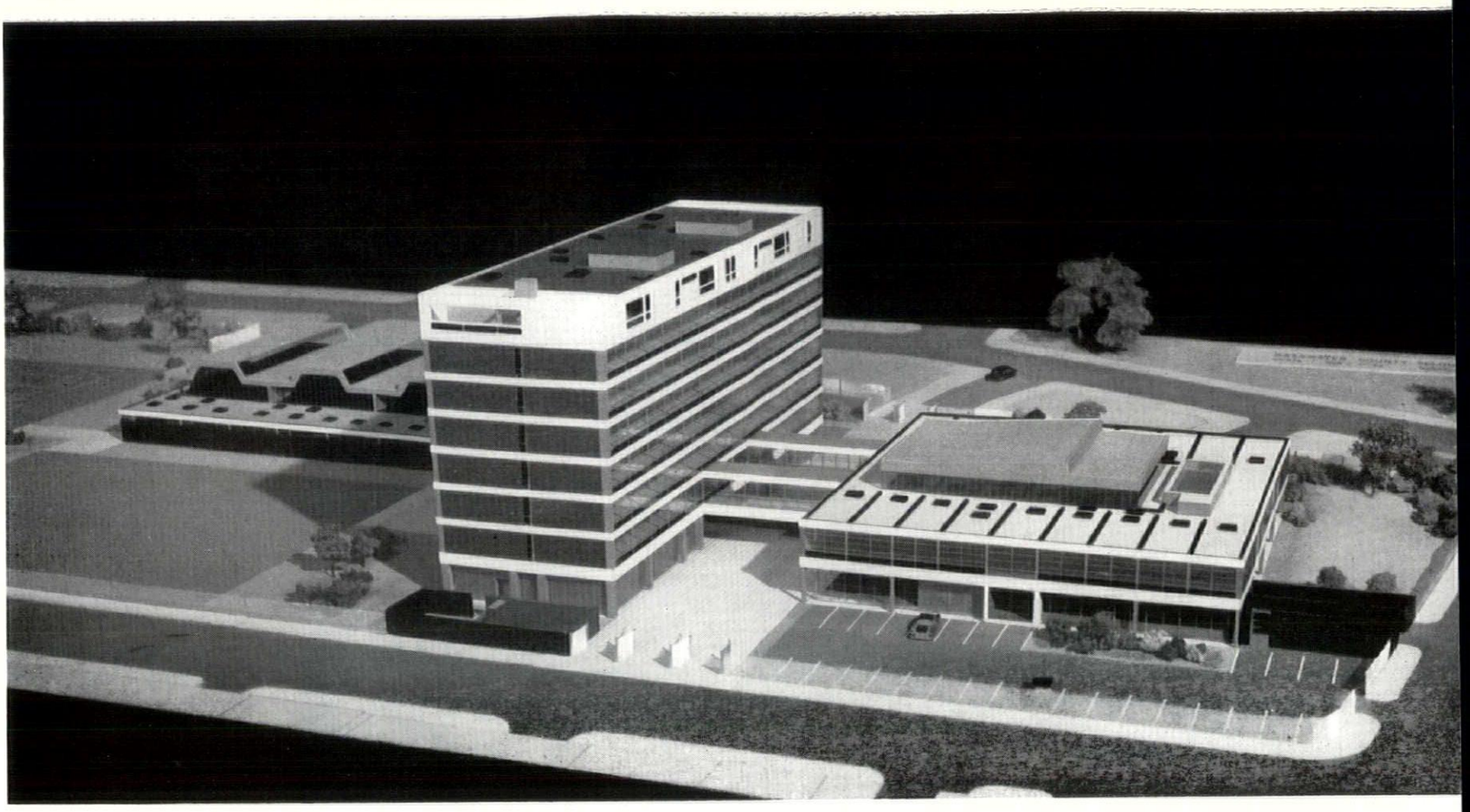


Assembly-hall for Radley College: above, two views from the direction of the entrance, which is behind the top row of raked seating; right, with the roof off, showing seating, access arrangements and stage.



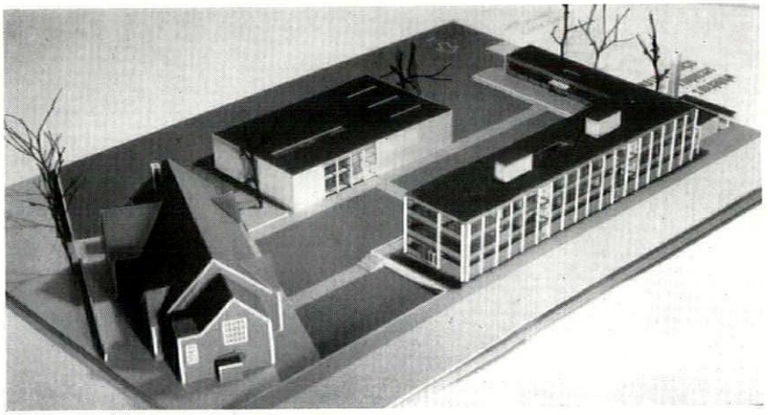
Below, secondary school in St. Marylebone. The assembly-hall with its pyramidal roof is on the left; the teaching block on the right.



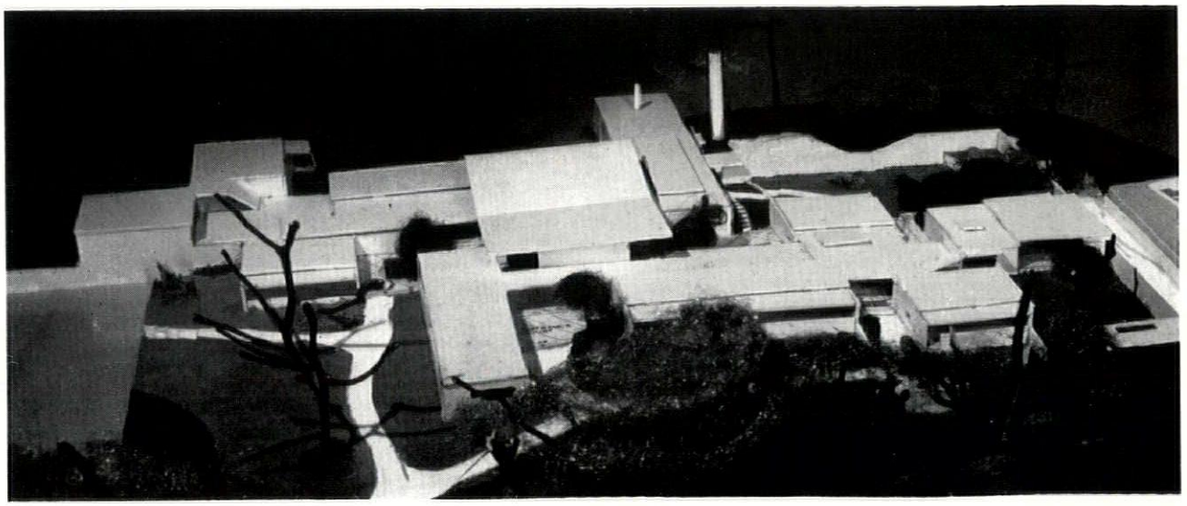


Above, secondary school, Paddington. In the centre is the 8-storey teaching block, on the right (linked to it at first-floor level) the assembly-hall and house block and on the left (partly behind the teaching block) the three gymnasia.

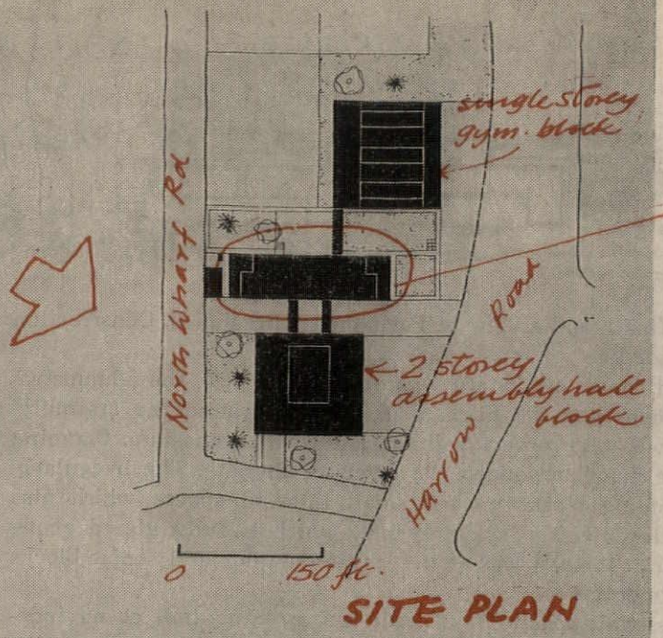
8. SCHOOLS



Left, secondary school, Harrow. On the left is the existing school.



Right, special school at St. Pancras for educationally subnormal children, with separate junior and senior departments grouped round a common assembly-hall.



SECONDARY SCHOOL: PADDINGTON

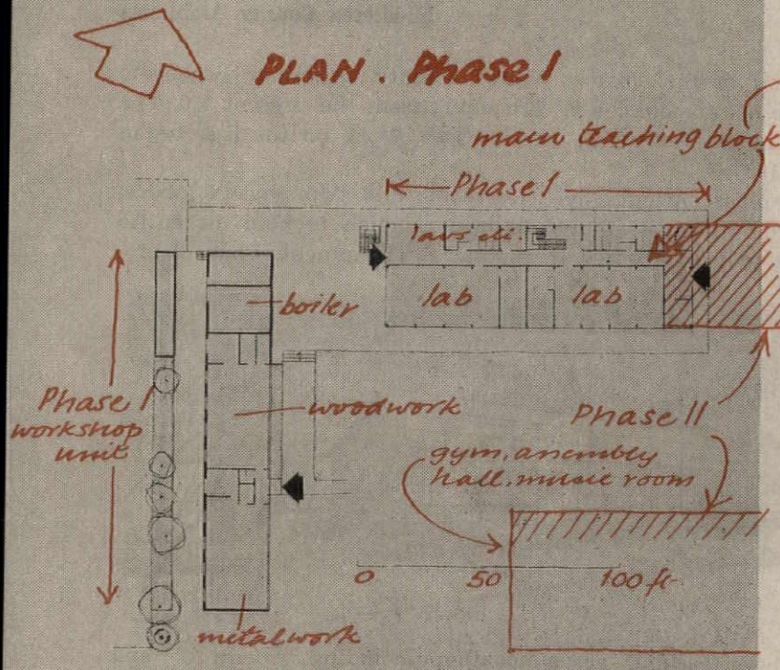
Hubert Bennett (London County Council Architect)

For 1,250 girls in North Wharf Road. It will start early this year.

Restricted availability of the site at the first stage has led to the adoption of a tall teaching block. This is of 8 storeys, and is linked at first-floor level to a 2-storey block containing an assembly-hall, house-rooms (also used for dining) and kitchen. Three gymnasia occupy another single-storey building. The tall block has two lifts and contains, as well as ordinary classrooms, laboratories, housecraft, art and administration rooms, a library and a schoolkeeper's flat.

Construction: reinforced concrete frame, with steel beams to roof the gymnasia and steel trusses over the assembly-hall. The cladding of the teaching block consists of metal windows set in wood frames with glazed coloured panels between. Structural mullions are painted concrete and perimeter floor-beams and top infill panels in gable ends are dark brick. The assembly-hall block is similarly clad except that the upper part of the hall has a deep timber fascia. The gymnasia block has glazed curtain-walling.

Architect in charge: J. M. Kidall. Job architect: E. Mendelsohn. Heating engineers: Roger Preston and Partners. Quantity surveyors: Reekes and Mann.



SECONDARY SCHOOL: HARROW

Elie Mayorcas (with C. G. Stillman, Middlesex County Architect)

A three-form entry mixed secondary modern school, accommodating 450 pupils, to be built in two stages: Phase I providing mainly the practical rooms and a few classrooms; Phase II the gymnasium, assembly-hall, and the majority of classrooms, including library and music-room. The site adjoins the existing school and is somewhat restricted so as not to encroach on the playing fields. Work started last July, and completion is expected in August.

Three main rectangular blocks form a rectangular court, with the present school closing the fourth side. The main teaching block, which also houses the administration, faces north and south, with the majority of teaching rooms on the south side. The communal block, housing the assembly-hall, gymnasium, etc., is parallel to the teaching wing, and the workshop unit, including the boiler-house, etc., is at right angles. The changing-rooms can serve both the gymnasium and assembly-hall, with easy access to the stage for dramatic performances. Dining-room, kitchen, etc., were not required as these already exist.

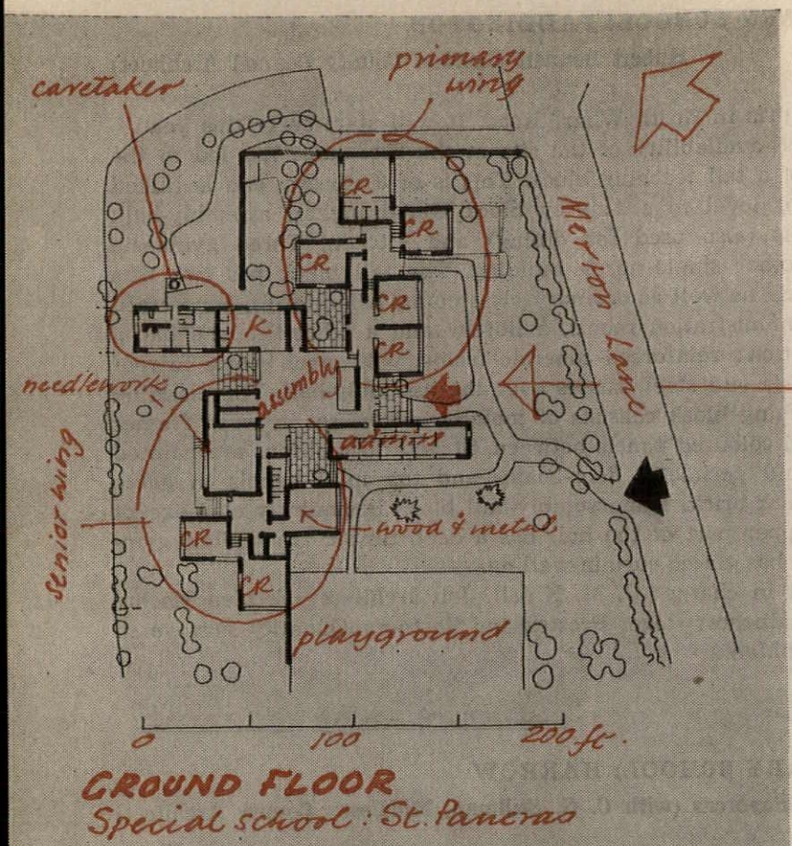
Construction: light steel frame, rustproof metal windows with exposed aggregate precast concrete panels below cills, backed by lightweight concrete block walling; suspended floors in precast reinforced concrete units, with exposed fair-faced concrete perimeter beams at floor levels. External cladding: exposed aggregate precast concrete panels, except workshop block which is mainly brick. Roofs are strawboard slabs on timber purlins

Assistant architects: John Hoile and Michael Pollard. Quantity surveyors: Wakeman, Trower and Partners. Services engineers: Hoare, Lea and Partners.

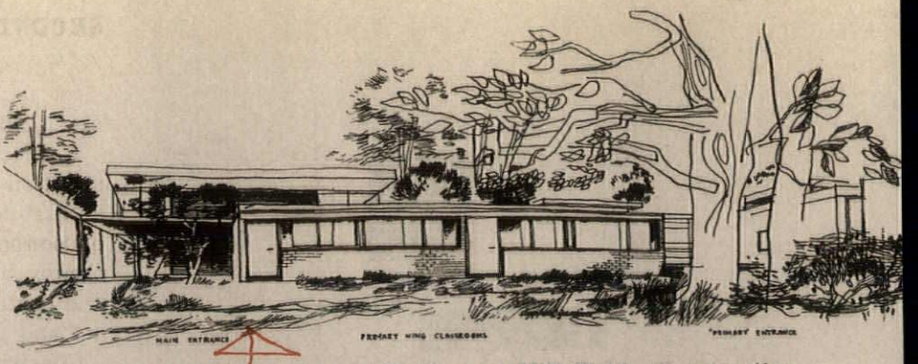
SPECIAL SCHOOL: ST. PANCRAS

Stephen Gardiner

A mixed school for 180 educationally subnormal children for the LCC. The site is in the north part of the borough on the boundary of Fitzroy Park. It is thickly wooded with a steep slope towards



GROUND FLOOR
Special school: St. Pancras

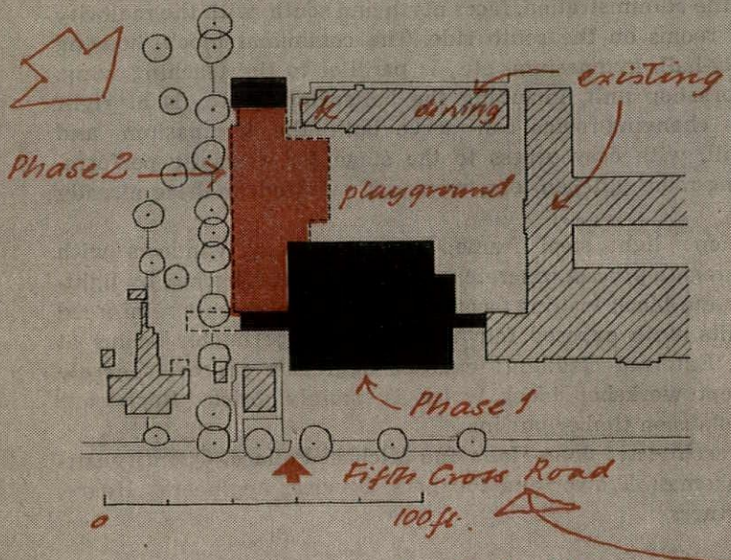


Hampstead Heath and a view of Parliament Hill Fields. Construction will begin shortly.

Junior and senior blocks are separated. These two, the administration department and the kitchen are grouped round the assembly-hall, which will also serve for dining and as a gymnasium. Planning is all on one floor but follows the levels of the site. The irregularly planned teaching blocks enclose small internal spaces which also step down the site. The assembly-hall, which is fully glazed above 9 ft., looks into these spaces at the corners. Junior and senior blocks have separate entrances.

Brick cross-wall construction, with the assembly-hall as an independent structure. Classrooms have a raised central portion to give clerestory lighting and windows consisting of a low strip of sliding sections. Windows are wood.

Electrical and heating consultants: A. F. Myers and Partners. Quantity surveyors: E. C. Harris and Partners.



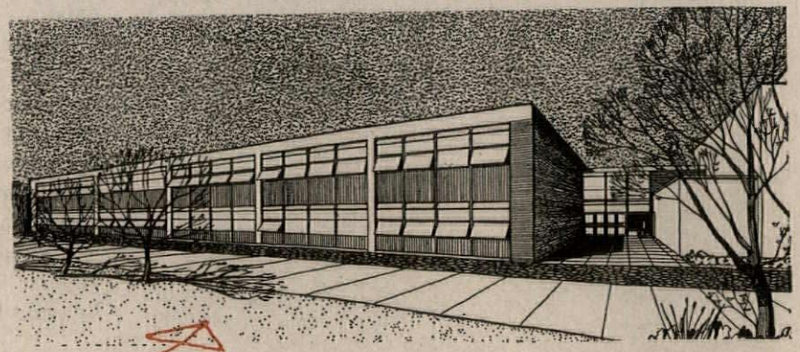
SITE PLAN

GRAMMAR SCHOOL: TWICKENHAM

J. M. Austin-Smith and Partners (with C. G. Stillman, Middlesex County Architect)

An extension of the Thames Valley County Grammar School to increase the accommodation to 720 pupils from the present 420. The work is to be carried out in three phases. Work on the first began in October, 1957.

The first phase includes five classrooms and two physics laboratories as well as an assembly-hall large enough to hold the entire school. This will be licensed for public entertainment. Phase 2 pro-



vides further teaching accommodation including woodwork and metalwork rooms, art and craft rooms, machine-drawing room, music-room and three classrooms. At the same time some alteration in the existing school will provide a library and rooms for the Evening Institute in the former assembly-hall, together with biology and chemistry laboratories. Phase 1 and the new work of Phase 2 form a wing to the existing school, to which they are connected at two levels. The third phase provides a new separate gymnasium block, at first

with only one gymnasium, but with cloakroom facilities adequate for a possible future second one. This building possesses its own boiler-house.

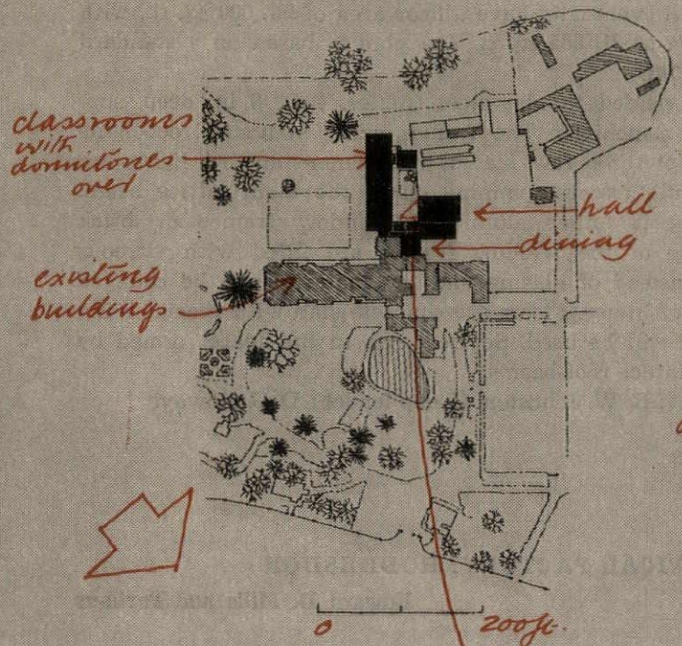
Construction: load-bearing brick piers. In the case of the class-rooms the floors and roofs are encased steel beams and cross-beams with infilling panels, spanning 10 ft., of precast concrete T-beams. The assembly-hall roof has an exposed welded angle-steel truss. External infilling panels are prefabricated full-height timber frames with metal frames to opening sashes. Panels beneath windows are vertical cedar boarding. The assembly-hall has external cladding of porcelain enamel sheets. The gymnasium block has a welded steel portal frame supporting a timber and wood-wool roof. The two-storey changing-rooms are within this framework. The internal gymnasium walls are Uxbridge flint bricks.

SPECIAL SCHOOL: PENN, BUCKS

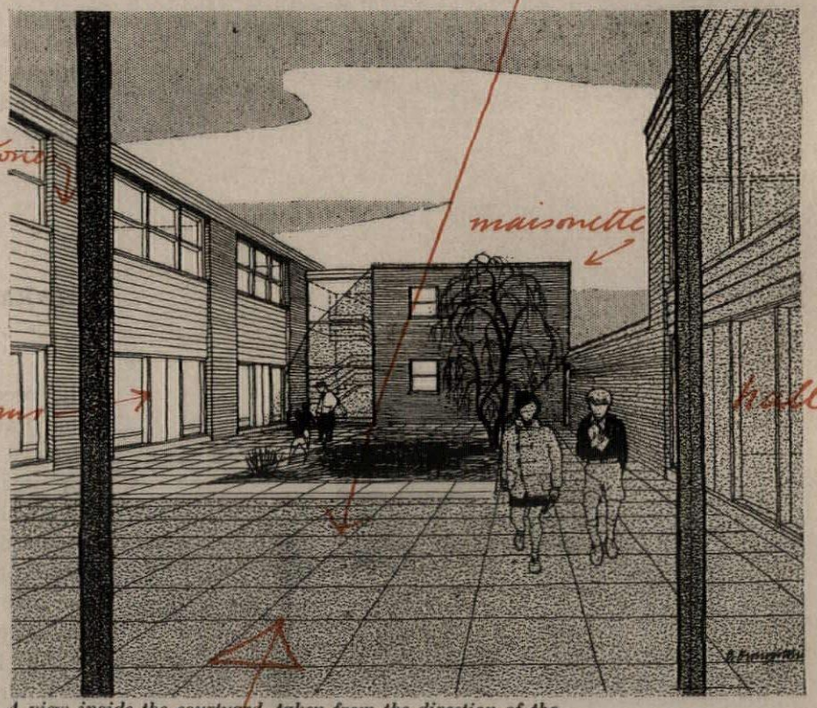
Stillman and Eastwick-Field

For the London County Council: a residential school for deaf and handicapped children, designed for use in conjunction with a country manor house which has already been converted as a special school by the LCC. Work is expected to begin this spring.

The buildings are grouped round a courtyard, and arranged to give direct access from the house at two levels. They include class-



SITE PLAN



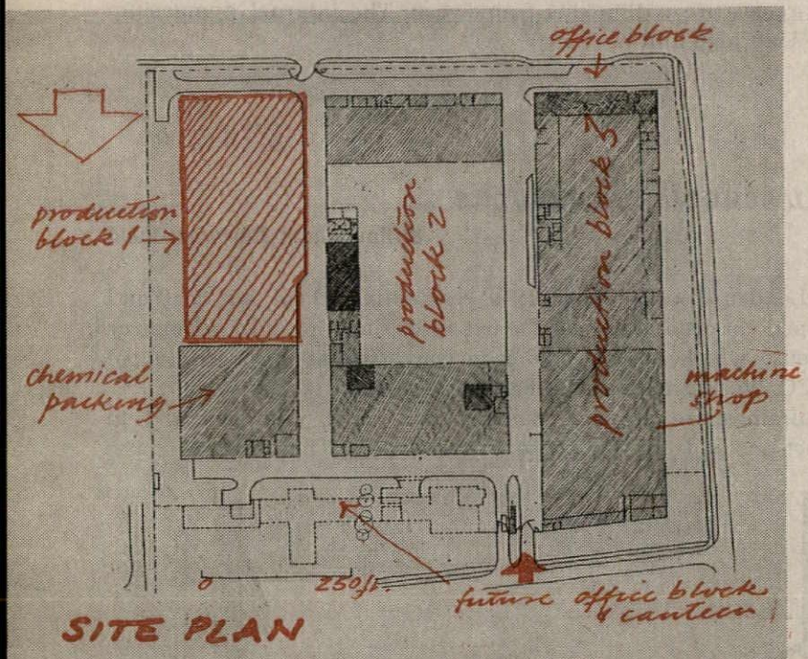
A view inside the courtyard, taken from the direction of the link with the existing manor house.

rooms, assembly-hall, dining-room and kitchen and dormitories, together with a headmaster's house and assistant headmaster's maisonette.

Construction: load-bearing brick cross-walls with precast concrete floors. The classrooms are lined internally with acoustic absorbent material to facilitate the use of deaf-aid equipment supplied from trunking in the floor. External finishes are bright red brick to match the house, and natural Western Red cedar fascias and cill panels. Joinery is painted white.

Associate in charge: David Brain. Quantity surveyors: Davis, Belfield and Everest.

9 INDUSTRIAL AND COMMERCIAL BUILDINGS



SITE PLAN

FACTORY: BASILDON

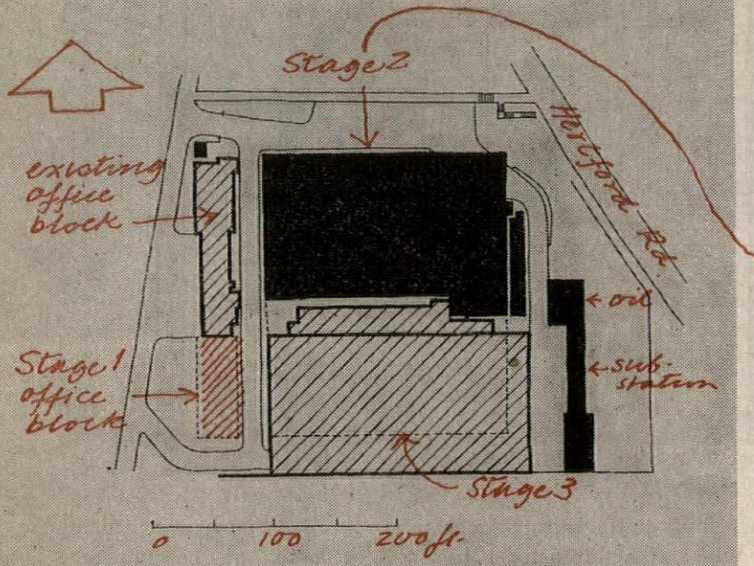
A. B. Davies (Chief Architect, Development Corporation, in succession to N. Tweddell)

For Ilford, Ltd., in the No. 1 industrial area of the new town. Work began last July and is expected to be complete by February, 1960.

The factory will eventually have a floor area of 507,000 sq. ft., with a production area of 313,565 sq. ft. The plan is based on a standard grid of 40 ft. by 40 ft.

Construction: welded tubular steel frames, 4 ft. 6 in. deep, supported on steel stanchions. The frames carry standard roof-lights 28 ft. long, except for a few places where non-standard lights are fitted to steel infill frames spanning on to the main lattice beam. External walling is either aluminium window frames or brick panels, but some of the window frames are filled with vitreous enamel panels instead of glazing and the material can be changed to allow flexibility in use. Floors are concrete slab with special tiling where chemicals will be used. Services run in the space formed by the depth of the lattice roof-beams.

Senior architect: R. W. Johnston. Group leader: D. Galloway.



SITE PLAN

PHARMACEUTICAL FACTORY: HODDESDON

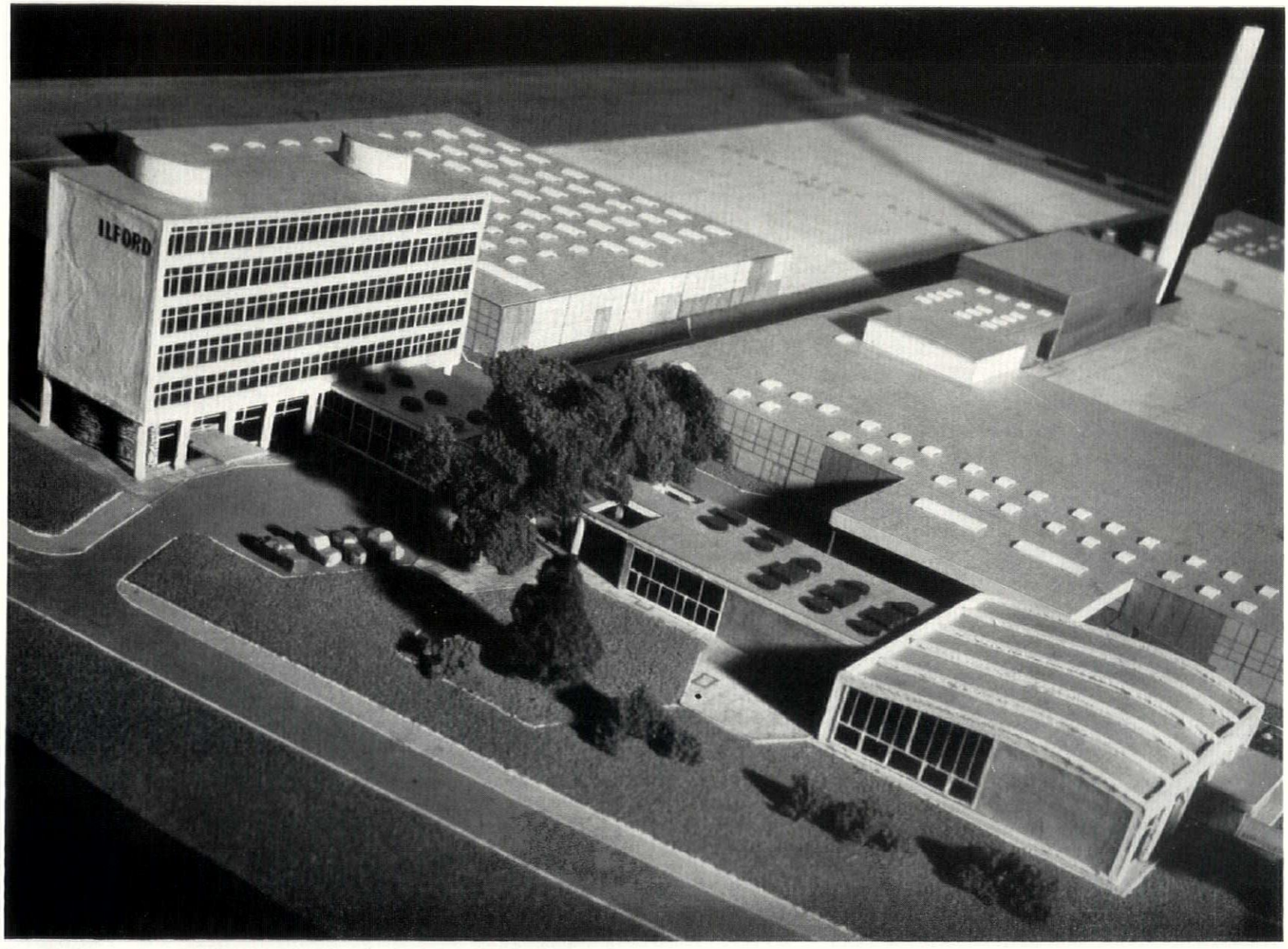
Edward D. Mills and Partners

The reconstruction in three stages of the existing factory of Merck, Sharp and Dohme, Ltd., makers of tablets, ointments, etc. Stage One, already in hand, is a small brick office block to be used temporarily for storage to enable the first part of the present factory to be demolished. Stage Two, illustrated herewith, is the first half of the production unit and replaces existing hutted accommodation. Construction has begun and will be completed next autumn. Stage Three, the second half of the production unit, replacing existing laboratories and other buildings, will follow.

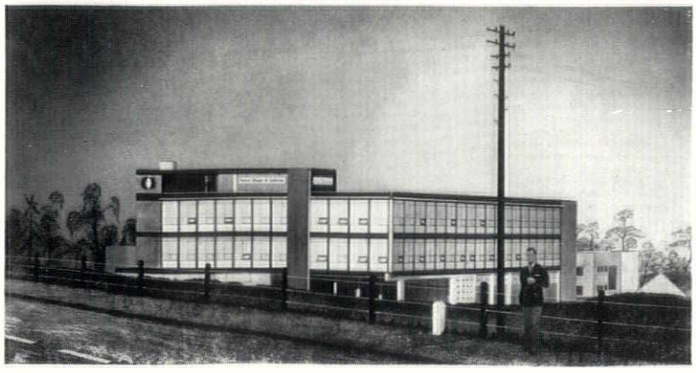
The 3-storey production building is designed with movable partitions to cater for possible changes in plant arrangement. Only the boiler-house, lavatories, staircases, etc., are enclosed with permanent brick walls. The ground floor contains the boiler-house, plant-room for the whole scheme, warehouse and packing and despatch departments; the first floor packaging areas, offices and a canteen; the second floor the main manufacturing area, largely air-conditioned and in part requiring to be completely sterile.

Construction: reinforced concrete frame with prestressed concrete roof and floor; metal windows, with brick or stove-enamelled steel sheet infilling. The external cladding is stiffened by steel sections forming mullions, which also support an overhead track for cleaning.

Assistant architect in charge: Graham Partridge. Consulting engineers: J. C. Hughes and Partners. Quantity surveyor: Leslie W. Clark.

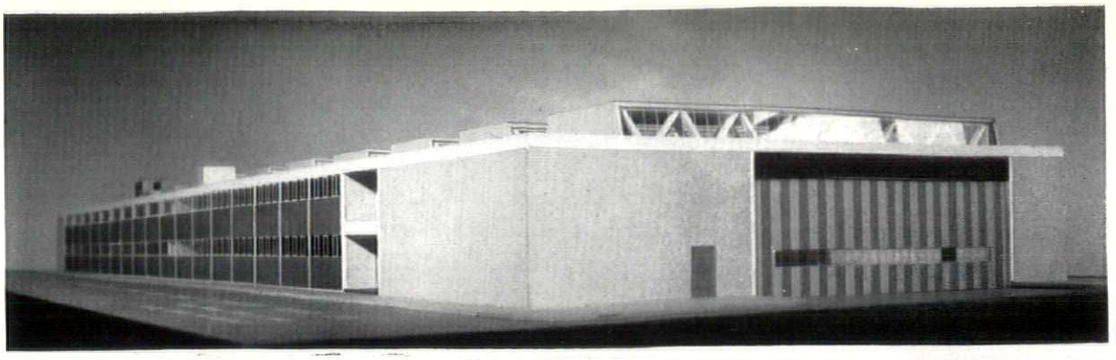


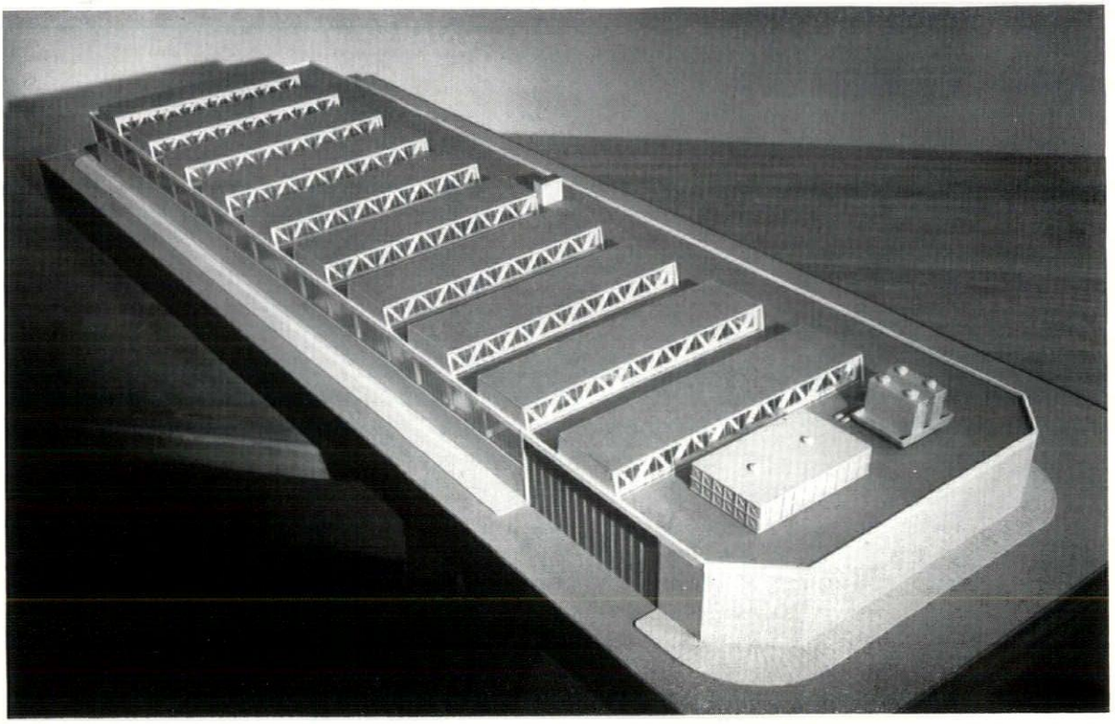
Above, factory in the industrial area of Basildon new town.



Factory at Hoddesdon: a three-storey production building to replace existing huts. It is part of a three-stage reconstruction of the whole pharmaceutical factory.

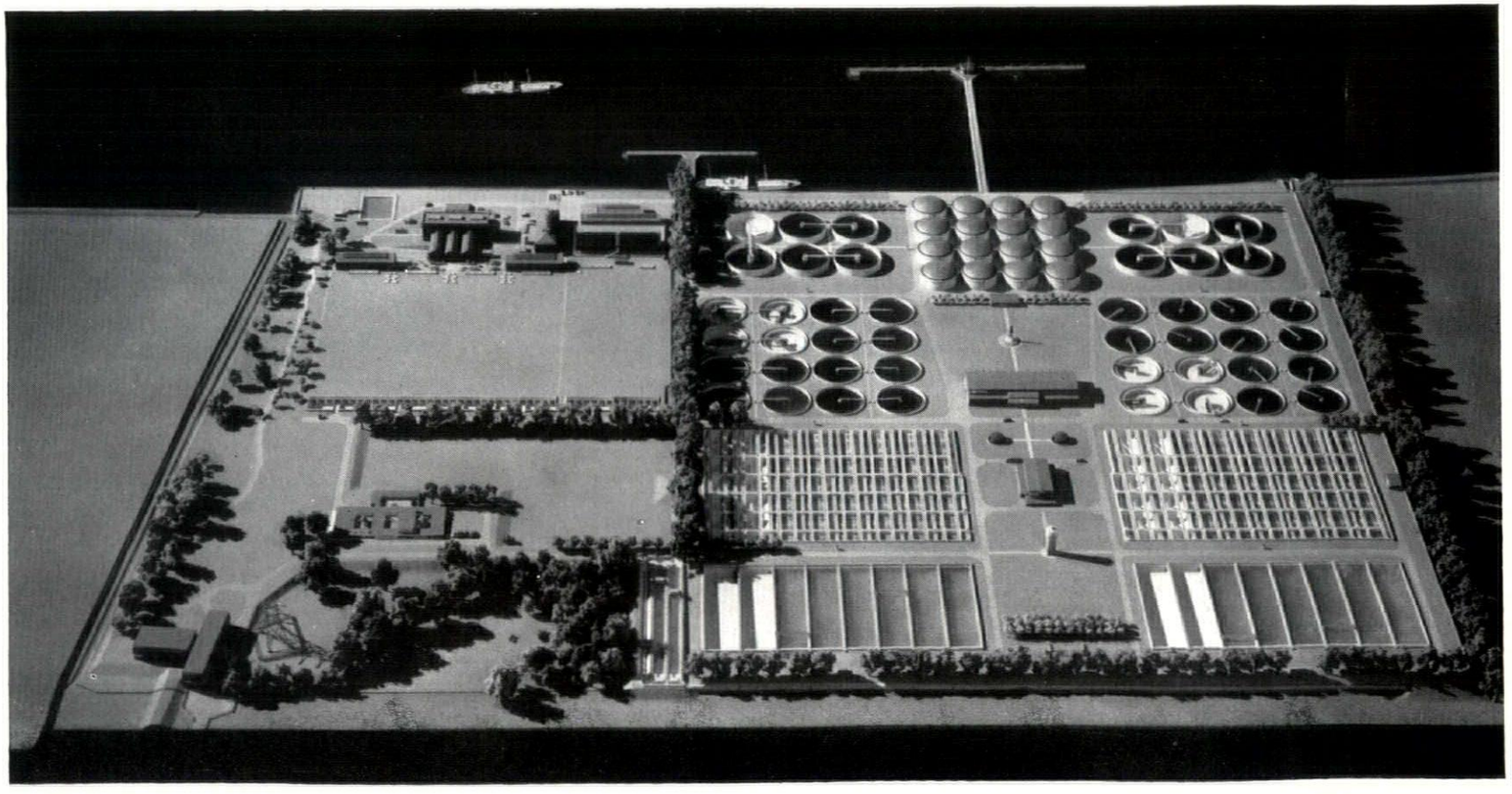
9. INDUSTRIAL AND COMMERCIAL BUILDINGS

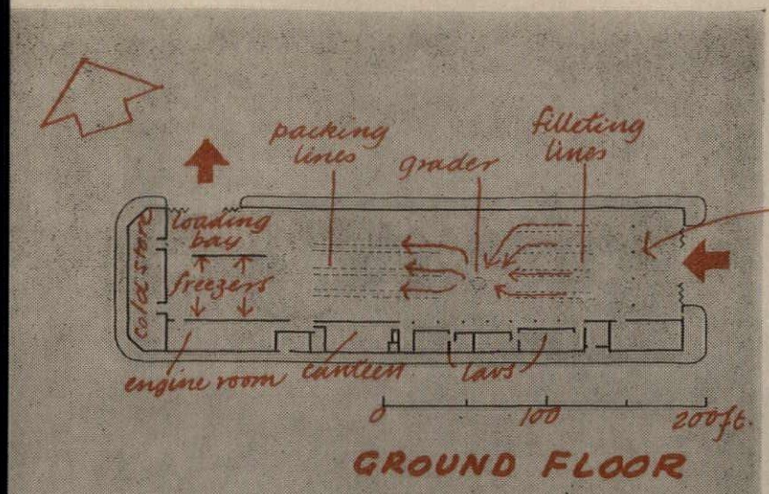




Fish processing plant at Grimsby. Top, showing, on right, doors for lorries leading straight into the production area and, on left, two-storey office and canteen area. Bottom, from above, showing roof-lighting of production area.

Below, sewage outfall works at Erith. The River Thames and jetty are at the top of the picture.





GROUND FLOOR

FISH PROCESSING PLANT: GRIMSBY

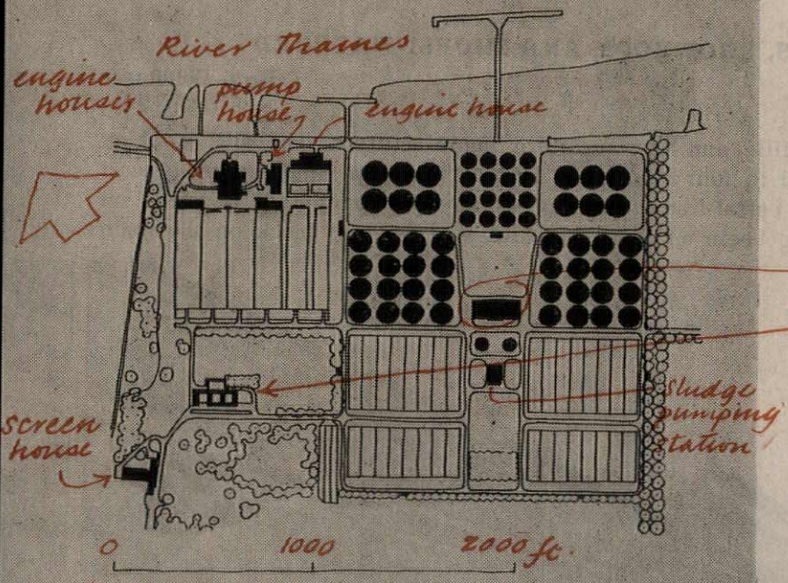
Manning and Clamp

For Associated Fisheries Ltd., on a site in Orwell Street, for the cold storage and processing of freshly caught fish. Capacity will be about 500,000 lb. of fish a day. 300-400 workers will be employed. Accommodation includes a canteen. Work began last June and is due for completion this June.

The main production area has a completely unobstructed floor. A parallel area, 2-storeys high, of the same total height as the production area, contains offices, lavatories, stores, engine-room and the canteen; also a first-floor gallery overlooking the production area. This is planned so that six 10-ton lorries can be unloaded at the same time at one end and the same number loaded at the other (despatch) end.

Construction: precast concrete sections carried on 70-ft. span concrete trusses formed from 10 ft. sections stressed together by high-tensile steel cables, protected from corrosion by the concrete. The roof shape is designed to provide uniform daylighting without glare. The roof is fully insulated. Service mains are incorporated in it so that water, electricity and other supplies can be dropped at any point.

Consulting engineers: Jenkins and Potter.



SITE PLAN
Sewage Outfall: Erith

SEWAGE OUTFALL: ERITH

Hubert Bennett (London County Council Architect)

An extension to the LCC's Southern Outfall works at Crossness, making them one of the largest in Europe. They will serve a population of 1,600,000 and a drainage area of 44,400 acres. The plant (including screens, detritus channels, sedimentation tanks, aeration tanks, sludge digestion tanks and a jetty) has been designed under the control of the Council's chief engineer, J. Rawlinson. The architect has been responsible for all buildings above ground. They include a screen-house, sewage and sludge pumping stations, power-house and offices. The work has begun and will be completed by 1962.

The height of the buildings was determined by the need for a heavy gantry to hoist any machine clear of adjacent machines and to travel the length of the building. All structures had to be suitable for piled foundations. They are framed in reinforced concrete (consistent with the concrete engineering works round them), with brick panels.

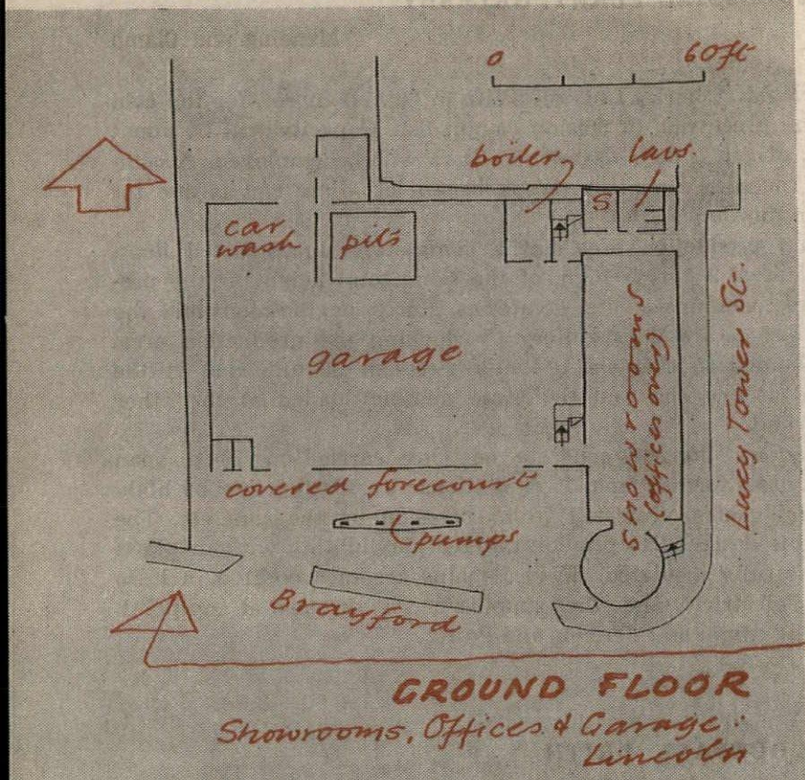
MOTOR SHOWROOMS, OFFICES AND GARAGE: LINCOLN

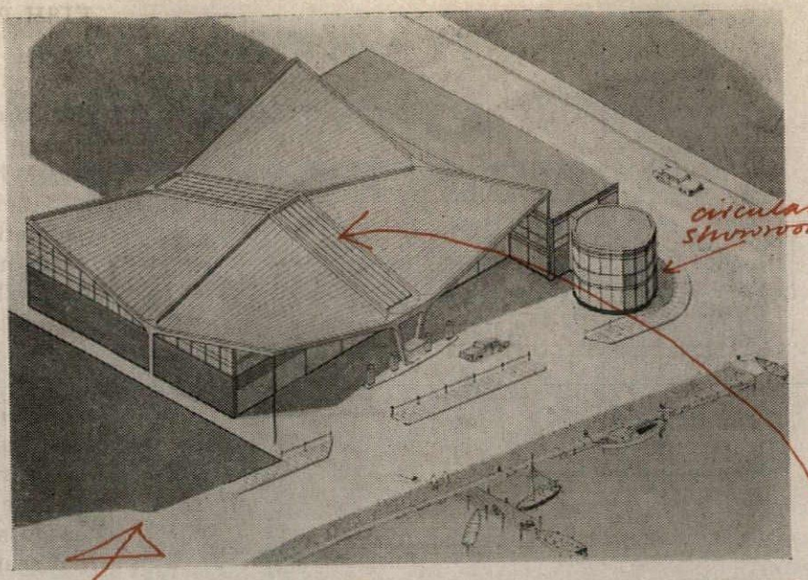
Denis Clarke Hall, Scorer and Bright

For the Lincolnshire Motor Co., consisting of a showroom for second-hand cars, a new-car showroom with rotating turn-table in the centre, offices, managing director's office and a board room above the showroom, and a garage. The latter is mainly for routine servicing of cars and lorries and the preparation of new cars for sale. Work began last spring.

The corner site faces south and east. Along the road frontage is a petrol filling island, part open, part covered. The partition behind it is mainly glass to allow for an extension of the showroom area if required. The petrol filling lay-by is on the south side and the car showroom on the east side, with through views to the road junction. At the rear is a yard containing the oil and grease store, etc.

Construction: the rectangular showroom and offices have an in situ concrete frame with prestressed floor units. The circular showroom and office is an independent structure consisting of a plate slab sup-





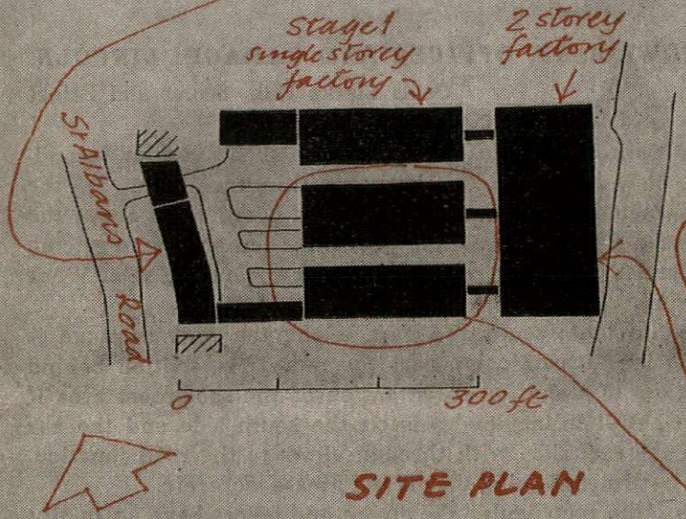
ported on five steel columns. The garage area and covered forecourt area is also a separate structure, of four columns supporting four hyperbolic paraboloid shells each 48 ft. square, separated by a roof-light running north and south.

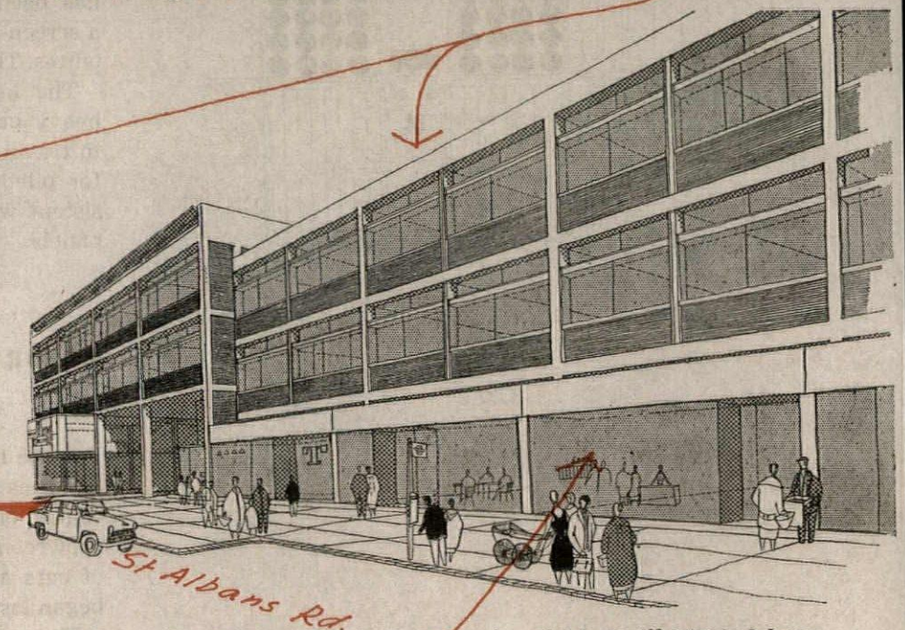
Consulting engineer: Dr. K. Hajnal Konyi. Quantity surveyors: Davis, Belfield and Everest.

OFFICES, SHOWROOM AND SHOPS: WATFORD

Ernö Goldfinger

For S. Hille and Co., furniture manufacturers. The site is being developed in four stages, the first of which, a single-storey precast concrete portal-frame building, is already completed. Construction is soon to begin on Stage 2, which is a 3-storey block on the main



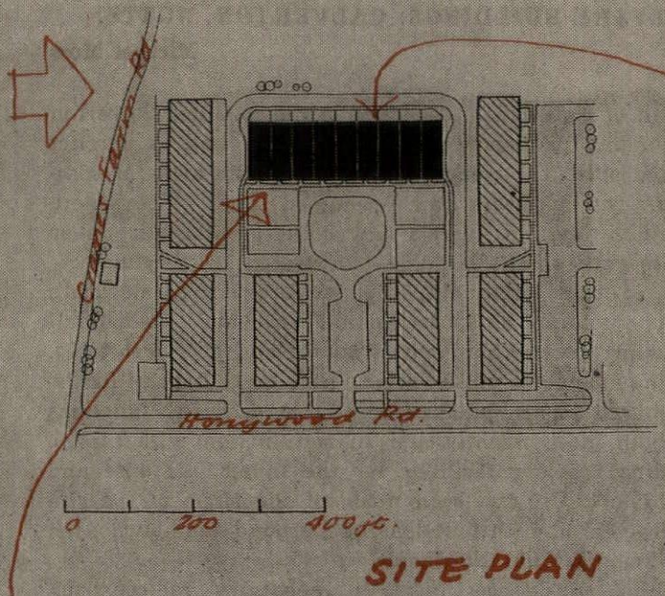


frontage to St. Albans Road. This block, which is illustrated here, bridges the access road to the factory and contains a showroom, offices and seven lock-up shops. Stage 3 will be a 2-storey factory building across the back of the site, containing the company's main workshops in some 40,000 sq. ft. Stage 4 will involve replacing some old brewery buildings, which are at present used as factory-space, by two new factory buildings.

The access road through the arcade requires 15 ft. 2 in. headroom, about 1½ times the floor-to-ceiling height of the shops. The ceiling

of the arcade is carried through to the showroom where the volume is further divided by a mezzanine over part of the area. The different levels of the office floors are integrated by the central staircase, each half-landing serving a floor.

The structure is a reinforced concrete frame, which allows maximum flexibility as the 18 ft. bays can be let as individual shops, or in larger groups where required.



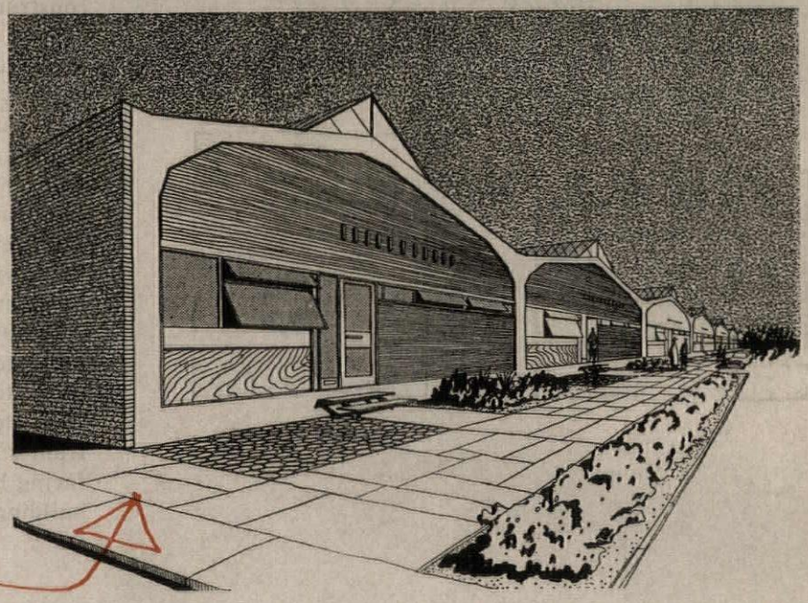
SITE PLAN

FACTORIES: BASILDON

J. M. Austin-Smith and Partners

A block of nine factory-bays, each of approximately 3,000 sq. ft. covered area, in the Nevendon industrial estate of the new town, to be used, separately or together, as leasehold factory space. Work began last July.

Construction: a standard precast concrete frame with concrete stools added to take the central glazing purlin. Offices, lavatories, etc., are



planned within the main structure with storage space above them.

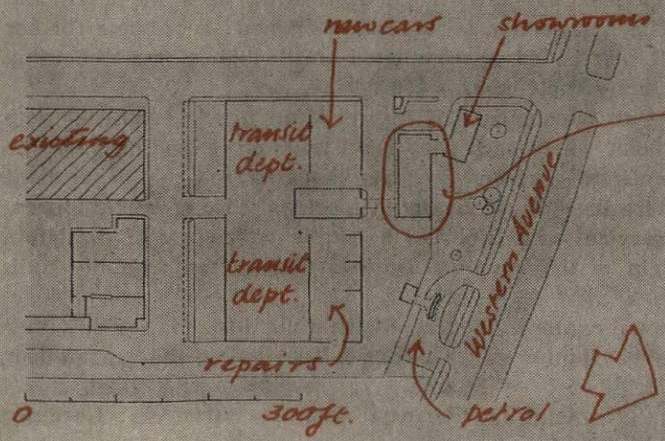
Designed in association with A. B. Davies, chief architect-planner to the new town.

CAR DEPOT: ACTON

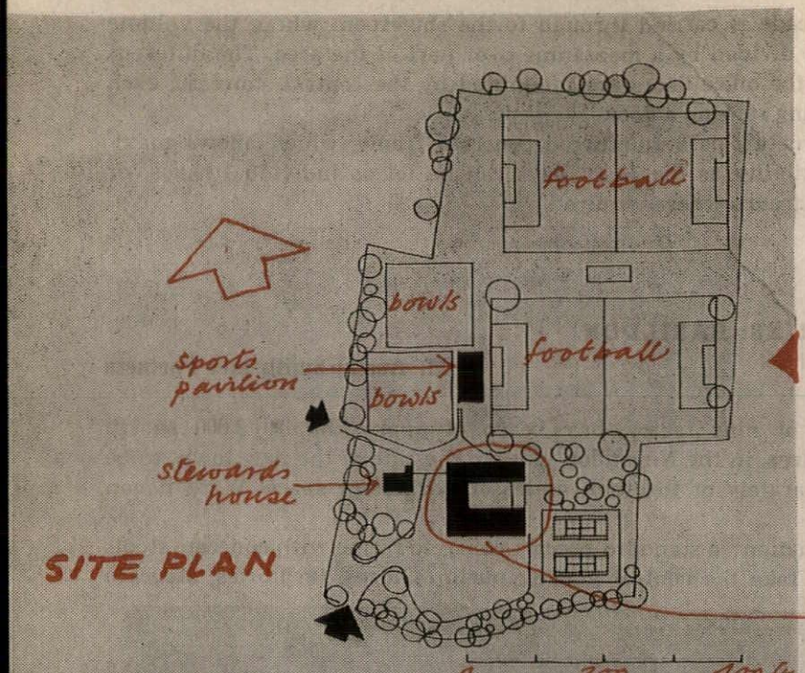
Clifford Tee and Gale

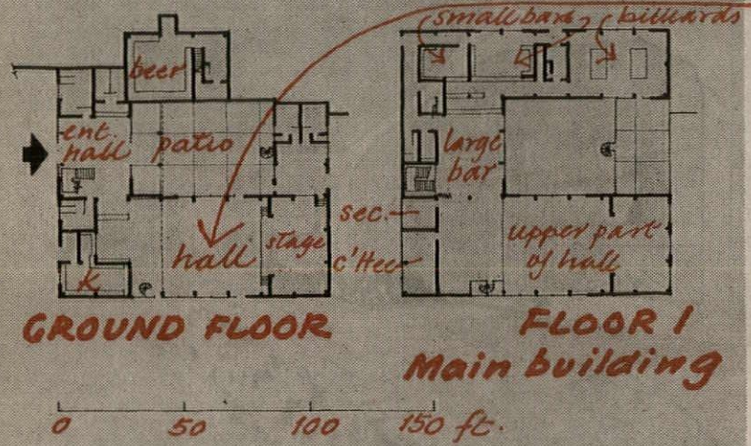
For Renault, Ltd., on Western Avenue: a group of buildings comprising transit shed to receive finished Dauphine cars from the existing assembly block, a car delivery and repair shop, an office block and a showroom and reception building. Work began last November and will be finished in September this year.

The transit shed, of 28,000 sq. ft., is 16 ft. high to underside of roof truss and is built in two bays of light steel framing with cavity brick walls at base and corrugated asbestos sheeting above. The delivery and repair shop of 14,000 sq. ft. has a single bay of similar construction but with continuous glazing over a dwarf cavity wall, insulated aluminium siding and asbestos roof. The office block has two storeys constructed of a light steel frame on a 10 ft. grid without internal stanchions to allow flexibility of subdivision. Floors are open-web steel and roofs wood-wool slabs. It has curtain-wall cladding. The showrooms also have a light steel frame, with plate-glass cladding in



SITE PLAN





timber and stainless steel mullions, clear of structural stanchions. Floor and roof slabs have marble fascias. Access to showrooms for display cars is by means of a removable ramp and sliding plate-glass doors.

Partner in charge: S. H. Fisk. Executive architect: J. C. Tilley. Associate designer: A. C. Hills. Chief assistant: W. J. Daniels. Structural engineers: C. B. Brown and Partners. Mechanical engineers: G. H. Buckle and Partners.

MINERS' WELFARE BUILDINGS: CALVERTON, NOTTS.

Michael Moss

Eight miles north of Nottingham. The site is the existing Calverton Hall and surrounding park land of 13 acres. The hall is derelict and is to be demolished. The colliery, just over a mile away, is comparatively new. The pit-head baths, canteen and offices were completed soon after the war, and a new colliery village is under construction. Site-work on the buildings illustrated has begun.

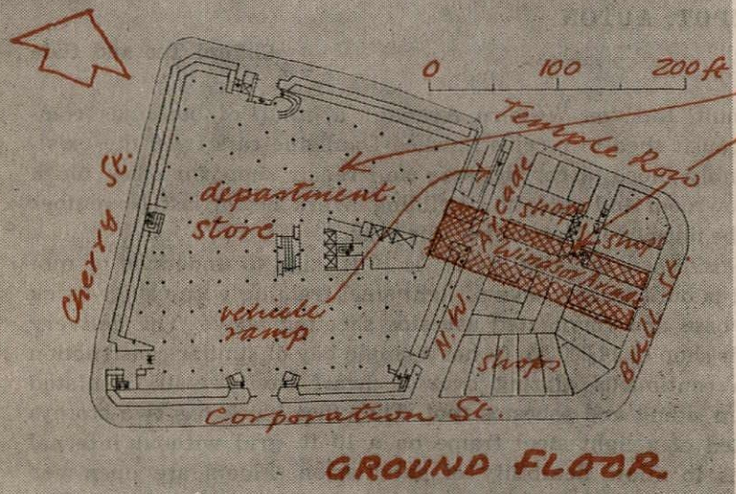
They consist of three buildings, the welfare-centre, steward's house and sports pavilion. The sports ground will have two football pitches, two bowling greens, hard tennis courts and a cricket table. The main building includes a multi-purpose hall, three bars, billiards-room and committee rooms, planned to enable different functions to take place both independently and in conjunction with others. The main building provides facilities for the miner, his wife and children and old folk. Use has been made of the slope of the site to provide road access at both first-floor and ground-floor levels, the basement cellar being cut into the hillside.

Expected mining subsidence makes it necessary to construct separate sections of the main building on independent reinforced concrete foundations. The structure is steel framed with a prestressed concrete first floor and steel roof decking. Windows have timber frames with metal opening lights. External cladding, which includes facing bricks, will be predominantly grey, black and white. The main building has electric underfloor heating.

DEPARTMENT STORE AND OFFICES: BIRMINGHAM

T. P. Bennett and Son

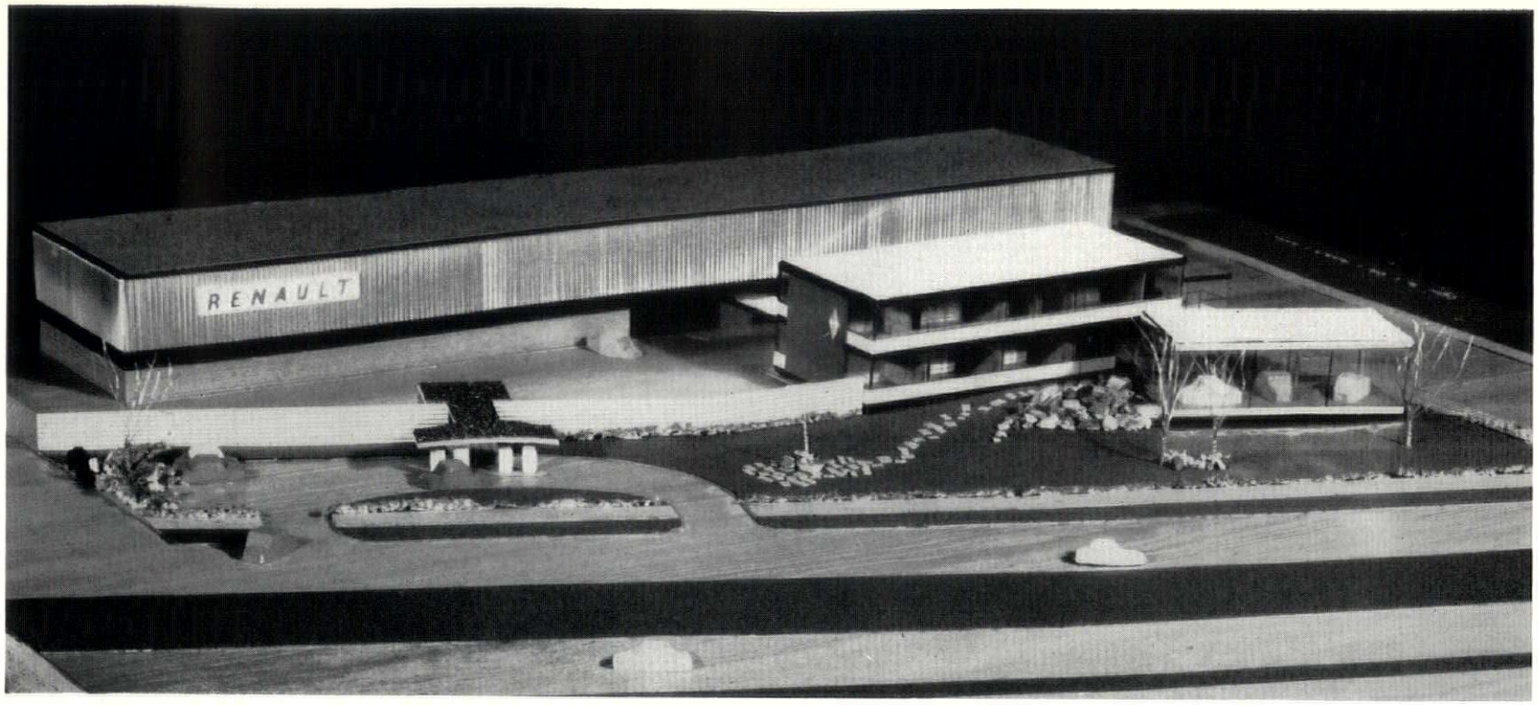
For Rackhams (Harrods) Ltd., on a central site bounded by Corporation Street, Bull Street, Temple Row and Cherry Street and overlooking St. Philip's Churchyard to the north. The development, by Harrods of Brompton Road, comprises a large 8-storey department store, an arcade of lettable shops on the site of an existing arcade system and a 9-storey office block oversailing both the store and the shops. The first section is just being opened; successive further sections will be opened as completed until 1961. Some remaining areas will not be completed until 1967.



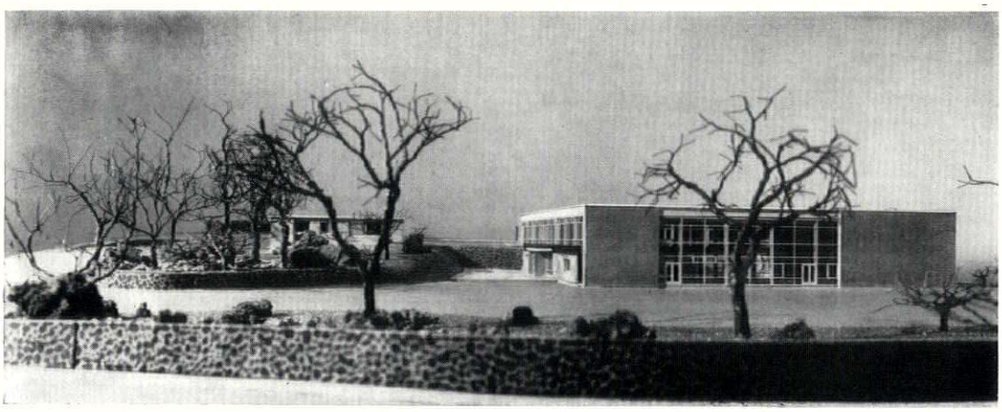
The service to the shops is by means of an internal vehicle ramp to the first floor, where each shop has a section of loading bay. The ramp continues to a second-floor service area for the department store. The store itself is planned with a central core of vertical circulation and service, with lifts and a double corkscrew of escalators the full height of the building. There are restaurants on the sixth floor.

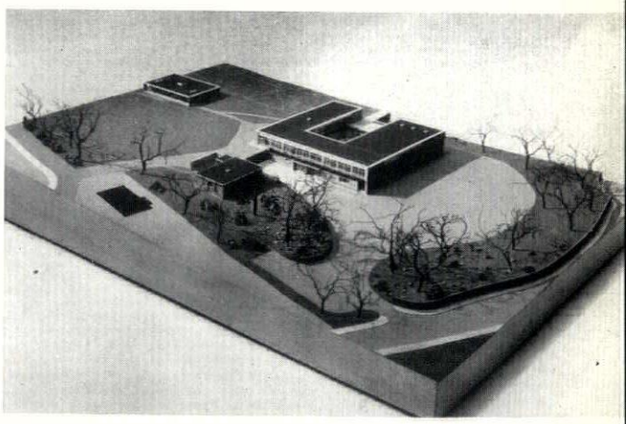
Construction: reinforced concrete with a piled foundation on either side of a railway tunnel which passes a little below the ground-floor slab.

Engineers: Ove Arup and Partners. Quantity surveyors: Gardiner and Theobald.

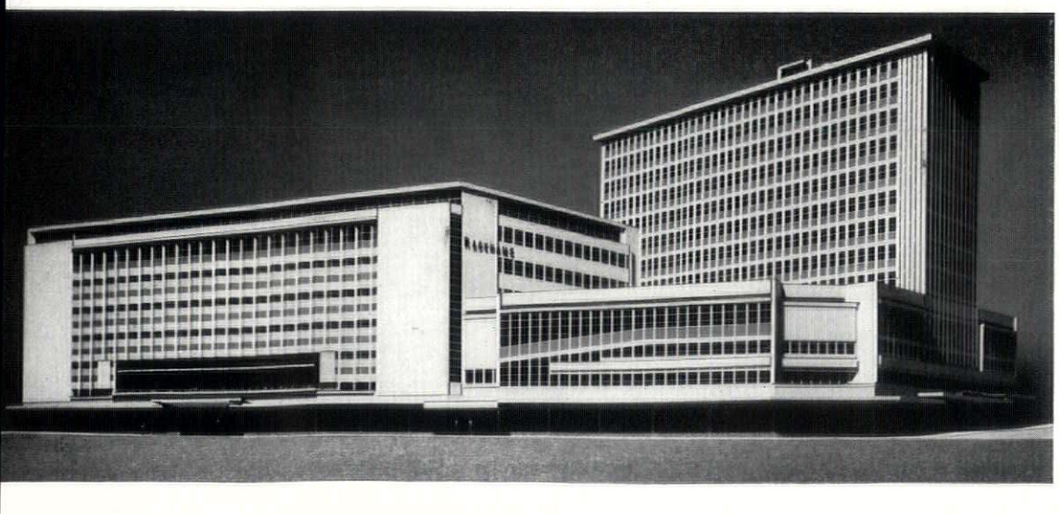


Above, Renault car depot on Western Avenue, Acton, by Clifford Tee and Gale. The office-block and showroom are on the right.



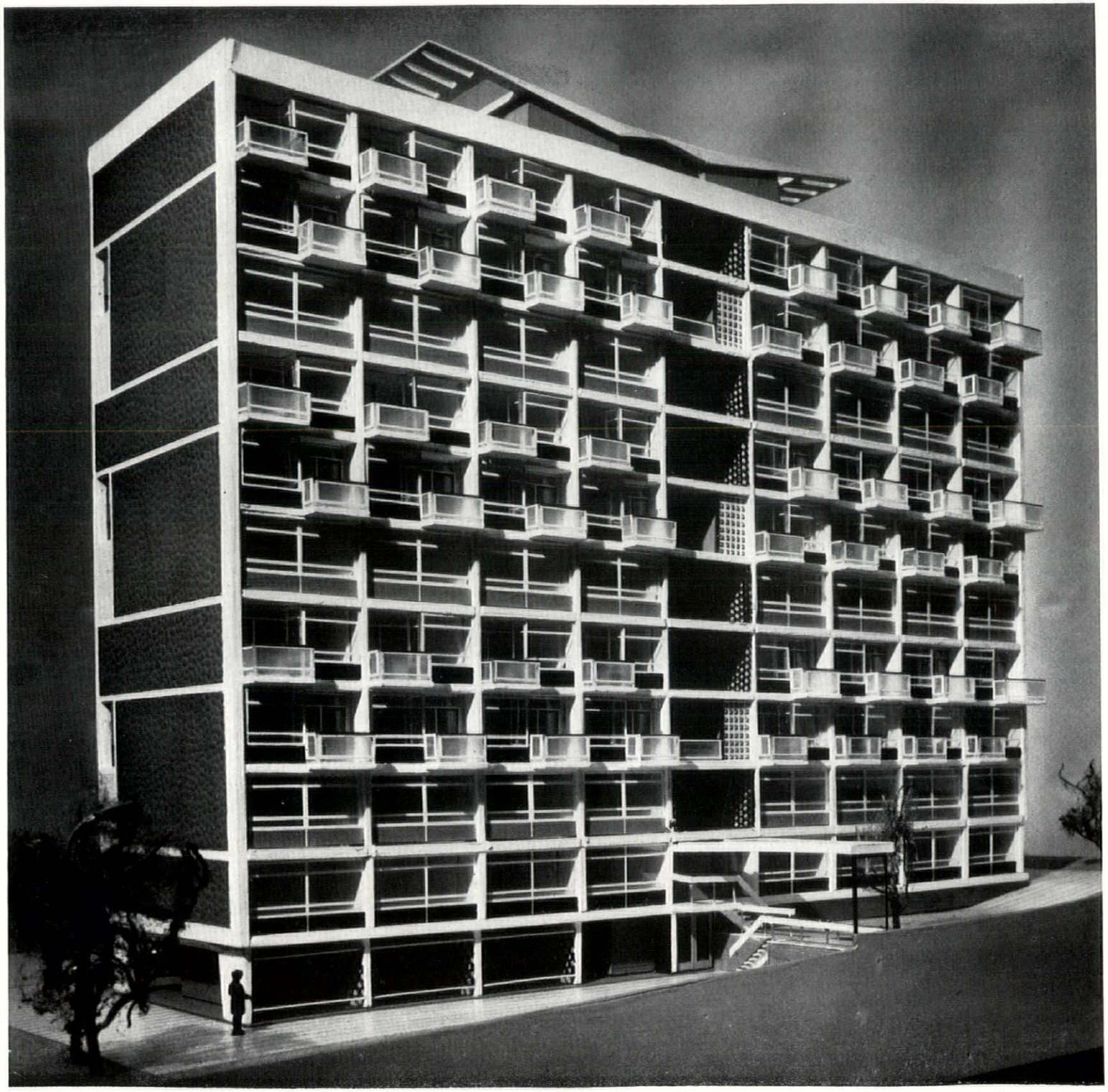


Miners' Welfare buildings at Calverton: above, the welfare centre, with the steward's house behind the trees on the left; between them can be seen the rise in the ground which allows direct road access to the upper level of the welfare centre. Right, looking down on the scheme, showing also the sports pavilion.

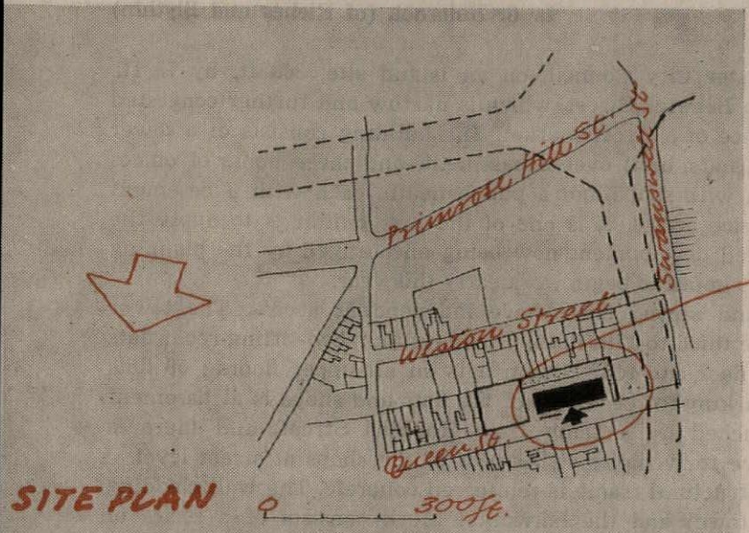


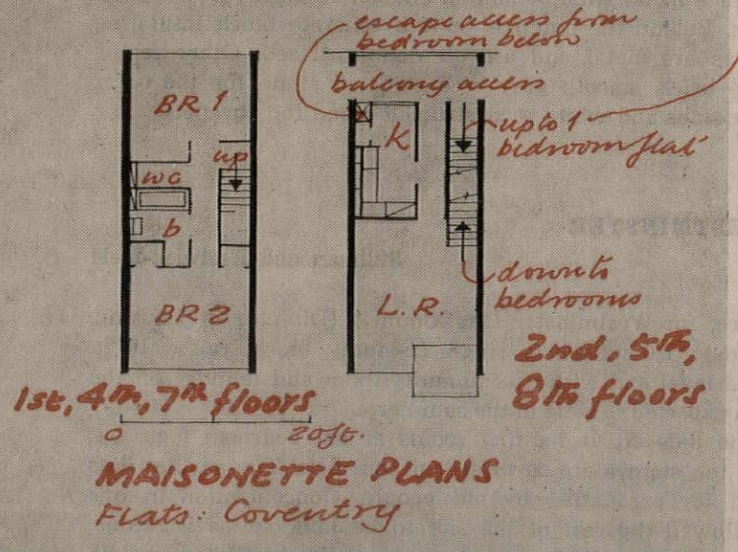
Department store at Birmingham: view from the corner of Corporation Street and Bull Street.

10 HOUSING



Ten-storey flats in the Hillfields area of Coventry: the facade containing the living-room windows. Access balconies run across the opposite facade. (See also the cover of this issue.)





CENTRAL AREA FLATS: COVENTRY

Arthur Ling (City Architect)

The new residential districts on the outskirts of the city being nearly complete, emphasis is now moving to the redevelopment of central residential areas. Two comprehensive development areas have been approved. This 10-storey block is for one of them, at Queen Street in the Hillfields area. Construction will begin this month.

The building contains 24 two-bedroom maisonettes, 24 one-bedroom flats and 8 bed-sitting room flats. Access to maisonettes is from balconies at second, fifth and eighth floors, and to flats by staircase from each of these levels. The same staircase well is used for the internal stairs of the maisonettes. A penthouse, containing lift machinery water-tank, etc., is designed to be seen from many parts of the city.

Construction: reinforced concrete frame with "no-fines" concrete infilling for party walls and in situ concrete floors. End walls have applied black aggregate finish between floor-slabs. Panels below windows are coloured glass. Windows are sliding. Living-rooms have electric floor heating. In the one-bedroom flats bathrooms and kitchens are mechanically ventilated.

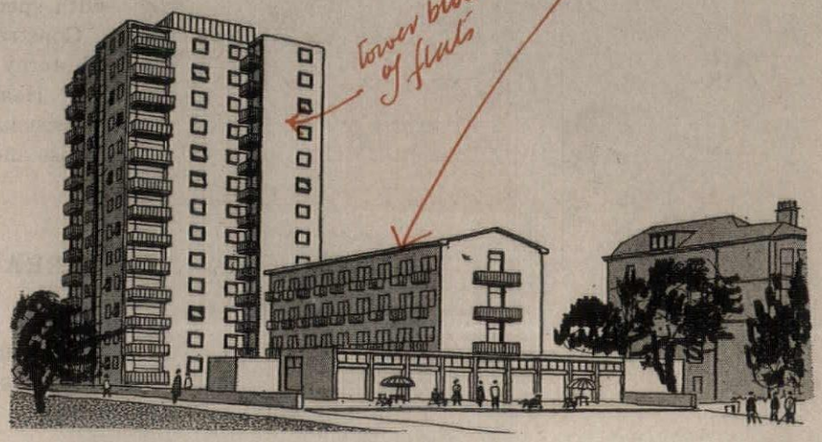
Principal architect: G. H. Morris. Group architect: C. Griffiths. Consulting engineer: Granville Berry (City Engineer and Surveyor).

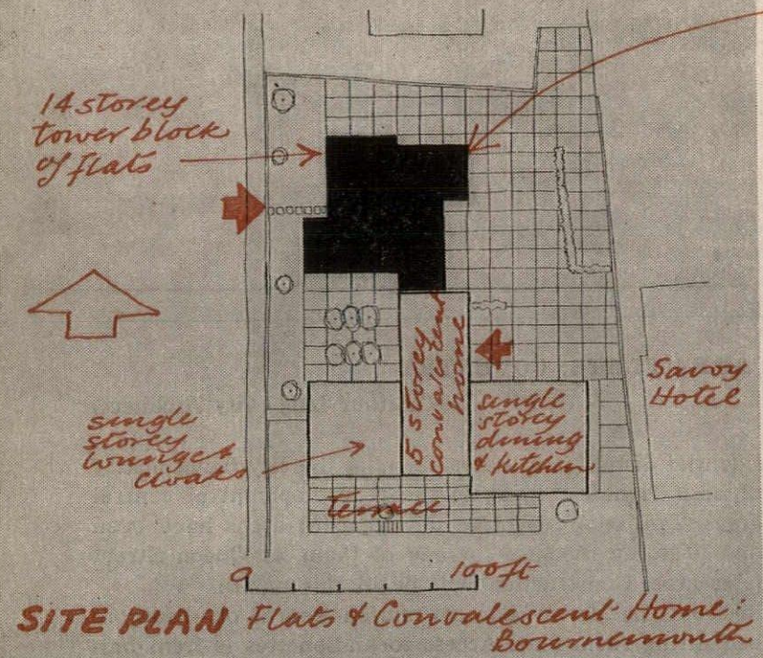
FLATS AND CONVALESCENT HOME: BOURNEMOUTH

Arthur Bailey

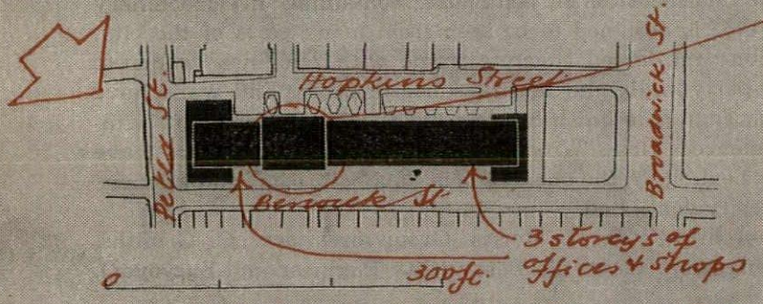
On the West Cliff, adjoining the Savoy Hotel. For the National Deposit Friendly Society and comprising a convalescent home, a tower block of flats and an underground garage. It is hoped to start work early this year.

The two superimposed buildings are independent except for shared heating and hot-water services. They have been planned to make the most of the sea-view and give privacy to the occupants. The convalescent home has 40 bedrooms, eight of which are double,

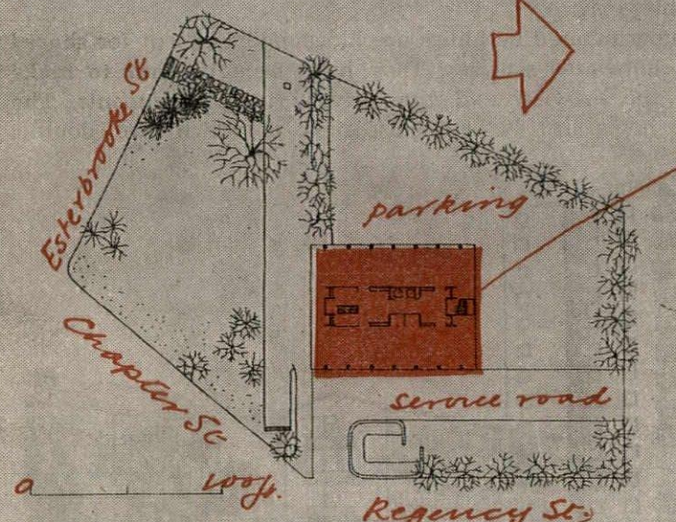




SITE PLAN Flats & Convalescent Home: Bournemouth



SITE PLAN Flats, Offices & Shops: Soho



SITE PLAN

matron's, deputy-matron's, staff and caretaker's quarters, separate men's and women's sitting-rooms, lounge, recreation-room, billiards-room and dining-room. The flat block has 3 two-bedroom flats on the ground floor and 4 two-bedroom flats on each floor above. The garage accommodates 34 cars.

Construction: reinforced concrete frame with 18-in. cavity walls faced with brick except the ground floor of the convalescent home which has quarry-faced Portland stone. Window and door frames are hardwood to resist the effects of sea-air.

FLATS, OFFICES AND SHOPS: SOHO, LONDON

L. C. Holbrook (of Riches and Blythin)

For Westminster City Council, on an island site, 300 ft. by 75 ft., fronting on to Berwick Street, which is narrow and further congested by the presence of a street market. The building consists of a tower of residential flats, built over a basement, and three floors of offices or workshops with shops and a pub beneath, each with a basement and rear service access. It is one of the first buildings to apply the policy of mixed development now being encouraged by the planning authority. It is hoped to begin work early this year.

The first and second floors have independent access. The tower rises from the third to 17th floor, providing four bed-sitting-room flats on the third floor and four 2-room flats on all upper floors : 58 flats in all. Car parking for occupiers of the flats and shops is at basement level, approached by a ramp from Hopkins Street, and there is standing space for vehicles at the rear of the shops at street level.

The main structural frame is reinforced concrete. The wall cladding of both the tower and the horizontal block consists of a series of prefabricated storey frames linked together with mullion posts. Each frame contains a metal window and an enamelled steel apron backed with asbestos. Behind the apron is built a concrete block insulating wall. Windows are metal and are all double glazed. Other facing materials are brick, smooth grey reconstructed stone for the outer edges of floor-slabs and white reconstructed stone for parapets.

FLATS: WESTMINSTER

Stillman and Eastwick-Field

In Hide Place, for Westminster City Council (Director of Housing, E. J. Edwards): 160 flats in a single 22-storey block, raised 16 ft. above ground level and with a community-room and laundry on the roof. Work is expected to start in the summer.

Most of the flats are bed-sitting rooms or one-bedroom flats, but in the lower ten storeys are 20 three-bedroom flats. The smaller flats are intended for occupation by old people. Concentration in one block has allowed the rest of the site to be laid out as a garden, with space for parking. Bathrooms are artificially ventilated and lit.

Construction: reinforced concrete frame with external cladding of storey-height precast concrete units with a white exposed aggregate. Heating is by electric floor panels.

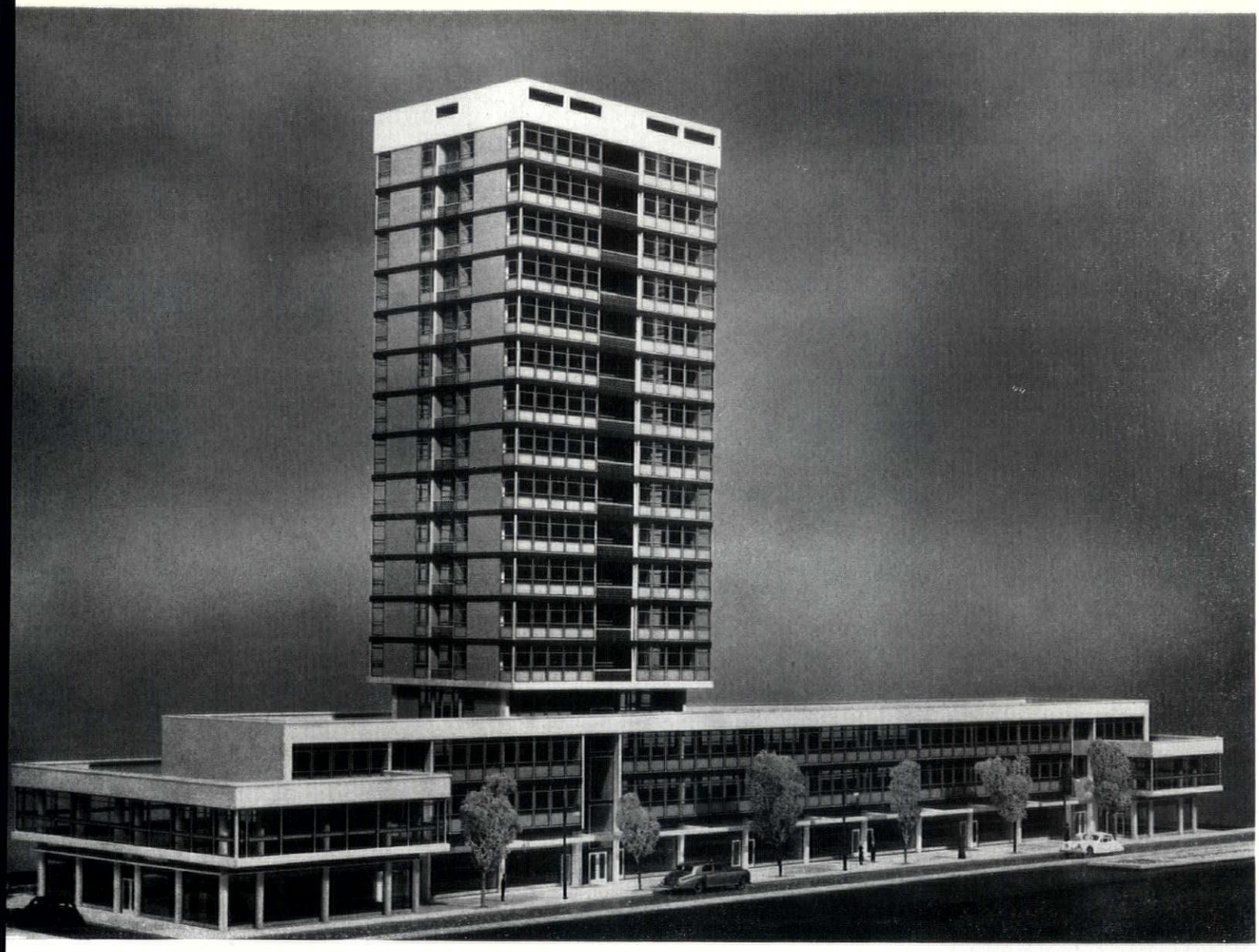
Associate in charge: R. Smorczewski. Structural engineers: Charles Weiss and Partners. Quantity surveyors: Harry Trinick and Partners.

BARRACKS: CHELSEA

Tripe and Wakeham

To replace the present Chelsea Barracks on the same site. The existing chapel will remain. Accommodation is provided for two battalions of footguards. Besides the living-quarters there are battalion

[*continued on page 67*

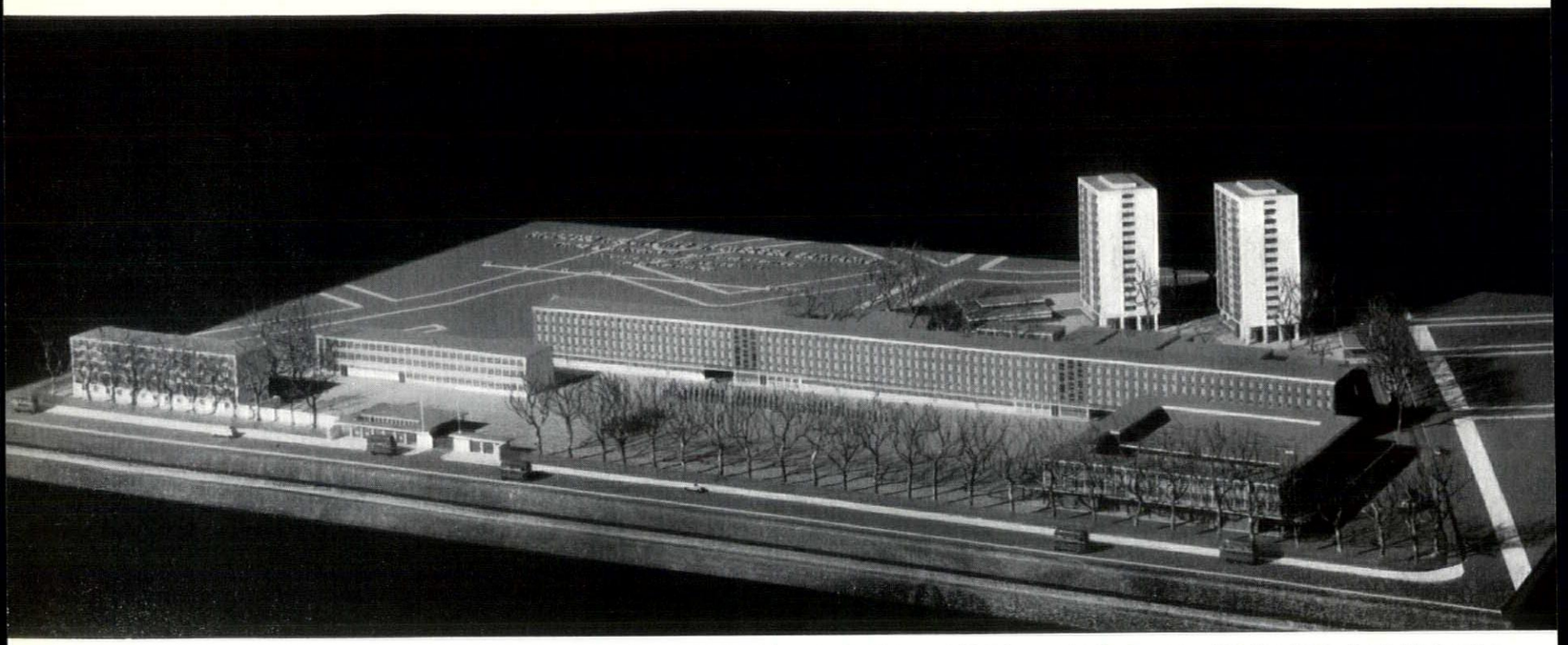




Left, twenty-two storey block of flats in Hide Place, Westminster, by Stillman and Eastwick-Field—see page 64.

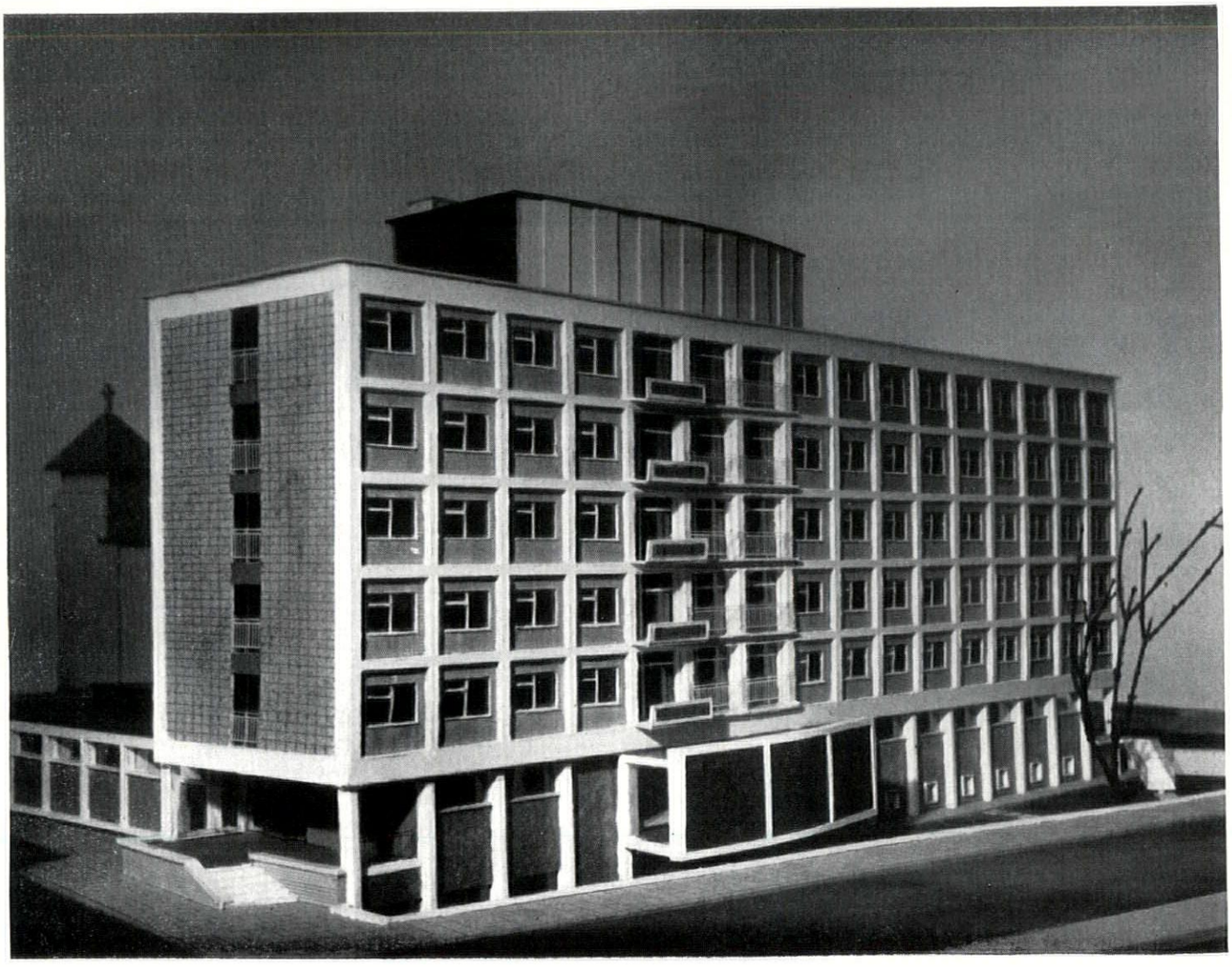


Mixed development in Berwick Street, Soho, by L. C. Holbrook, of Riches and Blythin—see page 64. Top of page, by day; above, at night. The tower contains flats and the three-storey building, fronting on to Berwick Street, offices or workshops with ground-floor shops.

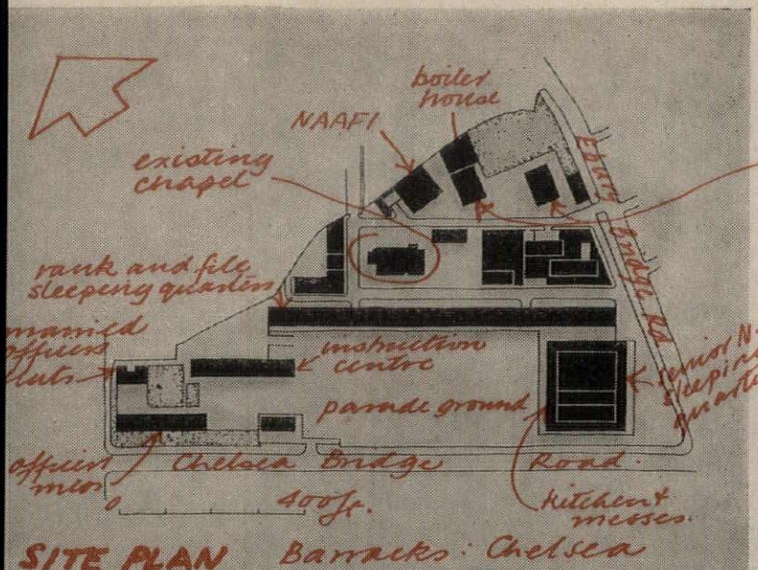


The new Chelsea Barracks, by Tripe and Wakeham, from the direction of Chelsea Bridge Road. The long low building is the main barrack block, standing behind the parade ground; the two tall blocks contain married quarters and are set at an angle so that their main facades are parallel to Ebury Bridge Road—see page 67.

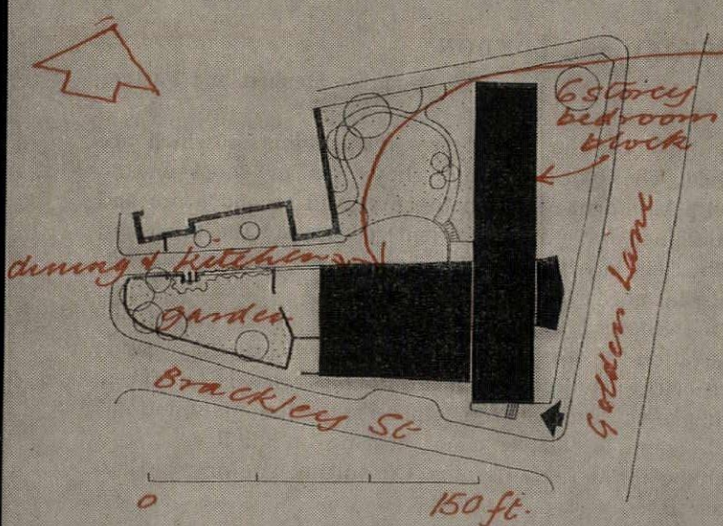
10. HOUSING



Police section house, Golden Lane, by J. Innes Elliott, Chief Architect, New Scotland Yard. Left, looking towards the corner entrance and showing the main wing with living quarters on the upper floors—see page 67.



SITE PLAN Barracks: Chelsea



SITE PLAN
Police Section House: Golden Lane

continued from page 64]

and company offices and stores, guard-rooms, rank-and-file dining-rooms and kitchens and senior NCO's messes; officers' mess, education and instruction centre; NAAFI shop; junior ranks club; swimming-pool, gymnasium, etc. Living-quarters comprise the main barrack block and married quarters with 52 three-bedroom and 50 two-bedroom flats. Construction will start in September or October.

Most of the buildings are planned on an 8-ft. grid. The structure is reinforced concrete, with hollow-tile and concrete rib floors to give flush ceilings. Cladding is brick or glass with some Portland stone. The external walls of the education centre and main dining-rooms are fully glazed. Window frames and frames to spandrel panels are hardwood, the panels being filled with coloured glass. Windows are metal, specially designed but standard throughout the job. Lavatories are planned round internal walk-in plumbing ducts. Heating is from a central boiler-house.

Structural engineers: Wilton and Bell. Heating and ventilating engineers: Kennedy and Donkin. Electrical engineers: Barlow, Leslie and Coombes. Quantity surveyors: Langdon and Every.

POLICE SECTION HOUSE: GOLDEN LANE, LONDON

J. Innes Elliott (Chief Architect, New Scotland Yard)

On an island site, which it shares with a bombed church later to be rebuilt. Construction is expected to begin in mid-1959.

A 6-storey block houses 120 single policemen, each having his own bedroom. Day-rooms such as lounge, quiet room, television room, billiards room, canteen and kitchen are on the ground floor under the bedroom block and in a single-storey wing facing Brackley Street. Parking space for 22 cars has been provided in the lower ground floor, approached by a ramp from Viscount Street. At the same level are a physical training room, changing room, uniform room, cleaners' room, etc., and in the basement is the boiler-room. It was required that the main block should be of the same height as the existing maisonettes in Fann Street and set at right-angles to them.

Construction: reinforced concrete frame faced with precast stone and brick panel infilling. The panels below the first floor on the main block are precast of knapped flint. Heating is from ceiling coils.

Senior architect: D. T. Edwards. Executive architect: I. F. Warwick. Assistants: D. A. Bowen; R. H. E. Bull; F. F. Stockley; S. S. Clerrici; N. C. Verrells (model). Engineers: Maurice Nachsen and Partners. Quantity surveyors: F. J. Meekins and Partners.

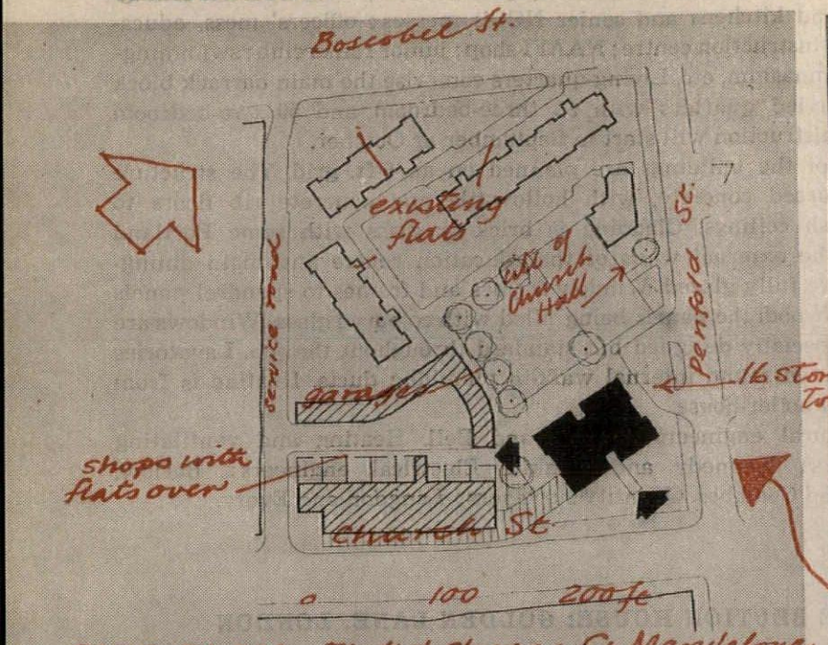
FLATS AND SHOPS: ST. MARYLEBONE

Bridgwater and Shepheard

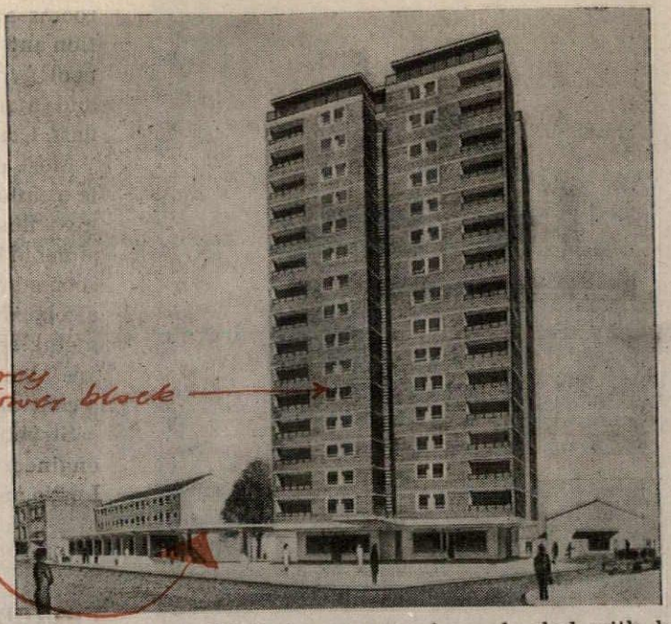
In Church Street: an extension of a scheme by Easton and Robertson, which was one of the first to be started after the war and was planned in 5- and 7-storey blocks running diagonally across the gridiron street plan. The old scheme conformed to pre-1947 standards of daylighting and layout; the new had to achieve the same density (200 people to the acre) while observing the present standards, which called for high building. Sixty of the flats are in a 16-storey tower block. Construction will start in the spring.

The low block has 16 small flats over eight shops on the line of Church Street. The high block has four flats per floor, over a ground floor of lock-up shops. The high block is at the same angle to the street as the earlier blocks, and has single-stair access from a ventilated lobby with two lifts. A group of garages lies behind the shops. A site is provided for a church hall to be built later.

The low block is of brick, slate-roofed, over concrete-framed



SITE PLAN Flats + shops : St Marylebone



shops. The high block is concrete framed, clad with brick carried on the exposed edge beams with plain concrete surfaces. Windows are reversible side hung. Heating is by electricity in floor screeds.

Consulting engineer: Felix Samuely. Quantity surveyors: Crosher and James.

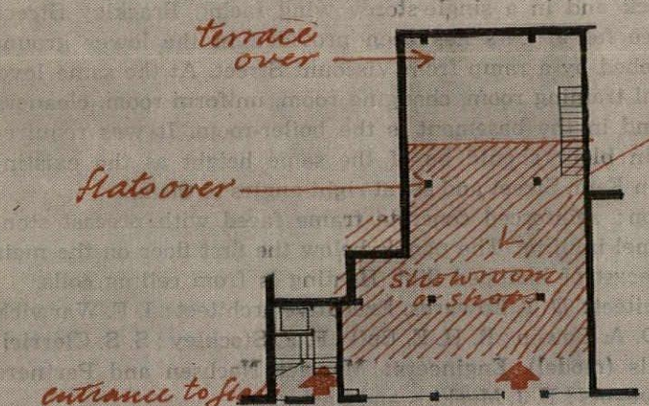
FLATS: CRAWFORD ST., LONDON

Douglas Stephen and Partner

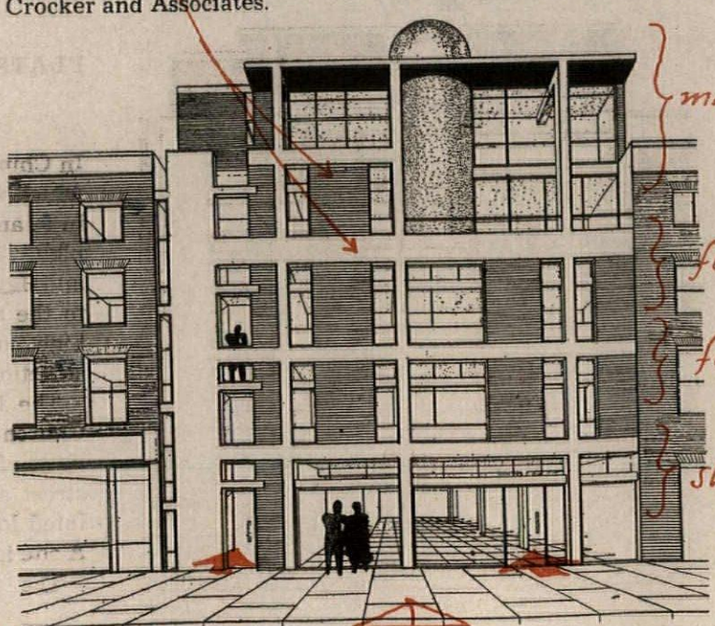
For G. Lilly and Co. On the site of two terrace houses which are to be demolished. The block contains showroom or shops on the ground floor, with basement; flats on the first and second floors and a maisonette (designed for a specific client) occupying the third and fourth floors. The flats have a separate entrance with stairs and lift. The starting date has not yet been fixed.

Construction: reinforced concrete frame with hollow-tile floors. On the front elevation the frame is fair-faced with marble aggregate; infill panels are brick. On the rear elevation the frame is fair-faced, also with brick panels. The concrete staircase to the maisonette is bush-hammered. There is electric panel heating on all floors.

Assistant architect: Panos Koulermos. Consulting engineers: R. J. Crocker and Associates.



GROUND FLOOR
Flats: Crawford St. London



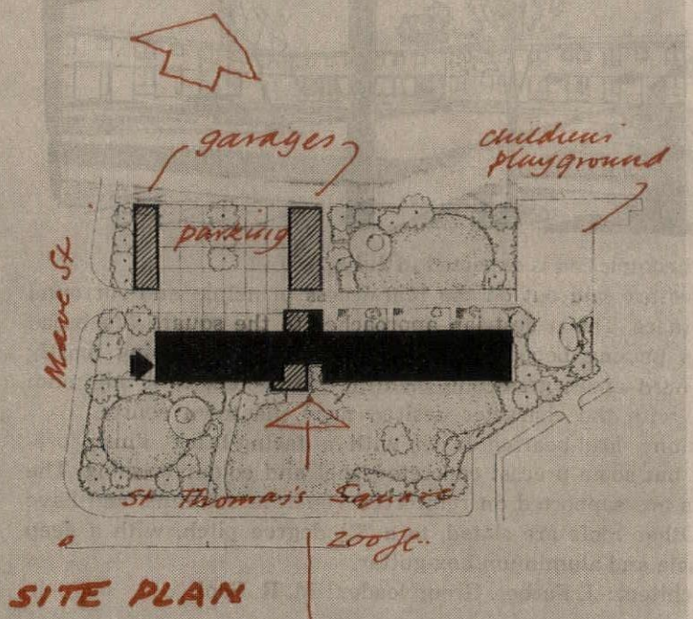
FLATS: HACKNEY

Eric Lyons

On the London County Council's Frampton Park estate. A scheme for the same site, providing flats, maisonettes and shops, was illustrated in the AR Preview issue, January, 1957. The plans have been since changed, and the present scheme, which will begin shortly, provides flats only, in one 10-storey block, all with living-rooms facing south over St. Thomas's Square.

There are 93 flats, arranged as follows: 15 bed-sitting room flats for young couples or old people, and 15 two-room flats, placed on the second, fifth and eighth floors, allowing space for a broad promenade on these floors, along the north side; 30 three-room and 30 four-room flats on the remaining upper floors; 3 five-room flats on the ground floor. There are also tenants' stores (one to every two flats) on the ground floor, and surrounding a service area on the north side of the site are 12 garages and 18 parking-spaces. On the north-east side, where walls are high and disturbance least, are children's playgrounds. There is only one entrance to the block, which is approached by two footpaths, one passing under part of the building and the other crossing the gardens from the square. The promenades on the second, fifth and eighth floors are reached by lifts. Flats on other floors are reached by one flight of stairs up or down from the promenades. The larger flats have private balconies.

Construction: reinforced concrete cross-walls and floors, with reinforced concrete external walls used as beams to their full height. Facing is brick. The flats have electric underfloor heating.



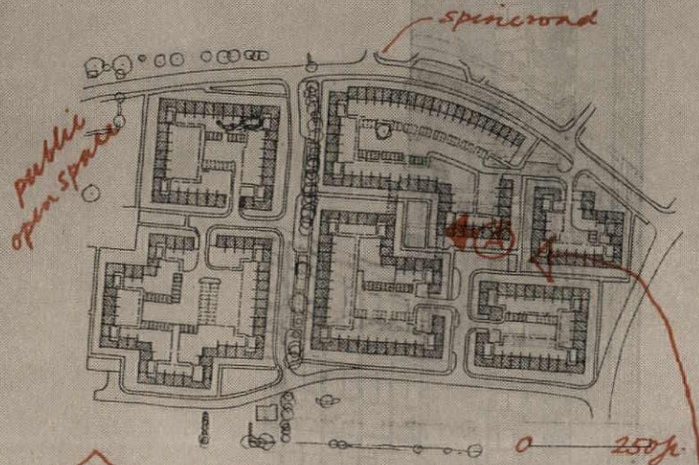
SITE PLAN



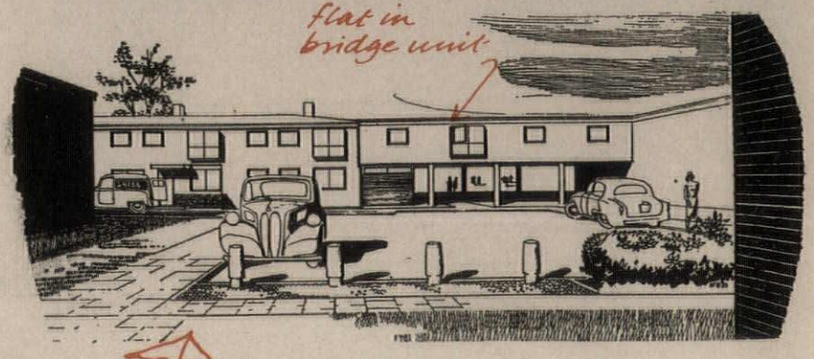
TWO-STOREY HOUSES: BASILDON

A. B. Davies (Chief Architect, Development Corporation, in succession to N. Tweddell)

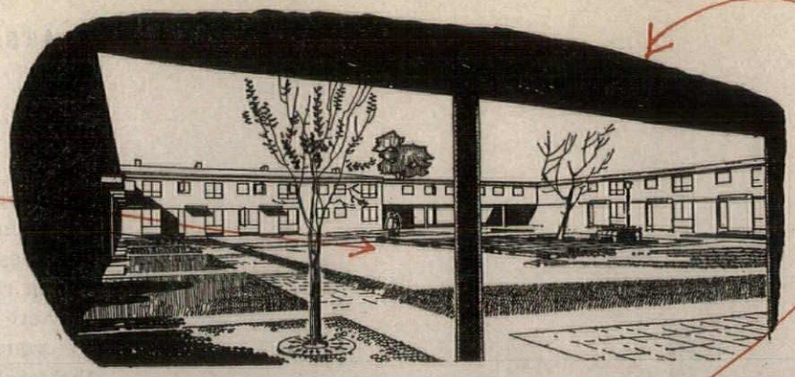
Ghyllgrove housing area No. 1, in the new town, providing 268 dwellings at a density of 18 to the acre. Work on the site began last



SITE PLAN



View from (A) in site plan showing central square

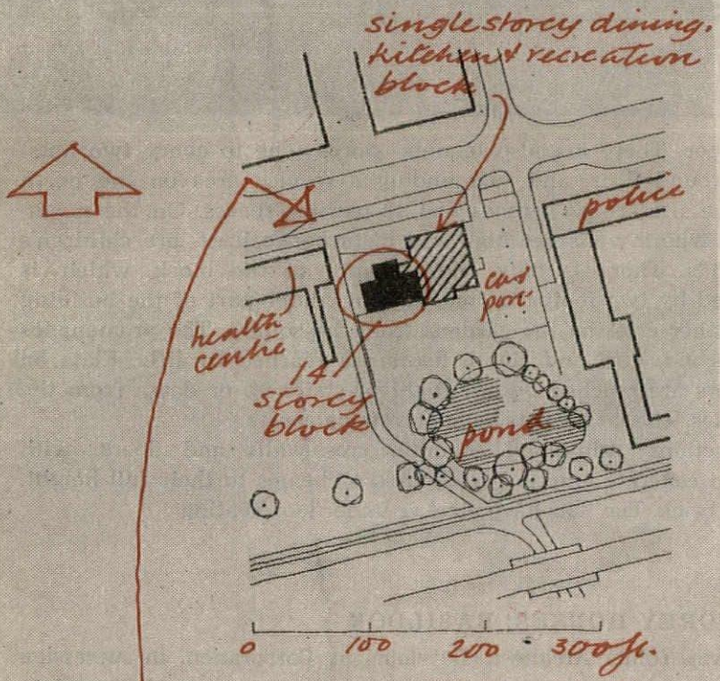


October and completion is expected in July, 1960.

The houses are laid out on the rear-access principle and surround a central square. The pedestrian approaches to the square are broad paved areas passing beneath bridge units. The landscaping mostly consists of hard areas, grass and planting being kept to a minimum to conform with the character desired near the town centre.

Construction: load-bearing brick with a facing-brick finish predominating but some precast concrete panel and colour-washing. The bridge units are supported on reinforced concrete columns, and have flat roofs. Other roofs are slated, to a 22½ degree pitch, with a deep asbestos fascia and aluminium box-gutter.

Senior architect: J. Farber. Group leader: M. R. Bool.



SITE PLAN

HOSTEL: STEVENAGE

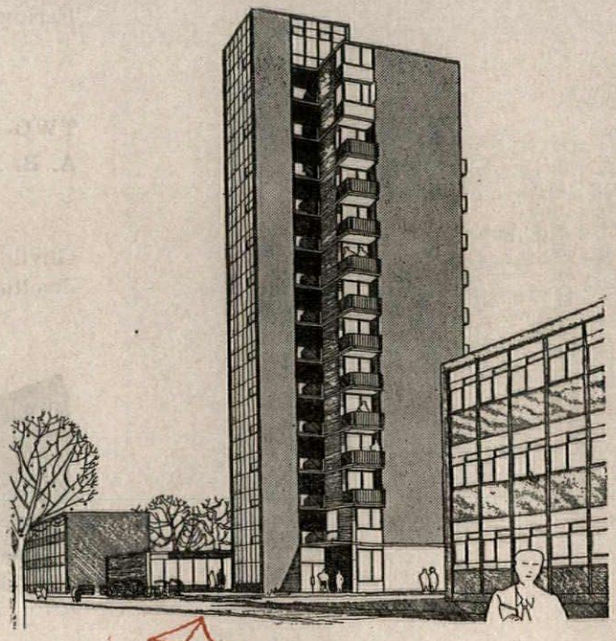
L. G. Vincent (Chief Architect, Development Corporation)

In the centre of the new town: for apprentices of the English Electric Co. The building is 14 storeys high and will be the highest structure in Stevenage. Work has just begun.

Accommodation is provided for 72 apprentices, mostly in bed-sitting rooms with communal bathrooms on each floor. The ground floor contains a dining-room, kitchen, games rooms and lounges. The quiet lounge has been planned away from the billiards and table-tennis rooms and may be used for study. Access to the upper floors is by lift or a single staircase. Instead of garages a series of car-ports has been planned to accommodate cars and motor-cycles.

Construction: reinforced concrete floors and walls. Cladding is brick. Heating is by underfloor embedded electric coils.

Architect in charge: R. Gorbing. Assistant architect: J. Scott.



COUNTER-ATTACK

PROGRESS REPORT

After eighteen months of operating the Counter-Attack Bureau it might be useful to set down, in the light of experience, what it can do and what it cannot. This note is followed by typical cases including some of those which for one reason or another did not appear in the monthly articles.

The first thing to say about the Bureau is that it is microscopic; it is really a long-sounding name for Gordon Cullen and myself. This reason is inevitable and financial—telling the truth as one sees it without fear or favour is not usually a profitable occupation—but in any case such an organization could never consist of more than about half a dozen loosely-linked members without setting up just that sort of top-heavy administration which is one of the chief causes of subtopia (if there are enough sub-committees nobody need think).

Consequently, being small, it must be largely an advice bureau—a reservoir of new ideas, or new angles on old problems, or (principally) different ways of making up an exciting environment out of random chaos. Most of our cases can only consist of advice—always given only after a visit to the site unless the problem seems purely legal or administrative or is trivial *prima facie*; simply a statement of what we think, for the local people to accept or reject[1] in carrying on with their campaign.

At the other end of the scale are the cases of national importance which are being fought locally in a hard-headed common-sense way, and to which we are giving as much help as we can—advice, publicity, expert witnesses, help with legal representation. There can only be three or four of these cases in a year—last year, Westgate Fields, Chichester (AR Oct. 1957); this year Poole (AR Jan. 1958); Aberdare (AR Oct. 1958) and the Royal Arcade at Newcastle, described below. At Aberdare, for example, the townspeople are going ahead with their own Town Map after advice from us, but entirely on their own initiative and incorporating their own ideas: this is the ideal situation. Between these extremes are cases where we provide publicity for a specific purpose—to state the problem so that public opinion can decide whether it wants a Public Inquiry, for example. So often things are rushed through, legally but immorally, so that as few people as possible know as late as possible.

This year the total number of cases we have handled is about two hundred; of these about a hundred and forty required or received advice only, about fifty-five were given publicity in various places, local and national, leaving half-a-dozen full scale cases.

From all this some general conclusions have become clear and it may be worth while to put these down:

First, that provided there are no national unseen pressures,[2] a Public Inquiry will provide a fair hearing and common sense. Ministry decisions are often decried for being inconsistent; all the evidence shows that in fact they are following the best rule of all—that circumstances alter cases. The worst features of the Inquiries are the attempts of official lawyers to treat them as being criminal cases with the objectors as defendants; the only thing to do here is to ignore the resulting unpleasantness, which is what the inspector does. For any local dispute an Inquiry is the best thing to aim for.

Second, that in cases involving central government the main problem is to put all the facts before the right person at the right time, and the right person is usually pretty high up in the Ministry. Normally, in Ministries, the higher one goes, the more tolerance, intelligence and understanding one gets—the difficulty is getting there, and in some cases knowing where to go in the first place.

Third, that some local authorities—a minority, but a perceptible one—are as malicious, stupid, ignorant and dictatorial as any Gauleiter administration. Sometimes this is the fault of the council officials, far more often the fault of the party political set-up of local government, the worst single factor in making the face of Britain the characterless mess it so often is. The view of the Ministry is that local government should solve local problems and if the people do not like their local government they should change it. This may be fine in principle but in practice a tory/socialist minority in a socialist/tory borough (the label is immaterial) stands no chance of a fair deal if the council is animated by false pride or some sense of class warfare, and quite a few are. In some cases it takes the greatest of effort even to persuade the borough surveyor to meet the residents! At the moment we do not stand in much fear of dictatorship from Whitehall but we already have quite a good line in dictatorship from the Town Hall.

Finally, five requests to those about to report an outrage:

1. tell us early. If the relevant council meeting is in two days time only Divine intervention will have any effect.
2. tell us fully, preferably with sketches and photographs.
3. be prepared to think, organize and act for yourselves; we can only help where there is self-help too.
4. please be sure in your own mind that you have a worthwhile case.
5. please remember that we are NOT a preservation society. Our job is to try to fit A and B together so that life is more fun not less. This may incidentally mean preservation—particularly preservation of a pattern rather than individual buildings; but only incidentally.

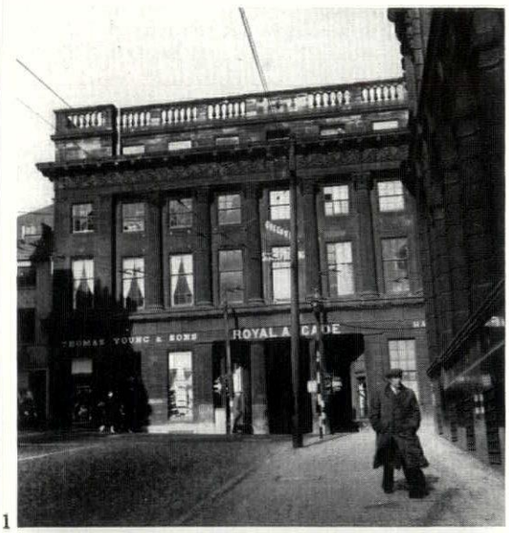
Ian Nairn

[1] Quite often they do reject it, because we are not part of a down-with-progress movement and some of our applicants seem to be.

[2] As there were at the atomic station inquiries, e.g. Nobody could pretend that these were more than a formality.

BUREAU CASES

Newcastle. The City Council wants to demolish Dobson's Royal Arcade, 1, and 2, one of his best buildings (part of which is in very good condition, part shabby but easily repairable) to make a big roundabout at the junction of Pilgrim Street and Mosley Street. This is a bottleneck now, and experience in London seems to show that roundabouts by themselves make conditions worse, not better, when there is very heavy rush-hour traffic (Hyde Park Corner, Marble Arch) because they are self-jamming. The solution in Newcastle is a multi-level system, which could be built without



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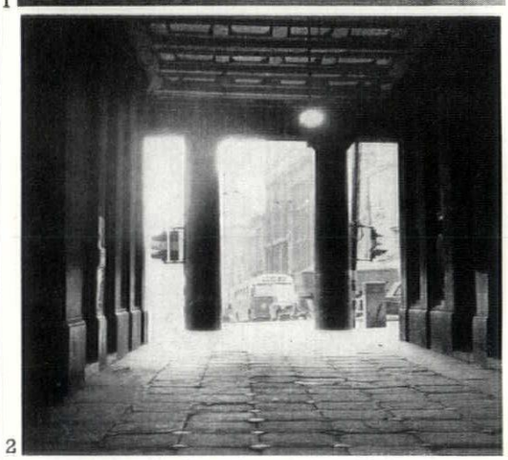


2

1, front of the Royal Arcade, seen from Mosley Street. The proposed roundabout will take in the Arcade and about seventy-five yards frontage to the north of it—a sizeable chunk out of the middle of the town.
2, looking west down Mosley Street from inside the arcade, which is used for offices at present: there is no reason why it could not become a pedestrian link between bus station and railway station, with shops to match.

demolishing the arcade, which would fit into Newcastle's existing riverside pattern of repeated road and rail flyovers and extreme changes of level and for which the vertical separation and the vacant land exists already. The arcade could also be converted—with a little imagination, which has been noticeably absent from this case so far—into a pedestrian link between the main railway and bus stations. The Ministry of Transport, who have to find most of the money for this Council-designed roundabout (which will cost £500,000!) are calling a public inquiry for the New Year. This proposal does not seem to make sense in traffic terms, let alone architectural ones. The Royal Fine Art Commission has, we understand, already said so, in no uncertain terms.

London, Ovington Square, S.W.3. Sharawaggi can be good fun and London is made up of them: but the building that has filled the gap in the otherwise complete Ovington Square (stucco classical of c. 1850) isn't quite in this category, 3 and 4. Ovington Square was simply a colour equation—green in the middle, white around the edges—and any new building ought either to have respected it (heaven knows, the conditions were general enough) or else tried to create something entirely different. This building does neither and simply forms a textbook of bad manners: different size, colour, rhythm, materials—and all *pointlessly* different, which is the exasperating thing. It is certainly 'modern,' which is small consolation, when it could so easily have been modern and sympathetic. England in the 1930's pioneered the adding of new to old without compromise but with sensitivity—Connell, Ward and Lucas at Redhill, McGrath at Chertsey, Lionel Brett at Ascot: where has the spirit gone to-day?



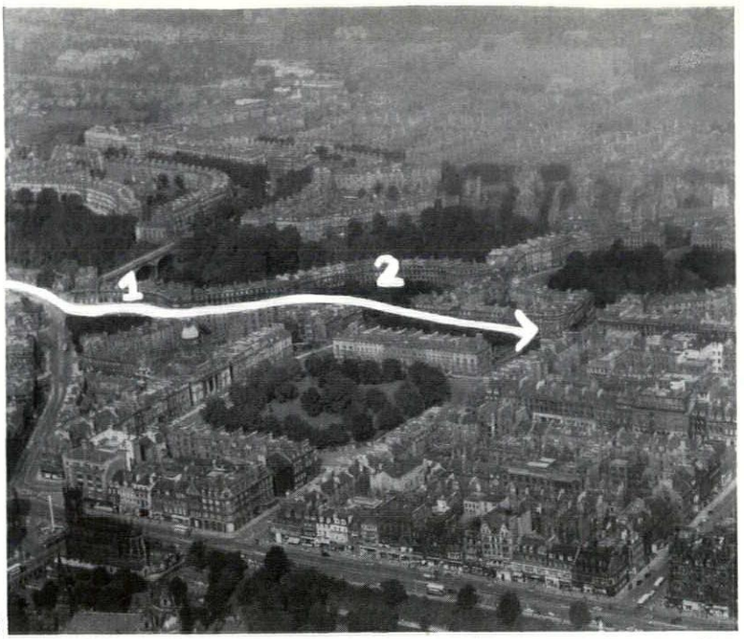
3



4

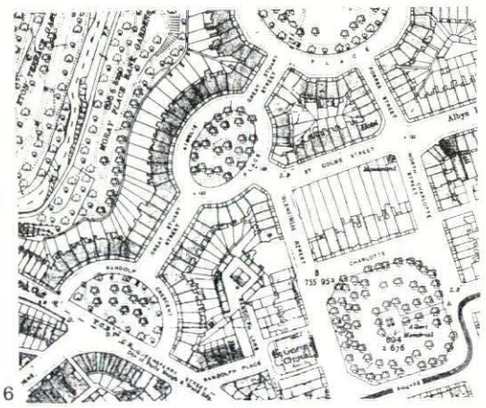
3 and 4, the effect of the new block in Ovington Square, seen close up and in perspective. Monochrome shows well enough the disruption of the rhythm and scale of the square: it cannot give any impression of the effect of multicoloured bricks and varnished woodwork on what was originally a 'colour equation.' Moved two hundred yards, to the Brompton Road, this building would have fitted in well enough.

5, an aerial view of Edinburgh's West End. The white line shows the proposed new through route which will involve removing the trees in Randolph Crescent (marked 1) and sawing off a corner of the planting in Ainslie Place (marked 2); the road would be asphalt throughout. The map, 6, shows the present layout: both map and photograph give some sense of the intricate and subtle interlocking of buildings and landscape which makes the New Town unique.



5

Edinburgh, Randolph Crescent. This is merely a matter of a road surface and a group of trees in the centre of one of the New Town Crescents, but a fundamental principle is at stake. The City Council want to turn an existing short cut for those who know into a through road for traffic coming from the N.W. of Edinburgh to the back of Princes Street. This will involve removing the trees in front of Randolph Crescent for a roundabout and taking a slice off the central space in Ainslie Place, replacing the existing setts with

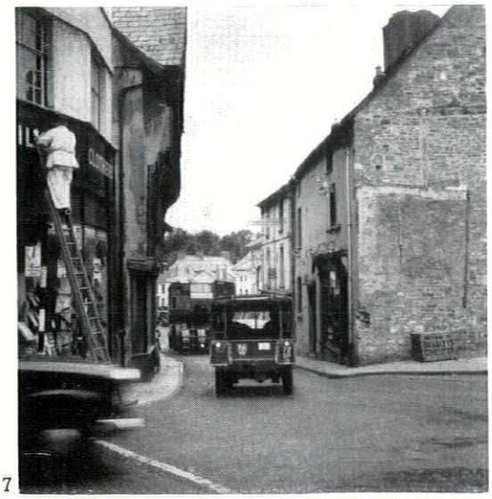


6

asphalt (see plan, 6 and photograph, 5). There is far more involved here than a few trees and some cobbles: this sort of treatment will destroy the whole spatial sequence intended by the builders of the New Town. The Edinburgh Council, blithe fellows, seem to think that 'opening up' the view of the Crescent will improve it. To be frank about this, the elevation of the crescent is not good enough to stand 'opening up,' nor was it intended to: Picturesque design was always intended as a blend of buildings and trees. Similarly, an asphalt band streaking diagonally across one corner of the elliptical Ainslie Place would be as disastrous as a channel gouged out of the stonework of the buildings: in this sort of layout buildings, trees and floor have almost equal value. This case, also, is going to public inquiry in the New Year.

Colne, Lancs. Colne is a small cotton town on a hill top without any proper centre. Demolition had provided an open space opposite the church which was to have been weakly rebuilt as before but with the street widened. Another group wanted an open square here and due to the local government game of musical chairs, they are now in power and seem likely to get it. The site is actually a plateau at the top of the town with a good view S.E. to the Pennines, and an open square (even without any buildings around, which might be disastrous in a low-lying town) would be a good thing here—as long as it is done in an urban way: no shrubs and rustic walls, preferably no grass: just setts and seats, and also big trees and a small market if either can be encouraged.

Brecon, Ship Street. This is a pleasant ordinary Welsh country-town street. It is also on A.40, London-Fishguard, and is only one vehicle wide with no real prospect of any internal relief road, 7 (Brecon as a whole ought to be by-passed, but this would still leave a problem). If the buildings are to come down something positive ought to go up instead—instead of widening and levelling off the corner the streetline would be better boldly cut back to make a tiny informal asymmetric square, a type which is a Brecon pattern already, for the whole town (city) is a series of interesting odd-shaped spaces.



7

7, Ship Street, the main Fishguard road at its narrowest point. Clearly, it is too narrow, and some of the buildings on the right-hand side must come down. But in rebuilding they should not simply be weakly set back; there will be more land than is needed for the widening, and this could be used to create a tiny wedge-shaped square on the pattern of the other open spaces of Brecon.

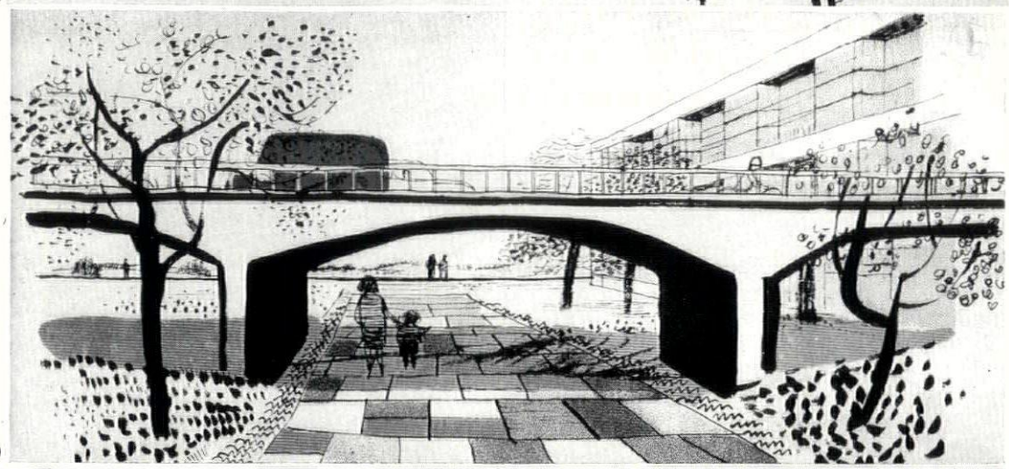
BOSTON MANOR

The housing solution for London is at the moment flats in the centre and overspill beyond the Green Belt. Nobody has yet tried to build character and living space into the existing sprawl, the weary acres of Essex, Middlesex and Surrey, to redistribute the pattern of London from being a pyramid to being a set of peaks and troughs. Yet, in fact, a great deal could be done simply by redistributing the population inside the built-up area: the land is there, as we have been saying for so long, in Counter-Attack and elsewhere; it is entirely a matter of how it is used. There is no reason why London Town should not bear the same relation to Greater London as Birmingham does to the Black Country; a dominant in some things, a partner in others, such as providing routine offices and factories. With the absurd rush hour movement eased and suburban towns becoming centres of their own there might even eventually be what Paul Jennings has called a lightening: a shrinking and self-containment so that each borough could be surrounded by a strip of fields or woods (and again there is enough public open space to do this, if it is organized and not cut up into statutory dollops):

8



9



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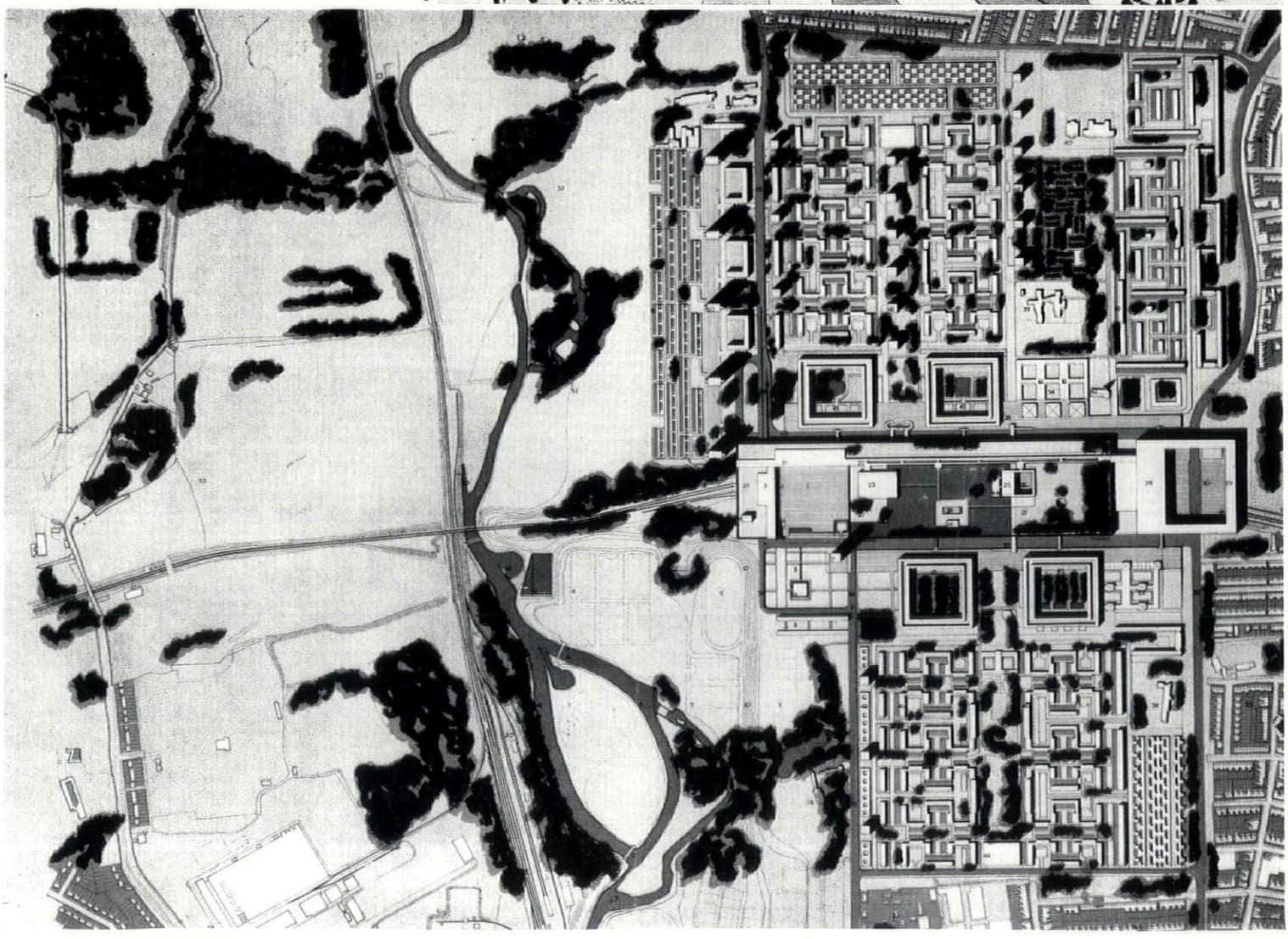


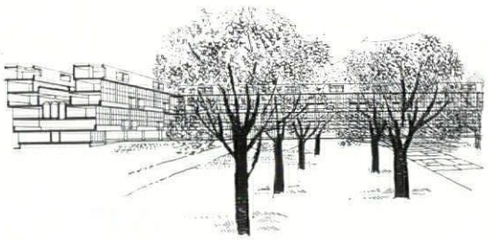
Three of the illustrations from 'The Living Suburb' in Architecture and Building. 8, *the square on market day with the hotel tower in the background.* 9, *traffic carried over the pedestrian way leading to Osterley Park.* 10 *the suggested layout of Boston Manor, with Osterley Park on the left.*

separating Ealing from Acton, Acton from Wembley, Wembley from Willesden.

Blithe theories. And theories they have remained apart from laudable recent attempts by the LCC to persuade offices to move out to the suburbs, until the remarkable September and October issues of *Architecture and Building*. There, a team made up of Chamberlin, Powell and Bon, Graeme Shankland and David Gregory Jones have worked out detailed proposals—administrative and



11, *section through the thirty-storey hotel block and terraced patio housing.*



12, *sectional perspective of one of the six-storey quadrangles of flats and maisonettes adjoining the market.*



13, *the patio houses, with two-storey bedroom blocks linked by screen walls, with the living rooms beyond.*

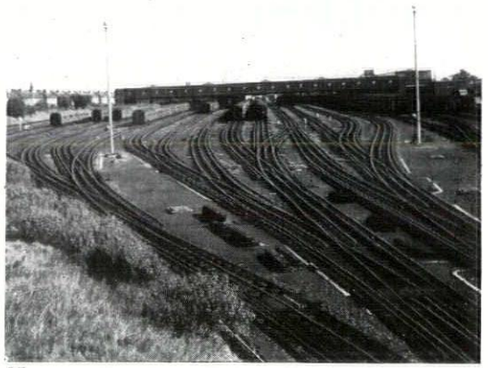
financial, as well as architectural—for creating a new centre at Boston Manor, midway between Ealing and Brentford. Several sites were considered, Boston Manor being finally chosen because of the combination of available vacant land, ready-made open space, easy connections to London by through tube, and easy connections to London Airport, hence the chance to provide a new focus for the growing air tourist traffic. The plan would double the present population of 15,000 on the 700-acre site, and proposes a big hotel and shops and offices as well as housing: the authors do not seem quite sure whether they want a self-contained new town or a super-Vällingby, and this is probably very wise, because in fact any such scheme would be both; some would want to live and work there, others would come as they have come to the Span projects, because it would be commuting-with-a-difference.

Boston Manor is flat, with ready-made parkland, now largely derelict, sloping down to the west beside the Grand Union Canal, 14; the existing housing is 1890 or 1930 and has humane scale and nice trees, 17—it is a good deal above the Heston-and-Isleworth touch—but nothing else. The railway runs east-west across the site and takes up a lot of ground, 15, with the repair sheds at Northfields, and there is also a lot of under-used ground south of it, 16. The scheme proposes roofing over the railway tracks with several levels—a car parking level, then a big shopping mall with offices, flats and the hotel above. The density of the rest of the area is to be raised with flats with high density terrace houses with gardens at 90 p.p.a., with patio houses at 170 p.p.a. terraced down the hillside, with terrace squares depending largely on the central open space for recreation, and with six-storey quadrangles of flats and maisonettes at 200 p.p.a.; a very varied range of house and flat types with extreme imagination used in individual type-plans. It is a first-rate idea, or portmanteau of ideas, presented clearly and ingeniously, and unlike some other recent schemes, it looks as though it would work.

G. Moncur



14



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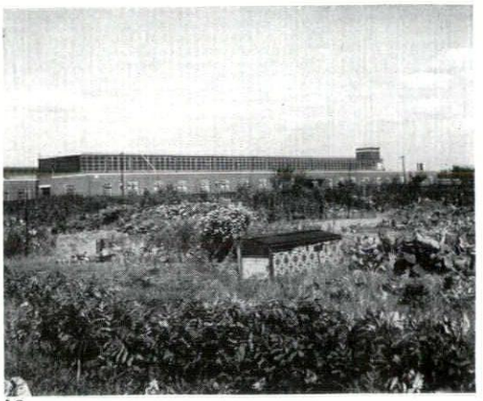

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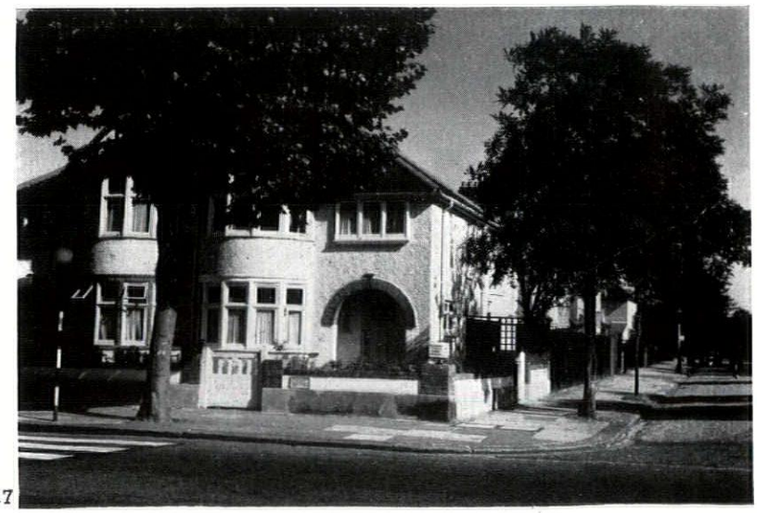
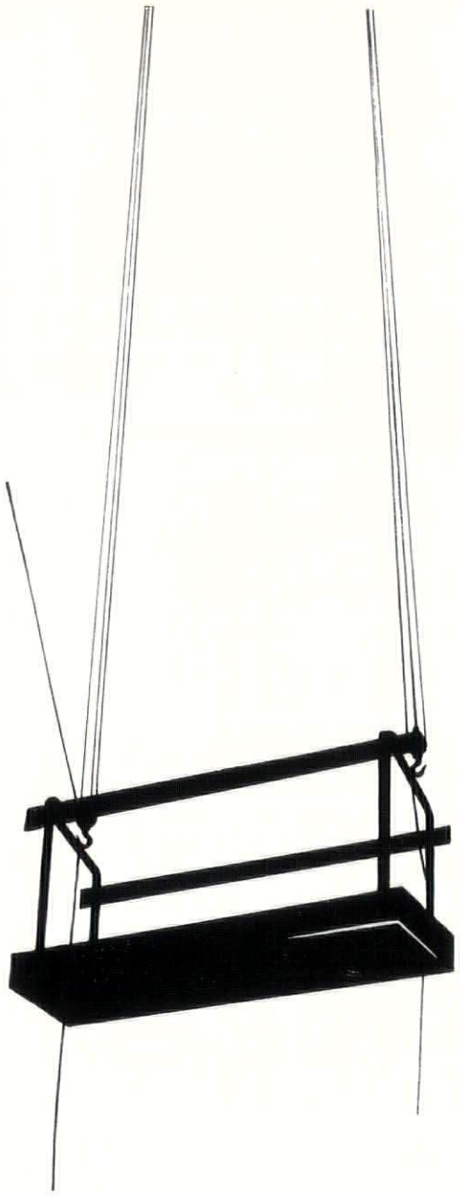


17

14-17, *the present Boston Manor;*
14, *the first class ready-made landscape around the Grand Union canal.* 15, *the huge area taken up by the Underground repair yard.* 16, *the big area of playing fields and allotments to the south. Both* 15, *and* 16, *could be used to start rebuilding without disturbing existing houses.* 17, *the existing housing and trees.*



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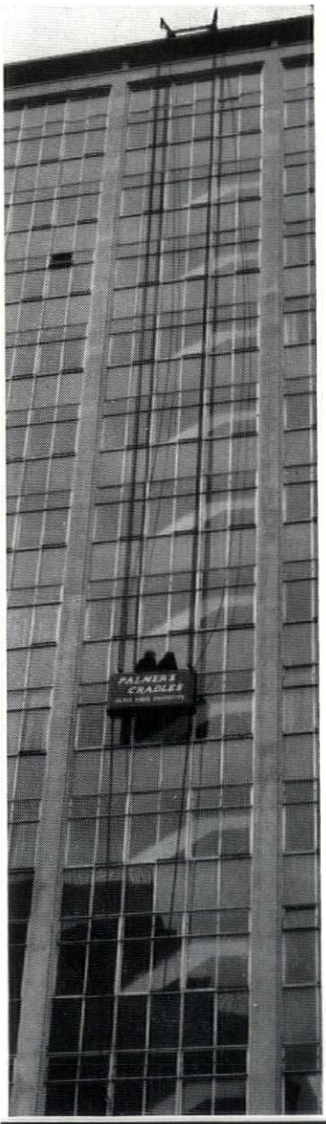

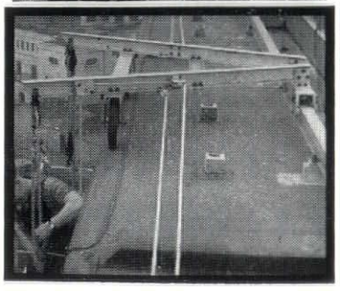

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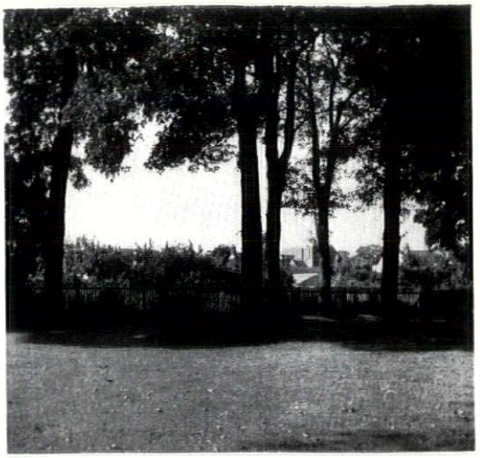

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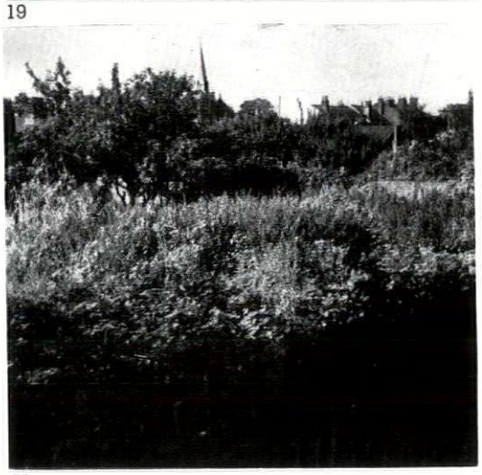


20

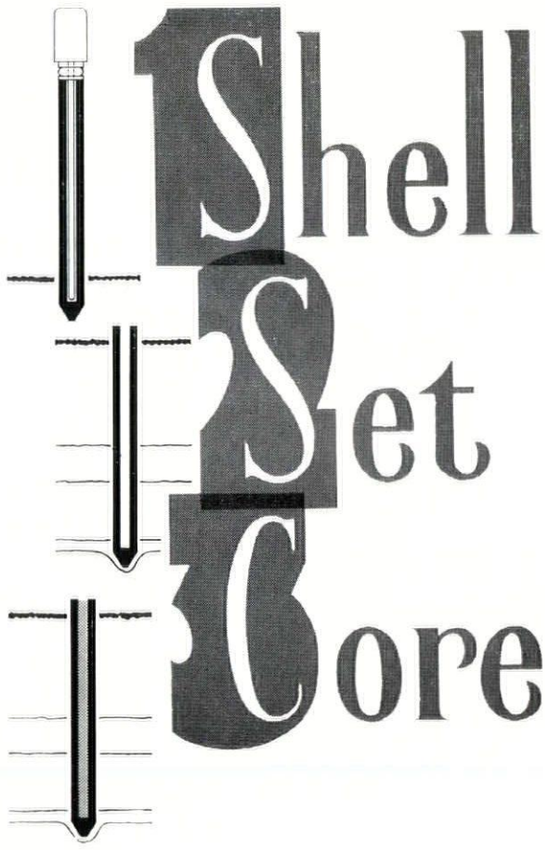
The derelict acreage in Dunstable is not enormous but some of it—as a site for old people's housing—is almost too good to be true. 18, an air view taken from the east, shows the whole pattern: the four sites described are shown arrowed in order from left to right. 19 and 20 are the overgrown ends of gardens at the back of the main street, facing open space and the side of the Abbey.

DUNSTABLE

Many old people like to be in the centre of things even if they don't have a lot of space. It should be our job to provide for them: what they get, almost invariably, are a few old people's bungalows tacked on to an enormous housing estate: with perhaps a 'recreation room' or 'social centre' grudgingly thrown in as though it were a true substitute for joining in the real life of the town centre.

Dunstable, Beds, has got this problem, like

[continued on page 78



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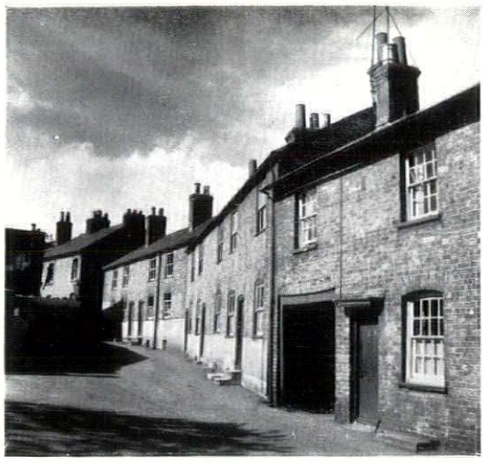

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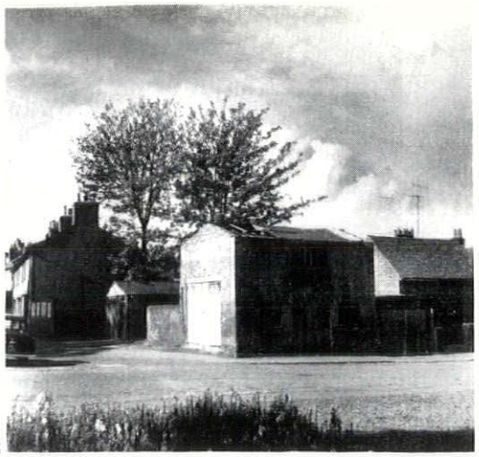

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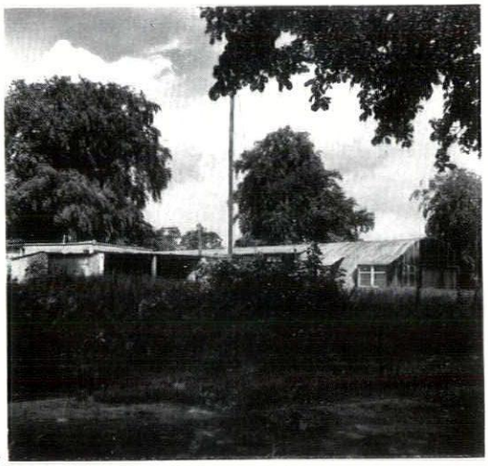

24

21 and 22, sheds and a recently condemned terrace actually opposite the west front of the abbey, not troubled by any through traffic. 23, is further north-east and overlooks the town's bowling green; 24 is part of a much larger site further north-east again including a derelict walled garden and a patch of land as big as a small park.

continued from page 76]

almost everywhere else; it is having trouble in persuading the old people to go and live one-and-a-half miles from town in one of the council estates: the excuse given is that no land is available for rebuilding in the centre of the town. It is an old excuse, and one that the Counter-Attack Bureau has never really believed in; so I went to Dunstable, purely as an experiment, to see how much genuinely derelict land there was. Dunstable is an ordinary busy English semi-suburban town which at the moment is sharing Luton's expansion so that there was no question that the main streets would be gap-toothed; but immediately one got to the back all sorts of sites presented themselves, some of them almost too good to be true—derelict ends of gardens, overlooking a public park, 19 and 20, empty cottages and sheds opposite the west front of the abbey, 21 and 22, disused ground overlooking the town bowling green, 23: a deserted walled garden and a patch of ground the size of a small park given to weeds and old huts, 24. The air photograph[1], 18, gives the pattern better than description can. This was a complete outsider's survey of only a fraction of the town—there are probably several difficulties in the way of each one of these sites. But surely here is the proper use of compulsory purchase, instead of its present widespread employment to evict hapless freeholders who don't fit in with the borough surveyor's ideas (it would be nice

[continued on page 80

[1] Where possible the REVIEW is taking its own air photographs both for jobs and for townscape articles.

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continued from page 78]

to see some compulsory purchase of the immense acreage of unused land owned by the railways, for example). Obviously, also, there might have to be some readjustment of public open space on an exchange system—but all this would be quite practicable. The point is that the often-hawked excuse of 'no available land' is simply not true: the land is there and the people who want to live on it are there—not only old people: young childless couples, non-gardeners, shop managers, students.[2] There is no need for anyone who wants to stay in the centre of town to be forced to move out—in Dunstable or anywhere else.

Ian Nairn

[2] At Godalming in Surrey small terrace houses are being built on sites like these as a private speculation—and are proving successful.

CONTRACTORS etc

Town Centre, East Side, Hemel Hempstead. (Hemel Hempstead Development Corporation). *Architect:* H. K. Ablett. *General contractors:* Leslie & Co. *Sub-contractors: Plumbing:* J. C. Toogood Ltd. *Paints:* Hadfields (Merton) Ltd. *Painting contractors:* C. & T. Painters Ltd. *Mastic painting:* Mann-Reddington Ltd. *Cork flooring:* F. E. Charman Ltd. *Thermoplastic tiles:* Marley Tile Co. Ltd. *Windows:* Crittall Manufacturing Co. *Electrical:* Lee, Beesley Ltd. *Floor heating:* Heating Investments Ltd. *Joinery:* Hollis Bros. Ltd. *Vitreous enamel panels:* Defiant Enamel Co. *Precast concrete:* London Ferro-Concrete Co. *Floors:* C. H. Chaston Ltd.

Housing Redevelopment, Sheffield. *Architect:* J. L. Womersley (Sheffield City Architect). *Heating and ventilating:* G. N. Haden & Son.

Bath House, Coventry. *Architects:* Arthur Ling (Coventry City Architect). *Contractors:* H. Clarke & Sons.

Retail Market, Sheffield. *Architect:* J. L. Womersley (Sheffield City Architect). *General contractors:* Wm. Moss & Sons Ltd. *Sub-contractor: Heating and ventilation engineers:* G N. Haden & Sons.

Factory Offices, Grimsby. *Architect:* J. Douglas Mathews & Partners. *General contractors:* Richard Costain Ltd.

Factory Offices, Poole. *Architects:* Farmer & Dark. *General contractor:* James Drewitt & Son. *Sub-contractors: Reinforced concrete frame:* Mears Bros. (Contractors) Ltd. *Precast concrete staircase:* Art Pavements & Decorations Ltd. *Bituminous felt roofing:* Permanite Ltd. *Suspended ceiling:* Hermeseal Acoustics Ltd. *Internal partitions:* Holoplast Ltd. *Venetian blinds:* J. Avery & Co. *Curtain walling:* Williams & Williams Ltd. *Vinyl asbestos flooring, rubber tile flooring:* Marbolith Flooring Co. *Vitreous mosaic wall finish:* Art Pavements & Decorations Ltd. *Heating installation:* James Combe & Son. *Electrical installation:* Aish & Co. *Zinc roofing:* Holloway Metal Roofs Ltd. *Plenum chamber steelwork:* Bourne Steel Construction Co. *Facing bricks:* Chas. Mitchell & Sons. *Strong room door:* Chubb & Sons. *Aluminium blind boxes:* Ford Vincent & Co. *Dome roof lights:* James Clark & Eaton Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Sliding door gear:* P. C. Henderson & Son. *Under floor ducting:* The Key Engineering Co. *Cloakroom fittings:* James Seiber Equipment Co. *Staircase balusters:* Savack Service Ltd. *Steel cycle holders:* Le Bas Tube Co. *Street lamp standards:* The North Midlands Engineering Co. *Circular concrete roof lights:* Sharp Jones & Co. *Spray apparatus to pond:* British Overhead Irrigation Ltd. *Rubber cover strips to rooflights:* The Expanded Rubber Co. *Concrete (structural) waterproofer:* Tretol Ltd.

Offices and Showrooms, Berners Street, London. *Architect:* Slater & Uren. *Main contractors:* Holloway Bros. (London) Ltd. *Sub-contractors: Heating and Ventilation:* Ellis (Kensington) Ltd. *Electrical services:* Duncan Watson (Electrical Engineers) Ltd. *Windows and curtain walling:* Henry Hope & Sons. *Lifts:* Otis Elevator Co. *Faience:* Hathernware Ltd. *Sanitary fittings:* Shanks & Co. *Rolling steel shutters, gates and portculles:* Haskins Ltd.

College of Technology, Huddersfield. *Architect:* Frederick Gibberd. *Main contractors* (1st and 2nd instalments): Wm. Moss & Son. *Sub-contractors: Structural steelwork:* S.G.B. Welded Structures Ltd. *Heating, ventilating and domestic services installation:* Pearson Installations Ltd. *Electrical installation:* T. W. Broadbent Ltd. *Metal windows and steel cills:* Helliwell & Co. *Lifts, laboratory block 1:* Hammond & Champness Ltd. *Laboratory fittings* (1st instalment): James Wadsworth & Sons. *Waste plumbing to laboratory block 1:* H. G. Stringer & Sons. *Terrazzo lavatory partitions* (1st and 2nd instalment): Conways Ltd. *Patent shutter gates* (1st instalment): Bolton Gate Co. *Balustrading* (1st instalment): Attrills Gates Ltd. *Blackout blinds to laboratory block 1:* Northampton Sun Blind Co. *Steelwork for overhead travelling crane:* R. Smith (Horley) Ltd. *Patent shutter gates* (2nd instalment): Potter Rax Ltd. *Lifts, laboratory block 2:* Pickerings Ltd. *Lifts (administration and catering block):* Electro Lifts Ltd. *Floor tiling:* Marley Tile Co. *Glazing:* Faulkner Greene & Co.

Methodist Church, Mitcham. *Architect:* Edward D. Mills & Partners. *General contractors:* James Longley & Co. *Sub-contractors: Steel roof trusses:* R. O. Wright & Co. *Roofing:* Broderick Insulated Structures Ltd. *Exterior brickwork:* Hall & Co. *Exterior bricks:* London Brick Co. *Internal brickwork:* Sussex & Dorking United Brick Co.

[continued on page 82

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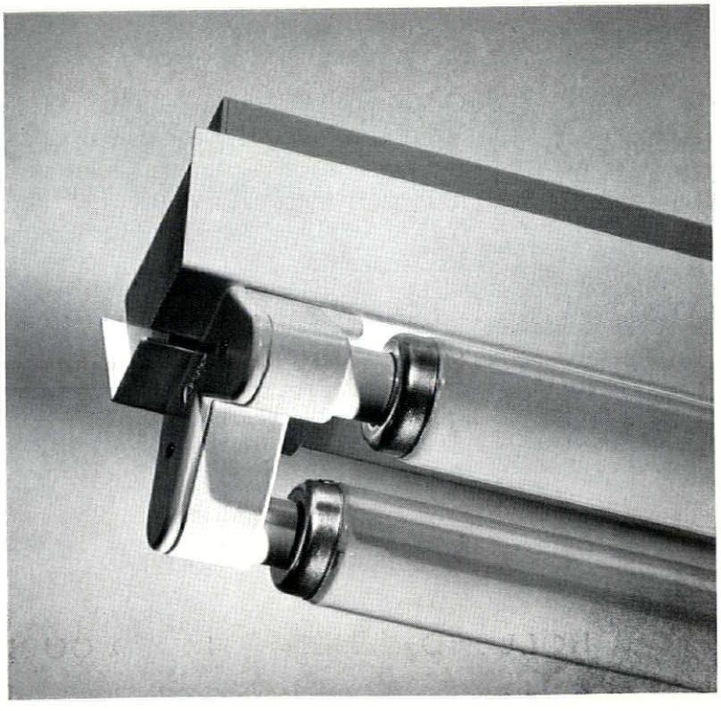

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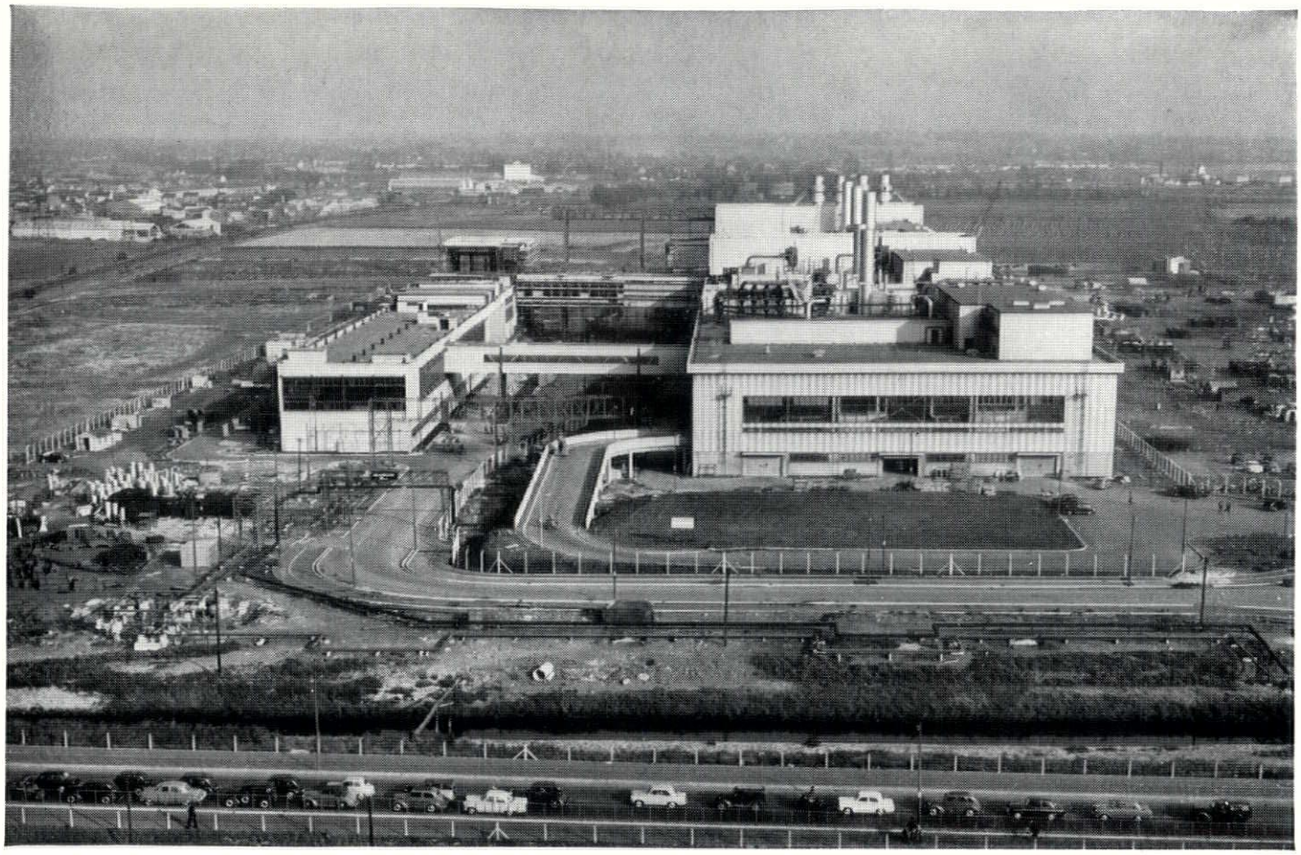

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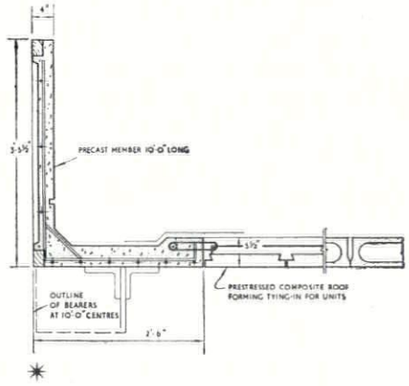

* *Typical detail of the Bison precast parapet wall unit.*

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CON.122

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Presbyterian Church, Belfast. *Architect:* Munce & Kennedy. *Main contractors:* Messrs. D. & R. Martin Ltd.

Primary School, Ipswich. *Architect:* Johns, Slater & Haward. *General contractors:* G. A. Kenney & Sons. *Sub-contractors: Hyperbolic Paraboloid Roofs—Consultants:* Timber Development Association. *Contractor:* Wheelers (Sudbury) Ltd. *Heating and hot water installation:* Norris Warming Co. *Electric contractors:* Christy Bros. Ltd. *Roofing (felt):* Limmer & Trinidad Lake Asphalte Co. *Aluminium windows:* Alumin Building Components Ltd. *Aluminium rooflights:* Crittalls Manufacturing Co. *Flooring:* Granwood Flooring Co. *Cork flooring:* Marbolith Flooring Co. *W.C. partitions:* Flexo Plywood Industries Ltd. *Sanitary ware:* Adamsez Ltd.

Secondary School, St. Marylebone. *Architect:* Leonard S. Manasseh. *General contractors:* Gee, Walker & Slater Ltd.

Secondary School, Harrow. *Architect:* Elie Mayorcas. *Builders:* Patman & Fotheringham Ltd. *Sub-contractors: Structural steelwork, steel reinforcement:* T. C. Jones & Co. *Metal windows:* James Gibbons Ltd. *Heating, hot water, gas and ventilation installations:* J. M. Kidd & Co. *Electrical installations:* Kenton Electrical Installations Ltd. *Suspended ceilings:* Sundeala Board Co. *Asphalte roofing:* Natural Rock Asphalte Co. *Metal balustrading:* Light Steelwork Co. (1925), *Linoleum:* Lino Tile Co. *Wood block flooring:* Jos. F. Ebner (1953) Ltd. *Precast terrazzo w.c. partitions:* Standard Pavement Co. *Precast reinforced concrete facing slabs:* Tercrete Ltd. *Precast reinforced concrete floor and roof units:* Truscon Ltd. *Ironmongery, cloakroom fittings:* Comyn Ching & Co. *Sanitary fittings:* B. Finch & Co.

Grammar School, Twickenham. *Phases, I, IIA (Classroom) and IIB (Gymnasium). Architects:* J. M. Austin-Smith & Partners. *Phases I and IIA (Class-room Block). General contractor:* W. H. Gaze & Sons. *Sub-contractors: Asphalt flooring:* Limmer & Trinidad Lake Asphalte Co. *Terrazzo stair treads:* Alan Milne Ltd. *Cerebos concrete paving:* Builders Merchants (London) Ltd. *Linoleum floors:* G. C. Construction Flooring Co. *Metal windows:* A. Beanes & Co. *Cement glaze:* Robbs Cement Enamel Finishes Ltd. *Precast concrete floor and roof units:* Fabricrete Products Ltd. *Wood block and strip flooring:* Horsley Smith & Co. *Curtain track:* Hall & Dixon Ltd. *Terrazzo partitions:* The Mosaic & Terrazzo Precast Co. *Sanitary fittings:* Broads & Co. *Cloakroom fittings:* B. Finch & Co. *Veneered panelling:* Bakers of Wycombe Ltd. *Rod reinforcement:* Rom River Reinforcement Ltd. *Structural steelwork:* Matthew T. Shaw & Co. *Facing bricks:* Henry J. Greenham Ltd. *Bricks:* J. P. Walshe & Sons. *Electrical contractor:* E. W. Merredew & Sons. *Heating and gas contractor:* J. Cooksey & Son (Ashford) Ltd. *Egg crate louvres:* Atlas Lighting Ltd. *Ironmongery:* H. & C. Davis & Co. *Porcelain enamel metal panels:* Stewart & Gray Ltd.

Phase IIB (Gymnasium Block). General contractor: Walker (Tooting) Ltd. *Precast concrete floor and roof units:* Fabricrete Products Ltd. *Rod reinforcement:* Rom River Reinforcement Ltd. *Woodstrip flooring:* Horsley Smith & Co. *Roller shutters:* Arthur L. Gibson & Co. *Structural steelwork:* Matthew T. Shaw & Co. *Metal windows:* W. James & Co. *Cement wall glaze:* Cement Glaze Ltd. *Terrazzo partitions:* Zanelli (London) Ltd. *Facing bricks:* H. J. Greenham Ltd. *Heating and gas installation:* J. Cooksey & Son (Ashford) Ltd. *Bricks:* J. P. Walshe & Sons. *Cloakroom fittings:* Cloakroom Equipments Ltd. *Electrical contractor:* R. Langston-Jones & Co.

Factory, Basildon. *Architect:* A. B. Davies, (Basildon Development Corporation). *Main contractor:* Holland & Hannen and Cubitts Ltd. *Sub-contractors: Steel:* Scaffolding (Great Britain) Ltd. *Foundations and Sewers:* Scott Hale Ltd.

Pharmaceutical Factory, Hoddesdon. *Architect:* Edward D. Mills & Partners. *General contractors:* Holland & Hannen and Cubitts Ltd.

Fish Processing Plant, Grimsby. *Architect:* Manning & Clamp. *Main contractors:* Taylor & Coulbeck Ltd. *Sub-contractors: Piling:* Holm Press Ltd. *Concrete roof trusses:* Dow-Mac (Products) Ltd. *Roofing:* Isocrete Co. *Heating and insulation:* G. N. Haden & Sons. *Bricks:* W. L. Jackson & Co. *Refrigeration plant:* J. & E. Hall Ltd. *Steel shutters:* Potter Rax Ltd. *Windows:* Crittall Manufacturing Co. *Patent glazing:* Williams & Williams Ltd. *Sanitary fittings:* Dawber, Townsley & Co. *Sectional steel water tank:* Braithwaite & Co.

Sewage Outfall, Erith, Kent. *Architect:* Chief Architects Dept. LCC. *General contractors:* W. & C. French Ltd.

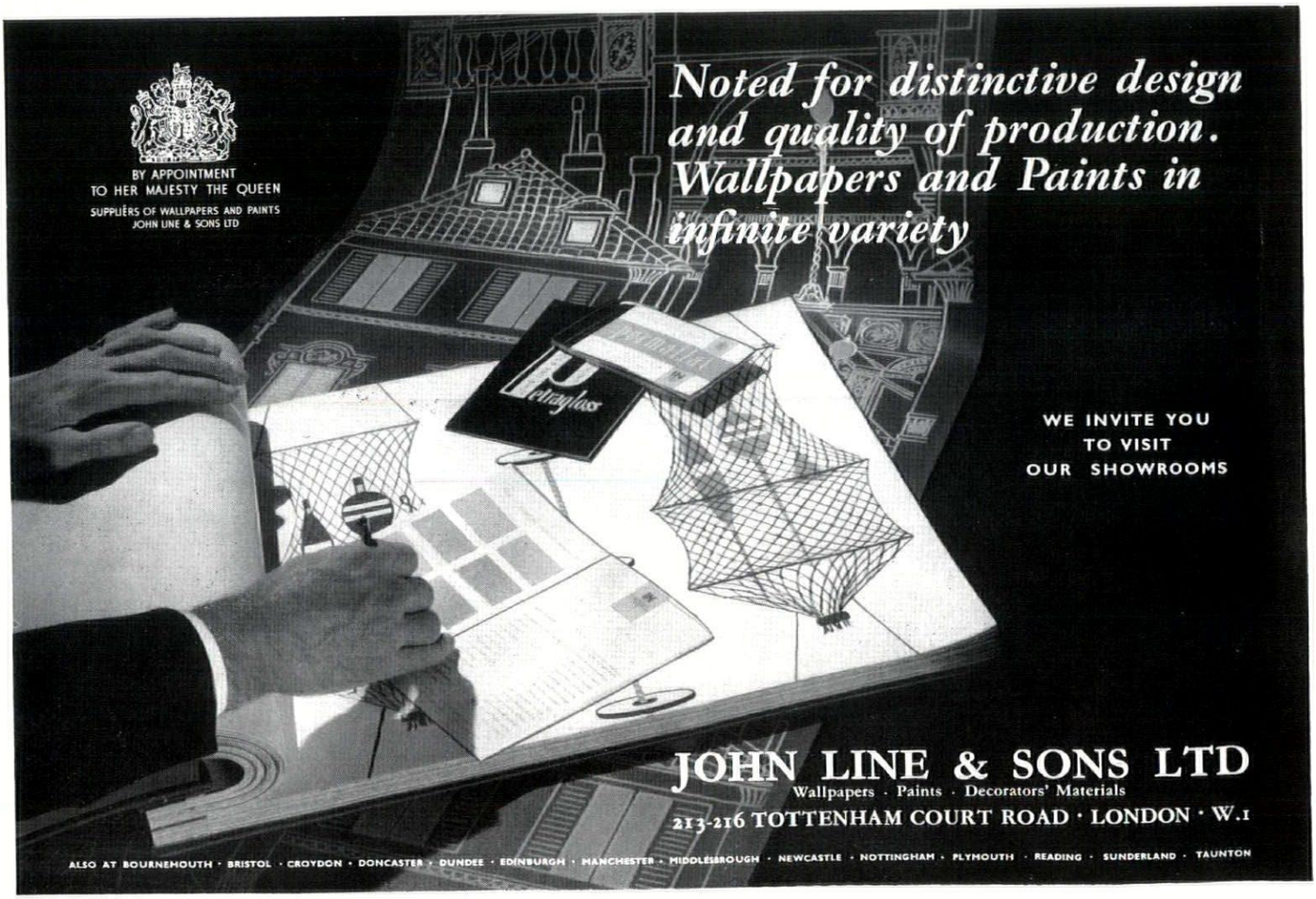
Motor Showrooms, Offices and Garage, Lincoln. *Architect:* Denis Clarke Hall. *General contractor:* Gee, Walker & Slater Ltd. *Sub-contractors: Myko beams:* George Greenwood & Sons. *Concrete tie beams:* Cawood Wharton & Co. *Bricks:* George Armitage & Sons. *Piling:* The Cementation Co. *Heating:* Young, Austen & Young Ltd. *Patent glazing:* The Standard Patent Glazing Co. *Plumbing:* J. H. Shouksmith & Sons. *Thermoplastic tiles:* Semtex Ltd. *Felt roofing:* William Briggs & Sons. *Garage doors:* Bolton Gate Co. *Turntable:* Entwistle & Walker Ltd.

Department Store and Offices, Birmingham (for Harrods, Ltd.). *Architect:* T. P. Bennett & Son. *General contractors:* Taylor Woodrow (Construction) Ltd.

Central Area Flats, Coventry. *Architect:* Arthur Ling (Coventry City Architect). *General contractor:* Geo. Wimpey & Co.

Flats at Crawford Street, London. *Architect:* Douglas Stephen. *General contractors:* Davies & Rentowl Ltd.

Two-Storey Houses, Basildon. *Architect:* A. B. Davies (Basildon Development Corporation). *Main contractor:* W. & C. French Ltd.



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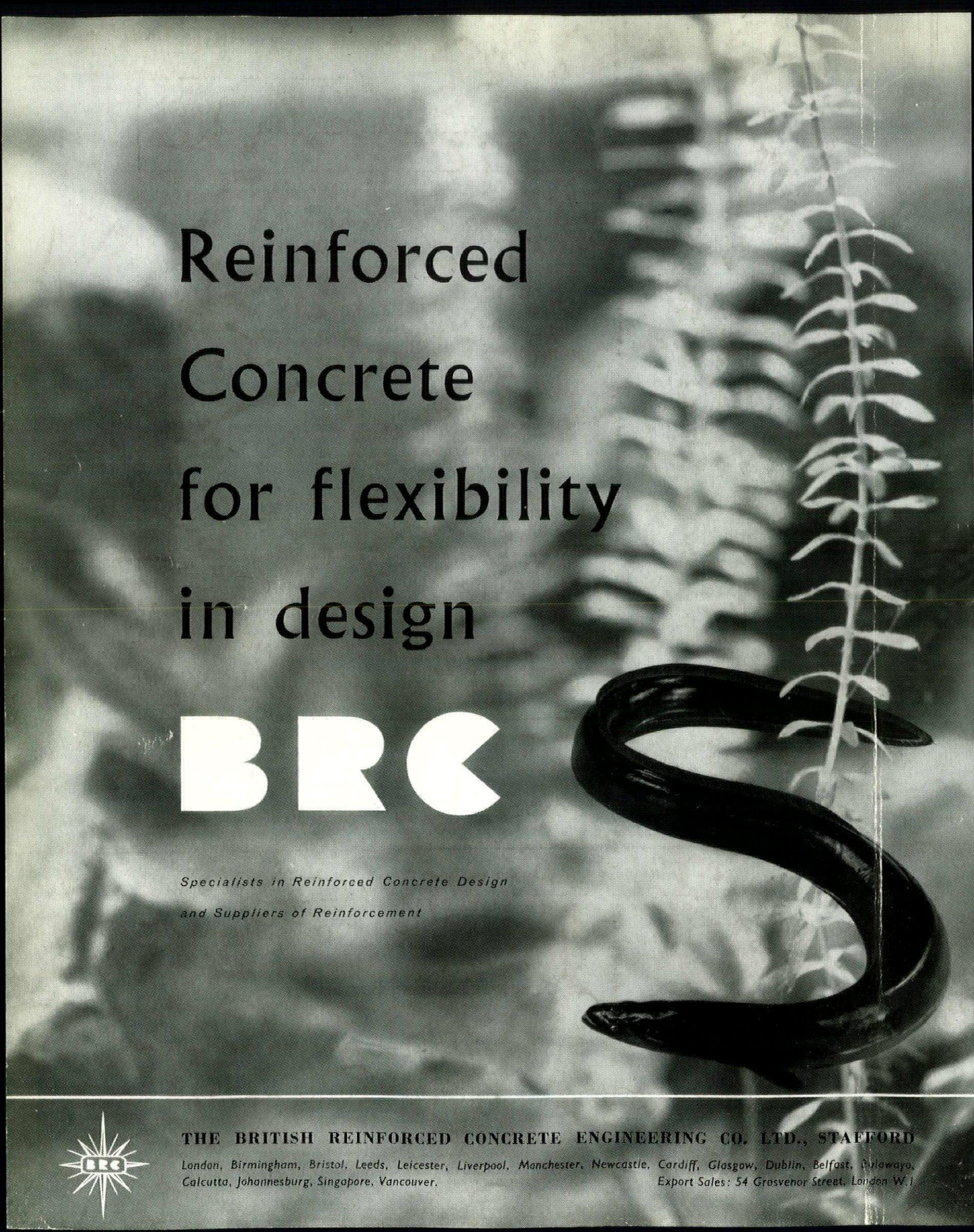
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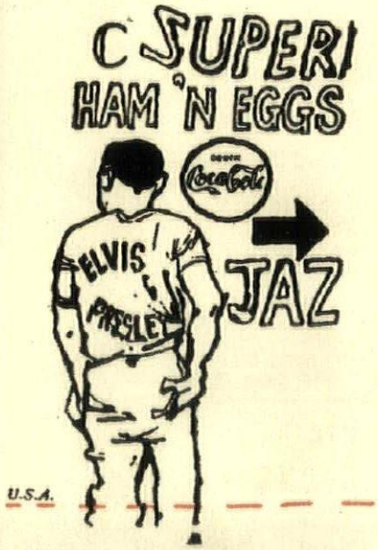

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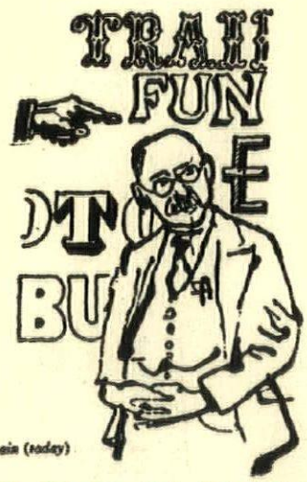
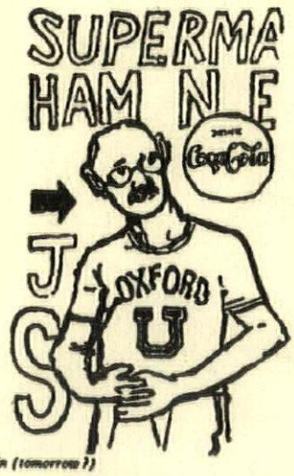


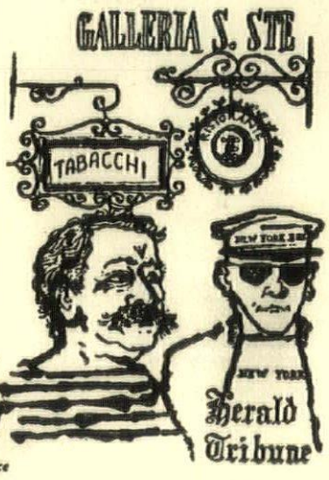
Britain (today)



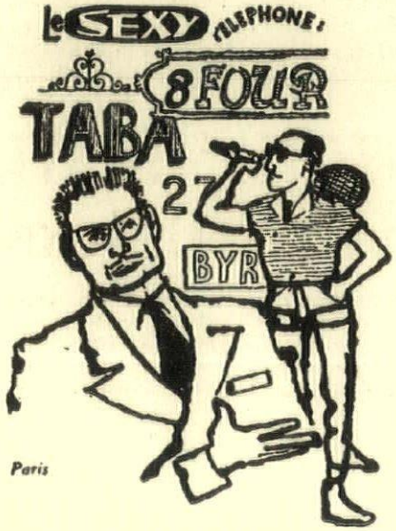
Britain (tomorrow?)



Milan



Venice



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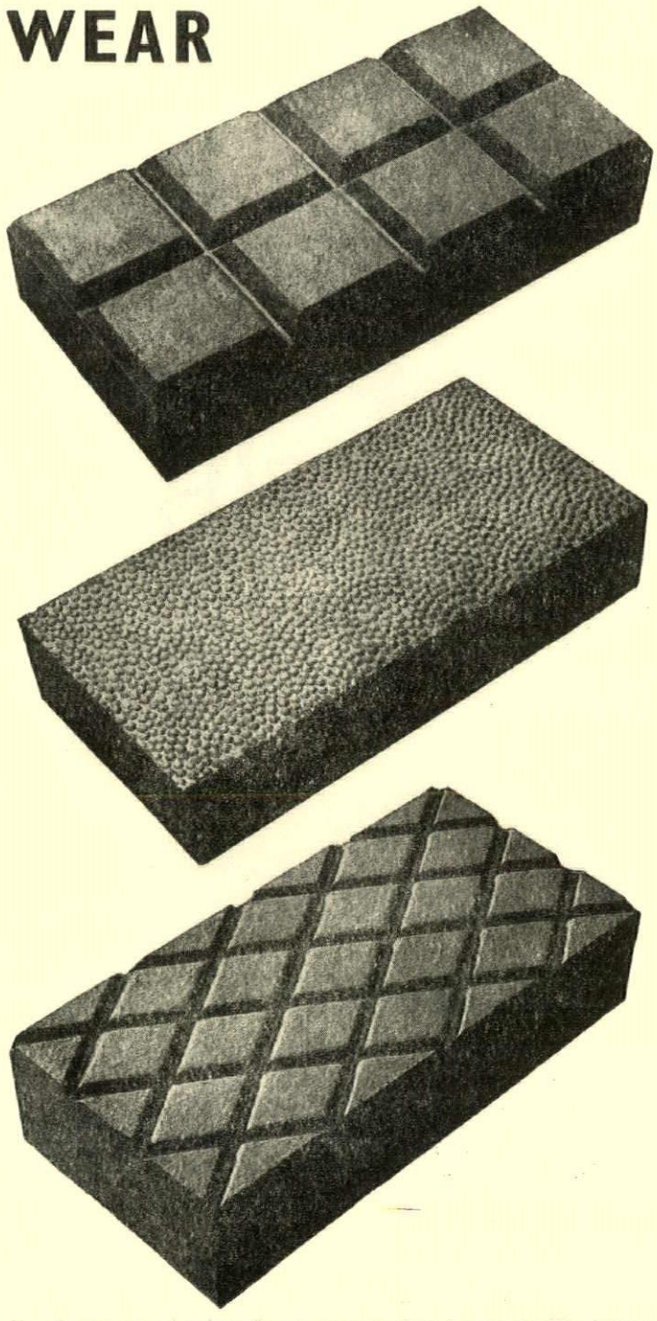

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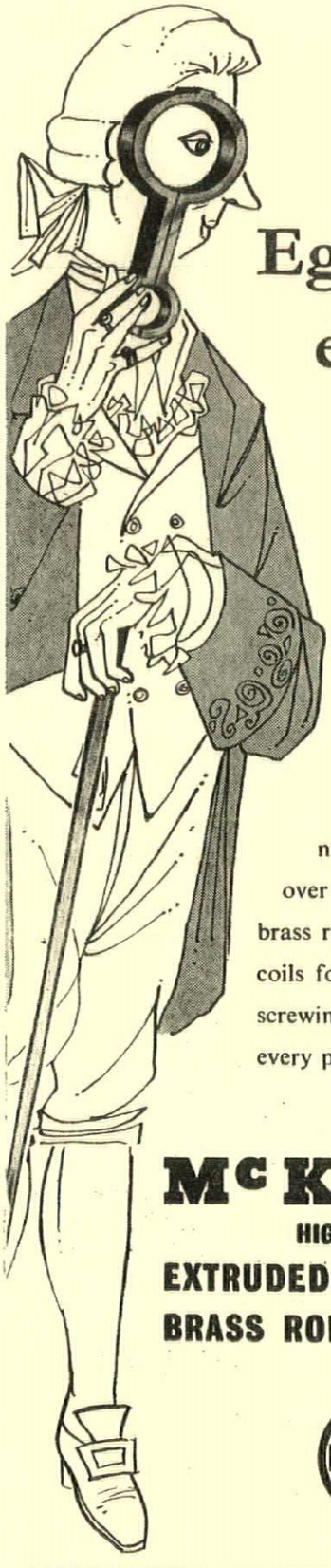

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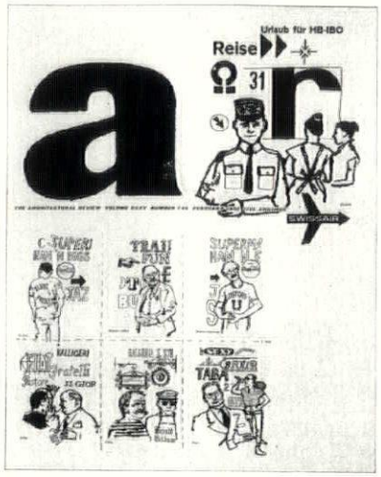

The Cover. This month's cover reproduces from the *SIA Journal*, an attempt by Len Deighton to characterise some well-known localities by the typography that forms the typical background to their typical inhabitants: top right, Zurich; centre left, USA; middle, England today; right, England tomorrow (?); bottom left, Milan; middle, Venice; right, Paris. The part played by lettering in establishing not only the *genius loci*, but the character of architecture generally, is a theme to which the REVIEW has constantly referred, both in general terms, and Nicolete Gray's detailed studies of letter faces. The concluding articles of her series are due to appear in the next few months, after which the whole set will be collected in a book to be published by the Architectural Press later in the year.

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THE ARCHITECTURAL REVIEW
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Whitehall 0611 Five shillings

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CORRESPONDENCE

Boston Manor

To the Editors.

SIRS,—May I make some personal comments on the Boston Manor Scheme described on pages 73–4 of the January AR? While I think the idea is first rate I feel that the plan is just a formal diagram, a completely symmetrical gridiron without a curve or irregular space, and without any attempt to let the place live through its impact on the eye. Townscape, if it exists at all, means here only a bit of fiddling with the floor. Even as a basic diagram it would be far too doctrinaire and rigid: as a detailed working out it seems intolerable, giving exactly the same lack of identity and monotony as the existing Boston Manor, simply providing more of it on a given area. The same formal sterility can be seen in the newer northern parts of Roehampton; it is beginning to appear in the East End—and I feel it is more dangerous to the establishment of modern architecture as a proper living part of the environment than anything else, fake half-timbering included. This is no party line plea for the Picturesque or for any other style: it is simply an expression of the fact that the eye sees serially and continuously, not in a series of staccato jerks.

The plan (I mean literally the *plan*, not of course the idea as a whole) is inhuman in two senses, as well as being visually sterile: the two often go together. First, it will simply engender the pigeon-hole Dolphin Square feeling: the formality and the symmetry defeat any simple human gesture of identification. Yet if instead of five or six house types there had been fifty or sixty (and the range of people, thank goodness, is infinite) the variety and humanity could have been achieved naturally—not artfully contrived in the way that the garden cities were, but growing naturally out of the functional requirements—houses with the big windows, houses with no windows, houses for a family of three and houses for a family of eight and two St. Bernards. And if such a chaotic assortment gums up the rigid pattern, so much the better: a real place might be born out of it.

The second inhumanity is a simpler business. There happen to be people already living in Boston Manor, and by and large they seem to enjoy it. The intention of the plan is, I am sure, that they will enjoy the new Boston Manor more—and on the same suburban terms as at present. But they will not do this by wholesale clearance and compulsory purchase, which is all that is held out for them. Such a scheme need not (and ought not to) involve such things: at Boston Manor as at dozens of other places, there is empty land available to start with—the area over the railway tracks, the usual quota of derelict plots, and a big patch of allotments and playing fields to the south of the railway (to

acceptable injustice; to take permanently a man's house does not). The central mall could be built, axially and formally, and would give quite enough plane geometry for one suburb; the high density terraces and patio houses could be built, asymmetrically, on the available vacant land and the present inhabitants could then be invited to move in to what ought in all fairness to be a freehold house. If they did, then the existing houses could be demolished piecemeal, one at a time, and new buildings inserted. If they didn't wish to move then they should be left, and good luck to them; the old housing would then be mixed in with the new—and even a 1928 brand semi-detached would help the character along. It is one thing to propound and argue a town planning aesthetic and quite another to try and force it on to an unwilling population.

I particularly regret having to write like this about the plan because I think that Chamberlin, Powell and Bon are one of the half dozen best firms in the business and I freely grant that they have made a great success of just such a rectilinear scheme at Golden Lane (though on a small scale, and this is crucial—you can always see out to the great unplanned world—and also making the utmost play with changes of level in lieu of curves). Corb's architecture made the modern movement; Corb's town planning could very well break it unless architects remember very smartly that town-making is people; people in all their multiformity and idiosyncrasy. Being in a strait jacket is no better than being dead, however high the brow above it.

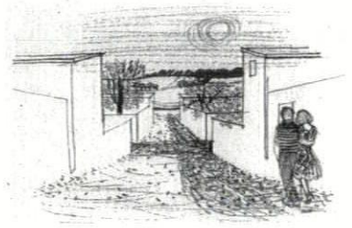
Yours, etc.,

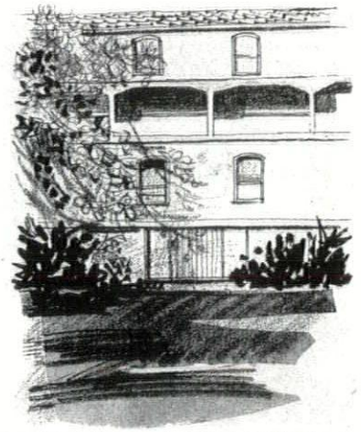
IAN NAIRN.

Regarding Nairn's Letter

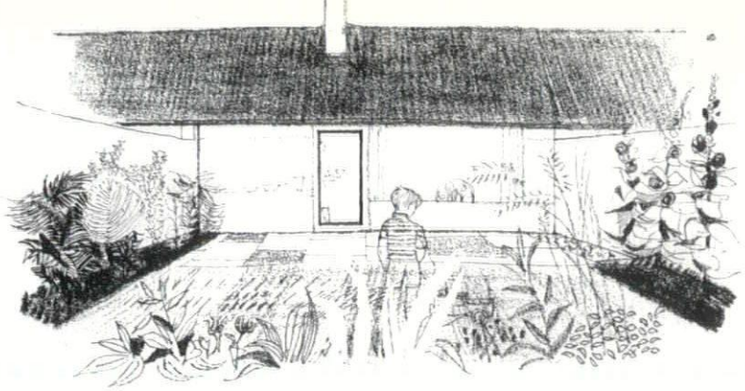
To the Editors.

SIRS,—We find it difficult to put our finger on just what Ian Nairn is getting at. He talks about curves and irregular spaces as if they were automatically superior in some way to straight lines and rectangular spaces. He refers to our planning on different levels, the separation of roads from footways and the layout and planning of open space on a scale larger than backgardens—which are all that exist now—as being merely 'fiddling with the floor.' He says that our proposals give exactly the same lack of identity and monotony as the existing Boston if Boston Manor were to be rebuilt in the way we have suggested (which Ian Nairn is quite entitled to deplore) it would be quite different from any other place in the whole world and would therefore at least possess the identity which springs from uniqueness. At the moment Boston Manor is a sea of two-storeyed houses flanking suburban streets which is, of course, extremely monotonous. We have proposed the creation of an entirely new centre with shops, offices, restaurants, places of entertainment, houses of infinitely greater variety than exist now, as well as flats and maisonettes for those who prefer them. Both in terms of providing more varied opportunities for living and more visual variety, this must be far from the present monotony existing at Boston Manor, which is, of course, unbearably—and unidentifiably—similar to countless other suburbs. Does Ian Nairn claim all formality as, in itself, inferior to any informality? If so, then of course our views are different as we think there is need for a coherent framework in planning and architecture; such an arrangement need not of course be a strait jacket. It appears to us that Ian Nairn thinks solely with his emotions; for instance, what do the following phrases mean: 'the formality and the symmetry defeats any simple human gesture of identification,' 'being in a strait jacket is no better than being dead however high the brow above it,' '. . . town-making is people'?





2, *a paved alley-way leading to Osterley Park.*
3, *front of maisonette block.*



4, *a typical terraced cottage from the garden.*
5, *patio houses, with two storey bedroom blocks linked by screen walls, with the living rooms beyond.*



Nairn says that he favours a chaotic assortment of housing and yet denies—for some reason—that he is pleading for the picturesque. Surely one of the basic activities of architects is to try to bring order out of chaos. If you prefer chaos to order, then don't pretend that you like or want architecture. What he is really after appears to be spec builders offering infinite quaintness, people endlessly expressing their personal appetites in an aggressive way, and the accidental at all costs rather than the deliberate. If Nairn's thoughts are to be taken literally, it would appear that no wholesale redevelopment can ever take place which involves the replacement of somebody's house with a better building, however much the community at large may benefit. Consequently he allows no place for the synoptic vision, or regional planning, or for radical thinking about our ways of living in the twentieth century. This seems to us to be an extraordinarily defeatist attitude to be adopted by the highly intelligent and cultured people who occupy this overcrowded island — particularly when one remembers the technology available to us which could be used to improve our environment out of all recognition. After all, we have made mistakes in our suburbs, we can at least try to improve them even if the risk is that we make further mistakes. But can we really afford to inhibit our opportunities by regarding every Englishman's home as a holy cow?

In the last resort, of course, it is the architecture which matters; a good plan, be it symmetrical or unsymmetrical, can be ruined or realized by the quality of the buildings and spaces of which it is composed. Our design of Boston Manor is a simply expressed coherent idea intended to take advantage of the possibilities offered by the site and the opportunities implicit in the programme to create a three dimensional architectural composition, which will not only fulfil the functional requirements but will also bring delight to those who live and work there. Its development would provide endless opportunity for enrichment in form and detail. But what really has Nairn got in mind, will he point to the sort of development which he would like to see by quoting twentieth-century examples which he thinks would be appropriate at Boston Manor? In the meantime we would like you to publish a few of the original sketches which accompanied our proposals so that your readers may judge how 'inhuman and visually sterile' we are!

By the way, Nairn writes as if we were solely responsible for the Boston Manor study. While we are quite ready to weather any criticism we would like to remind you that credit for any virtues the scheme may have must be shared with Shankland and Gregory Jones.

Yours, etc.

PETER CHAMBERLIN.

1, *the square on market day.*



MARGINALIA

Le Corbusier Exhibition

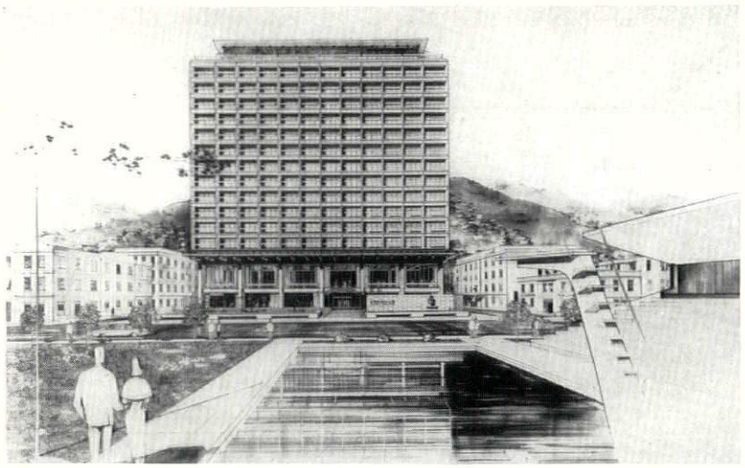
Due to private, rather than official enterprise, the touring exhibition of the work of Le Corbusier, which had already been seen in Zurich, Berlin, Stockholm and other European centres, finally opened to the British public in Liverpool in December, and will now be on view in London, at the Building Centre, Store Street, W.C.1, until March 6. It is not an entirely comprehensive exhibition, since it gives very full coverage to works recently completed or still in hand, but makes a number of conspicuous omissions from his earlier *Oeuvre*—the absence of the *Cité de Refuge* and all the Swiss buildings before 1918 considerably impoverishes the picture given of him.

However, what is shown is well shown, in the form of large photographs, drawings and some excellent models, supported by a number of paintings, sculptures and tapestries, some of which have hitherto been known only from magazine illustrations. Although the works shown are grouped by themes, rather than chronologically, and emphasize certain recurrent strains in Le Corbusier's work and thought, they shed surprisingly little light on the problem of his current changeability of style between the curved plasticity of, for instance, Ronchamp, and the

rectangular slab-construction of, say, the Mill-owners Building at Ahmedabad. What is clear, however, is that a well-known saying of his must now be amended to read 'the secret of my research must be discovered in my painting *and my sculpture*' and the exhibition, by confronting paintings, sculptures and models of his buildings gives a probably unrepeatable glimpse of what that secret might be.

Canada on the China Coast

The 240-room Victoria Park Hotel in Hong Kong, due for completion in 1960, is more than an Hotel Fabulous with a surprisingly English name, it also marks a new stage in Commonwealth architectural co-operation and the emergence of Canada as a power in international architecture, for its designers, in association with Professor Gordon Brown and local architects Wong and Ng, are the increasingly well-known Toronto firm of John B. Parkin Associates. (Recent work by this office was illustrated in November, 1958, AR.) The published perspective shows a block whose fifteen storeys tower above the colonial roof-lines of immediately neighbouring buildings, but there are a number of other developments of this scale in Hong Kong already, while by comparison with Japan, of course, the size is unremarkable. A more instructive comparison with Japan, however, and with the work of Kenzo Tange in particular (*Marginalia*, December, 1958) suggests that the rapprochement between the architecture of East and West may not after all be along the Mies-Katsura axis, but somewhere between Le Corbusier and Oriental monumental, bracketed architecture.



6, fifteen storey tower of Victoria Park Hotel, Hong Kong.

The Art of Re-issuing VIII

Architecture, You and Me (Oxford University Press, 30s.) is a collection of miscellaneous papers by, or addressed to, Sigfried Giedion between the years 1937 and 1956. It originally appeared under the German title of *Architektur und Gemeinschaft*, which is far more apt to the intentions of the book because it avoids the Pop-art and catchpenny implications of the English version. These texts are, in fact, far from catchpenny and the first section of the book, 'The Ruling Taste,' which is chiefly about Ary Scheffer, is specifically anti-popular—the key essay here was begun in 1936, and revised in 1955, and this lapse of time may be responsible for the fact that this is the only piece in the book that contradicts the axiom *Giedion speaks only of the questions of the hour*, for its underlying theme is that Pop taste is wrong, a proposition curiously at variance with the ideas of the Fifties.

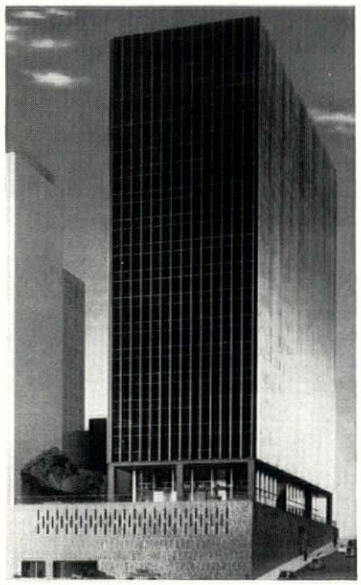
For the rest, the book accurately reflects the questions of successive hours in the post-war history of CIAM—Monumentality in 1945, Integration of the Arts in 1947, East-West politics in 1949, The Core of the City in 1951, the New Regionalism in 1954, Hyperbolic Paraboloids in 1956—and provides an unusually handy guide to the movement of ideas in progressive Western architecture in the first decade of Peace, down to—but not, alas, including—the decomposition of CIAM in 1957, under the influence of younger men to whom Giedion was less an historian than an historical figure. As a proper counterbalance to this, the only section of the book which seems, at the moment, to have any standing more lively than that of an historical document, is the one in which Giedion examines his professional conscience as an historian on the subject of the teaching of architectural history. Though one may not agree with his proposal that the history of architecture be taught as the history of space-concepts, the teaching of history will be the question of many hours to come, and his views as a professional in the field must be heeded.

Architettura Cantiere

Architettura Cantiere, the most serious of the Italian magazines—not to be confounded with Zevi's *L'Architettura*—has recently devoted three whole issues (Nos. 12, 16, 18) to the work of Ina Casa. Ina stands for the Istituto Nazionale Assicurazioni and Casa stands for casa on a very large scale. The institute is a State Agency, the daughter institute for the building of housing estates an independent body working with Government funds. As in Italy the building of estates of low-rental flats is not carried on by the cities and provinces themselves, Ina Casa has taken their place. Their estates are to be found everywhere in Italy. They range from minor infillings to housing for populations of 4,000 and up to 6,000 (Cesate, Milan) and even 10,000 (San Giuliano, Marghera-Mestre), and what makes Ina Casa the most remarkable housing agency in Europe is the fact that their estates are designed consistently by good architects in private practice. There are estates by BBPR, by Albini, by Figini & Pollini, by Paniconi & Pediconi, by Gio Ponti, by Vaccaro, by Quaroni, by Daneri, etc., etc., and amongst consultants brought in, there are Piccinato and Samonà. In addition—which is perhaps even more remarkable—there are any number of minor names who, with the help of Ina Casa, get a chance of putting work before the public on a scale not otherwise available in Italy. Some are rationalists, some are anti-rationalists, some are brutal, some are smooth, some are villagey, some are urban. The only thing that they hardly ever seem to be is landscape-conscious. Otherwise these three issues of *Architettura Cantiere* are a pattern book of modern estates and would well deserve to be available as a book in this country. We are short of literature on good high density housing.

The Norton Building

At first sight, 7, a regular US office-building in the now established curtain wall vernacular idiom, distinguished from its peers and equals chiefly by careful detailing and lavish technical equipment, the Norton Building in Seattle, designed by Bindon and Wright (with Skidmore, Owings and Merrill) contains an important innovation which may or may not be taken up against the grain of recent American structural thought. Apart from the lift and services stack there are no fixed vertical internal structures at all, and by using deep pre-stressed concrete floor-beams it is possible to offer tenants clear office floors seventy feet square on either side of the core, and seventy by thirty in front of it. It remains to be seen, of course, whether unlimited freedom in plan that this offers will ever be fully exploited, or whether service outlets will, in practice, impose a limiting module by their location on a five-foot-square grid.



7, glass tower in Seattle.

Tattersall's Concrete Horses

The customary praise, for having commissioned public architectural sculpture by a living artist, can be reinforced in the case of the group of horses on Caltex House, Knightsbridge, 8, by Franta Belsky, with praise for the topographical appropriateness of the iconography (the building occupies the site of Tattersall's, a name to conjure with in horse-racing) and for the technique employed. Not a separate work of art, balanced on or clamped to the building, it takes its origin from a purpose made r.c. column integral with the main structure. To this column were attached the reinforcing rods that form the skeleton of the sculpture, which in their turn were skinned in expanded metal and lathing to form the key for the trowelled-on cement that gives the visible form of the sculpture. The final surfacing is in burnished and wire-brushed plastic metal.



8, side view of Belsky's horses.

Correction

Apologies are due to Mr. K. Lint for the misspelling of his name on page 326 of the November issue.

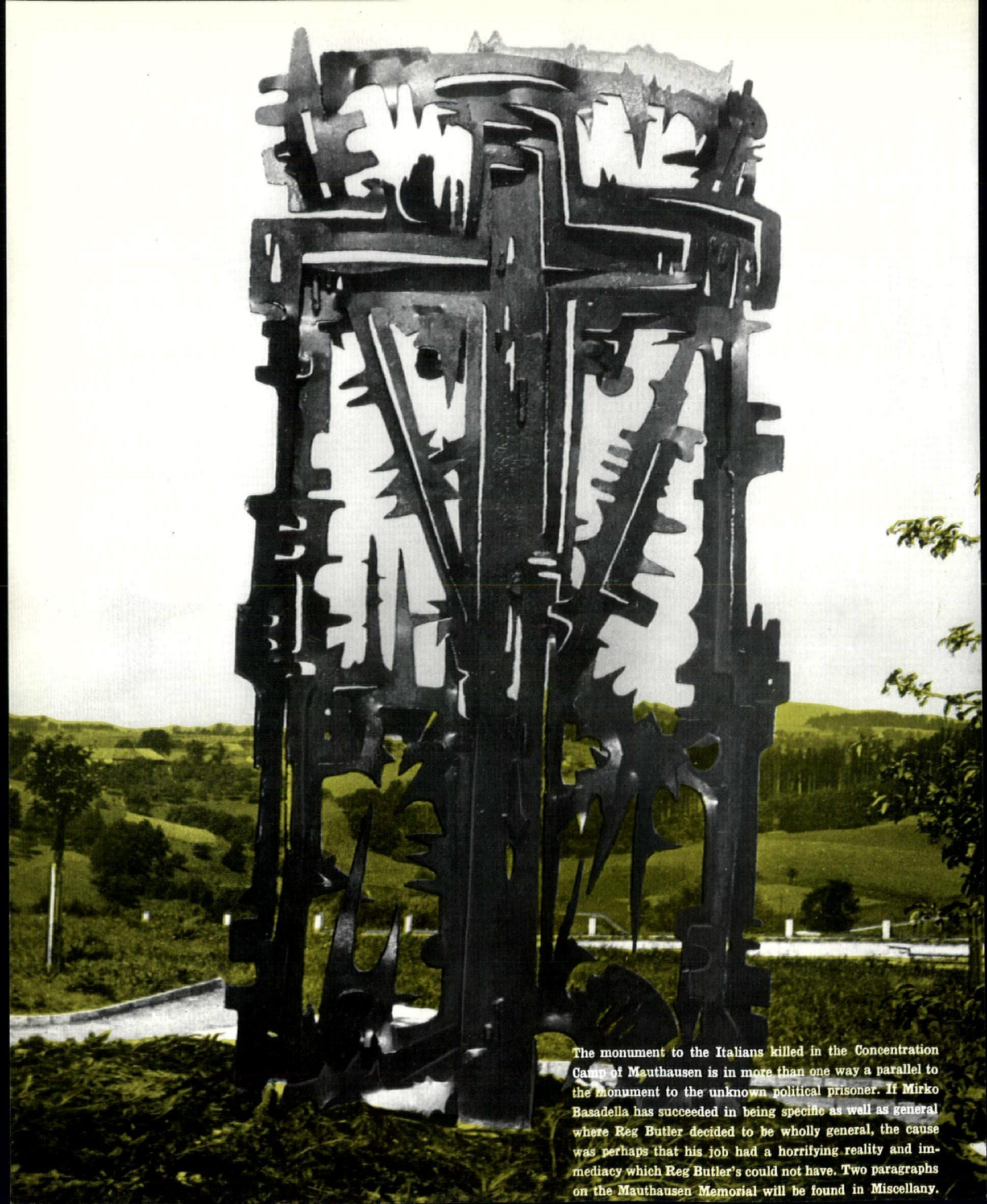
Intelligence

Leeds University announce the appointment of Mr. Peter Chamberlin, of Messrs. Chamberlin, Powell & Bon, as Consulting Architect to the University from December, 1958.

The Institute of Landscape Architects, of 1 Park Crescent, Portland Place, W.1, is contemplating setting up a landscape Design Centre at their premises. To assess the demand for such a centre they request anyone interested in taking advantage of it to write to the Secretary.

ACKNOWLEDGMENTS

MARGINALIA, pages 83–85, 1–5, Architecture & Building ; 6, John B. Parkin Associates ; 8, Godfrey Mac-Dominic. HOSPITAL IN BELFAST, pages 90–93, Galwey, Arphot. BRASILIA, pages 94–104, Humberto and José Franceschi, Marcel Gauherot and Peter Scheier. SOLAR SUN MILL, pages 105–107, 6, Aluminium Co. of America. SPAN, pages 108–120, 5–11, 13, 17–19, 23–25, Peter Pitt; 12, 14, 20–22, Toomey, Arphot; 15, 16, 26, Sam Lambert. INTERIOR DESIGN, pages 121–125, House for the Principal of Newnham College, Raymond Wilson; Offices in Berkeley Square, 9, 11, 13, 14, Toomey, Arphot; 10, 12, John Maltby. DESIGN REVIEW, page 126, 1, Strüwing Reklamefoto; 2, 3, Edinburgh Weavers; Carr in Portugal, frontispiece and 1, Photografia Atvas. CURRENT ARCHITECTURE, pages 129–130, 1, 2, Paul Forster; 3, Hans-Dieter Haren; 4, 5, Pickard of Leeds; 6–8, Galwey, Arphot. UNIVERSITY OF NIGERIA, pages 132–136, 1, 2, Alfred Cracknell. MISCELLANY, pages 137–144, Exhibitions, 3, Newport-Givilt; 4, Tomorrow's News; 5, R. B. Fleming & Co. Ltd. and The Arts Council of Great Britain; 6, Lord's Gallery; 7, 8, James Mortimer and The Arts Council of Great Britain; 9, Lee Krasner Pollock; 10, Mrs. H. Gates Lloyd. Jacobsen, pages 140–142, 1, 2, Niels Berg; 3, 7, Strüwing; 5, Finmar Ltd.; 6, Erik Hansen. THE INDUSTRY, 2–3, Northern Aluminium Co. Ltd.; 6, TAF (International) Ltd.



The monument to the Italians killed in the Concentration Camp of Mauthausen is in more than one way a parallel to the monument to the unknown political prisoner. If Mirko Basadella has succeeded in being specific as well as general where Reg Butler decided to be wholly general, the cause was perhaps that his job had a horrifying reality and immediacy which Reg Butler's could not have. Two paragraphs on the Mauthausen Memorial will be found in Miscellany.

Reyner Banham

THE GLASS PARADISE

As research into the motivations of modern architecture proceeds, unacknowledged pioneers are being brought to light whose contributions must be set beside those of the masters who have already been written into the record. Outstanding among the missing pioneers is Paul Scheerbart, a Berlin literary bohemian who died in 1915 *and, as Reyner Banham shows in the article below, a man with a strong claim to be regarded as the true prophet of all-glass architecture.*

The public were less surprised by Lever House than was the architectural profession—and this was logical, for had not a massive body of opinion-making machinery been telling them, since the mid-Twenties, that modern architecture was just a lot of glass boxes? Architects, on the other hand, knew that between the glass legend and the concrete fact there was a great gulf fixed—a gulf forty years wide and as deep as the building industry.

In spite of near-misses like Gropius's *Faguswerke*, and any number of exhibition buildings, in spite of Mies van der Rohe, Lever House was still the first of the glass towers to realize a seminal concept that has lurked in the mind of the Modern Movement since before the first World War. The reasons for this extraordinary lack of phasing may be traced back to the Movement's own view of itself, and particularly to its tendency to try and tidy up its own history as it goes along.

The respectable genealogy of the glass legend is primarily the work of two men: one was Hermann Muthesius, father of the *Deutscher Werkbund*, who wrote in his *Stilarchitektur und Baukunst* of 1902, of the beauties of the Crystal Palace and the Galérie des Machines, station halls, covered markets, and most of the totemic objects of the glass dream—a pioneer re-assessment of the nineteenth century. The other is Sigfried Giedion, whose *Bauen in Frankreich* of 1928, related the architecture of his contemporaries back to Muthesius's canon of nineteenth-century masterpieces, and interpolated, with great historical subtlety and erudition, a philosophy common to both. His contemporaries were, of course, delighted to find that they were following such distinguished precedents, most of which were unknown to them until they opened the book.

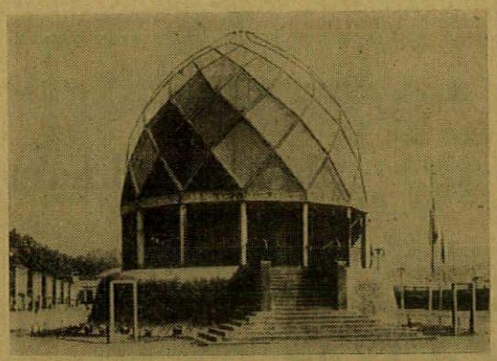
But if these precedents were, in practice, unknown to them, what precedents did they follow, what motives drove them? What, in fact, had been said and done to further the glass dream between 1902, when Muthesius pointed the way, and 1929, when Giedion's book was shortly followed by others by e.g. Artur Korn or Konrad Werner Schulz, which dealt specifically and exclusively with glass in building.

One can point first to two respectable contributions, Meyer's *Eisenbauten*, before the first World War, and the *Ingenieurbauten* of Lindner and Steinmetz after it, which both drew attention to buildings of the type originally praised by Muthesius, but were not particularly slanted toward glass. One sees also that Bauhaus teaching, and the example of the Bauhaus buildings in Dessau must have turned men's minds in the direction of transparent membranes, even though Le Corbusier's first *pans de verre* were still, so to speak, around the corner of a white rendered wall. But in all these there is no sign of the singing tones of prophecy, the incantatory repetitions that give a material those symbolic powers, over and above the recommendations of reason, that make it a live component in architecture.

It is to Germany, in the months immediately preceding and immediately following the first World War, that we have to turn to find that prophetic tone, to the period bracketted by the completion of the glass wall of the *Faguswerke*, late in 1913, and the second, 1920, glass-tower project of Mies van der Rohe. Both of these are accounted works of the party of reason, yet both, on examination, are found to have some curious cousins. Mies's glass-towers have been justly called Expressionist, while their contemporaries, from Gropius's side, include the first Bauhaus proclamation with its gushing rhetoric about buildings 'like crystal symbols,' and a three-spired gothic cathedral on its cover.

All this is commonly written off as an aberration due to 'Post-war Berlin.' But if it was, then it was an aberration that gripped a generation, and must have more in it than meets the eye. In fact, there is a great deal in it, a great deal of the Modern Movement's disreputable ancestry, but as far as the glass legend is concerned, there are two dominant strains, both traceable back to the Werkbund's exhibition in Cologne in 1914. The importance of that exhibition for the glass dream is known, and acknowledged in every history by an illustration of one of the staircases of Gropius' office block in its glass hemicylinder. But that is only half the story.

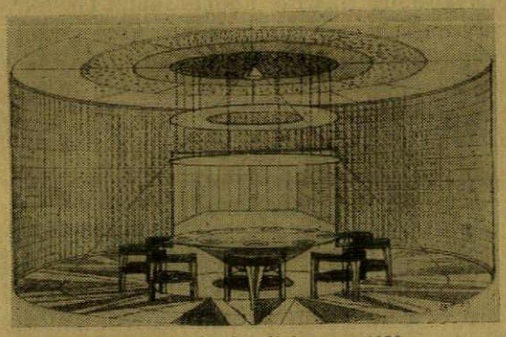
There was also at Cologne for that exhibition a pavilion devoted to the glory of glass exclusively, a pavilion that demonstrably had a far greater immediate effect on the imagination of German architects than Gropius's did, for sundry descendants of it can be identified in designs done after the war, including Mies's first, faceted design for the Friedrichstrasse skyscraper. This pavilion cannot be comfortably fitted into the history of the modern movement—particularly if that history, like Giedion's, is slanted for continuity—because it is so wrong for its time: a primitive geodesic dome of steel and glass, raised on a drum of glass bricks containing staircases with



1, *Bruno Taut: Glass Industry Pavilion*, 1914.

glass treads and glass risers, a design imbued with the homogeneity and visual certainty that Gropius's office block so conspicuously lacks, even allowing for differences in function and form.

The Glass Pavilion was the work of Bruno Taut, and so far exceeds every other design from his drawing board that one may properly enquire what lies behind it. The clue is given by Konrad Werner Schulz: it was *Paul Scheerbart gewidmet*, and this Paul Scheerbart was *der literarischer Vorläufer und Anreger moderner Glasarchitektur*. Now, the statement that the literary forerunner and instigator of modern glass architecture was Paul Scheerbart will probably come as a complete surprise to English-speaking readers and to many



2, *Bruno Taut: project for glass dining room*, 1923.

German-speakers as well. In German architectural literature his name is unknown outside the works of Schulz, Platz (two brief references in his *Baukunst der neuesten Zeit*) and some forgotten books by Bruno Taut. In English, there is a glancing reference in Giedion's *Walter Gropius: Work and Teamwork*, but not a word in *Space, Time and Architecture*.

The oblivion into which Scheerbart's name has fallen suggests—and how rightly—that he is not to be numbered among Modern Architecture's respectable ancestors. Handbooks of German literature, unanimously unaware of his architectural interests, record an almost spherical bohemian layabout—and Kokoschka's portrait confirms this—a fringe-member of the Futurist-Expressionist *Sturm* group, born in 1863 and dead in 1915, the author of fantasticated novels, mostly short and decorated by his own hand in Yellow Book style. Many of these novels can best be described as contra-science-fiction, astral pantomimes, moon romances, astral novelettes and what-have-you. Beyond this, his output included appendices to the Munchausen legend, Harem romances, an *Eisenbahnroman* that appears to be the pioneer of that genre of literature whose chief ornament is the *Madonna of the Sleeping Cars*, a 'Hippopotamus' novel (of which more in due course), and a telegraphic romance called *The Mid-Ocean Hay-fever Sanatorium*, in whose very title one perceives something of the vein of practical logic that runs through his one work specifically devoted to the arts of building, *Glasarchitektur*, published in 1914.

Dedicated, as one might have guessed, to Bruno Taut, it is a slim, soberly-presented volume, quite unlike his novels in typography and format, and runs about a chapter to a page—some of the chapters no more than single thoughts noted in a couple of sentences—for 125 pages. These chapters are only loosely connected, though not much more loosely than those of Le Corbusier's *Vers Une Architecture*, and like that work they expound an unpredictable mixture of uninhibited vision and sharp practicality. Both the vision and the practicality draw their strength from the things that Scheerbart knew at first hand or had seen with his own eyes—glazed verandas, palm-houses, public halls, searchlights, zeppelins, sanatoria, mirror-panelled café interiors, theosophist publications, the Cologne pavilions of Taut (explicitly) and Gropius (by inference), and much more besides. The vision he offers is a compound of all these, torn from their contexts, and re-assembled by a mind unrestrained by conventional ideas and received opinions, but buttressed by a shrewd idea of what will, and what won't work.

> The vision of a glass world
> . . . as entirely delectable as the gardens of the Arabian Nights . . . a paradise on earth . . . we shall show no longing for the paradise of heaven

begins with something that was common knowledge to Scheerbart and most of his readers, the glazed conservatory. This he envisaged becoming ever larger and more important until it had to be emancipated from the house, and set up independently in the garden. The glass-world citizen then abandons his old house and moves into the conservatory, which is aesthetically linked to the garden (floodlit at night) by glass walls and screens that extend its structure into its surroundings. As a habitable environment, the conservatory-house, which Scheerbart seems to envisage as something like Taut's glass pavilion, has double walls of coloured glass carried in a reinforced concrete frame clad in mother of pearl or mosaic. Its floors were to be of coloured ceramic tiling, its furniture of glass with brightly enamelled steel legs and upholstery of glistening glass-fibre cloth. Artificial light was to enter the rooms from sources between the double-glazing, and from hanging lamps of oriental style, the heating under the floor.

The landscape in which the jewel-like house and its floodlit garden are situated is to be a diffuse metropolis, with air-navigation beacons winking from the tops of its taller buildings. Illuminated trains, cars and motorboats, like blazing jewels traverse the night scene, while overhead, zeppelins, brightly-lit themselves, and shedding light over the land, cruise toward an air-terminal in a park of experimental glass buildings, one of which is a hangar whose roof-space is occupied by an exhibition of models of historic airships, all with their own miniature lights ablaze. The shore line of the Swiss lakes, the outlines of the smaller Alps are picked out in brilliantly lit glass hotels, the summits of the higher peaks are floodlit in colour. Venice—or a new movable Venice—is a cluster of huge pyramidal buildings, glazed and illuminated and doubled by their reflections in the calm sea. Tourists, no longer hurrying from distraction to distraction, move calmly from the contemplation of one glass wonder to another.

About this vision certain things need to be said. Its inspiration was certainly personal—Scheerbart, it appears, was often poor, cold and miserable in squalid surroundings, and had an acquired hatred of the ill-lit and oppressive atmosphere of congested masonry cities. Hence the diffuse planning of the glass dream-world, the gardens and the greenery. Hence, too, the dedicatory motto he pronounced at Taut's Cologne Pavilion

> Das Glas bringt uns die neue Zeit
> Backsteinkultur tut uns nur Leid
> (Glass brings us the new age
> Brick culture does us only harm)

and his insistence that the 'metropolis in our sense' must be dissolved. But Scheerbart, unlike some of the glass-enthusiasts of later generations, was under no illusion that glass was in itself a universal panacaea. He had too much practical sense for that, and knew the weaknesses and side effects of its use. He knew that it was all too pervious to heat, and insists frequently on the need for double glazing. He knew also of the green-house effects it can produce, and insisted that glass architecture was for the temperate zones, and not the tropics nor the polar regions. He knew that his call for *Mehr Farbenlicht!*—More coloured light!—that runs through the whole book, could only reasonably be answered when electricity was more cheap and plentiful than at the time he wrote. When hydroelectric power came in, he prophesied, then even

private persons will have floodlighting in their gardens. He knew from Taut that the making of convincing models of glass buildings awaited more tractable materials than the picture-glass and brass strip then in use, and looked forward to developments in transparent plastics (he names a forgotten proprietary product: *Tektorium*). Beyond that again, he looked forward to even better materials than glass for full-size buildings, and identified laminated glass (zwischen zwei Glasplatten eine Zelluloïdplatte) which had only just come in, as an example of what should be looked for from a lively and developing technology, for

> We stand at the beginning, not the end, of a culture-period.
>
> We await entirely new miracles of technology and chemistry.
>
> Let us never forget it.

This optimistic view of technology puts him at one with the Futurists, whose works he certainly knew, and in this, as in his long-range prophecies, he is clearly of the party of progress, a member of the mainstream of modern architectural thought. Where he is conspicuously outside that mainstream is in the detail aesthetics of his vision. Whether or not he knew any Tiffany interiors, he certainly knew and admired individual pieces of Tiffany glass, and its aesthetics, notably the nuanced colours that he calls *die Tiffany-Effekte*, inform many of his visualizations. To this must be added an insistence on ornament based on mineral forms and vegetation—perhaps like Louis Sullivan's—and a strong strain of conscious orientalism that directs his thoughts on light fittings, cloths and fabrics, floor coverings, tile-work and so forth.

Here, in fact, we see him headed against the supposed tide of Modern Movement ideas. As Charles Mitchell pointed out some time ago, the idea of good modern design for which we have settled is a profoundly classical idea, in opposition to the anti-classicism of much nineteenth-century thought. Scheerbart was no classicist, and for an entirely logical reason: *Hellas ohne Glas*—Greece without Glass. Equally logically he admired those cultures that delighted in coloured glass, in the Orient and in Gothic Europe. Equally logically again, he combated the classicist polemics of Adolf Loos (by implication if not by name) against ornament.

But—and still perfectly consistently—he also saw Gothic architecture as the true forerunner of the great glass and iron structures of the nineteenth century that he admired quite as much as Muthesius ever did, and in this linking back of the *Grands Constructeurs* to the Gothic spirit, he is at one with the French Rationalist tradition from Viollet-le-Duc to Auguste Choisy, the tradition that produced most of the buildings that were featured in *Bauen in Frankreich*. Again, his orientalisms, gothicisms, his interest in theosophy and light-mysticism, which all seem a mile away from mainstream modern movement ideas, are no distance at all away from the frame of mind in which Johannes Itten created one of the greatest glories of the modern movement, the Bauhaus preliminary course. The Bauhaus connection cuts even closer than this—much of the text of the first proclamation, where it deals with eliminating the barriers between brain-worker and artisan, directly echoes the apocalypse of Scheerbart's *Immer Mutig* (the Hippopotamus novel referred to above) where

> Kings walk with beggarmen, artisans with men of learning

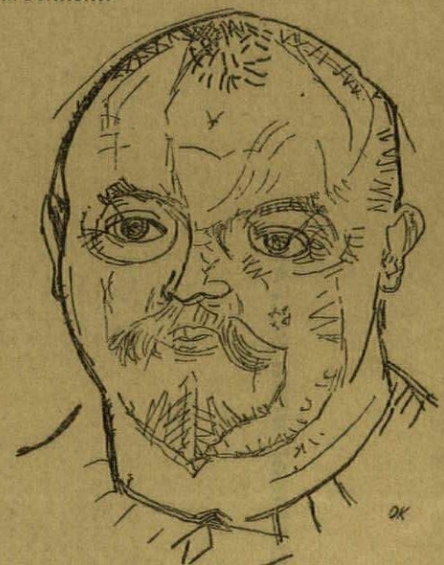
and the three-spired cathedral in Lyonel Feininger's woodcut on the cover is now seen to be topped, not—as has been supposed—by three stars of Bethlehem, but by three navigation lights for Zeppelins.

One could pursue the matter further, into the ever-ramifying but ever more attenuated influence of Scheerbart as it runs on into the Twenties—including perhaps the glass towers of Le Corbusier's *Plan Voisin de Paris*, for they are close cousins to Mies's Friedrichstrasse project, and their form with emphatic vertical accents was later written off by Le Corbusier as a mistake peculiar to German architecture. But the mere pursuit is not the point—it is the necessity and attractions of the pursuit that are the point. Why, in a word, do we have to re-write the history of the Modern Movement?

Not because that history is wrong; simply because it is less than lifesize. The official history of the Modern Movement, as laid out in the late Twenties and codified in the Thirties, is a view through the marrow-hole of a dry bone—the view is only possible because the living matter of architecture, the myths and symbols, the personalities and pressure-groups have been left out. The choice of a skeletal history of the movement with all the Futurists, Romantics, Expressionists, Elementarists and pure aesthetes omitted, though it is most fully expressed in Giedion's *Bauen in Frankreich*, is not to be laid to Giedion's charge, for it was the choice of the movement as a whole. Quite suddenly modern architects decided to cut off half their grandparents without a fathing.

In doing so, modern architecture became respectable and gutless; it entered on what Peter Smithson has justifiably called its Academic phase, when it became a style with books of rules, and could be exported to all parts of the Western world. But having set itself up as something more than a style, as a discipline of pure reason, it had to double-talk fast and frequently to explain its obsession with certain materials, particularly glass and that smooth white reinforced concrete that never existed outside architects' dreams and had to be faked in reality with white rendering. Clearly, these materials were symbolic, they were totemic signs of power in the tribe of architects. But while concrete has never lacked respectable medicine-men, from Auguste Perret to Pierluigi Nervi, to maintain its *mana*, the image of Gropius as the official witch-doctor of glass has never looked very convincing. On the other hand the fanaticism of a Bruno Taut possessed by the spirit of Paul Scheerbart, as by a voodoo deity, has much more the air.

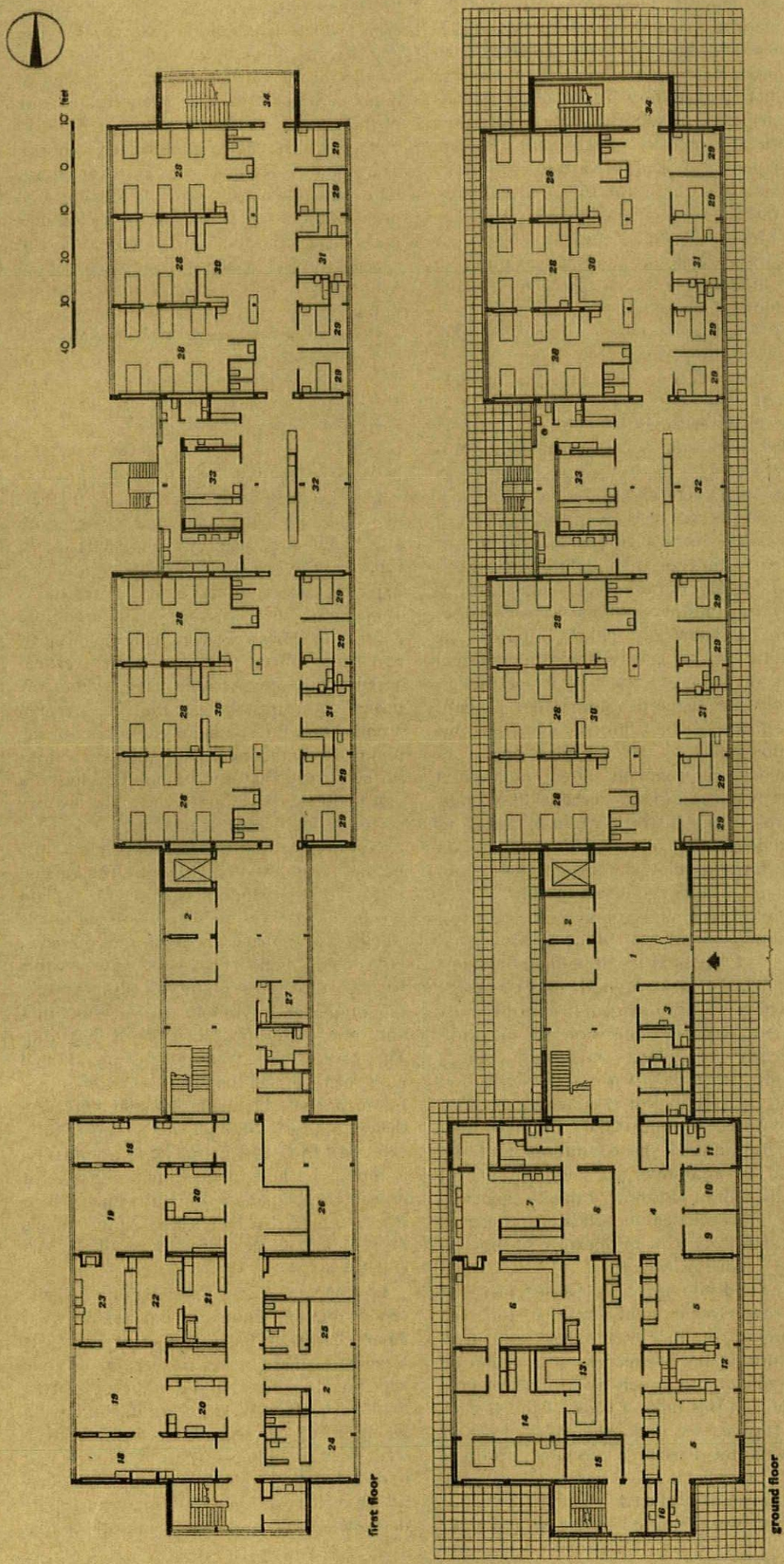
This is not to say that we now throw away the history of glass in modern architecture as it has been established so far—the position of Muthesius and Gropius among its prophets is not demolished, only diminished. We have to find some space for Scheerbart, as Giedion now clearly recognizes. The problem, which is not to be settled by a single article, is—how much space? As to his right to that space there can be no further doubt, for if one applies to him the normal test for missing pioneers, that of prophecy uttered in the right ears at the right time, he scores more heavily than many other writers of his day. Not only were his architectural writings known and in varying degrees influential among the generation of Gropius and Mies van der Rohe, but at a time when many spoke of steel and glass, he also spoke of water as the natural complement of glass, of the need to temper the white glare of light through glass by the use of coloured tinting, he spoke of America as the country where the destinies of glass architecture would be fulfilled, and he spoke of the propriety of the 'Patina of bronze' as a surface. In other words, he stood closer to the Seagram Building than Mies did in 1914. To put him back into the history of modern architecture is to shed upon it precisely what he would have us shed upon it—*Mehr Farbenlicht!*



3, *portrait of Paul Scheerbart, by Oscar Kotoschka.*

HOSPITAL NEAR BELFAST

Probably the most thorough programme of functional research into any problem of architecture or planning to date, was the Nuffield Provincial Hospitals Trust's *Investigation into the Functions and Design of Hospitals* led by Richard Llewellyn Davies. Its findings were embodied in a book that is a classic of its kind, *Studies in the Functions and Design of Hospitals* (Oxford University Press, 1955) and in two experimental wings to existing institutions, the Nuffield Wing at Larkfield Hospital, Greenock, and Nuffield House, Musgrave Park Hospital, Belfast. These were designed by the body which has succeeded the *Investigation*, the Division for Architectural Studies. The Larkfield scheme was described in the *Studies;* the Belfast building is illustrated in the pages that follow.



HOSPITAL NEAR BELFAST

ARCHITECT | **RICHARD LLEWELYN DAVIES**



1. view from the south-east, showing the areas of paving which reflect light into the deep wards.

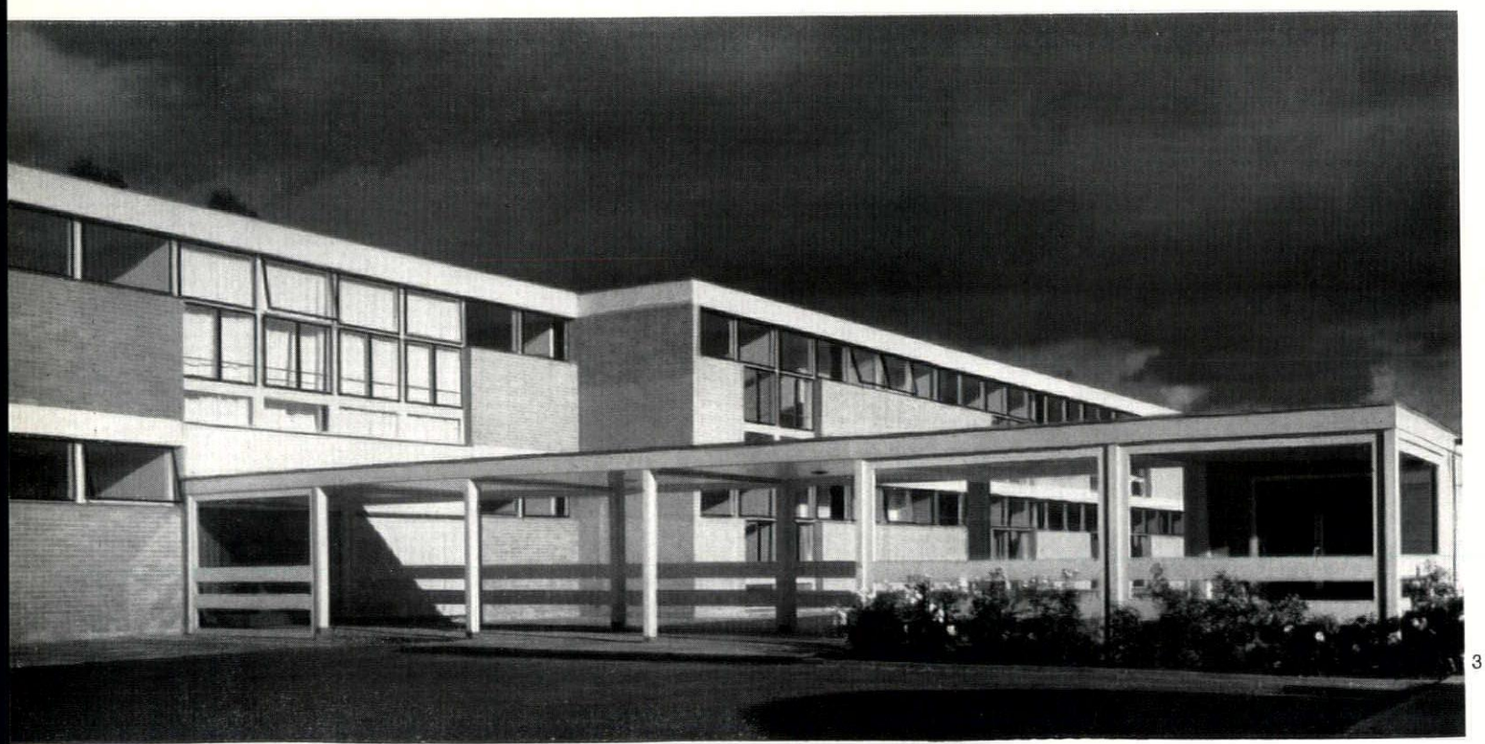
Nuffield House, for surgical patients, is the second of two research projects on hospital design undertaken by the Nuffield Foundation. It contains two identical ward units, one above the other, occupying the southern block, with the north block containing an X-ray department, a central sterile supply department serving the whole hospital of about 700 beds, and a twin operating-theatre suite.



2

New theories on the design of hospitals have been incorporated ; teams of nurses care for groups of 20 patients to give more personal attention, and provision is made for patients who are out of bed to have comfortable sitting spaces and better washing facilities. The main ancillary rooms are at the centre of the ward unit, with the beds as close to them as possible and the artificially ventilated and lit toilet rooms in the depth of the building. This resulted in shorter, thicker blocks than usual and led to considerable economies.

A reinforced concrete frame structure has been used, and the construction of the floor and roof slabs was designed so that vertical service ducts could be introduced at any point without disturbing the main frame



3



4

HOSPITAL NEAR BELFAST

structure. A 5 ft. module was used, with the main structural bays of 20 ft. by 10 ft. All main partitions are built in two skins, 6 in. apart, and services run vertically between them. The external walls are of cavity construction, with the edge of the floor and roof slabs exposed on the face of the building. The roof is insulated with a 2 in. layer of cork. The ventilation plant, lift motors, and horizontal services are housed in the basement. Colours externally and internally are very light tones of grey, with exposed structural columns painted black to express the building's skeleton.



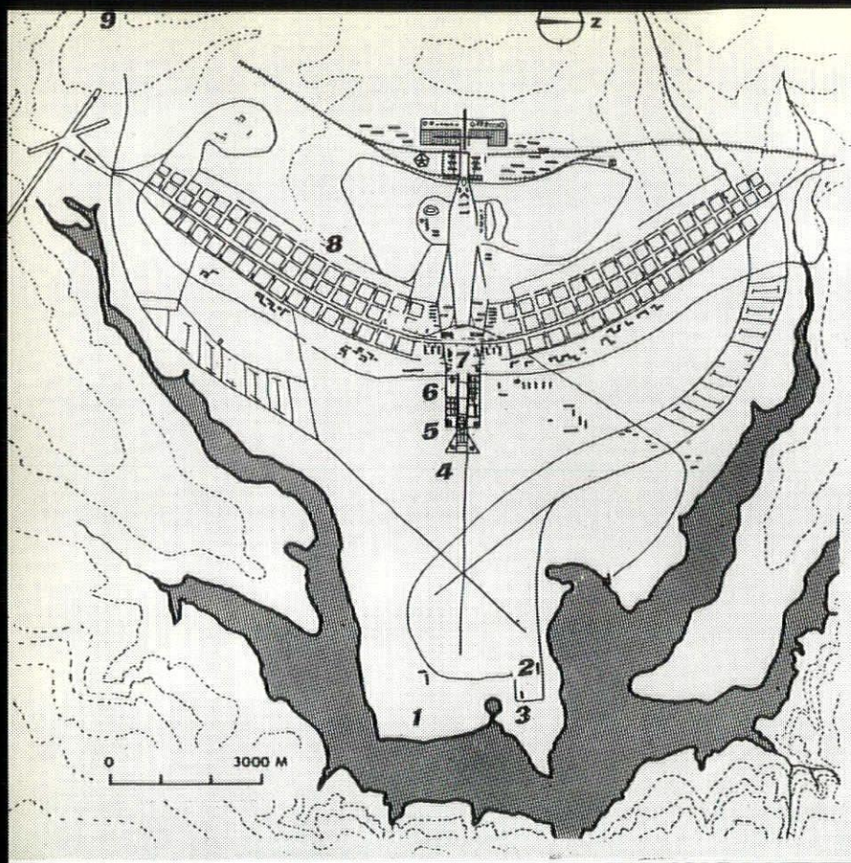
5

The architect worked with the team at the Nuffield Foundation Division for Architectural Studies.

6



2, view from the north-east, with windows to sisters' and interview rooms in the link block on the right.
3, main entrance; to the right, doors from the glazed corridor lead to the remainder of the hospital.
4, north end of operating theatre block.
5, ward kitchen.
6, entrance hall, with sculptured panel by Mary Martin.



On the facing page begins a report on progress at Brasilia, the new capital city in the interior of Brazil. On the left is the master-plan for which Lucio Costa was awarded first prize in March, 1957. Construction began immediately and below is an air-view, taken seventeen months later, showing the same plan taking shape on the ground. Some of the residential squares can be seen partly built-up, and the light patches show where work is going forward on the parliament buildings and where the completed hotel and President's palace (illustrated herewith) are sited. Key: 1, future lake; 2, hotel; 3, President's palace; 4, parliament buildings; 5, government offices; 6, cathedral; 7, banking centre; 8, residential zone; 9, 'free town'.

J. M. Richards

BRASILIA

Lucio Costa's master-plan for the new Brazilian capital, 600 *miles north-west of Rio de Janeiro, was described and illustrated in the* REVIEW *for December,* 1957, *in an article by Sir William Holford, who was a member of the international jury which earlier that year had awarded Costa first prize in the competition for the plan. Construction began forthwith, under the architectural direction of Oscar Niemeyer, and the city is already taking shape on the ground, as the air-view opposite shows. On the following pages are an account of progress to date, a preview of Niemeyer's designs for some of the principal buildings and illustrations of the two important buildings already completed by him, an hotel and the President's palace.*

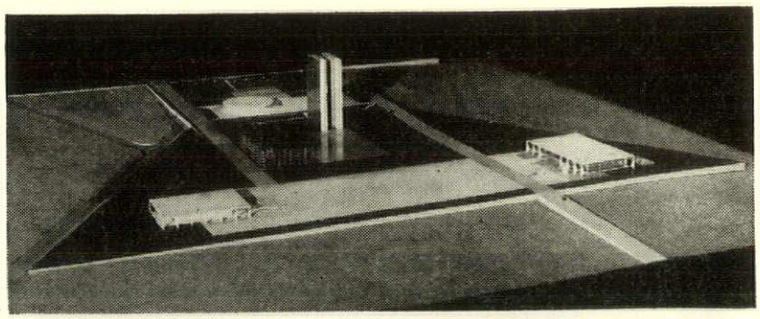
Building activity is concentrated just now on two sites, some two and a half miles apart, one at the eastern end of the main axis, where the parliament buildings are under construction, and the other in the residential belt, where eleven of the square blocks of which this belt consists are in various stages of construction. These are about a third of the way along the southern arm.

Elsewhere on the site of the future city—an area of about sixty square miles—the ground is still covered with its original vegetation, a fairly sparse low-growing scrub dotted with small twisted trees not big enough to obscure the bright red earth between. Apart from the newly built highway that links Brasilia with the outside world (the nearest town, Anapolis, was 75 miles away), the site is of course criss-crossed with roads—mostly as yet unmetalled—and there is an enormous amount of completed work in the way of water and power supplies, drainage systems and so on not visible to the eye.

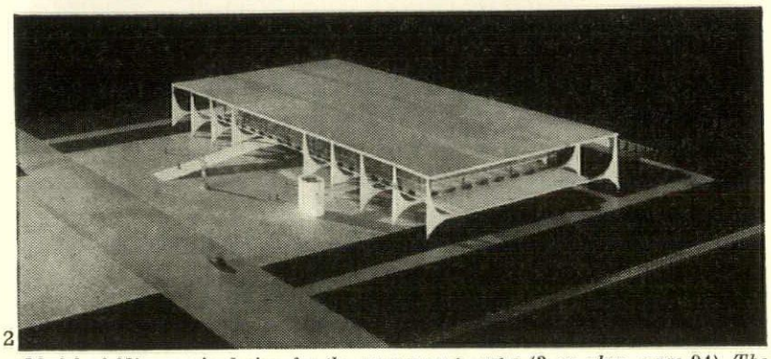
It is otherwise fairly featureless except for a distant rim of mountains in every direction. Its shape is a plateau with only minor undulations, rising slightly towards its centre. It will have much more character when the lake which is to enclose it on two sides has been created. This will be done by damming a couple of streams that meet nearby. The barrage which will effect this is under construction and will be finished next year, but it will take a whole rainy season after that (December to March) for the lake to fill. The lake will also provide a useful head of water for hydro-electric power, supplementing the rather meagre supply that now comes from a single fuel-operated station.

Beside the shore of the future lake, near where its two arms will join, are sited the two major buildings already completed: the hotel and the President's palace. They are about a quarter of a mile apart and just north of the extreme eastern end of the main axis. The hotel (see page 104) has a simple unpretentious character such as befits a building that will not eventually have so important a role to play in the life of the city as it has for the time being—when hotels grow up in the central area it is likely to become a lakeside holiday hotel or country club. But it has the advantage of spacious planning on a scale that a building restricted, as most hotels are, by the economics of land values cannot normally afford; it is not normally practicable, for example, to have all the bedrooms along one side of the corridor only and the public rooms in a spreading single-storey wing. The equipment and decoration of the bedrooms and public rooms is of the highest standard.

The President's palace (pages 97–101) is a more consciously monumental conception, and Niemeyer has managed to give it a nobility of character rarely



1



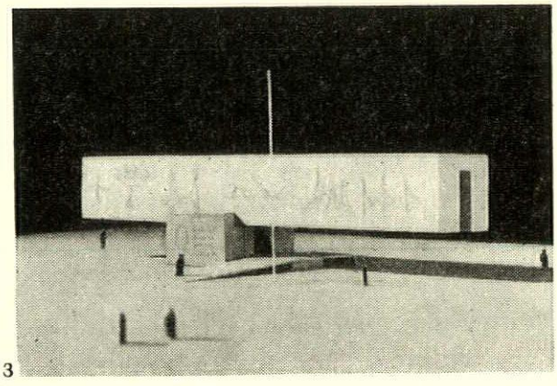
2

Model of Niemeyer's design for the government centre (3 *on plan, page* 94). *The parliament buildings, comprising twin-slab secretariat, Senate and Chamber of Deputies, which have already been previewed* (*AR, December,* 1957), *are under construction. Soon to be started are the two buildings at either end of the long paved platform, the President's and Cabinet offices* (*lower picture*) *and the Supreme Tribunal.*

achieved in a frame-and-glass idiom. The at first sight somewhat eccentric shape of the marble screen, which partly supports the outer edge of the surrounding verandah and serves also to throw patches of shade across its floor, discloses itself in practice as a most successful architectural device. It gives the palace a slightly grander than domestic scale, and redeems the austerity of its general lines not only by the introduction of these dipping curves, but by adding sparkle and vitality to the whole structure through the fall of light on the surfaces and edges of the subtly modelled marble.

The way the palace, with its verandah, is poised above the ground it sits on and reflected, when seen from the approach road, in shallow pools adorned with sculpture, adds to its dignity. The only weakness in the design is the uncertain handling of the end elevations (5 on page 98). The scale of the circular chapel, which stands on a square platform extended from the end of the building at the level of the verandah, has also been criticized. Photographed separately it does perhaps look as though it ought to be bigger than it is, but the eye is not in fact disturbed by its scale and it is happily enough related to the rest of the palace.

On the paved platform seen above, connecting the Presidential offices with the Supreme Tribunal, is to stand a stone monument, right, commemorating the inauguration of the new capital.



3

Inside there is a wonderful sense of space, with an appropriate change of scale between the magnificent suite of reception rooms on the ground floor and the living quarters occupying an upper floor at either end of the building. The interior daylighting successfully eliminates glare. The finishes are beautiful. The sumptuous furnishing is by the architect's daughter.

The present startling contrast between the elegant sophistication of this building and the primeval landscape that reaches from all directions right up to its doors will of course become less as the landscape is tamed, gardens are planted and the future lake-shore defines the edge of its site. But the palace has been designed nevertheless to stand permanently in an open verdant setting, detached from the built-up area of the town.

Approaching it from the direction of the palace, the town proper begins with the group of parliament buildings, 1, (previewed in December, 1957), of which the construction is already well advanced. They rise above a rectangular platform and consist of three elements: a twin-slab secretariat building, twenty-eight storeys high (it will be the tallest in the city), and two low circular buildings, the Senate and the Chamber of Deputies, the one covered by a shallow dome and the other having the shape of an inverted dome, which contains a basin-like auditorium. These are linked by two levels of service rooms beneath the platform. They will be the first of the public buildings to be finished, and have already reached the stage where their geometrical form is beginning to emerge from a tangle of concrete formwork and scaffolding.

Around them the complicated series of levels comprising main roads, approach roads, building sites and their surrounding terraces and car-parks have already been established by batteries of earth-moving machinery. The double highway leading into the town passes either side of the platform on which these buildings stand, and then beneath and on to a larger platform at the ends of which are sited the two other major buildings of the central group: the offices of the Supreme Tribunal and of the President and his cabinet, 2. These have already been designed, but not yet started. They are similar but not identical, and are not unlike the President's palace in style, incorporating a marble screen similarly composed of curved members, but in this case set at right-angles to the walls of the building instead of parallel. Niemeyer has also designed a stone monument, 3, to be erected on the same platform to commemorate the inauguration of Brasilia.

The next group of buildings to be started will be several of the eighteen identical government office buildings, arranged in parallel formation, that are sited immediately west of the parliament buildings. These are very simply designed (4 on page 103): 340-ft.-long rectangles ten storeys high raised on *pilotis*, with the interior floor-space (except for lift-enclosures, lavatories and escape-stairs) left open for subdivision as required.

Beyond these government offices, just off the main axis, will be the cathedral, again already designed though no starting-date has been fixed. Niemeyer's design (page 102) is highly original. It is circular in plan with a sunken floor, reached by a ramp leading down-

[*continued on page* 103

architect : Oscar Niemeyer

structural engineer : Joaquim Cardoso

mechanical engineer : Afrânio Barbosa da Silva

interior designer : Ana Maria Niemeyer Attademo

BRASILIA: THE PRESIDENT'S PALACE

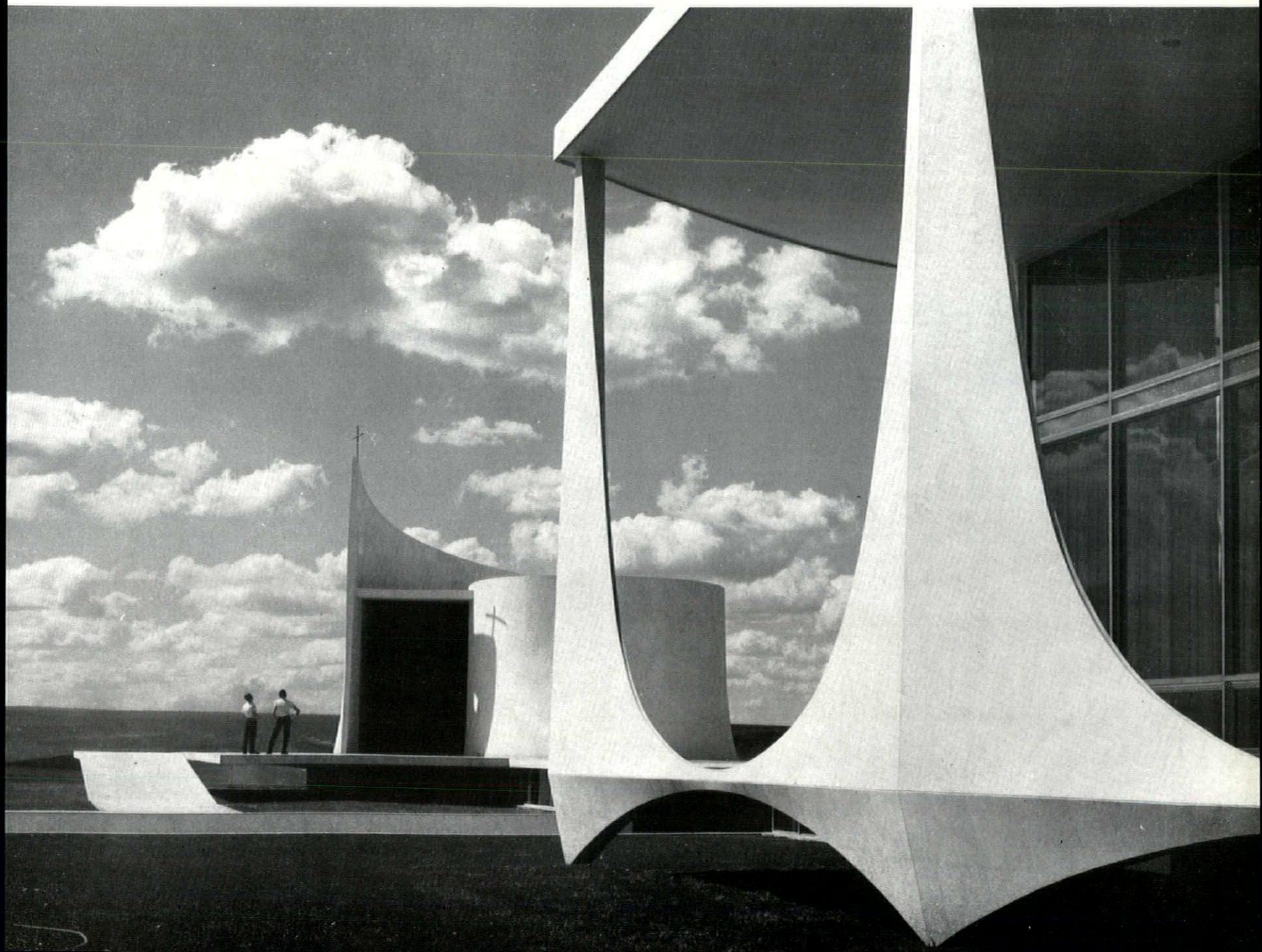
The palace was built in 13 months and completed last June. It is sited on the shore of the future lake (see page 94), about three miles east of the built-up area of the city.

The plan consists of three elements: the main rectangular building of two storeys and basement, shaded by a verandah ; a circular chapel on the same level as the verandah, linked to it by a bridge across a sunken road ; and a service wing consisting of basement only, at right-angles to the main building and linked to it by an underground passage.

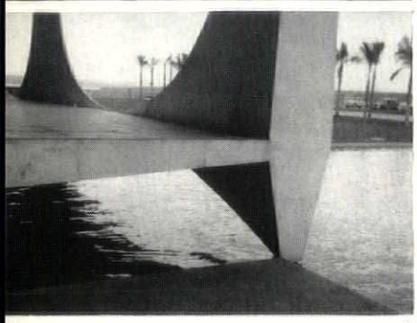
The main building has a central entrance hall rising through two floors. This is on the same level as the paved terrace outside, and from it a ramp rises about 4 ft. to the general ground-floor level of the building, which is the same as that of the surrounding verandah. The main suite of reception rooms (part of which again rises through two storeys) runs nearly the full length of the far (north) side of the building, facing the lake, and terminates in a banqueting-room. The kitchen adjoins this on the south side. Occupying the equivalent position to the banqueting-room at the other end of the building

[*continued on page* 101

1, the north-west corner of the palace, with the circular chapel beyond.

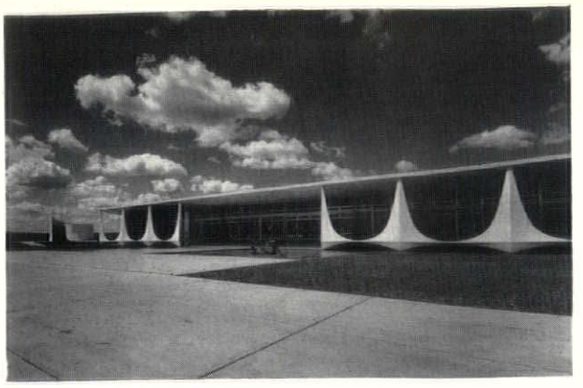






2
3

2. looking outwards from the main entrance hall across the pools and marble-paved terrace.
3. detail of verandah floor and screen where it is broken in the centre of the entrance front.
4. the entrance front.
5. the chapel, with the west end of the palace beyond. A road passes beneath the bridge that joins them.
6. looking from the verandah towards chapel, showing bridge between and the shade cast on the verandah floor by the curved marble screen.



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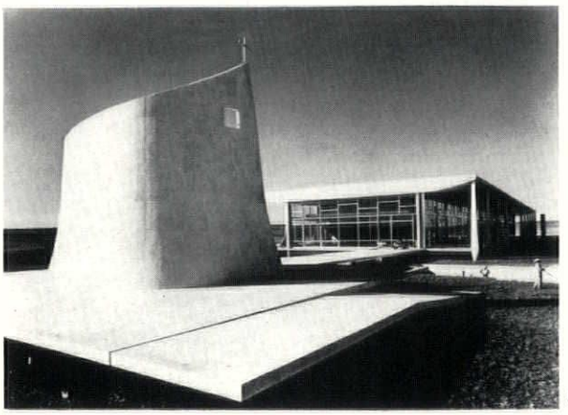
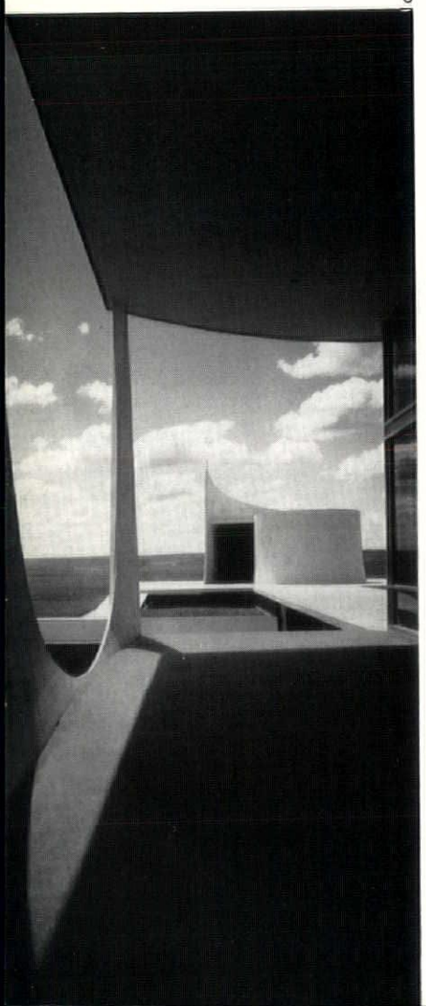


5

BRASILIA: THE PRESIDENT'S PALACE

7 (facing page), the south side of the palace, where the verandah with its curved marble screen extends the whole length. The bedrooms of the private apartments on the first floor have a balcony inside the verandah.
8, part of the entrance front, looking across one of the pools with its bronze sculpture by Alfredo Ceschiatti.

7 →
8



6

keys

basement

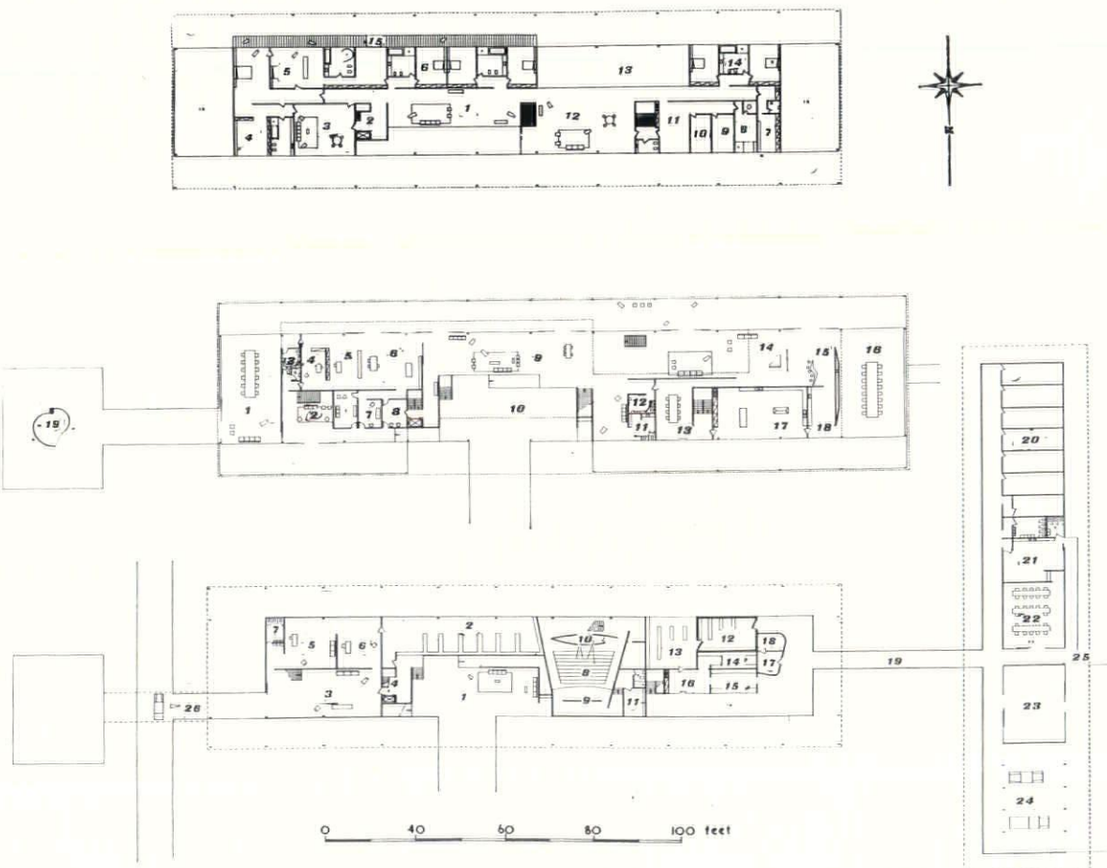
1, entrance hall.
2, cloakroom.
3, private and Ministers' entrance-hall.
4, private access to main floor.
5, waiting-room.
6, guard-room.
7, lavatory.
8, theatre and cinema.
9, stage.
10, projection-room.
11, store-rooms.
12, cold-store.
13, food-preparation.
14, wine-cellar.
15, pantry.
16, service-lobby.
17, dirty linen.
18, linen-room.
19, service corridor.
20, staff bedrooms.
21, staff kitchen.
22, staff dining-room.
23, laundry.
24, garage.
25, service entrance.
26, private entrance.

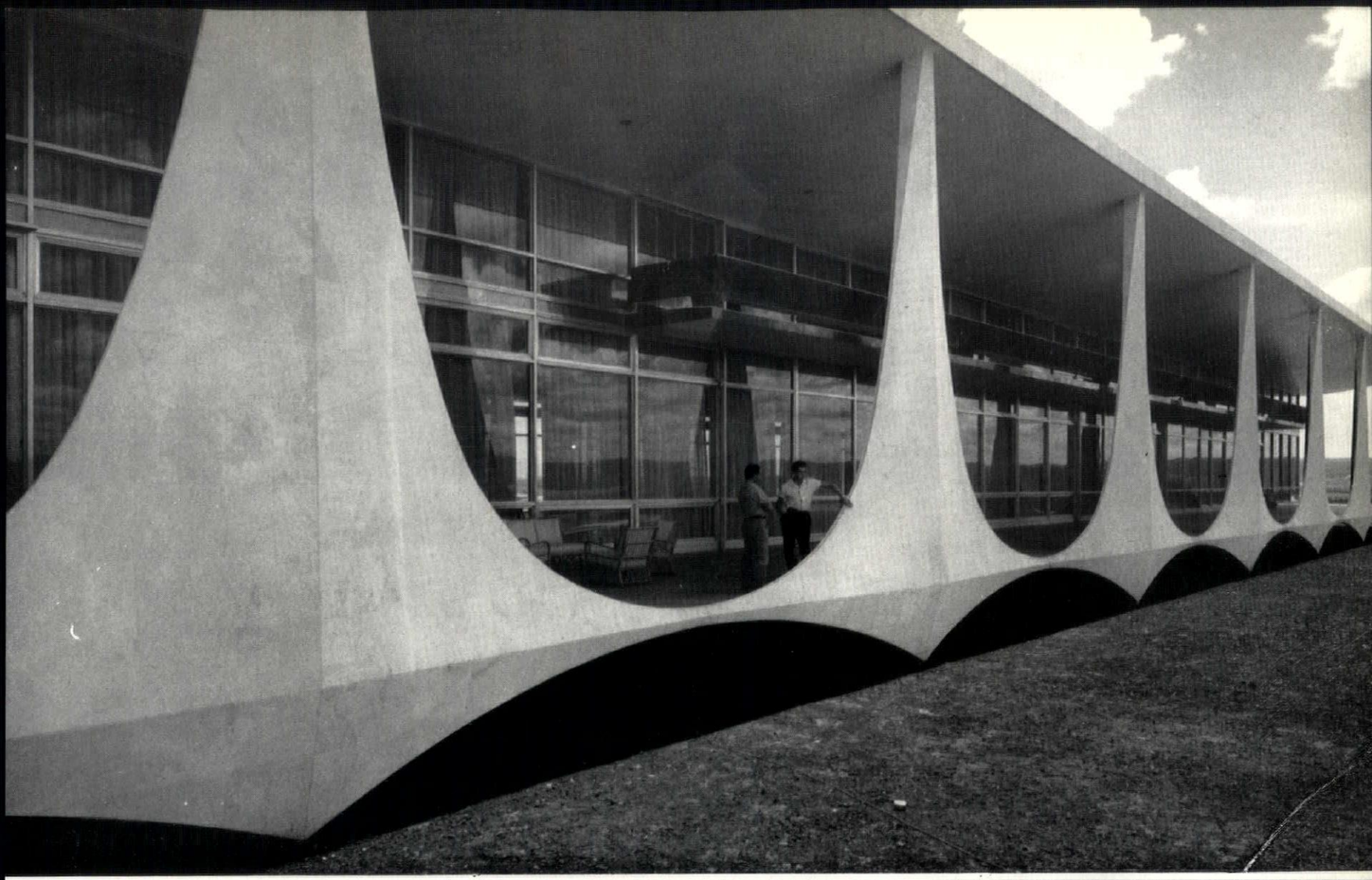
ground-floor

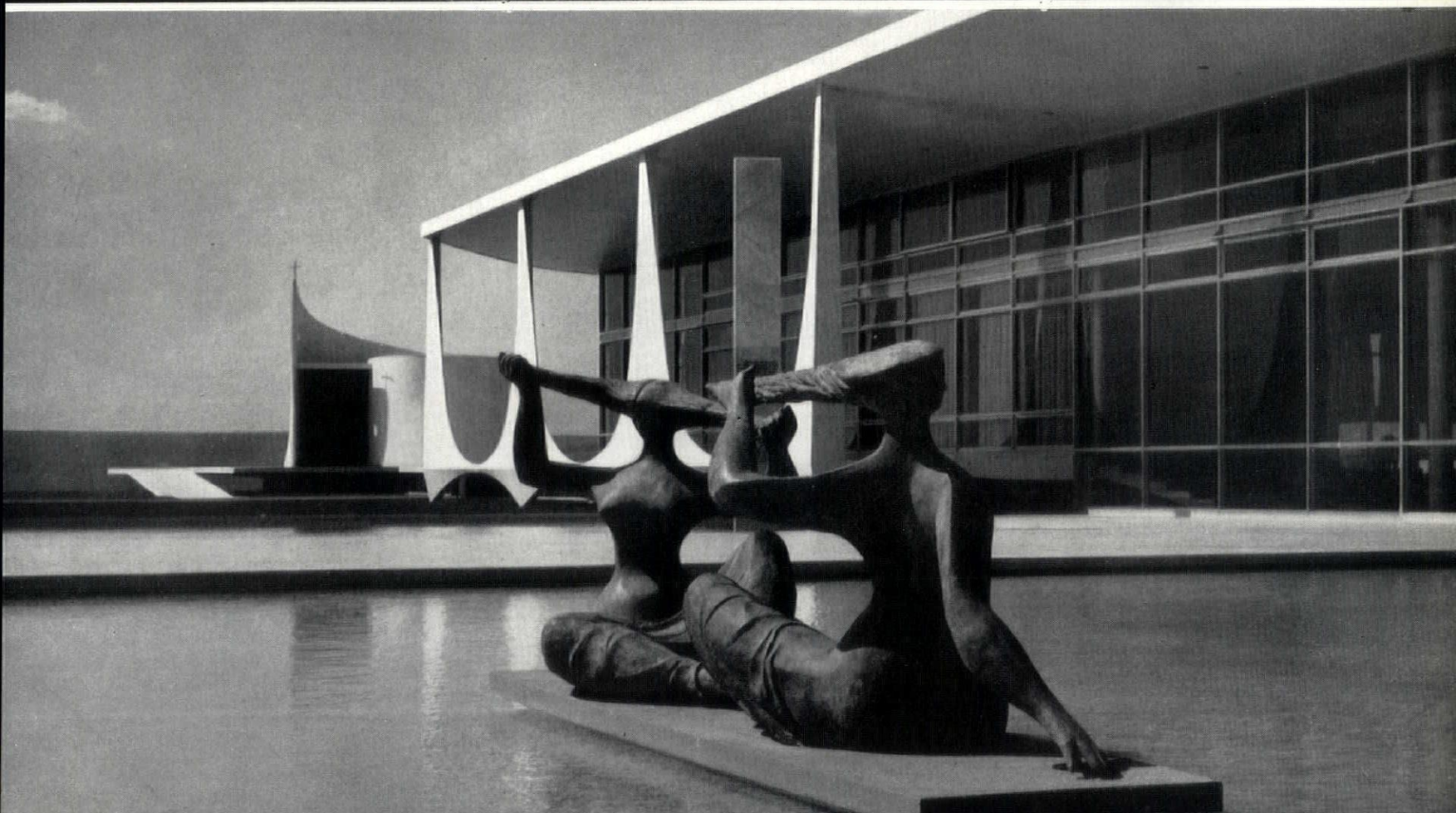
1, Ministers' conference room.
2, waiting-room.
3, lavatory.
4, Private Secretary's office.
5, President's office.
6, library.
7, office.
8, waiting-room.
9, main reception hall.
10, entrance hall.
11, women's lavatories.
12, men's lavatories.
13, private dining-room.
14, music-room.
15, bar.
16, banqueting-room.
17, kitchen.
18, pantry.
19, chapel.

upper floor

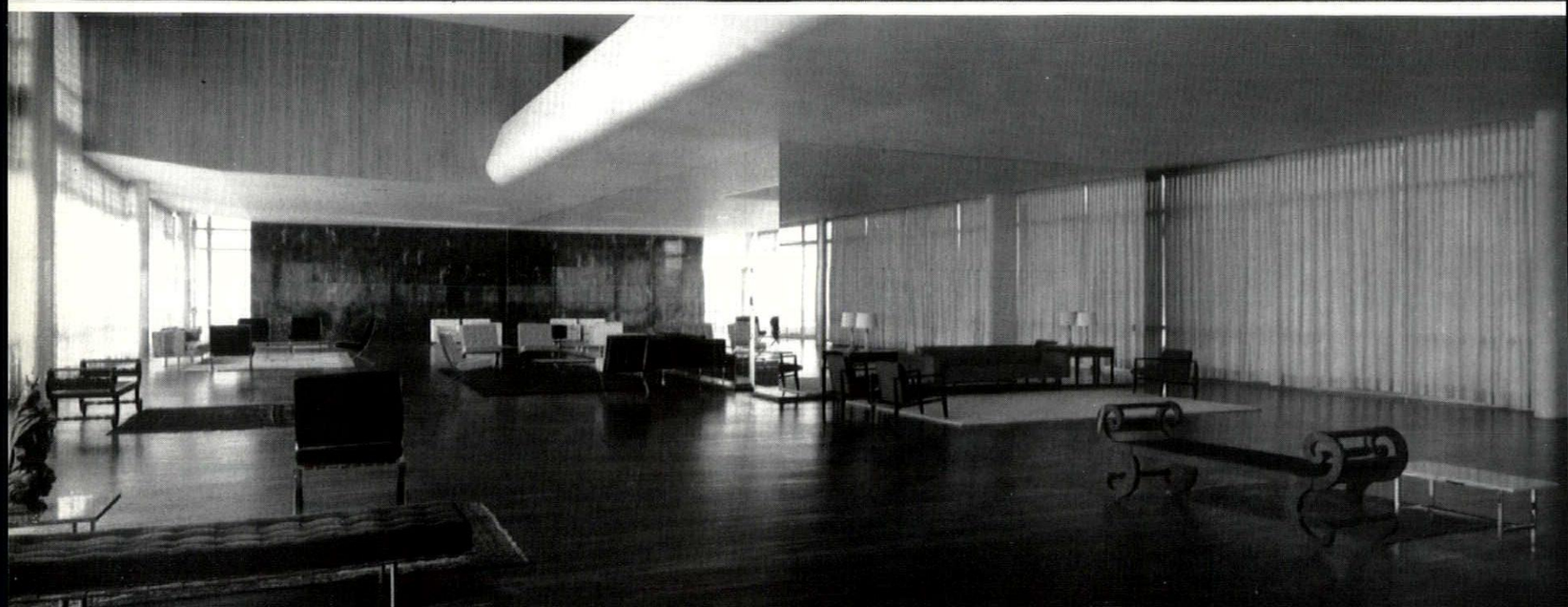
1, gallery.
2, President's vestibule.
3, President's sitting-room.
4, President's dressing-room.
5, President's bedroom.
6, bedroom.
7, linen-room.
8, Turkish bath.
9, powder room.
10, barber.
11, service
12, private sitting-room
13, void.
14, bathroom.
15, balcony.











9 (facing page), the ground-level entrance hall with ramp, duplicated in a mirror, leading up to the main level of the ground floor reception suite. The upper part of the picture shows the curved soffit of the gallery connecting the two ends of the upper floor across the two-storey hall.
10, the main reception hall, two storeys high in parts and occupying the full width of the ground floor.

continued from page 97]

9
←
10

BRASILIA

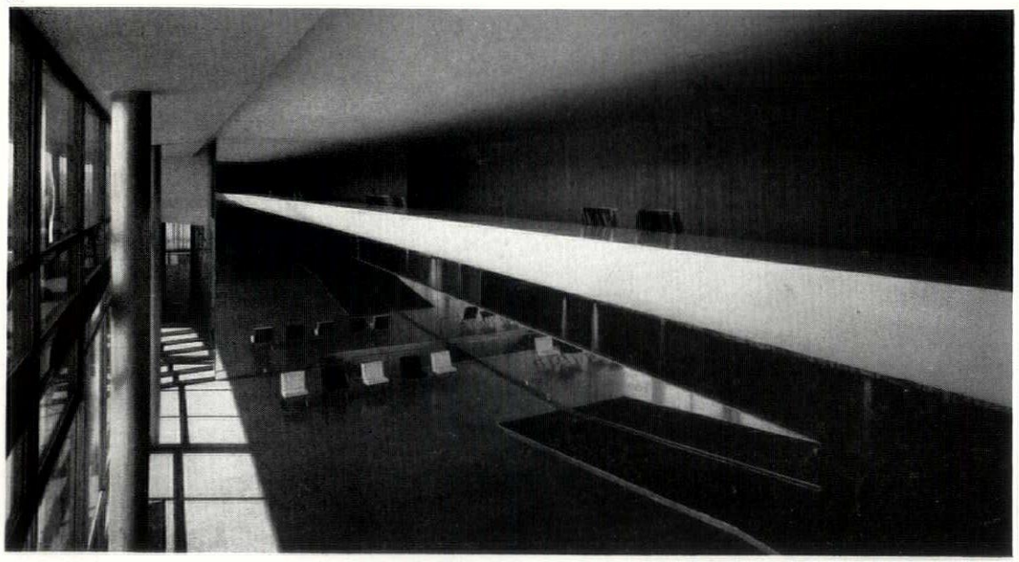
is a Ministers' council-chamber which can be reached by a private entrance at basement level, beneath the bridge leading to the chapel. Also in the basement, which is approached by a road beneath the entrance terrace, are a guardroom, various stores and preparation rooms in connection with the kitchen above, and a private film-theatre. At the end of the service wing, which contains staff living-quarters, is the garage, entered from the far (eastern) side. On the north side of the main building is a swimming-pool. The upper floor of the main building contains the private apartments, divided into two groups which are connected by a gallery overlooking the two-storey hall. The bedrooms of the President's apartments have a balcony facing north, projecting beneath the roof of the verandah.

11



The building has a reinforced concrete frame and roof, the latter cantilevered outwards to form the roof of the verandah, which is also supported by the screen of greyish white marble along the north and south sides. The upright members forming the screen curve outwards at the level of the verandah floor, the outer edge

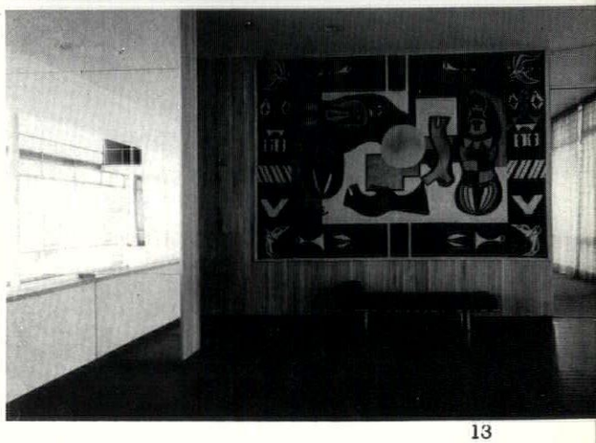
12



of which they support, and then inwards again to the points at which they rest on the ground. Between the arches thus formed the ground continues underneath the verandah ; so do the shallow pools of water on either side of the entrance.

The paved terraces and the walls of the chapel are of the same marble as the verandah screen. The chapel is lined internally with gold mosaic. The walls of the main building are of clear glass except at the western end, facing the chapel, where the glass has a greenish colour to counteract the glare from the low evening sun.





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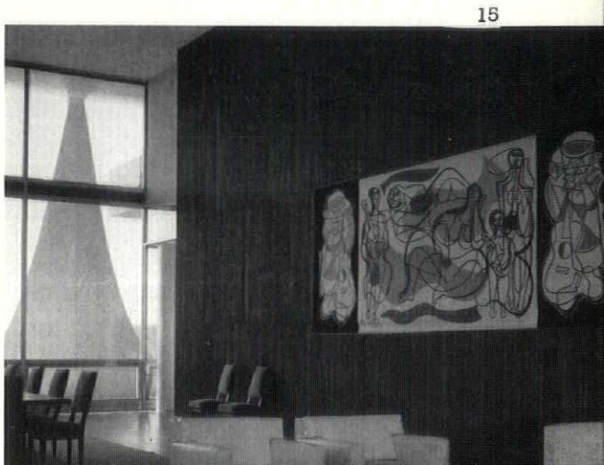
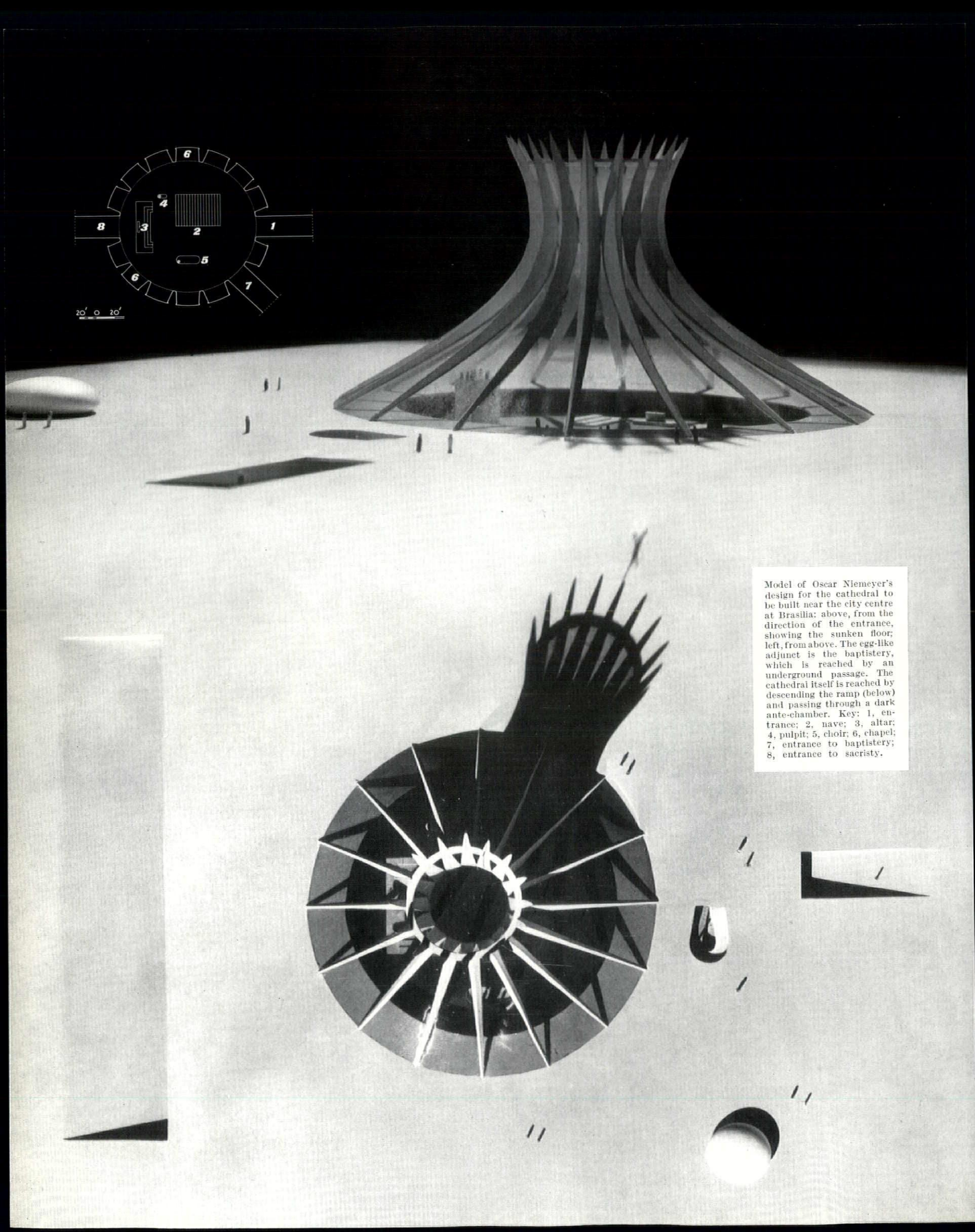
14

11, entrance hall and ramp (at the top of which the President receives visitors) from the main reception hall.
12, looking down into the entrance hall from the first-floor landing (connecting gallery on right).
13, window detail, main reception hall. The outline of the verandah screen can be seen through the curtains.
14, a tapestry marking the end of the first-floor gallery, by the entrance to the private apartments.
15, a corner in the main reception suite, with painting mounted on background of dark grained wood. The curved verandah screen can be seen through the window.

15





Model of Oscar Niemeyer's design for the cathedral to be built near the city centre at Brasilia: above, from the direction of the entrance, showing the sunken floor; left, from above. The egg-like adjunct is the baptistery, which is reached by an underground passage. The cathedral itself is reached by descending the ramp (below) and passing through a dark ante-chamber. Key: 1, entrance; 2, nave; 3, altar; 4, pulpit; 5, choir; 6, chapel; 7, entrance to baptistery; 8, entrance to sacristy.

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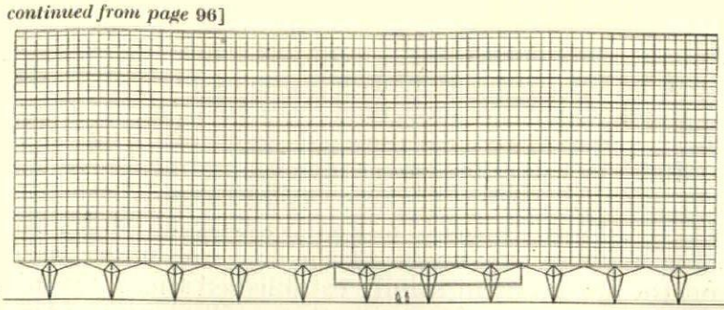

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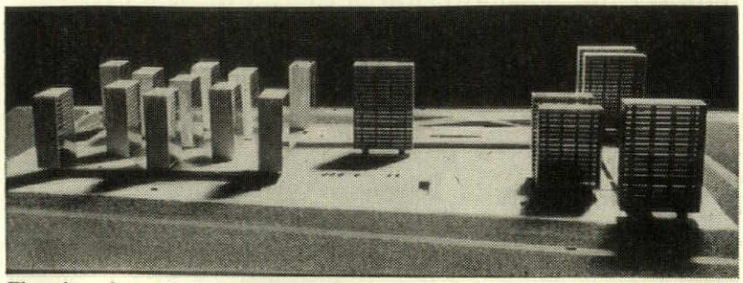


5

Elevation of standard government office building, of which there will be eighteen. Below, layout of business zone.

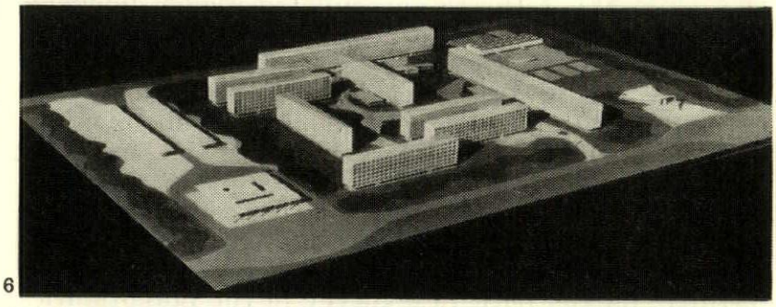
wards from the surrounding pavement. The ramp leads into a darkened ante-chamber, from which the visitor passes into the huge light interior of the cathedral, 230 ft. in diameter and 130 ft. high, holding 4,000 people, shaped like a cooling-tower and, it is understood, functioning like one as well. A detached baptistery, egg-shaped externally, is reached by stairs from a subterranean passage leading from the cathedral floor.

The only other central-area buildings so far designed are for the business zone, where banks, insurance companies and so on will have their offices. A model, 5, has been made showing Lucio Costa's proposals as to how such buildings might be grouped. It is difficult to understand the logic of the change of orientation between the eleven fifteen-storey slab-blocks suggested for private establishments and the remainder, which consist of a twenty-storey block in the centre for the Bank of Brazil and five others, connected to it, for Government financial agencies; but the use of levels to separate motor-traffic and car-parking from pedestrian access (cars approach each building beneath the piazza on which the buildings stand) is interesting and consistent with the planning technique used elsewhere.

The residential zone (see plan) is divided into squares, each housing about 3,000 people, identical in size but laid out internally in different ways. Belts of trees separate them, and primary schools and community buildings are sited among these trees. Another purpose they are intended to serve is to identify the outline of the squares and create a built-up skyline throughout the residential zone, during the period when parts of it have not yet reached the development stage. Work is going forward on eleven of these squares and others will be started soon. The buildings already begun will accommodate 15,000 people, mostly in seven- or eight-storey blocks of flats. Something over 200 flats are on the point of completion, 2,800 are scheduled to be ready by the end of this year and nearly 4,000 by the end of 1960. This rate of progress means that in April 1960, when the seat of Government officially moves from Rio de Janeiro to Brasilia, there will be something like 3,300 flats ready for occupation. It has been estimated that a minimum of 1,800 essential civil servants will have to be working in Brasilia for the Government to begin operating from there, so this leaves a margin of accommodation for others besides civil servants, apart from the smaller quantity of housing that is already beginning to go up in controlled areas outside the main housing belt. Notable among these is a group of middle-class houses already finished, east of the southern arm of this belt, at the edge of the future lake.

The layout of the first square due to be finished within the residential belt is shown in model form in 6, and the progress photograph shows the buildings under construction. In the corner of the model can be seen the neighbourhood church, which is already finished, 8. It is one of Niemeyer's always interesting demonstrations of the use of concrete as a plastic material, though the relationship of some of the planes gives the impression of not having been very fully visualized and the church suffers from having been built, for economy reasons, rather smaller than the architect designed it.

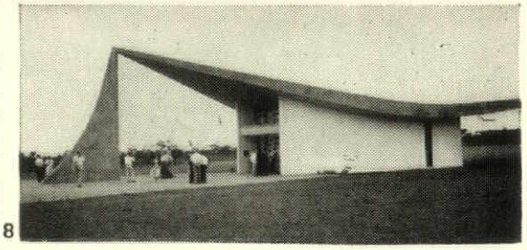
There is now a labour force of about 20,000 in Brasilia, including building and engineering workers, transport and tractor drivers and those engaged in road-making and landscaping. They live for the most part in camps, hidden away in folds of the ground a little distance from the future built-up area (9 on the plan on page 94). There is also, just west of the airport,



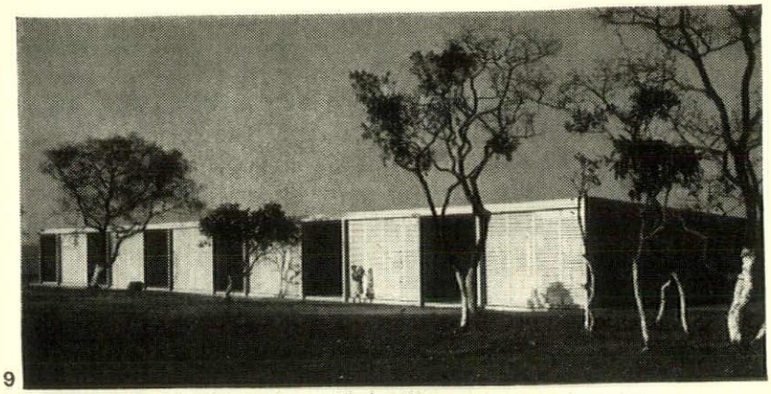
6



7



Top, model of typical residential square. Centre, group of squares in residential zone under construction. Right, small church (shown also in right-hand corner of model above) already completed. 8



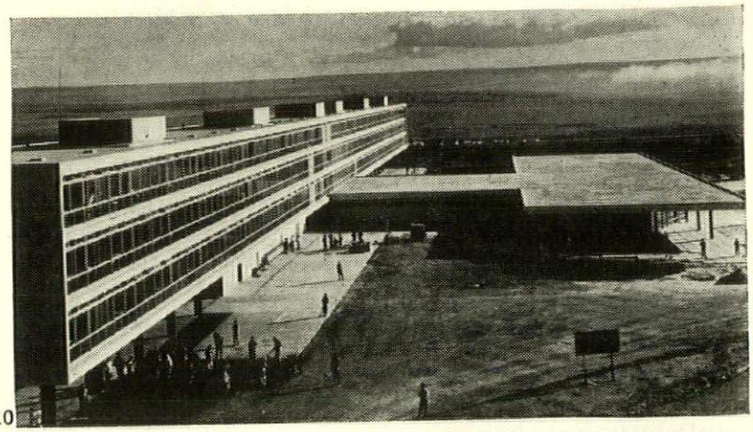
9 *Temporary housing for workers with families.*

which is near the southern tip of the residential belt, a temporary shopping and recreation centre for the working population, known as the 'free town' because any enterprising trader is free to set up there on the understanding that the whole place—which is mostly single-storey and timber-built—will be cleared away in a few years. The total population of Brasilia, including the inhabitants of the free town and others that serve the needs of the construction workers, the administrators, transport workers, police and those who run the services already established there like the airport, the power-station and the hotel, is now about 45,000.

The only industries so far established are small ones connected with the building works, and some of these are probably only temporary. There is also some temporary agriculture, because in order to create a source of food in this hitherto unpopulated region, financial help has been given to farmers to start smallholdings on a short-term basis on land that may eventually be too near the centre of the city to be permanently agricultural—it may be required for parks and playing-fields or outlying housing areas.

There is also a long-term plan for promoting agriculture in the region. Land is to be leased to farmers on initial leases of thirty years. Owing to the poor quality of the soil at present they will be helped to improve its fertility, on the basis of a survey of the potentialities of different areas and the crops most suitable for each, which has already been made. So far forty-three farms have been allotted to tenants by the Ministry of Agriculture, and besides these four large model farms have been planned, which the Ministry will operate itself. The area over which this and similar regional planning is going forward is about 2,000 square miles, and a commission has recently been set up to study the future of the even bigger region of which Brasilia will eventually be the centre.

The programme for building and siting hospitals and schools in and around the city is fairly complete, but construction of these is only just beginning, except for some temporary schools for urgent present needs, of which there are not many because construction workers have been discouraged from bringing their families. Housing and government buildings have the first priority because of the decision to move the seat of Government to Brasilia next year. Great efforts are being made to get the life of the city well under way, and the Government solidly established there, by this date because soon afterwards there will be a presidential election. President Kubitschek (who cannot constitutionally be re-elected) has been the driving force behind the construction of the new capital; the energy



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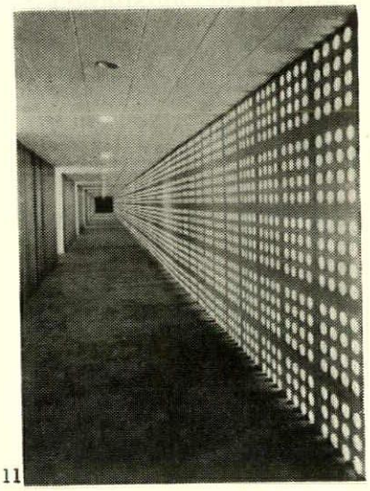
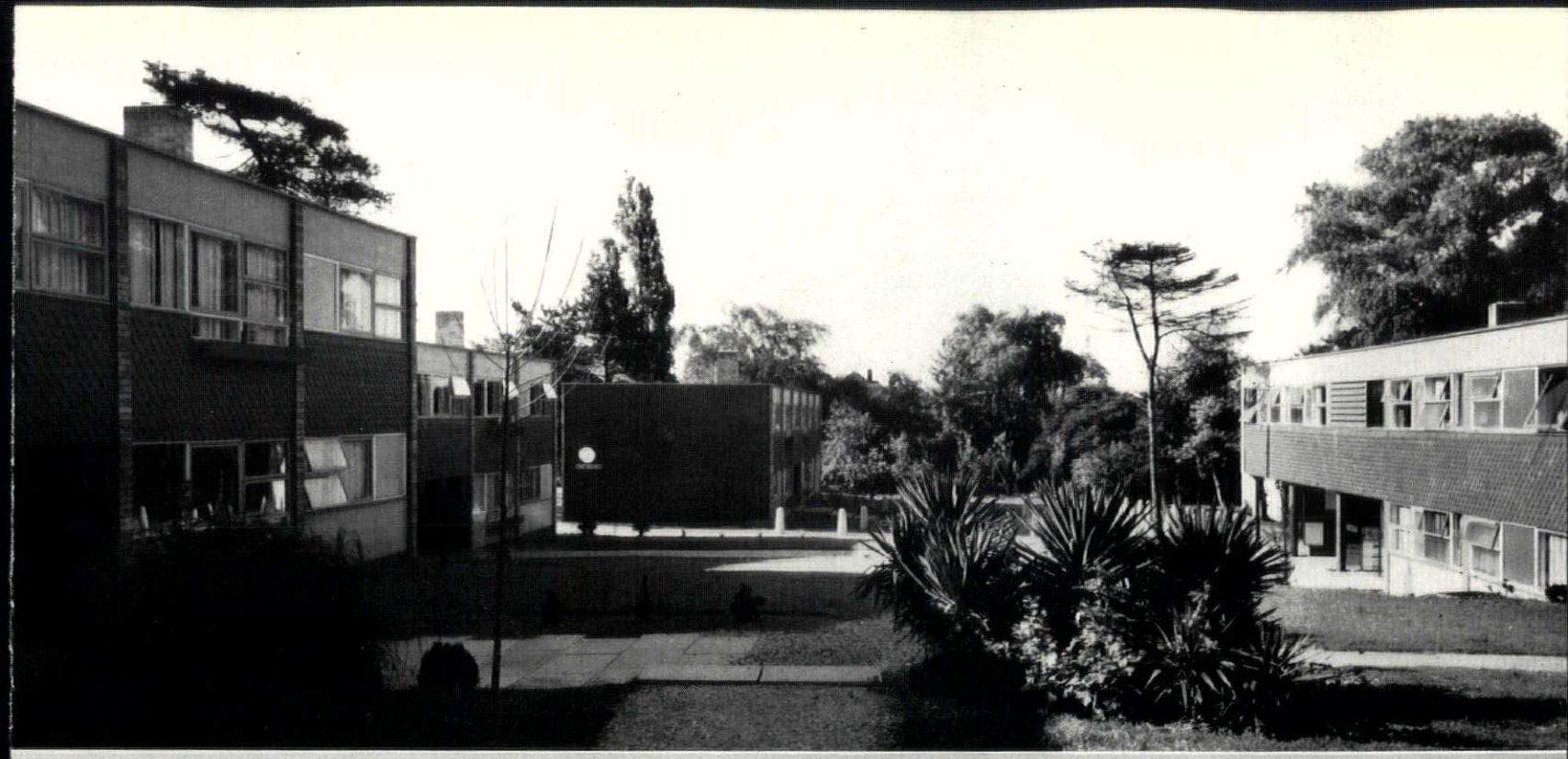


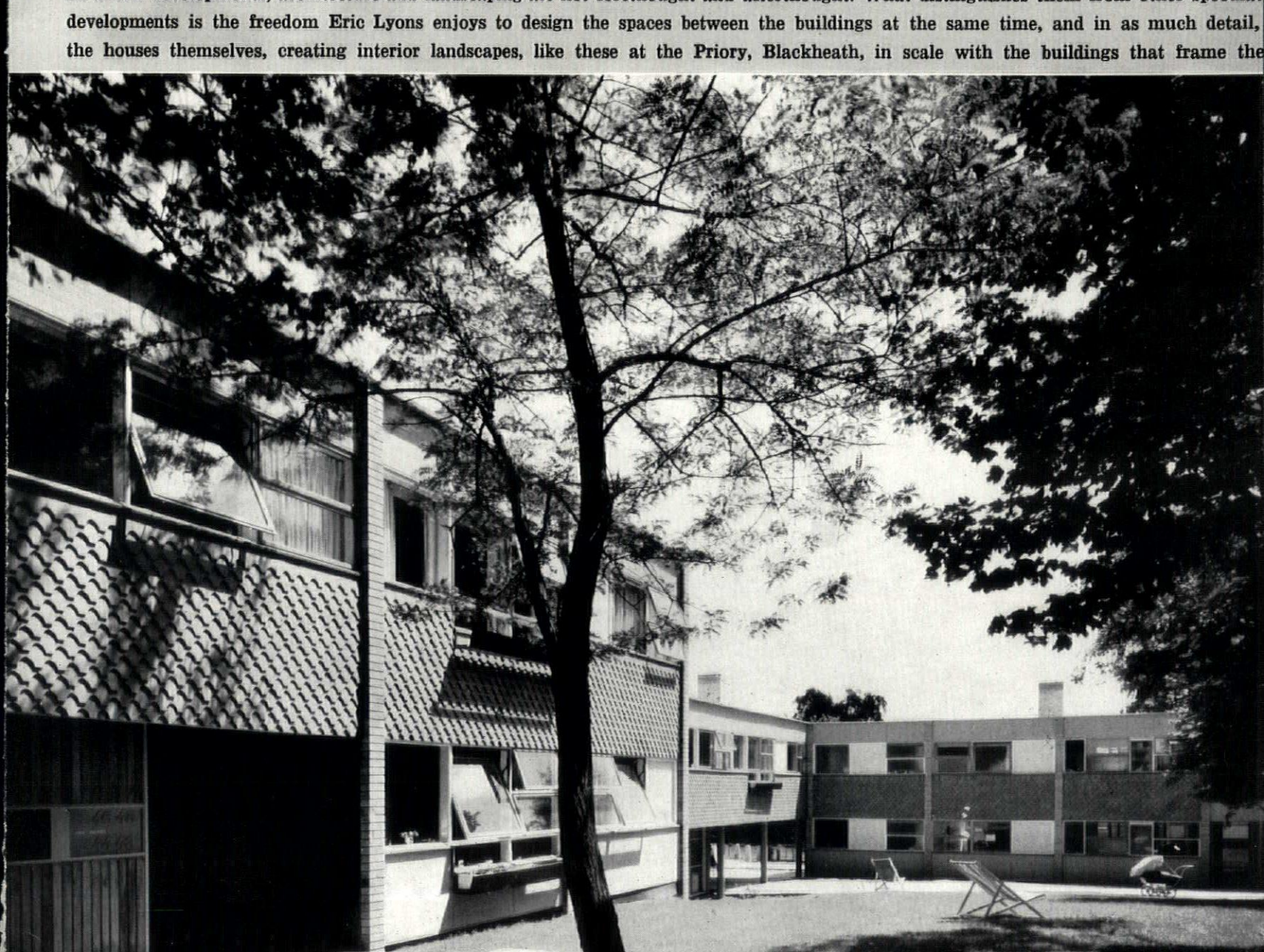
11

The Palace Hotel, the second building to be completed (2 on plan, page 94): above, looking along the bedroom wing—the public rooms occupy the single-storey wing on the right; right, looking down the 400-ft.-long corridor, with bedrooms on the left and a continuous screen on the right of pierced concrete blocks with holes filled with glass.

that is being put into the project is the result of his enthusiasm for it; its architectural quality derives from his interest and discrimination. No one knows how a change of president may affect its future progress and even influence the official policy towards what is, for Brazil, a long-term investment made at an unusually difficult moment as regards the country's economy, as well as a declaration of faith in the future.

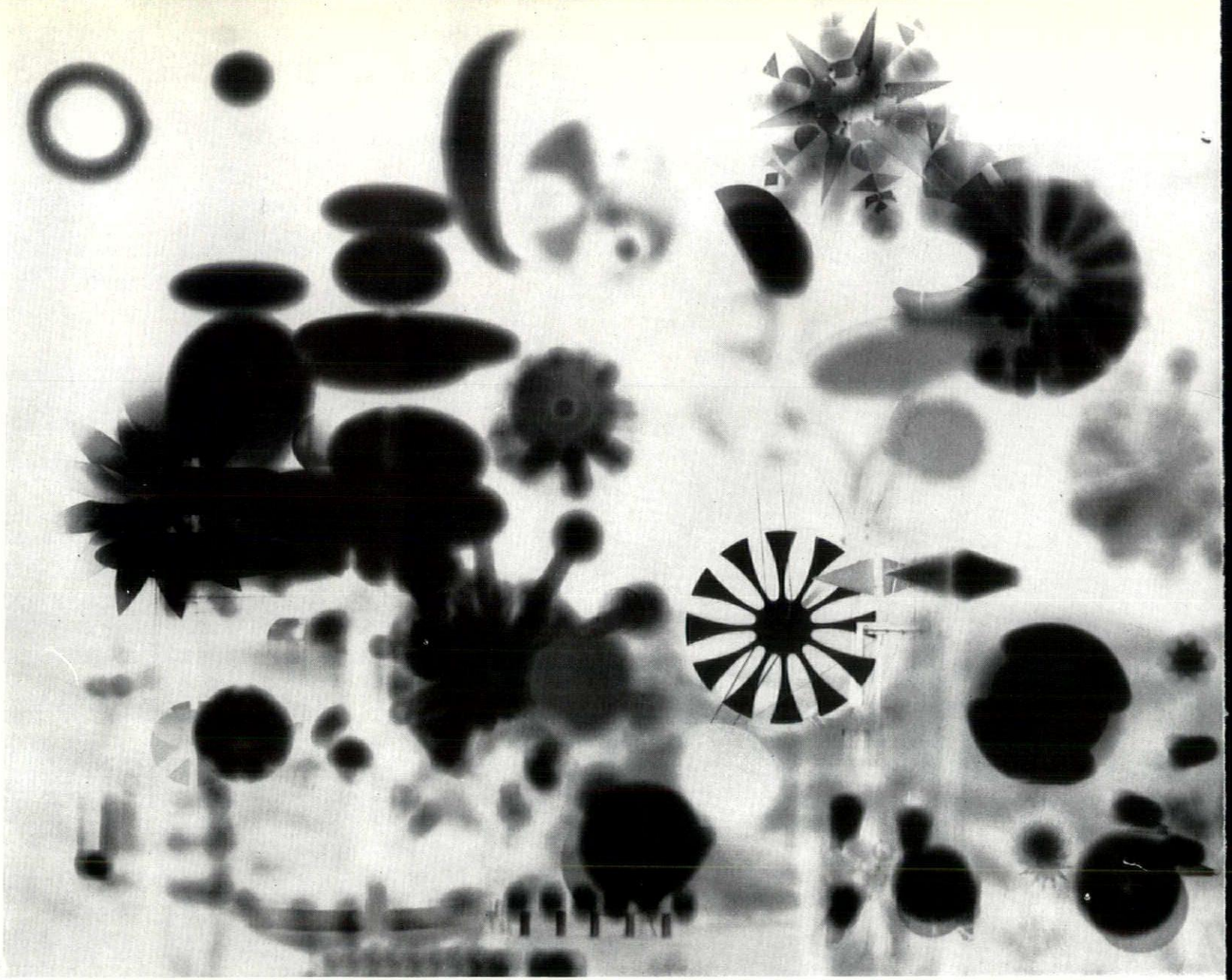


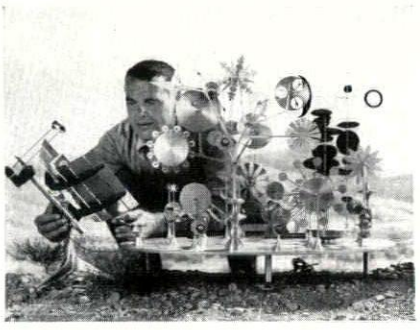
In SPAN developments, architecture and landscaping are not forethought and afterthought. What distinguishes them from other speculat developments is the freedom Eric Lyons enjoys to design the spaces between the buildings at the same time, and in as much detail, the houses themselves, creating interior landscapes, like these at the Priory, Blackheath, in scale with the buildings that frame the



sun-mill

1, 2



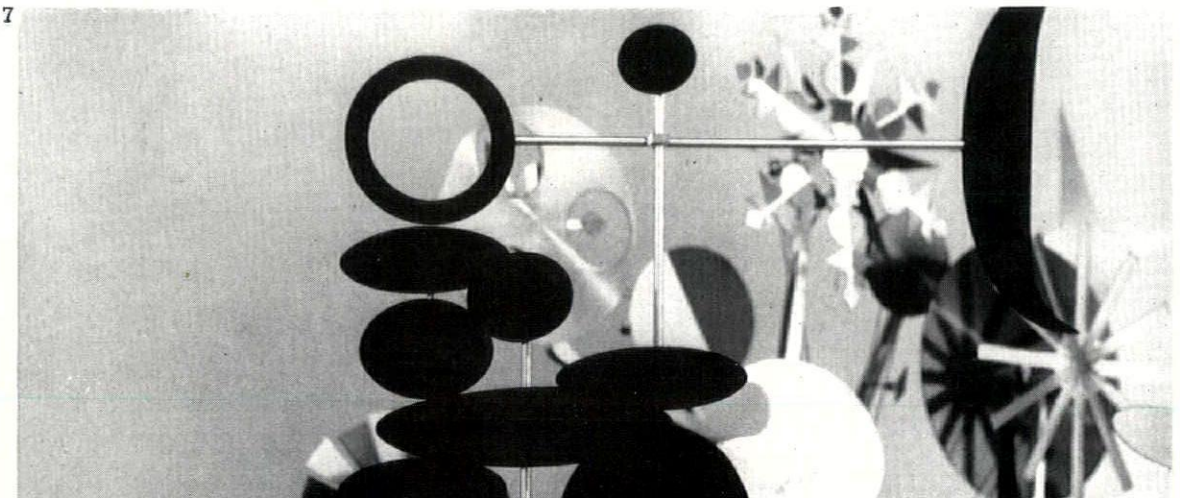


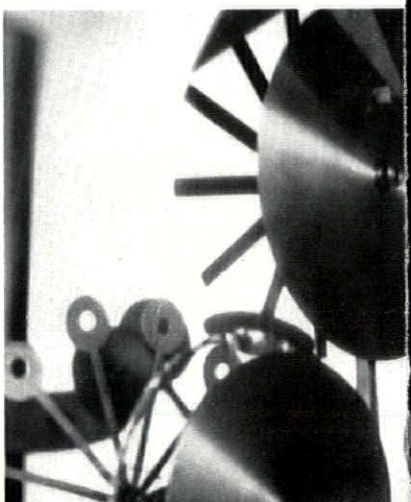
3

1 and ***2,*** the blur of moving and rotating shapes is the output side of Charles Eames's do-nothing machine, the shallow trough of aluminium reflectors focused on a bank of silicon cells is its input. The cells convert the energy of sunlight into electricity, which is used to power small electric motors (selected by the rank of press-buttons visible in both pictures) which activate the various moving displays of the toy. ***3,*** although the visual scale of the toy is ambiguous in isolation, comparison here with the figure of its creator, shows that it is physically large. This is in keeping with the general programme, that it should perform its elegant nothings with the maximum of effect.

4 and ***6,*** those who like to generalize about the character of Charles Eames as a designer will surely find plenty of material in the detailing of the toy. On the main platform, for instance, one recognizes in the shapes themselves the hand that designed the *House of Cards*, but what of the structure that supports them? The bases are in a fair-ground

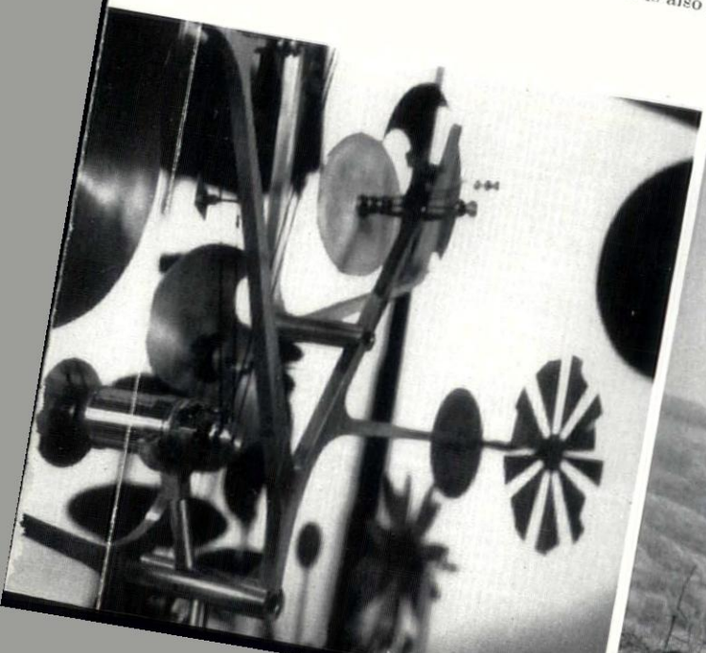
5, 6, 7



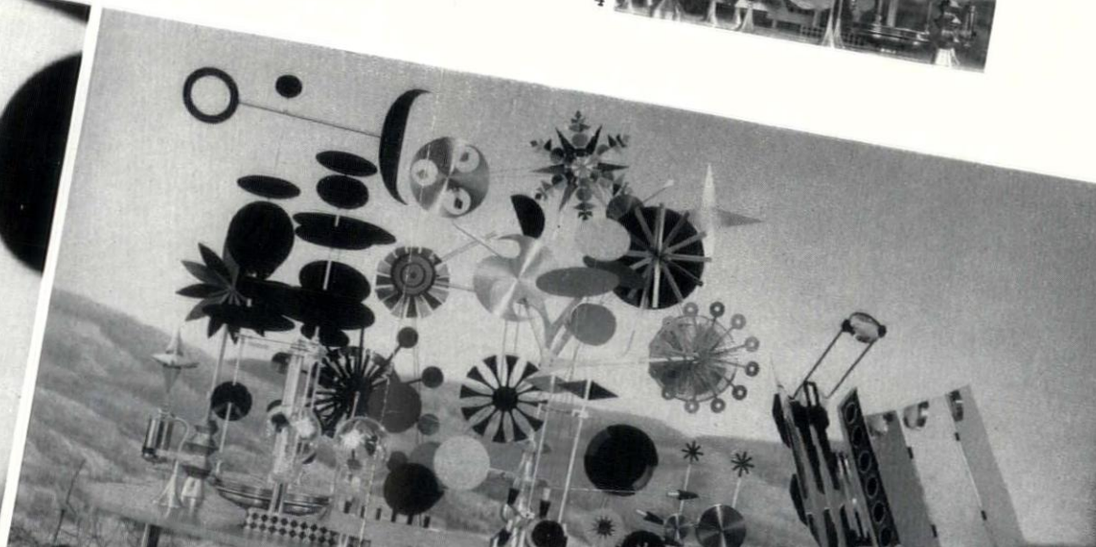


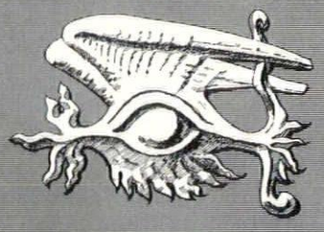
idiom that is in line with his well-known interest in ancient pop-art, but the branching upper parts are like some elegant eighteenth-century scientific instrument. And all this is in striking contrast to the purely science-fiction detailing of the light collector itself. Does this contradict the designer's personal declaration that this is not an eclectic conception? It is a nice point in the aesthetics of different functions, but it probably would have been a stylistic eclecticism to impose the same style on both the input and output sides. **5** to **7**, in its parts and its totality, the toy is a work of directed fantasy, and a feat of virtuosity in the exploitation of aluminium as a material of many uses. It is also an addition to the range of mobile sculpture, filling a median position between Calder's early, power-driven constructions, and his later ones, randomly activated by atmospheric movements. Here, natural power is drawn from the object's environment, but its application is not random—which is in character with its function as a didactic device.





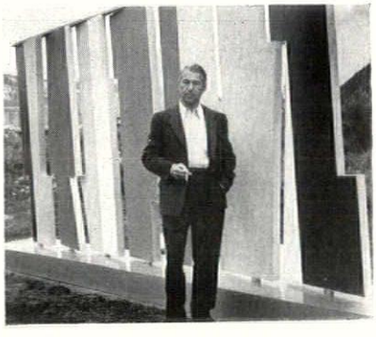






the exploring eye

The patronage of Big Business in search of prestige is as much a part of the history of the Modern Movement as the patronage of Popes and princes is part of the history of the Renaissance. Pioneering designs were produced for the Larkin Company, for AEG, for Fagus, for Voisin—designs without which Modern architecture would have been different—and the recent efflorescence of US architecture depends heavily on business patronage, even when it is disguised by University foundations. The motives of such patronage are rarely disinterested but buildings are not necessarily the worse for their patrons—if you seek proof consider the work of Alberti for the vain, irreligious, immoral, pleasure-seeking tyrant of Rimini.



Herbert Bayer's contribution to ALCOA's Forecast *programme was also—like Charles Eames's Solar Toy—concerned with the sun, though with controlling it rather than exploiting it. The* Kaleidoscreen *of coloured aluminium panels—seen here set up by the pool at Aspen Meadows, Colorado—is intended to serve both as an adjustable abstract sculpture on an architectural scale, and as an equally adjustable screen against wind and sun. The side of the panels seen here makes a pattern of coloured shapes the reverse is left in natural aluminium, giving a choice of reflecting and light-diffusing surfaces.*

Patronage is something the designer may bend to his own ends, and ample demonstration of this truism is afforded by the FORECAST programme of the Aluminium Company of America. Leading US designers of every inclination, from Harley Earl, the Wizard of Detroit, to Isamu Noguchi, apostle of Zen in the arts of design, have been invited to visualize the part that aluminium could play in the future of design—and, by implication, the part that design could play in the future of aluminium.

For the most part, designers have stayed within the frontiers of their known specialities —Herbert Bayer, for instance, produced a piece of abstract-functional architectural sculpture—but what could be expected to happen when the invitation reached a designer for whom frontiers exist only to be crossed? As it happened, Charles Eames at first declined to participate because he felt that there were more urgent things that needed action before ALCOA's Utopia. But, since the aim of FORECAST was to promote ideas, it was soon seen to be possible to promote some of these more urgent ideas, as well as ALCOA (though the patron had doubts).

An idea in question was the conservation of natural resources and the search for alternative sources of energy. To fix the idea of solar power as a coming alternative in the public mind, Charles Eames devised his solar toy. The performance of even the most advanced photoelectric cells is not yet such as to produce very much power, and rather than create a machine that did a little practical work grudgingly, he decided to produce one that would do nothing at all, but with a tremendous flourish that people would remember. The resultant do-nothing machine employs the power from a bank of silicon cells to operate an elaborate powered mobile, much as Hero of Alexandria or some rococco goldsmith might have used water power to operate a singing bird or similar toy—with the proviso that this sun-mill was a toy with a purpose.

R. Furneaux Jordan

SPAN

THE SPEC BUILDER AS PATRON OF MODERN ARCHITECTURE

Most of us have lived mainly in an era throughout which domestic architecture has been firmly divided into two; on the one hand the vast spawning over England of the spec' house, on the other hand the relatively tiny group of houses designed by architects. Each of these two groups—the first popular, successful, philistine, the second either bad or esoteric—has each gone its own way, each in utter contempt of the other. It has been Eric Lyons's job to bridge the gap. Twenty years ago he would have been regarded as barely respectable, today he is important. He may even come to be looked back upon as a key figure, less because of his architecture—good as this often is—but more because he has blown the gaff, the gaff that spec' building was unclean, untouchable, and didn't need an architect.

The objection of architects to spec' building has normally been at least as much a snobbish and 'trade union' objection as an aesthetic one, an attitude of hurt dignity that they could so easily be dispensed with . . . just as if that were not their own fault. A determination by architects to prove that they were essential to the great big world of house building has been conspicuous by its absence. It has been easier to say the grapes were sour. As Eric Lyons himself has said: 'Although architects are united at least in their resentment of the despoliation of town and country, it seems very few architects are prepared to interest themselves seriously in the developer's problems.'[1] Eric Lyons has

[1] *RIBA Journal*, May 1958, p. 223.

not been merely employed and tolerated by a spec' builder; he has initiated, experimented and controlled. He has been a vital cog in a successful machine. He has made himself as necessary to his particular kind of client in the domestic field as, say, some kind of T. P. Bennett or other has always been necessary in the commercial field. Lyons, however, is also a bit of an artist. He does in fact combine—a rare but not unknown combination—the sensitivity of the artist with a sharp business sense . . . both being necessary.

To make himself an essential cog in the machine of spec' housing was something that the architect of the 'twenties and 'thirties either would not or could not do—would not for reasons of professional dignity, could not for reasons of technical inability. The Garden City was never a commercial spec' in the ordinary sense, while the little AA-Laing competition of 1933 led to the building of half a dozen houses but was a commercial failure. At that time—the spec' builder's heyday—the architect's only real retort was to advocate both planning control and aesthetic control; he got both in the end, and if ever the biter was bit . . .

With Eric Lyons's housing schemes we return to something like the proper role of the architect in spec' building, the eighteenth-century role. Historically, of course, speculative *building* as distinct from the speculative *builder*, has always been the normal method of making towns. The palaces and churches of the architectural history books are all abnormal, beautiful freaks that have survived. Ordinary men, once they had evolved beyond building hovels with their own hands, have seldom lived in 'tailor-made' houses; houses have always been sold to them over the counter. There is nothing wrong with that and historically the role of the architect in it all is hardly worth discussion, so much is it a matter of mere nomenclature. So hazy has always been the border line between the country builder who could draw out a façade and the architect who paid his own workmen, that as often as not they were the same man.

The roles of Eric Lyons and of G. P. Townsend, his former partner, present client and spec' builder, are rather more clearly defined, but not much; the difference in social status is nil. That point has probably never occurred to them, nor would it have done a hundred years ago when hardly any architects were gentlemen. Fifty years ago—when architecture significantly was at rock bottom—it would have been vital. In those days if an architect must soil his hands with 'real building' then it could only be in an arty-crafty and romantic manner—as with Gimson's Leicestershire cottages. Voysey's efforts to be a 'real builder' via the drawing-board, in the revival of an architecture that had never known the drawing-board, were merely pathetic. In the middle ages the border line did not exist. In the eighteenth century it was blurred; although the word 'architect' was by then a common one, Bath and the spa towns were all speculative schemes involving an architect only because the test of the potential customers demanded it—someone, such as the Woods, had to handle the current clichés.

The first snobbish, as distinct from aesthetic, objection by an architect to spec' building was Sir John Soane's protest against the Dowager Duchess's speculation in Bedford Square; the employment of Leverton did not alter the fact—a sad one to Soane's mind—that the houses were built to sell to, rather than directly for, the residents. The Square is today an historic monument, but only as a speculation could it have been given artistic unity under one hand. Nash, while also able to give to the Terraces a similar unity, was really the common denominator between 'the age of taste,' which was on the way out, and the jerry builder who, thereafter, was to dominate the scene for over a century, dragging in the mud the very name of spec' building—a fate which in itself it did not deserve.

Clearly, therefore, in this century the only thing that could restore the position and put the architect back into spec' building, *as a key figure*, was a renewed demand for technical integrity accompanied by a change of taste. If once again—but of course in a wildly different context—there was to be a demand, as in the eighteenth century, for careful planning to match specific ways of living, for carefully considered form and colour, for a designed landscape, for a structure at least comparable with radio sets and cookers (as eighteenth-century building was comparable with Chippendale) and for economic realism, then once again the architect would come to be not merely tolerated but would be found essential . . . always assuming that he knew his job. Such a revolution, involving all this, is not yet universal, but has indubitably begun in odd corners. It necessitates the architect. Professional publicity and legislation have done little to bring this about; they are the product rather than the cause. Bigger causes—the usual forces of social history—have been at work. In the last decade these forces have made a chink in the grim wall of popular taste, and through this chink Eric Lyons has been the first to stick his nose.

This change in taste is obvious and need not here be dilated upon. It is all round us. The welfare State, the environment of the modern school, the example of the best public housing, the BBC, women's magazines, COID, technical education and popular science, new

ways of living, travel, Espresso bars, Penguins, Festival of Britain, etc., have all played their part. Such popular taste is of course very easily debased, commercialized, exploited and, indeed, created for base motives. It is then called 'contemporary.' There is nothing new about all that; commercial exploitation of U level taste at non-U levels has gone on throughout history. Today with all our channels of communication and distribution, it goes on more quickly; with the absence of a vernacular and with our literate masses, it is spread more widely. Such cashing-in always begins with the things most easily produced. You don't 'tool-up' on the strength of a fashion. First come clothes, then textiles, typography, furniture, then decor, then 'tailor-made' architecture. Then cars. Last of all, spec' building. For, last of all—terrified of deciding and unequipped to decide between a cultural revolution and a fashion—are the building societies. They call the tune and so settle the timetable. As Mr. F. Lee, of the Building Societies Association, has said, it took precisely ten years for the Societies to accept maisonettes.[2] That, more than philistinism itself, has been the real brake. Not mass addiction to mock Tudor—that is almost out anyway—but huge vested interests in mock Tudor, and in the road layouts that go with it, have been the real barrier to the Eric Lyons and Span Buildings liaison. The sale of the Span[3] properties—and they sell before they are built—has not been considered by the Societies as proof that they are sound investments. That barrier, however, as private owners resell at very substantial profits, is now just beginning to crumble . . . four years after the Ham scheme has proved itself.

Dialectically therefore the 'chink' which gave Eric Lyons his chance was bound to happen, and so at some point there was bound to be a Lyons. Not that the social forces mentioned were the only ones, or even the main ones. As always the final 'push-over' was economic. 'I think we are approaching the time when it may no longer be economically possible for the individual to have built his own "special" house, and, from a town-planning point of view, I doubt whether there is any solution to the collection of individually designed small houses—no matter how well designed. I want to emphasize the word "small." It is due to the advent of the small house that the new town-planning problem has arisen.'[4]

The high cost of the 'tailor-made' house, plus land costs, plus the inability or refusal of the individual to solve his problem in a non-individual manner, i.e. in an eighteenth century manner—are the main economic factors, but not the only ones, in the story. It is also significant that Span advertising[5] is almost limited to *The Observer* and *The Sunday Times*, papers read almost wholly by a highly literate and almost eccentric class who would, at least until about 1950, have never contemplated a spec' house save in horror—least of all as a home for themselves. The fact is that while the change in taste has moved up the social scale to embrace the readers of 'posh' newspapers, the value of money has also brought the spec' house buyer down the economic scale. The two things roughly overlap at professional and managerial levels.

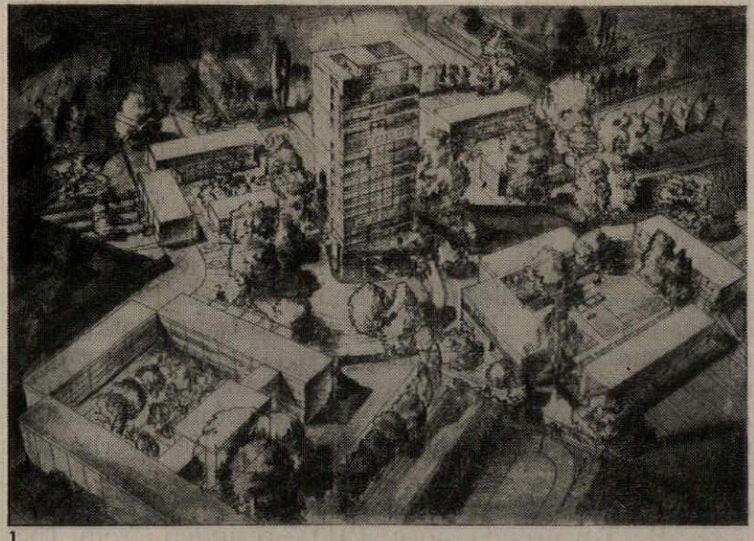
Compared with what is usually meant by spec' housing this means that the area within which the Span idea can operate is relatively small, though widening. The spec' builders' normal demesne—i.e. by-pass land—is ruled out by taste and, presumably, snobbery; inner suburbs such as Chelsea, Bayswater, etc., though formerly normal for managerial classes and well in the running on snob grounds, are now

[2] *RIBA Journal*, May, 1958, page 230.

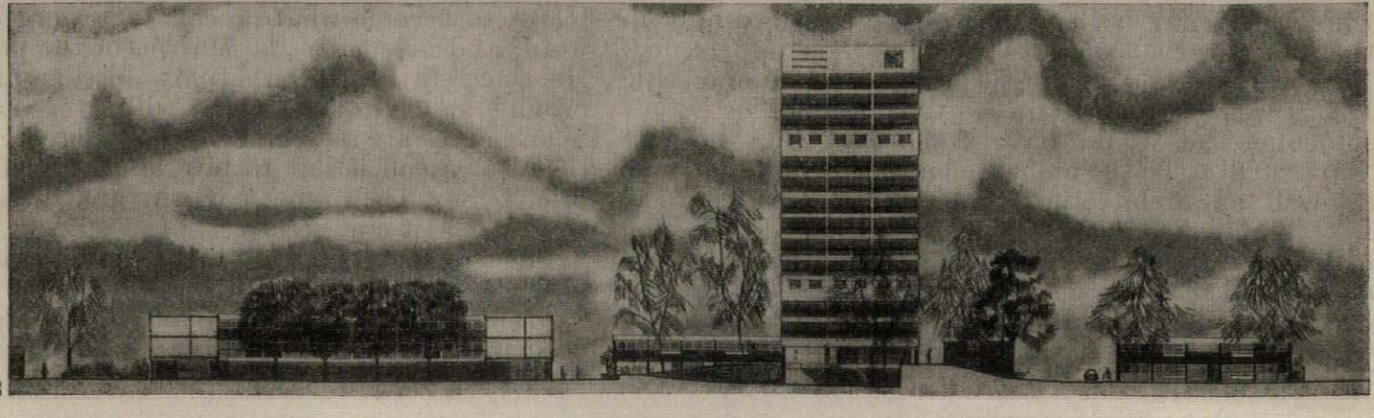
[3] The name of the development company directed by Townsend.

[4] *RIBA Journal*, May, 1958, page 223.

[5] After inspection of the work itself one finds that the usual advertiser's encomiums do—for perhaps the first time in one's experience—bear a ring of truth. One also notices that 'Large Mortgages Available' can now be added.



1

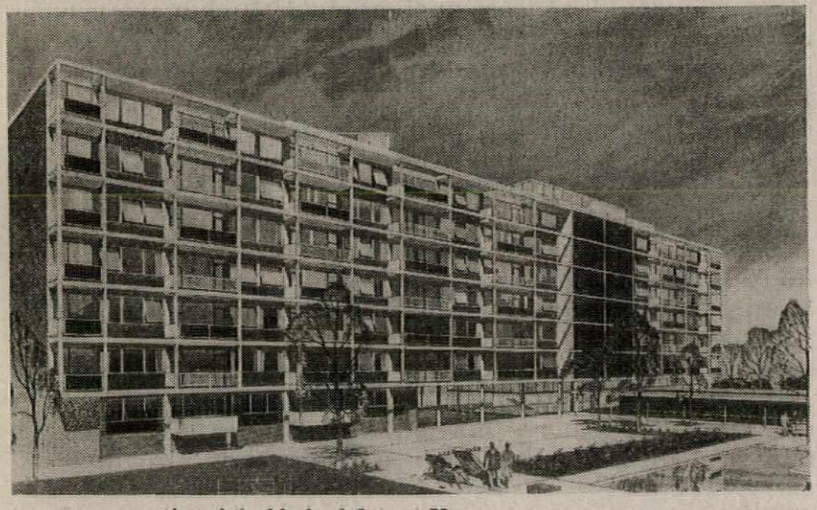


2

1 *and* 2, *aerial view and elevation of the scheme at Hills Road, Cambridge, the first to include a tall block set among two-storey housing.*

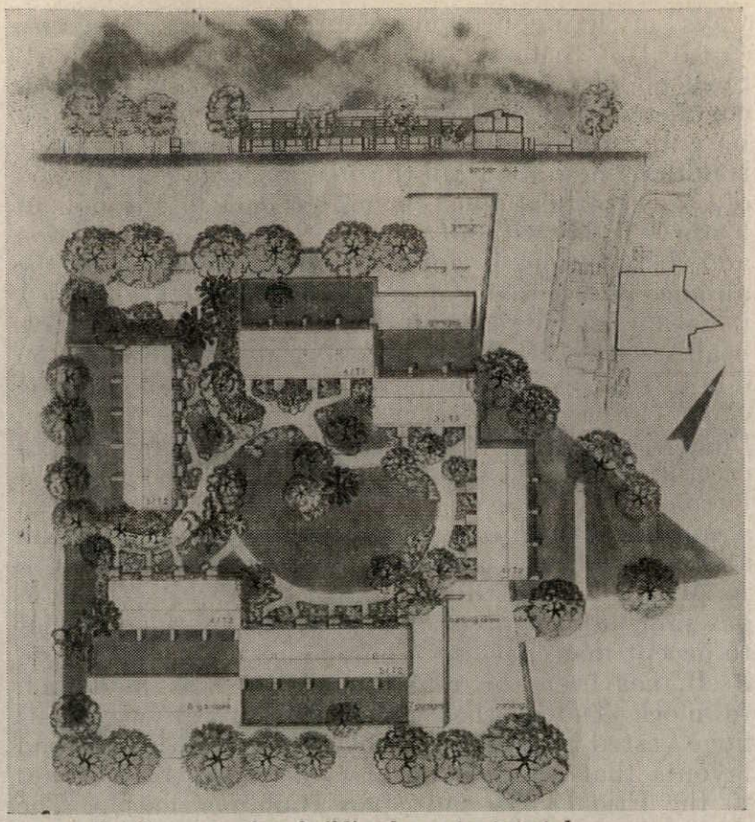
becoming ruled out by property values, the devaluation of snobbery as such, the cost of decent conversion and the resulting absence of amenities. This, at present, has caused Lyons and Span to operate in the left-over areas of the more salubrious outer suburbs—Richmond, Twickenham, Teddington, Ham, Blackheath and Beckenham—where commuting has its compensations in sylvan surroundings. Hence the frantic battles that Lyons has had to wage with local amenity (i.e. preservation) societies and with town-planning authorities who ought to know better—battles with those who can recognize any sash-windowed brick box as 'Georgian' but who still, even today, cannot see the true Georgian essence of a group of houses combined into a single architectural unity and related to a designed landscape. Those battles are still having to be fought, but it may be significant that Cambridge has accepted fairly easily the kind of housing for which Richmond is already famous but which it tried furiously to reject.

In addition to this kind of leafy suburb there may also be possibilities in certain 'unusual' provincial cities; there is a scheme at Hove, 3, and the Cambridge scheme, 1 and 2, with its mixed high and low building, has already begun. By and large, however, the geographical area within which the particular social and economic forces are at work is a small one, though the success of the schemes is enlarging that potential area all the time.



3, *perspective of the block of flats at Hove.*

It is unlikely that an entirely new genre has been created, or that Lyons's houses are architecturally epoch making. They meet the requirements of an epoch, which is not quite the same thing. In time the whole idea may well prove to have its place only in the decade 1955–65 . . . to be then superseded. Nevertheless, a certain situation existed and Eric Lyons was the man who cashed in on it. If he hadn't someone else would have done. Not that he just 'happened' to be the man. He had social and economic as well as architectural perception. Also courage. Like Pimlico's Cubitt, or Nash, or Ralph Allen, seeing a situation he both exploited it to his own advantage and solved it to the general advantage. As with those earlier men the client's 'taste' was a given factor of the first importance, not an irrelevancy to be wooed by the architect.



4, *project at Coventry, where building has not yet started.*

Eric Lyons—born 1912—was an articled pupil while studying at Regent Street Poly evening school. He worked for eighteen months with Gropius and Fry during the Impington period. As much or as little may be read into these facts as one wishes. He went into partnership with G. P. Townsend who had trained in the same way. After the war Lyons performed the apparent miracle of building a private block of 24 flats before licensing stopped him. This, at Richmond, is still a presentable piece of modernism under the Fry influence. He is a typographer, has designed a best-selling Tecta chair, and builds one private house each year. He lives in a new and very modern wing of a very exuberant and turreted Victorian house at Molesey. In the main part of the house he has his offices. His staff are a good team working in rooms that look on to the garden. The administrative machinery is efficient because it is almost non-existent. At Molesey he lives in 'the Lyons country' and has never been trapped by London's idiotic overheads. He is really a new phenomenon, neither provincial nor metropolitan—a successful suburban architect.

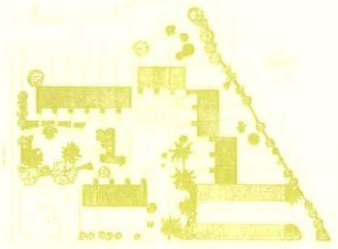
G. P. Townsend—born 1911—resigned from the RIBA to become what he calls, for want of a better word, a 'developer'—'the Martha of the partnership.' He sincerely believes that his mission in life is to provide an environment that will give people a 'lift.' Span houses are now built by negotiated contract, so that Townsend is left to buy land, to sell leases, to brief Lyons. The former partners are, therefore, quite simply, client and architect.

Their own statements on their job were published nearly three years ago. In view of the success of the Span idea since then, those statements are now seen as being something more than theoretical, and are

[*continued on page* 119

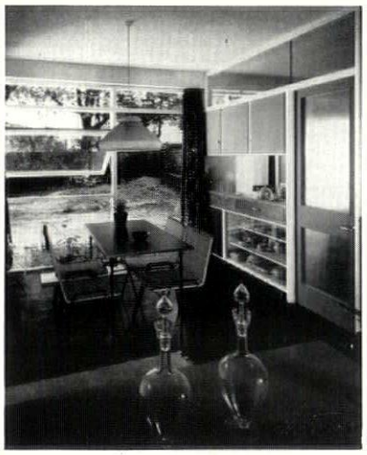
Flats at Teddington

5 and 6, the Cedars, at Teddington, in the outer western suburbs of London, takes its name from a fine growth of mature trees on one side of the site, all but one of which have been retained, as is general policy in SPAN developments. The accommodation is in terrace houses of the T2 type which have brick cross-wall construction, seen here in front and rear elevations.



site plan showing viewpoints

7, interior fitments and arrangements at the Cedars follow the general line established in earlier SPAN developments. The servery wall, dividing this dining area from the kitchen beyond, registers on the exterior glazed wall of the ground floor as the blank panel seen in 6, right.

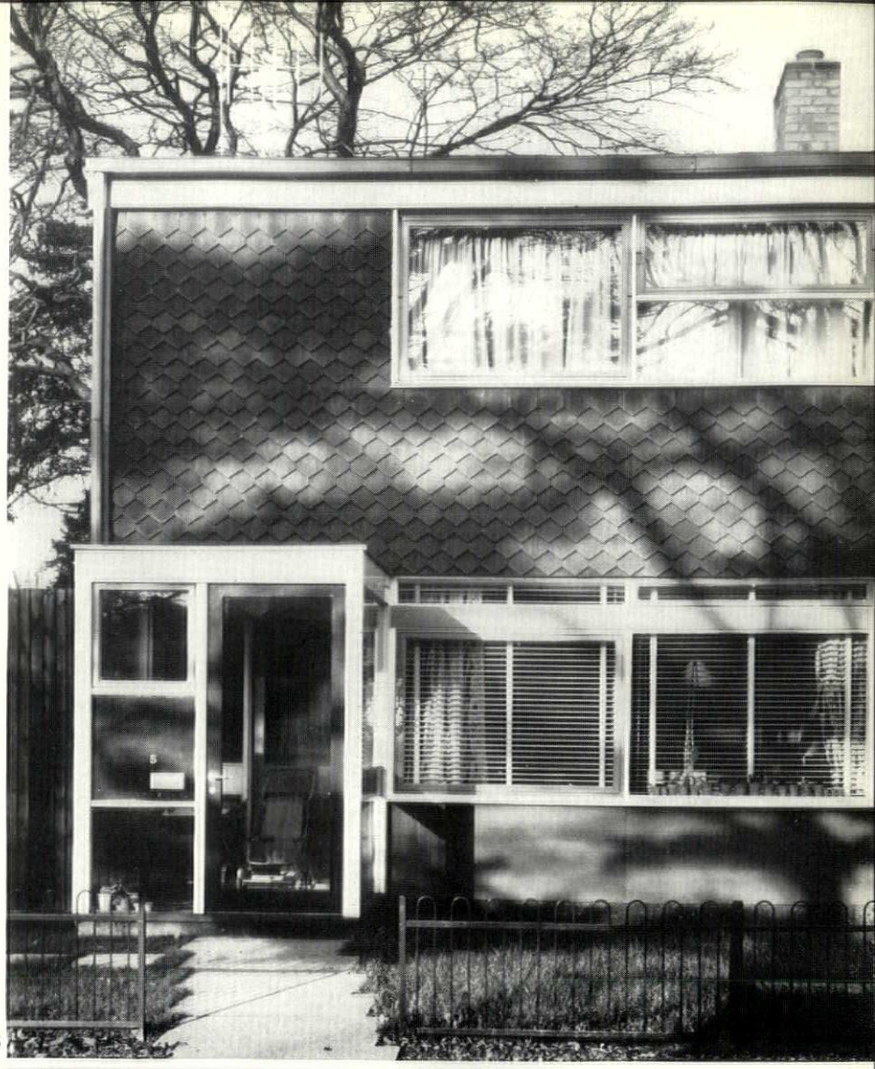


7

8, unlike earlier SPAN developments, usually on less restricted sites, the Cedars has recognizable front gardens of cottage style, rather than open landscaping with turfing and planting, which would be out of scale with compact grouping of the buildings.



8



5

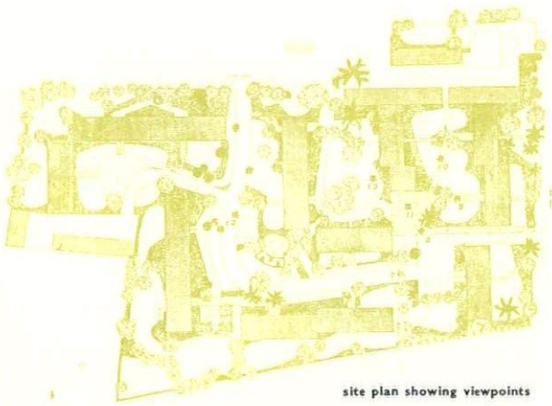


6

The Priory, Blackheath

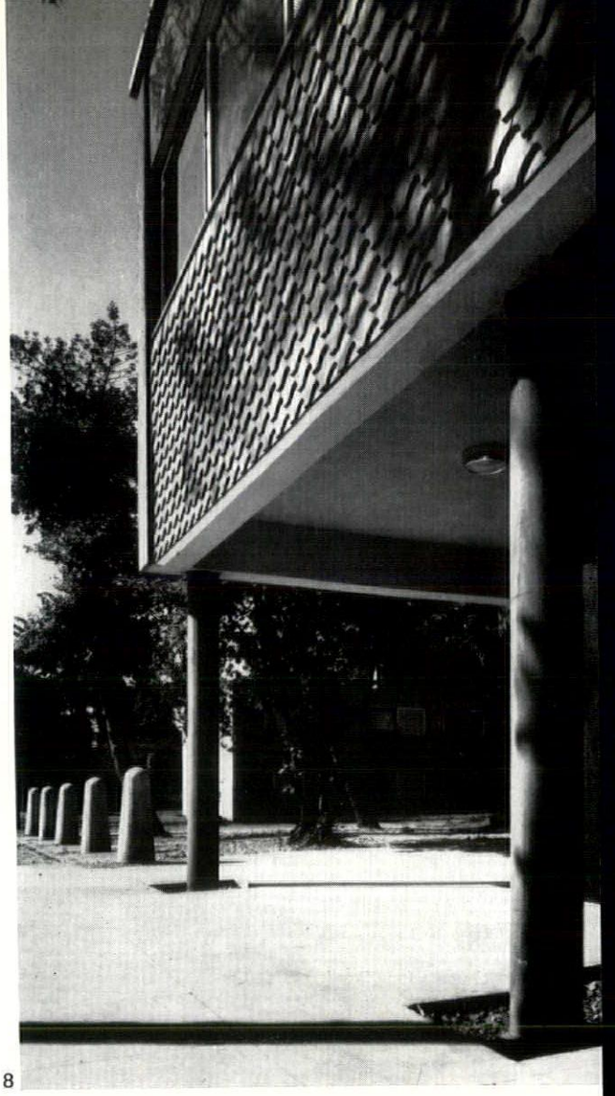
7, *the Priory, one of the group of related schemes in Blackheath, a south-eastern suburb of London with considerable landscape qualities, lies largely in old gardens belonging to the ruined Priory that gave the scheme its name, and has been retained as a 'folly', lying just beyond the farthest range of buildings visible in this view.*





site plan showing viewpoints

8, 9 *and* 10 (*facing page*), *essential to the planning of the eastern half of the Priory site is the underpass connecting the two main garden-courts on that side, a social amenity as well as a circulation link, providing covered public space at a point where the inhabitants naturally meet.*



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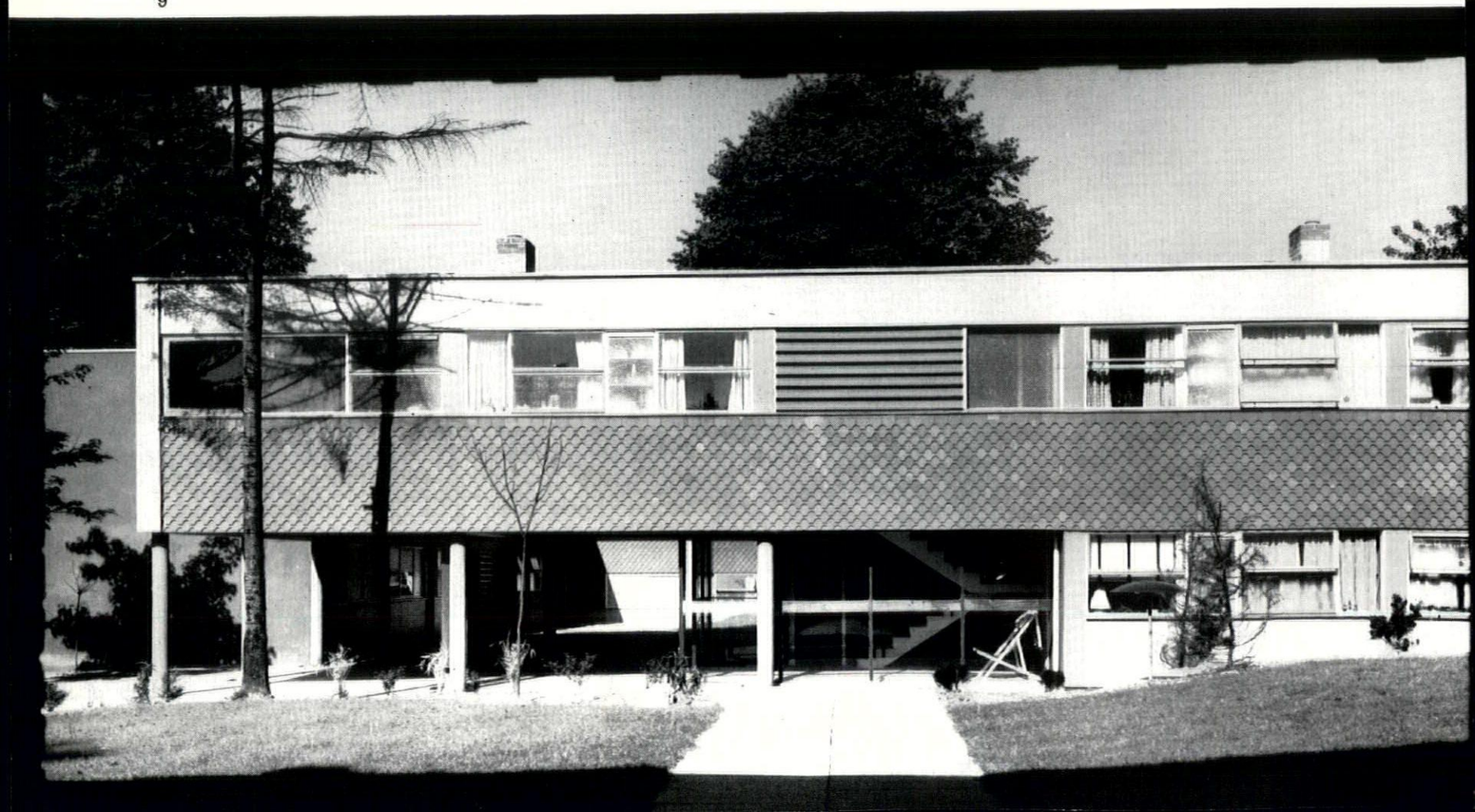
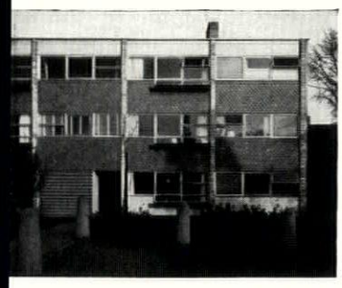


11, *in spite of the Priory's comfortably high density of fifty persons to the acre overall, and the inevitable economic pressures on speculative development, it is still good business and good design to be generous with areas that are not directly saleable to clients, as in this open stair-hall adjoining the covered underpass.*

12 *and* 13, *the bulk of the flats in the Priory, including the three-storey blocks whose use is encouraged by the falls of the site, are of the revealed cross-wall construction that is almost a SPAN house-style, but the framed structure of the underpass block is expressed by developing the facades on both sides in long horizontal bands of tile-hanging and fenestration.*



10

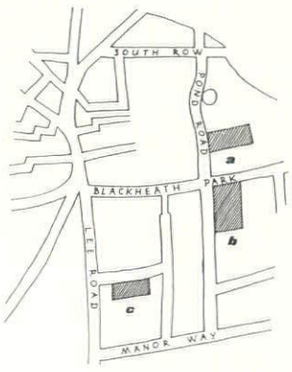


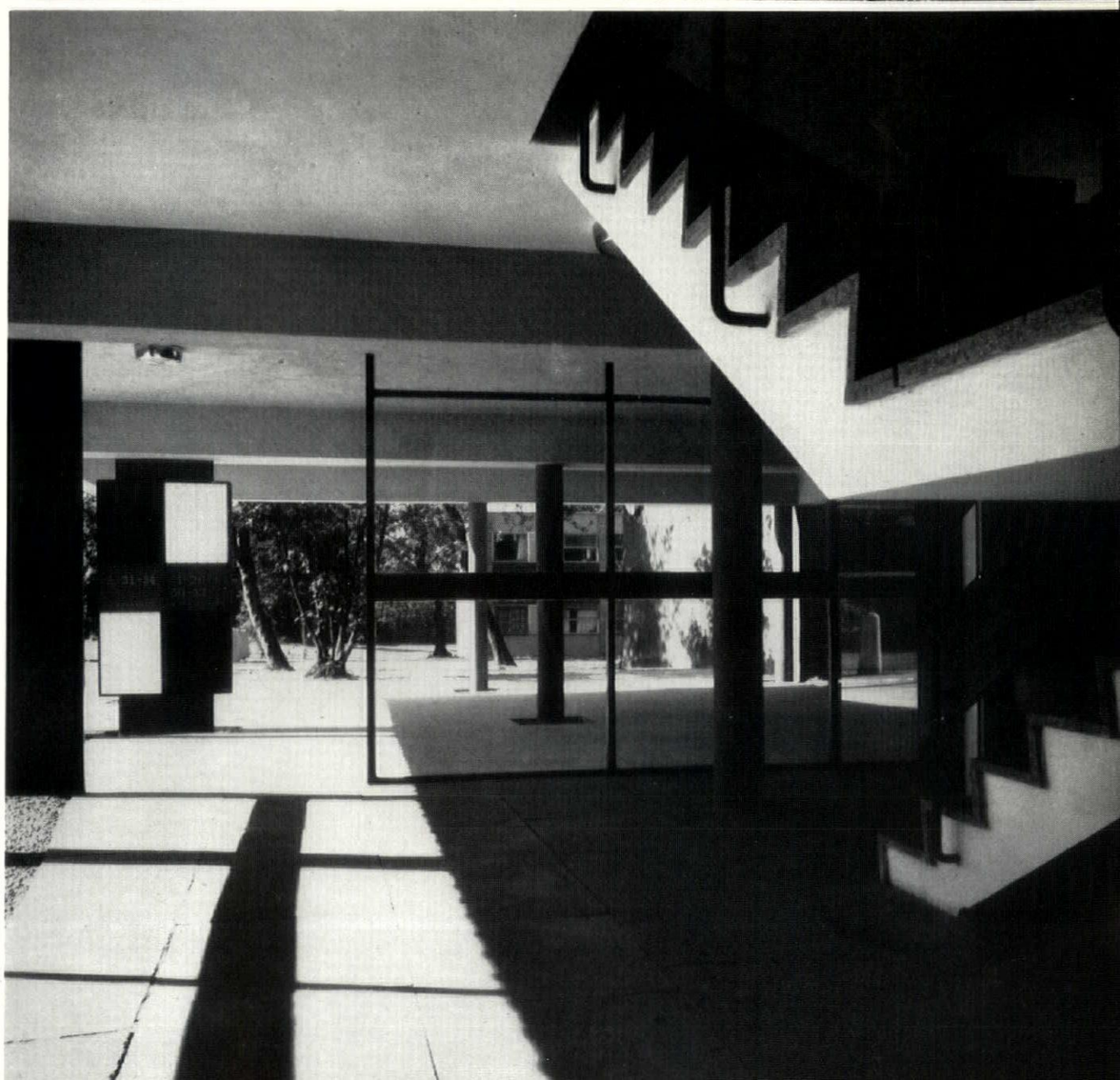
12



13

key site plan
a, the keep (not illustrated)
b, the hall
c, the priory





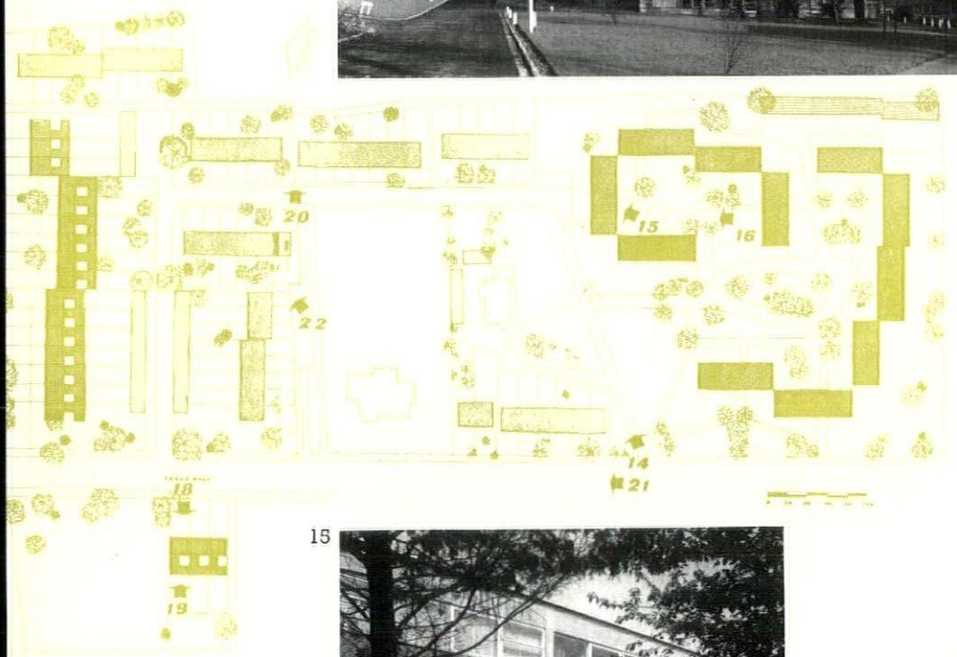
11

The Hall, Blackheath

14, *the Hall, lying on the gentle slope below Blackheath Park, a broad avenue of picturesque early-Victorian houses, is a mixed development of flats and houses, lying right and left, respectively, of the road in this view.*

14





site plan showing viewpoints

15

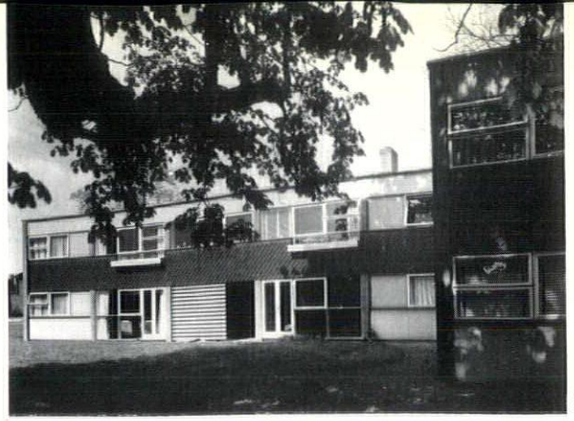


15 *and* 16, *one group of flat-blocks (that nearest the camera in* 1*) forms an almost completely closed loop framing an inner court whose landscaping makes sweeping use of the fall of the site.*

17, *toward the southern corner of the site, the flats are grouped in loosely staggered ranks, and their living rooms face outwards, leaving the court behind them for vehicle access.*

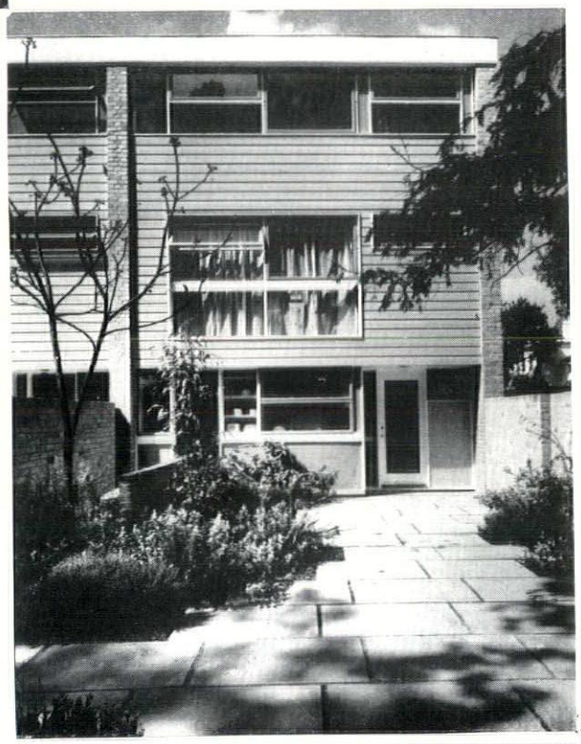
16





17

18 *and* 19, *separated from the rest of the development by Foxes Dale, are a group of three-storey houses, including this show-house which was widely noticed by the press and the home magazines, thus providing one of the SPAN developers vital links with their possible public. The weatherboarded treatment of the elevations is being used for further three-storey housing at this end of the site.*



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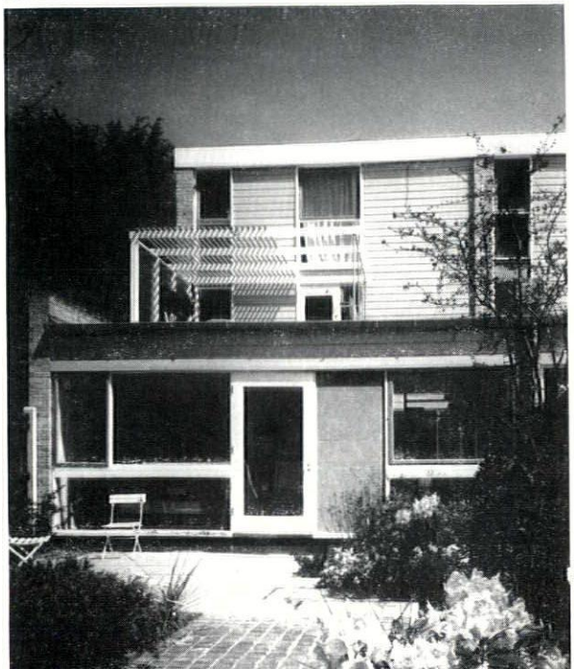


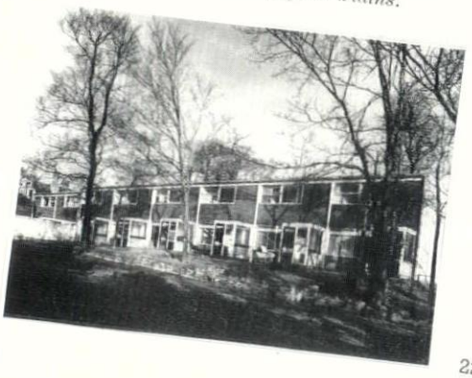
19



20

20 and 21, most of the area between Foxes Dale and Blackheath Park is occupied by two-storey houses of the T2 *terrace type, with pitched, split-ridge roofs. Although the ground rises, the houses are not stepped within the terraces (rarely a happy effect) and changes of datum are marked strongly by staggering the blocks or even inserting screen walls, as here, which also serve to tidy up access to back gardens.*

22, within the site, successions of blocks at right-angles provide stopped views that keep the eye within bounds, establishing a domestic scale which is reinforced by the developers' planting and the choice of path widths.



21

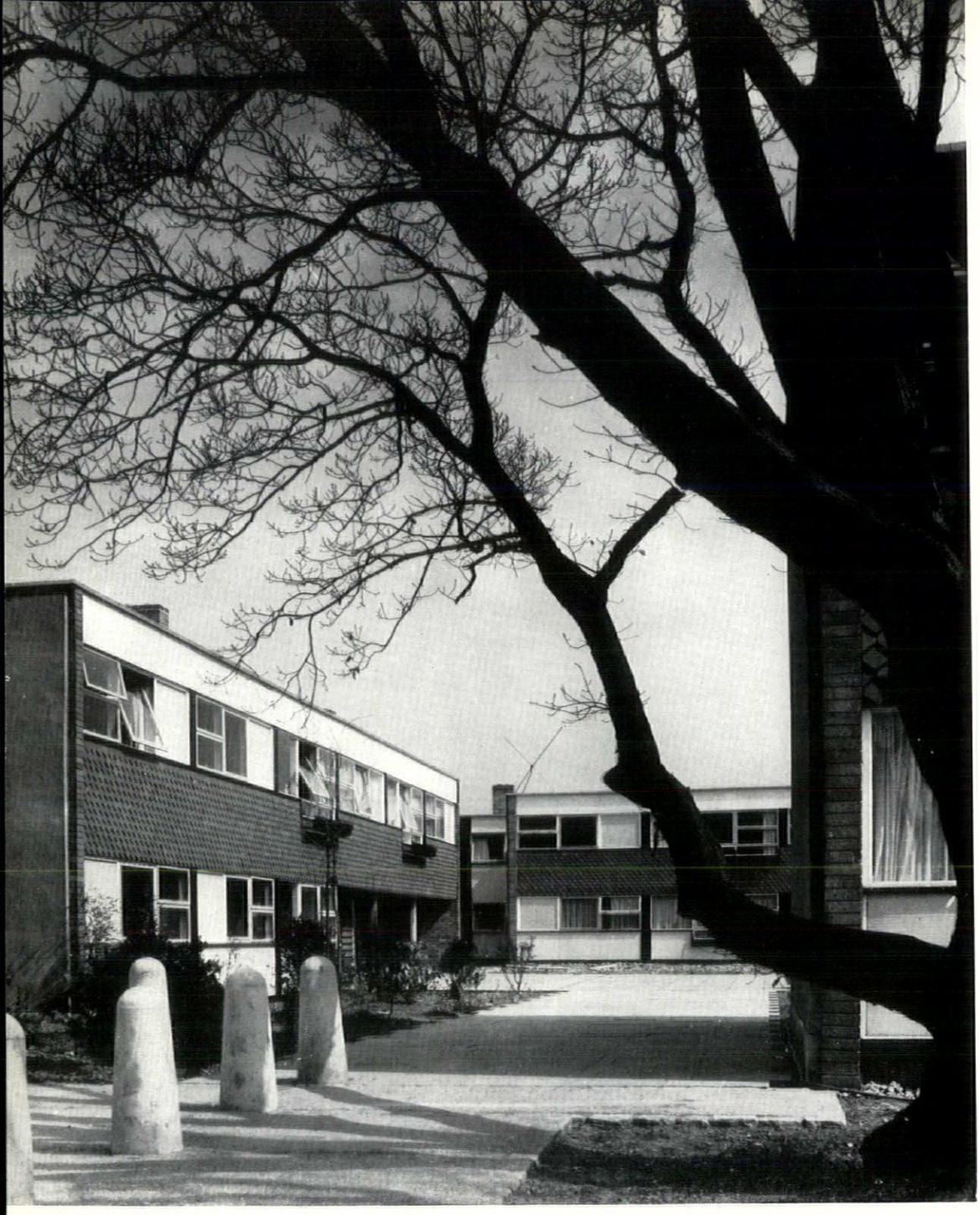


22

Parkleys, Ham Common

23, *Parkleys, at Ham Common, as far out to the south-west of London as Blackheath is to the south-east, but on a perfectly flat site, first introduced to the public the characteristic SPAN repertoire of wall-surfaces, ground-surfaces, street furniture and planning techniques, both indoors and out. Completed in* 1956, *it contains* 160 *flats, some in two-storey terraces, others in three-storey blocks of H-plan form, at the same fifty-to-the-acre density as later schemes.*

25, *already at Parkleys the characteristic planning scale of the later SPAN developments had appeared; closed or partially closed vistas of limited length, with trees and floorscape pattern used to give a sense of measure, related, however loosely, to the modules of the repeating elements of the facades.*



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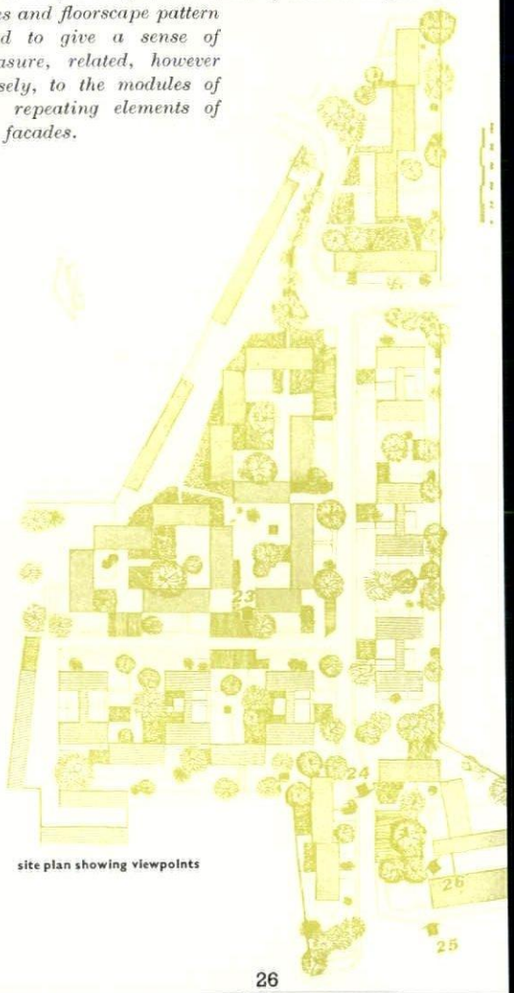
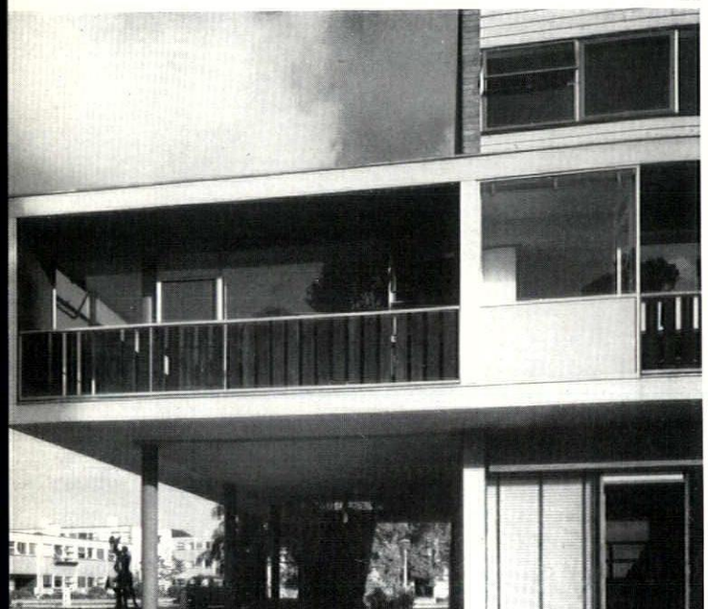


site plan showing viewpoints

25



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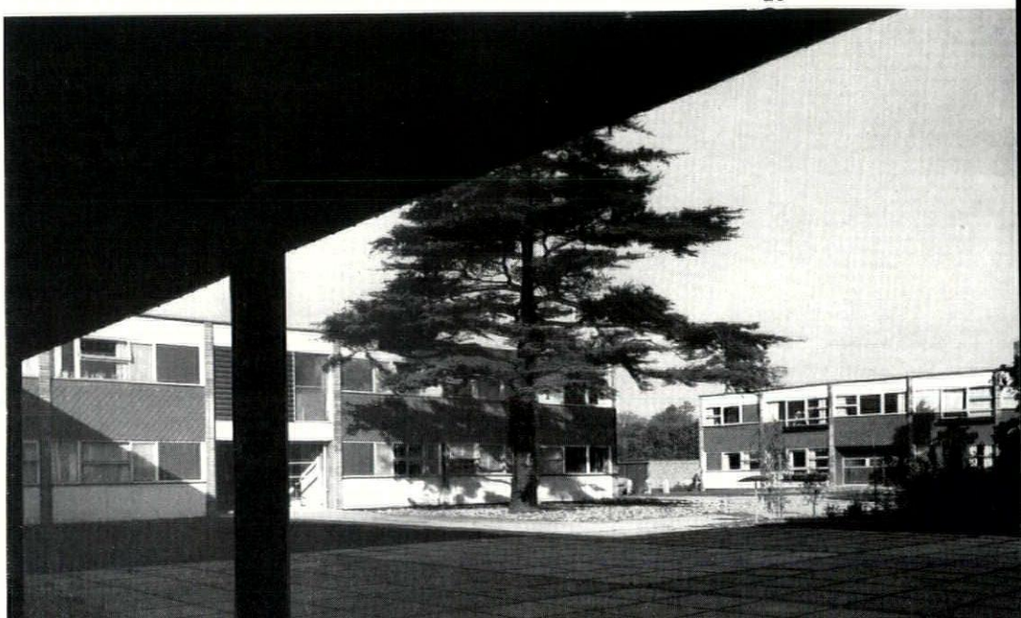


continued from page 112]

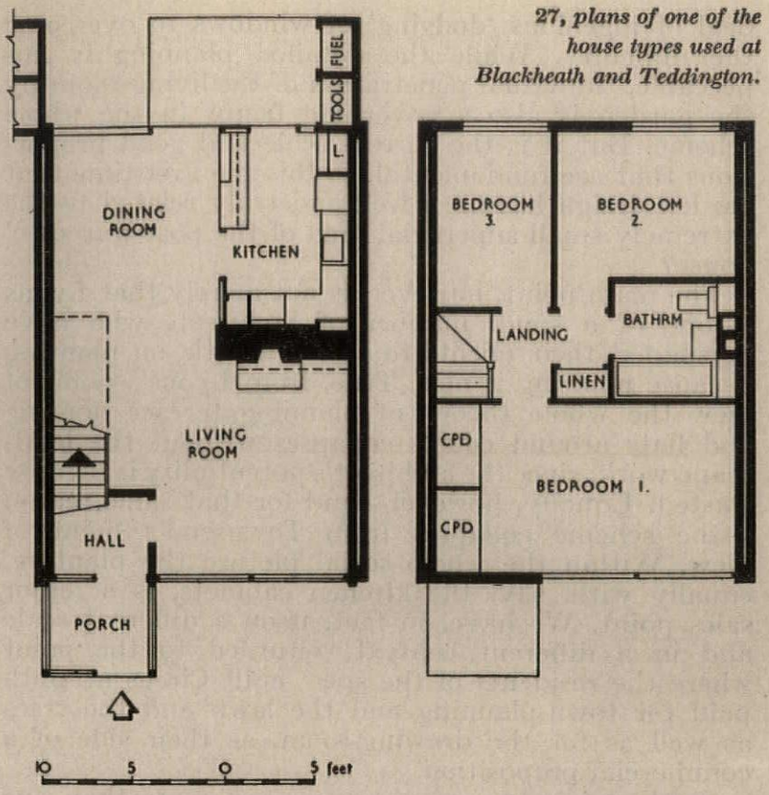
still worth quoting.[6] Eric Lyons then said: 'I believe that architects are suffering from an excess of "professionalism" which is lowering our status and frustrating creative development. We are generally despised by most creative artists and are barely tolerated by engineers, surveyors and other technicians. I cannot support the theory that the architect should become a super-technician who co-ordinates a team of technicians, as I believe that *the real criterion of the architect's activities must be an artistic one*. Like other artists, architects, of course, must be technically equipped, but, as in other arts, an obsession with technique is evidence of artistic sterility. Our scope is reduced by an ever-increasing number of "specialists," town-planners, interior decorators and so on. The theory that this is giving the architect greater freedom is not supported by very much evidence and I think it is about time we reclaimed our proper interest in town-planning, landscaping and all spheres of creative design.'

G. P. Townsend's statement, made at the same time, is perhaps even more significant: 'Contemporary design has been the basis of our approach to the problems of providing accommodation that will give a pleasant and stimulating background for day-to-day living. The results have more than justified our belief that the public would appreciate a contemporary environment and I am satisfied that architect-designed houses and flats can be produced to sell at competitive prices, and to show the developer the necessary margin of profit. . . . *The architect has to design and organize so that buildings can be produced at the same cost as a builder's scheme providing the same accommodation.* This means that the architect must collaborate at all stages with the developer in considering siting, construction, methods, materials and the administration of the contract. Some architectural ideas have to be scrapped . . . other progressive ideas are incorporated even though at the time the public response may be a matter of conjecture. So far the public response has been highly favourable . . . the appreciation of the buying public is far in advance of the ideas of most local authority officials and local planning committees.'

The two sentences that I have italicized above, by Lyons and Townsend respectively—apparently antithetical—would seem to sum up the problem. They also symbolize an age-long conflict in architecture. It is in resolving the antithesis that the Lyons-Townsend system has succeeded.

Those schemes have nearly all been illustrated and described from time to time and need not, therefore, be analysed again here. The essence of them all, however, is something almost universally absent from normal spec' building and almost always present in good eighteenth-century building—*landscape*. This does not just mean that Lyons can plan a pretty garden and has somehow persuaded Span to pay for it. The whole approach is through landscape. The landscape, the design of houses within an environment, is the starting point of the design from Lyons's point of view; the top selling point (see advertisements) from Townsend's.

[6] *Architects' Journal*, 20, 1, 55, page 72.



27, plans of one of the house types used at Blackheath and Teddington.

In the majority of the schemes,—almost all of them apart from the projected high building in Cambridge—low terrace blocks of houses or flats, mainly two or three storeys, surround and fully enclose communal gardens. A garden surrounded by domestic building *can* be too large. In the Lyons schemes, however, two or three garden courts may be formed, rather than one big one, with the paved link between them sometimes carried under the buildings. This gives a vista from one garden to another. It assures—and here again an eighteenth-century comparison might be made—that the gardens are not too large, that there is a correct proportional relationship of horizontal space to building height, and a proper sense of enclosure. That proportional relationship is rare today when building heights are controversially argued without reference to foreground. The height-space relationship in most Georgian squares is correct, also in most but not all (not Downing for instance) Oxford and Cambridge colleges. In the so-called 'closes' of the garden cities the space relatively to the cottage heights is usually far too big and—owing to the administrative machine having got out of hand—is ridiculously so in the New Towns. *The landscape design in the Lyons schemes is beautifully in scale with the buildings.* The architect has had the courage to recognize how small his buildings are and so to cut up his site almost, sometimes, to the point of being pretty-pretty. There is a further analogy here in the gardens of old cottages. Traffic, service entrances and garages are usually on the perimeter of the scheme, so that the gardens remain an undisturbed precinct. They also form the outlook from the living-rooms. One valid criticism arising from the planning around small garden courts concerns the very real risk of one flat overlooking another. This criticism is now recognized and in the later schemes especially there is a good

deal of ingenious 'dodging' of windows to overcome the difficulty. While the detailed planning is impeccable, the visual penetration of the living-room by the garden is also a governing factor in the whole scheme. But it is the correct scale and good proportions that are fundamental. Is this the first time that garden design has been well and truly related to the extremely small superficial area of the post-war spec' house?

The main point, however, is not merely that Lyons is one of a small number of architects who have persuaded their clients to spend a little on planting because planting is nice. True, from Lyons's point of view the whole theory of planning terrace housing and flats around courts collapses without the landscape work, since the architect's potentiality is thereby wasted. Equally, however—and for that same reason—the scheme collapses from Townsend's point of view. Within the whole social picture the planting, equally with, say, the kitchen cabinets, is a major sales point. We have, in fact, if on a different scale and in a different context, returned to the point where the residents of the spec' built Circus at Bath paid for town-planning and the lawn and the trees as well as for the drawing-room, as their side of a commercial proposition.

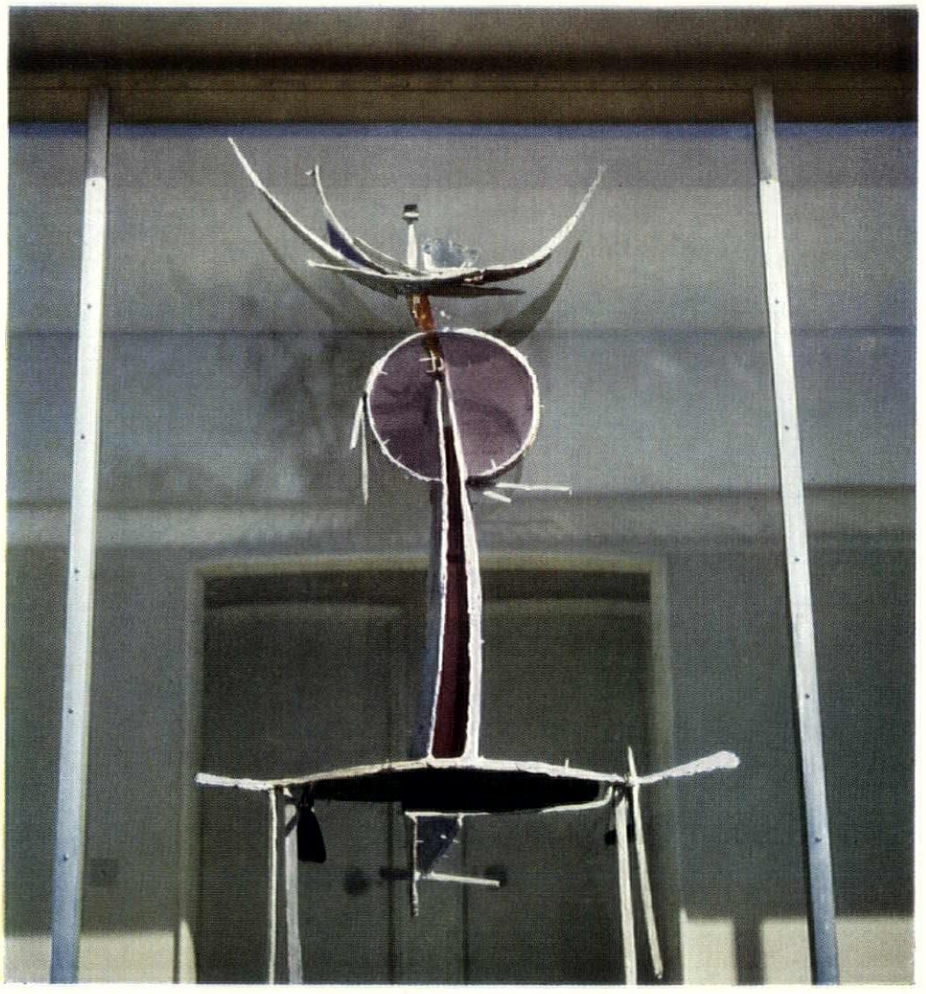
Gardens involve maintenance, and more than one pretty forecourt to a school or factory has gone to the winds on this point. In the Span schemes residents buy long leases—£2,500 to £3,000—knowing that thereafter they assume a share of responsibility for upkeep. Span pave and plant the gardens well and even lavishly. (The LCC have borrowed their tree list.) Then the residents' committee takes over and employs a gardener. This works well. Only if major planning or structural change is wanted do the committee refer the matter back to Span as landlord, and thus indirectly to the architect. In fact resident co-operation, of its own volition, goes rather further than this; on at least one scheme—the recently designed and very charming little square at Teddington—it has clearly been extended to such things as the window curtains.

Not that the schemes are stereotyped; the unit plan both of flats and houses does of course repeat, 27, but just as the town-planning forms—size and shape of gardens and blocks, etc.—have to adapt themselves to the exigencies of the site, so does the planting adapt itself to the character of the site. At 'The Priory,' Blackheath, one side of the larger garden court, for instance, is left unenclosed so that it may be looked down upon by an old stone tower. In this scheme, since there are virtually no old trees, herbaceous planting and flowering shrubs are used in profusion. By contrast 'The Hall,' Blackheath, has several fine old trees at its heart, and consequently mown lawns rather than flowers is the main theme. In the tiny square at Teddington each house, it is true, has its own small plot of flowers, but the smallness of the scheme as a whole demands a very simple treatment, which it gets.

The detailed planning, the equipment and the architectural detail are all, by now, well known to architects. This article has emphasized rather how these things find their starting point in, first, the social situation and then in the landscape design. Landscaping is not just a desirable but expensive 'extra.' The other thing that has been emphasized is the whole Lyons-Townsend-contractor-resident relationship. The nineteenth-century conception of the architect as a professional gentleman—analogous to a doctor or lawyer—acting as agent for another gentleman, is not a conception that has in any case been valid for more than a very small slice of history. It is crumbling all the time now. The place of the official architect, of the civil engineer and of the spec' builder in our civilization is the proof. What Lyons has done, however, is to show that if the architect, instead of remaining aloof in an unreal world, can break in on the vicious circle at the right point, he will—rather surprisingly—be found indispensable.

ID

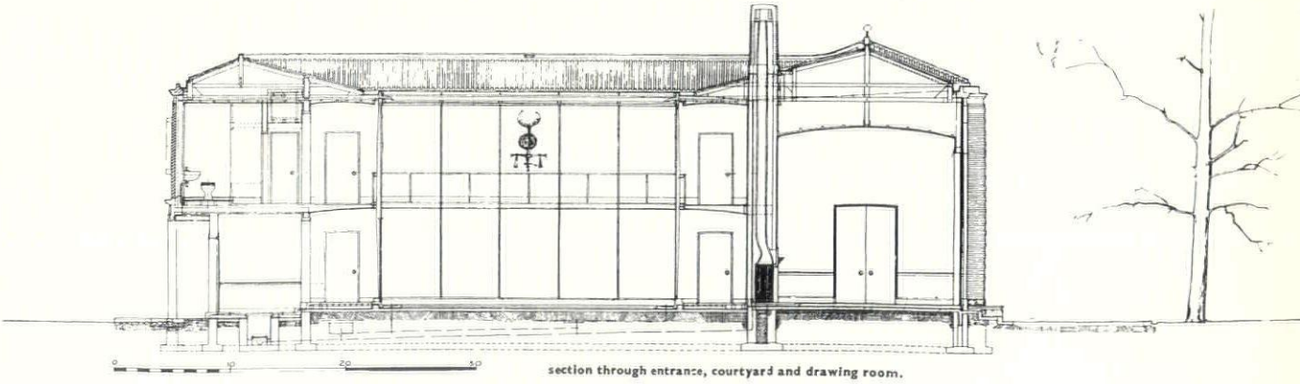
a monthly review of interior design



1, in the interior court (see section below): stained glass and aluminium sculpture by Geoffrey Clark portraying summer.

House for the Principal of Newnham College, Cambridge

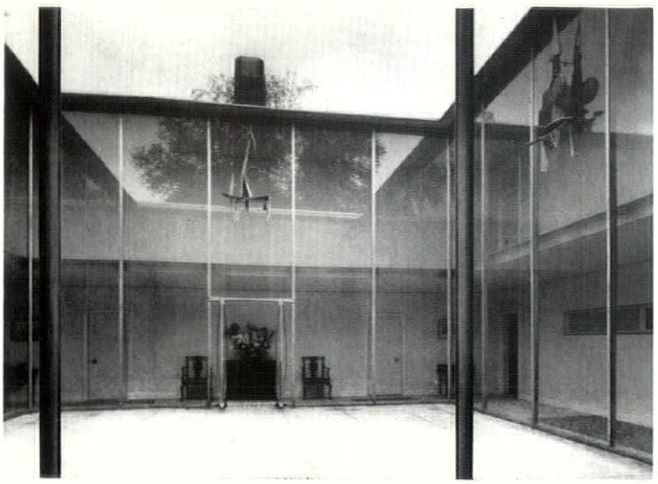
architect: Louis Osman.



section through entrance, courtyard and drawing room.

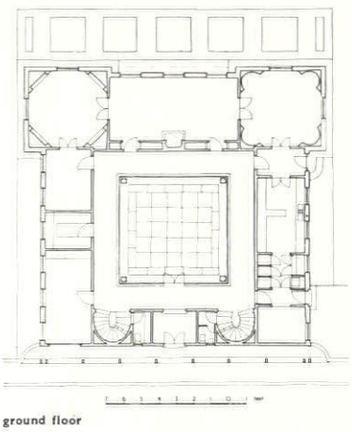


house for the principal of newnham college

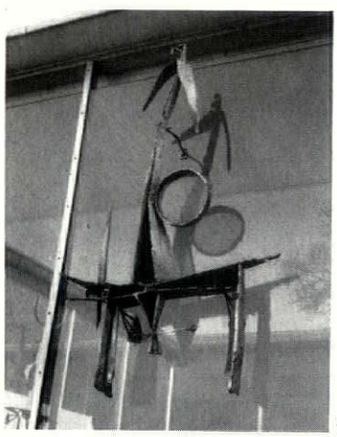


3

The interior courtyard of the house with sculptures ←2 of the four seasons seen against the glass walls.

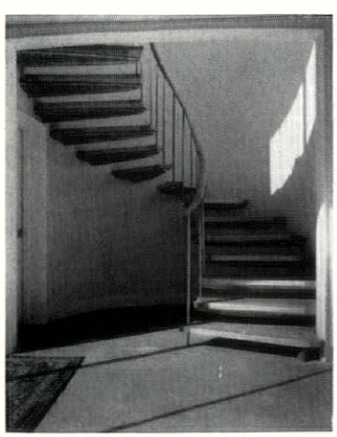


ground floor



4

The house is planned as a perfect square, surrounding an open courtyard (see section on page 121 and plan above). 2-6, sculptures of stained glass and aluminium by Geoffrey Clarke, representing the four seasons, were provided by a legacy to commemorate 'the noble work of women in the Great War.' They are suspended by stainless steel brackets from the clear glass walls of the courtyard to give a jewel-like and three-dimensional effect. Each season is represented by a plant-like form symbolizing man: spring, 6, the young plant moves upward through the horizontal plane representing the surface of the earth; summer, 1, shows the plant open and blooming; autumn, 5, with the plant past its prime, and winter, 4, the plant dying and the cross-shaped root fully developed, symbolizing man's soul. 7 shows one of the cantilevered twin staircases, with ash treads carried on aluminium cast brackets. The solid outer walls of the house, 8, allow the roof and gallery to be cantilevered.



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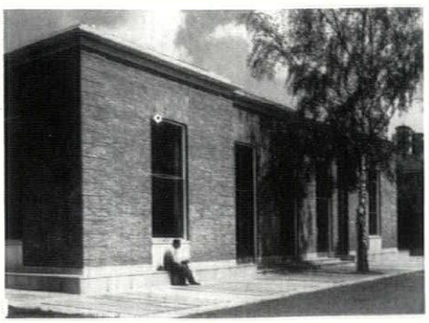

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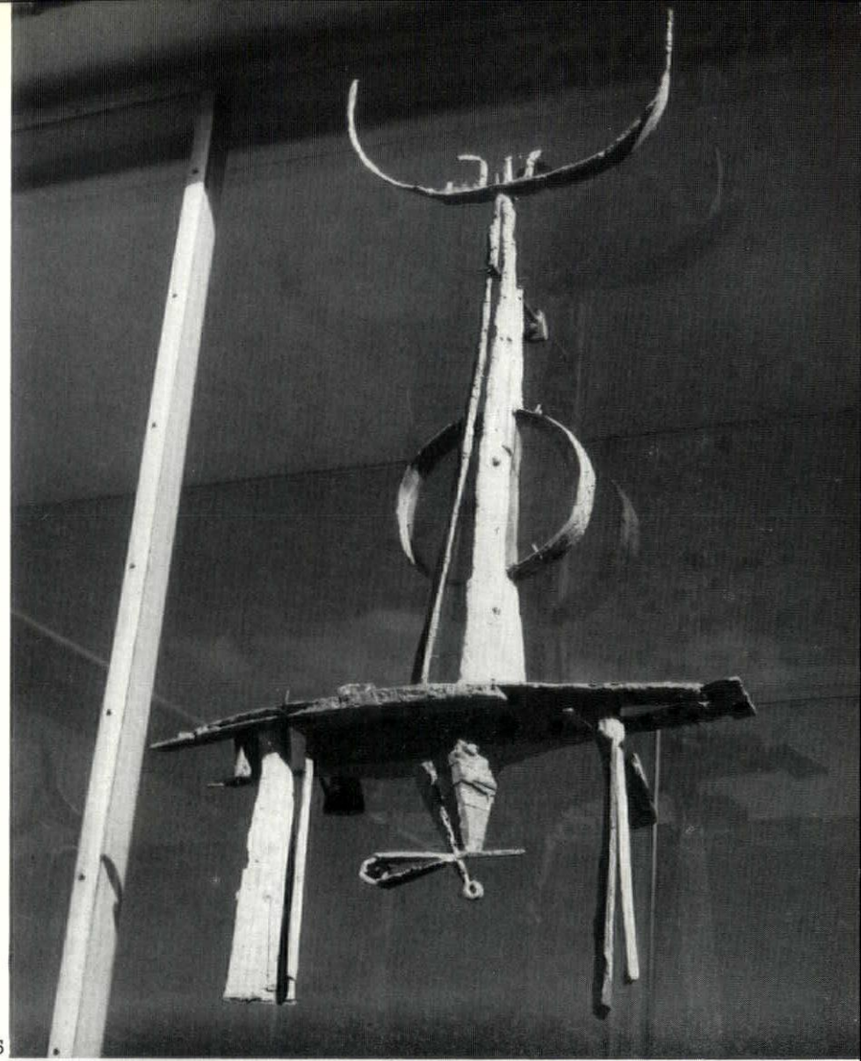

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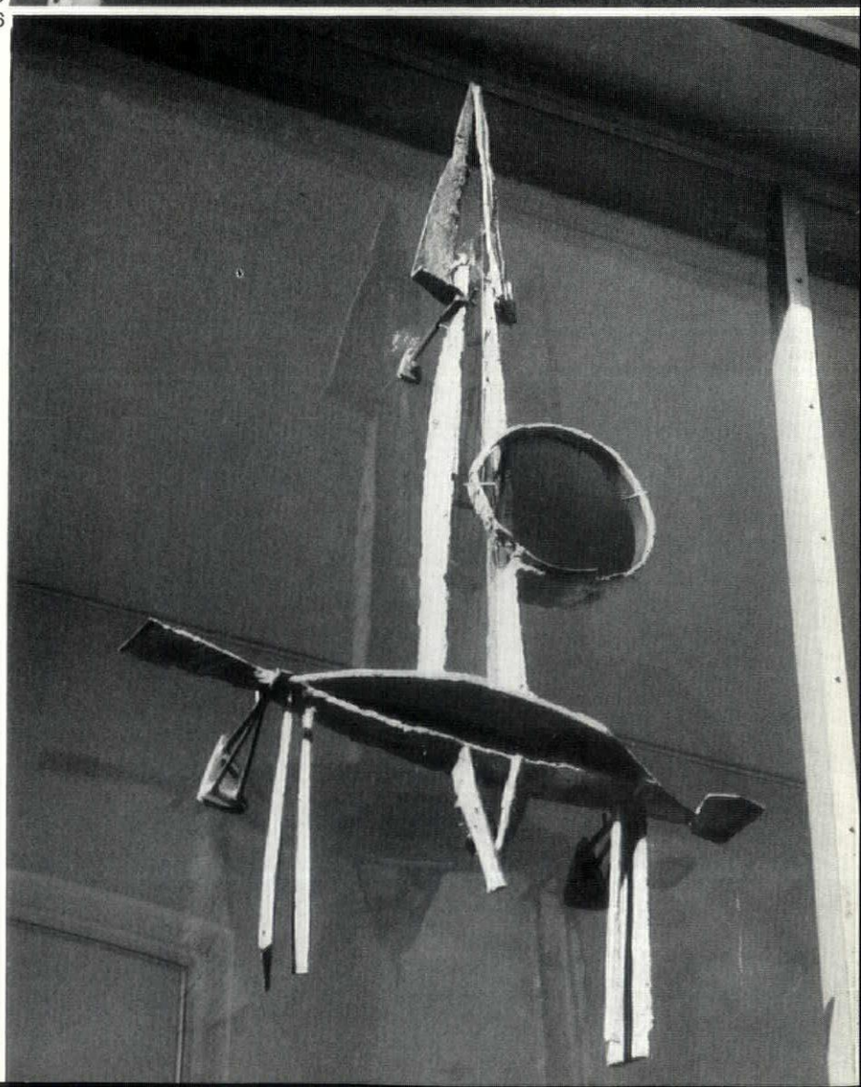

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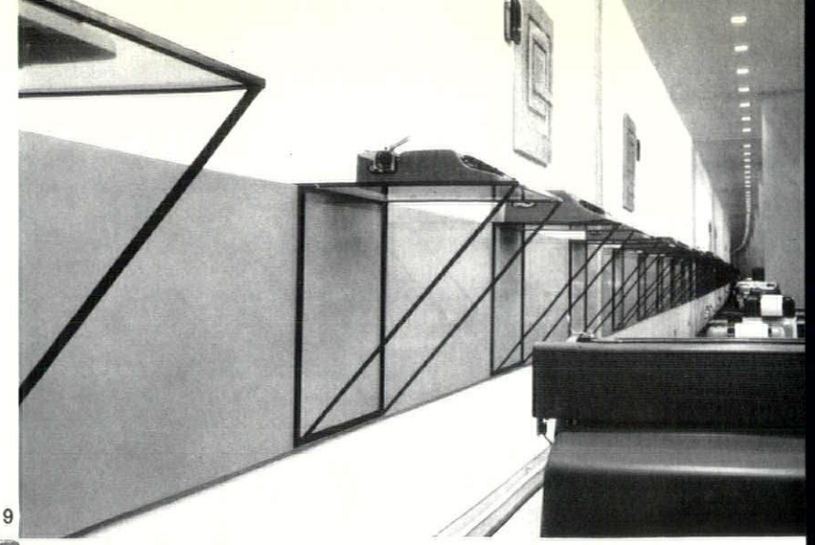

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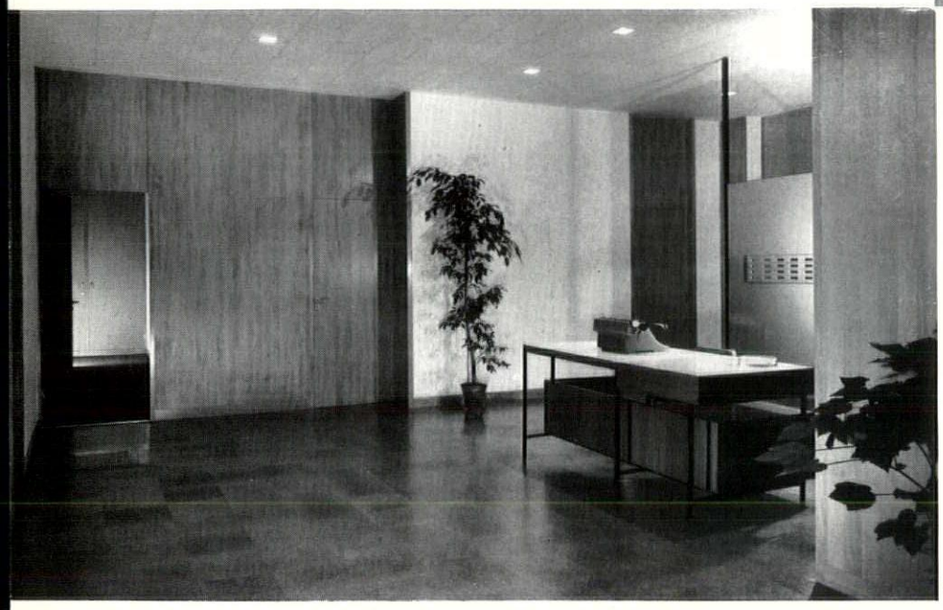
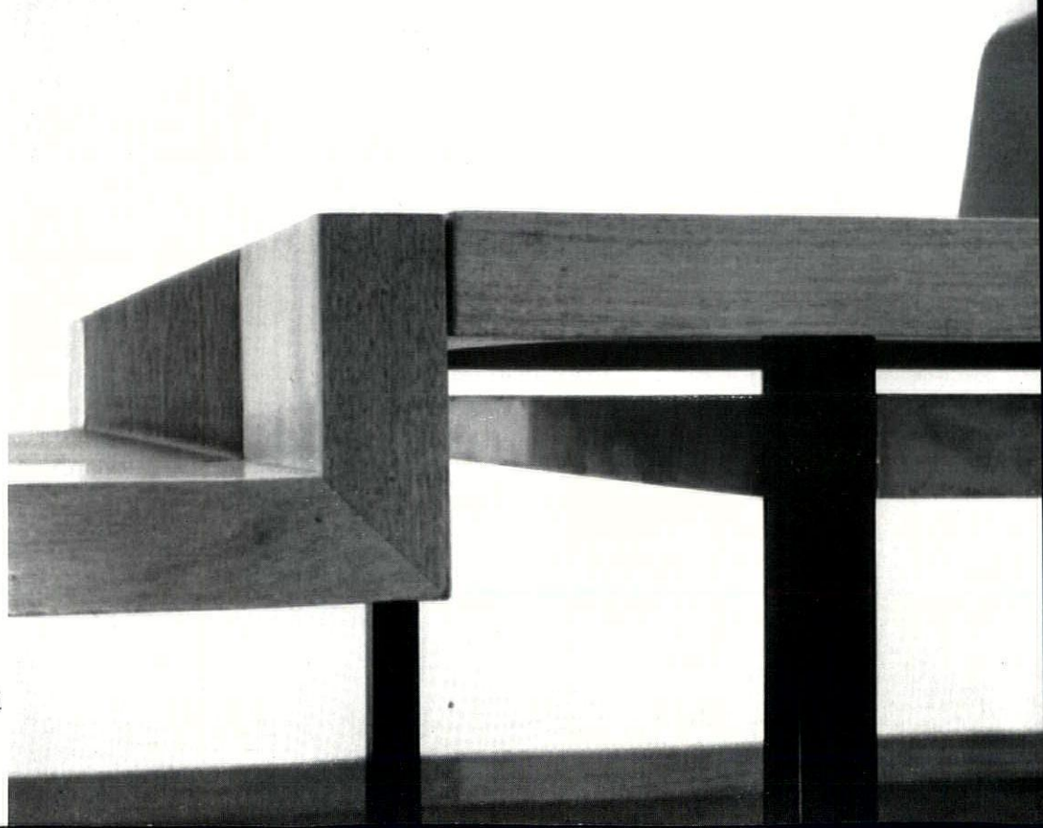


10

Offices in Berkeley Square

designers : Misha Black, and John Diamond

The new head offices for British Olivetti Limited are at 30, Berkeley Square, a new building on the corner of Davies Street. They cover 18,150 square feet on three floors. On the first floor of the offices is the Reception Hall, Managing Director's suite, Sales Offices and a large room which doubles as Meeting and Display Room. 10, in the Reception Hall plaster walls painted olive green, blue and black alternate with cedar veneered doors and panelling. The cedar veneer is laid in 3in. wide leaves to provide a ripple of pattern on the flush walls. There is a cork floor and an acoustic tile ceiling with recessed lighting. The reception desk is a standard Olivetti design. Behind the desk an obscured glass screen with black steel supports conceals a small mail office. 9, in the Meeting and Display Room the length is emphasized by the continuous cedar veneered horizontal



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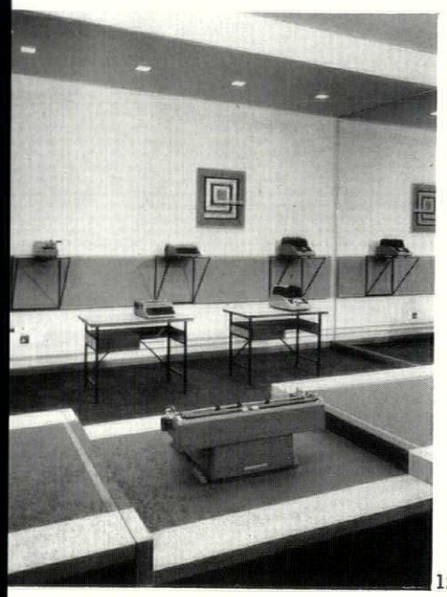

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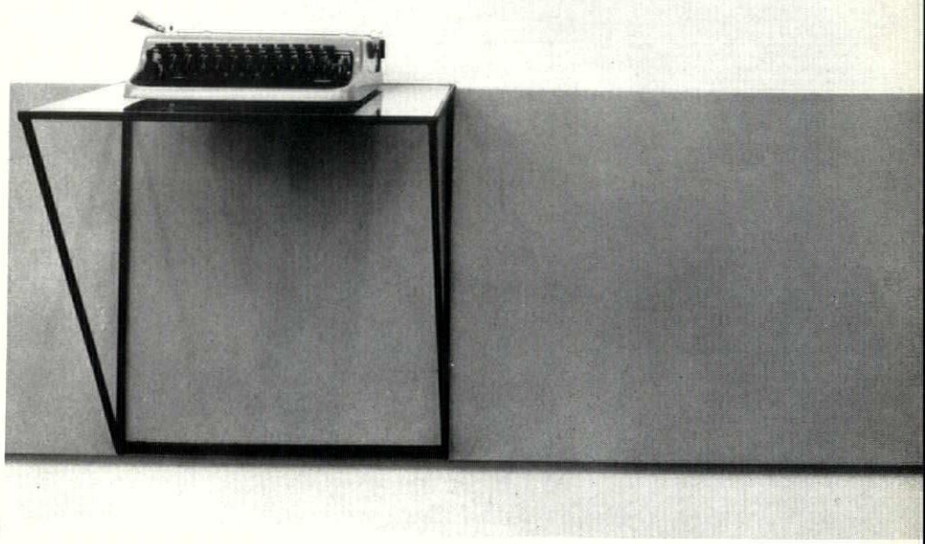

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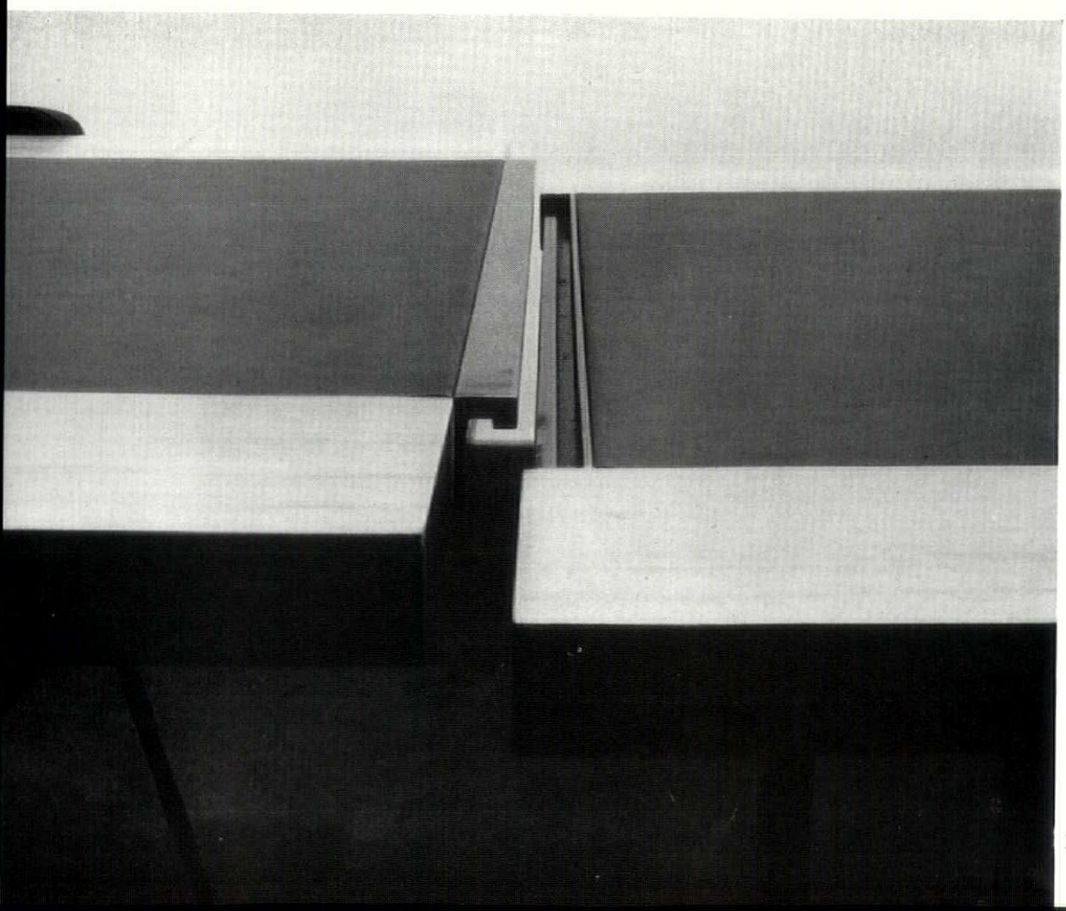


14

lighting panel and by the design of the display recess which is extended by mirrors at either end.

12, The typewriters and calculating machines are displayed on glass shelves suspended from a yellow coach-work finished blockboard band.

13, on the wall behind this there is a mosaic panel in black, grey and gold illustrating the Olivetti sign. More machines are shown on small tables at typing height.

11, in the centre of the room narrow table units can be assembled to form a continuous table for meetings, or intermediate leaves can be replaced by lower display tables at typing height when the room is being used for display purposes. The units are made of agba with grey leather tops.

14, the leaves fit together by means of interlocking aluminium extrusions.

DR

design review

1

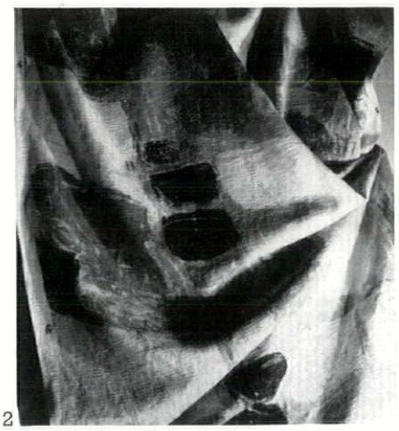


Jacobsen chair

1. *Professor Arne Jacobsen was one of the first designers to break away from the traditional use of timber in Danish furniture manufacture. His latest design is the easy chair called the Egg. The shell is fibreglass and is supported on a chromed steel swivel base. The chair is made by Fritz Hansen, of Copenhagen, and will be sold here by Finmar next Spring* (see also *Miscellany note, page* 140).

new fabrics

2. *Skara Brae, by William Scott, one of two fabrics from Edinburgh Weavers' latest range of screen prints, is printed on a heavy cotton tweed which was specially constructed to interpret the texture and*



2

spirit of the original design. The pattern is reminiscent of large lumps of stone and is called after a Stone Age building in Orkney.

Painters do not often produce successful fabric design. Many overlook the inherent qualities of the actual cloth and the design gets lost in draping and matching. William Scott has produced here a design with all the vigour of his painting which still manages to fit the flow of fabric. It is made in blue, gold and grey, is 48 in. wide and the retail price is 39s. per yard.

3. *Shepherds Hey, by Jennifer Lowndes, is a fresh and freely drawn design based on roses. It is printed on a new closely woven slub cotton, introduced to provide a material suitable for coverings as well as curtains.*

The colours are gold/green, blue/green, red/orange or black/orange. The approximate retail price is 23s. 6d.



3

CARR IN PORTUGAL



R. B. AND MARY WRAGG

The label 'of York' attaches to John Carr's name with the persistence of an Homeric epithet, and makes it difficult for us to visualize him designing even beyond the borders of that county, let alone overseas. Yet, as the following article demonstrates from unpublished correspondence in Portuguese archives, he undoubtedly designed the hospital of the Misericordia in Oporto, whose façade is seen above.

An alliance between England and Portugal has existed since 1373 and trade between the two countries has resulted in small numbers of English people living in the larger towns of Portugal. In Lisbon, there has been for centuries a British community. In the second city, Oporto, famous for the export of the red and white Douro wine, the powerful association of English companies which largely controlled the Oporto trade, built in 1785 a fine headquarters known as the Factory House. Complete with banqueting hall, dessert room and ball room, it is still being used by English residents as a clubhouse.

The only book on Portuguese architecture which is easily available —Walter Crum Watson's *Portuguese Architecture*—contains on page 269 a reference to the English factory in Oporto and to the hospital. 'The plans of both have clearly been sent out from England, the hospital especially being thoroughly English in design ... (it is) not unlike what might have been designed by some pupil of Chambers.' English in design, certainly, but hardly in the style of Sir William Chambers or one of his limited following: another more likely architect of the period must be sought.

In December, 1779, a meeting[1] took place at the Assembly Rooms, York; a committee was formed and a petition sent to the Commons requesting Parliamentary reform 'to correct the grofs Abufes in the Expenditure of Public Money.' The action provoked the Marquis of Rockingham, that conscientious Whig politician, to write a letter[2] of considerable length, outlining his views to a certain York alderman, a member of the committee. After discussing the precarious position of the country and the incompetence of those in power, he illustrates a point thus: 'I should suspect that it may have happened not infrequently, that you have heard *ingenious Gentlemen* descant much upon *Architecture*. The Ideas and Theories might be *very pretty;* and yet you from knowledge acquired by experience & also from better information of the nature of the materials of which houses are built—have been forced to pronounce that such buildings were fit only for *Castles in the air* and would not do on this *Terrestrial Globe*.'

The opening paragraph of the letter indicates the profession of the alderman—'I much wish your letter had brought me a satisfactory account of the state of your health. If it was not time of war—I should almost recommend to you a sea voyage to a warm climate. I don't know whether *the grand plan you sent to Lisbon* has been carried into execution, it might do you good to go & look.' The letter concludes 'I am ever, Dear Carr, your affectionate friend Rockingham.' The architect's 'grand plan' may have travelled via Lisbon but it was destined for Oporto, there to be erected as the hospital of Santo Antonio.

John Carr (1723–1807), son of a building surveyor and bridgemaster, an alderman, J.P. and twice Lord Mayor of York, was the most successful Yorkshire architect of the eighteenth century. By 1779 (the date of Rockingham's letter) he had designed public buildings—the Basilica at York and grandstands at York, Nottingham and Doncaster racecourses; he was performing the duties of bridgemaster to the North Riding and had built Greta Bridge and Ayton Bridge; and he had erected numerous large country houses—including Constable Burton, Harewood House, Thoresby Park, Basildon Park and Denton Park. He was at this time engaged on the Crescent at Buxton for the Duke of Devonshire and on extensive works at Wentworth Woodhouse for the Marquis of Rockingham, the chief patron amongst Carr's many titled and influential clients, any of whom might have carried his fame to Portugal. One, for example, whose family had traded with Oporto and for whom Carr most likely carried out work at Blyth Hall, was his friend William Mellish, M.P. and Receiver of Customs. Another, chaplain to the English Factory in Oporto and for whose family Carr later carried out work at Bollings Hall, near Bradford, was the Yorkshireman Dr. Wood; here the connection is very close, for Carr's letter, quoted later, shows that Dr. Wood acted as an intermediary between architect and client in the early stages of the project. However, the man finally instrumental in the appointment of Carr as the architect for the hospital was most probably John Whitehead,[3] British Consul in Oporto for fifty years and close friend of General João de Almada e Melo, Military Governor of the city and one-time President of the Council of the Misericordia, the organization responsible for commissioning the erection of the hospital.

The brotherhood or benevolent society, known as the Misericordia, was founded five hundred years ago by a queen of Portugal for the care

[1] Political Papers of Revd. Christopher Wyvill (1794–1804).

[2] Wentworth Woodhouse Muniments, Rockingham letters.

[3] John Whitehead is *said* to have designed the British Factory House (1785) and the British Church in Oporto. He was a mathematician and draughtsman, assistant on town planning to General João de Almada e Melo and adviser on weights and measures to the Marquês de Pombal, famous Portuguese statesman. Equally well the design could have been contributed by Carr.

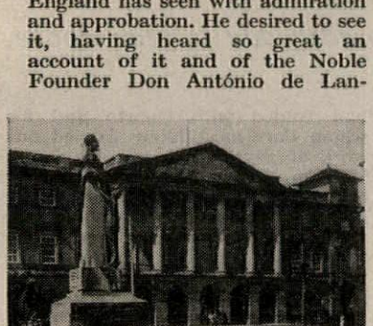
of the sick and needy; today it manages various hospitals and institutions in most of the larger Portuguese towns. In 1766 and 1767[4] its board decided that the existing hospital was unsuitable and insufficient for the needs of the growing city and that a new hospital ought to be erected outside the city walls large enough to treat and house the thousands of unfortunates, both Portuguese and foreign, who every year flocked to the Casa to seek Christian charity. The President of the Santa Casa at this time was Don Antonio do Lancastre and it is to him that John Carr wrote the covering letter[5] to his design:—

May please Your Lordship,

At the request of the Rev. Dr. Wood, Your Lordship will herewith receive the designs I have made according to your instructions for the General Hospital proposed to be erected at Oporto under your noble influence, which I flatter myself you will find conveniently designed for the purpose, and Worthy the patronage of the most noble Don António de Lancaster.

I very much lament my being prevented the honour of corresponding with your Lordship on this important subject, by Dr. Wood's not acquainting me in due time with Your Lordship's instructions to Dr. Goold in March or April last, those instructions by reason I believe of Dr. Wood's indisposition were not communicated to me until 20th July, at which time I had completed my design, and waited with impatience to be informed how I might send the design to Your Lordship.

Fortunately, Dr. Wood arrived in this city yesterday, on account of his health and an opportunity now offers by which I can send Your Lordship the drawings immediately . . . by Capt. Sconswar (who I have impowered to receive it) an adequate gratuity for so complete design as I have sent you; a design which the King of England has seen with admiration and approbation. He desired to see it, having heard so great an account of it and of the Noble Founder Don António de Lancaster from a great many Noblemen of my acquaintance who waited on me to see the designs and general instructions which Your Lordship sent me by Dr. Wood.



1, *central block of the main elevation.*

Your Lordship will please to observe I have so particularly put down the measures of every part of the plan and elevations that the workmen may build from the drawings every minute part thereof, which makes the design of much more use and value, the doing of which with such care and exactness, have indeed been a work of such Time and Thought that nothing could have induced me to have undertaken at a time when I am conducting so many Magnificent Structures for several Noblemen and others in the Kingdom . . .

Be pleased to give me leave Most Noble Lord before I conclude, to observe that I shall be very sorry to anticipate Your Lordship's generosity by setting you a price upon this extensive Plan, yet in justice to my experience and abilities in architecture and the esteem and reward which I receive for my designs in England make it necessary, perhaps, for me to inform Your Lordship that £500 would be thought but a very moderate reward for such a design in England. But the honour and pleasure of being employed by Your Lordship and the hopes I have of seeing some part of the design erected I shall not ask more of your Lordship than the above sum of £500. . . . Which sum I desire your Lordship will remit me by my acquaintance Captain Robert Sconswar who is a man of Credit . . .

My Lord on all occasions
Your Lordship's most obedient
most humble servant
John Carr.

York, August 7th, 1769.

The plan was accepted. It formed a vast rectangle, the frontages measuring about 540 feet and the sides about 520 feet, with an immense interior court, in the centre of which was a chapel. The ground having been bought, St. Anthony was chosen by vote as the patron saint—significantly the majority of the members of the board were called Anthony! Funds at the disposal of the board were inadequate but, being augmented by 'Divine Providence and Bequests,' the foundation stone was laid on June 10, 1770, with great pomp and ceremony. Owing to the existence of a stream[6] and the irregularity of the site, the foundations are in some parts said to be 100 palmos below ground level and those to the outer walls 50 palmos in thickness. The construction is entirely of granite from quarries north of the town, and of stone from part of the old town wall which was demolished soon after building started on the hospital. The wall thickness is also colossal, seeming more suitable for a fortress than for a hospital; the building was, in fact, struck several times by cannon balls during the Civil War at the seige of Oporto, in 1833, yet suffered no damage.

Work was first commenced on the southern angle of the building and continued until 1780 when it was suspended owing to lack of funds. It is probable, incidentally, that Carr was kept informed of the progress by Whitehead who forwarded to the Board of the Misericordia a translation of a letter written by Carr from York dated February 4, 1777, in which he criticized the alterations made to his plan by the local builders and the Board of Directors. He made various suggestions as to what should be done to avoid spoiling the proportions and symmetry of the building. Work recommenced in February, 1791, with the proceeds from a lottery which was authorized in aid of the Misericordia, two-thirds of the total profit being allocated to the continuation of the building work. In the meantime, the original plans of John Carr had become so disfigured and damaged through want of care that they had to be recopied. This was done by a man recommended by Whitehead but the originals have disappeared.



2, *Carr's drawing for the hospital church.*

By August, 1799, the building was sufficiently advanced to permit the transfer of patients from the old hospital. The townsfolk were invited to help; the first to be moved were the women who came in army waggons, carts and sedan chairs. The work of distributing the sick in the wards according to the plans of the doctors went forward until dark.

But building work still continued and more wards were opened. In 1807–12 another interruption was caused by the Napoleonic Invasions,[7] all the available money being used to treat the wounded or to support the widows and orphans. In 1824, the old hospital was finally abandoned, and building resumed at the new until 1832 when the Civil War and the siege of Oporto occurred. Work started again in 1837, but, in 1843, was discontinued and never resumed on John Carr's design. The original rectangular plan was not realized, only the main frontage and half the length of the two sides being completed. Even so, observers will agree with Crum Watson that 'the hospital is yet a fine building, simple and severe. . . . The only thing, apart from its unfinished condition,[8] which shows that the hospital is not in England, are some colossal figures of saints which stand above the cornice. . . .'

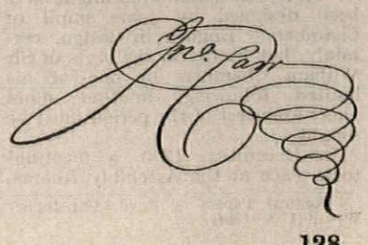
The design is one of the best Carr ever produced: the variation in the grouping and size of the elements together with the play of masses in receding planes at first-floor level, creates a bold and lively effect. Many of his other designs are satisfactory on paper but lack movement in the third dimension. The entrance elevations of Harewood House and Basildon House illustrate Carr's disability in this particular. Several elements of the hospital can be recognized elsewhere in Carr's work. The rusticated basement storey with the circular headed openings and inner surrounds of plain ashlar, occurs in the Town Hall at Newark; the steep pediments in the projecting links are reminiscent of Mr. Royd's house at Halifax, designed about the same time; and, of course, the vases breaking up the skyline are to be found throughout his designs. Comparisons of buildings can lead to surprising parallels and tempting theories. The central block of the main elevation of the Hospital with the great sexastyle portico in the middle, and the end pavilions with Venetian windows, 1, invite comparison with the south elevation of Wentworth Castle. This elevation, lauded by Walpole in the belief that his friend Lord Strafford was the architect—'Nothing ever came up to the beauty of it. The Grace, proportion, lightness and magnificence of it are exquisite'—was, at one time, attributed to Carr but more recently has been disallowed, partly on the grounds that he had never elsewhere done anything in the same style. The similarity between these two elevations makes it permissible now to reintroduce Carr's name to Wentworth Castle.

No parallel can be found to compare with the design for the hospital church, 2, fortunately perhaps for Carr's reputation. The detail may have become debased in the copying of the drawings and 'the colossal figures of saints' are doubtless a touch of local colour but, nevertheless, the conception is naïve and uninspired. Had the whole scheme been completed—the vast courtyard with the church in the centre—it would certainly have formed one of the most remarkable groups of architecture of the period in Europe.

Precisely why the Board of the Misericordia decided to purchase a plan from England for their hospital is also a matter for speculation. An earthquake had devastated Lisbon in 1755 and fear of a further calamity had caused the Royal Family to live in a range of wooden buildings at Belem, on the banks of the Tagus. Rebuilding commenced under the guidance of the energetic Marquês de Pombal and, no doubt, all those with architectural skill were employed on this urgent work, obliging the Board of the Misericordia to go farther afield for their architect. They may have known, through Whitehead, that Carr had designed a hospital for Leeds—opened in 1771, and described some years later by John Howard as 'one of the best hospitals in the kingdom'—and that he was building Bootham Mental Hospital, in York. They may even have heard that a spare design was on the market: it has been suggested that the Oporto plan was originally intended for one of the London hospitals but was turned down because it took up too much space. However that may be, the hospital had its effect on buildings at Oporto. Several, including the University, are built in a similar style.

Carr was no doubt flattered by being chosen as the architect of so large a project overseas for, although very successful in his profession, he had never set foot abroad nor had he made the Grand Tour like so many other fashionable architects of the time. In spite of this, he not only designed various projects in Ireland—as, indeed, did Chambers and Adam—but he also, as has been shown, achieved what is probably a unique distinction at the time, that of having designed a building for erection outside the British Isles.

Acknowledgment is made to:—Mrs. Susan Lowndes Marques, Earl Fitzwilliam's Wentworth Estates Co., University of Sheffield Grants Committee, Board of the Santa Casa da Misericordia do Porto, and most particularly to Mrs. Ruth M. Jennings, Chairman of the Executive Committee, Associação Luso-Britânica do Porto.



[4] Records of the Santa Casa da Misericordia do Porto. Secção D., Banco 8—Livro No. 7, Folhas 289–294, 306–7, etc.

[5] Ibid, Secção D., Banco 1—Livro No. 1.

[6] The same difficulty was encountered on the site of the Crescent at Buxton.

[7] Wellington's headquarters in Oporto were at the Palacio dos Carrancas, built in 1795.

[8] The main pediment was completed only relatively recently: the penthouses, including those with pyramidal roofs, were later additions to Carr's design.

1, *office blocks with terraced restaurant and three-storey hexagonal book store in the centre.*



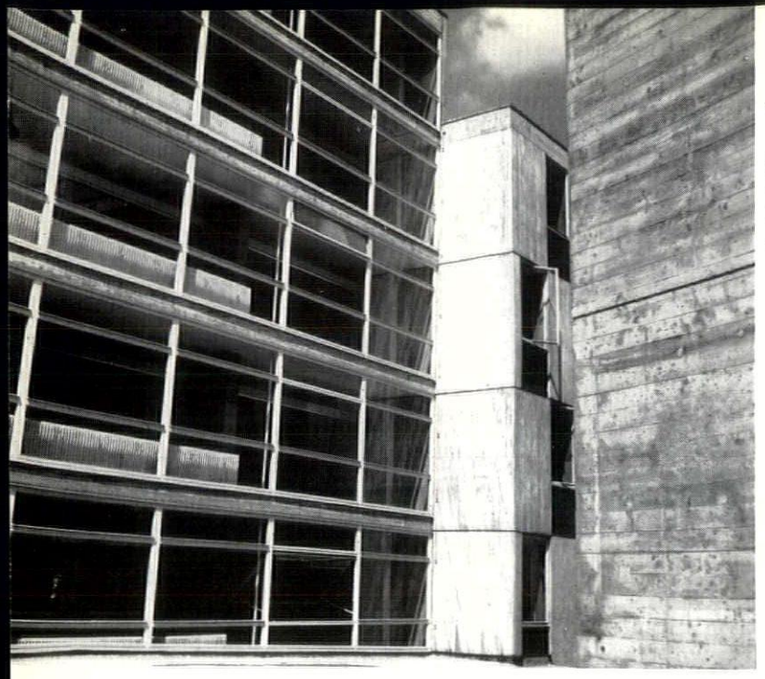
OFFICES AT OFFENBACH AM MAIN

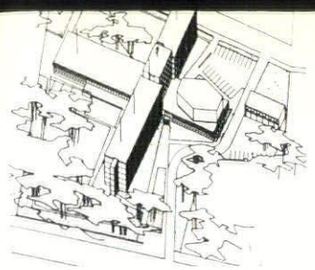
ARCHITECTS: CITY BUILDING OFFICE OFFENBACH AM MAIN
CHIEF ARCHITECT: P. F. POSENENSKE



2, *main staircase, rails are aluminium.*

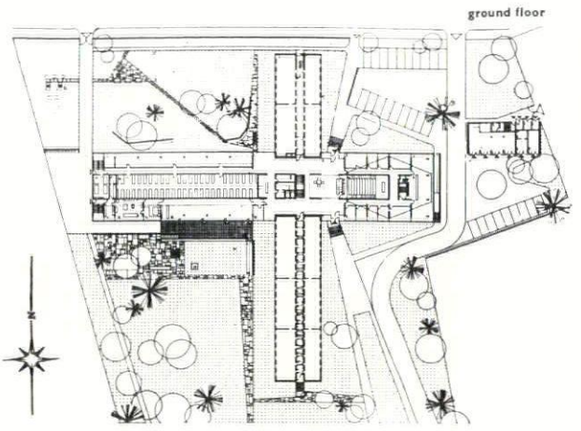
The State Building Office designed this block for the Federal German Republic's weather-information and climatological research departments, on a site which was formerly the park of a private house. A five-storey block of offices runs north to south, intersected by a one-storey wing incorporating a three-storey hexagonal book store, and library, lecture hall and a terraced restaurant. The external walls are of load-bearing reinforced concrete, with windows alternating and set back from the surface of the wall. The main staircase is of black wedge-shaped concrete steps on sloping slabs. Externally the concrete has been treated with transparent silicone coating, and the woodwork to doors and furniture is in its natural colour.



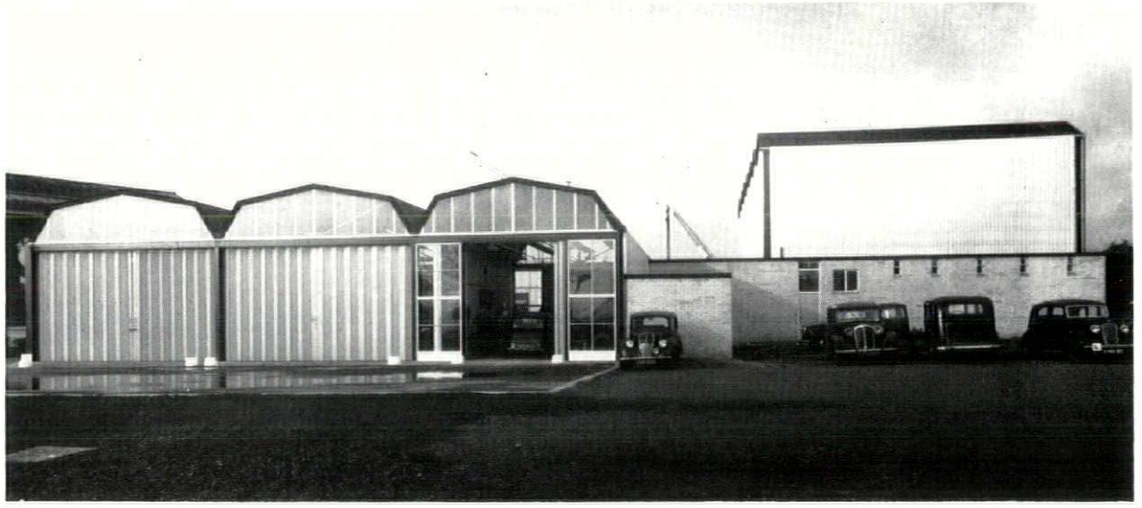


axonometric view

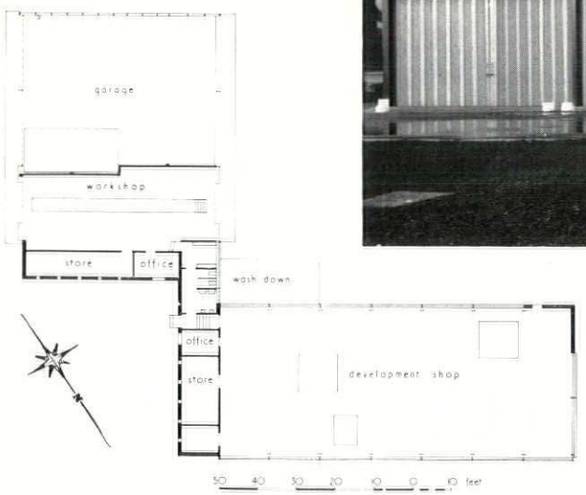
Offices at Offenbach am Main



3, *detail of elevation showing windows of main staircase behind the hexagonal book store.*

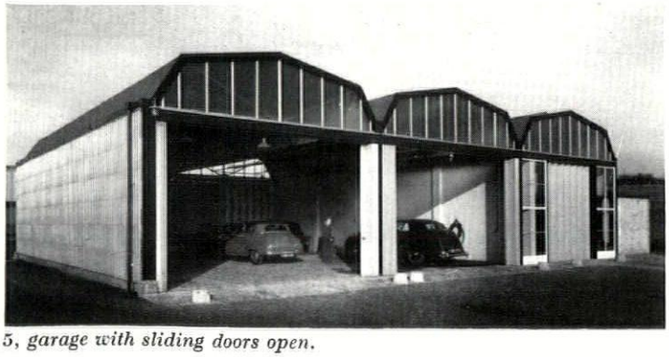


4, *garage with research and development block on the right.*



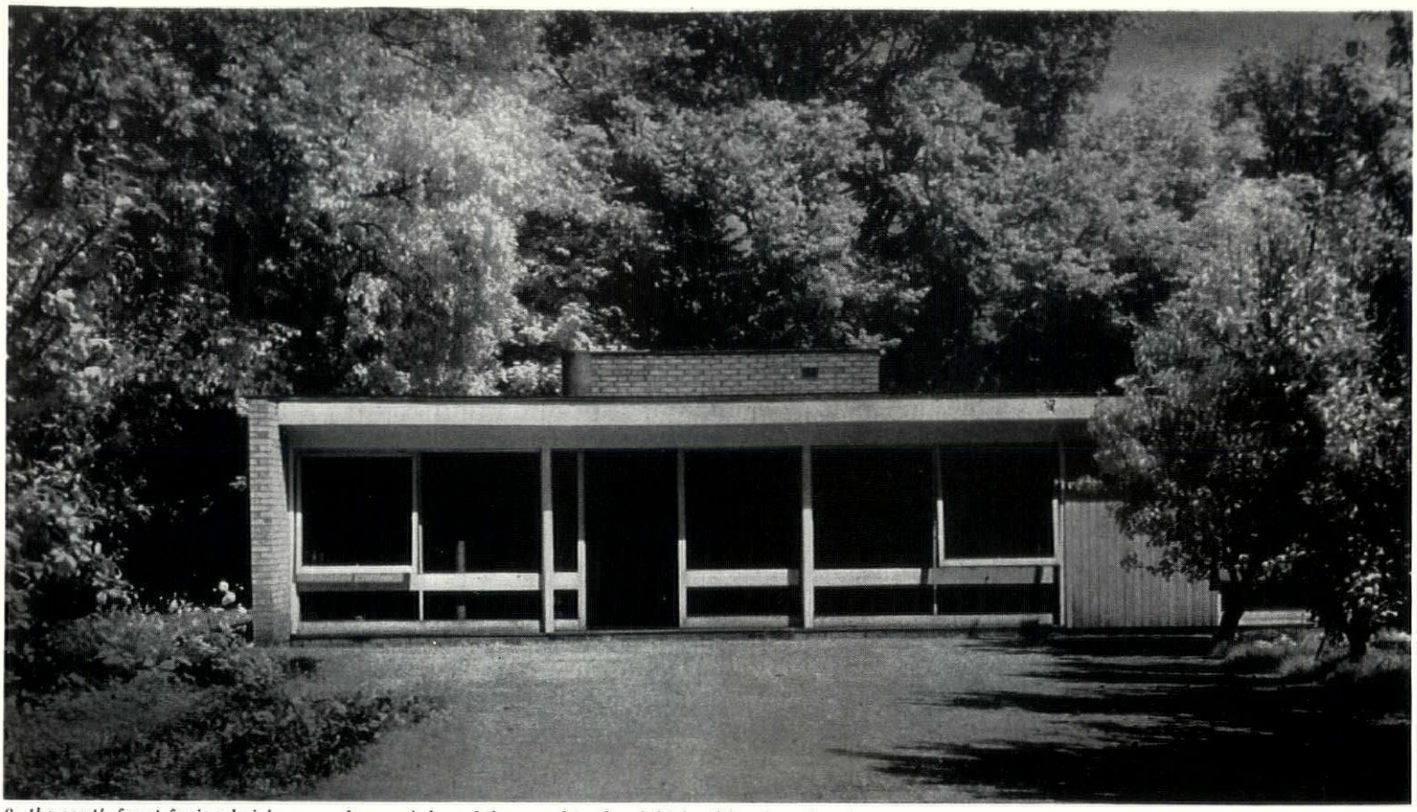
FACTORY AT WAKEFIELD

ARCHITECTS: R. J. MOCK AND R. E. ENTHOVEN



5, *garage with sliding doors open.*

This Research and Development block, with adjoining garages, at Horbury, forms part of a large scale factory redevelopment programme. Construction is of Leicestershire limestone bricks and patent aluminium cladding, which has been used for the first time in the area on an industrial building. The roof steelwork is of tubes and rods forming lattice girders on the joist columns. Internally the buildings are faced with 2 in. insulation board.



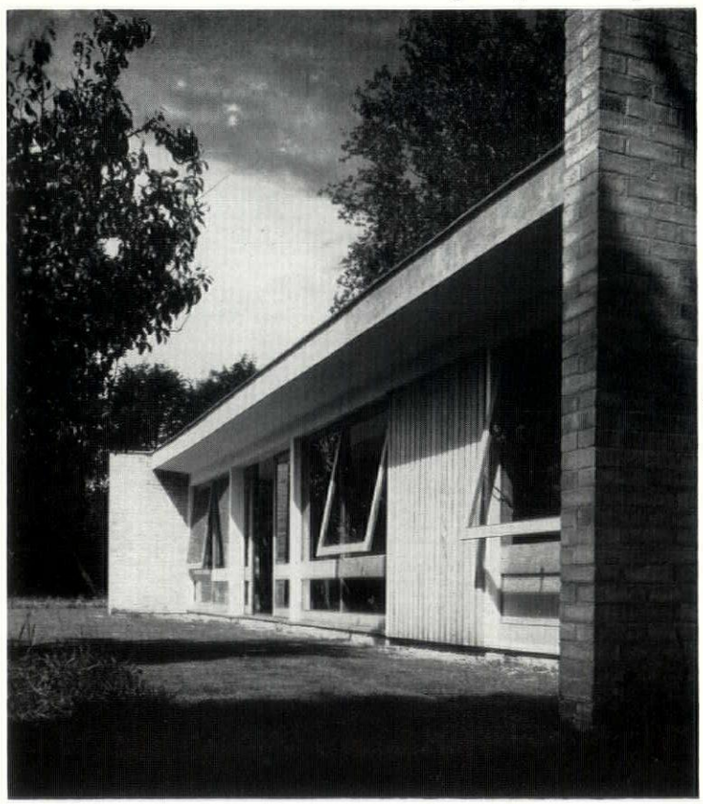
6, *the south front facing bricks are salmon pink and the panel to the right is of hardwood strips.*

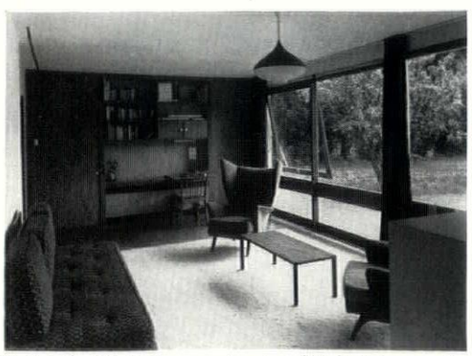
HOUSE NEAR HYTHE

ARCHITECT: JAMES C. WILLIAMS

Built on a wooded site of two acres, this house at Saltwood looks south over a small orchard towards Hythe. It was planned for a young married couple and can be extended later for a larger family. The floor is a 4 in. concrete slab covered with hardwood strips carried on shallow sleeper walls. External walls are of salmon pink facing bricks and hardwood strip panels; internal partitions are of 3 in. breeze blocks. The roof is finished in 3-ply felt and aluminium. Thermostatically controlled heating is by solid fuel boiler, with two circuits serving the living room and kitchen, and the bedrooms and bathroom. Domestic hot water is supplied by a solid-fuel cooker and an immersion heater. The living room, dining area and kitchen have an open plan, with the free-standing fireplace providing the focal point. The service core is in the centre of the house, and all plumbing is internal.

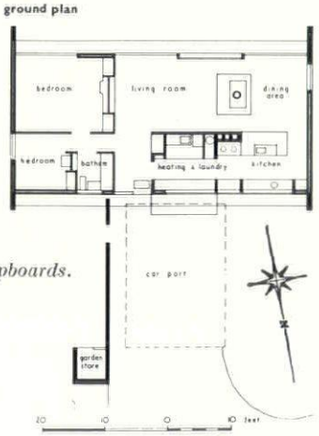
8, *garden front looking west.*

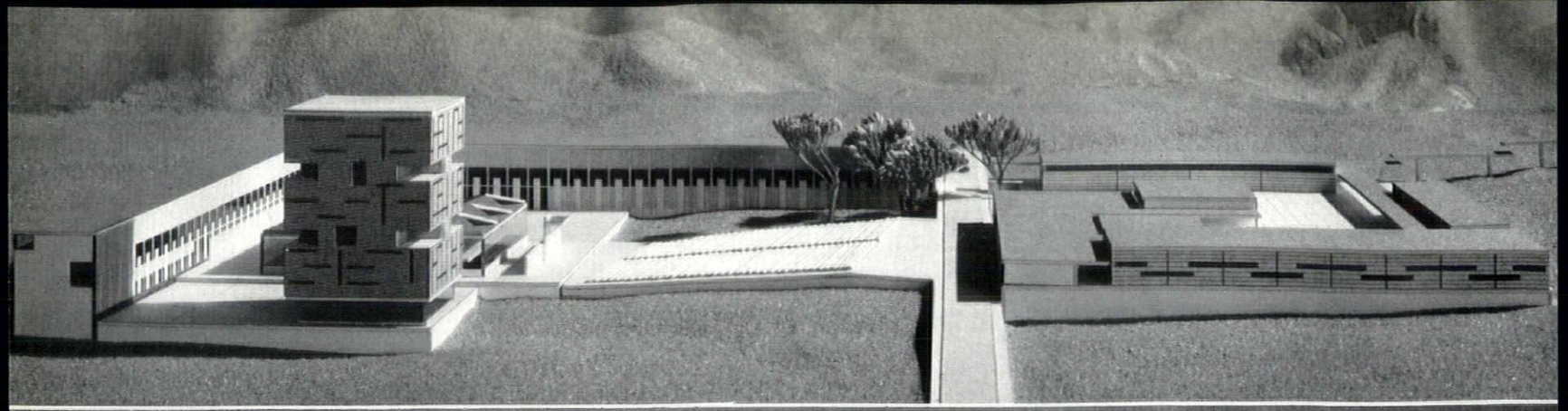


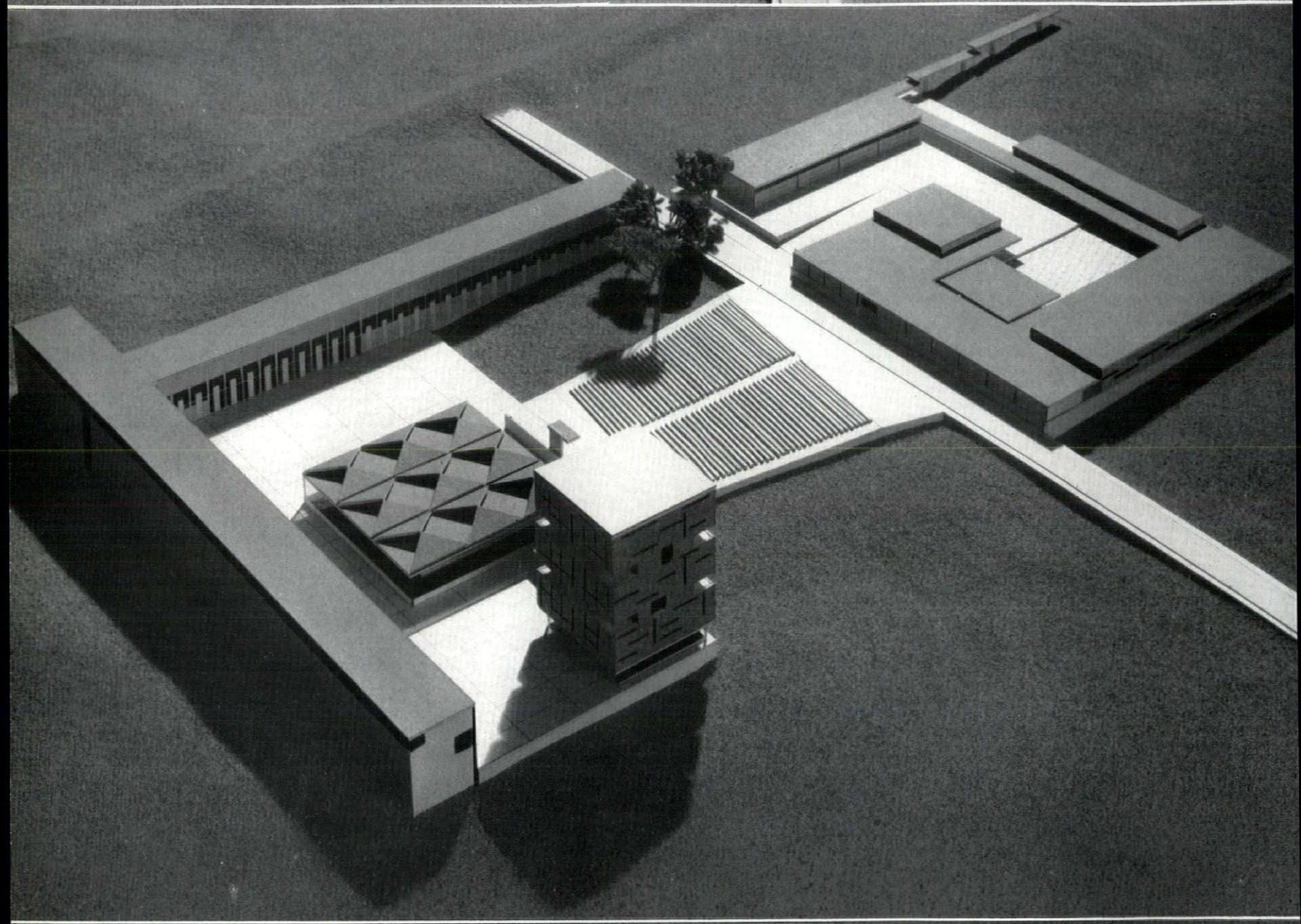


7, *detail of living room showing fitted shelves and cupboards.*

ground plan

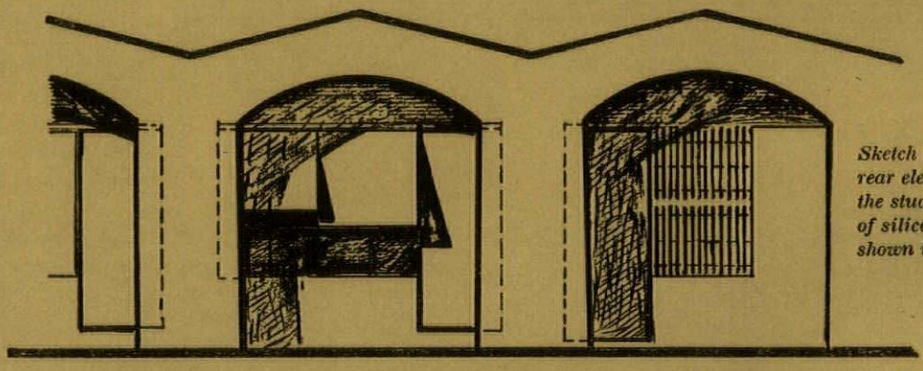






James Cubitt and Partners are a British office with a well-established connection with West Africa—their recent work on the Gold Coast was described in the AR for May 1956—but the buildings projected for the University of Nigeria at Nsukka may yet prove to be one of their most important works in the area, since the project is on a scale that is visually and academically comparable to the University Cities of Latin America.

Since the first project for the University of Nigeria, the University Square of which is seen opposite in model form, was accepted, various modifications have been made to the scheme, on which work should begin shortly. Comparison of the plan (bottom right) with the photographs of the model, shows that the main changes are the transference of the library-tower to the other side of the spine road, alterations to the layout and alignment of the open-air theatre, an extensive rearrangement of the students' union which no longer encloses a court but runs parallel with the spine road. The arts faculty 'cloister' remains in its original position enclosing the square which contains the theatre.



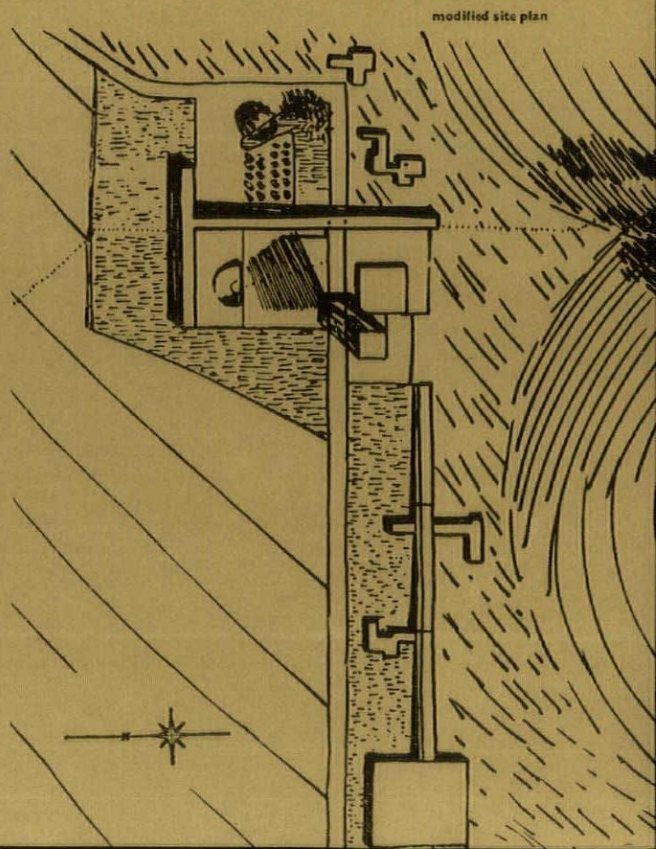
Sketch of the front and rear elevations of one of the students' residences, of silicone-treated adobe, shown in plan on page 136.

UNIVERSITY OF NIGERIA

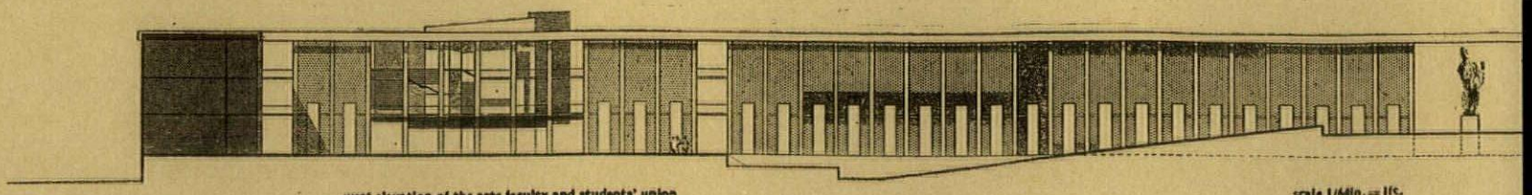
architects | ***JAMES CUBITT AND PARTNERS***

The site of the university, at Nsukka some 40 miles from the capital of the Eastern Region of Nigeria, is in fine rolling country, overlooked from hills to the West, where part of the new town will be sited. These hills are rather smaller in size and scale than the Berkshire downs. They are used to determine the layout. First the site is looked down upon from the West and this leads to the emphasis on the academic buildings which should not be dwarfed by the volume of residential accommodation. Secondly, the central academic buildings are exactly sited to get the benefit of the fine backcloth of hills to the West. Thirdly, a bare shoulder of hill is intended to enhance the rigid forms of these central buildings and to be a part of the composition which they form. These considerations determined the layout with its main spine, a mile long, running from the Stadium and Sports Centre to the 'University Square.'

The university is for 3,000 students, about a quarter of them women. The university square is formed by the Faculties of Arts, Law and Theology, the Library, Administration, the open-air Theatre and the Students' Union. There is a cross fall of

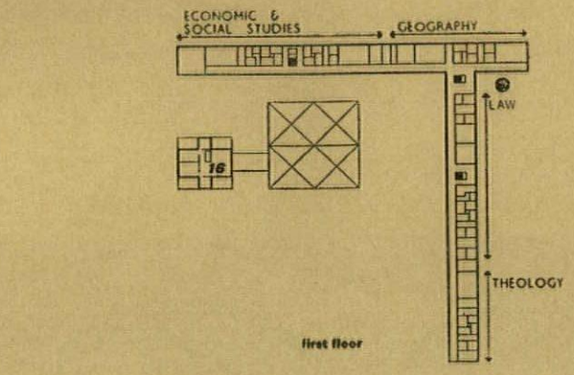


modified site plan

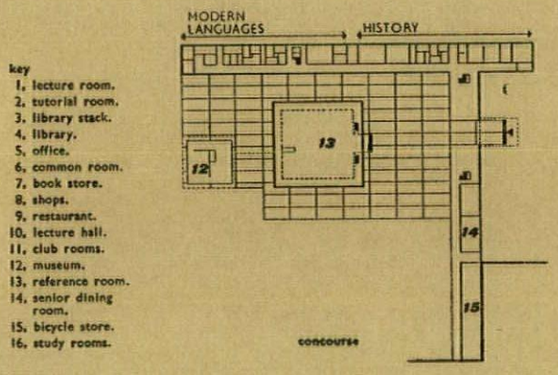


west elevation of the arts faculty and students' union

scale 1/64in. = 1ft.

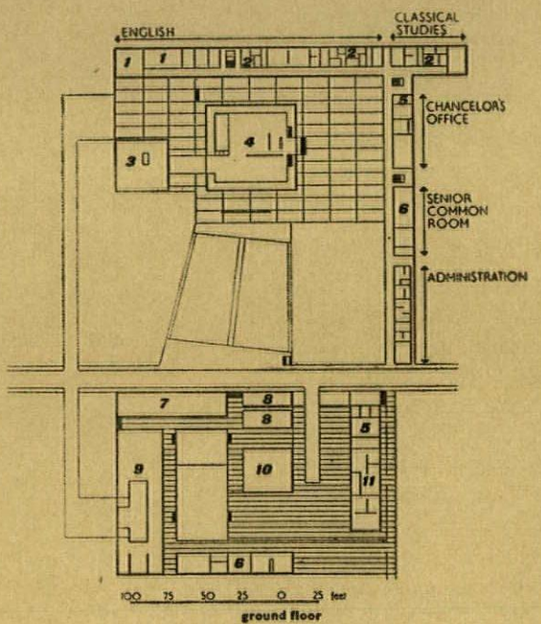


first floor



concourse

key
1, lecture room.
2, tutorial room.
3, library stack.
4, library.
5, office.
6, common room.
7, book store.
8, shops.
9, restaurant.
10, lecture hall.
11, club rooms.
12, museum.
13, reference room.
14, senior dining room.
15, bicycle store.
16, study rooms.



ground floor

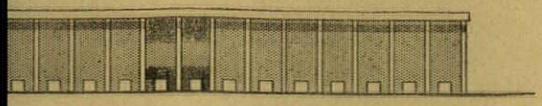
some 35 feet, down from the South-East corner. The main circulation is by a wide inward-looking passage (or cloister) at road level, from which the ground drops away until, at the North-West corner, there are two full storeys below cloister level. The line of the cloister is continued uphill to the Chapel on a small spur beside a beautiful natural cluster of trees. The Theatre (seating 4,000) follows the natural slope.

All members of staff will have private rooms which can be used for tutorials. Deans of the Faculties will have a small suite. The Library is divided in two parts, one a main reading room and the other a book stack, and so avoids a building of forbidding volume and makes building in stages more practical. The recently completed students' union at Nottingham was used as a guide to the accommodation in the students' union.

Immediately to the West of university square is the Faculty of Science and Engineering. The most important factors were flexibility and expansion. It was decided at the outset to allocate a substantial piece of ground as a 'backyard' for laboratories and workshops, some of which would be temporary structures as teaching methods and equipment develop and change.

Residential accommodation is tightly grouped. The men's halls of residence are to be single-storey with individual rooms of nearly 200 square feet. Some junior lecturers will be placed in charge of halls of residence and the remainder will be in individual compounds at the entrance to the university. The senior staff will be accommodated in 40 single houses, 54 terrace houses and 34 flats. The houses are to the South of the existing road, set out in groups of three. Terrace houses and flats, placed in a central position on the main site, will be landscaped in a park-like manner clear of the main line of vision from the university square westwards towards the distant hills.

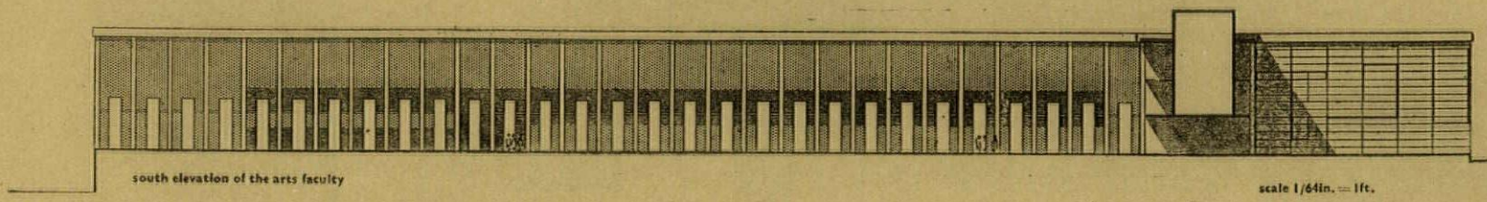
The soil on the site is suitable for making high-pressure building blocks and the men's halls of residence will be constructed of these blocks. Each hall for male students will house approximately 240 men, including seven lecturers, in small self-



UNIVERSITY OF NIGERIA

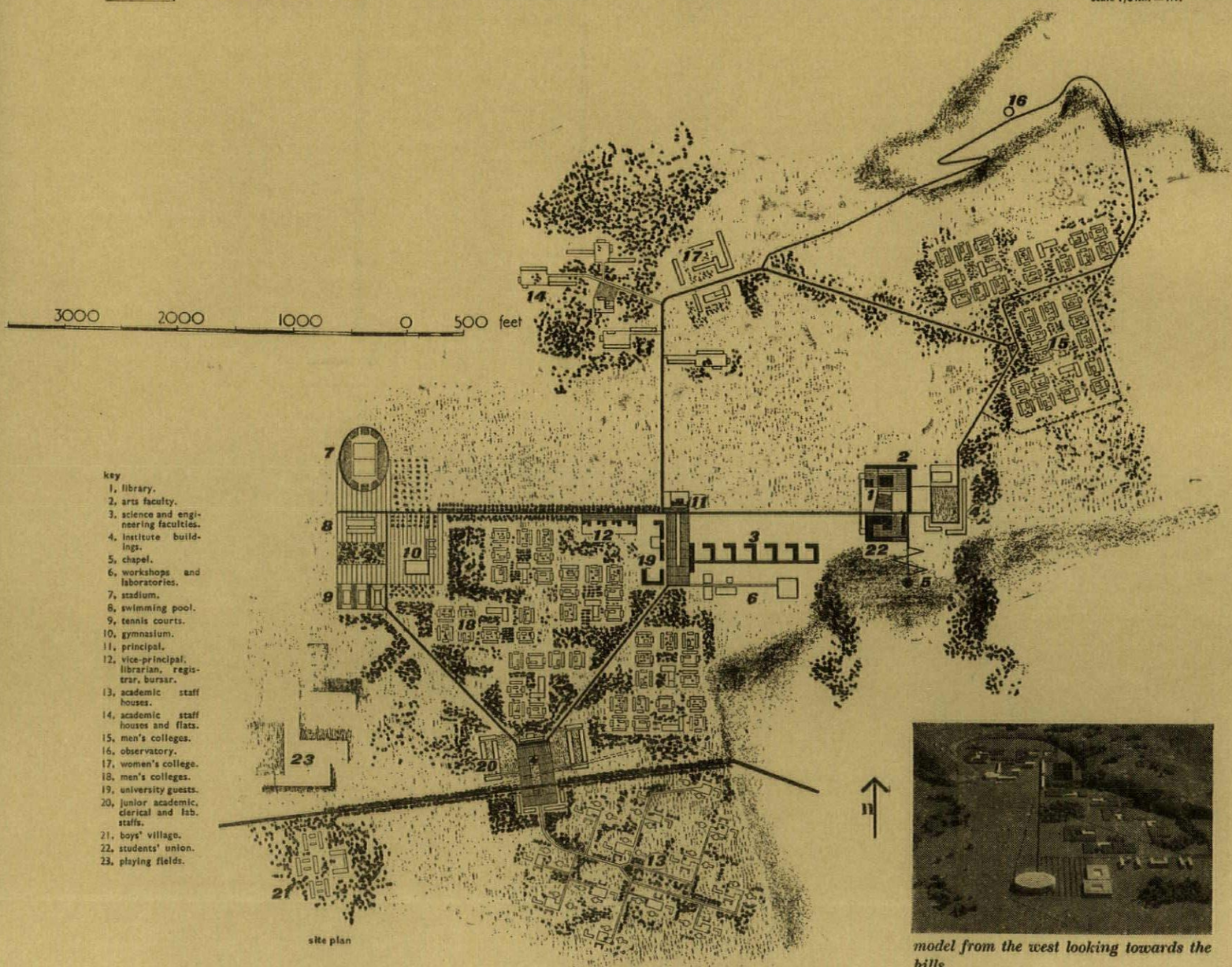
contained compounds. Two halls will share one dining hall. Designs for the women students are completely different. First they share rooms, secondly, the buildings are closer together, are of two storeys and have access stairs to pairs of rooms, and thirdly, a separate building is proposed to combine dining rooms, common rooms, visitors' rooms and a library.

At the North-West corner of the site are swimming baths and a stadium; detailed plans for those are not yet complete.



south elevation of the arts faculty

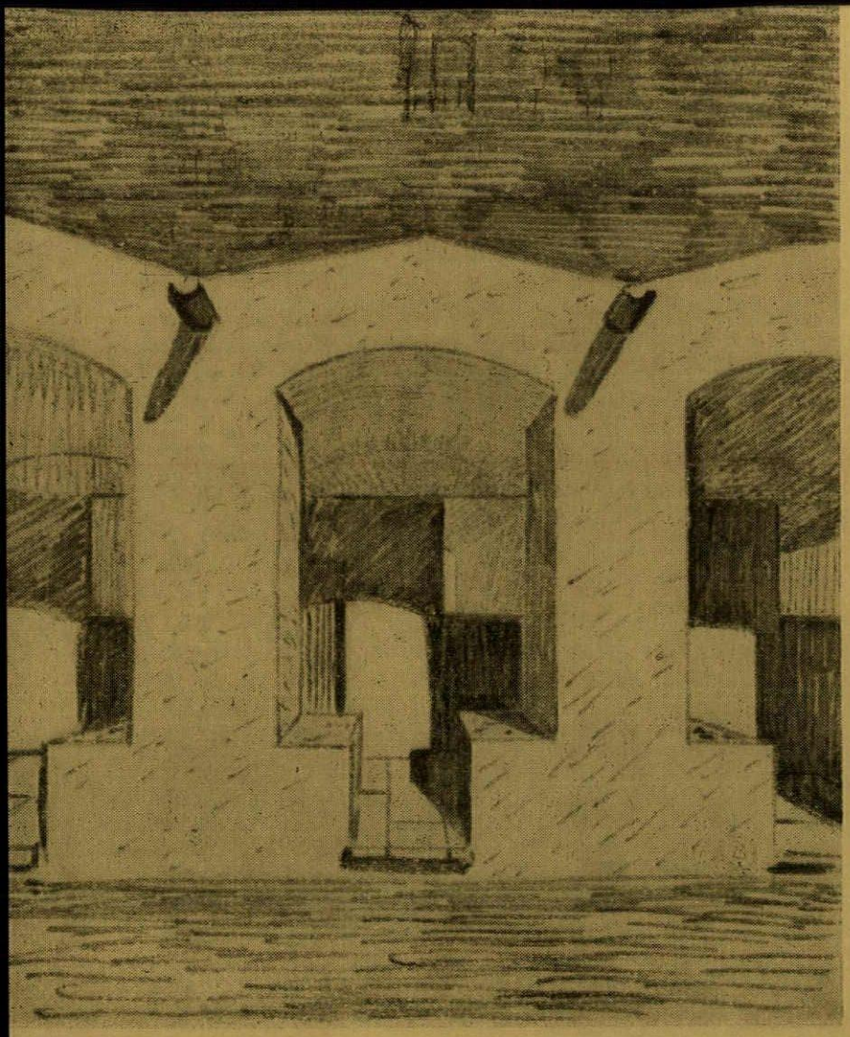
scale 1/64in. = 1ft.

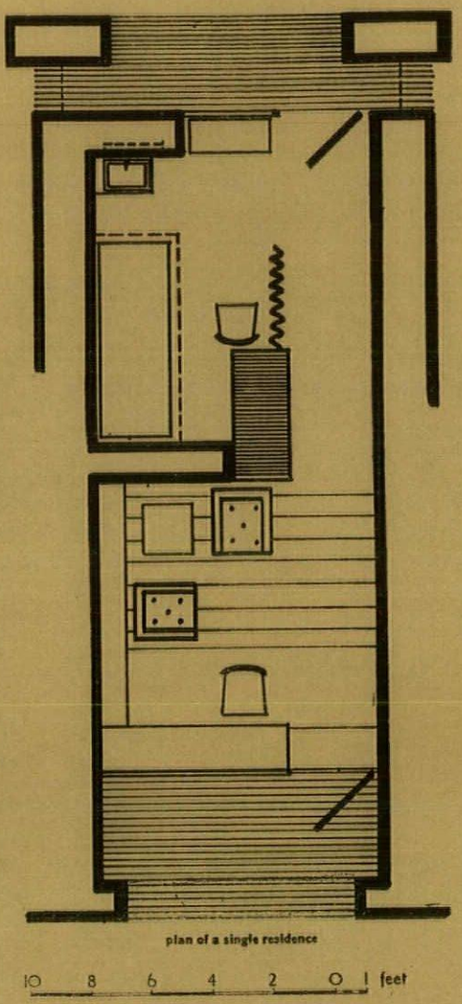


site plan

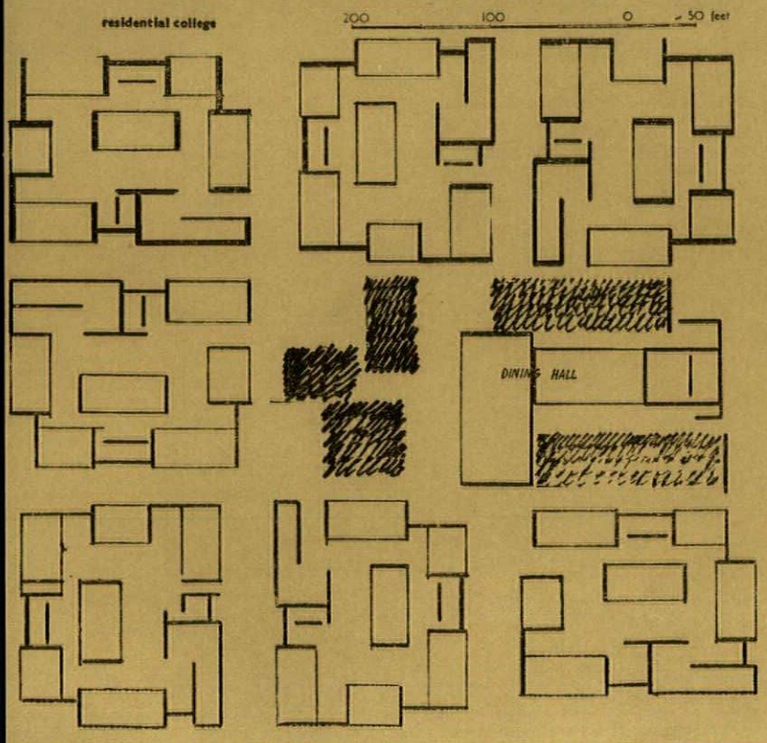
model from the west looking towards the hills.

UNIVERSITY OF NIGERIA

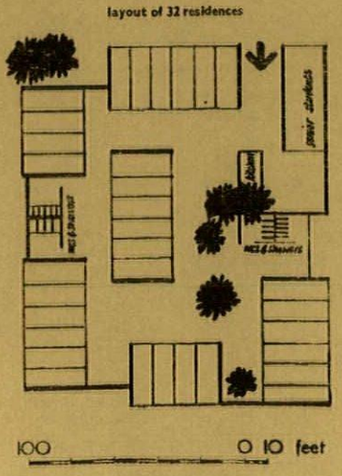




Preliminary sketch, above, of one of the residential blocks, which will be of pressed local soil, treated with a protective silicone solution. The plan, right, which is a later design, shows how through-ventilation is provided.



The residential college, left, is made up of seven groups of residences, with dining hall and kitchens. Each of the groups, shown in plan below, provides thirty-two residences with w.c.s and showers and a common room.



EXHIBITIONS

PAINTINGS

Evelyn Williams devizes fat babies with brutal tenderness; but to give complete satisfaction, every drawing and painting has to remain more or less the same as the example reproduced here, 1. One finds one-self resisting the slightest iconographical deviation: the child *must* be asleep and heavily swaddled, with arms stiffly raised and fingers curled, and there *must* be a vast area of plump cheek between the tiny nose-mouth configuration and the ear.

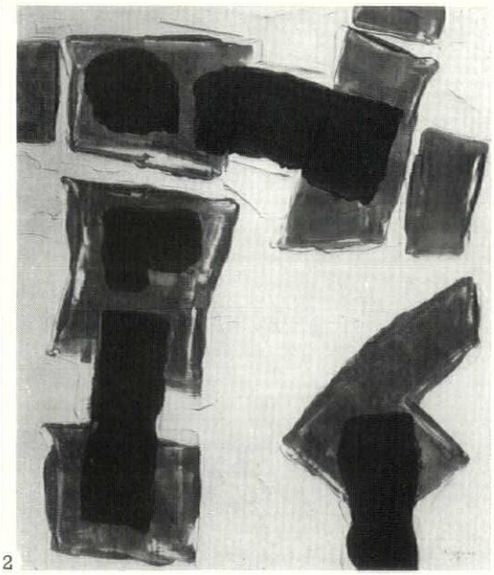


1

Actually, it allows for more variation than one might imagine: there is room for a few carefully considered changes in the position of the head and the angles at which the arms shoot up, and for endless adjustments of the situation of the child in the picture-space. The artist has succeeded in hitting on a witty and sensitive formula that has the stamp of an archetypal image, and I see no reason why she shouldn't go on producing it for the rest of her life. But it's clear that she has different views on the matter, for there were only about half a dozen of them among the forty or so items which comprised her one-man show at the newly opened Woodstock Gallery in the street of the same name.

It's possible of course that she worked directly from the model and that the model has already toddled off, but whatever the reason may be, she is obviously preparing to forsake this satisfying image. She evidently shares with some of the Beaux Arts Gallery artists the desire to equate the substance on her canvas with a gloomy view of what is meant by the term 'common clay,' but it is mingled with a wittiness of drawing more reminiscent of the sophisticated primitivism of Lewin Bassingthwaite. She has produced a number of cleverly simplified heads and figures in her search for an image as satisfactory as her sleeping child, but they are easily forgotten, and one's dominant recollection is of a number of oblongs filled with a whitish-grey blur of deeply grooved substance like dirty plaster. The best of these impossible alternatives to the sleeping child is a group of 'portraits' in which the shape of the head is not disclosed, but the magnified features of the face project from the surface as if a huge plaster cast were being gently pushed against a rolled-out, uncooked slab of whitish-grey pastry. If these 'faces' are likenesses, they would make a pleasant alternative to 'official' portraits and look austerely effective in modern board-rooms and conference chambers.

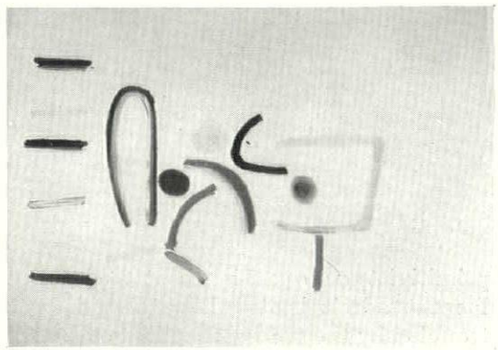
The Canadian painter Paul-Emile Borduas, who has just had his first London exhibition at Arthur Tooth & Sons, has a superbly sumptuous facture. His pictures are done with the palette-knife, and some of them closely resemble those of his younger but more famous compatriot, Jean-Paul Riopelle; but he breaks away in his most recent works, which are sometimes simply black on white or black on brown on white in three distinct planes, 2. His blacks and whites have the depth and luminosity of full-bodied colour, and he handles the paint itself with a notable sense of drama. The ridges in the white pigment where one smear of the palette-knife edges up to another, give



2

the impression that they are caused by the movement of the brown smears, which have caught up some of the white on their edges, as if they were travelling across snow. The black smears float freely, just above the brown ones, never catching up any of the brown pigment on their edges. There's something in the large, slow rhythms of these paintings that forgets the towns we live in, and establishes a remote connection with nature.

In a way, there's something suggestive of a short poem about nature in the curious painting by Victor Pasmore entitled 'Abstract in Crimson, Peacock and Lilac,' 3, which was included in his exhibition at the O'Hana Gallery. The exhibition also contained some elegant examples of his rectangular constructions in wood and plastic, and a number of paintings which are nearer to geometry than the one reproduced, and nearer to drawing than to painting, since they are arrangements of



3

straight lines and arcs on large boards with elaborately prepared white grounds. The lines and arcs are, however, in free-hand, so the arcs have a very faint tendency to wriggle and the straight lines could just conceivably be on the point of referring to something—to a twig, say, or a personal pronoun. The signs that this distinguished hand is thawing out again are even more obvious in 'Abstract in Crimson, Peacock and Lilac,' and the title itself not only indicates the predominant, if sparingly used, colours, but emphasizes their organic connections. The bright shaky marks on the big white board (it will be noted that they are almost on the point of turning into funny faces) suggest that Pasmore is taking Klee as his teacher again and that he is eager to warm himself in Klee's little power-house. But I don't think we should be over-optimistic about these signs. He probably found it painful and rather disgusting to put so many coloured marks on one white board, and it would be wrong of us to give him the impression that we would like him to suffer unduly.

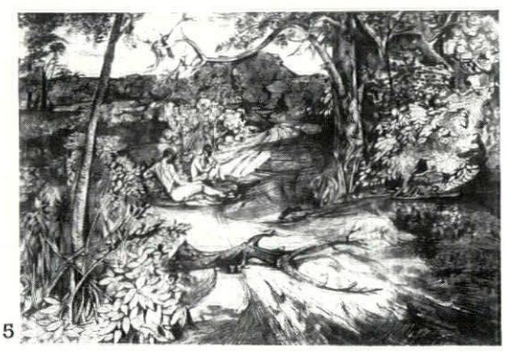
L. S. Lowry has once again presented at the Lefevre Gallery a choice selection of his views of the Industrial North, and there are no significant changes. His panoramic views retain their fascination, 4, and are a continual reminder that the contemporary eye finds discursive information acceptable only if it is rendered in a



4

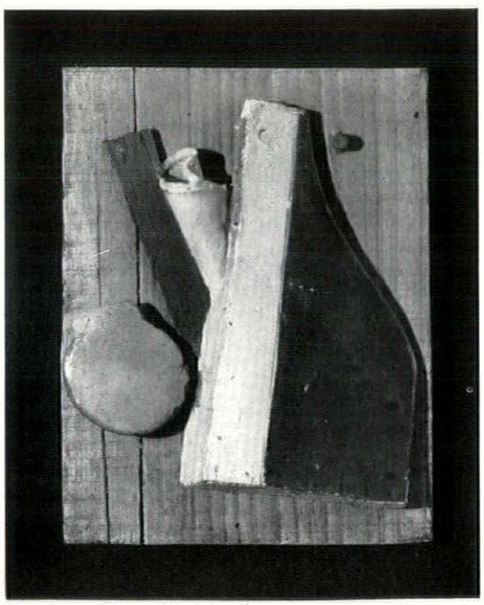
primitivist or quasi-innocent style. But I must admit that I have always been troubled by the sudden mist that overtakes the top band of his otherwise brightly coloured prospects, and I am sure that a true primitive would ignore the smoke altogether and give us the final pleasure of picking our way by a clearly defined route to whichever arch of the viaduct we decided to make for.

It might have been better not to hold the John Minton memorial show; it provoked only a new set of obituaries. But no, that's not quite fair: if Michael Middleton had not been asked to contribute an introduction to the catalogue he might never have written his brilliant and moving evocation of Minton's appearance: '. . . the scarecrow figure with its loping, fevered stride, head down, chin stuck into chest, every fibre intent on getting wherever he was bound; the lantern face under the shock of hair, its extraordinary gravity in repose and its total re-creation in gaiety; the exuberant clowning into which was channelled, increasingly and defensively, a perpetual crackle of nervous energy.'



5

Minton's vivid presence dies more slowly than his work. Apart from the self-portrait which he painted in 1953 (it is less devastatingly 'revealing' yet somehow more truthful than the portrait of him by Lucian Freud) his best work seems to have been the series of drawings in which he treated Samuel Palmer's visionary landscapes as a faintly erotic, neo-romantic hide-out, and in the process only succeeded in producing a kind of arty topography, 5.



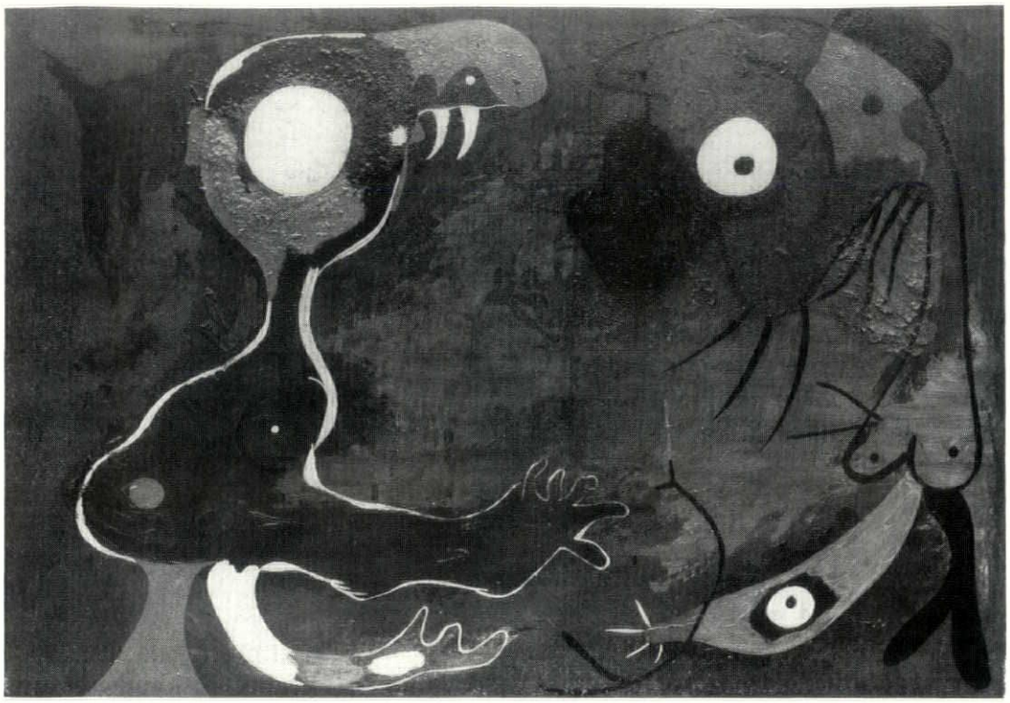
6

Lords Gallery in Wellington Road, N.W.8, has just exhibited the largest group of works by the German artist Kurt Schwitters that has ever been seen in London. Schwitters was one of the outstanding Dada figures of the first half of the nineteen-twenties, and he went on being resolutely Dada after the movement had come to a natural end. But the Dada element in his work declined to a mildly humorous choice of materials for what in essence became a charming contribution to the constructivist movement. The exhibition included a few powerful and intransigent rubbish-reliefs and I would have liked to reproduce here the one which has a broken wheel as its chief motif and whose bent and rusty spokes claw at the air like a sardonic forecast of English metal sculpture, but I can only show a relief made in 1942, 6, during Schwitters's own English period, which is composed of carefully chosen junk artistically coloured and arranged.

When Picasso repainted one side of 'Les Demoiselles d'Avignon' to put it savagely off balance he changed the course of European art. That was in 1907. Since then, painting and sculpture have become arts of assault, and the successful work is a disruptive event. But it was not until the early twenties, when Picasso himself had temporarily lost his nerve and was lending his genius to a neo-classical revival, that this approach to art was given the support of an adequate verbal concept. It came in the form of an exhortation to surrealists, and appeared in an essay by André Breton called 'Beauty will be Convulsive.' He declared that the painter ought to concern himself with 'beauty envisaged exclusively for passionate ends,' and that a truly contemporary painting should produce in the onlooker a state of physical disturbance indistinguishable from erotic pleasure.

It was probably a tactical error on Breton's part to mention erotic pleasure, for the surrealist painters spent far too much of their time grubbing about in the shadow of the 'divine Marquis.' The large group of surrealist paintings from the Urvater collection which was recently exhibited at the Tate did not include any first-rate examples of surrealism's invaluable experiments with automatic techniques, but it was fairly rich in sadistic melodrama and provided a good cross-section of the more comically solemn ways in which the surrealists devoted themselves to the search for convulsive beauty. Miro's 'Two Women,' 7, is a successful assault on the canvas, conducted with line and colour of equal violence; but in his best works the female personages are not so intent on interfering with one another and are happily scattered among the birds and stars. Ernst and Tanguy were represented by imaginary landscapes which suggest that their search had taken them, like princes in fairy tales, on long and hazardous journeys. The large and ambitious paint-

ings by Matta and Lam show them to be lightweight linearists with a flair for depicting scenes of ambiguous ferocity. The Matta reproduced here, 8, is called 'Beside Themselves.' The Magrittes maintained a high level of macabre humour. One of them was a painting of a crumbling brick tower which had grown a tangle of thick roots; it was depicted meticulously against a plain background, as if it were a botanical specimen, and as an image of an uprooted folly presented the show with a badge which it scarcely deserved.



7

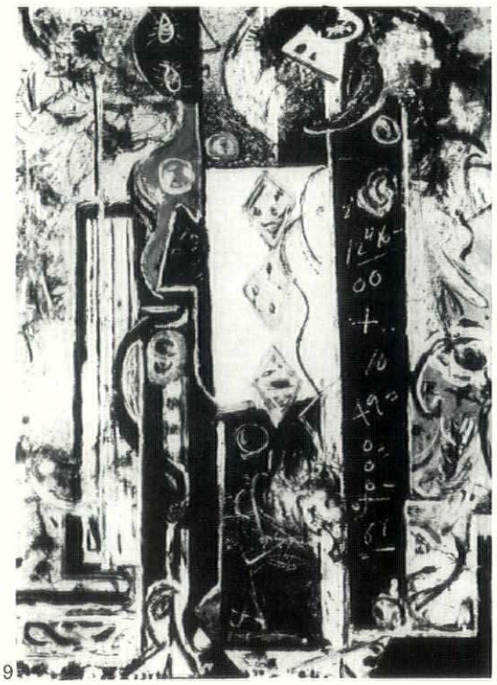
After having one's first sight of a Jackson Pollock drip-painting in the rather narrow gallery of the Institute of Contemporary Arts, where one received the curious and exciting impression that it had no limits, it was something of a shock to see a number of them at Whitechapel and be able to stand back and look at them as if they were easel paintings. Whitechapel didn't exactly diminish them, but it disclosed their double identity. At close quarters they are marvellously intense and alert, but as soon as one stands back they become quiet and charming wall treatments. In his handsome and fascinating retrospective, the works which preceded the drip paintings were either scenes of violence, like the coloured drawing called 'War,' 10, or undisguised assaults upon some of the aspects of contemporary form that interested him, 9, and Sam Hunter points out in his excellent introduction to the catalogue that they were influenced by the 'automatism' and the attitudes of revolt and 'sacred disorder' propounded by the surrealists who were living in New York during the war years.

The drip paintings still seem to me to be Pollock's most remarkable contribution to contemporary art, and the effect he achieved in this manner cannot be reproduced by brushwork. The last paintings in the show were done with a brush and created a rather saddening effect of anxiety and anti-climax. Perhaps he had an uneasy feeling that he still had to prove that he could paint 'properly,' but he didn't really need to prove anything: when he dripped Duco out of a can on to a huge canvas he became a master of labyrinthine line. His triumph as a painter is inherent in his fantastic control of poured paint.

Robert Melville



8



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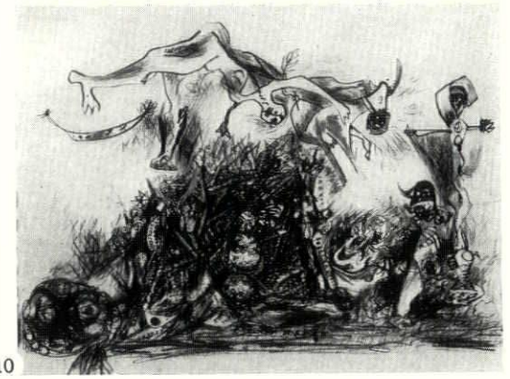


10

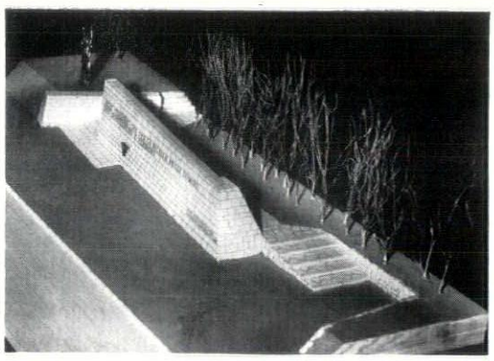
WORLD

ITALIAN PRISONERS OF WAR MEMORIAL

It was a double homage to Mario Labò when he was asked to design the memorial to those who had been killed at the ghastly Concentration Camp of Mauthausen in Austria.

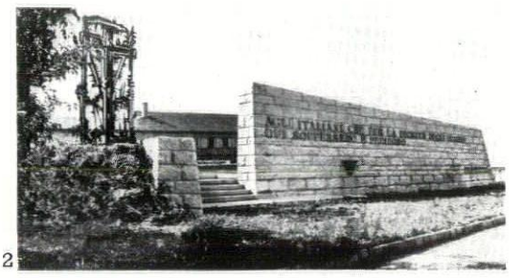
Mario Labò—Papà Labò—is nearly seventy-five years old. He is an architect of repute, a distinguished historian of art and architecture and one of the first in Italy to have taken an interest in the modern style of architecture. His son Giorgio was a talented young architect and a friend of architects. He was a fighter in the Resistance, was arrested by the Nazis, ill treated and finally shot.

The design is an exemplar of how an immeasurably delicate task can be fulfilled. It has neither the facile gentility of so many English war memorials nor the all-too-un-facile abstraction of Reg Butler's Unknown Political Prisoner. The composition, 1, is simple, perhaps bleak: a wall of granite with a strong batter, a wailing wall, as it has been described, and steps about the wall, hauntingly senseless and aimless; an inscription in large, unmonumental letters and another small, near the first, which reads: *Beati qui persecutionem patiuntur propter justitiam*, 2; finally to the left, Mirko Basadella's cross, illustrated on page 86 of this issue. Mirko won a second prize in the competition for the monument to the unknown political prisoner and first prize for



1

sculpture at Sao Paulo in 1955. The Mauthausen cross is of forged iron, about ten feet high—it seems higher. It rises, at first hardly perceived, in a thicket of thorns. It is both concrete and abstract, and perhaps it succeeded in being both, because of the desolate mood of the site. Where Reg Butler had to evoke suffering in general, in many places and for many causes, here for Mirko was the place where thousands had perished for one cause, among them, it may be added in the ARCHITECTURAL REVIEW, Giuseppe Pagano, the intellectual leader of the modern



2

movement in Italy, and Gianluigi Banfi, the first of the two Bs in BBPR. So this is a monument to the known, not the unknown, and a memorial that will for long have to stand up to the fierce emotions of those relatives who visit Mauthausen. The cross is still our most appropriate symbol of suffering, the spikes are an immediately convincing symbol of torture. With that much guidance the monument will at once be understood and for ever remembered. The deliberate, ascetic absence of such guidance from Reg Butler's monument both in its original form and its present form ready for erection in Berlin is what caused the opposition against it.

Nikolaus Pevsner

JACOBSEN

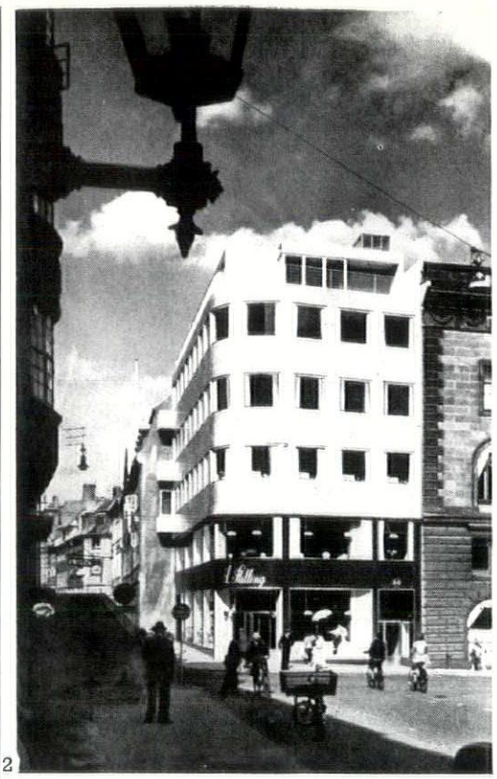
More than any other Danish architect, Arne Jacobsen (the subject of an exhibition now at the RIBA) is able to express in his works the technical and architectural possibilities of his time.

He graduated from the Royal Academy, Copenhagen, in 1927 and two years later he and the architect Flemming Lassen carried out a work destined to have a significant influence on architectural thought; the circular *House of the Future*, 1, functional and flat roofed, exhibited in Copenhagen in 1929. This kind of architecture had not been seen in Denmark at that time, and caused a great stir. Other young Danish architects were also becoming interested in Bauhaus ideas at the time and were reacting against Neo-classicism. Freed from the strict rules of classicism, Jacobsen was able, in his developments at Bellevue in the early thirties, to shape his buildings to make the most of all the features of the site, and to enable the greatest possible number of flats to share the attractive view of the Sound.

His ability to perceive and create a 'milieu' was put to a severe test in 1937 when he was called upon to design the Stelling office-building in an old part of Copenhagen, and decided to design a building of truly contemporary style which complied with all the functional requirements, 2. The result came in for a good deal of criticism on the part of the public. The architects, on the other hand, were delighted, and the Stelling Building is quoted as an example, when schemes for the renewal of the old town give rise to discussions on principles.

Arne Jacobsen's well-known town-hall at Aarhus (in collaboration with Eric Möller) was also heavily criticized. Here he was forced by public opinion to give the building a tower.

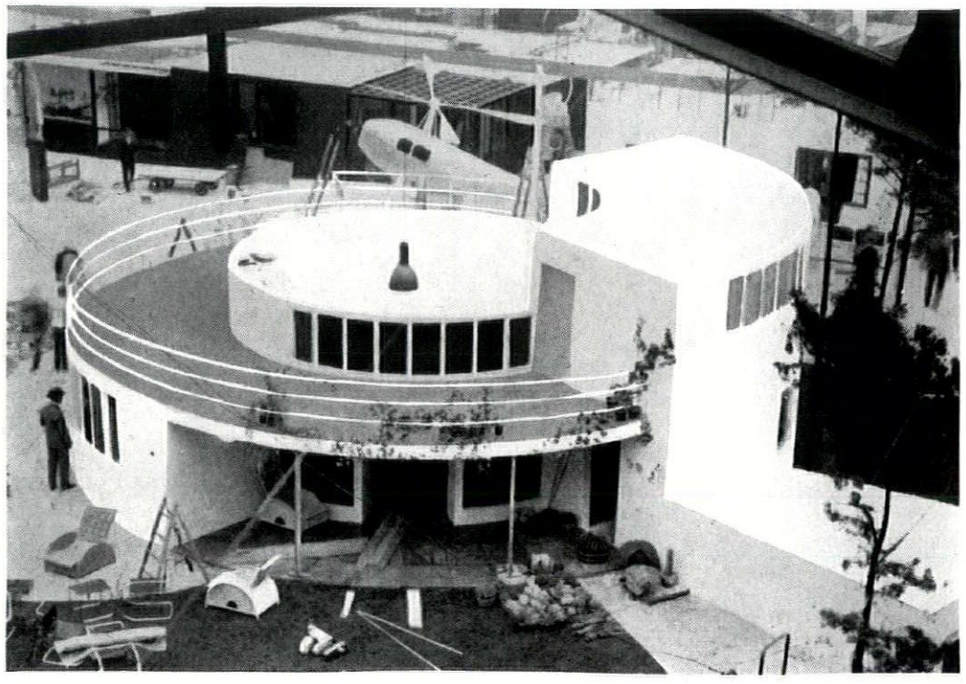
On the other hand, Sölleröd town-hall (in collaboration with Fleming Lassen) immediately became a popular building and, favoured by particularly attractive



2

surroundings, it is most frequently referred to as a characteristic work by Jacobsen. His studies in housing were interrupted by the war, but his Soholm estate at Klampenborg, completed in 1950, with the marked sculptural effect of the rhythm of its gables, caused a stir far beyond the frontiers of Denmark.

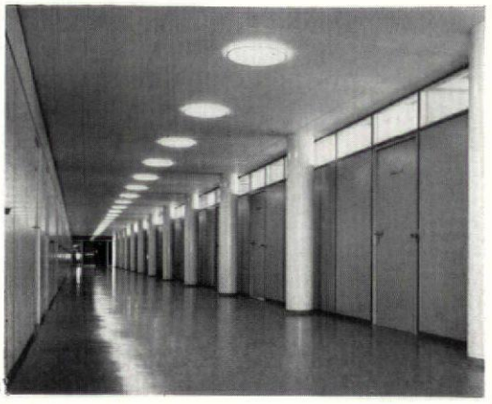
By that time—since 1933 in fact—the Bauhaus ideals had taken refuge in the United States, whose hospitality had enabled them to develop further. When Denmark was liberated, and when it became possible to build again in reinforced concrete, steel and glass, Jacobsen was able to retrace the Bauhaus ideal in the



1

USA, alive and artistically treated. It was necessary for him to hold these building-shapes in his hands, as it were, to feel them and recognize them as a medium for his own artistic development. His ability to renew himself, to vary his means of artistic expression, has been interpreted by some critics as a lack of a personal artistic note. But Rodovre town hall and the SAS building are not reproductions of American buildings. In the choice of proportions, details and materials they—like the Jespersen building in Copenhagen, 6—represent typical works of Arne Jacobsen.

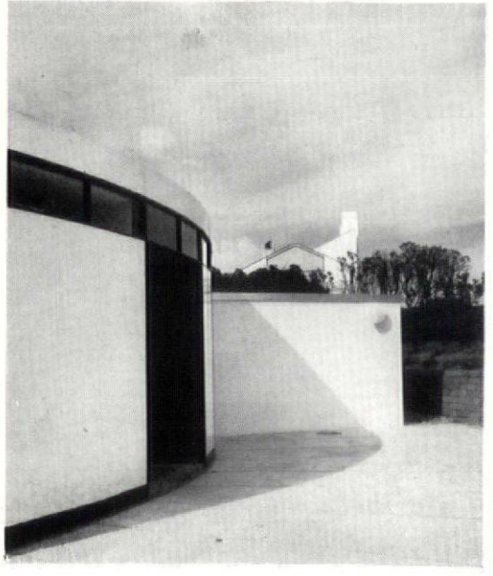
In Rodovre Town Hall, 3, built in 1955, the offices are concentrated in a utilitarian



3

building, a cube where the module, governed by functional considerations, is apparent in the facade-partition, as well as inside. The air terminal and hotel, respectively housed in a large horizontal and mighty vertical block, 5, of the SAS building, his latest work, jointly form a building full of contrast. Again we find the simplification of architectural expression until a strong sculptural effect is achieved, as also in the circular villa near his earlier fish-smoking house at Odden, 4.

The main structure of the building, the



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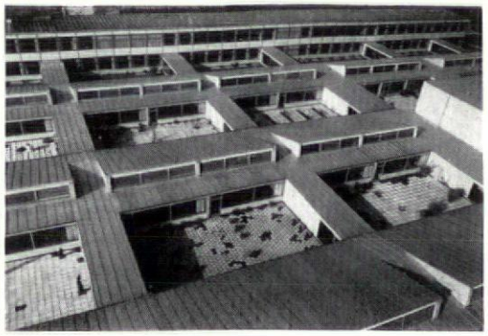
6

Arne Jacobsen's use of curtain walling; 5, above, the projected SAS air terminal, 6, below, the Jespersen building, a small office block in Copenhagen.



7

choice of proportions and the refinement of detail are increasingly cultivated by him in his constant search for simplification and refinement of form. This is as true of recent buildings like the Munkegars school at Gentofte, 7, with its rational courtyard plan, as of the excellent furniture, lamps, furnishing fabrics and other products of applied art he designs. These last are frequently created by him in conjunction with some building task. We can look forward to many new works by his hand; Arne Jacobsen is only 56.

Paul Erik Shriver

TOWNSCAPE

HANDRAILS FOR LINE

The four aspects of the outdoor scene with which the visual planner has to concern himself are space, mass, texture, and line. The last of these, line, is divisible into several categories.

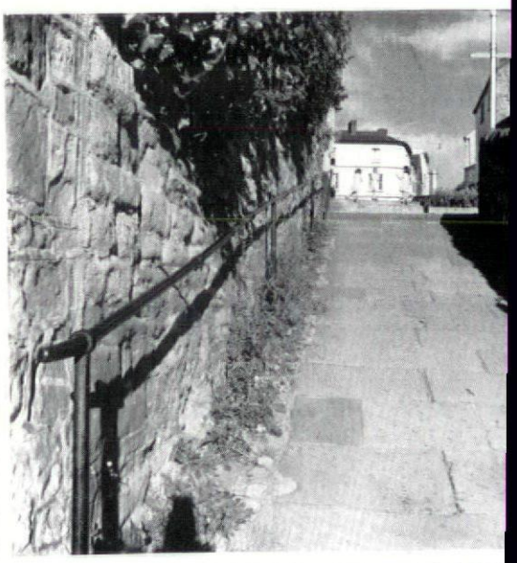
The line formed by the earth or the objects upon it against the sky, the skyline, is one; the line formed by the meeting of two surfaces is another. These are ubiquitous, but there is another kind of line which is rarer: the free calligraphic line scrawled across the surface of the picture.

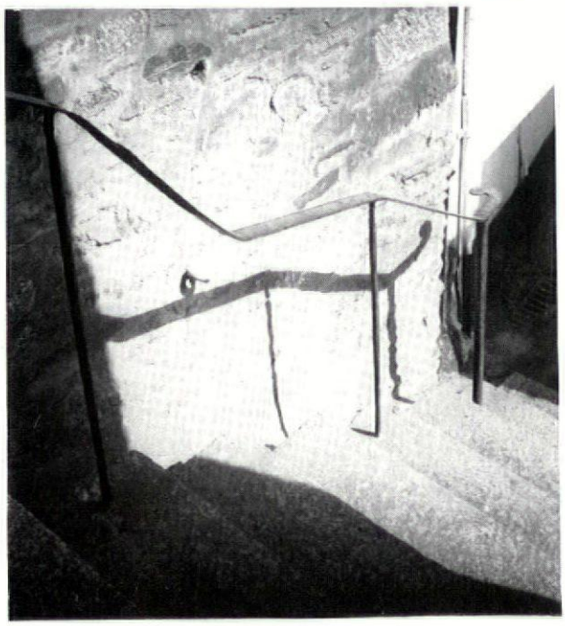
Here are four examples of this third kind; in each the line is the line of a handrail. In the first (Ross-on-Wye) the handrail is attached to a wall, in the second and third (Ross again and Fowey) it is equally close to a wall, but has its own supports; in all three the essential character of the wall, its solidity and its function as a plane bounding space, is emphasized by the rail, which also gives the eye a sense of direction. In the fourth photograph (Fowey again) there is no wall but the rail itself creates, with the most economical means possible, a spatial division, while leading the eye a pretty dance into the bargain.

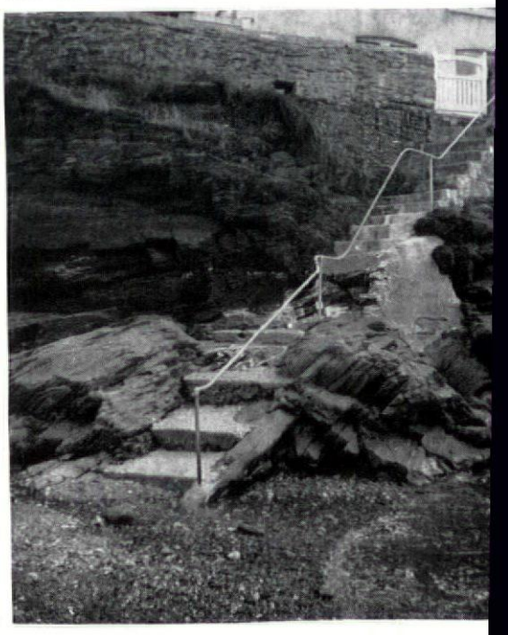
'Leading the eye a pretty dance . . .': that is the purpose, æsthetically speaking, of pure line. As these photographs show, there need be no conflict between the æsthetic purpose of a handrail, considered as line, and the utilitarian purpose of a handrail, considered as a handrail. Hence its peculiar value, as a linear element, in the designer's stock of motifs.

Andrew Hammer









1 *and* 2, *Ross-on-Wye, Herefordshire*
3 *and* 4, *Fowey, Cornwall*

1 | 2
3 | 4

BOOKS

PORTAL AND CAPITAL

SCULPTURE AT CHARTRES. *By Peter Kidson and Ursula Pariser. Tiranti.* 1958. 18*s.*

This is a useful book and an enjoyable one as well in spite of dull layout and a rather grey tone of the photographs. The photographs are excellent—some indeed, such as the capitals from the north tower, the almost completely unknown king from the north porch, and the Christ enthroned from the Portail Royal, are unforgettable. The text is instructive and written in a straightforward style. It deals with matters of iconography foremost—what is represented, why it is represented and why it is represented thus—but does not neglect aesthetic matters. Chartres demonstrates on the highest level of European art what sculptors were capable of about 1150 and about 1205 to 1235. On the stages, especially in the latter thirty years, there is no unanimity of opinion. Although it looks indeed as though the three portals of the south transept were all built at one go, the sculpture of the side portals is almost as different from that of the middle one, as are the side portals from the middle portal in the north transept. St. Piat is nearer to St. George than he is to St. James. The suggestion that St. Laumer and St. Avit were added by a man who came from Reims is at once convincing. St. Theodore on the other hand can be understood without any impulse from outside the Chartres workshop. One of the most attractive

features of the book is the illustration of details from the brackets and pedestals of figures. The relations with Villard de Honnecourt's famous textbook are illuminating and have not been stressed before. **N.P.**

ELEMENTARIST

THE WORK OF G. RIETVELD ARCHITECT. *By Theodore M. Brown, Bruna (Utrecht), price in England, 3 gns.*

Gerrit Thomas Rietveld is a Dutch provincial artist who has twice made contributions of unmistakable international importance to the growth of mainstream modern design. These were the so-called 'Red-Blue' chair of 1918 and the Schröder House, in the suburbs of Utrecht, of 1924. Both are typical of that species of space-composition that may loosely be termed 'Elementarist' though this term did not exist at the time the chair was designed, and had been twisted to mean something else before the house was a year old. Nevertheless, it is the Elementarist connection that gives these designs their international significance, and it is in this connection that Mr. Brown's book (a Utrecht doctorate thesis hustled into print for its subject's seventieth birthday) is conspicuously weak. Mr. Brown appears to accept a little too willingly the official *de Stijl* estimate, propagated by Theo van Doesburg, that Rietveld was a native Dutch genius who profoundly influenced the course of modern German architecture.

That there was influence is unarguable, that Rietveld was an architect gifted with occasional flashes of dazzling originality there is no doubt, but there is more to it than that. The chair was conceived in a culture cut off from the outside world by Holland's neutrality but it could never have been produced without the successive waves of Wrightian influence to which Dutch designers had been subjected, nor without the English Arts and Crafts tradition, for its basic form is that of a Morris Chair. But to these given influences had been added a searching, abstract, *ad hoc* analysis, which is peculiar to the time and place, can be recognized in Mondriaan, and was identified by J. J. P. Oud as anti-Wrightian.

The Schröder House is different. Where the chair analyses down to essentials and results in a rational tracery in space, the house elaborates outwards from a simple interior plan, and the necessary extensions and openings of the outer wall have been made the excuse for the creation of kind of habitable relief-sculpture of horizontals and verticals. Between the two one may interpolate another chair, in which the elegant rationalism of the Red-Blue has been sacrificed to an arty and unfunctional asymmetry—it appears to have been designed for a one-armed man. This chair Mr. Brown calls the 'Berlin,' on the grounds that it was designed for exhibition in that city in 1923, but the significance of both time and place seem to escape him.

Van Doesburg's contacts with Berlin had, by 1922, converted him and *de Stijl* magazine from a transmitter of Dutch ideas to the world, into a transmitter of Berlin ideas—the ideas of the *G* group, of which Elementarism was the creed and El Lissitsky the moving spirit. The Schröder House was the first permanent realization of these outward-going ideas, but it was not the only realization of them in 1924. Mr. Brown seems unaware that Frederik Kiesler's spatially more advanced *Cité dans l'Espace* was only *re*-created for the Paris exhibition of 1925, and had first been erected in the same year as the Schröder House. He seems equally unaware that this, and Rietveld's Berlin chair, and Kiesler's *Cité* all appear to be indebted to some earlier exhibition designs of Lissitsky's.

When these considerations are read into the record, much of Rietveld's supposed influence evaporates—he and, for instance, Mies van der Rohe appear as designers drawing on a common pool of ideas, and primacy in the use of a particular architectural device does not necessarily imply primacy in its conception. The adoption of a purely Doesburgian attitude to the history of abstract art is thus a serious blemish on the book, but it does not make it a useless or a trivial one. Within the distorted diagram of history that Mr. Brown has accepted, he has done a great deal of valuable research and recorded much from the architect's memories and papers that was not available in print before, including a letter from van Doesburg that makes his historical slant transparently obvious. It is, to sum up, a book that the student of modern movement history should read with provisos, but it is also a book that he should read. **Reyner Banham**

THE GREEKS FROM GHANA

GREEK ARCHITECTURE. *By A. W. Lawrence. The Pelican History of Art, 63s.*

The English-reading student of Greek architecture has not lacked for good textbooks on his subject. New editions of Dinsmoor's and Robertson's manuals with up-to-date bibliographies have been issued in recent years; and between them they cover more than adequately the history of the art of building in antiquity. Nevertheless, there was room for another book, which should expand sections which the earlier books had treated briefly, and give a fresh slant on periods which, for whatever reason, they had tended to regard as qualitatively of less importance. Lawrence has provided just such a book, and has done it very well. It has certain obvious merits which should be recorded immediately. It devotes much more space than either Dinsmoor or Robertson to the origins and early history of Greek architecture; and this is only fair, since the whole history of Mycenaean and archaic Greece itself has been transformed in recent years by the epigraphic discoveries of Ventris and others. It deals very fully with Greek domestic architecture, town-planning, halls and open structures. And it makes a special point of Greek fortifications, a subject on which Lawrence is the first authority. On the other hand, it gives a fresh and subtly reasoned account of the central theme of any general history of Greek architecture—the evolution of the Greek temple and the development of the Doric style. All this can be commended unreservedly to the general student of architectural history.

To the general reader—and the Pelican History of Art is addressed to such—the most suggestive chapter will be the Epilogue, in which Lawrence allows himself to make a qualitative aesthetic evaluation of Greek architecture; and it is here that the general reader will feel entitled to ask questions, and perhaps even to raise objections. Lawrence starts with an unusual advantage over all his competitors: for some years he was Professor of Archaeology at the University College of Ghana; and he can therefore make a significant contribution from the vantage-point of Accra. 'After some years' personal experience of a society which is now emerging from a primitive culture, I picture the Greeks as more alien than I used to think them, and far more vividly'—such is the privileged position from which Lawrence sets out; and the freshness and independence of many of his judgments are certainly due as much to this unaccustomed angle of vision as to that native ingenuity which readers of his earlier works, written in the less exciting atmosphere of Oxford and Cambridge, have long since admired. Lawrence's approach to his problem is suitably cautious: it requires, he reminds us, 'a strenuous intellectual effort to form an appreciative judgment of Greek architecture—every building is to some extent ruined . . . the very fact of disuse effects a transformation of its own, making an academic exercise in design out of what used to be a place of worship or of living. . . . But the best-trained imagination has its limitations . . . the spiritual gulf between the ancient and the modern worlds is broader than is generally realized. The Greeks, when their architecture reached its height, had only lately ceased to be a semi-primitive people.' And he uses this fact to explain that curious mixture of extreme sophistication and vestigial conservatism which characterizes the architecture of the classical period, that disconcerting combination of perfectionism in detail with an almost infantile timidity of structural design. Up to a point, Lawrence faces this dilemma squarely: 'The Doric temple—that supreme creation of Periclean Athens—is really abstract sculpture; regarded from the standpoint of utility as a building, the temple is ridiculous.'

It is at this point that the general reader grows restive. *Was* the Parthenon the supreme creation of Periclean Athens? We know next to nothing of Phidias, and little enough of Sophocles—we cannot be sure. And *has* architecture the right to be abstract sculpture? And why should we *not* judge a temple 'from the standpoint of utility'? There is nothing ridiculous about Ayia Sofia or Chartres: they are completely successful functionally, and 'supreme creations' into the bargain. And again, why is it that the unresolved discord of the primitive and the civilized in the Athenian consciousness of the Periclean age should hamper the growth of architecture, but not the growth of sculpture or (we may reasonably guess) painting or poetry or prose? And when Lawrence says, a little further on,

'there can be no doubt that arches were considered an aesthetically reprehensible substitute for the flat lintel, with which was associated everything of recognized beauty in architecture . . .,' we can only ask again: *why*? And all Lawrence can say in reply is: 'Beauty implied something analogous to what we call the right thing; a building could not be beautiful unless it conformed with the long-established and universally-admitted dogmas of the art, as well as having—and this ranked above all other qualities—correct proportions to the smallest detail. In actual fact, the greatest masterpiece of ancient Greece, the Parthenon, is the one building in the world which may be assessed as absolutely right.'

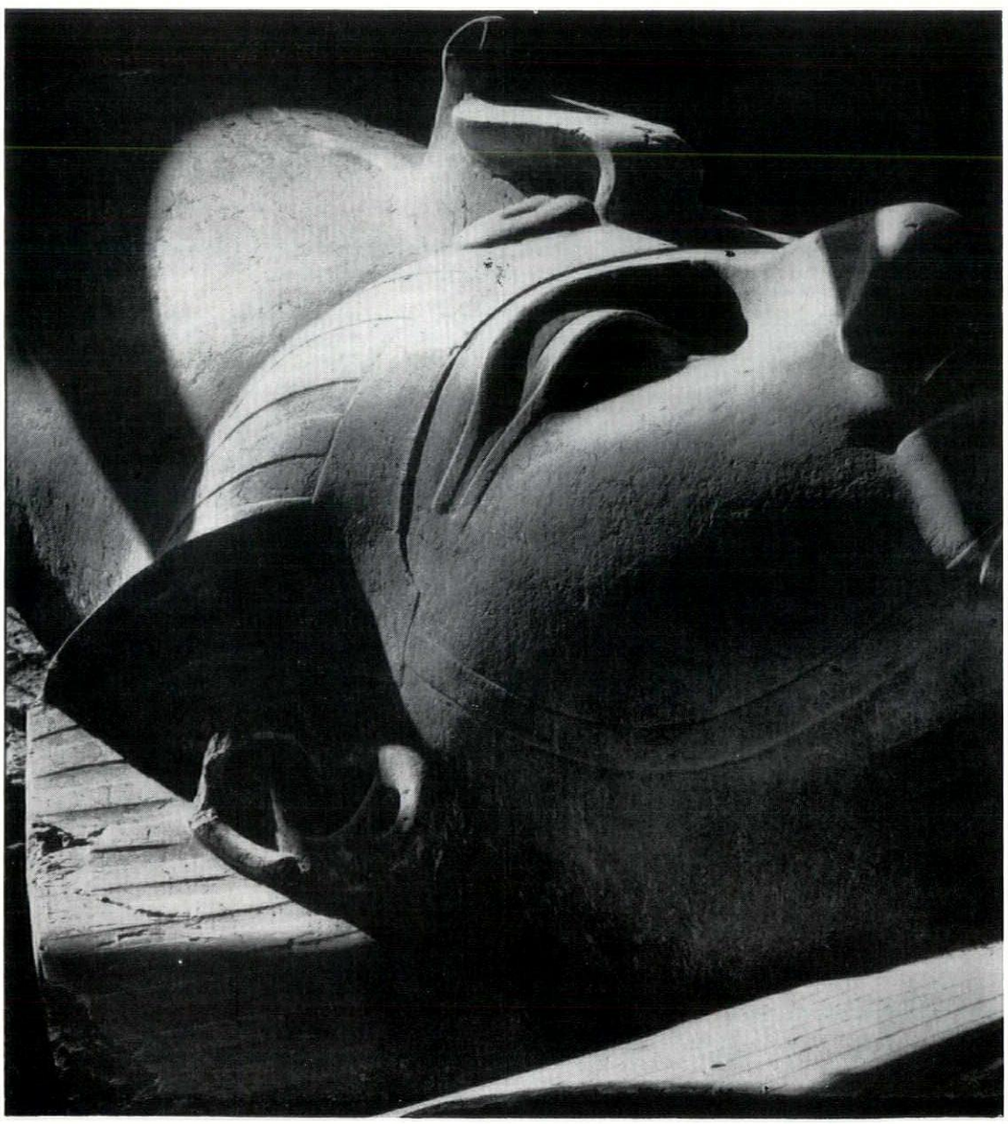
This is the last sentence in the book; and the general reader may pause to wonder. The right thing . . . long-established and universally-admitted dogmas . . . correct proportions . . . the one building in the world which may be assessed as absolutely right. . . . The experience of Ghana seems to have evaporated and the philhellene conventionality of Oxford and Cambridge seems to have re-asserted itself. It is disappointing, because Lawrence is one of the few critics of ancient art who might have offered an explanation of that central oddity—the fact that Greek architecture was so conservative and atrophied so early while Greek sculpture and (for all we know) Greek painting went on from strength to strength, from one brilliant innovation to another.

Roger Hinks

Shorter Notices

THE THRONES OF EARTH AND HEAVEN. *By Roloff Beny, with an introduction by Herbert Read, and texts by Freya Stark, Bernard Berenson, Jean Cocteau, Rose Macaulay and Stephen Spender, Thames and Hudson, 4gns.*

Mr. Beny is a young Canadian painter, given to photographing what he decides not to paint. His publishers have made a stunning book out of the results, but the photographs themselves present, as might be expected from a painter, a slightly arty quality that is out of step with the documentary turn that photography has taken under the influence of the *Time* and *Magnum* schools. That is to say, the resultant images do not arise more or less directly from the subject-event in interaction with the mechanics of the photographic process, but appear to be photographic reproductions of images preconceived in terms of an alien, painterly sensibility.



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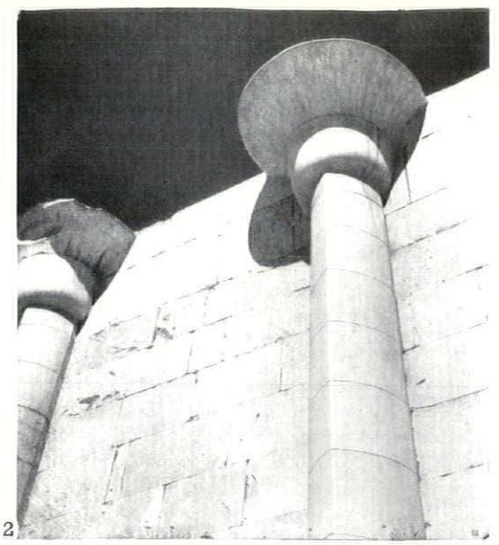

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What emerges is therefore less an evocation of the Mediterranean scene than of the personality of a grand-tourist making an imposingly grand tour, its visual range limited by the limitations of the tourist's Baedecker-guided mind. In some cases, the supporting texts, being the work of more mature minds than Mr. Beny's, more skilled in their own channels of communication than he in his, tell us more of the appearance of the scene than he can—Berenson in particular.

Occasionally, the subject matter, by sheer enormity or oddity, breaks through the mould of the painterly aesthetic, carries references that have by-passed the photographer, or flatly contradict him. A fallen Egyptian colossus snoozing in a grove of palms, 1, a piece of ancient architecture reduced by the accidents of time to the status of a diagram in Choisy, 2, or Gaudi's *Sagrada Famiglia*, glaring out of the page to make nonsense of the caption's ill-considered 'a nineteenth century pseudo-gothic folly.' One senses that just as in every fat man there is a thin one fighting to get out, there may be in this painter a photographer fighting to get out, but not fighting hard enough.

Michel Santiago

Books Received

A PLACE IN THE FOREST. By The Earl of Bessborough. B. T. Batsford Ltd. 10s. 6d.

KENSINGTON. By William Gaunt. B. T. Batsford Ltd. 25s.

FLOORS AND FLOORING. By D. M. J. Davidson. Crosby Lockwood & Son Ltd. 12s. 6d.

THE PERSPECTIVIST. By R. Myerscough-Walker. Sir Isaac Pitman & Sons. 60s.

REINFORCED CONCRETE IN ARCHITECTURE. By Aly Ahmed Raafat. Reinhold Publishing Corp., New York. Chapman & Hall, England. 120s.

THE WEATHER CONDITIONED HOUSE. By Groff Conklin. Reinhold Publishing Corp., New York. Chapman & Hall, England. 118s.

WOHNHOCKHAUSER—POINT BLOCKS. By Paulhans Peters. Georg D. W. Callwey, Munich. Dm. 17.50.

DECORATIVE ART, Vol. 48. 1958-59. The Studio Ltd. 35s.

ALUMINIUM IN MODERN ARCHITECTURE 1958. Reynolds Metal Company. Reinhold Publishing Corp., New York. Chapman & Hall, England. 40s.

THE TEACHING OF SCIENCE IN SECONDARY SCHOOLS. Compiled by a Joint Committee of the Incorporated Association of Assistant Masters and The Science Masters' Association. John Murray Ltd. 17s. 6d.

MATERIALS AND METHODS OF ARCHITECTURAL CONSTRUCTION. 3rd Edition. H. Parker, C. H. Gay and J. W. MacGuire. John Wiley & Sons, New York. Chapman & Hall, England. 96s.

THE THEATRE. Helen & Richard Leacroft. Methuen & Co. Ltd. 10s. 6d.

MODULOR 2. Le Corbusier. Faber & Faber. 42s.

SKILL

WHOLE HOUSE HEATING

by John Voelcker

Whether he likes it or not, the turn of technical events has involved the architect in the problem of heating as never before. Up to a very few years ago he could design a space and a structure and then think how to heat it; but now he knows that the space and the structure are as significant in determining the comfort produced as the actual equipment chosen. It seems logical, therefore, to preface this account of equipment for whole house heating by certain general considerations which bear on the providing of comfort economically and on the interrelation between heat source and structure.

Architects have been aware for some time that heating economy is closely bound up with the limiting of heat loss through the walls and through too much ventilation. They are perhaps less aware of the extent to which it depends on the idea of intermittency: on the speed with which a building will heat up and with which the heat source will shut down. Intermittency is more important than it used to be, partly because we leave our houses empty for longer periods during the day and partly because we are accustomed to use more expensive, more refined fuels. Also it has become more of an issue in that these fuels and the equipment used to burn them are more susceptible to control than before and because the great development which has taken place in recent years in materials of low thermal capacity makes it easier to construct buildings which can respond quickly to temperature change.

It is a part of our traditional knowledge that the use of certain materials of low thermal capacity (e.g. wood used as panelling) make for comfort; but this traditional knowledge has been very imperfectly carried over into modern practice and we have been insufficiently aware of the corollary, namely, that if certain materials of high thermal capacity and high thermal transmittance are used to line the walls of a room, comfort can be impossible to provide. It was shown by Thomas Bedford many years ago that the average temperature of the walls (and of all solids within a room) should not be appreciably lower than that of the air and should preferably be higher. The same authority also showed that the air temperature should be kept at a figure round 65°F. The average mean radiant temperature of the walls is determined by a formula* which takes into account the internal air temperature, the difference between this and that of the outside air, the thermal resistance of the surface material and the total air to air resistance of the wall. The internal surface temperature of any given external wall will always be lower than that of the internal air (unless the wall is heated); and if the total thermal resistance is low, it will be very much lower. As an example, with an inside air temperature of 67°F and an outside air temperature of 35°F, an 11-in. cavity brick wall will have an inside surface temperature of 59.2°F. To provide tolerable (but hardly comfortable conditions) with such a wall, it would be necessary to raise the air temperature to 75°F. Alternatively, you could raise the average mean radiant temperatures of the other surfaces within the room by some form of panel heating. This may not be practicable, however, and in any case a heating 'problem' has been created which another choice of walling could have avoided.

In recent years our notions of whole house heating have been much influenced by two contrasting technical developments on the equipment side: electrical thermal storage and the adaptation for the small house of the warm air forced-draught system. But before considering the very diverse heating service which these give, more must be said about the house itself. It is clear that the highly insulated house is a different proposition thermally to the house of tradition in that a greater share of the heat generated in one part of the house infiltrates into other parts. This discovery was one of the great surprises of the BRS Abbots Langley experiment after the war. The houses which were the subject of this experiment had a 'house U value' of only about 0.38, which is about the standard implied by the proposed bye-law regulations; also they were of traditional cellular plan. Even so, it was found that for every 1°F put into the living room 0.5°F filtered to the bedroom above. This effect is presumably increased when the open plan is adopted for the ground floor. Apart from this consideration of heat filtering through the structure, there is new evidence on the interreflection of heated surfaces which favours the open as against the cellular plan. Hallett in 'Notes on the Theory of Radiant Heating' (Institute Heating and Ventilating Engineers, 29, 206) describes how a room 80 ft. by 20 ft. warmed by medium temperature ceiling panels was divided into two parts, one 60 ft. by 20 ft. and the other 20 ft. by 20 ft., by a partition. It was observed that the larger part was cooler than the whole room before division and that the smaller part was uncomfortably cooler, despite the fact that the same total quantity of heat was provided and the heat supplied per unit area was the same in both parts. This observation indicates that increases in the area of a room heated by floor or ceiling panels increases the heating effect on the occupants, not only because the radiation from distant panels adds appreciably to the radiation received from panels near to the occupants, but also because the radiation from panels not directly above or beneath the occupants strikes a larger surface of the occupants.

Both warm air and underfloor have their limitations and both make specific demands on the structure. Warm air is the heating method par excellence for intermittent heating; but because it warms the air and not the structure it can never, by itself, produce those ideal conditions of comfort laid down by Dr. Bedford; and it will get tolerably near to them only if the wall and floor surfaces are capable of warming up quickly and of reaching a temperature only a few degrees lower than that of the air. There is no doubt that such surfaces as the traditional plastered wall and the solid ground floor with a thin covering of thermoplastic or PVC are unsatisfactory, as they fail on both of these counts and force the occupants of a room to adopt an air temperature which will have to be so high to give a feeling of warmth that it will also give a feeling of stuffiness.

The main limitations of underfloor heating are slow response to control and the difficulty of providing a large enough area to heat the room in very cold weather. At the same time, precautions must be taken to limit the loss of heat round the perimeter.

In reviewing the present range of equipment suitable for whole house heating, we have decided to limit 'equipment' to that concerned with distribution, as distinct from heat production; for to do otherwise would have drawn in almost every gas, electric or solid fuel boiler on the market. Even with this restricted definition it is not easy to find a logical basis for categorizing heating equipment. Lacking this, it seems sensible to start with the traditional media for whole house heating—hot water radiators—and to pass from thence to the rationalized equipment for water borne heating, i.e. panels and skirting heating; and to conclude with electric panels and warm air convectors. It must be emphasized that this is no more than a commentary on the more interesting pieces of equipment that we have been able to find and is not in any way a comprehensive review of the field.

radiators

Radiators, the traditional type of whole house heating equipment in the era when it was a luxury, have undergone considerable modifications of recent years. The most revolutionary development, the introduction of the small pipe system, has, of course, nothing to do with the form of the radiator itself but must be mentioned here as it has freed all hot water heating systems from the desperate limitations imposed by gravity circulation: it is now possible to put your heating units where they are needed to warm people, and not merely where they are needed to maintain the flow of water.

Apart from this, radiators have themselves evolved considerably to conform to the findings of heating research, an evolution which is illustrated in 1, 2, 3 and 4. Not all radiators have responded, however, and it is of some importance to architects to know the enlightened view. There are three points to notice. The first is that the material of the radiator should be capable of a quick thermal response. This tells in favour of the light weight radiator (e.g. pressed steel) over traditional cast iron. The second concerns the actual configuration of the heating surface. It was the belief of early radiator designers that the more knobbly the radiator, the better. It is now known that radiators with re-entrant surfaces give less output than those with flat surfaces, since with the latter much of the radiant heat is merely re-absorbed by the radiator. The third point concerns the adaptation of the form of the radiator to enable it to be put where it will be most useful. This has led to the development of the long low radiator in place of the tall column, and thence to the skirting heater and, indeed, to underfloor heating. Radiators should not be enclosed or painted with metallic paint. They should be backed with walls of low thermal capacity and high thermal resistance and, if possible, the surface behind them should be lined with metal foil.

skirting heating

Observations on the thermal characteristics of conventional radiators have led to the development of heating equipment which provides improved heat distribution. One such development is 'Baseboard' or skirting heating which exploits the convection characteristics of conventional radiators by applying warm air at very low level, evenly distributed round the perimeter of an enclosure. Illustrations 5 and 6 show two ranges of skirting heaters now on the market. The first is that of Crane Limited who were the first in the field in this country. The Crane skirting heaters are of cast iron and are made in three models: 6-in. and 9-in. skirtings which are radiant only and a 9-in. skirting which is both radiant and convective. The second range is Copperad Limited's Wallstrip, 6, which is likewise made in

* See two articles on this subject in the *Architects' Journal* by Alexander Hardy, November 20 and November 27, 1958.

three models: one which is primarily radiant, another which is primarily convective, and a third which is both. Of these the convective version has by far the greatest heat emission in terms of Btus, giving (with water at 150°F) 370 Btu per foot run against 240 Btu per foot run for the combined strip and 158 Btu per foot run for the radiant strip. These emission rates (which are comparable for the Crane skirtings) can be stepped up by raising the temperature of the water (Crane advise 170°F for forced circulation); nevertheless they are not large and the run of uninterrupted skirting space will have to be considerable if 'Baseboard' units are used to provide all the heat required. Normally it will be advisable to used forced circulation by installing a pump in the boiler return because this will increase the emissions and ensure that the same temperature is maintained in every part of the circuit. The convector or combined 'Baseboard' units are to be preferred to the radiant types for domestic use, not only because the larger quantity of heat emitted will probably be required, but also because skirting level, the ideal position for releasing warm air, is not the best place for emitting radiant heat. It is suggested that 'Baseboard' heating is suitable for bedrooms where lower temperatures are required and where the ratio between the run of skirting and the volume of the room is favourable, since only the bedhead and the door need mask or interrupt the circuit.

panels

Another development from the conventional radiator is the flat faced panel which improves its radiant characteristics since there are no re-entrant surfaces. While 'Baseboard' heating requires an extensive uninterrupted perimeter, panel heating requires large surfaces unobstructed by furniture if it is to provide the quantity of heat required. Illustration 7 shows an Ideal Rayrad, manufactured by Ideal Radiators Limited. The unit consists of a number of interconnected D section waterways which can be coupled to adjacent units and fixed to the wall, floor or ceiling structure of a building. A variety of rolled steel sheets suitable for use in different positions is provided for screwing on to the face of these units. Such panels are particularly useful when the requirements of whole house heating are to be satisfied in an existing dwelling because they can provide unobtrusive warm surfaces and a good distribution of warmth. The positions in which panels are fixed will depend on the surfaces available and upon the ratio between convected and radiant heat required. For guidance, it can be assumed that the panels mounted on ceilings emit 70 per cent, on walls 65 per cent, and on floors 55 per cent of their heat as radiation. Whenever panels are used, adequate insulation should be provided to ensure that no heat is lost in the wrong direction.

In new houses where panel heating is to be used it is unnecessary to fix back panel units. Instead, the heating elements, whether hot water tubes or electric cables, are embedded in the structure and the wall surfaces themselves are heated to emit the warmth required. The equipment for panel heating is simple, but the way in which it is laid out requires careful thought because alterations are difficult and expensive once the system has been installed. The position of the panels, the size and shape of the enclosure to be heated, and the materials to be used in the construction of the panel must be considered. Because a considerable quantity of radiant heat is emitted by the panels, exact calculations are complicated and, in the case of house heating where there are numerous variables, results are probably inaccurate. Nevertheless the following observations should be borne in mind when determining the layout. Panels, whether embedded in ceilings, walls or floors, should be arranged in such a way that radiant heat is emitted as evenly as possible. At the same time the system should be zoned or graduated so that greater quantities of heat are emitted in the colder parts of an enclosure, for example, near external walls. Ceiling panels (which were described in 'Suspended Ceilings Part 2.' AR, September, 1958) have advantages which suggest that they are suitable for domestic use. The first floor structure can be designed as a heat distributor emitting a greater proportion of its heat downward and the remainder providing background heat to the first-storey rooms. Added to this, ceilings provide a surface area larger than walls or floors because they are not obstructed by furniture, but the thermal characteristics of ceiling panels must be weighed against these advantages. Ceiling panels emit a higher proportion of radiant heat than wall or floor panels and, although an even air temperature throughout a room is assured, there is some danger that radiation from a source only 8 ft. above floor level may cause discomfort to a person standing underneath. In any case the area and surface temperature of any panel system must be limited by rule of thumb, depending on the ceiling height. These characteristics indicate that ceiling panels may be used in living rooms where the occupants are normally seated at low level since the intensity of radiation is reduced and the surface areas of the reclining occupants receiving the radiation is increased.

Wall panels are seldom used for heating because the walls are broken up by openings and their surfaces are masked by furniture. It is doubtful whether a sufficient area of heating surface could be found; and even if it could, the distribution of radiant heat would be irregular and therefore cause discomfort.

floor heating

Floor heating by hot water and by electricity is used extensively; in particular, in solid ground floors. While the surface temperature of ceiling panels is usually about 100°F, the surface temperature of a floor will cause discomfort if it exceeds 80°F. This indicates that the maximum floor area available must be heated and even then it is doubtful if any more than background heat will be provided. Care must be exercised in the choice of floor finishes and any adhesives used should be heat resisting and sufficiently ductile to accommodate the relative thermal movement of sub-floor and floor finish.

The construction in which panels are embedded should normally be of low thermal capacity so that the

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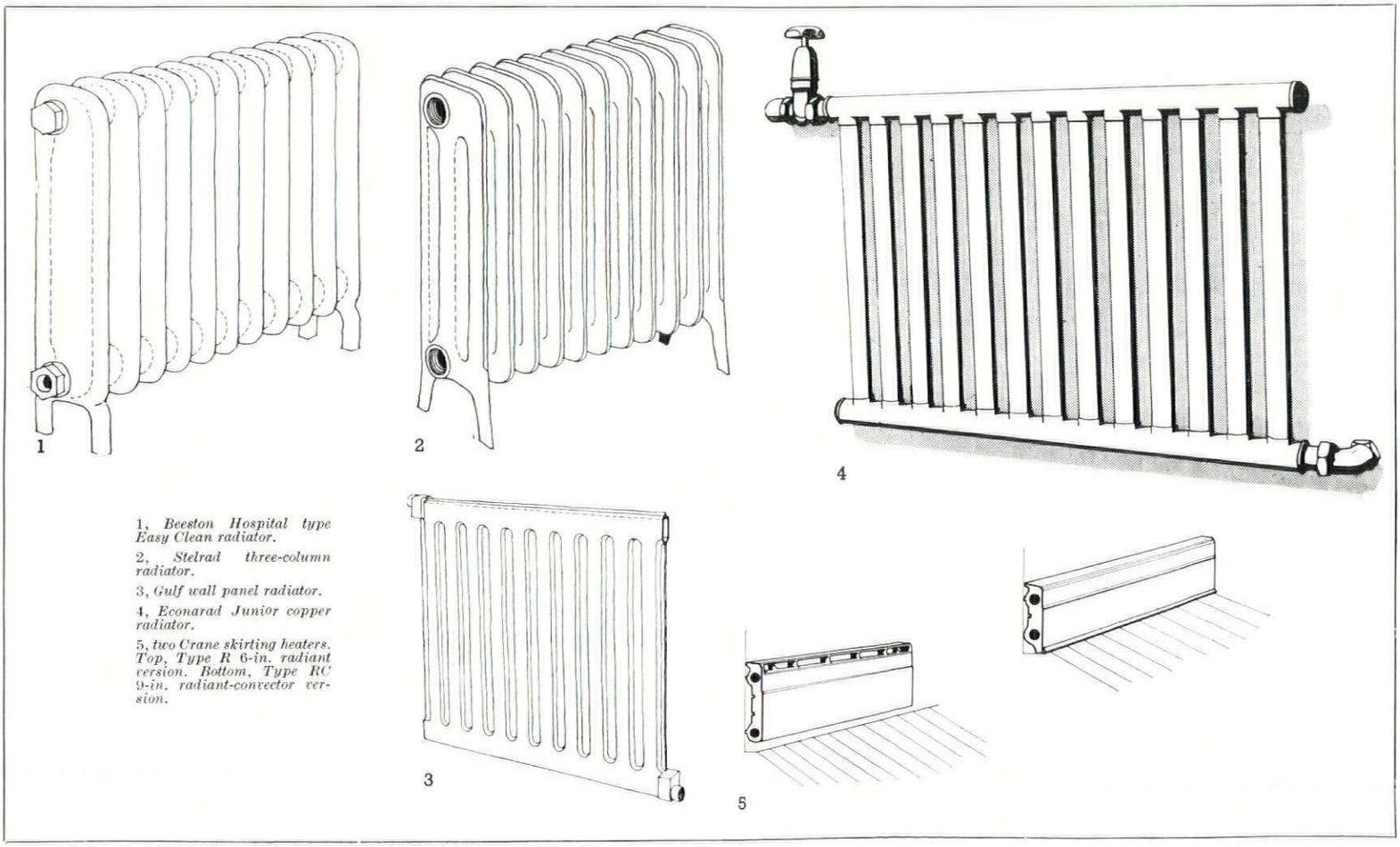


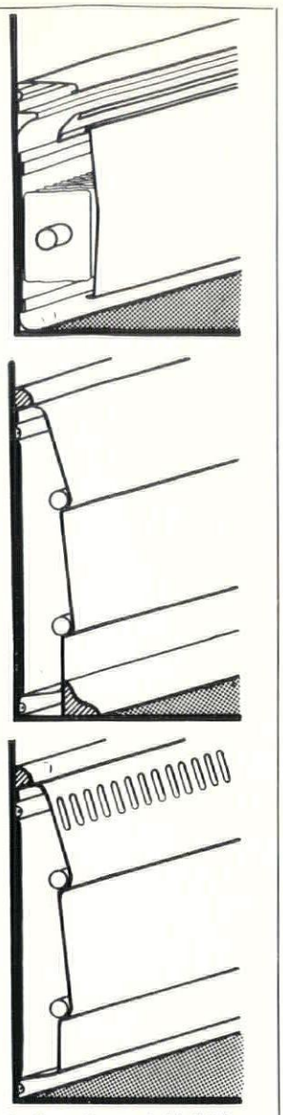
1, *Beeston Hospital type Easy Clean radiator.*

2, *Stelrad three-column radiator.*

3, *Gulf wall panel radiator.*

4, *Econarad Junior copper radiator.*

5, *two Crane skirting heaters. Top, Type R 6-in. radiant version. Bottom, Type RC 9-in. radiant-convector version.*



6, three Copperad Wallstrip skirting heaters. Top, Type C mainly convector version. Middle, Type R mainly radiant version. Bottom, Type RC radiant and convector version.

continued from page 146]

system can respond quickly to changes in the demand for heat. An exception to this is when the construction is used for thermal storage. Whether the floor is designed for thermal storage or not, the construction should include insulating materials which ensure that the heat is released in the right direction and not wasted; and care should be taken to select materials which have low thermal movement and neither crack nor discolour when subjected to temperature variations.

Underfloor heating systems do not differ greatly from one another and we therefore illustrate three only by way of example. The first is a hot water system which is marketed under the trade name 'Panelite' by Benham and Sons Limited, 8. Since the surface temperature of underfloor heating panels cannot be higher than 75°F or 80°F, there is often difficulty in providing enough heat by this means alone and, therefore, other supplementary means must be found. In some cases it might be convenient to provide this by other water heated sources, such as radiators or skirting heaters. This may create difficulties, however, as the water in these other sources would normally have to flow at a higher temperature than that in the underfloor pipes. To overcome this and at the same time to provide for expansion in the metal, 'Panelite' pipes are covered in an insulating sheath.

Illustration 9 shows a solid floor heated by 'Panelec' electric floor warming equipment. In this example the concrete slab is used to store heat and, therefore, insulation is only provided at the edges of the sheet where heat might be lost rapidly. It will be seen that the heating cables are contained in sheaths so that they can be withdrawn in case of fault. A number of other preparatory systems are available, some having cables that can be withdrawn and others, such as the 'Pyrotenax' system, in which the heating cables are cast permanently into the floor.

One very interesting development in underfloor heating has recently been put on the market by Heating Investments Limited, 10. The object of this is to diminish the time lag in thermal response which must always apply to any floor in which the element is laid on a screed. The method chosen is to cement aluminium foil to ½-in. expanded plastic insulating sheeting and to cement this in turn to the subfloor. The heating element is then laid in the foil and located between 2-in. hardboard strips. By this means the foil serves both as an insulant and as a means of evening out the heat. Three feet square aluminium alloy sheets are then laid over the hardboard and these in turn are covered with linoleum.

warm air systems

A method which can be used effectively as a part of whole house heating systems is that of heating and distributing air. The advantages of this method are that large quantities of air can be heated quickly, that the outlet temperature and velocity can be varied rapidly, and that the equipment is simple and cheap to install. On the other hand the surface temperatures and the mean radiant temperatures of an enclosure will be lower than the air temperature, circumstances which may cause discomfort. Warm air systems are essentially simple pieces of equipment involving a boiler (which may be of virtually any type), a heat exchanger and a fan. The boiler may also serve to heat the hot water, in which case you have to be careful to see that the space heating demand does not prevent your getting a hot bath when you want it. The heater cabinet may discharge air direct into the rooms, or it may discharge through ducts. Since this field of heating is characterized by a single piece of equipment which is of standard pattern and sells at a standard price, it is both possible and useful to quote actual prices for them.

Radiation Ductair was the first warm air whole-house heating system to appear on the market, 11. This was designed for the 4/5-bedroom house and units fired by solid fuel, gas, or oil are available. These have space heating ratings of 35,000–50,000 Btu/hr and the installed cost of the systems with water heating is £380–£550, the solid fuel and gas installations being the cheaper.

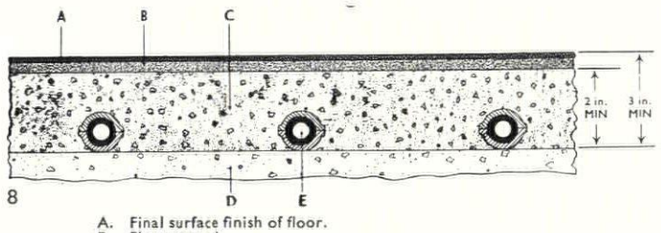
Recently the Ductair 20 giving a space heating output of 20,000 Btu/hr, suitable for the 3/4-bedroom house and fired by all three fuels, has been introduced at an installed cost (including water heating) of £190–£240.

Just introduced is the oil-fired space heater, the Ductair OS85, rated at 85,000 Btu/hr, and this is suitable for heating the large house, schools, churches, offices, shops, factories, etc.

A characteristic of all Ductair installations is that the warm air is discharged at low level and returned at high level, giving quick and very uniform heating.

Another ducted heater with its own heat source is the Halcyon F45 by William Sugg and Company Limited, 12. This is a gas-fired unit designed for building-in and, though it is only 17 in. by 12 in. square by 34 in. high, has a rating of 17,000 Btus. Well supplied with control equipment, it is called by the makers a 'selective heating unit' with reference to the ease with which the heat output can be directed to particular rooms. Prices vary according to the amount of ducting required, but an average figure is £100. Though it does not attempt to provide full heating to volumes greater than 3,500 cu. ft., mention must be made here of Radiation's 'Heatmaster.' This provides cooling, space heating and water heating from a single (solid fuel) source and the cost installed (including the hot water cylinder and all controls) is about £270.

Another long established firm to be concerned in whole house heating is Aga Heat who, after entering the space heating field with units of small rating for one or two rooms, now market a model, the 'Agavector Senior,' which, with a rating of 25,000 Btus, may be said to belong to the whole house heating class, 13. This differs from 'Ductair' units in that it comprises a heat exchanger only. It has no ducts and is designed for fixing into a storey height cubicle 2 ft. square on plan giving directly on to the rooms it is to heat. Heated by an Agamatic 30/80 (or boiler of similar rating) it is envisaged as part of a hot water heating system and it is suggested that the indirect cylinder can be fixed in the same cabinet above the heat exchanger. The price is £82 10s.



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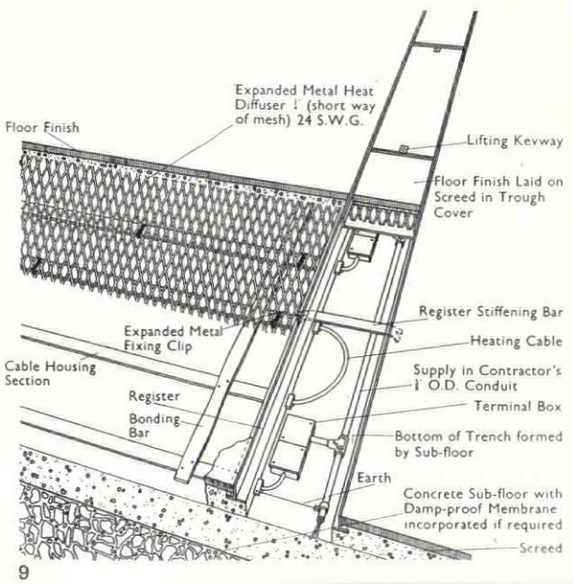
A. Final surface finish of floor.
B. Floor screed.
C. Ballast concrete to pass ¾ inch sieve.
D. Concrete base.
E. Panelite coil pipe with sheath.



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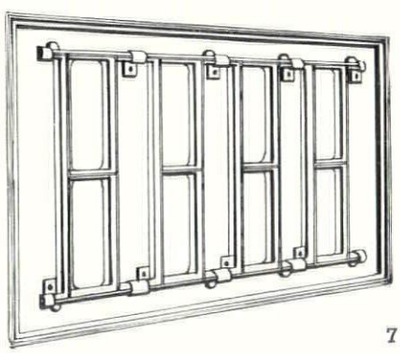
7, Ideal Rayrad panel No. 36 seen from the back.
8, Panelite hot water underfloor heating.
9, Panelec electric underfloor heating.
10, Heating Investments Limited's electric underfloor heating designed for quick thermal response.



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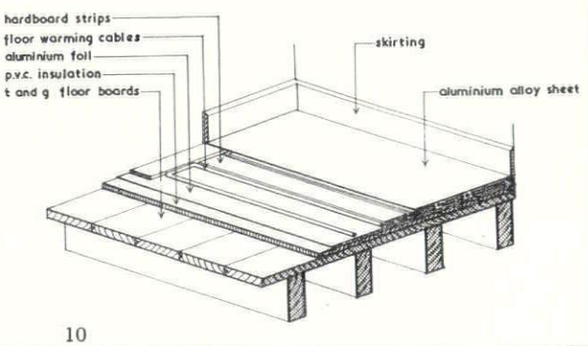

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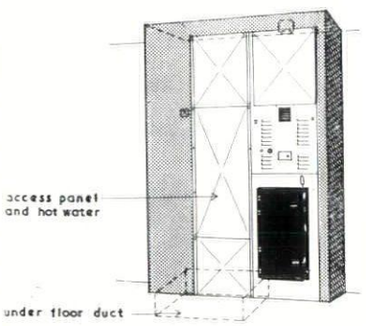
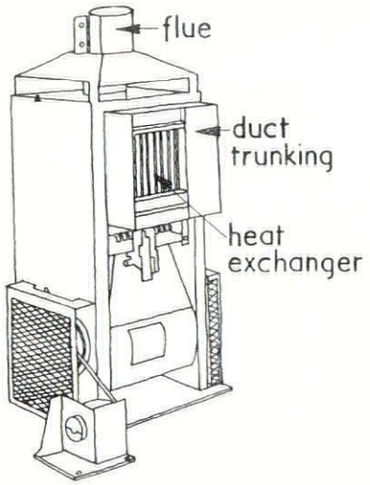
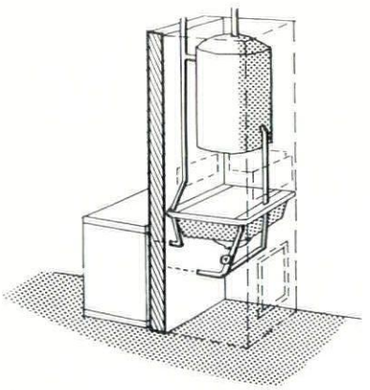


11, *Radiation Ductair whole-house heating unit.*



12, *Halcyon F45 gas-fired ducted warm air heater.*



13, *cut-away diagram of Agavector Senior heat exchanger with indirect cylinder installed in same enclosure.*

Similar both in scope and in its method of operating is the Janitor warm air heater cabinet. This can be bought either as a freestanding unit encased in a metal cabinet (i.e. for installing in existing buildings) or without a cabinet for building-in. It is made in two ratings: Model 3 at 25,000 Btus which sells at £71 and Model 5 at 36,000 Btus which sells at £77, both prices ex works.

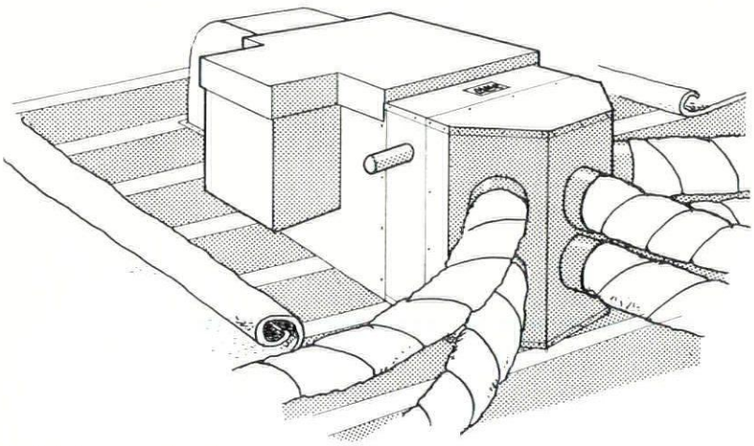
The Potterton warm air unit was developed primarily for bungalows; and comprises a heat exchanger and fan, a series of flexible ducts and an inlet duct and filter for recirculation, all of which are designed to rest on the ceiling rafters, 14. The unit operates off the hot water circuit and is made in two sizes: the 'Minor' with a rating of 17,000 Btus/hr. and the 'Standard' with a rating of 25,000 Btus/hr. The price for the Standard unit is £97, but to this must be added the price of the ducts and other accessories which in a house of average size would be of the order of £24.

Potterton warm air units are conceived as equipment which can be added to an existing system: 'Harton Units' marketed by Structural Services Limited are more comprehensive in their scope and can comprise not only the heat source, the fan and the heat exchanger, but the hot and cold water cylinders. This tendency to all-inclusiveness derives from the interest of this firm in the idea of packaged plumbing. There are two 'Harton Units': a solid fuel version rated at 33,000 Btus/hr. which sells for £236 and a gas-fired version rated at 60,000 Btus/hr. which sells for £257. Both of these prices include the cold water storage tank, the hot water cylinder and the associated plumbing and all equipment in both cases is housed in a steel frame occupying a floor space 2 ft. 7 in. by 2 ft. 3 in.

conclusion

With so embarrassing a choice before him, what is the architect to do? Is he to pursue the goal of intermittency to the extent that you 'switch' on the heat when you enter a house or a room and 'switch' it off again when you leave, expecting a response as instant as with the electric light? Against this there is the consideration that if a house is permitted to fall below a certain temperature there is always a danger of damp through condensation. To avoid this (as Sir Alfred Egerton pointed out) temperatures in a house ought never to drop below 50°F.

Another point which seems worth making in conclusion is the amount of heat which the architect can himself contribute, free, gratis and for nothing, by letting the sun into a building at the right time of day. One of the discoveries of the schools programme was that large uncurtained east windows let in an important amount of heat. Glass is diathermanous, letting in long wave radiations from the sun but stopping short wave radiations from within a room. For this reason (and despite its bad conductance characteristics) it can cause a considerable build-up of heat in an otherwise unheated room. If double glazing were to become general (and already there is a strong case for it), this factor will deserve more serious consideration.



14, *Potterton warm air unit.*

MANUFACTURERS

Aga Heat Limited, 20 *North Audley Street, London, W.1.* (*Mayfair* 8454.)

Beeston Boiler Co. Ltd., Beeston, Nottingham. (*Beeston* 54271.)

Benham and Sons Limited, 66 *Wigmore Street, London, W.1.* (*Hunter* 4422.)

Copperad Limited, 1 *York Street, London, W.1.* (*Welbeck* 1226.)

Crane Ltd., 15–16 *Red Lion Court, Fleet Street, E.C.4.* (*Fleet Street* 6511.)

Econa Modern Products Limited, Aqua Works, Highlands Road, Shirley, Birmingham, 11. (*Acocks Green* 2211.)

Gulf Radiators Ltd., 229 *Regent Street, W.1.* (Regent 1051-6.)

Heating Investments Limited, 45 *Church Crescent, London, N.3.* (*Finchley* 2743.)

Janitor Boilers Limited, Vale Road, Camberley, Surrey. (*Camberley* 2471.)

Panelec (*Great Britain*) *Limited*, 21 *Bloomsbury Street, London, W.C.1.* (*Langham* 4234.)

Thomas Potterton Ltd., Cavendish Works, Buckhold Road, Wandsworth, S.W.18. (*Vandyke* 7202.)

Pyrotenax Limited, Hedgeley Road, Hebburn-on-Tyne, Co. Durham. (*Hebburn* 83–2244.)

Radiation Group Sales Limited, Warm Air Division, 10 *Mortimer Street, London, W.1.* (*Langham* 7541.)

Steel Radiators Ltd., Stelrad Works, Bridge Road, Southall, Middlesex. (*Southall* 2603.)

Structural Services Limited, Gas Division, 2 *Harton Street, London, S.E.8.* (*Tideway* 5412.)

William Sugg and Company Limited, 67–73 *Regency Street, London, S.W.1.* (*Victoria* 3211.)

THE INDUSTRY

Foamed Polystyrene

One of the newer plastics (to the architect anyway) is foamed polystyrene. Its outstanding characteristics are: a very light weight (2 lbs. per foot cube) and low thermal transmittance (U=0.22). British Resin Products now market this material under the name Distrene X and they have issued a brochure in typescript that is entirely free of 'advertising.'

It is a technical description of manufacturing methods, thermal properties, mechanical properties, methods of bonding to wood, metal and glass and, very briefly, an indication of uses, as insulation for refrigerators, pipes, etc.

In fabrication, the 'raw' material is put into moulds after heating. It contains a 'blowing agent' which, on further heating, comes into spectacular action by expanding the material to 65 times its original volume, thus filling out the mould.

The finished product has an impervious skin and an interior structure of closed cells so that it is unaffected by contact with water. Sheets of this strange material can be cut with a saw—or a hot wire with a low voltage current. Or it can be moulded and bent in a press at about boiling water temperature.
British Resin Products Ltd., Devonshire House, Piccadilly, W.1.

Roof Insulation

It was not until BRS began its heating research, in pursuit of the government's fuel saving policy after the war, that industrialists realized what they had been wasting. The insulation of factory roofs in particular showed such spectacular savings—often the cost of post facto insulation could be saved in less than 4 years—with a continuing saving in smaller boiler plant and lower running costs.

But insulation of an existing building is not always easy, it may entail fiddling work and disturbance to processes going on in the building. Now a new advertising leaflet describes a method of adding another skin *outside* the existing roof. Timber battens are laid on the existing sheeting over the purlin lines. Between these a glass fibre blanket is fixed and over this a new layer of asbestos sheeting. This is first screwed down into the battens and then standard roofing bolts are fixed right through both old and new sheeting.

The company has worked out methods of dealing with verges, ridges, eaves and rooflights.
Universal Asbestos Cement Manufacturing Co. Ltd., Tolpits, Watford, Herts.

Gas Heaters

The conversion of coal into heat by gas is more efficient than by electricity—and thus less costly. But electricity is cleaner and more flexible to employ. The fatuous competition with itself waged by the nationalized fuel and power industry is a fairly even contest except that gas has the disadvantage of special care over fire danger and ventilation to clear carbon monoxide—especially difficult with overhead heaters. Nevertheless, gas units up to 70,000 BTU per hour input find extensive use and a recent booklet brings the various types together in fairly systematic presentation. Opening pages discuss advantages, limitations, precautions, methods of designing installations, heating characteristics, etc., in a way fairly sensible for the architect—with tables

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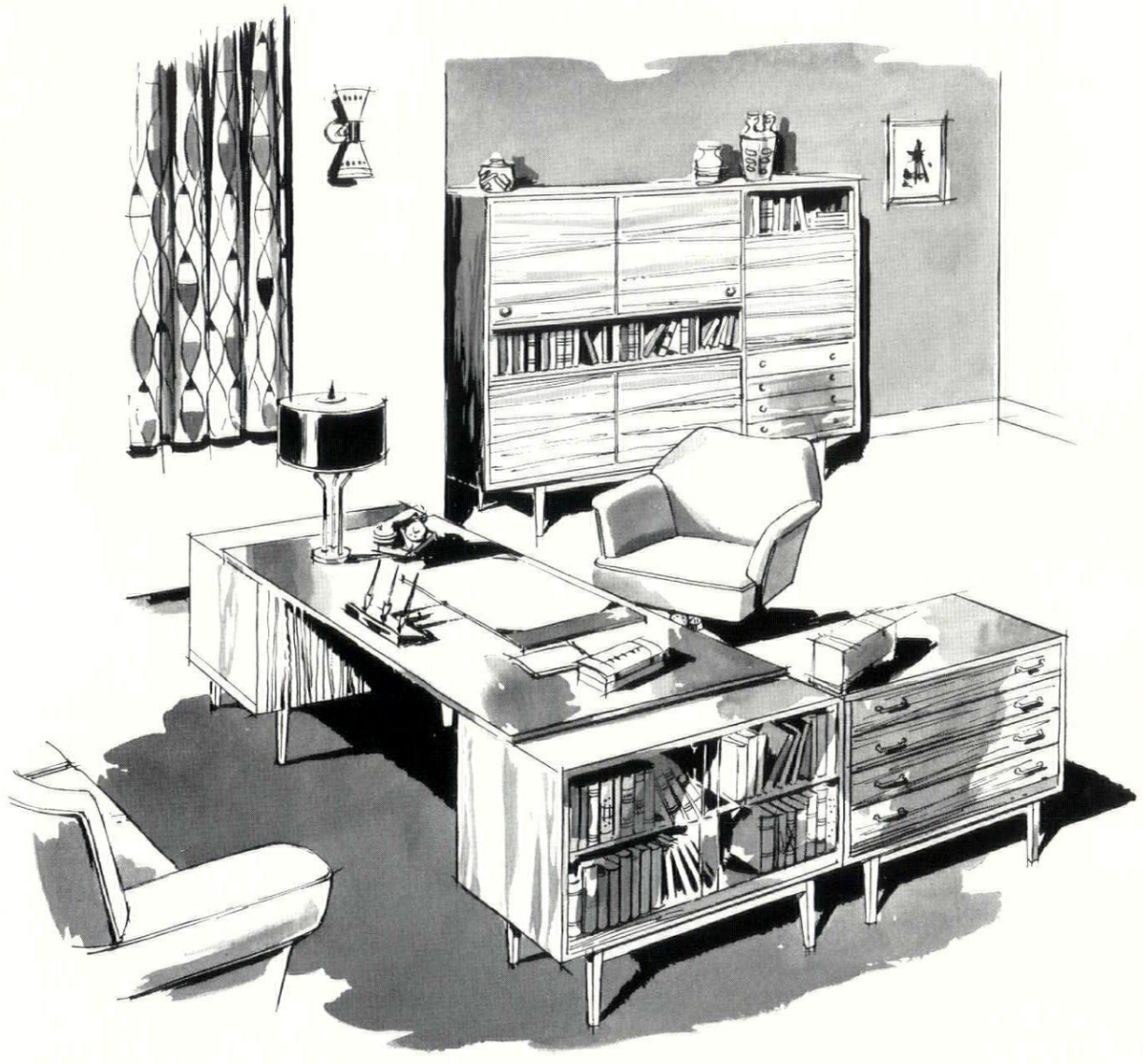

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continued from page 148]

of output related to area and mounting height.

Part II of the booklet consists of information sheets of seven types of heater, with photographs, dimensions, and sectional drawings of each. The booklet, to BSS size 8¼ in. by 5½ in., is produced by *Bratt Colbran Ltd.*, 10 *Mortimer Street*, *W.1*.

Silkscreen Tiles

The silk screening of ceramic tiles is not a new process and most repeating pattern tiles are produced in this way. What strikes the eye in thumbing through H. R. Johnson's catalogue is the departure from the accepted or normal conventions of tile decoration, most of which are based on pre-silk screening techniques; e.g., the geometric repeating pattern that we know so well from a hundred chipped childhood fireplaces. These tiles enjoy the freedom of the techniques and could as well be wallpaper or any other printed surface. The ever present problem of repetition of pattern is skilfully got over by the use of a small-scale pattern which in itself is not symmetrical so that when multiplied over a large area and used in different positions (i.e. pattern vertical or on its side) the total effect is one of life and variety and rigidity. The patterns themselves are pleasant enough and it would have been nice to know the designer's name. The brochure is very well handled. It is in colour and shows a detail of the tile together with the effect of many tiles and variations in colour. Clear and concise.

H. and R. Johnson Ltd., Stoke-on-Trent.

Sealing for External Walls

Sealing compounds for external walling materials that are impervious to water have had a troubled history. There have been cases where whole façades have required stripping out and resealing because manufacturers' claims proved unreliable—and BRS, who might otherwise help, are hamstrung by not being able to recognize any product by its trade name and by the difficulties involved in accelerated weathering tests.

With these cautions I write of a new compound marketed by Farmiloes, the paint people. It is based on Butyl—a synthetic rubber and is made in strips, sheets and 'U' section gaskets.

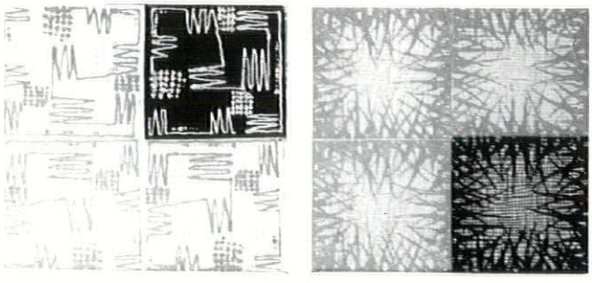
It is called BRR 1304 and three claims are made for it. First, that it is extremely durable and chemically inert, second, that it does not go solid and third, that it is ferociously adhesive to pretty well any dry surface.

In manufacture the material is treated with a coating to keep its adhesiveness out of action and thus simplify storage and handling. On the site, or in the workshop it is brushed with a solvent such as white spirit which releases its adhesiveness—and then applied. Adhesion reaches its most determined degree after 2 or 3 days.

Two kinds are made: 'uncured' (or soft) and 'composite'—which is a hard core of cured BRR 1304 covered by a layer of the softer material. Strips are made from $\frac{1}{32}$ in. to $\frac{1}{2}$ in. thick and from $\frac{1}{4}$ in. to 4 in. wide—available in both forms.

One hopes that the claims made are justified. The inclusion of a BRS test in the advertising brochure would nourish hope more than anything.

T. and W. Farmiloe Ltd., Rochester Row, S.W.1.



1, two examples of asymmetrical silk screening of ceramic tiles, one of each being depicted in black to clarify the design.

Double Glazing

The same company—Farmiloe's—are also selling a Belgian sealed double glazed unit. The edge consists of a metal channel, labelled as 'lead' in the catalogue, fixed to the glass with a patent metal-to-glass bonding material. Units are evacuated and filled with dehydrated air before sealing, during manufacture.

They can be made in double, triple or even quadruple units—the latter being more appropriate to refrigerated cabinets than buildings. Almost any type of glass can be used and spacings between $\frac{1}{4}$ in. and $\frac{1}{2}$ in. are listed, all units being made to order. The company offers a guarantee for five years against condensation or the penetration of dust into the innerspace—provided the units are installed in accordance with their instructions. They claim a sound reduction of 40 to 50 decibels with double glazing—about twice that of single sheet glass.

The catalogue reads as though it were a straight translation from the French (? or Flemish) and so does not quite answer all the questions one has—particularly questions of price. Many architects have found that the similar units marketed in this country are so costly that fuel economics does not always justify them.

One might note in passing that BRS does not seem to attach so much importance to the sealing of double glazing that we once thought to be so important.

T. and W. Farmiloe Ltd., Rochester Row, S.W.1.

A Dutch Coke Boiler

A Dutch coke boiler with the homely name of Redfyre Emma is now available in this country, being made under licence by Newton Chambers. It is made in three main types ranging from 240,000 to 6 million Btu per hour rating. Efficiencies of 85 to 90 per cent are claimed for this hopper type boiler in which the flue gases are blown from the firebed into a secondary combustion chamber fed with preheated air and thence to a final heat exchanger. The brochure is unusual in quoting approximate prices. For example the 240,000 Btu is £730, the 1 million Btu is £1,160.

Newton Chambers and Co. Ltd., Thorncliffe, Sheffield.

[continued on page 152



another attractive carpet design by CARPET TRADES CONTRACT SERVICE

One more proof of successful co-operation, with client, architect and carpet manufacturers meeting for personal discussion and consultation. Carpet Trades Ltd. offer this specialised service to all their contract clients. The carpet installation shown here, produced exclusively for Royal Mail Lines, is in the 1st class dining room of *R.M.S. Andes*. The carpet, designed to the specification of the architect, is in 'Sentinel', another high quality fine woollen Wilton, with a striking modern design on a tan background. (Goods are supplied through normal trade channels only).

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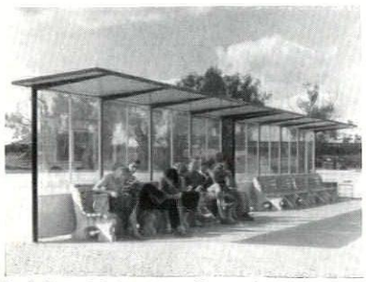
continued from page 150]



2, *structural aluminium portal frames.*

Structural Aluminium

The two significant characteristics of structural aluminium (low weight apart) are its low elastic modulus and its high cost (relative to steel). In design they betray themselves in wide attenuation of sparely used material—the built-up rather than the monolithic member. But the portal frames of a recent works canteen, illustration 2, seem to deny these effects. The box sections have ¼-in. flanges and 12-gauge sides of Noral B 51 SWP alloy, pop riveted together with internal diaphragm stiffeners at 2-ft. centres. A compressed straw slab roof deck is supported on 5 in. by 2½ in. bulb channel purlins. For some reason the clerestory is constructed in reinforced concrete. This slightly puzzling building was designed by Louis de Soissons, Peacock, Hodges and Robertson; engineer: R. T. James. Structural contractors: Aluminium Alloy Fabrications Ltd.



3, *shelter with 20 gauge alloy roof.*

Another venture in the same material is for roadside shelter roofs, 3. The verticals, cantilevers and panels are in steel with a 20 gauge alloy roof, which saves weight and eliminates painting.
Designer: D. R. Mellor. The shelter has been approved by the COID—but surely not the seats!
Northern Aluminium Co. Ltd., Banbury, Oxon.

Steel and Asbestos Sheeting

Future architectural historians—if they ever come to view architecture functionally—should allot a significant place to the corrugated iron (and later asbestos) sheet of the between the wars period.

Since then, sheeting has climbed socially and now we have a curious marriage in 'colour Galbestos'—a steel sheet galvanized both sides as an adhesive for asbestos felt. This is bitumen impregnated and then a final veneer of culture is applied—colouring of red, grey, buff or green.

This form of composite sheet is made in FVB, Box Rib W or Box Rib R sections and can be part of the Q panel or deck system of insulated cladding.

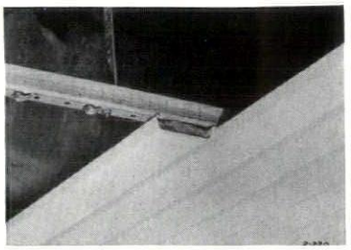
A new catalogue shows, besides the colours, fixing details at ridge, gable, verge, patent glazing and gutter, etc. But it says nothing about price.
Robertson Thain Ltd., Ellesmere Port, Wirral, Cheshire.

Acoustic Ceiling

A Danish type of acoustic ceiling is to be marketed in this country by Hurseal Ltd. in association with Avery's, the blind makers.

It consists of long narrow strips of trough section finely perforated aluminium alloy—the flange edges of which both point the same way. This allows the strips to be hooked over lugs which project from the bottom of channel section supports. One advantage claimed for this method is that the supporting channels need not be fixed at exactly regular spacing, a feature which comes into its own with existing buildings, and makes for speed of erection.

Strips are made in any length—or in short lengths to form a kind of 'parquet' floor pattern—they are filled on the topside with mineral wool absorbent and finished in stoved enamel to specified colours and the Danish company has worked out various kinds of edge treatment. The new company to be formed by Hurseal and Avery is to supply and erect at first Danish, but later British made material.
Hurseal Ltd., 229 Regent Street, W.1.



4, *perforated aluminium trough section of acoustic ceiling.*

Factory Heating

The main problems in heating factories are first that there is a great deal of air and probably a high air change rate, secondly that heater units must not obstruct machines or other service lines—which is not always easy to manage, especially where planning changes may occur as

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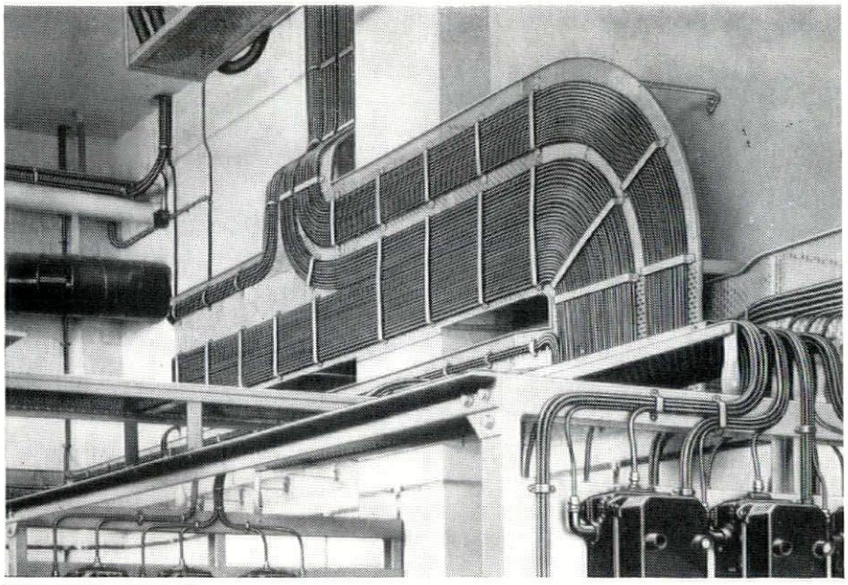

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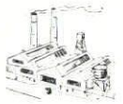

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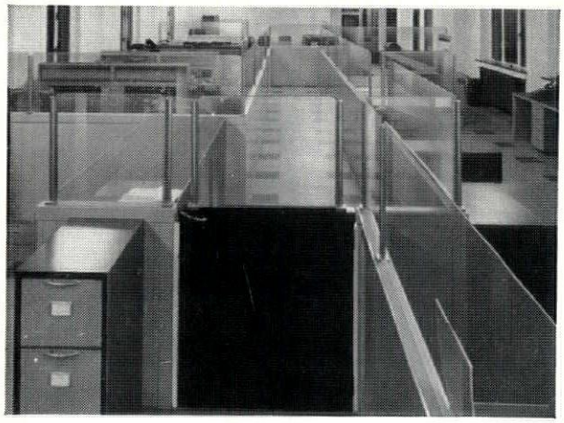
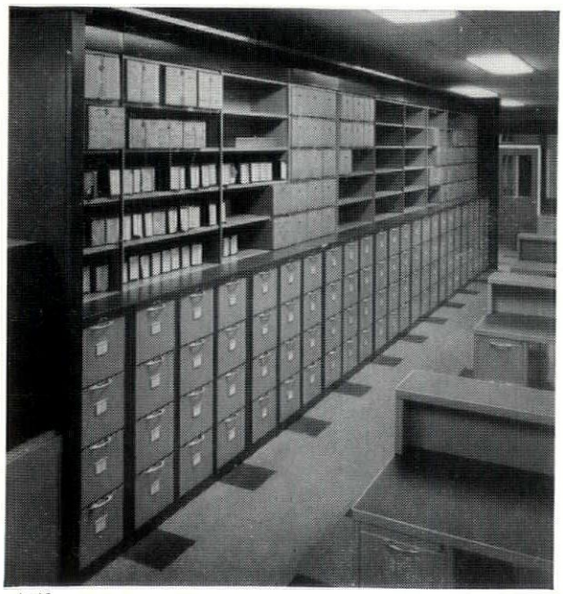
Westminster Bank Limited, Overseas Branch; Threadneedle Street, E.C.
Architects: S. F. Everson and D. F. Searles, A/A.R.I.B.A.





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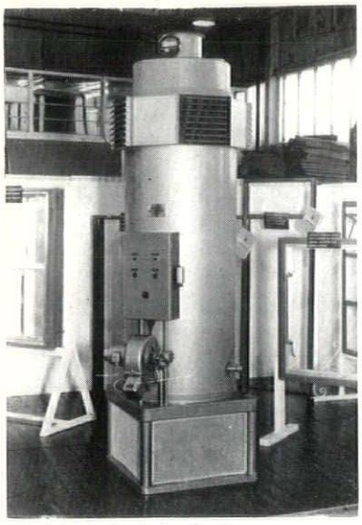


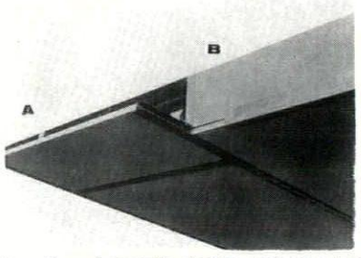
5, unit heater for factory heating.

production processes alter. One solution that is being used to an increasing extent is the large unit heater. Some of these are truly gigantic in output—over 1 million Btu per hour in the form of hot air.

John Thompson Beacon of window fame have produced one with an output of nearly 600,000 Btu. It is direct oil fired model, the heat exchanger of flue gases to air being in the form of a spiral 'bundle' of tubes. An efficiency of conversion of 87 per cent is claimed using 40 seconds oil and a 2 h.p. motor which pushes the air out at the rate of 320,000 f.c. per hour with a temperature of 122°F. There are automatic controls for safety and to delay starting of the fan until the exchanger has warmed up. Height 11 ft. 3 in., weight 12 cwt.
John Thompson Beacon Air Heaters Ltd., Wolverhampton.

'Do it yourself' Insulation Method

It is rather strange to find the 'do it yourself' movement entering, so to speak, the building industry. This is the claim made for a method of insulating factory roofs—presumably because the factory workers can 'do it themselves' in slack periods or weekends. The method consists of a framework of H sections in metal, along the top flanges of which are a number of sliding clips. Into these are hooked metal strip hangers which are bent by hand over the purlins. In the illustration, A shows a cut-away section through the run of sheeting, and B one of a selection of trimming angles to finish off an area. The H section is made in various depths to fit tightly over various types of insulating material. Those mostly used are $\frac{1}{2}$-in. fibre board and $\frac{3}{8}$-in. foil backed plasterboard.



6, section of acoustic sheeting and trimming angle.

The Phoenix Timber Company Ltd., Frog Island, Rainham, Essex.

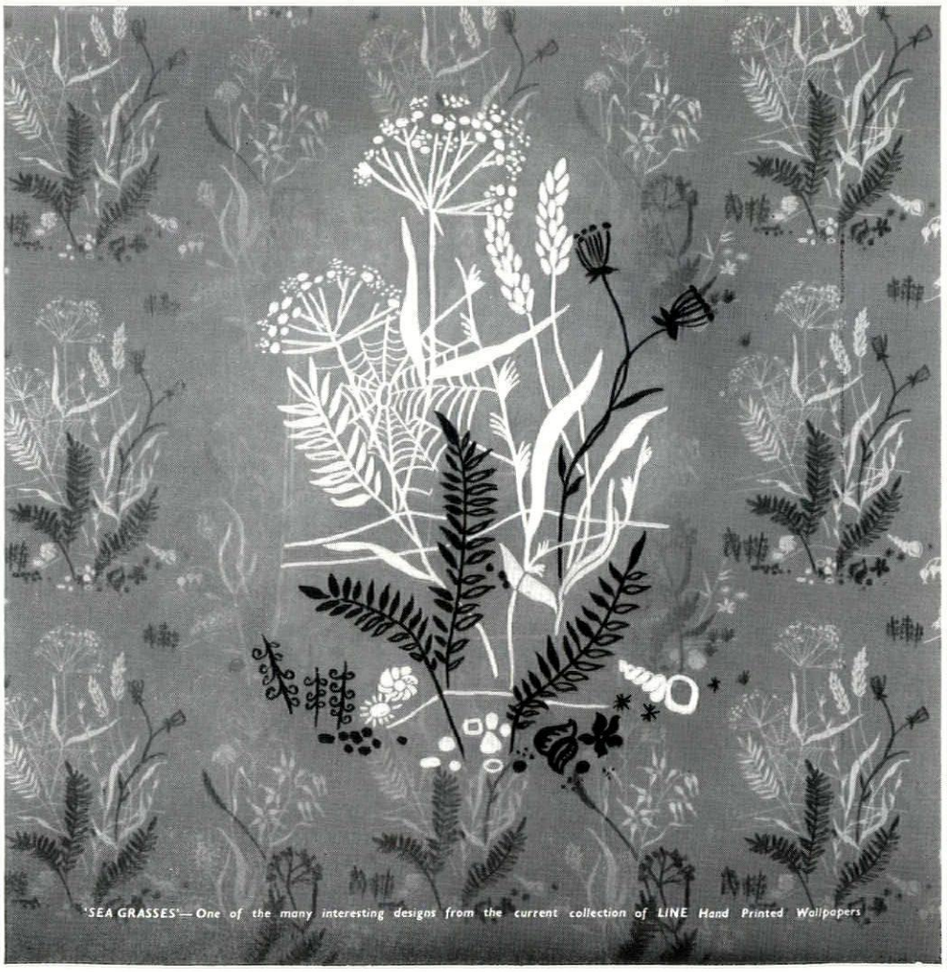
CONTRACTORS etc

Musgrave Park Hospital. *Architects:* Richard Llewelyn Davies in association with Samuel Stevenson & Sons. *Main contractor:* Wm. Logan & Sons. *Sub-contractors: Heating installation:* Frenger Ceilings Ltd. *Light fittings:* Frederick Thomas & Co. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Sanitary fittings:* Dent & Hellyer Ltd. *Ironmongery:* Alfred G. Roberts Ltd. *Lino flooring, tanking and roofing:* The Neuchatel Asphalte Co. *Autoclaves:* Manlove, Alliott & Co. *Bedpan washers:* Sumerling & Co. *Hot air ovens:* Laboratory Thermal Equipment Ltd. *Sterilizing sinks:* James Stott & Co. *Facing bricks:* The Northern Brick Co. *Metal windows:* Crittall-McKinney Metal Window Co. *Cubicle curtain track:* Roanoid Ltd. *Window curtain track:* Silent Gliss Ltd. *Paints:* Hadfields (Merton) Ltd. *Plastic domelights:* Williaam J. Cox Ltd. *Beds, overbed tables:* S. B. Whitfield & Co. *Lifts:* Evans Lifts Ltd. *Autoclaves:* Sierex Ltd. *Blinds:* James Anderson Ltd. *Tables, chairs:* Finmar Ltd. *Chairs:* Teeta Ltd. *Bedside lockers:* Remploy Ltd. *Signalling system:* Gent & Co. *Light fittings:* The Merchant Adventurers of London Ltd. *Terrazzo:* Apuana Marble Industries Ltd. *Anglepoise lamps:* Herbert Terry & Sons. *Plumbing installation:* Wm. Coates & Son. *Electrical installation:* A & C Electric Ltd. *Clay tiling:* W. D. Hendersons Ltd. *Air conditioning:* Miles-Ashanco Engineering Co. *Paints:* Montgomerie Stobo & Co.

House near Hythe. *Architect:* James Williams. *General contractors:* P. Charlier and Sons. *Sub-contractors: Bricks:* Ashford and Naccolt Co. *Sanitary fittings:* Adamsez Ltd. *Heating:* Aga Heat Ltd. *Radiators:* Steel Radiators Ltd. *Hardware:* Alfred G. Roberts Ltd.

Factory at Wakefield. *Architects:* R. J. Mock and R. E. Enthoven. *General contractors:* Fell Construction Co. *Sub-contractors: Electrical installation:* F. H. Wheeler Ltd. *Heating:* Sulzer Bros. Ltd. *Roofing:* Roberts on Thain Ltd. *Steelwork:* S.G.B. Ltd.

Offices for British Olivetti Ltd., Berkeley Square, London, W.1. *Designers:* Misha Black and John Diamond. *General contractors:* F. G. Minter Ltd. *Metal partitioning:* The Ayrshire Dockyard Co. *Lighting fittings:* Atlas Lighting Ltd. *Acoustic ceilings:* Horace W. Cullum Ltd. *Travertone ceiling tiles:* Armstrong Cork Ltd. *Cupboard units:* Rippers Ltd. *Meeting room table:* Andrew A. Pegram Ltd. *Door furniture:* Alfred G. Roberts Ltd. *Plastering:* Jonathan James Ltd. *Decorations:* F. G. Minter (Decorations) Ltd. *Ventilation:* Ellis (Kensington) Ltd. *Paint:* Hadfields (Merton) Ltd. *Carpets:* Taylor and Marr Ltd. *Plants:* Flower House Ltd. *Mosaic:* Art Pavements and Decorations Ltd.



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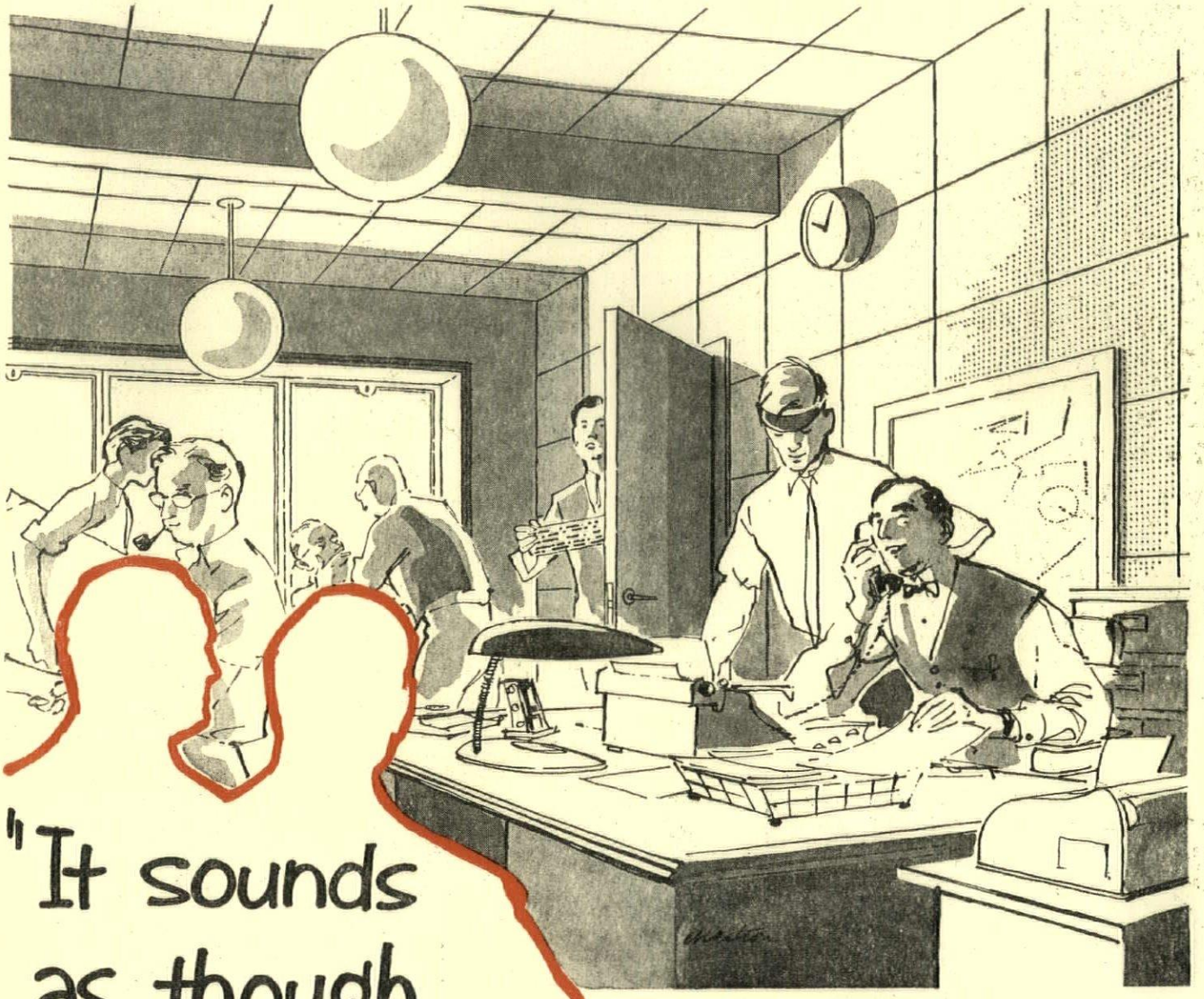

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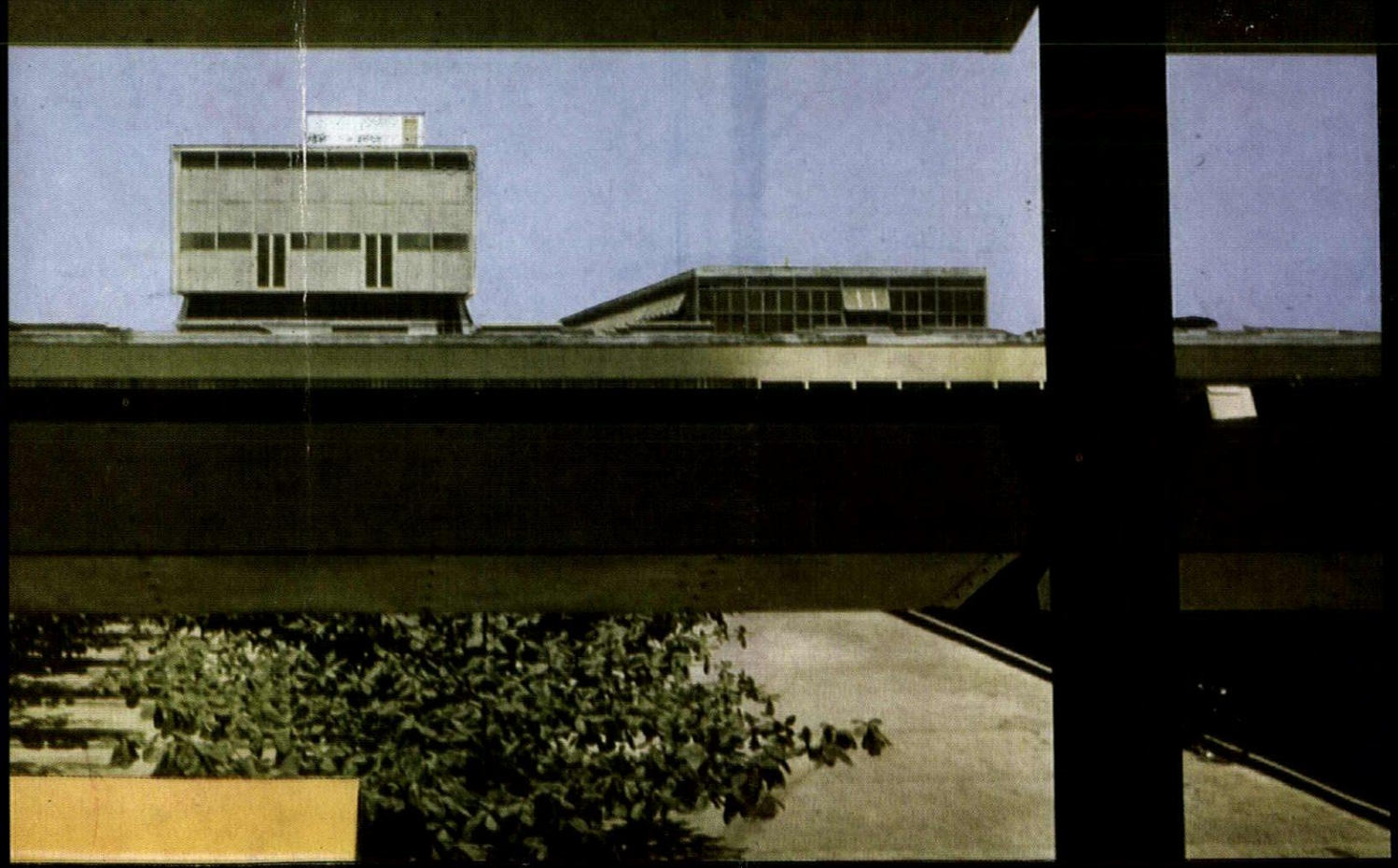

THE ARCHITECTURAL REVIEW VOLUME CXXV NUMBER 746 MARCH 1959 FIVE SHILLINGS

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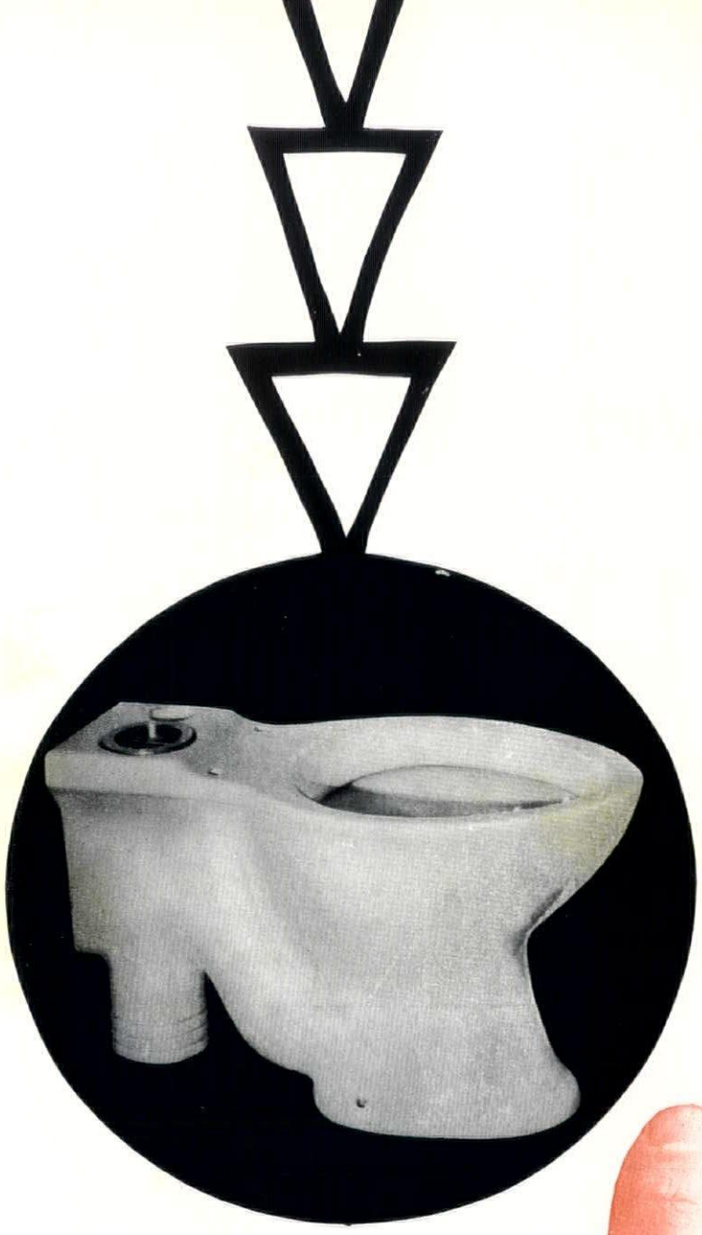

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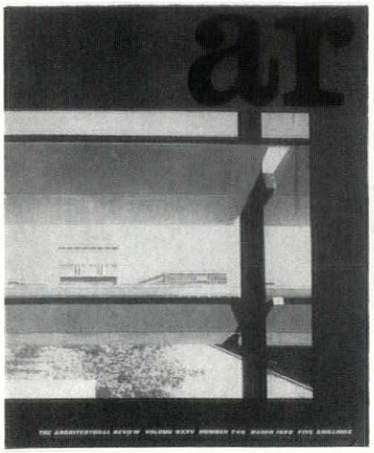

This Month's Cover shows a view through the sunshades of the administration building of the Burma Pharmaceutical Laboratories, Rangoon, looking towards the grinding tower of the main production block. This enterprising and ingenious design by James Cubitt and Partners was previewed in the AR for November, 1955, and its completed state is illustrated and described on pp. 188–192 of this issue.

Directing Editors	J. M. Richards Nikolaus Pevsner H. de C. Hastings Hugh Casson
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THE ARCHITECTURAL REVIEW
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CORRESPONDENCE

Origins of 'Functional'

To the Editors.

SIRS,—In the course of recent research into architectural theory of the first quarter of the present century, I have been very struck by the absence of both purely functionalist conceptions, and the words associated with them. In particular, the word 'Functional' is conspicuously missing from the books and lectures of the period, and seems not to have made any consequential appearance in print until Alberto Sartoris's book *Gli Elementi dell'Architettura Funzionale* (1932) where the word is attributed to Le Corbusier, and a passage is quoted from a letter he wrote to Sartoris while the book was in preparation, suggesting that he should use 'functional' instead of 'rational,' which had been the common Italian usage up till that time. The word seems to have been a new one in Le Corbusier's vocabulary at the time too, and yet I am assured that it was in use in England in its accepted meaning by the late 'Twenties.

I would be interested to hear from any readers who can shed light on the earliest use of the word, and give dates for its occurrence in print or in speech before 1932.

Yours, etc.,
REYNER BANHAM.
9 Queen Anne's Gate,
London, S.W.1.

Death of a Monument

To the Editors.

SIRS,—Thank you for your article on the collapse of the Campanile. This particular sentimental Anglo-Saxon always cherished the belief that the fall was caused by successive generations of caretakers hacking extra accommodation out of the ground-floor walls.

Yours, etc.,
EDWARD SAMUEL.
Highgate, London, N.6.

[The Editors add: the version of events given in AR, November, 1958, is based on the very full account given by that unsentimental Anglo-Saxon Horatio Brown, who was present in Venice at the time. His report may be found in AR, November, 1902, page 163ff., and although it mentions the holes, etc., made in the base in connection with the buildings that were later removed, it distributes the main blame between failure of the mortaring, the elements, and 'meddling' with the Loggietta.]

Projected Solent National Park

To the Editors.

SIRS,—I was very glad to see that you are supporting the above scheme. Already the Hampshire County Planning Authority have declared a ten-mile-wide green belt and are opposing an application for permission to build at Bucklershard.

There is one aspect of the scheme, however, to which I would draw your attention: at the south-west

end of the Solent there is a shingle spit leading to Hurst Castle. Within its protection is the long line of muddy banks, colonized by *Spartina* grass, which are one of the main features of the Solent shore. This shingle spit is moving inland under the influence of the sea at a rate, I am told, around one yard a year. About thirty yards from the bank's present position is a creek parallel to the shingle. Eventually, if no steps are taken to prevent the shingle from drifting into this creek, the spit will be breached. At a guess this will mean the rapid erosion of the mud banks with far-reaching consequences, possibly as far as Calshot.

Are the proponents of the National Park scheme aware of this danger?

Yours, etc.,

CHRISTOPHER PERRATON.

Havant, Hants.

MARGINALIA

Milan Displayed

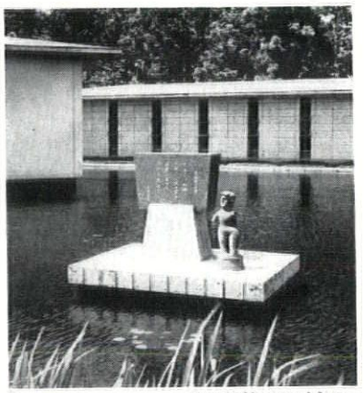
The visitor to Milan who wished to study its modern architecture has hitherto had to rely for directions on (*a*) a nose for style that would tell him whether the bus was passing through a district that tended towards, rather than away from modern (a less reliable guide than when Corb-hunting in Paris) or (*b*) access to an up-to-date copy of the 'Rogers Map,' which was not always to be had, or (*c*) the dubiously-good offices of certain curious expatriates who used to be found hanging around the refectories of student hostels.

These fallible guides have now been replaced, and not before it was time, by an illustrated year-book entitled *Milano Oggi*, edited by Gio Ponti with a multilingual text, and available in England from Tiranti at 18s. 6d. This gives, and should always give, photographs of the outstanding modern buildings, interiors, etc., together with the architects' names and the streets in which they are located, and backed up by some sketch-itineraries that could, with profit, be made more detailed and more map-like in future years.

The economics of annual publication clearly require that *Milano Oggi* serve not only as a guide to take with you, but also as a souvenir to bring back for your files, and for this function it also contains some evocative illustrations of ancient monuments and a record of the current news of art, theatre and sport—the last represented not by car-racing at Monza (currently a sore point!) but by 'the invincible Ribot.' This section also includes two pages on the Museum of Science and Technology, where there is a model embodying Leonardo da Vinci's *pensieri* on architecture and town-planning, 1, that deserves to be more widely known.

Taniguchi Memorials

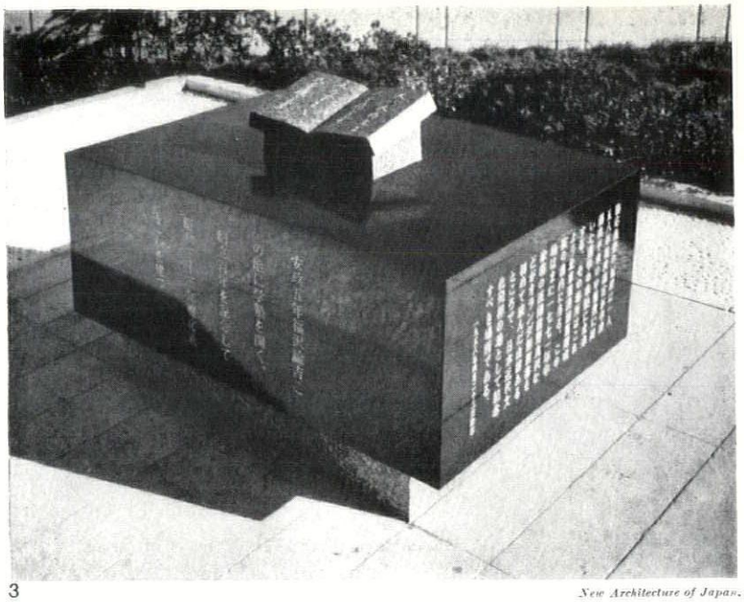
Another example of the way in which Japan is taking over from Italy in providing leadership in those minor, but not necessarily insignificant, architectural tasks on which the masters of the modern movement have given insufficient guidance, is afforded by a group of



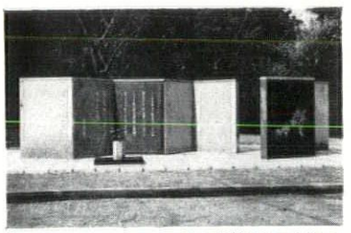
2 *New Architecture of Japan.*

memorials designed over the last few years by Yoshira Taniguchi. These comprise a hall, dedicated to the memory of Toson Shimazaki the novelist, at Komoro; a monument to Nobu Koda, who devoted her life to pioneering western music in Japan, and three of even greater cultural or symbolic interest, even to Western eyes.

These are the Memorial for Oto-Tachibana-Hime, the Alcestis of Japanese legend, a slab and a statuette in archaic form, 2, situated appropriately in a pool, since she drowned herself to save her shipwrecked husband; the centennial monument for Keio University, 3, a memorial stone surmounted by a carved book, two symbols that have worn flat in Western usage, but not here; and the memorial for the doctor-poet, Mokutaro Kinoshito, 4, at Ito, in the form of a folding screen and vase.



3 *New Architecture of Japan.*



4 *New Architecture of Japan.*

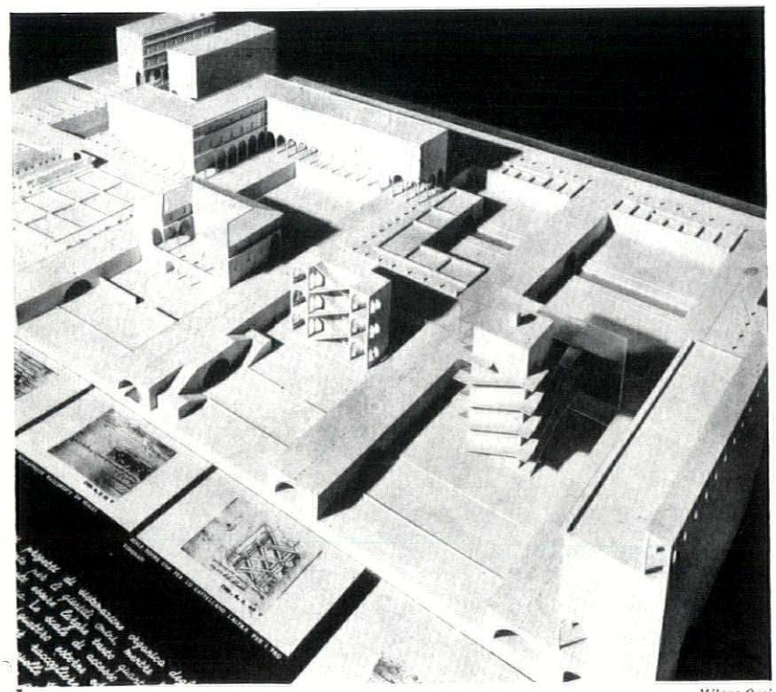
Not the least impressive aspect of these works of piety is that their programmes involved, over and above the purely memorial functions that Western architects seem to find embarrassing enough in themselves, further factors that would have rendered that embarrassment too acute for design to proceed in many cases. Thus, the monument to Oto-Tachibana-Hime adjoins the club-house of a golf-course overlooking the coast where she drowned (English architects might consider, for comparison, the task of memorializing Lady Godiva at an equivalent site in the Midlands) and beneath the vase of the doctor-poet's memorial are buried his stethescope and fountain-pen—yet Western architects can scarcely lay up so time-honoured and tradition-loaded an object as a regimental colour without losing their nerves and reverting to half-baked historicism. *Verb. sap.*—there is no need to spread embarrassment further by spelling out the obvious conclusions in words.

Horse-shoe Plan Hotel

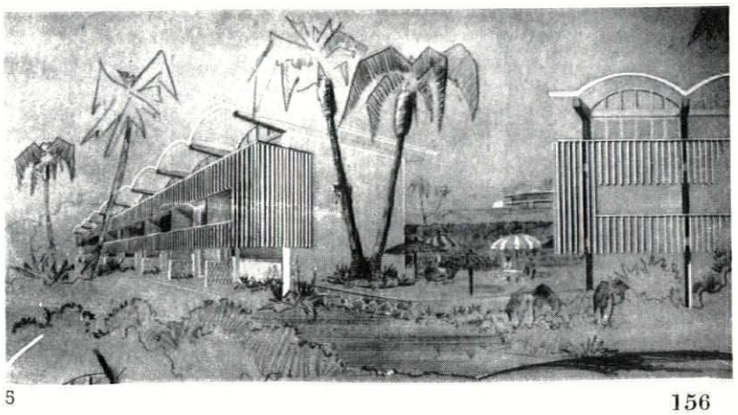
Hotels Fabulous tend to stand up tall and advertise their presence—the Hilton chain seem to have established an unbendable precedent for this—and the low build and scattered structure of the *Boucaneer*, on the Gold Coast of Jamaica, 5, comes as something of a surprise in this context. However, the site overlooking Montego Bay suggested the exploitation of all round views, the climate suggested maximum Trade-Wind ventilation and an anticipated holiday-making, rather than business-pursuing, clientele suggested low-density accommodation (and low local labour costs probably took the worst edge off over-long staff circulation systems). In the upshot, the architects, Slater and Chait, of New York, have grouped the guest rooms in four blocks of three storeys each, laid out in a rough horse-shoe plan, with dining-rooms, and so forth, in a separate, circular structure between the arms of the horse-shoe.

Reece Winstone

Mr. Reece Winstone is a photographer. His name is familiar to many from his letters to *Country Life*, everyone of them accompanied by a



1 *Milano Oggi.*



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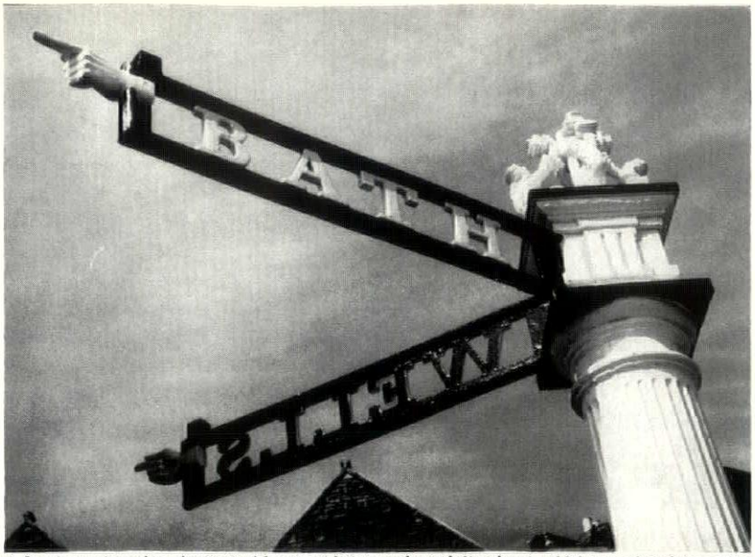


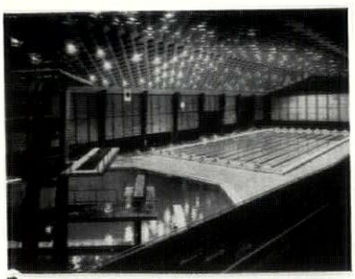
6, handsome Georgian signpost with cut out letters and a pointing hand, which is a relic of the earlier fingerposts.

photograph of an unusual building or object connected with architecture or townscape. What he writes about them is as unusual, odd pieces of information which it must be more arduous to gather than readers will at first realize. Mr. Winstone has made Bristol his home and as he has by now a collection of several thousand Bristol pictures, he decided to take the risk and go into print. The outcome is three paper-backed books on Bristol, all three to be obtained from Mr. Winstone himself: Bristol as it was 1900–1914, Bristol as it was 1914–1939, and now Bristol Today. The first volume had 170 photos, the second 100, this new one 200. Each of them costs only 10s. (or 17s. 6d. bound). Nor should it be thought that Bristol Today deals with anything but today. The volume is a very complete pictorial survey of Bristol including its old buildings, ecclesiastical and secular. So, to give a few instances, the old Bristol High Cross can be seen, which has recently been re-erected in Berkeley Square and also the interior of Wesley's Chapel, the fine Grecian Arcade, Arnos Court, built of slag in the Gothic style about 1765, the splendid shell-hood in Tailor's Court and one of the few new curtain walling jobs.

Mr. Winstone refrains from criticism of what Bristolians have recently done to their city (Centre Gardens!), but he has some strong things to say on the decay and demolition of valuable buildings. At the end of the book are some impressive lists of buildings saved since the war, maintained or repaired since the war, transferred to National Trust property, and still unsettled as regards the future.

Pool in Tokyo

Intended chiefly for competitive aquatics before an audience, the Metropolitan Swimming Stadium in Tokyo is the work of Masachika Murata and contains two pools, one for diving, seen nearer the camera in 7, and a ten-lane, fifty-metre pool for racing, seen beyond the diving basin. The main architectural interest of the scheme, however, lies in its section. Pools with accommodation for spectators are apt to be wasteful both of total volume and overhead space, as well as acoustically intolerable, if roofed by normal structures. The basic form of the section employed by Murata in order to avoid these difficulties is seen in the gable elevation, 8, the space being roofed by a series of asymmetrical portal frames, resting on the ground at one side, rising to a crest high enough to clear the trajectories of the divers, dipping, and then rising again over the rake of the grandstand and being supported, just beyond the left-hand margin of 8, by upward extensions of the stanchions that carry the grandstand seating.



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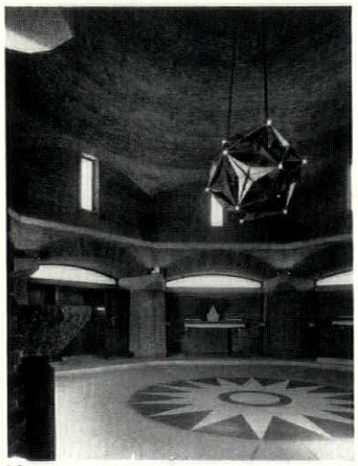
Udaci Centre

The Roman architect, Luigi Vagnetti, whose *Palazzo Grande* in Leghorn was discussed in AR, October, 1952, as an important manifestation of eclectic tendencies in Italian modern architecture, has recently completed a centre for UDACI, a Catholic ladies' organization, on the outskirts of Rome. This group of buildings, 9, comprising hostel, offices, etc., and a small round church, looks less ambiguous



9



10

in its style than did his earlier work when seen against the background of other modern Italian architecture, if only because so many northern Italian architects now appear to be adopting a similar position, as described in Marginalia, AR, November, 1958.

If one may compare Vagnetti's earlier scheme—which now appears as a pioneering work in a new idiom, rather than a harking back to an older one—with this latest work, the general impression is of a greater degree of homogeneity in the new, fewer unaccountable random elements from earlier eclectic styles than before, a clearer and less ambiguous exposition of the constructive disciplines than in the rather ambivalent arcading of the *Palazzo Grande*. In the little church, in particular, one sees a constructional approach that commands attention and respect, 10, its mixed use of massive brick and stone seeming to revive an approach almost forgotten in Europe since Berlage's Stock Exchange in Amsterdam, though its planning, of course, rests on a tradition that is as old as Christianity in Italy.

CORRECTION

Police Headquarters: St. Pancras

The consulting engineers for this project (by the Chief Architect, New Scotland Yard), illustrated in the 1959 January Preview issue, should have been given as W. V. Zinn and Associates.

INTELLIGENCE

The British Architectural Students' Association are holding a conference on *The Function of the Architect in Society* at Trinity College, Cambridge, on April 4 and 5, to which they are inviting 75 B.A.S.A. members and 75 members of the profession.

The Ministry of Health and Ministry of Housing and Local Government are to have separate architectural departments. The Ministry of Health are inviting applications for the post of chief architect to take charge of building schemes for the Local Health Authorities and Hospital Boards; the Ministry of Housing and Local Government is to appoint a chief architect to establish a housing development group.

The Department of Scientific and Industrial Research is now to be the only Government Department responsible for building research and will invite various sections of the building industry to nominate representatives to a Standing Conference on Building Research and Development. The Ministry of Works will continue to provide the present service of Advisory Leaflets, Lectures and Technical Information Service.

Marcus Whiffen has received the 1958 Book Award of the Society of Architectural Historians, for *The Public Buildings of Williamsburg, Colonial Capital of Virginia*, which was judged the outstanding contribution to the literature of architectural history by an American author or on an American theme, published between October, 1957 and October, 1958. The award carries with it the presentation of the Alice Davis Hitchcock medallion.

ACKNOWLEDGMENTS

MARGINALIA, pages 155–157: 5, Slater & Chait; 6, Reece Winstone; 7, Y. Futagawa; 8, Akio Kawasumi; 9, 10, Foto Sciamanna Roma. FRONTISPIECE, page 158: Roderick Cameron. TIME AND LE CORBUSIER, pages 159–165: 6, 10, 13, 16–20, Hinks; 8, 9, McCallum, Arphot; 12, 14, Hicks. OFFICES IN KNIGHTSBRIDGE, pages 166–173: 1, 3, 5–17, Toomey, Arphot; 2, 4, Maurice Broomfield. BRICK CLIFFS OF DOVER, pages 174–178: 1–6, Galwey, Arphot; the remainder by J. R. Peverley. SWISS REVIVAL, pages 179–187: Nairn, Arphot. DESERT GATES, pages 193–195: 1, Ara Güler; 3, 4, A. Costa. INTERIOR DESIGN, pages 196–201: Unesco Paris, 1, 15, D. Berretty, Unesco; 7, G. E. Ifert; 8, E. B. Foto; 9, 12, Architectural Design, 16, 17, Johannes Krahn; the remainder by Jack Nisberg. ROYAL COLLEGE OF ART, pages 202–206: Frontispiece, Toomey, Arphot. CURRENT ARCHITECTURE, pages 207–210: Police Housing at Canonbury, 2, 3, Edgar Hyman. Flats at Gateshead, 5, 6, Turners (Photography) Ltd. House at Richmond, 7–10, Toomey, Arphot. MISCELLANY, pages 211–216: Exhibitions, 1, Sandra R. Lousada; 2, Nathan Rosenberg; 3, Museum of Modern Art, New York; 4–6, Photo Studios Ltd. & Royal Academy of Arts; 7, Waddington Gallery: 8, Burrell Collection, Glasgow Art Gallery. Art in Use, 1, Roderick Cameron. Counter Attack, Nairn, Arphot. SKILL, pages 217–220: 3, Technical Precision Co.; 7–9, 11, 12, Toomey, Arphot; 13, Econa Modern Products Ltd. THE INDUSTRY, pages 220–224: 1, The Wallpaper Manufacturers Ltd.; 2, Ideal Boilers & Radiators Ltd.; 4, Walter Nurnberg.



What appears to be some kind of dead tree in the photograph opposite  *standing gaunt and romantic in a Mediterranean garden, is in fact a rare piece of functional sculpture from the heroic age of electricity—a lightning conductor, transplanted from the roof of an historic house whose identity is revealed in a note on p. 214.*

Nikolaus Pevsner

TIME AND LE CORBUSIER

The touring exhibition of the works of Le Corbusier, which is now at the Building Centre, London, shows his buildings as they were in their prime, when the rendering was white. The photographs on the next few pages show them as they are now, neglected or insensitively altered. The difference between their original and their present state is a blot on the face of European culture—they do not make beautiful ruins, and there is no reason why they should have to, within a quarter century of their erection. In the article which begins below, Dr. Pevsner states the case for their preservation as a charge on the French Service des Monuments Historiques.

It is easier in France—and for that matter in England—to find a ruined medieval keep in the depth of the countryside than a recently built private house by however distinguished an architect. Even Le Corbusier is not to be excluded from this statement, as anyone can attest who has made desperate efforts to trace his villas with no more to go by than the indications in the *Œuvre Complète*. Evidently, the people in the suburbs or villages where they stand have no inkling of their historic significance. This is confirmed to a degree when one has at last found them. Few Le Corbusier fans in this country can be aware of the state in which a number of them survive. It is a strange state and one's reactions are at first confused. They are conditioned by the uncertainty of whether one ought to enjoy this unexpected state as pleasing decay, or castigate it as premature dereliction. Whichever way one looks, however, one is left with an uncomfortable feeling of ambiguity.

As regards pleasing decay, the trouble is that—to me at least—decay in the case of

Le Corbusier villas just is not pleasing, either intellectually or visually. Intellectually the shock of seeing recent pioneer-work so patently slighted spoils any possible aesthetic pleasure in the decay, and one walks away depressed that the battle for modern architecture evidently is lost, the battle fought by the generation that was young when Le Corbusier built at Vaucresson in 1922, at Garches in 1927, at Stuttgart in 1927, and at Poissy in 1929. In addition, and this is especially so in the case of the Villa Savoye, the connotations of this particular decay—occupation, the collapse of France, the rounding up and the destroying of French Jews—are too frightful to allow even an attempt at aesthetic appreciation. Aesthetic appreciation needs detachment. Extraneous emotions shout it down.

But even where no extraneous emotions interfere, Le Corbusier's houses can't please in decay. Concrete structures with walls designed to be rendered white make bad ruins. What we are used to enjoy in decay, according to our upbringing, but perhaps also according to just laws of aesthetics, is weathered stone and lichens, indeed all that Ruskin has praised in so many fine passages. Flaking stone may look melancholy; it does not look shabby. Le Corbusier's style from 1920 into the 1930s has as its hallmark the smooth white surfaces of walls with metal windows cut into them without any intermediate mouldings and with an uncompromisingly sharp horizontal line to set them off from the sky. These white surfaces must be white, these metal window frames free from rust. The Villa Savoye at Poissy should greet us on its hill-crest as an eternal Kidder Smith vision.

Yet, in looking at recent photographs of Poissy, a sneaking, ambiguous, perhaps a malicious pleasure creeps in, a pleasure—admittedly more intellectual than visual—engendered by seeing nature win over man. After all, we are ready to admire the classical temple or even the Roman aqueduct in ruins as much as the Gothic abbey, in spite of the fact that the latter, being of a dynamic, permanently growing and changing nature, makes a good ruin, whereas the former, being finite, static, unchangeable, calls for high finish and perfect condition. So we, who don't suffer technocrats gladly, may well find ourselves indulging in a satisfaction over grass on the terrace and bushes on the roof.

But there is something else to complicate matters yet more. Le Corbusier himself, incalculable as ever, has lately made his pact with the devil-nature and ushered her into his creations—not as a gracious contrast to the crystalline purity of his forms, as in the case of the tree inside the Pavillon de l'Esprit Nouveau (or in the case of the waterfall in Wright's *Falling Waters*) but as a partner on equal terms. However much Le Corbusier may protest against the desecration of his early masterpieces, his most recent ones, and especially the Maisons Jaoul, possess this same quality of the *non-finito*, the roughness, the sympathy with the accident, the licence for things to grow where they choose, with which nature is now trying to endow the early villas—Act of God, correcting act of Le Corbusier, you might say, or Act of God, improving Early Le Corbusier into Late Le Corbusier.

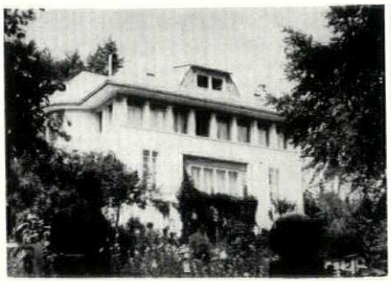
So perhaps one is wrong in assuming without any check that Le Corbusier is protesting. Perhaps he is delighted. But whether he is or not, we cannot be, or perhaps I ought to say I cannot be. As an historian I must detest this reworking of man's work by nature. I want my evidence genuine and refuse to accept it fiddled, whether by man or by nature.

But enough of these pleasantries. The case is really much less subtle. Here are buildings

[*continued on page* 165

time and le Corbusier

In buildings completed before a certain point in time—around 1932—*it might almost seem that le Corbusier's work has suffered in inverse ratio to its age and conventionality of design: the first house he ever designed,* 1, *and the villa for his parents, built in* 1913, 2, *both under the already respectable influence of*

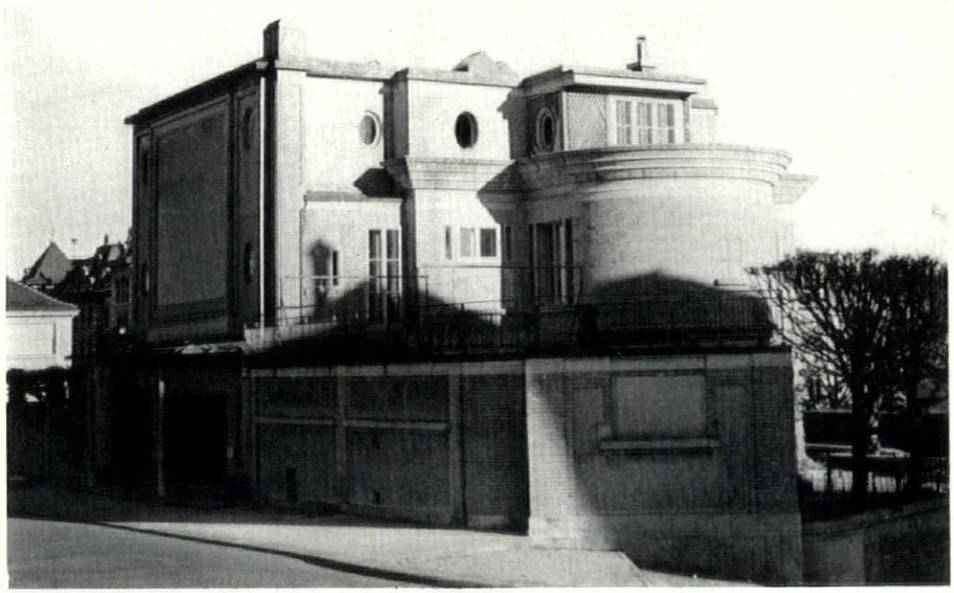


1

German architects like Behrens, Poelzig and Heinrich Tessenow, are in good shape for houses in their forties or fifties and little altered from their original designs; the famous villa of 1917, 3, *reverting* via *Perret, to Beaux-Arts formulæ, but reminiscent also of Hoffmann's Villa Ast in its rounded bays, and concealing a Wrightian plan within, is still in a condition that rivals that of any of its contemporaries in the suburbs of Paris or Amsterdam. But the villa Savoye at Poissy,* 4, *a statement at once expansive and compact of the first crisp maturity of* le style corbu *in* 1930, *presents a ravaged face to the surrounding cabbage-patches, the sharp definition of its forms remains, but the white surfaces 'franc et loyal' are no longer absolute planes on which 'everything defines itself with candour.' Yet this last was not an expression of stylistic prejudice or architectural insensitivity; it is one of the disasters of war, precipitated by the tragedy of the Savoye family under German rule. The vicissitudes of le Corbusier's works have stemmed from vagaries of ownership.*



2



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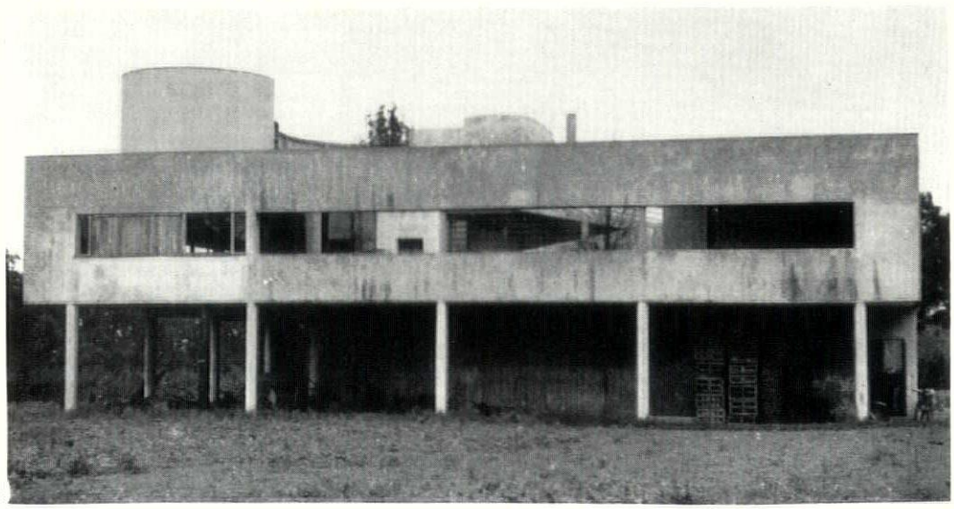
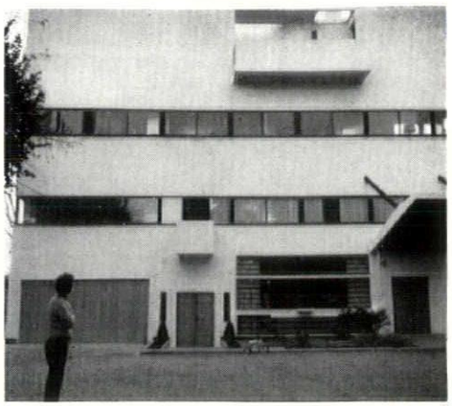


4

after



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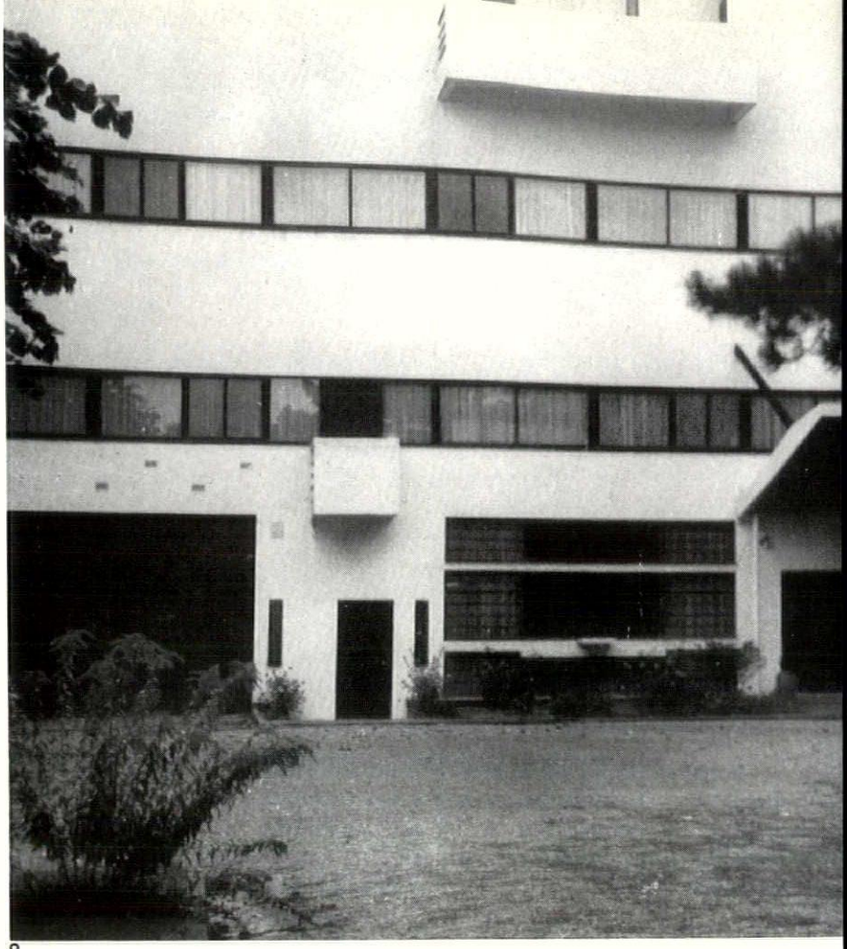
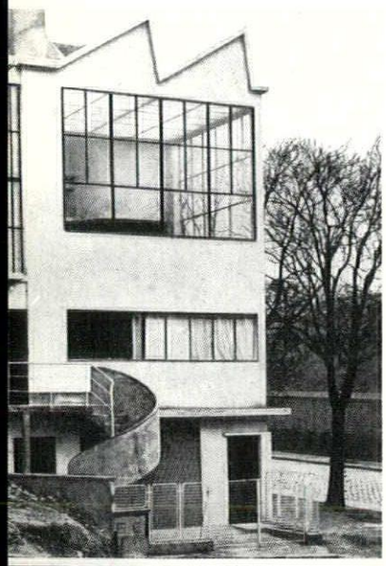


8

before



5

5 and 6, the outrages committed against le Corbusier's buildings vary from the wholesale and obvious to subtleties that almost look as if they must be deliberate. The removal of the rooflights of the Ozenfant studio-house of 1922 is crude surgery that has wrecked the natural lighting of the interior, but observe also what the alteration of the door has done to the façade.

7 and 8, three years ago it appeared that the villa de Monzie at Garches might be destined for the respectful future that its high esteem among architects deserved, but another change of ownership has produced conversion into flats, and a series of minor surgeries inside and out whose thoughtless obviousness adds up to a subtle destruction of a highly sophisticated pattern of openings on the ground floor. The dropping of the line of the top of the garage doors, the doubling of the door to make a symmetrical composition under the balcony—both bespeak a tidy mind, but the wrong mind.



6

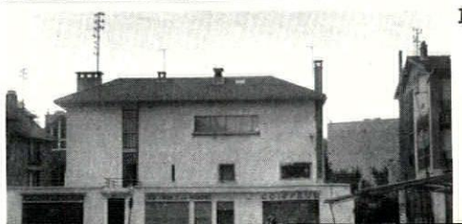
after

before



9

after

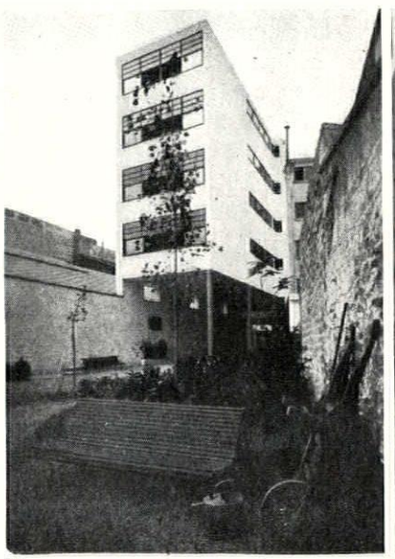


10

time and le Corbusier

9 and 10, the fate of the villa at Vaucresson, a pivotal work of 1922, is wholesale butchery in which, for once, stylistic prejudice appears to have been effective—hence the pitched roof.

11 and 12, simple but effective; the pure rectangularity of the Palais du Peuple, first masterwork of le style corbu *in 1926, wrecked by a new roof with just sufficient pitch to offend the eye.*



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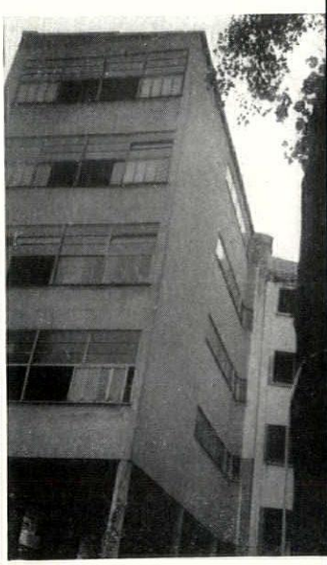


12

before

after



13

13, *the* Pavillon Suisse, *the great masterpiece of* 1930, *shows the benefits of decent, continuous upkeep—effective as the day it was built, it is now flattered by the trees and the other buildings that have gone up around it.*



14

14, *the rewards of remaining in one, sympathetic, ownership are also demonstrated by the matured and settled aspect of the little-known, little-visited* propriété Church, *a string of buildings designed in* 1928 *around the perimeter of a private garden in Ville d'Avray.*

15 *and* 16, *in pitiful contrast, the terrace of the villa Savoye—farm junk, invading grasses, the original shrubs grown out of control, mocking well-built forms that time has not yet chipped or blunted.*

17, *over page, when the villa Savoye was white, le Corbusier waxed enthusiastic over its site, a slightly domed rectangle of uninterrupted grass, surrounded by banks of trees. The trees re-*

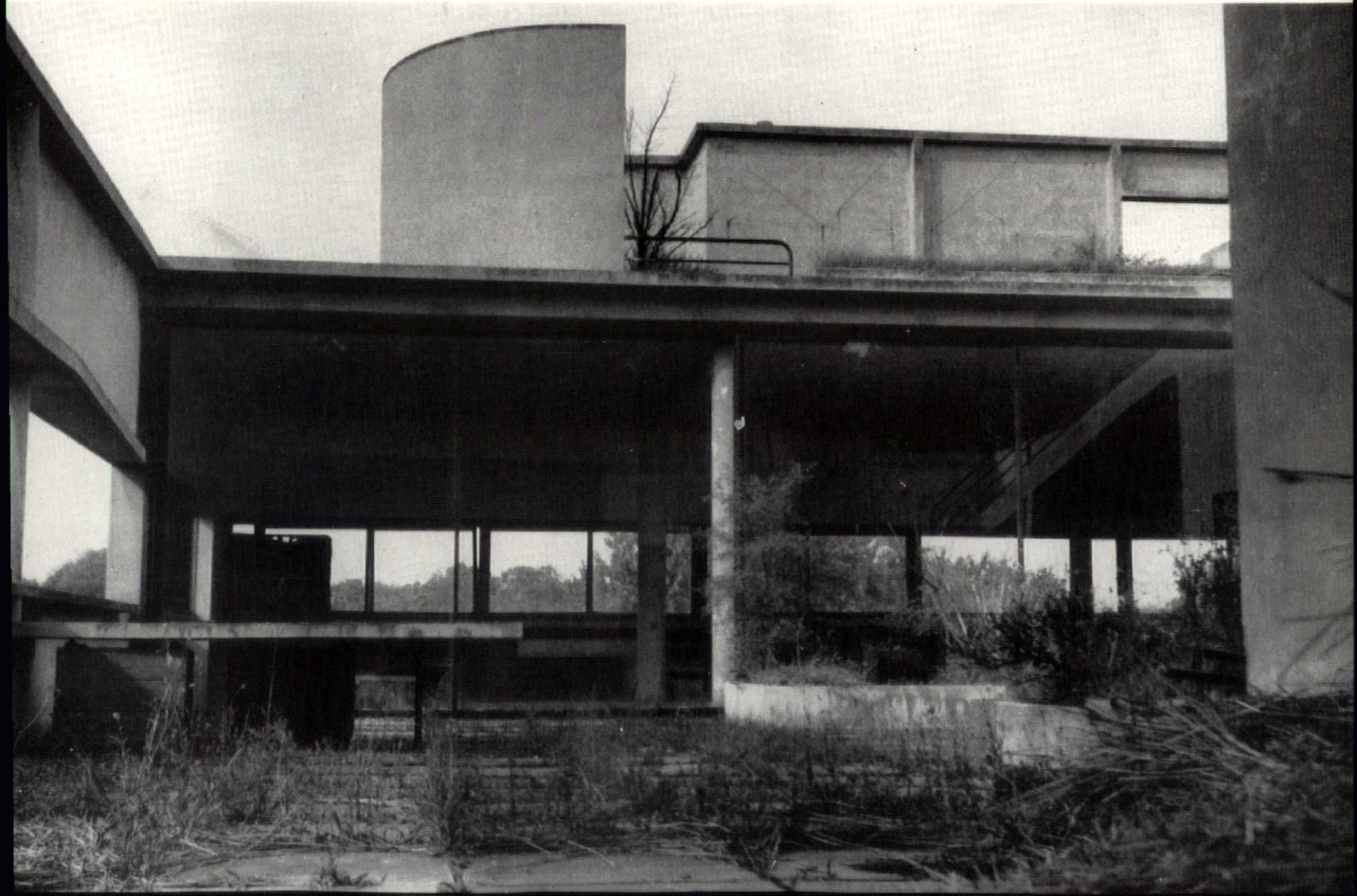
then

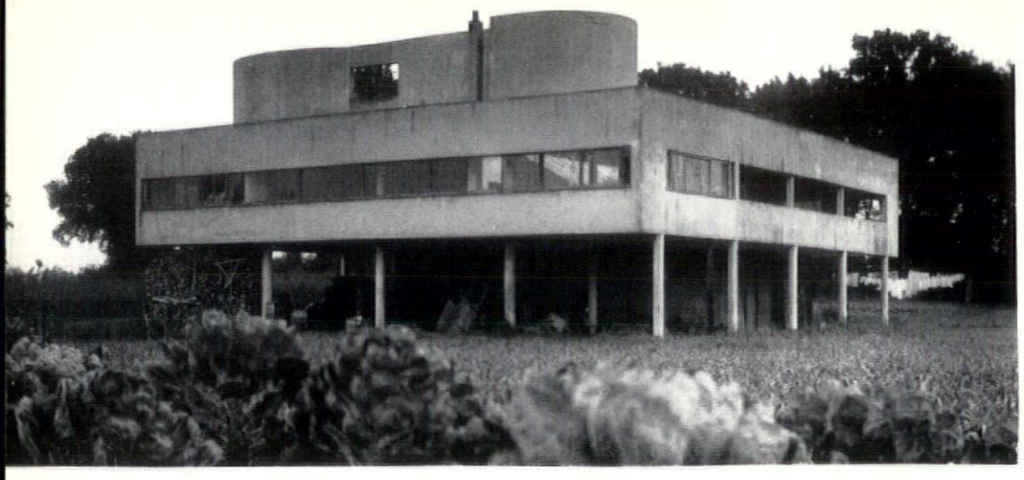


15

now

16





17

main, the grass has gone, replaced by the busy patterns of market gardening, a pattern that is prolonged into the house (alas for interpenetrations of inner and outer space !) by impedimenta such as tractors, carts, piles of logs. The affront is curiously worsened by the way in which the cabbage-forms in the foreground almost ape the spectacular tropical plants that set off this building's numerous progeny in South America.

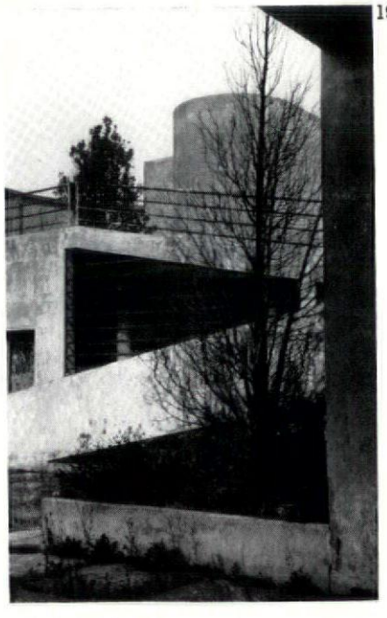
18 and 19, on the terrace, time has taken a complex revenge over formal purity. These scenes strike a familiar note, they echo the photographs of the roof terrace of le Corbusier's own flat at the Porte Maillot, and mock his delight on returning home after the war to find a wild garden self-established among the flagstones. But at Poissy much of the greenery, that makes romantic what was once classi-



20



18



19

cal, is of his own planting.

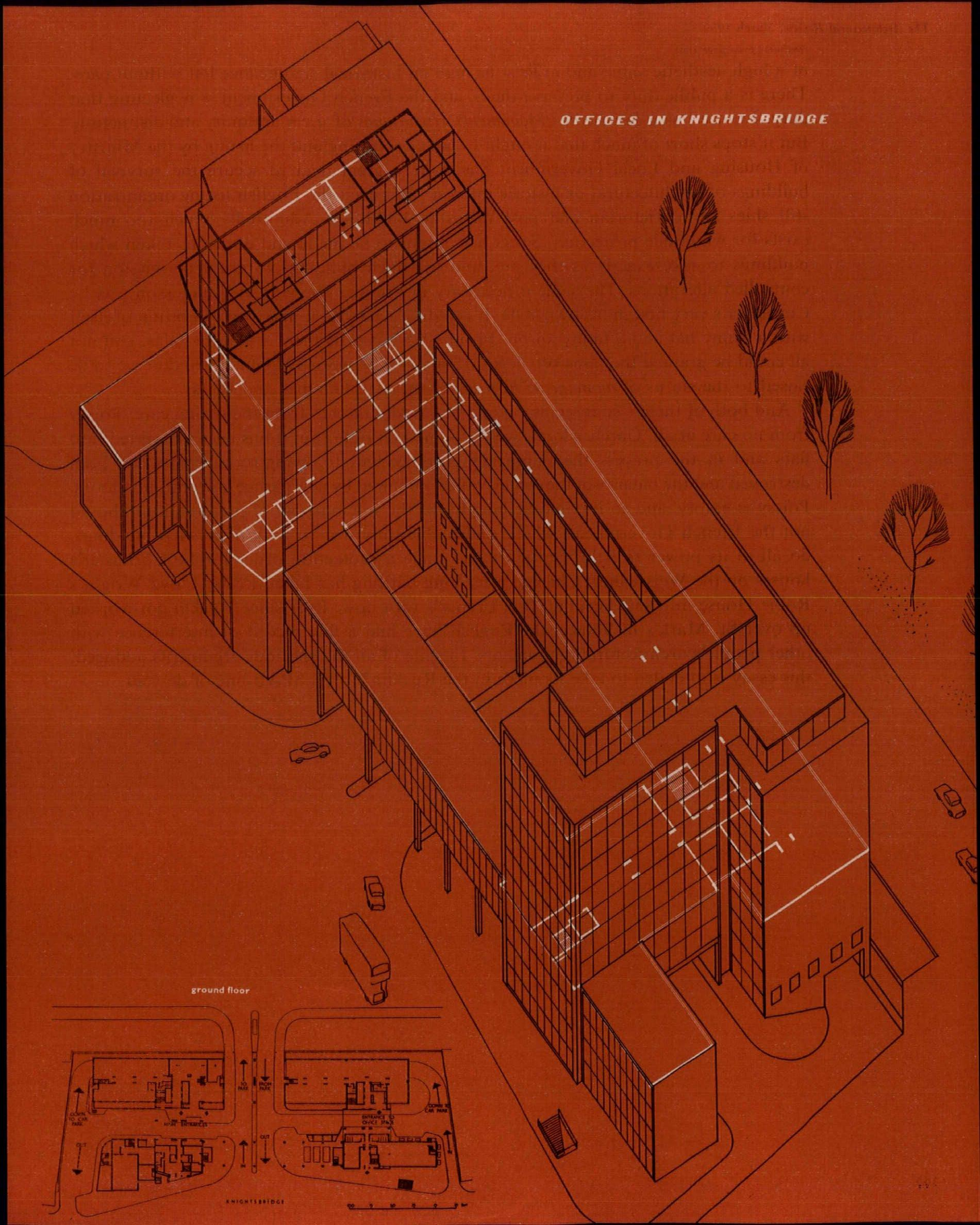
20, and in the Maisons Jaoul, most striking of his post-war domestic work in Europe, such accidents seem to have been put to work deliberately, large and clear-cut forms are consciously set off by rugged textures that weathering can only enhance.

continued from page 160]

of a high aesthetic value and at least as high an historical significance left without care. There is a public duty to preserve them, and the French Government is neglecting that duty. France has a *Service des Monuments Historiques* of great antiquity and distinction. But it stops short of much that it ought to include. In England the listing by the Ministry of Housing and Local Government has done a great deal to secure the survival of buildings of 'architectural or historic interest'. But even the English listing organization still shies from Victorian and post-Victorian buildings. Admittedly much too much exists for wholesale protection. Select lists ought to be made and decisions taken which buildings to save exactly as they are, and to which buildings to grant permission for controlled alterations. The same is necessary in France. The villa at Vaucresson was Le Corbusier's very first in his own style. It is a disgrace to let it make an exhibition of itself with a funny hat and a funny apron. From 1925 onwards there are more villas, and not all could be granted the same privileges. If any two between 1925 and 1930 deserve to be raised to the status of *monuments historiques* they are Garches and Poissy.

And both of these—so it seems—could be saved, Garches from the wrong care, Poissy from no care at all. Garches looks well-groomed all right, but it has been converted into flats and in the process the important entrance-hall to living-room space has been destroyed and the balance of the east elevation impaired by new garage and entrance doors. Poissy is empty, and so it could be bought for the sole purpose of preservation. Should not the French Government, whose undeniable duty it is to look after such buildings, do all in its power to help? Stuttgart has made a protection order for Le Corbusier's houses on the Weissenhof, Chicago after long battling has taken Frank Lloyd Wright's Robie House into safe keeping. It is France's turn now. Ever since Ruskin got worked up over St. Mark's in Venice, the English have had a fine record of interference with other people's architectural monuments. In spite of all the specious arguments adduced, this essay is intended to take its place in the Ruskin-Morris-SPAB-line of descent.

OFFICES IN KNIGHTSBRIDGE



ground floor

OFFICES IN KNIGHTSBRIDGE

ARCHITECTS | **GUY MORGAN AND PARTNERS**



1, looking east along Knightsbridge.

The site is bounded on the north by Hyde Park and on the south by Knightsbridge, with the Hyde Park Hotel on the east, and was zoned for office development at a plot ratio of 4.5:1. The London County Council plans required that the new road leading into Hyde Park should cross the centre of the site, and together with the



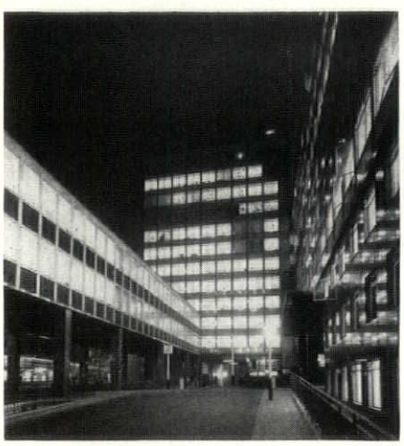
2. the high tower seen from the lower block, looking across the main entrance courtyard.



3

widening of Knightsbridge, this affected one-quarter of the site. Car parking had to be provided at the ratio of one car to every 2,500 sq. ft. of gross floor space and is mainly at basement level. All entrances and car parks had to be reached from private service roads, to avoid interference with the flow of traffic on public roads.

The building is designed entirely as office space, demanding first-class lighting, fast lift services spaced so as to avoid long horizontal circulation, and grids planned so that office space could be cut up at a later date.



4

The building is planned in three main blocks; Park Block running east-west, 366 ft. long and close to the Park, with fine views of the trees and, from the upper floors, of the Serpentine and the hills to the north and south of London; the high tower of 17 floors and the low tower on the east at the same height as the Park Block. Smaller buildings serve as links along the Knightsbridge frontage. The centre portion of these low blocks is supported on columns allowing the 70 ft. wide dual carriageway of the new road to pass underneath the building. The road then crosses a long narrow court-yard and runs under the Park Block, where it is covered by a curving canopy which protects the building above from noise and fumes and marks the road entrance visually.

The construction is of reinforced concrete on the balanced cantilever system. Two-thirds of the weight is taken on the widely spaced internal columns, one-third on the external mullions which are spaced at 8-ft.

OFFICES IN KNIGHTSBRIDGE

3, night view of the park façade, with the continuous 300-ft. long window on the top floor.
4, the service road between the Park block and the low block fronting Knightsbridge leads to the main entrance on the right and runs across the public road into the park.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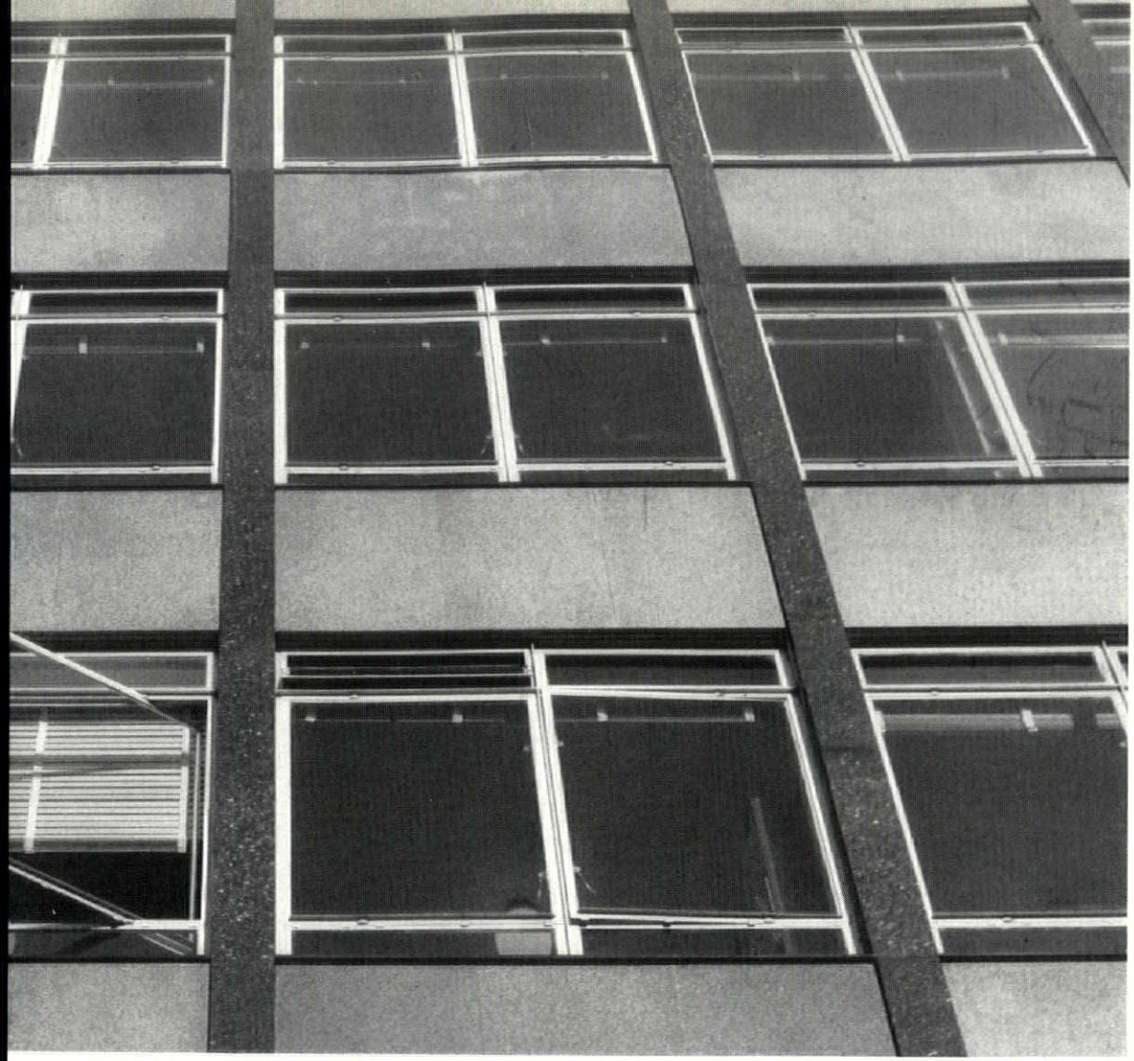






9

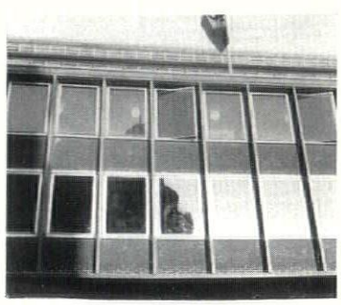
5, wall detail on the low block, with mullions of Portland stone.
6, wall detail on the Park block; the structural grid is faced with blue pearl granite; the reinforced structural spandrel with grey granite.
7, the public road under the building, which is carried here on granite-faced columns with a 35-ft span.
8, the north elevation of the Park block; the double width mullion marks an expansion joint in the structural frame.



10

9, the south elevation from the top of Sloane Street.
10, one end of the Park block from the service road; the bottom three floors form a Vierendeel beam and carry the upper part of the building.
11, part of the low block, with ebony brick aprons.

5 | 6
7 | 8



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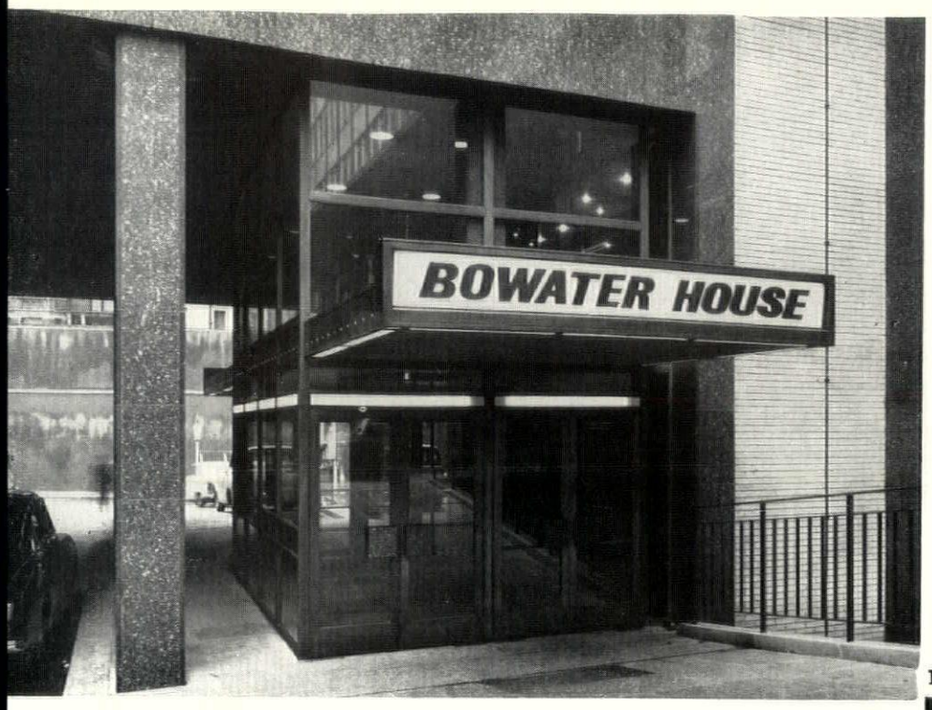
12



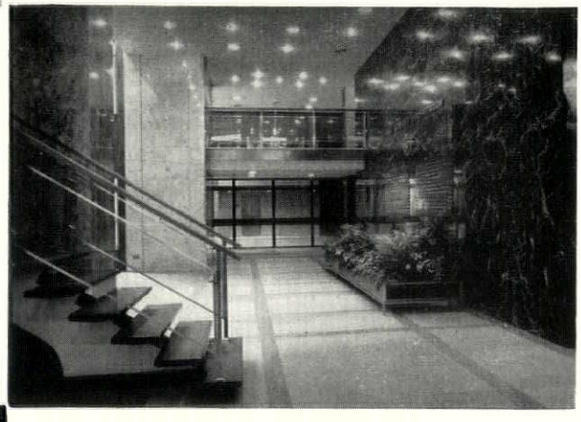
13



14

12, 13, on the facing page the entrance hall and waiting area, with furniture designed by the architects. The gallery above provides space for exhibitions.
14, canopy over the main entrance.
15, the entrance porch from inside, and the bottom of the cantilevered staircase.

centres. By having windows divided down the centre the grid for offices is 4 ft. Heating is by hot-water pipes embedded in the structural slab. The whole of the site was excavated and the buildings carried on r.c. foundations, with the roads as bridges, sloping to allow for the varying site levels. Natural materials were chosen as finishes. The main cladding is thin 1½ in. polished blue, grey and pink granite, grey and dark blue bricks and Portland stone for the low blocks and for copings. The lift motor rooms have been designed with the tank rooms, plant rooms and caretakers' flats as two-storey roof buildings echoing the plan of the main building below.



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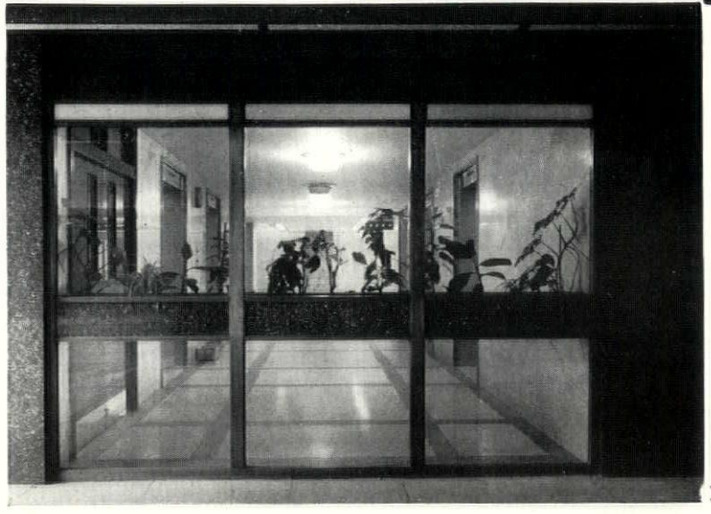

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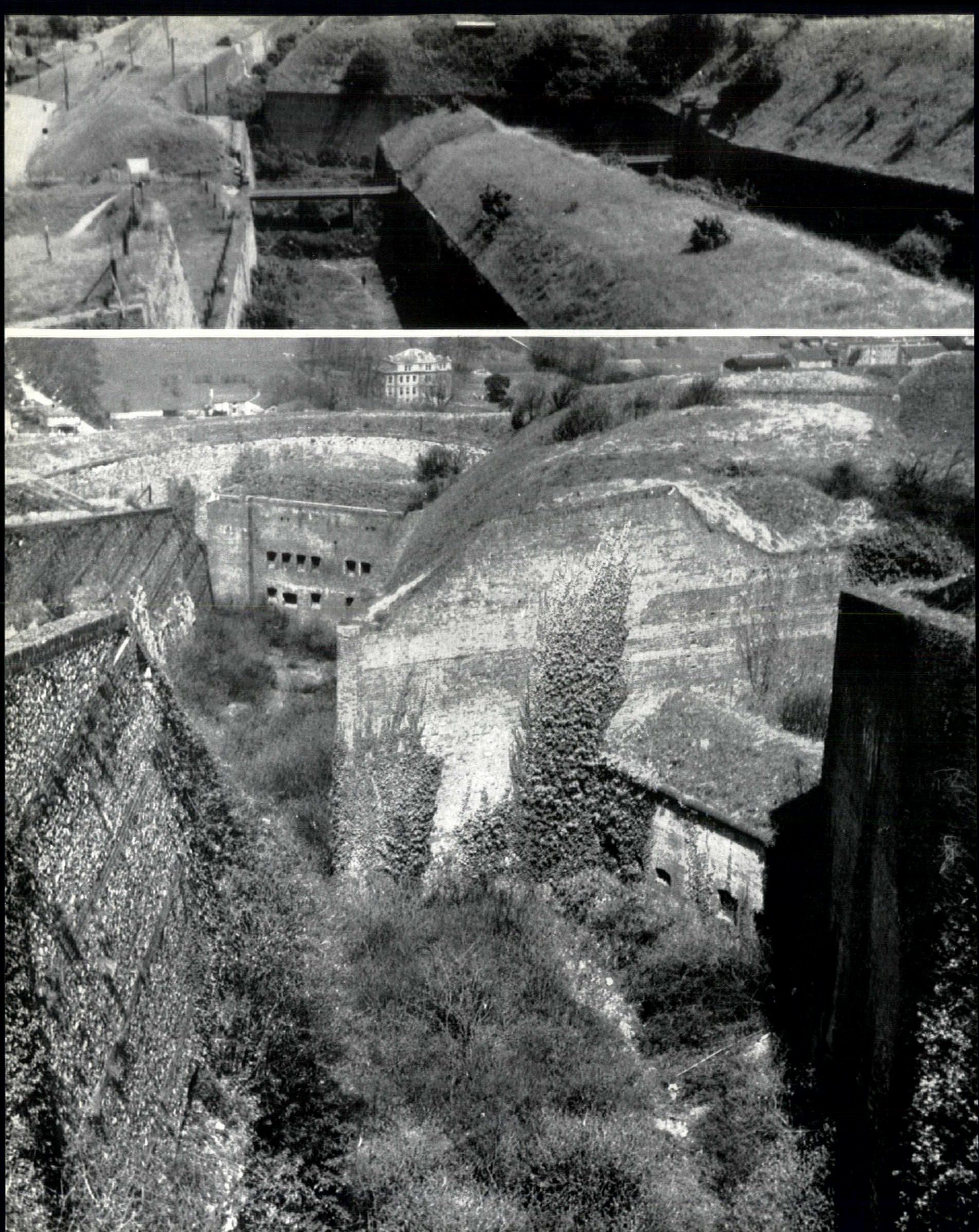
OFFICES IN KNIGHTSBRIDGE

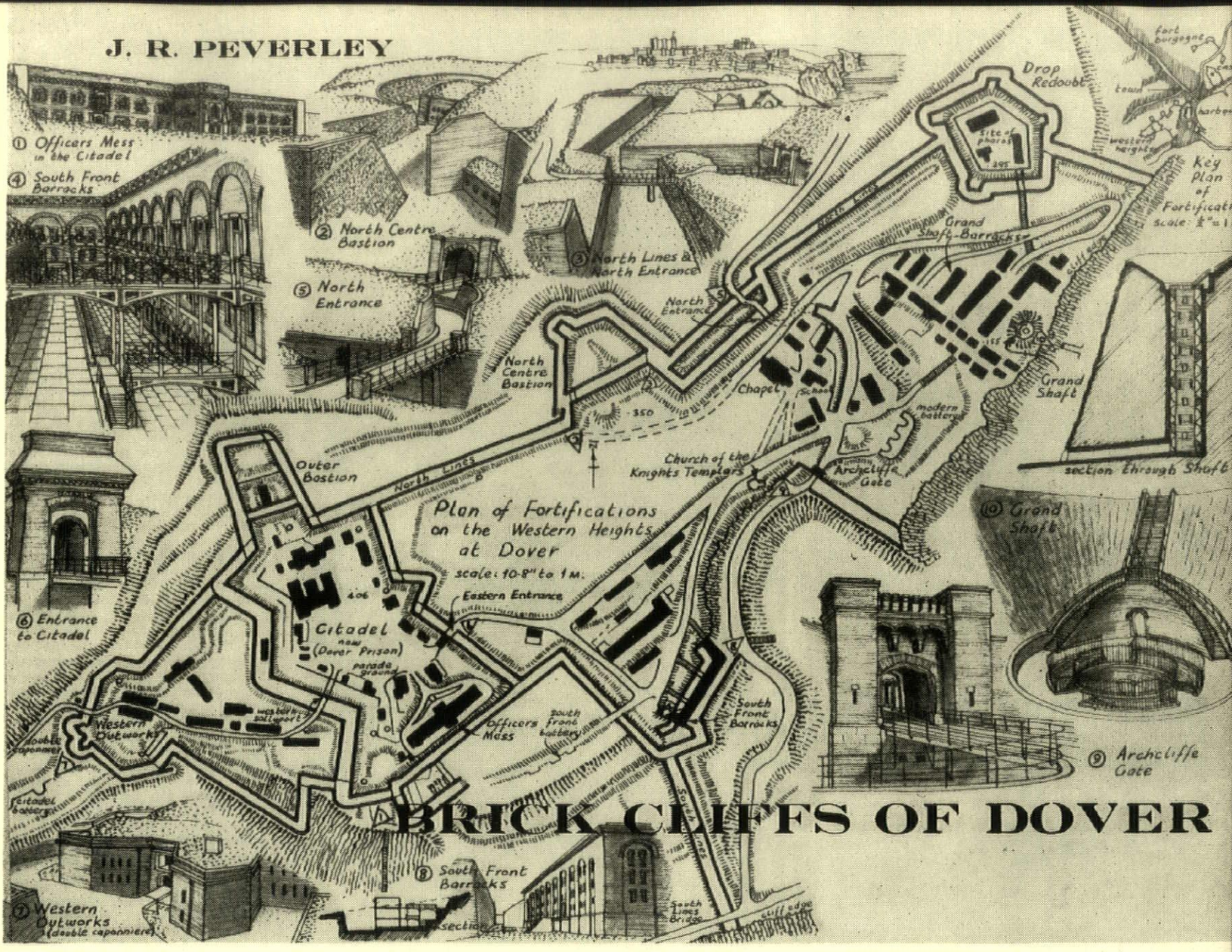
16, looking in at the lift lobby of the east tower.
17, corridor on the north side of the low block, with the wall housing a deep beam.



17



J. R. PEVERLEY

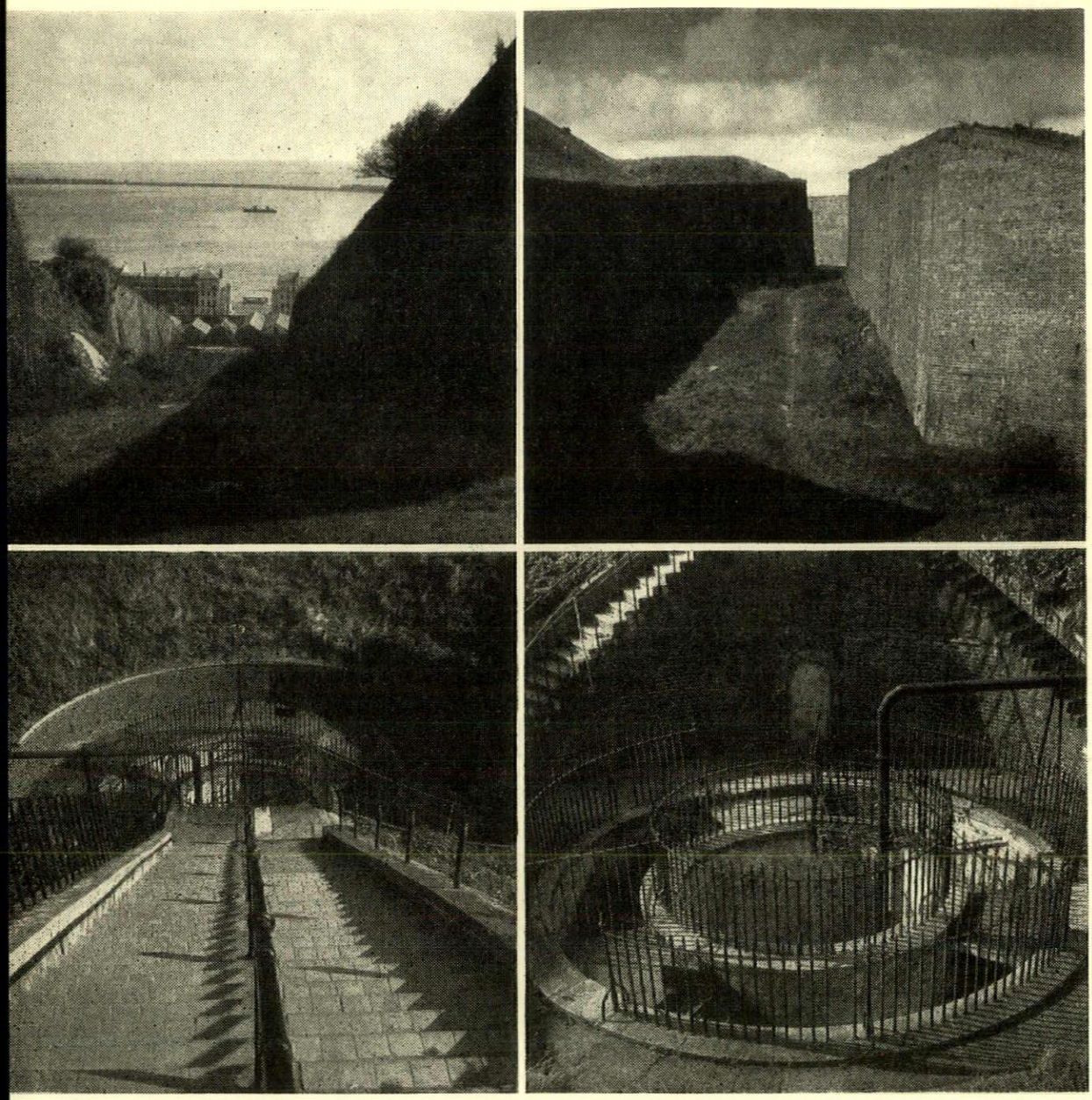


It is not only atomic war that twists and disrupts the landscape with structures of fantastic scale; the Napoleonic and Victorian fortifications at Dover can boast tunnels, shafts, excavations, underground buildings and bomb-proof vaults that command respect even today, as J. R. Peverley makes clear in the article below. On the other hand, the present condition of these works, ill-maintained and crumbling, is both dangerous and deplorable—as monuments of our military past they deserve care and attention quite as much as do the medieval fortifications that face them on the other side of the town. Shown opposite ☞ are the earthworks at the North Lines, looking east (top) and towards the north centre bastion (bottom). The drawing of the fortifications, above, is by the author.

Unknown to most people, there exists on the hills surrounding the town and port of Dover, what was considered at the beginning of this century, to be the strongest and most elaborate piece of fortification in the country.

Although the development of this fortification has continued sporadically since Roman times, being strongly influenced by the invention of gunpowder in 1320, the introduction and development of artillery, and a succession of wars, the most intense period of building occurred in the twelfth, thirteenth and nineteenth centuries. The medieval fortifications, comprising the famous Norman Castle, are already well chronicled and familiar to everyone, and it is possible to be conducted over them by a Custodian, who will be pleased to sell you an Official Guide. The nineteenth-century fortifications, however, are practically unknown, they are officially closed to the public, and there are no Custodians or Official Guides. This is most unfortunate, for they are of great interest and are historically important as an example of a most ingenious type of defence.

These nineteenth-century fortifications occupy the hill on the opposite side of the town to the Castle, known as the Western Heights (see plan). The hill was first fortified in 1779 during the war with America, France, Spain and Holland, but the defences were only in the form of earthworks and cannons. Nothing further was done until the war with France in 1793, following the Revolution of four years earlier. Napoleon was threatening to invade the country, and a plan was drawn up to make the Western Heights the largest and strongest piece of fortification in the country, big enough to house a large section of the British Army in hiding; for whilst the fortification was never expected to be directly assaulted from the sea, it was intended to be used as a base for attacking Napoleon's army in the rear, after it had already effected a landing, presumably somewhere between Hythe and Rye. Because of this curious stratagem, the colossal expenditure incurred in the erection of these fortifications, and the Martello Towers and the Royal Military Canal, which are both contemporary, was not easily accepted by people of any intelligence. William Cobbett, who had some knowledge of military fortification, having made a report on those in Canada, says in his 'Rural Rides,' that when he visited the Western Heights in 1823 a 'couple of square miles or more were hollowed like a honeycomb, . . . that either madness the most humiliating, or profligacy the most scandalous must have been at work here for years.' The defences were only half completed when he saw them, yet he estimated that the quantity of brick buried in the hill would have built a cottage for every labourer in Kent and Sussex. This last remark includes a word illustrating a most important development in the design of fortifications. Whereas the Norman Castle advertises its presence by being perched on a hill and having a dramatic skyline, the Napoleonic



3|4 8, *looking south over the town and harbour from the drop redoubt.*
5|6 4, *the drop redoubt.* 5 *and* 6, *the Grand Shaft.*

fortifications are buried in their hill and are invisible at a distance, except for the unnatural angularity of the hilltop.

The plan that was drawn up for the fortification of the Western Heights was based on the principles of fortification as perfected by Vauban, the famous seventeenth-century French military engineer, and on recent experience in the North American continent. In outline, they consisted of a *citadel** on the highest ground, connected by *lines* and outlying *bastions* to a *redoubt* overlooking the town. The Norman Castle was to be strengthened against heavy bombardment, and reinforced on its north side by the construction of Fort Burgoyne and two outlying *caponnieres* (see plan). It was also proposed that the Western Heights should be connected to the Castle by a *line* cut straight across the intervening valley, through the centre of the town, but as this would have involved the demolition of a great deal of public property, it was abandoned until such time as it would become essential. This last was the only part of the plan that was never completed, the remainder being constructed in two stages.

The first stage of construction was carried out prior to, and during the Napoleonic wars, c. 1790–1814, and included the building of the Grand Shaft, the Grand Shaft Barracks, the Drop Redoubt, parts of the Citadel, parts of the connecting Lines and the strengthening of the Castle. The latter operation was achieved by deepening the Castle moats to twice their original depth, and piling up the material obtained to form earthworks and batteries parallel with the curtain walls. The towers in the curtain walls were filled up solid and levelled to provide gun platforms, and the remainder of the surplus material was banked up either side of the walls for additional protection. The Constable's Gateway was spoilt by the addition of Victorian bridges, and the Keep was roofed over with bomb-proof brick vaults; the whole Castle was badly damaged. In 1802 a Spur was thrown out to the north with a bomb-proof guardroom, passages and hanging doors, and the *ravelin* was cut to its present slope. On the Western Heights construction was in progress on the Grand Shaft.

The Grand Shaft, 5 and 6, which provides direct communication between the Heights and the town, is a most interesting piece of construction, and deserves description. From the square of the Grand Shaft Barracks, 59 steps descend to the bottom of a circular bowl excavated in the top of the cliff. From here a further 140 steps descend in a spiral around a vertical, circular, brick faced shaft, open at the top, which is connected to Snargate Street by a horizontal tunnel emerging at the bottom of the cliff face. There are three sets of spiral steps around the brick well, which are lit by windows pierced in the side of the well, and which were intended for officers and their ladies, 'women,' and soldiers. These three classes of society had, however, to unite in the use of the steps at the top of the Shaft, and the horizontal tunnel at the bottom. In 1812 Mr. Leath, of Walmer, rode a horse up them for a wager. It was completed in 1802 to the design of Sir Thomas Hyde Page, military engineer, and Ireland said of it in his History of Kent published in 1829, 'such a union of elegance and convenience might have reflected credit even upon the genius of Sir Christopher Wren, at one combining the gracefulness of that stupendous vestige of architectural skill, the Monument of London, with the greatest simplicity and general accommodation.'

To the rear of the Grand Shaft, and contemporary with it, are the Grand Shaft Barracks, housing 1,200 men. At the same time as the barracks, about 1803, a Military Hospital was constructed near the Archcliffe Gate. From the barracks a long flight of steps rises to the Drop Redoubt, 4, constructed in 1808 at the extreme eastern end of the Heights, and commanding the whole of the valley, town and harbour. From here the official salutes were fired for the arrival of Royalty, and a flag was always kept flying. During the excavations for the Redoubt, the foundations of a Roman Pharos were unearthed. Its twin is still extant within the Castle walls, and is acknowledged as the oldest building in the country. With the aid of these two lighthouses, constructed in A.D. 43, the Roman galleys were able to cross the Straits of Dover by night, and by setting a course directly between the two beacons, could proceed straight up the River Dour. Thus were the links of the Roman Empire maintained unbroken throughout the dark hours.

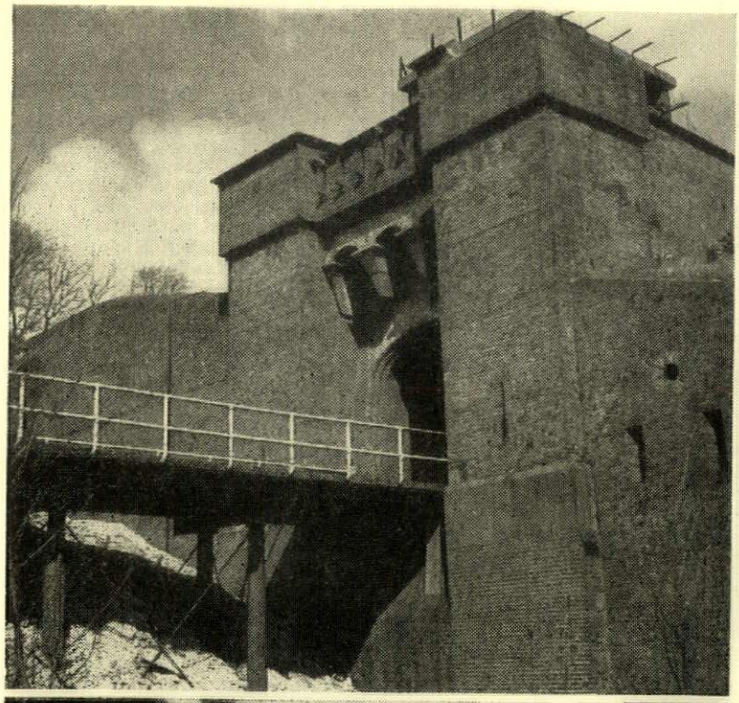
The Citadel occupies the highest ground on the Heights, some hundred feet higher than the Redoubt, and was the stronghold of the fortress, fulfilling the same function as the Norman castle keep. It consists of masked batteries, a large parade ground surrounded by storehouses and barracks, and a well 420 feet deep. The Lines and Outlying Bastions connecting the Citadel to the Redoubt were in course of construction in 1814, when the armistice with France was signed. All work on the Heights was stopped, and for nearly forty years the hill was riddled with a meaningless honeycomb until about the year 1850 when the Commission for the Defences of the United Kingdom recommended a continuation of the work, in view of the impending Unification of Germany, and the threat of Napoleon III.

The second stage included the completion of the North and South Lines, the formation of the ground between the Citadel and the Drop Redoubt, the construction of barracks and offices, and the completion of the Western Outworks, 9.

It was essential that the Citadel should have direct vision of the Redoubt; this meant removing the whole of the top of the hill, which was found useful to form earthworks and steep escarpments on the slopes of the hill, giving to the Heights a complicated angular silhouette.

Nearly four miles of Lines, 3 and 8, equivalent to the medieval moat, were constructed, linking the Redoubt to the Citadel, and these in turn to the cliff face. The Lines were hewn into the solid chalk, and usually have brick linings at least 18 inches thick, or alternatively flint linings coursed in brickwork, 10. They vary from between 30–50 feet deep, and are usually 30 feet wide. Wherever they turn an angle, deep wells prevent direct passage along the floor of the moat; these wells are overlooked by galleries running behind the moat walls, from which musket fire could be directed down either of the angles formed by the moat. The North Centre Bastion, 4, carried out the same function as towers in the curtain wall of a medieval castle. It provided transverse fire along the line of the fortifications, and prevented the enemy from approaching too close by means of

* For explanation of military terms see Glossary at end.



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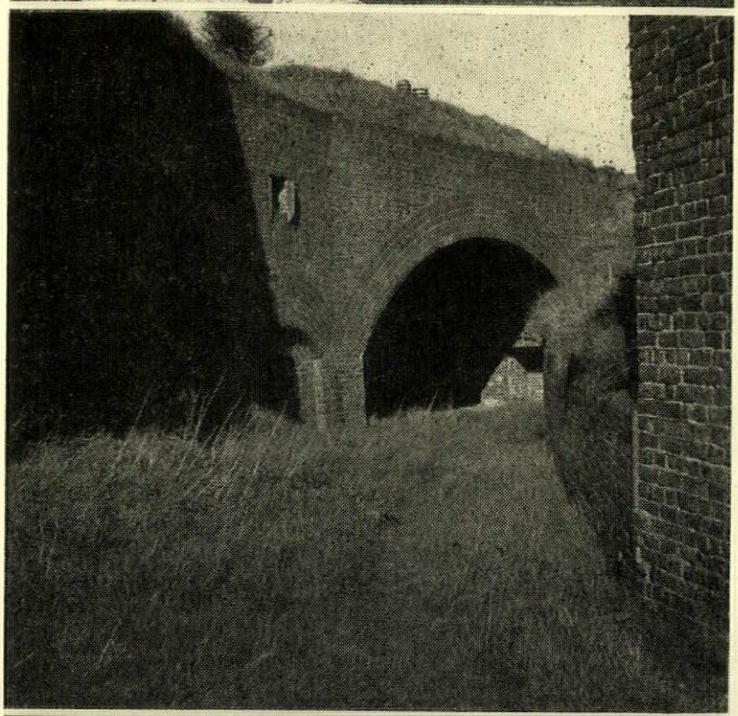

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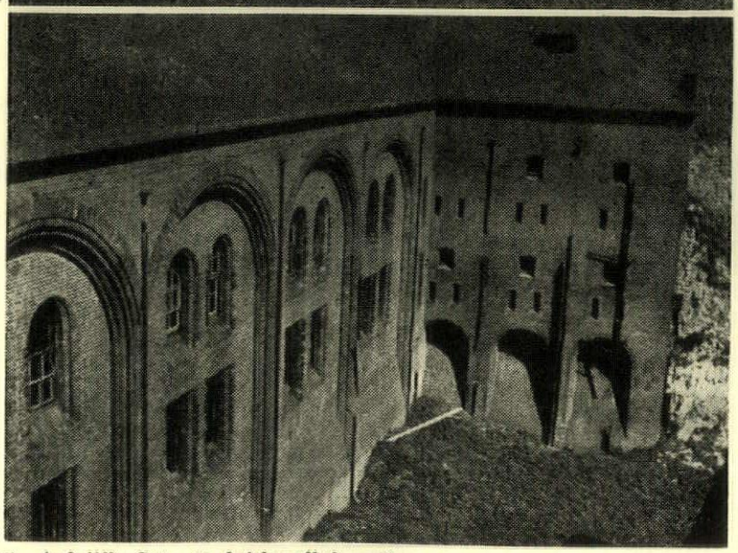

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7, *Archcliffe Gate.* 8, *brick-walled earthworks.* 9, *casemates in the western outworks.*

parallels and *traverses*, to the main line of defence. The Lines have *casemates* formed behind parts of their walls, and at salient angles *caponnieres* are thrust out into the ditch. The hilltop is criss-crossed with these lines which run over it, and up and down its slopes, apparently without any regard for its contours; indeed at one place, a line descends two hundred feet at 45 degrees, turns an acute angle at the bottom, and laboriously ascends again. The scaffolding, stagings and labour required to excavate these enormous ditches, and the production and transport of the material required to face them, must have constituted a major engineering task.

Included in the second stage was additional troop accommodation; this resulted in the construction of the bomb-proof South Front Barracks, 12 and 13, in 1860. A huge trench was excavated in the slopes of the hill facing the sea. The Barracks were then built along the centre of this trench; the various floor levels being connected to the hill behind, by a series of cast iron bridges and galleries. The bomb-proof structure of the building took the form of a series of very thick brick cross walls, roofed over with massive brick barrel vaults covered with earth. This structure is expressed externally, and has resulted in a building curiously reminiscent of a Florentine palazzo. Just above the barracks are the Married Soldiers Quarters built in 1859.

Within the walls of the Citadel, an Officers Mess was constructed. This took the form of a long red brick building with stone dressings, designed in a kind of mock Tudor country house style, with a central hall and ceremonial staircase. The Mess has a wonderful view over the Channel, and is approached by a steep sweeping symmetrical drive, enclosing a central staircase. The whole of the Heights and the Citadel were supplied with water by steam power.

The Citadel was considered to be exposed on the western flank, so the Western Outworks were constructed. They have a wedge-shaped plan and culminate at the point of the wedge in a double *caponniere*, 9, flanked on either side by *casemates*, and surrounded by two semi-circular ditches, the whole being designed symmetrically about a centre line. The eastern entrance to the Citadel was provided with a massive gateway constructed with battered walls, and vaguely reminiscent of a pylon of an Egyptian temple.

There are two vehicular approaches to the Heights. From the south, a long winding road from the Ropewalk passes the South Front Barracks, and enters the Fortifications through the Archcliffe Gate, 7, a forbidding entrance designed in a pseudo medieval manner. From the north a steep hill ascends from Worthington Street; at the summit are traffic lights, the next section of the road being only wide enough for single line traffic. The road turns sharp left, passes over a deep moat by means of a bridge, turns sharp left again and then right, passes over another deep moat, enters a narrow tunnel, guarded by a sliding door, turns sharp left and then right and emerges into a deep cutting, surely an approach worthy of this impregnable position.

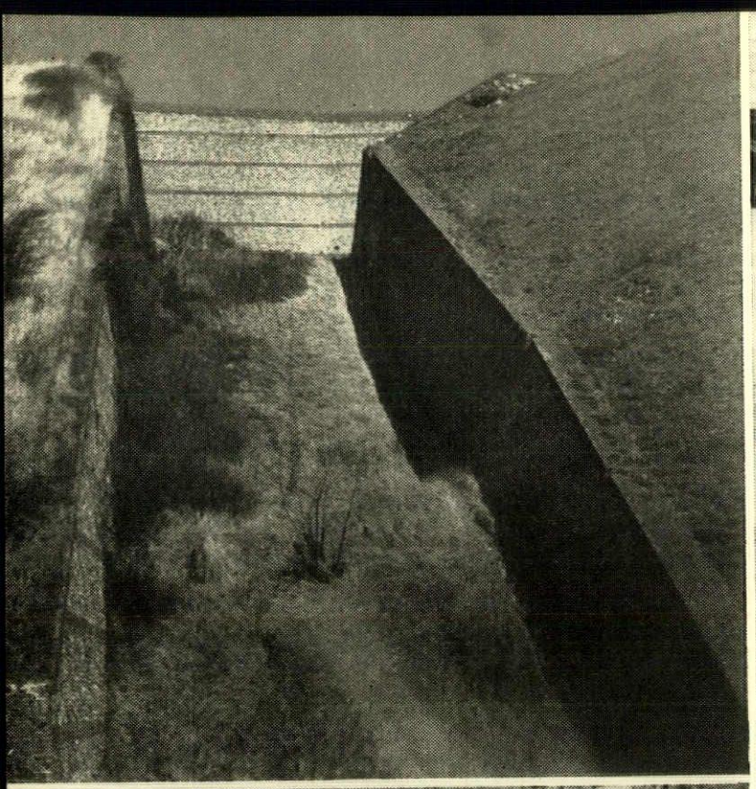
Enclosed within the boundaries of these fortifications are two places of worship. All that remains of the Church of the Knights Templars is the foundations in the form of a circular nave and a rectangular chancel; here King John is reputed to have made subjection to Pandulph the Pope's Legate in the year 1213. On the opposite side of the road is a small military chapel with a bell turret, built about 1857 in the Church Commissioners Gothick, and recently converted into a storehouse.

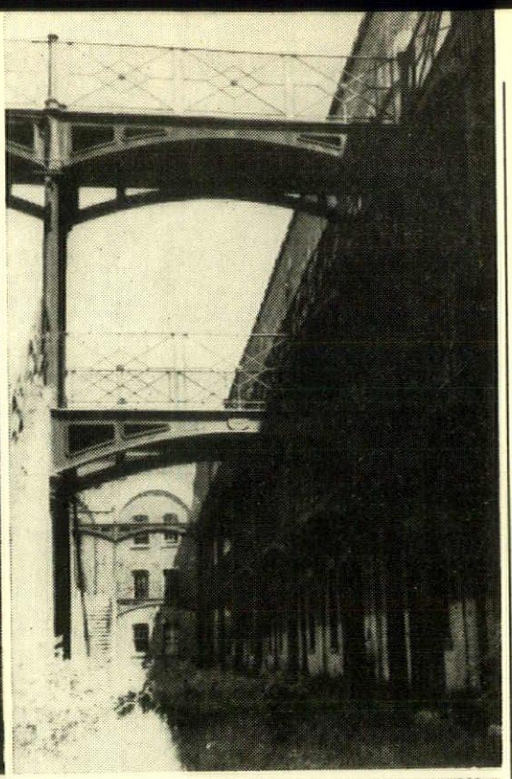
Over at the Castle, work was in hand on two projects. The first was the large Officers Quarters built within the castle walls, overlooking the sea. It was constructed in 1857 of grey Kentish ragstone in the usual military medieval and cost £50,000, of which £10,000 was spent in preparing the site. The other was the construction of Fort George, later known as Fort Burgoyne, in 1861. The curtain walls of the Castle are incomplete on the north side, and are supplemented with earthworks. To reinforce these, it was decided to construct the Fort with two flanking wing redoubts, connected by ditches, overlooking the sea and the town. The Fort itself looks north over the Downs. Bomb-proof *casemates* were built to accommodate 230 men, and *caponnieres* to house 24 guns with another 85 guns on the *terre-pleine*, and nine more in the wings.

With the building of Fort Burgoyne, the whole plan had been completed. The Western Heights could hide 4,000 men and the Castle could house 3,000 men, and Dover became one of the centres of concentration of the British Army. It was during the following fifty years that the town expanded and passed through its most prosperous phase. Since the resumption of work about 1850, the fortifications had cost the nation about £700,000, which at today's rate of exchange would be equivalent to about six million. It is a curious twist of fate, that both of the military ventures at Dover have proved ghastly failures. The Admiralty Harbour, the largest artificial harbour in the world, costing £4 million in 1909 when it was completed, was abandoned in 1920 by the Admiralty, because of its increasingly vulnerable position. The Military Fortifications, the strongest in the country, completed about 1860, were abandoned in 1929 because the barrack accommodation was condemned. Whereas the harbour remains useful for other purposes, the fortifications have only once been of any military value. That was in 1941, when Admiral Ramsey fortified the Heights and the Castle, so that even if the harbour, town and country to the rear of Dover should be overrun by a German invasion, these two positions should remain in British hands to the last, rendering the port useless to German shipping.

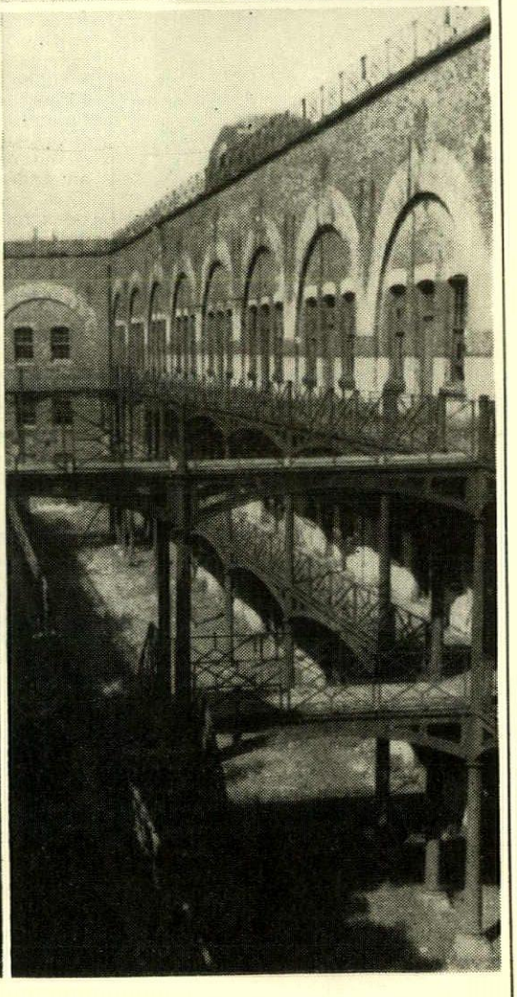
After the war the Castle was returned to the Ministry of Works, except that part always occupied by the Army, and the Heights were evacuated and allowed to fall into decay. A few years ago, with the acute housing shortage, some of the Grand Shaft Barracks and the Married Soldiers Quarters were renovated and put to a new use. Four years ago with the acute shortage of prison accommodation the Citadel was chosen as an ideal location for a new 'House of Correction,' being entirely surrounded by deep moats and already constructed. The casemates provided excellent cells, and the moats which were illuminated at night provided impassable obstacles. Recently, the Prison Commissioners relinquished the Citadel to Her Majesty's Borstal Institution. The staff of the Institution are housed in a newly built estate of asbestos cement prefabricated bungalows, which form a crown of white subtopia to the yellow-grey fortress.

Officially the War Department









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11 | 13

10, *approach to the lines of the western outworks.* 11, *the Grand Shaft.* 12, 13, *the South Front Barracks.*

own the Western Heights, and notices prohibiting public access to them are displayed on all the approaches; people wishing to view the fortifications must obtain a military pass from the Garrison Adjutant at the Castle. In practice, however, the public perambulates at will over and through the fortifications, except the Citadel, which is closed except to duly authorized persons. In the evenings, and at weekends, children may be seen clambering in and out of the moats, roaming through the deserted barracks, scrawling on the walls, and lighting bonfires wherever they have the chance. At the deserted South Front Barracks, children unhindered have recently smashed all the cast iron balustrading, broken up the timber floors, and thrown down the York stone copings. Most of the fortifications are, however, still structurally sound, but decay is developing fast. Already sections of the facings to the moats have collapsed, brick arches are cracking and dropping, there is little pointing left anywhere, and two of the three spiral staircases in the Grand Shaft are closed with barbed wire. At the Castle, the Ministry of Works have recently extensively repaired the Napoleonic Spur Caponniere, but on the Western Heights, where there are infinitely grander Napoleonic fortifications, no repairs are being undertaken. If the War Department cannot afford to repair them, and have no further interest there, they should relinquish them to the Ministry of Works, for they are undoubtedly as historically important as the Norman Castle, and will one day be recognized as such.

Glossary

Bastion: A projecting work at the angle or in the line of a fortification, to bring flanking fire on the assailants.

Caponniere: A passage or bastion projecting from the main wall of a redoubt or citadel into the surrounding ditch; developed by Albert Durer, to bring flanking fire on assailants.

Casemate: A bomb-proof vault in a fortress housing some of the garrison or guns, and constructed to form part of its walls facing into a ditch.

Citadel: A stronghold or fortress used as a storehouse and centre of a defensive organization, and as a refuge for final retreat.

Embrasure: The opening in a wall to fire guns through, usually with bevelled sides for a wide angle of fire.

Fosse: A ditch around a fortification, usually filled with water.

Glacis: An open plain in front of a fortification, where assailants would be open to fire.

Line: A deep ditch or moat.

Ravelin: A detached work with a parapet and ditch, forming a salient angle in front of the main fortification.

Redoubt: A detached outwork of great strength, able to fire in any direction, without re-entrant angles, and without flanking defences.

Terreplein: The upper surface of a rampart where guns are mounted.

Traverses and parallels: The traverse is a zig-zag trench used by assailants for approaching a besieged fortress so that fire could not be directed down its length; a series of 'parallel' trenches were constructed parallel to the fortification as the traverse trench proceeded, to accommodate guards for the excavators of the traverse. This method of attack introduced by Vauban in 1673.

Ian Nairn

SWISS REVIVAL

RECENT ARCHITECTURE IN GERMAN SWITZERLAND

It was only in the last few months of his life that the world became aware of the work of the late Hans Hofmann, or began to suspect that he might be part of a major architectural revival in German-speaking Switzerland. In the article below, Ian Nairn distinguishes the features—and the lessons—of that revival; a parallel study of French Switzerland will appear in a forthcoming issue of the AR, and recent work from both zones will be seen at an RIBA exhibition during 'Swiss Week' in October.

'The Swiss have had four hundred years of peace and what have they produced?—cuckoo clocks'

The Third Man, 1948

A familiar gibe, this one, peddled as conversational small change in one form or another about any aspect of Swiss art: how neat, how clean, how worthy, how irretrievably frigid and dull. As far as architecture is concerned, the taunt has come home to roost in an ironic way in the last ten years, for the architectural problem of a dense highly industrialized society has become something very like the cuckoo-clock problem, or at least the Swiss-watch problem. Mechanization, mass production and standardization have all set up the need for a set of beautifully finished and carefully assembled interlocking components—just the conditions that are needed for the manufacture of good watches.

Cleanness of line, neatness and precision have ceased to be just negative housewifely virtues: they have become the basis of this new type of architectural design. And where

other countries need all their energy to make some sort of acceptable standard of grammar and detailing out of the new vocabulary, with imagination either forgotten or loaded on to the building at the last minute with a vast gusty gesture,* the Swiss have been able to take the syntax for granted and hence have had creative energy to spare. At the same time, the years spent on careful landscaping applied to worthy but dull buildings have reaped their reward now that the buildings have become crisp, gay and elegant—the landscape foil is taken for granted, not applied as an extra; and, finally, for the first time in two hundred years Swiss volumes and masses have stopped being soggy and low-intensity, perhaps as a psychological reaction, perhaps as a natural consequence of the industrial forms, perhaps originally in emulation of Sweden: it would be silly to guess as result of a few weeks' architectural travelling. But however it has happened, all the numbers of the combination lock have come together at once, and Swiss architects have opened the door of the safe.

Or, to be accurate, one group of Swiss architects; this is still almost entirely a Zürich phenomenon. By and large French Switzerland builds in the lowest-common-denominator style familiar from *Europe Rebuilt*,† apart from Saugey's deft Genevois curtain walls, and the Ticino builds like Milan—i.e. slickly but without much feeling. Even in Basle, only seventy miles away, the results are merely competent but uninspired, like the work in an average German city, whilst Zürich has got the beginnings of a genuine industrial vernacular with each building not merely negatively acceptable but a positive addition to its surroundings.

What it is not, thank goodness, is a Zürich School, with masters, disciples and party lines. It is just a climate of opinion, and the three architects singled out especially here —Gisel, Schütz and Hofmann—are not leaders in any formal sense; they have never been connected and for all I know they may dislike each other's work. They are simply three good architects who between them represent the three qualities forming the numbers of the combination lock; Gisel the hard industrial geometry, Schütz the melting together of buildings and landscape, and Hofmann the imaginative use of industrial techniques. To some extent this article has to be a memorial as well as a chronicle; Hofmann died, aged sixty, at the end of 1957 when to judge by his latest buildings there seemed no limit to what he might have done, and no lack of patrons to employ him: jobs then in hand included a church, the head office of a big Zürich bank, a spa and the Swiss legation in New Delhi. If only one of the fuddy-duddies, old and young, that so bedevil architecture all over the world could have loaned him ten years of life!

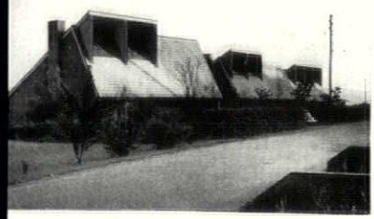
If anything has caused these trends to coalesce it is the universal competition system which keeps the profession toned up rather like liver salts—and how the profession needs it here—and the full, gimmick-free and *critical* presentation of new jobs in the Swiss magazines. But by whatever cause, several dozen architects in and around Zurich are producing buildings in this new hard colourful spirit; some of the results are shown in the following scrapbook and represent simply a few semi-casual journeys near the Zürichsee. Where they use clichés it is in the right way, i.e. simply as trademarks or parts of a design, not as the wholesale imitation of someone else's thought process, which

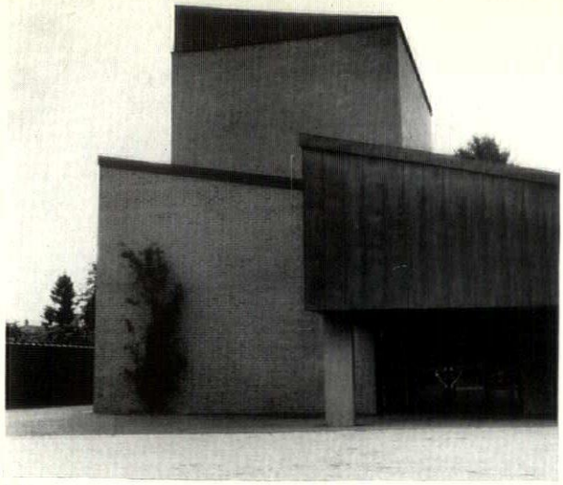
[*continued on page* 187

* The outstanding exceptions to this, as far as England is concerned, are, in my view, Powell and Moya and Chamberlin, Powell and Bon. But for the ordinary run of English building of this sort 'well-detailed' is about the highest praise that can be given to it.

† cf. *Europe Rebuilt:* 1946-56 by J. M. Richards; AR, March, 1957, pages 158-176.

Ernst Gisel. *Hard crisp forms and a remarkable ability to compose interlocking masses are clear in any of Gisel's buildings. They are accompanied by a much rarer quality which cannot be caught in photographs—a sense of interlocking volumes in interior space: Gisel's open plans are not one aimless floating space but a set of compact spaces butting against one another. On a minor scale the qualities are shown in the northlights of his houses at Zumikon,* 1, *and the mysterious piece of spatial penetration which is the entrance to the school at Thayngen, near Schaffhausen,* 2. *On a larger scale they form the continuous firm-bodied backwards and forwards rock of the masses at the Parktheater at Grenchen,* 3–8. *The facing materials are brick and bronze, the resemblance to Aalto's Säynätsalo is notable—yet it seems to be a genuine correspondence of feeling, not imitation, for both were building at the same time. Walking round the building* (3–8 *form a sequence*) *the complex shape is built up with such watertight forms that the memory apprehends what is going on at the other side of the block although it can no longer be seen. It is the effect of walking around Hilversum Town Hall translated from smooth horizontals and verticals into crisp* 30° *and* 60° *angles. In the newer Letzi School in the western suburbs of Zürich Gisel's forms have become thicker and flatter though still hard,* 9–12; *the remarkable sense of interrelated volumes is still there and will doubtless remain whatever vocabulary he chooses to work with. This ability is rare enough in architecture; it would be unparalleled in town planning.*





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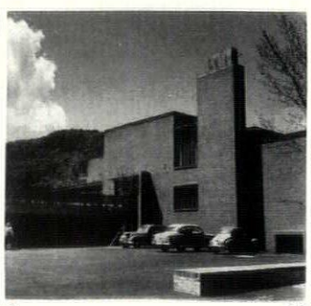

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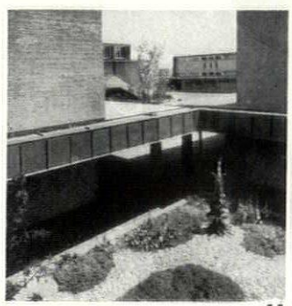

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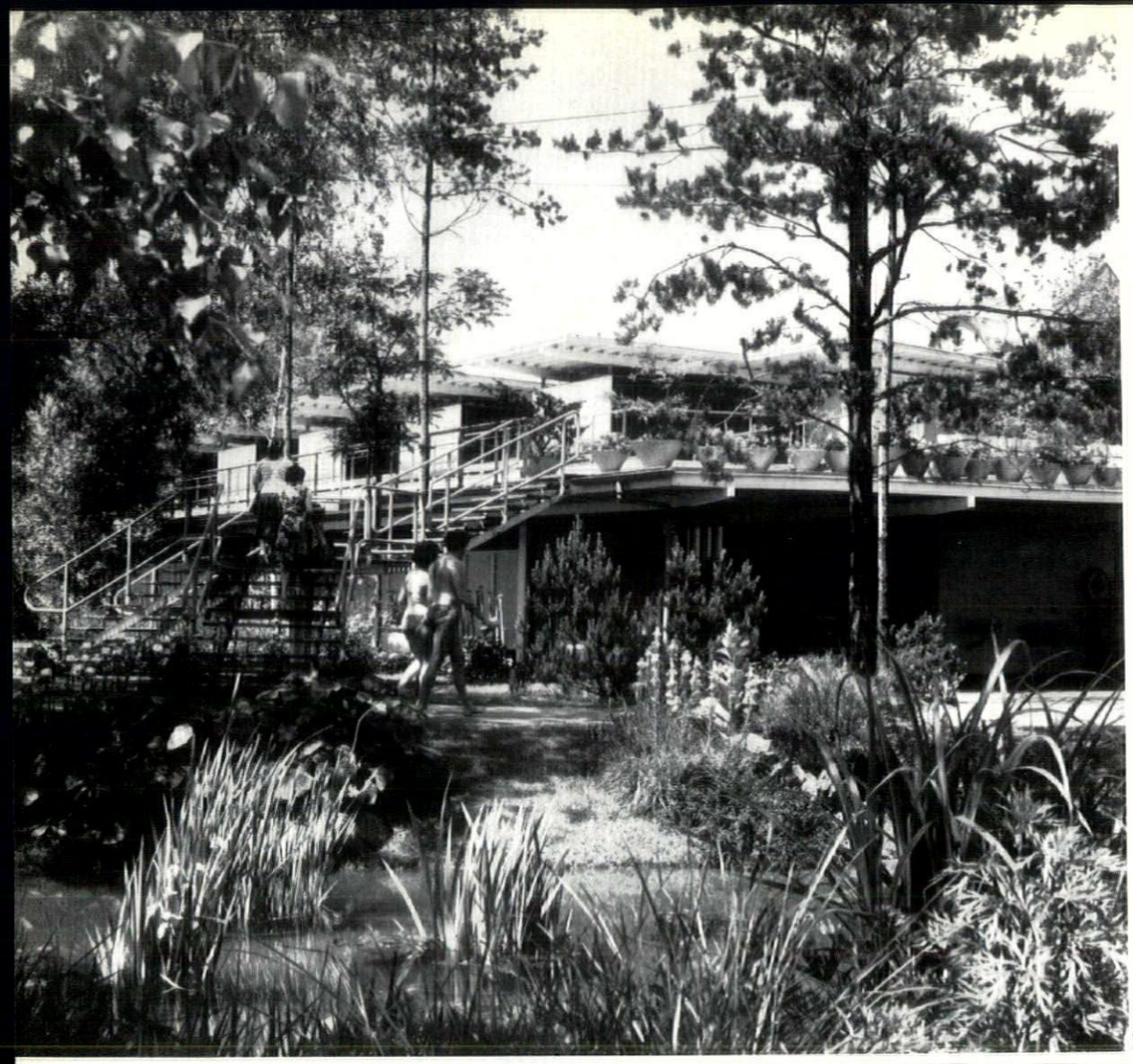

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Josef Schütz *Schütz's contribution is to have taken the customary tradition of good landscaping to the point where buildings and landscape are indivisible; where the planting is not a prettifying enrichment but an extension of the building itself. This was already clear in his church at Thayngen,* 1950, 13, *where the leaves and twigs become an additional skin to the wall, and is applied to a whole strip of ground instead of a single building in the famous Tiefenbrunnen bathing beach at Zürich,* 14-16, *where perhaps for the first time modern architecture has been able to look gay without looking makeshift as well. There is no telling where the landscaping ends and the pert bright buildings begin: no telling where deliberate effects end and the accidental arrangement of bathers and yellow and red chairs takes over. Yet the way in which this is done is not whimsy or arty; it uses straightforward industrial forms in an industrial way—for example the concrete mushrooms around the entrance,* 15, *or the honest asbestos-cement cladding above the restaurant,* 16. *And although 'landscaping' is used here with its traditional leafy meaning the method of design would be as valid for man-made surroundings—whether the main roundabout of a town or the backyard of a huge industrial plant.*



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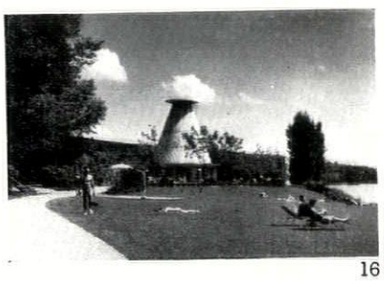

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Hans Hofmann *Hofmann was a generation older than Gisel or Schütz and had previously built in the Swiss style of the 'thirties and 'forties (the Christian Science church near the Zürich Art Gallery,* 1938*). Then in* 1954 *he designed the exhibition hall for the Basle Industries Fair,* 17*, the detail very German but carried out with a sparkle and polish which German buildings rarely possess—for example, in the sumptuous black and gold trim to the repeating pattern of staircase windows. Hofmann's mastering of the more direct interaction of buildings and their surroundings was shown in the hydro-electric dam and power station at Birsfelden, three miles upstream from Basle,* 18–21*. He had been landscape consultant for ten years before being asked to build and the result is a triumph of deliberate counterpoint between buildings and landscape: the zigzag roofs set off both the low hills to the east and the jagged Gothic skyline of Basle to the west. All outside walls are painted deep grey-green (a positive colour, not 'amenity green') with scarlet and white trim; the powerhouse is as full of colour inside as a Baroque church. A public way runs across the dam and Hofmann wanted to take it right through the powerhouse. This proved to be impossible, but visitors can look in from a high gallery reached by the spiral staircase,* 19*. The headquarters building for the Aluminium Gesellschaft on the north side of*



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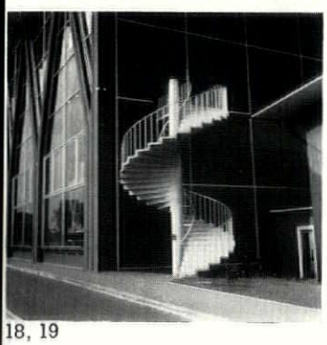

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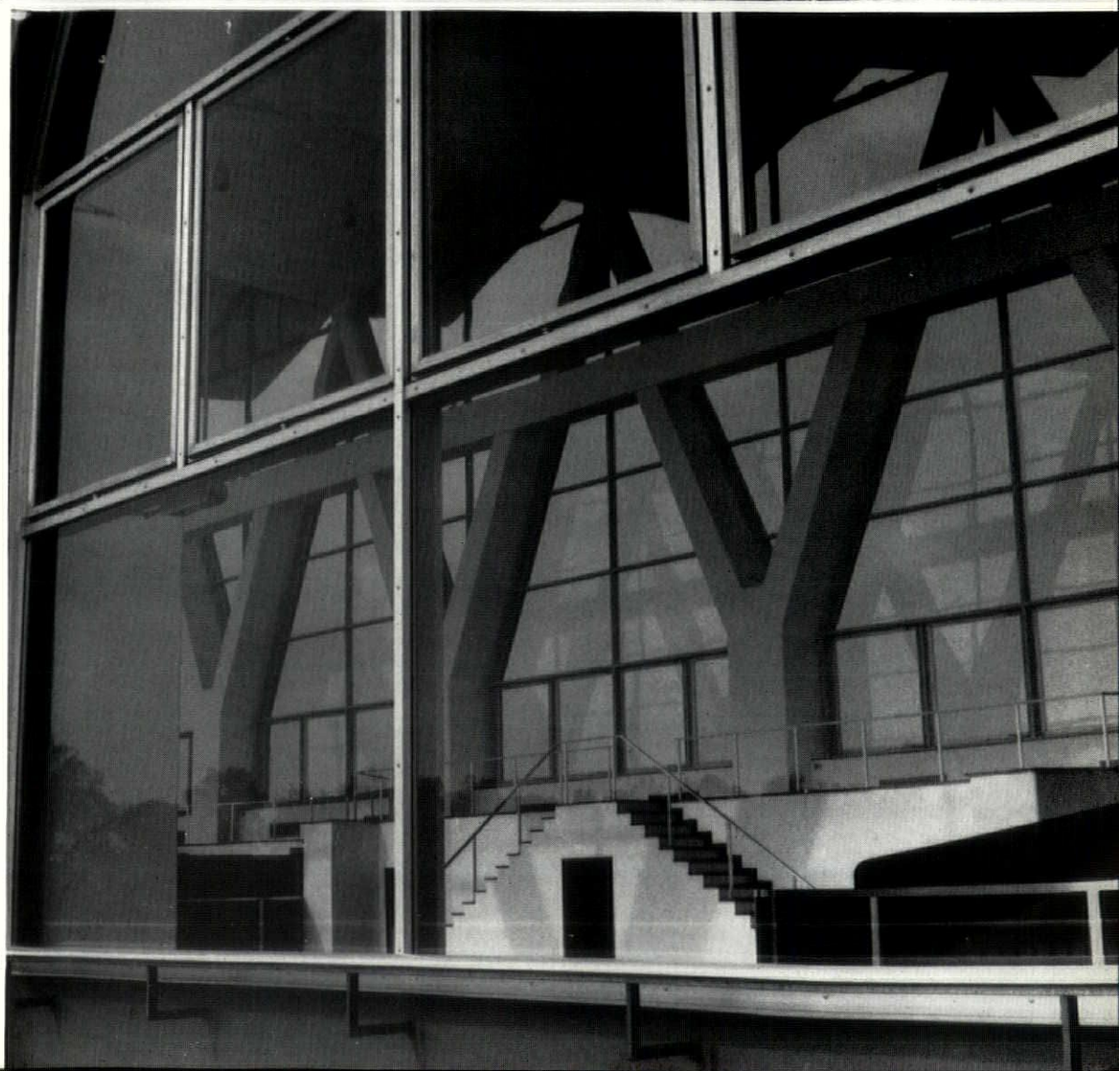

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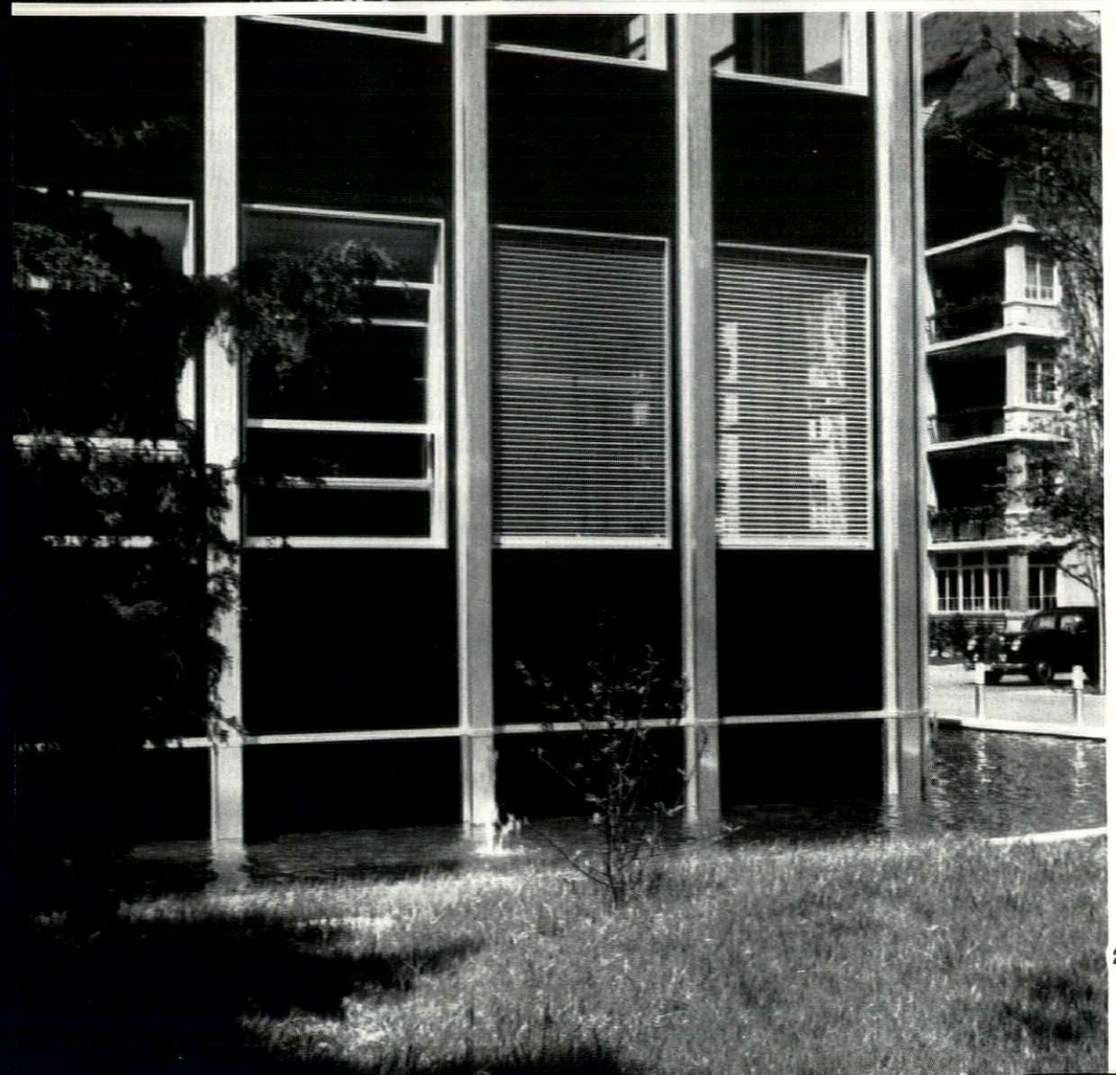

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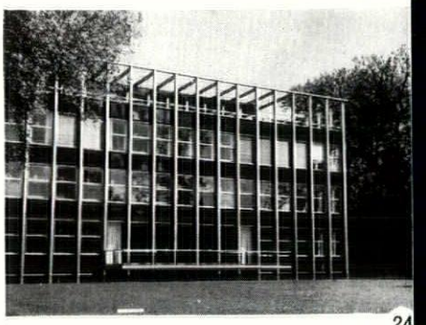
the Zürichsee is quite different again, 22–24*: an urban tour-de-force built as an aluminium eyecatcher, and one which makes similar American efforts look very dowdy. The mullions are aluminium, the spandrel panels are deep blue anodized aluminium sheet, the uneven burn marks making a continuously changing pattern in the sunlight. Comparison with our own best curtain-walled offices brings out immediately the difference between an acceptable curtain wall and a really good one, a matter largely of degree of attention paid to the profiling —attention which it is much easier to give when the basic grammar is instinctive, as it is here. Hofmann's last building, a recreation centre on the Mythenquai at Zürich,* 25*, is as complex and interpenetrative as the Aluminium building was formal and sheathlike. Air and foliage flow through the simple two-level building which is almost a skeleton with open-air staircases and framing. It is the effect of the glazing of the Basle Industries Fair building in reverse: there, several different real planes are held by multiple reflections in the single plane of the window; here the traditional picture composition of building—landscape in front—air above, which the eye effectively reduces to one plane, has been mysteriously redistributed so that none of the elements is quite where it should be. We are back here into pure Soanic research into the meaning of space, though not in any esoteric way, stemming purely from the functional needs of the building. Perhaps the most remarkable thing is that one person should have designed all four buildings within five years—an imaginative range which most architects would have taken a lifetime to achieve.*



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Vernacular: *A random selection of new buildings in and near Zürich. The surface styles and treatments are different, but the same crisp industrial spirit underlies all of them.* 26, *one of the sources of this newly-found facility with industrial forms—a new farm building, near Frauenfeld.* 27, *flats at Alstetten,* 1954–5 (*Zürich City Architects' Department*), *surface colours white, black and deep red; Swiss architecture has ceased to be just white paint, good taste and clever tree planting.* 28 *and* 29, *flats off the Bleicherweg, Zürich. Under-window panels dark blue; an acceptable modern building made into something more by piquant siting beside the canal—the deflected view of* 29 *is only one of several.* 30, *over page, office block in the Bahnhofstrasse, Zürich: attention to detail transforming an ordinary curtain wall block into a positive addition to the street. Under-wall and panels deep olive-green; mullions and cleaning rail aluminium. It must be admitted that it also has a low-pitched pantiled roof, just visible, a very queer partner to the cool elegance beneath.* 31, *new offices at the Braun Boveri factory at Baden; spandrel panels deep blue, the individual twist coming here from the uncompromising but subtle mixing of old and new and the outward cant given to each spandrel panel to throw off rainwater. This, barely visible in photographs, gives in the flesh a perceptible change in outline, worth exploiting further.* 32, *bathing beach on the Mythenquai, Zürich (Hans*

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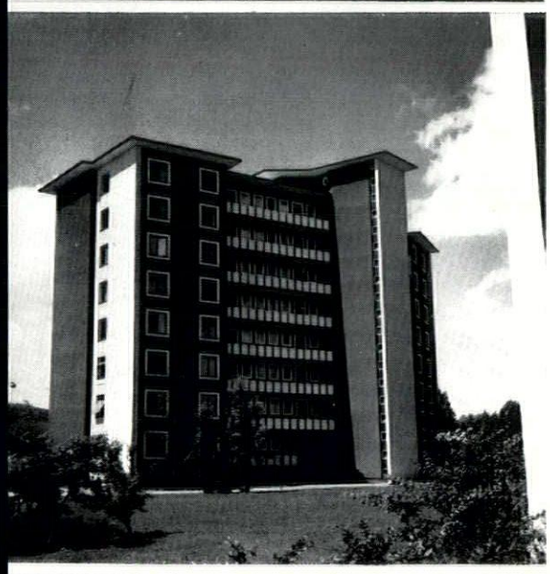
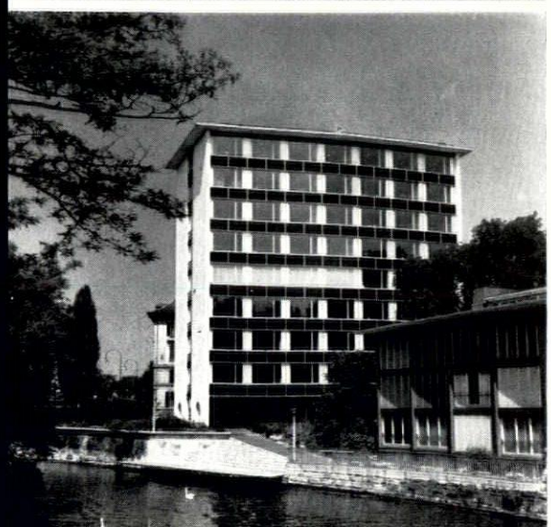
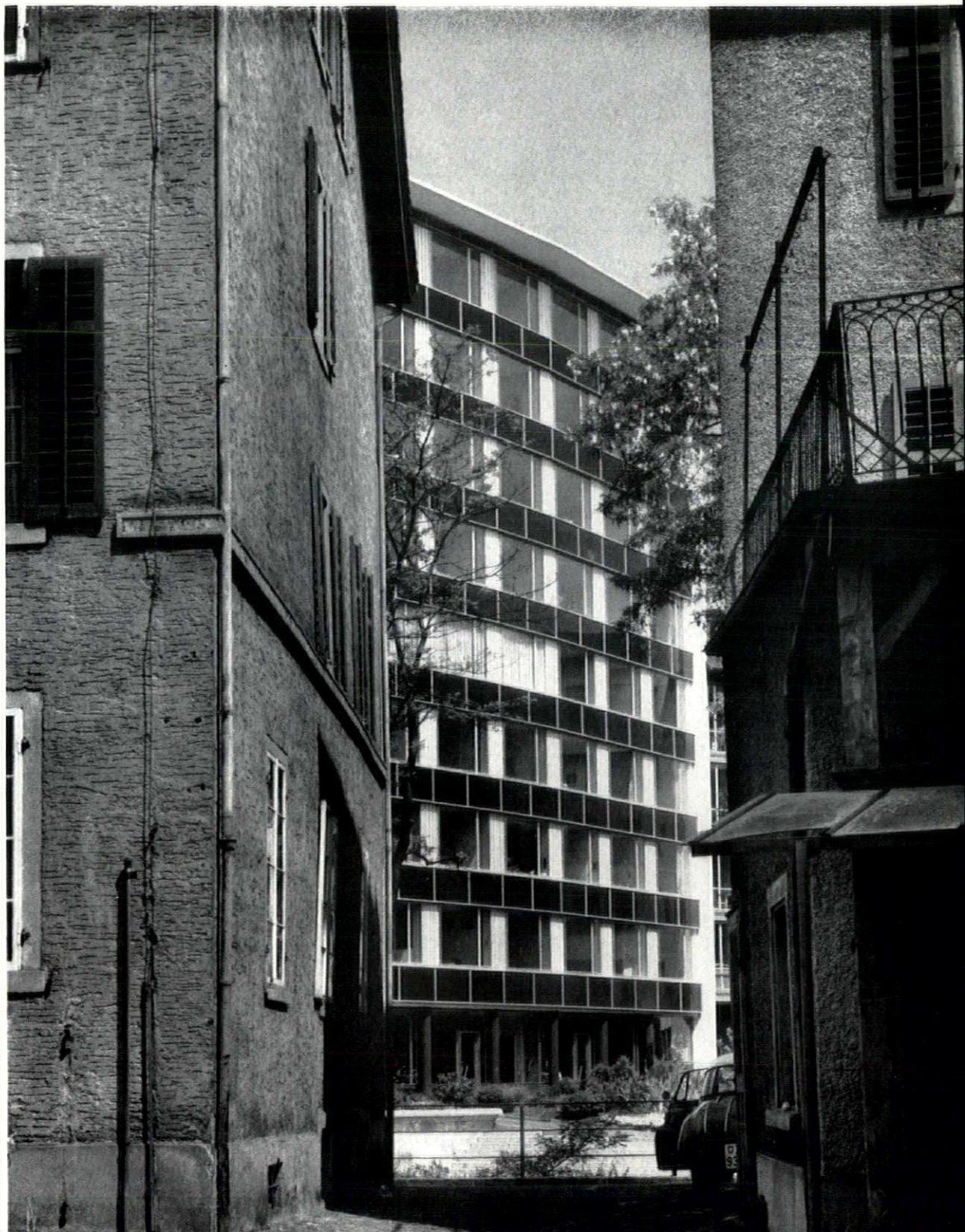
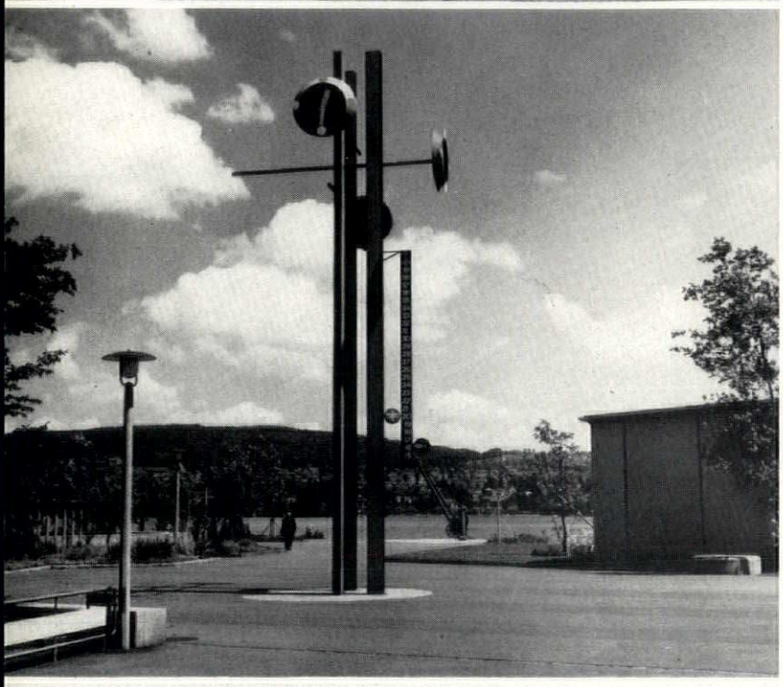




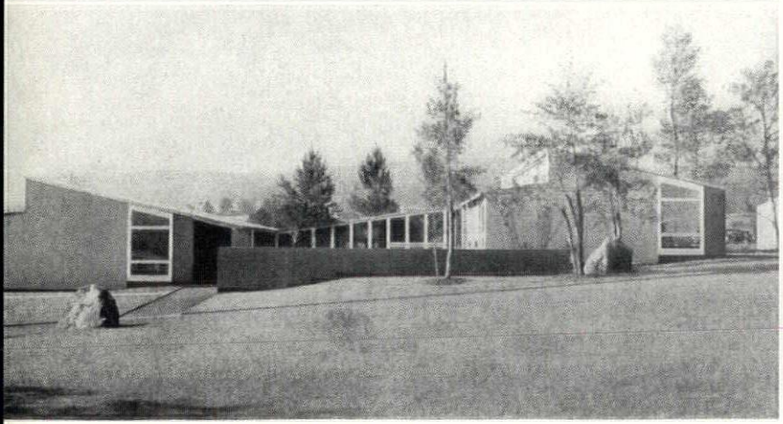


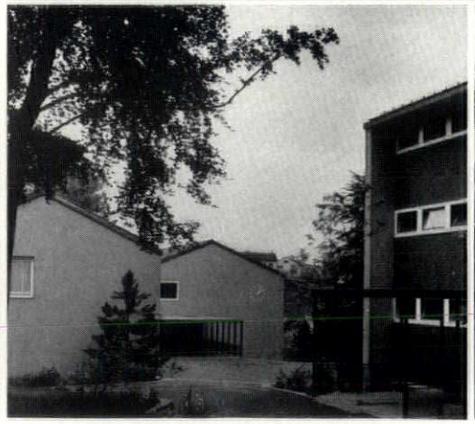














Hubacher, 1957), clearly inspired by the Tiefenbrunnen, and none the worse for that—not a slavish copy but someone else's variation on the same theme. 33, *church at Opfikon, near Zürich airport: the unexpected case of the imitation being built before the original—Hofmann's design for the church at Sihlfeld.* 34, *school at Alstetten; Gisel's style of brickwork and angular rooflines but again interpreted rather than imitated. The style is exactly suited to a multiplicity of separate elements, just as the elegant curtain wall of* 30 *is perfectly suited to an urbane continuous street line.* 35–36, *school at Baden. Though deceptively simple, this is almost the best example of what this new Swiss idiom can do for the ordinary building programme. It is simply three pitched-roof classroom units on a steeply sloping site, linked by planting and covered ways and forming a tiny enclosure at the centre,* 35, *end walls are grey roughcast, side walls are rendered a dull smoky red; window trim is white.*

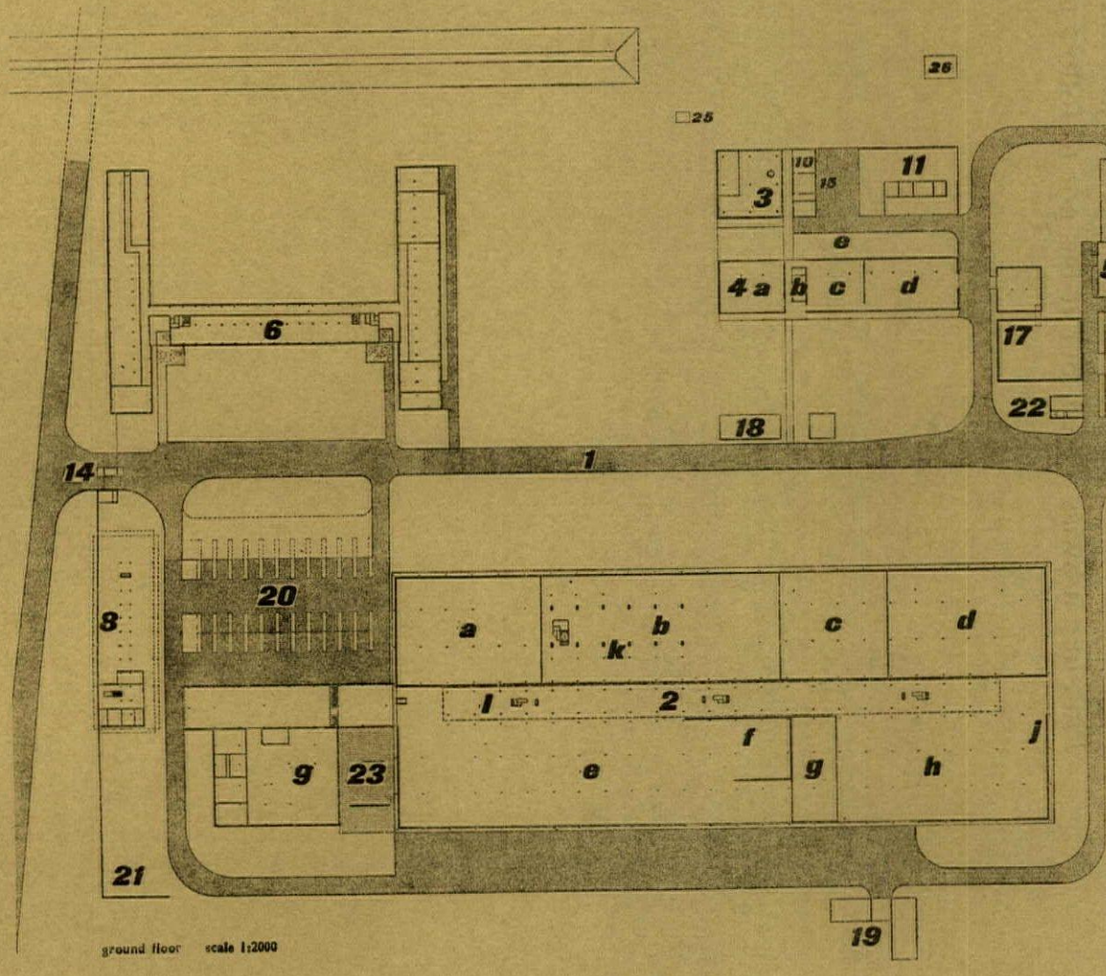
Here undoubtedly is a vernacular: gay, lively, not in the least affected and not in the least afraid of modern industrial techniques. Formal praise of this sort of building nearly always sounds inflated and an easy target for intellectual snobbery, yet in their way these Swiss buildings are just as important for the future of architecture as the post-war designs of Corb or Mies.

continued from page 180]

makes the whole building into a cliché; nor is there any attempt to push a cliché or way of design into a building type for which it is not suited, as some Americans seem to be trying to do with the curtain wall. Something like 'the style for the job' is emerging, yet with all the mini-styles informed by the same spirit—in other words Style in the true long-forgotten sense of the word.

Fashions are easy come and easy go these days; this Swiss style is not yet strong enough to absorb shifts in fashion (as gothic did) without being swamped by them. In particular, it would be folly for Zürchers to swap for the nearest available bait—at the moment shaggy mock-Corbusian plasticity or bloody-minded Italian brickwork. For once in the world, style, temperament and economic conditions are perfectly in step: this could be the beginning of a South German/Swiss/Austrian style as great as the Baroque, if it is left alone by the style-mongers for another ten years or so. And quite apart from all its local qualities, this new Swiss style has universal lessons for anyone building for the new industrial pattern in a crowded country (i.e. ourselves, Benelux, parts of W. Germany and Northern Italy): the pattern of clean industry, precision factories and electric power. We in England have played it squalid (Slough), genteel (New Town industrial estate) or jungly (grid substations) and are still no nearer a solution; if the new landscape is not to mean mutual destruction of both industrial and rural character, it must be fitted together just like the parts of that watch. It need not look like a Swiss watch, but it has got to follow the principles of sound watchmaking.

LABORATORIES AT RANGOON



ground floor scale 1:2000

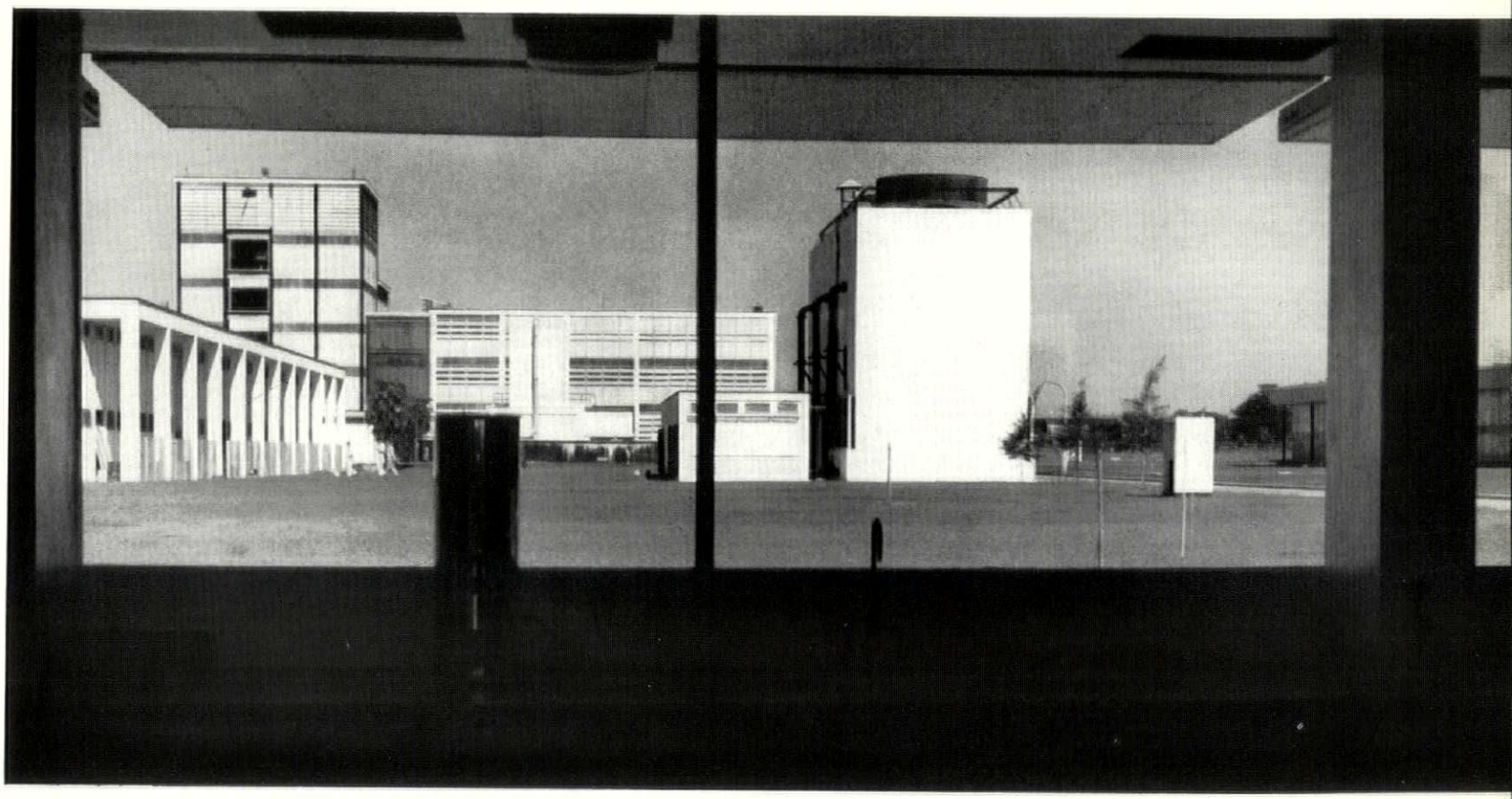
key

1. main internal circulation road.
2. production building.
   a. tabletting.
   b. galenicals.
   c. filling.
   d. S.P.U.
   e. bulk stores.
   f. bottle washing.
   g. components.
   h. finished goods store and despatch.
   j. surgery.
   k. drug grinding tower above.
   l. mezzanine above.
3. boiler house.
4. generator house and cooling plant.
   a. compressors.
   b. L.T. switchroom.
   c. generators.
   d. workshop.
   e. H.T. switchroom.
5. yeast and alcohol building.
   a. ferment plant.
   b. alcohol tower.
   c. yeast plant.
   d. acid store.
6. biological laboratories.
7. to animal farm and operating unit.
8. administrative offices.
9. canteen and welfare building.
10. laundry and cloakroom.
11. garage and maintenance.
12. rice store.
13. alcohol finished products store.
14. gate house and main switchroom.
15. oil storage tanks.
16. incinerators.
17. reservoir and pump house.
18. cooling towers and pump house.
19. inflammable and noxious stores.
20. car park.
21. bicycle park.
22. gatehouse.
23. terrace with inaugural stone.
24. main outfall drainage canal.
25. sewerage pump house.
26. sewerage collecting tank.

LABORATORIES AT RANGOON

ARCHITECTS | **JAMES CUBITT AND PARTNERS**

1, generator house, yeast and alcohol plant and cooling tower from the laboratories.

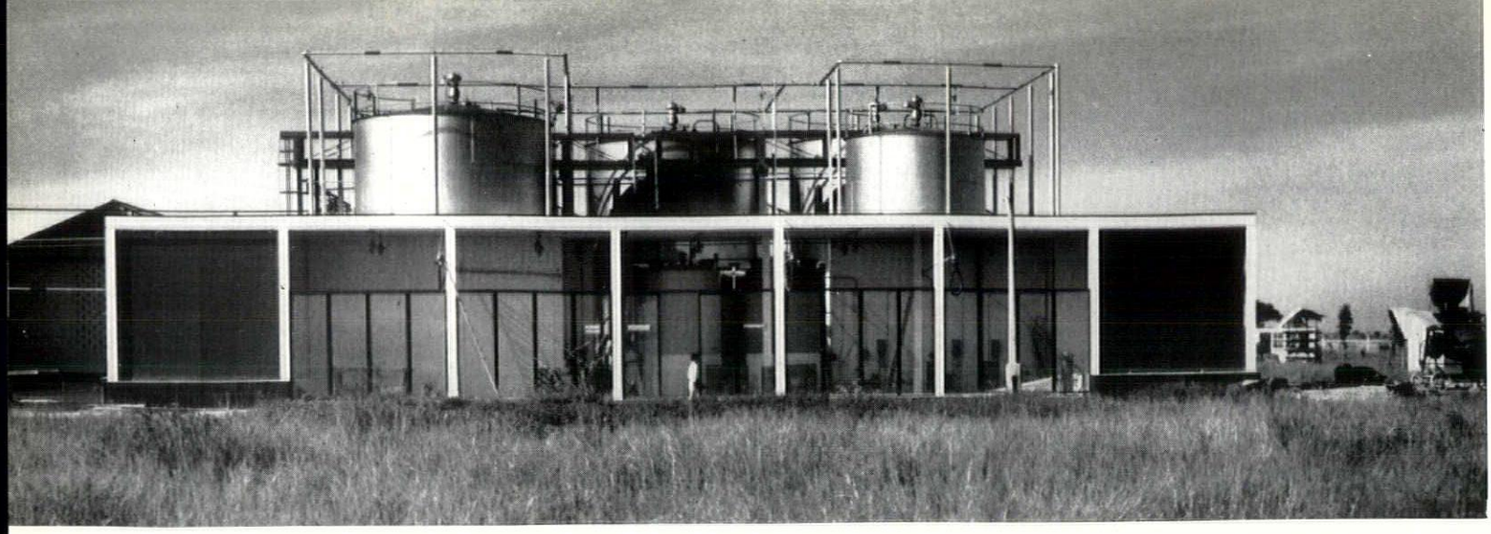


These buildings, which were previewed in the AR of November, 1955, form part of the Burma Industrial Development Plan and are in the area planned as an industrial zone, to the north of Rangoon. The site of 140 acres was chosen, in spite of the difficult subsoil conditions, because it was level, had good transport facilities and was close to Rangoon and the Hlaing River. There are three main sections ; the main pharmaceutical production building, the alcohol and yeast vitamin plant, and the biological laboratories. In addition, there are the administration block and service and workshop buildings.

Owing to the scarcity of skilled labour, considerable use has been made of factory-made building elements and dry, precast construction. The layout allows for a future rail service to the rice store of the alcohol plant, and the site approach road can be developed into a double carriageway.

The alcohol and yeast plant is at the far end of the site. The main production building has been sited to allow for a future finished goods warehouse at its northern end. The length of these two buildings, of over 1,000 ft., and the need to expose the non-airconditioned half of the main production building to the prevailing wind, determined its north-south axis. The boiler-house is between the alcohol plant and the main production

[*continued on page* 192



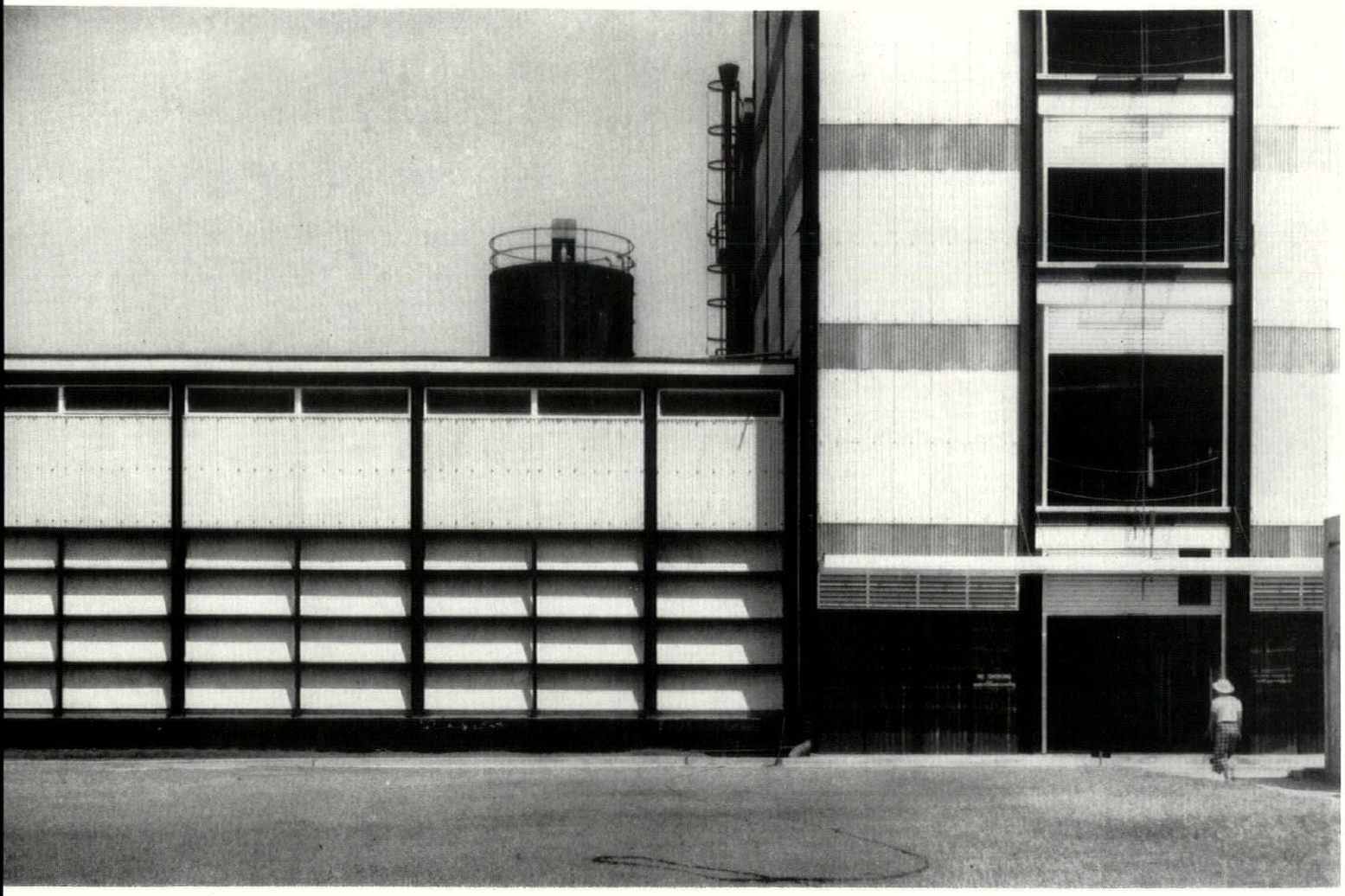
2

2, alcohol finished products store.
3, the timber-louvred gatehouse with the yeast plant beyond.

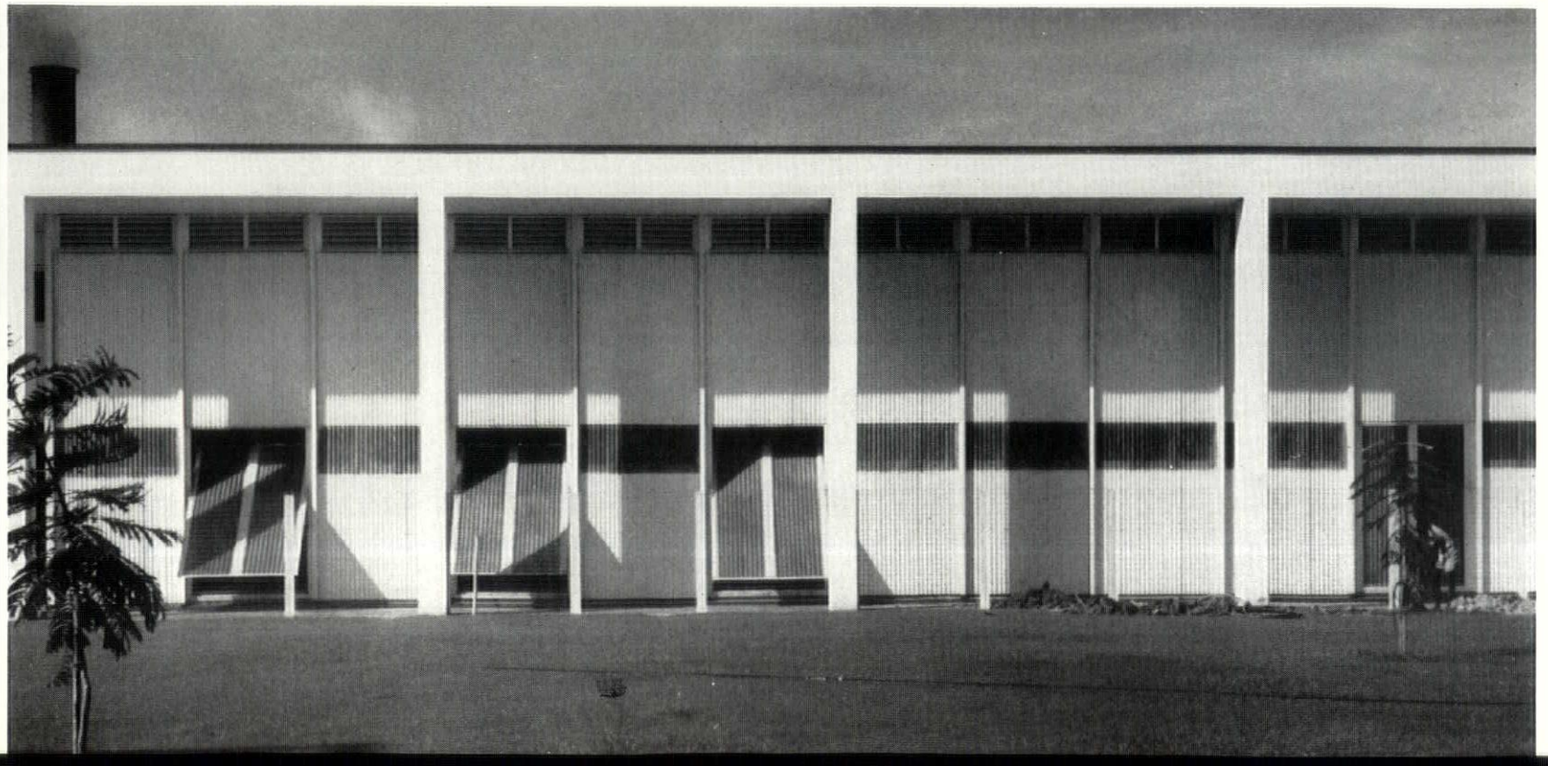
3



4, the yeast plant and alcohol tower.



5, the generator house; this building and the yeast plant have wall infilling of corrugated asbestos and corrugated green fibreglass, with pressed metal louvres.



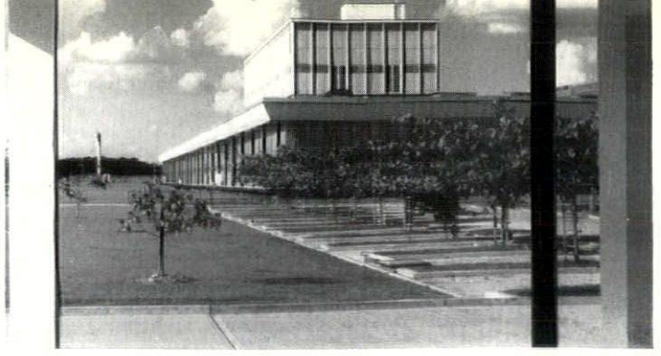
continued from page 189]

building, both of which it supplies with steam. All other services, such as water pump, filtration houses, refrigeration, gas and repair shops, were also grouped in this area. The animal farm and the incinerator for the biological laboratories were sited at the farthest end of the site. The biological institute, administration offices and canteen create an informal quadrangle, which the end of the main production building completes on a grand scale.

The main production building is constructed with a space frame built on the site from prefabricated units in the form of inverted pyramids. This deck is supported on a column grid 32 ft. by 24 ft. A complete bay of the roof was built up on the ground and hoisted into position by mobile crane. Each unit receives a precast aerated cement slab, treated with a screed and waterproof membrane, covered with solar tiles. The ceiling is formed by 4 ft. square asbestos sheets clipped to the tension members of the space frames. The building is clad externally with demountable aluminium double skin panels insulated internally with fibre glass.

The biological building is H-shaped in plan, the centre being of two storeys, with single-storey wings. The structure is designed in precast concrete units, with curtain walling protected by continuous sunbreakers. The administration building is raised off the ground on piloti, providing a shaded car park beneath, and the structure is similar to that of the biological institute.

There are 15 air-conditioning plants, which serve 725,000 cubic feet of space. Mechanical ventilation is provided for the rest of the building. A thermal electric installation provides the steam required for the manufacturing processes and part of the electricity needed. A triple cooling tower provides cooling water for process purposes and for the refrigeration plant condensers.



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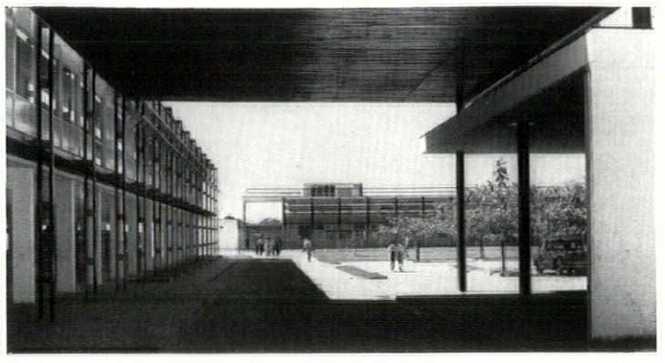

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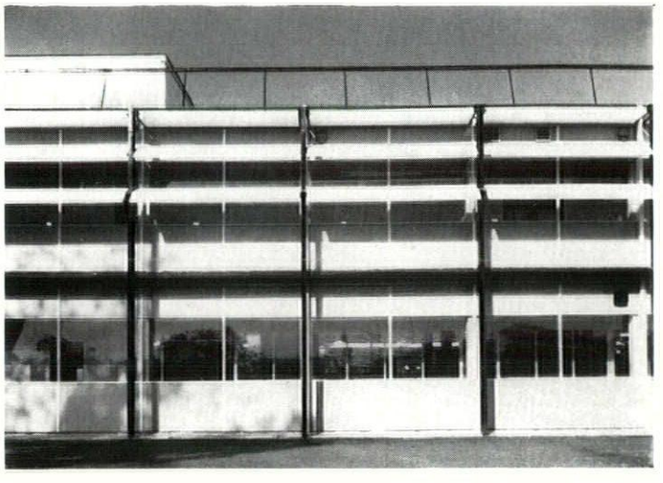

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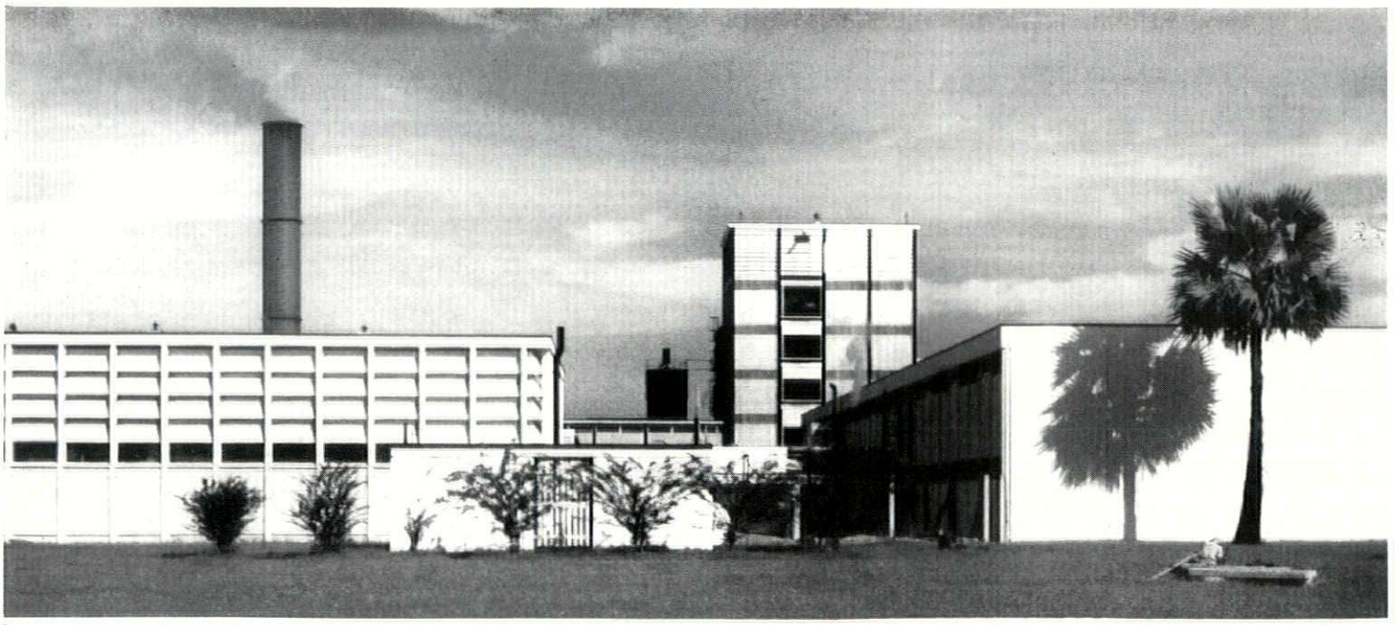
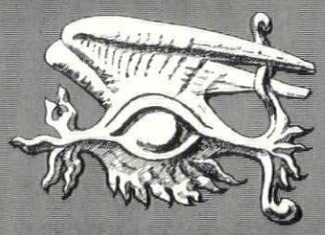


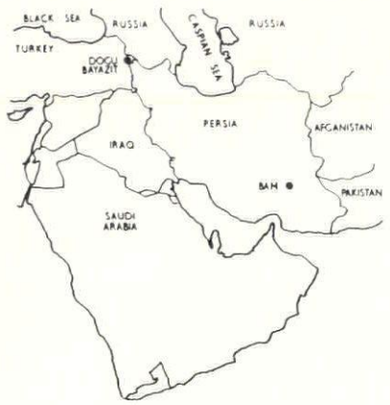
9

6, the main production building seen also on the cover.
7, the administrative offices with the biological laboratory beyond.
8, the biological laboratories.
9, the boiler and generator house, with the alcohol tower in the background.



the exploring eye

Although we continue to speak in English of castles 'commanding' a pass or a plain, the concept has become a very abstract one for most of us, and conjures up no visual image beyond an array of arrows in a nest of simplified contours in a school text-book. Most of the castles, fortresses and block-houses we know have been engulfed by towns or hanging woods, ringed by municipal gardens or bus-terminals, the sea has retreated from them or their estuaries have silted up. Rarely, as in a case like Lucca, can we see in Europe a set of walls whose function is manifest and comprehensible to us.



Map of Persia and adjoining territories, showing the location of the Palace of Ishak Pasha at DoguBayazit and the town of Bam.

It needs a desert or semi-desert landscape to restore the life and—above all—the sight-lines to our diagrammatic picture. Only there is the military prospect likely to have escaped obliteration by vegetation or buildings. Only there can one stand on the ramparts and appreciate fully the field of possible military operations below, the dead ground, the lie of the valleys, the distribution of water, the scalable and unscalable slopes. Inevitably, the Near and Middle East, which have been cavalry-and-castle terrain since before the time of Alexander the Great, provide the best known military prospects of this sort, and the writings of Robin Fedden and others have made the commanding aspects of Crusader castles like Krak, Margat and Chastel Pelerin familiar to the general student of architecture.

But a little farther East, the marches of Turkey and Persia, and the desert gates of Persia itself, provide a further sequence of commanding fortresses whose settings make their military functions clearer still. The two that form the subject of the illustrations inside this gatefold are the so-called Palace of Ishak Pasha, in Turkey, and the Oasis of Bam in Persia. The former overlooks the abandoned city of Old DoguBayazit in the province of Agri, in the extreme eastern part of Turkey, close to the frontiers of Russia and Persia. It lies in the shadow of Mount Ararat, but—in spite of the scientists and mountaineers who visit the mountain—the Palace of Ishak Pasha remains an almost unknown monument, and the fine panorama by Ara Güler is the first photograph of this impressive ruin to appear in any Western journal.

Bam, on the other hand, lies on the southern fringe of the Dasht-i-Lut, or Great Salt Desert in central Persia. It commands invasion and trade routes over the Kuh-i-Jamal Bariz behind it to the Persian Gulf, and eastwards into Afghanistan and what is now Pakistan, but its place in history is as the site of the last stand of the Zand dynasty in 1795, and as the refuge of the leaders of the Ismaili sect in 1840, before their flight to India. Its supposed impregnability no longer an asset, Bam is now little more than an oasis of gardens ringed by ruins, but its relationship to the desert waste beyond is still as striking to the eye in Costa's photographs as in actuality.

reputed to be the coldest part of Turkey. It lies some eighty miles from the main overland trade route from central Turkey to northern Persia, and its original function is supposed to have been one of feudal command over the lands under Mount Ararat, rather than something strategic. Its origins as a fortified site are unknown, but presumably go back to a Christian Armenian

Turkish and Persian [illegible] in its decoration and make its dating difficult. However, its function could hardly be more clear, at no time in its history could anything have moved on the yellow plain below without being spotted at once from the castle look-outs.

2, Bam is entirely different in character. Not a compact fort standing aloof from its town, it is—

is only when one looks down from the castle that one sees at once that its function was to dominate the plains beyond the city walls, and block access to the mountain passes.

3 and ***4,*** the views down from the fortress of Bam are among the most extraordinary in the world. In one direction one looks over the walls, still in fairly good order, to a fantastic jumble of domestic ruina-

lost its city. Looking another way, the eye commands a seemingly endless flatness, the nearer part cultivated and the pattern of cultivation broken by the shards of walls and towers standing up in inexplicable irrelevance, the farther part running away into an immense and barren plain on which nothing could move without being seen.

[Research carried out by Anthony Rhodes]

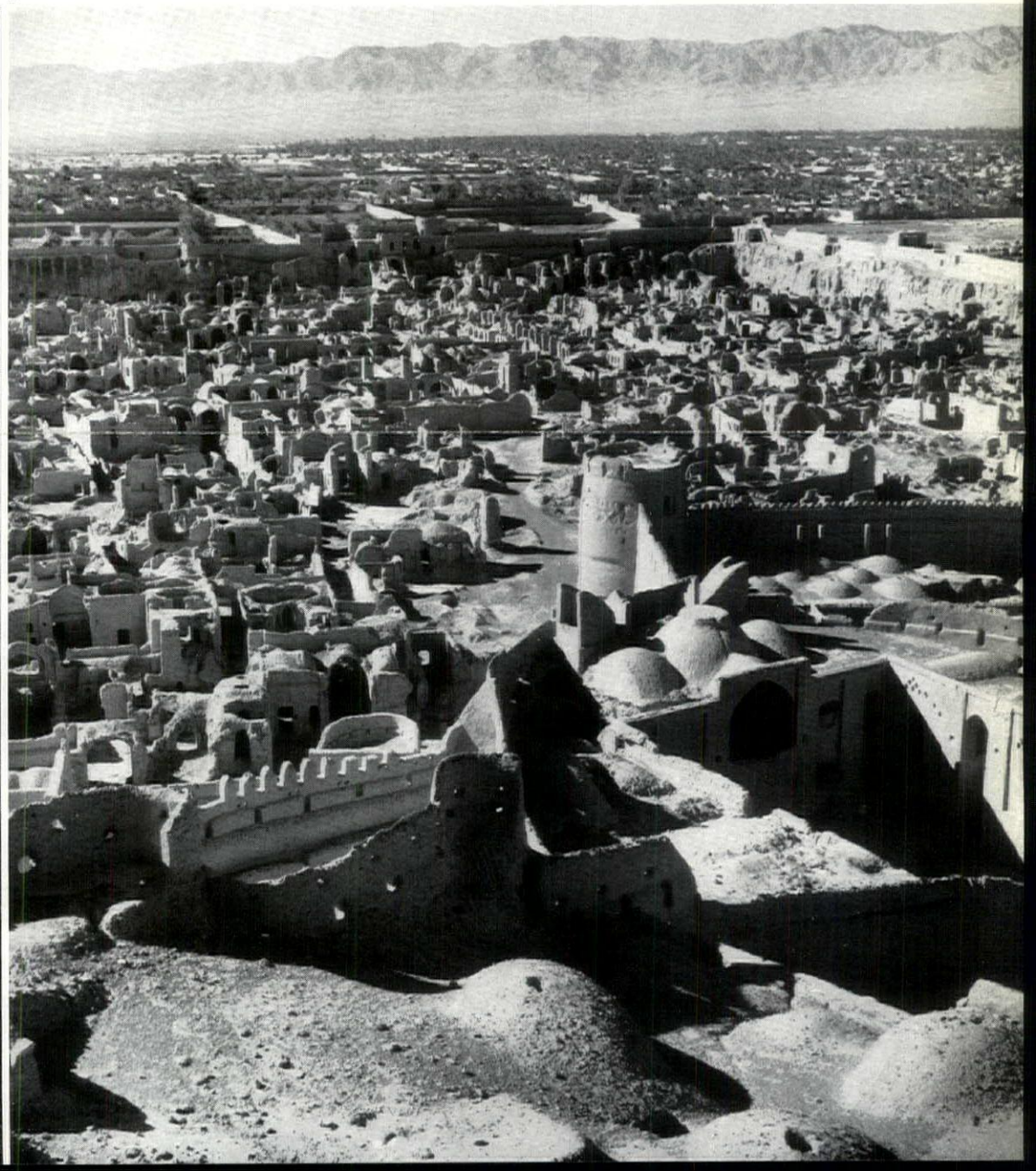


2

3



4



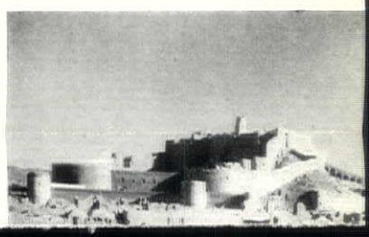
1

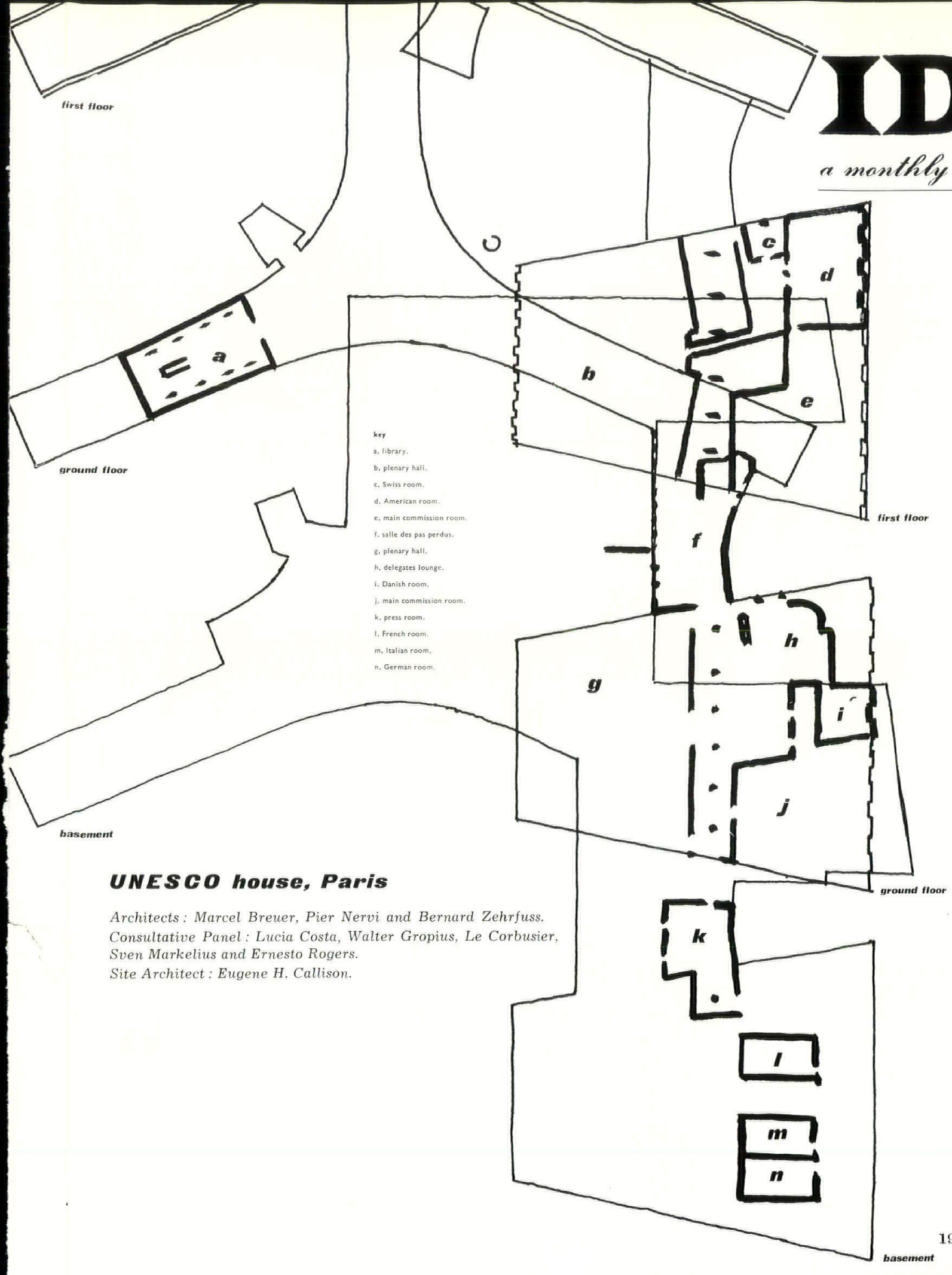
1, the fortified palace of Ishak Pasha commands, visibly, immense prospects over bleak and inhospitable terrain—the bleakness is not merely a visual effect, since it stands at an altitude of 6,000 feet, in what is

ruler. The remains now visible on the site are much more recent, and some date from a restoration as late as 1775, under the Ishak Pasha who gave the place his name. As a result, Christian and Muslim, Armenian,

or rather, was—a walled town huddled around and partly enveloping an irregularly fortified hillock. From the ground, indeed, one might believe that the function of the castle was to dominate the town, it

tion, vaults, domes and arches fallen and half-fallen, broken stumps of walling, a skeleton townscape. But beyond it lies a fairly flourishing zone that one is tempted to call a garden suburb that has





UNESCO house, Paris

Architects : Marcel Breuer, Pier Nervi and Bernard Zehrfuss.
Consultative Panel : Lucia Costa, Walter Gropius, Le Corbusier, Sven Markelius and Ernesto Rogers.
Site Architect : Eugene H. Callison.

interior design



1

1, a view through the main entrance area of the Unesco building—the general entrance from the Place de Fontenoy lies behind the lift-block on the left, Nervi's entrance-canopy from the main forecourt can be seen through the glass, right. The pilotis, like all other exposed concrete surfaces, are sandy in tone, the floor of riven Norwegian granite.



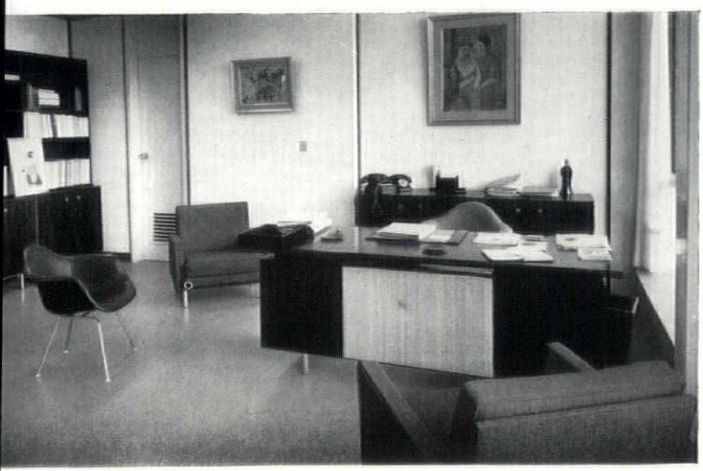
2

2 and 3, the library, which fills in one wing of the ground floor between the pilotis (it lies directly behind the viewer in 1) is a gift from Sweden, designed by Hans Borgstrom and Bengt Lindroos. On the floor of cork tiles stands furniture of red beech and fir, clear plastic lacquered to show the natural colour of the woods. The desks have at their ends a neat device for racking, and reading, works of reference, with elbow-pads on the side-pieces.



3

4, an executive office on one of the higher floors—Eames and Knoll furniture is used extensively throughout the building. Although the fenestration can only just be seen in this view, the effect of floor-to-ceiling windows of anti-glare tinted glass can be appreciated.



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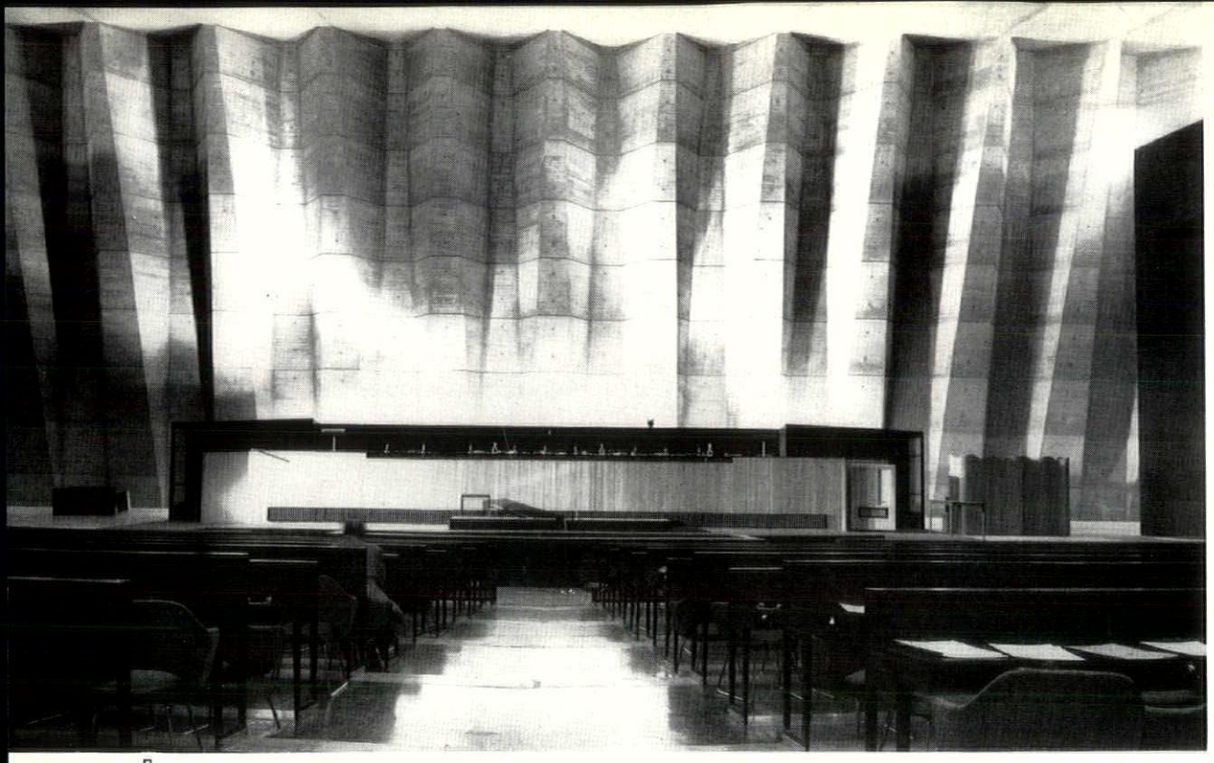
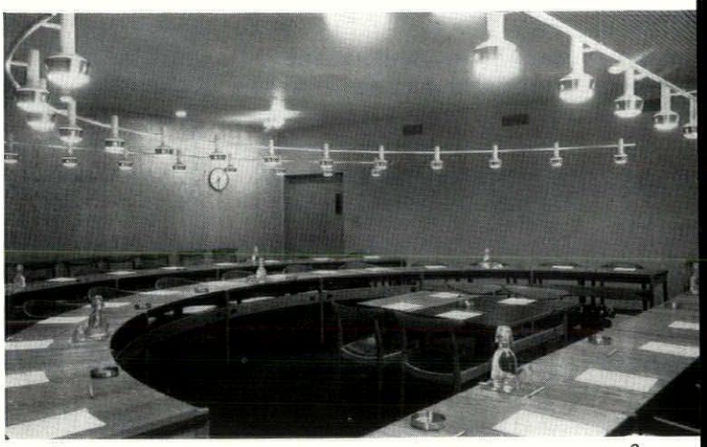


5

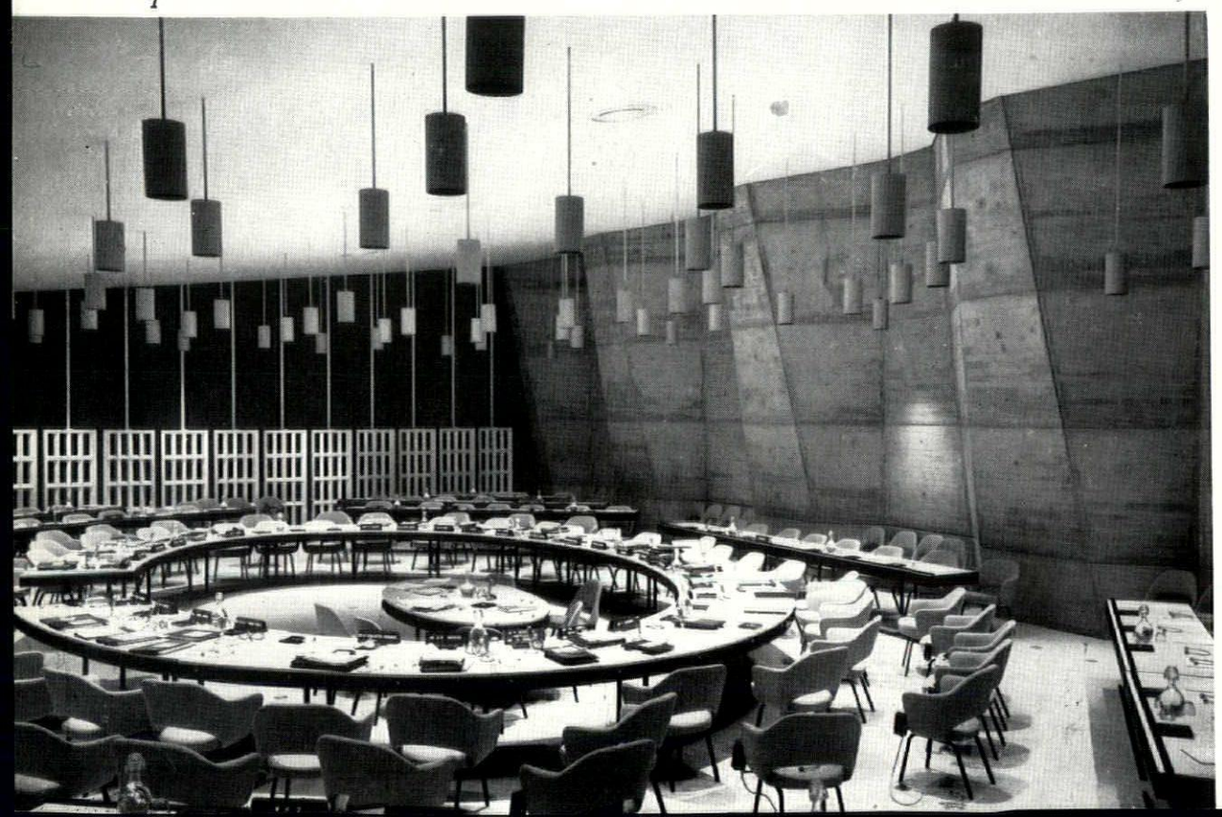
5, the inner face of the folded slab end-wall of the conference block gives the Hall of Plenary Assemblies of Unesco the most dramatic interior of any comparable work done in this century. The structure of the roof is also left exposed, but the sides of the room are masked by black-painted timber structures containing translation-booths, etc. (just visible at right). The exposed woodwork of the dais, however, is in natural finishes.
6, in complete contrast, the ground floor Committee Room designed by Hans Wegner (and given by Denmark), has only one exposed concrete wall, invisible in this view, the others



6

UNESCO house, Paris

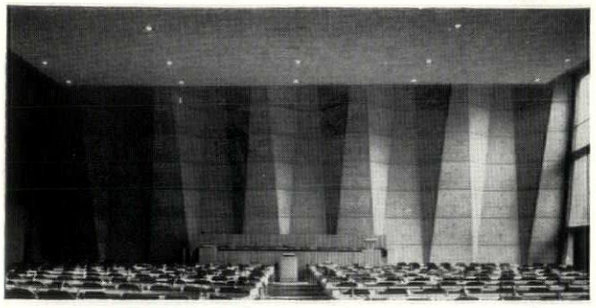
7



being panelled in ash, with furniture of ash and teak, with natural leather upholstery—a blond colour-scheme that does much to offset the subterranean effect of many of the other windowless rooms in this block.
7, the folded slab of the outer walls appears again in the Executive Boardroom, but the smaller scale, the smooth suspended ceiling and the forest of lamps hung from it, give an entirely different effect to that of the larger rooms. Designed by Philip Johnson (and given by the USA) this room has bronze velvet side walls, protected by plastic grilles; floor, ceiling and table-tops are parchment, the Saarinen chairs covered in tan cloth—on some of the chairs the control panel for the translation service can be seen clipped to the frame.



9



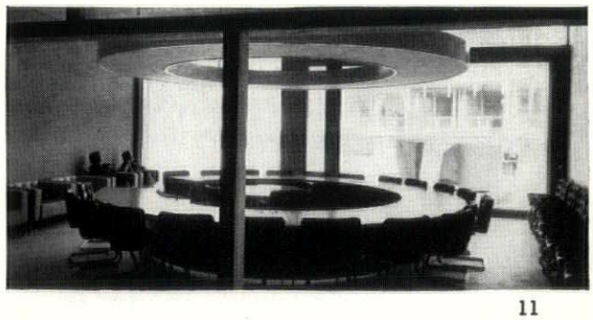
8

8, the Main Commission Room, second largest of the ground-floor rooms in the conference block, creates an entirely different effect to the main assembly by virtue of its fenestration, covering most of one side and ensuring that the folds of the end wall are seen, for much of the day, in raking light.

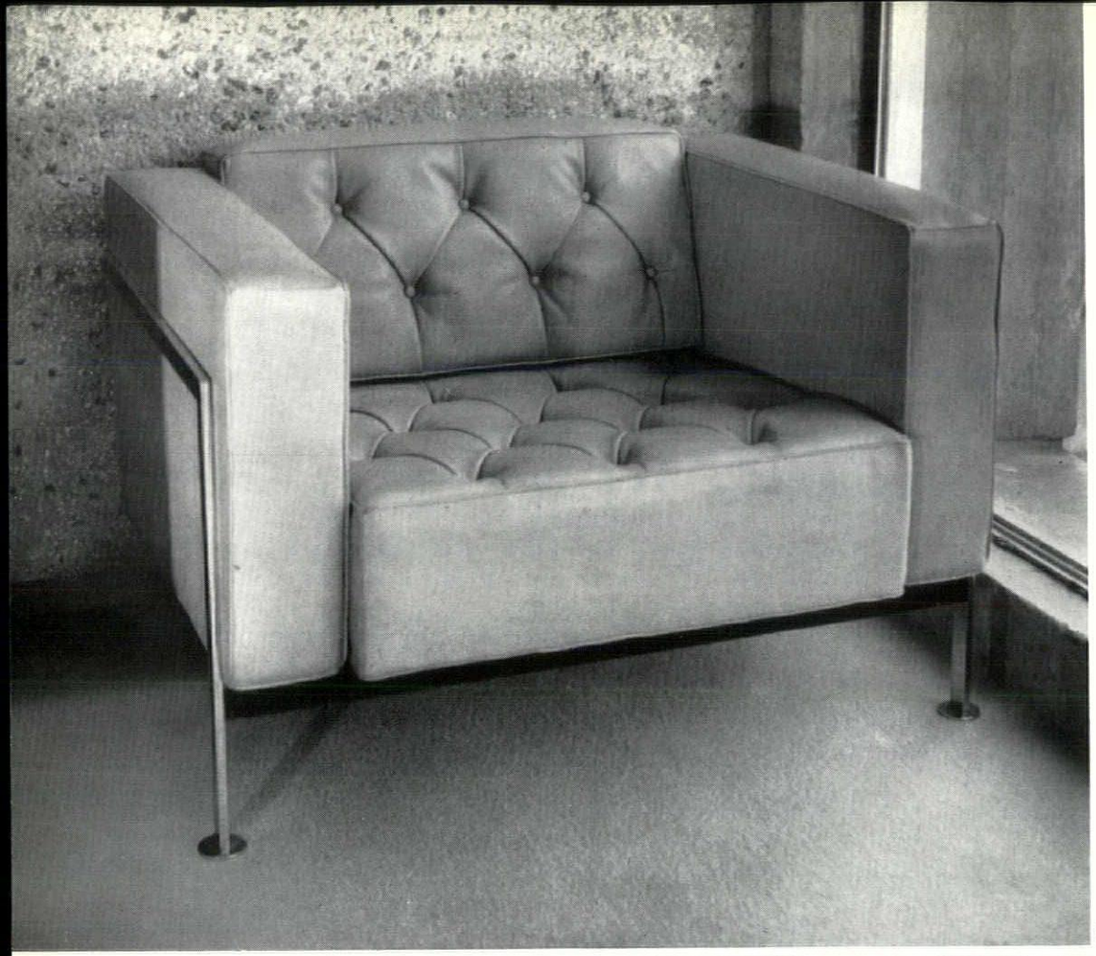
9 and 10, the furniture used in the Unesco building covers almost the entire range of techniques and aesthetics accepted as modern, ranging from Hans Wegner's elegantly detailed chairs (exquisitely made by Johannes Hansen) in the Danish-given Committee Room, to Robert Haussmann's brisk, shiny chromium and leather chairs, 10, for the upstairs, Swiss-given, Committee Room, seen in 11, with its circular walnut table, and circular light-fitting whose height can be adjusted at need.



10

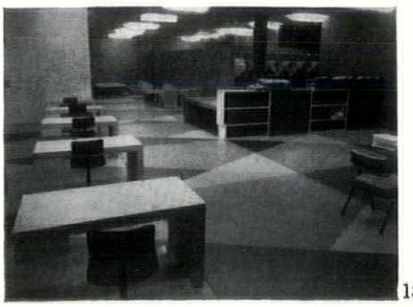


11



12

12, another of Haussmann's chairs, in chromed steel strip framing four removable leather covered cushions—a classic modern-movement solution for relaxing or waiting chairs. These are in the foyer of the Swiss committee-room, and one of the bush-hammered concrete walls is seen behind.



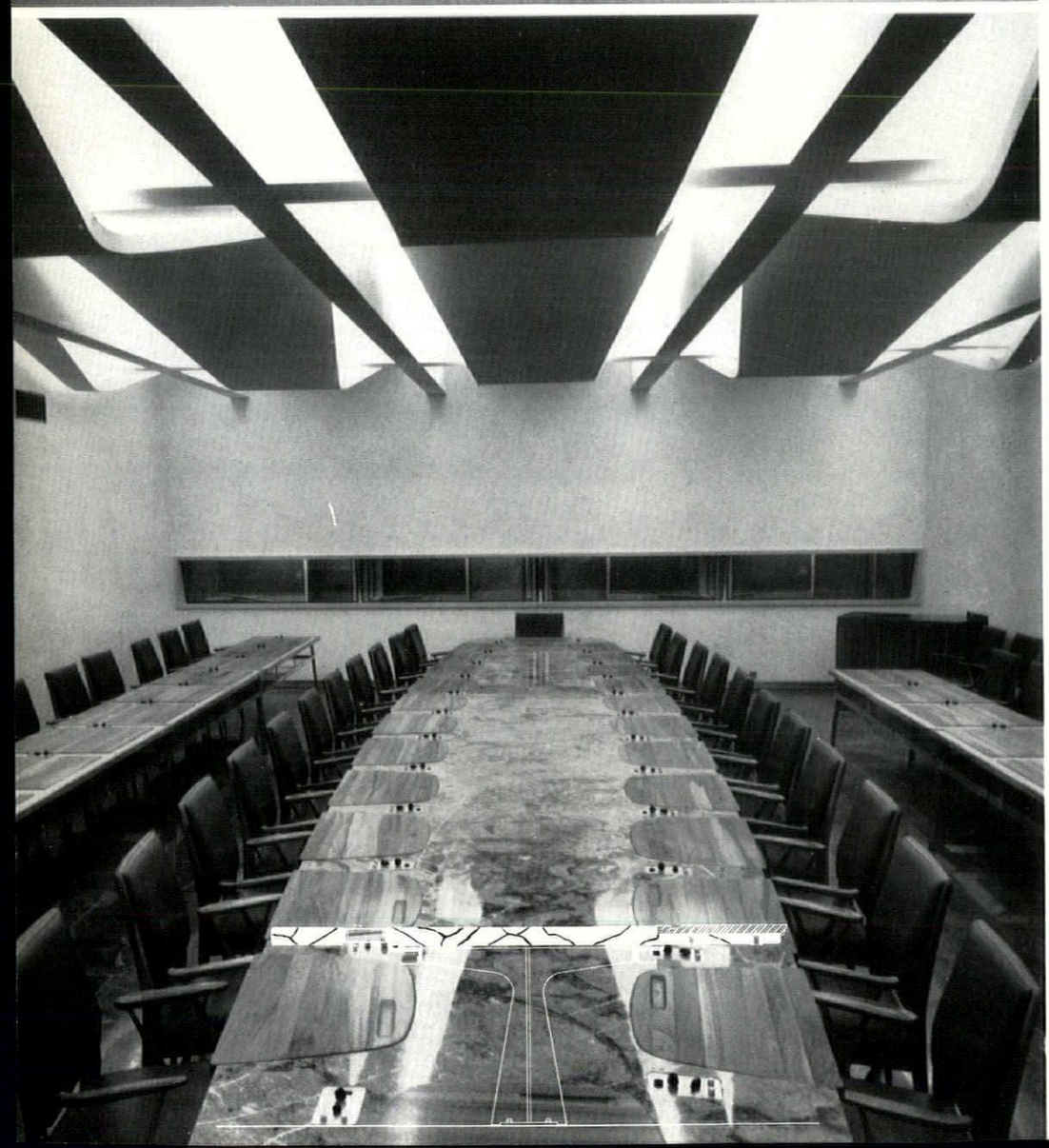
13

13 and 14, there is another sharp contrast of approach between the Press Room, given by the Netherlands and designed by Gerrit Rietveld, with its calculatedly uncluttered air (though it is far from Spartan, as witness the bold pattern of giant triangles of blue, yellow, red and green on the floor) and the most luxurious of the Committee-Rooms, that given by Italy and designed by the BBPR partnership, 14. This has walls of olive wood, and ceiling too, with curved coves merging them together, a floor of Vicenza marble, and a table that repeats the olive wood theme. The array of lampshades (of Murano glass) is intended to give direct light on each place at the table, as well as a general diffused light.

16 → 17

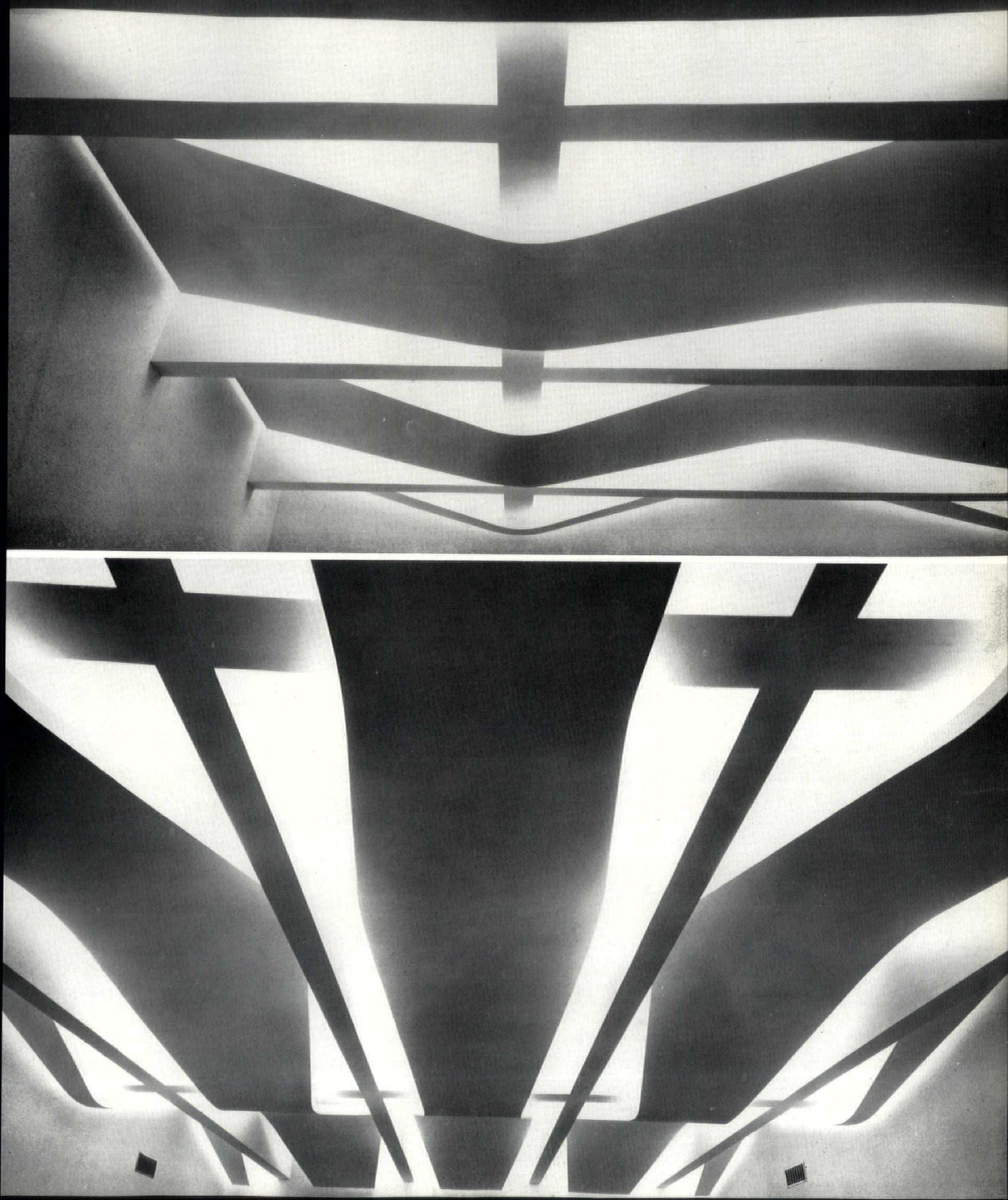


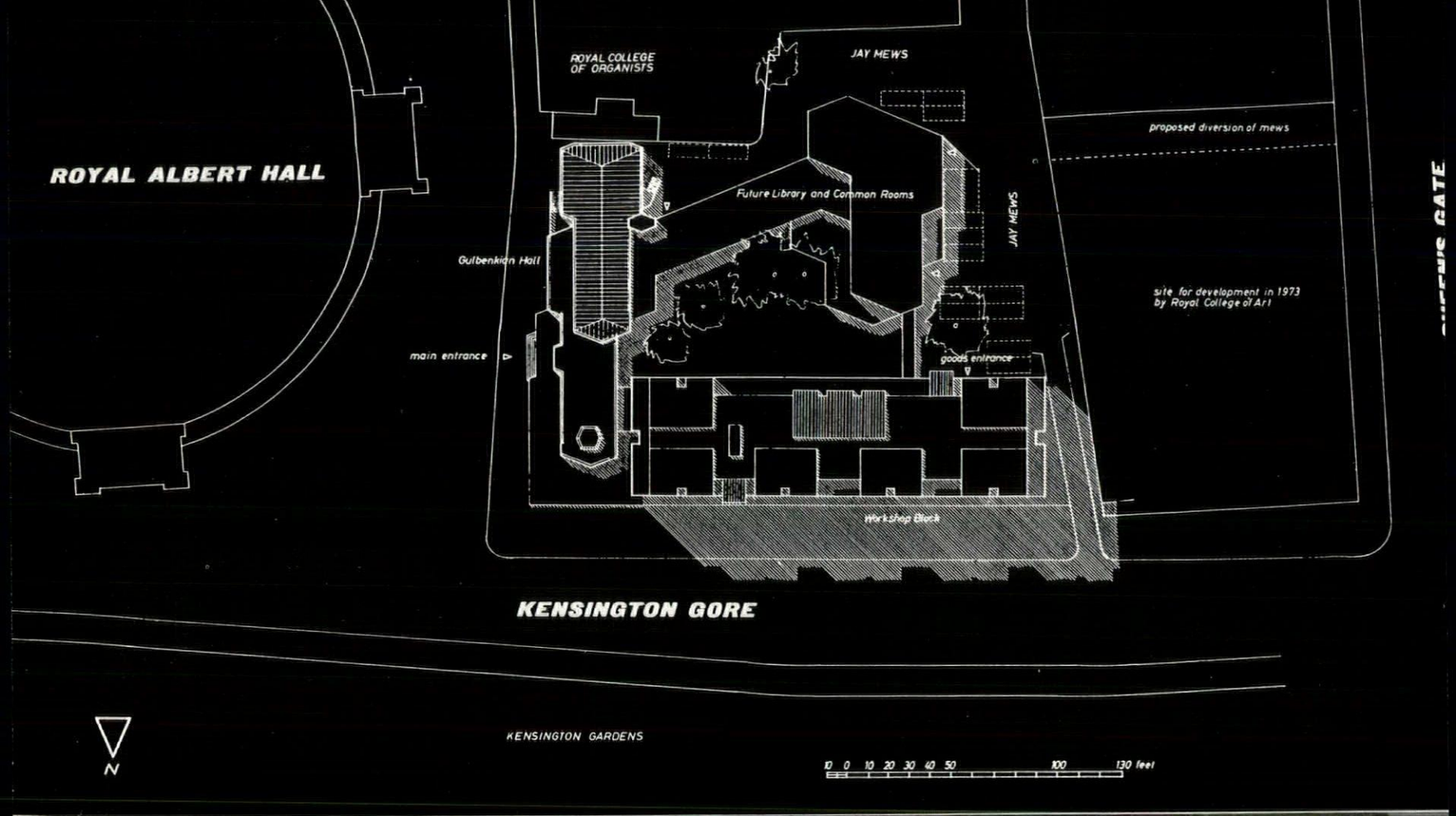
14

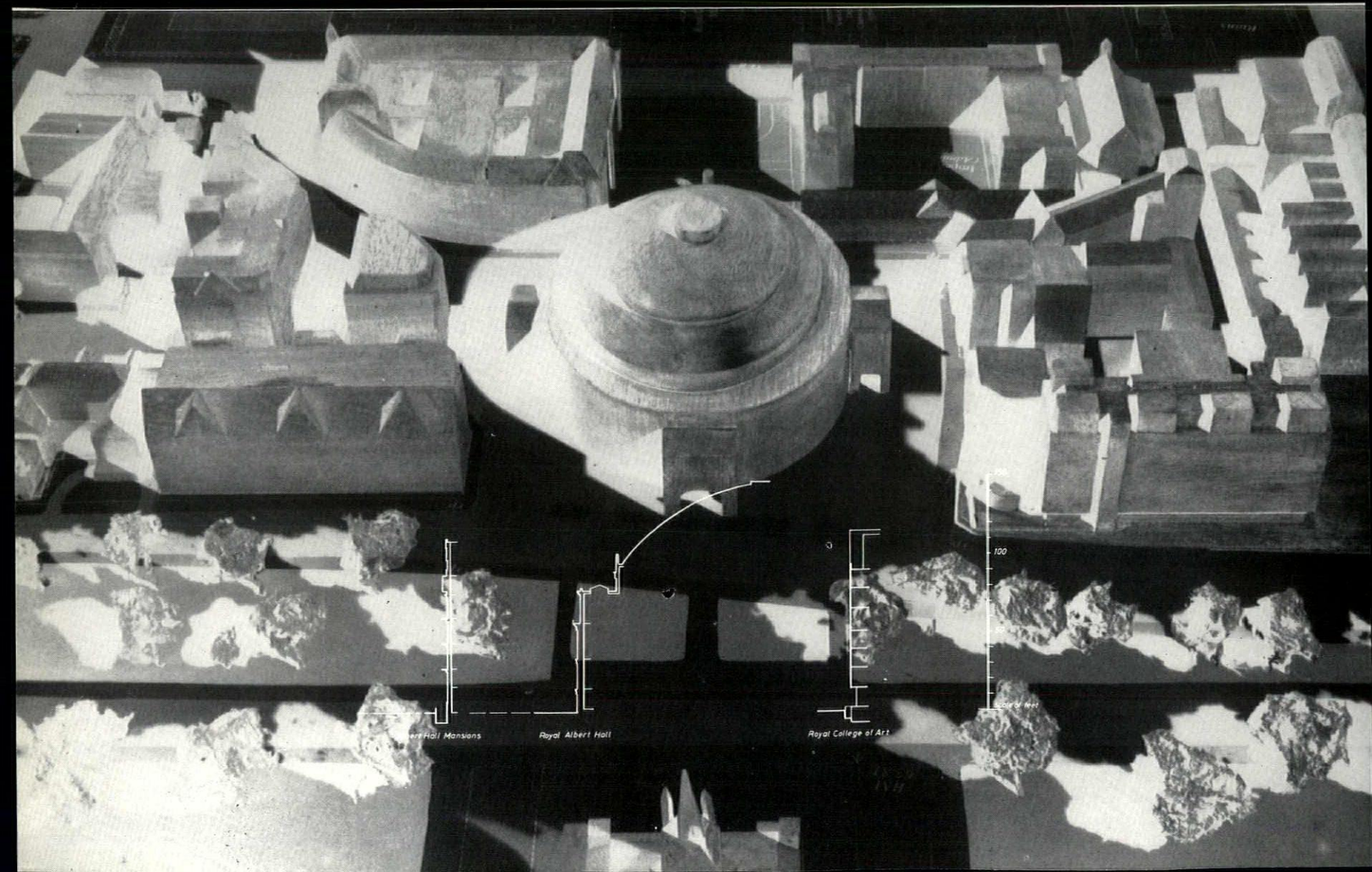


15

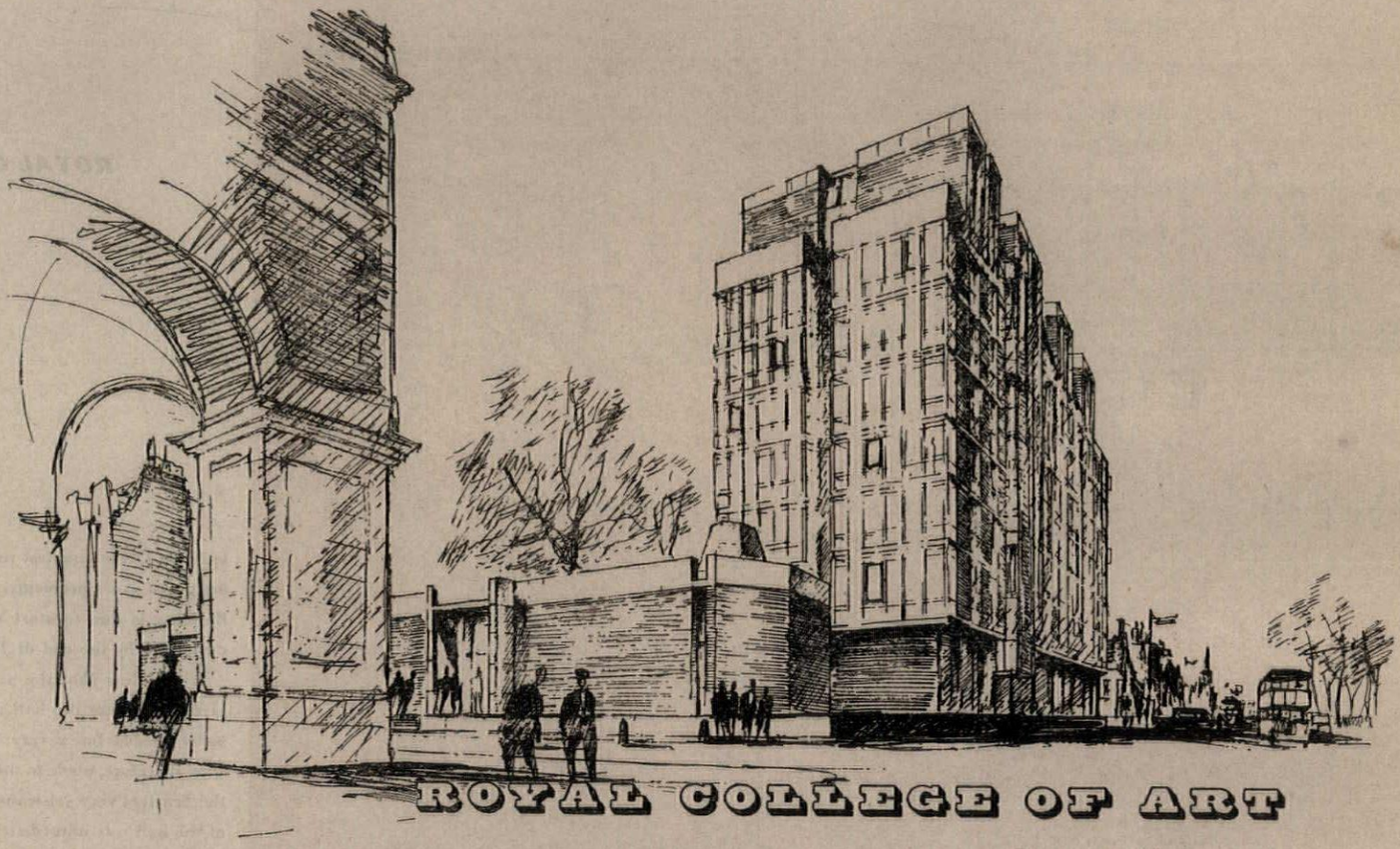
15, 16 and 17 opposite, most striking of the basement committee rooms is that given by Germany, designed by Johannes Krahn. The floor is of Wallenfels marble laid in strips, the walls of light vermiculite plaster, but the whole scheme is dominated by two main features: the table, with its Bongard marble top carried on a stainless steel base—the section shows the walnut writing surfaces, right, and the space for translation controls left—flanked by purpose-designed chairs in walnut and blue leather; and the ceiling, seen also opposite, whose undulating stucco elements carry both lighting and acoustic surfaces on their upper sides.




ROYAL ALBERT HALL
ROYAL COLLEGE OF ORGANISTS
JAY MEWS
proposed diversion of mews
Future Library and Common Rooms
JAY MEWS
Gulbenkian Hall
site for development in 1973 by Royal College of Art
main entrance
goods entrance
Workshop Block
KENSINGTON GORE
KENSINGTON GARDENS
N
10 0 10 20 30 40 50 100 130 feet


Royal Albert Hall
Royal College of Art

the plan, above, and photograph of the model, below, show the layout of the new college buildings and their relationship to the Royal Albert Hall and the Albert Memorial. The superimposed section gives the comparative heights of the buildings. Left, Albert Hall Mansions; centre, Royal Albert Hall; right, Royal College of Art.



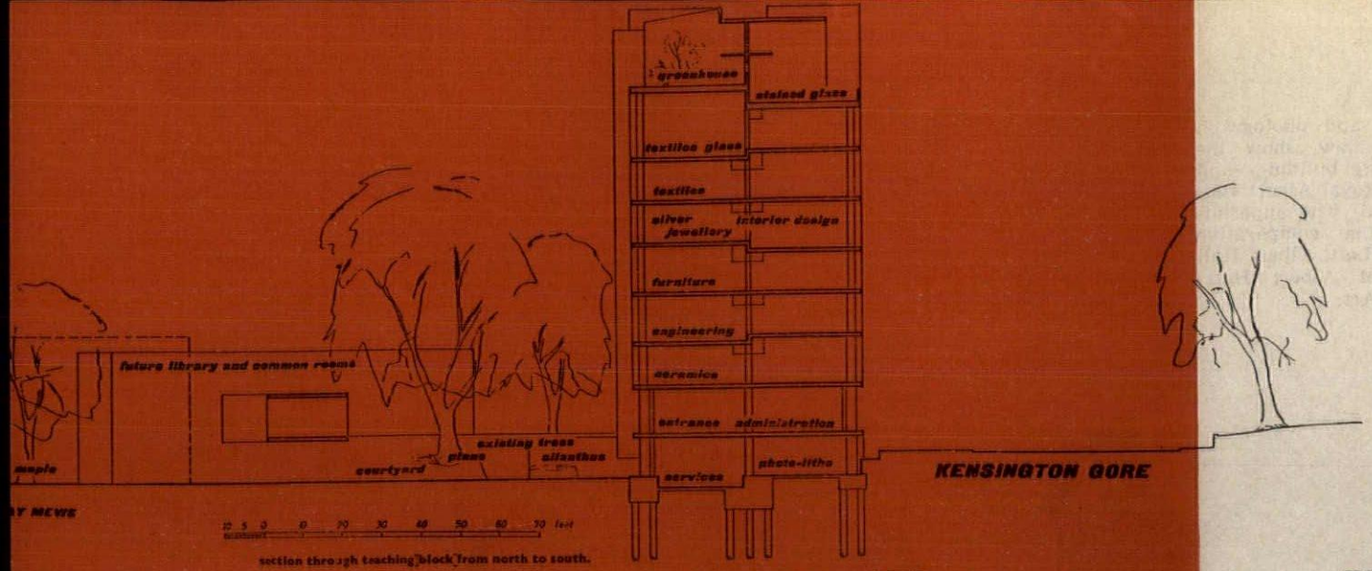
ROYAL COLLEGE OF ART

ARCHITECTS | **SIR HUGH CASSON, H. T. CADBURY-BROWN AND R. Y. GOODDEN**

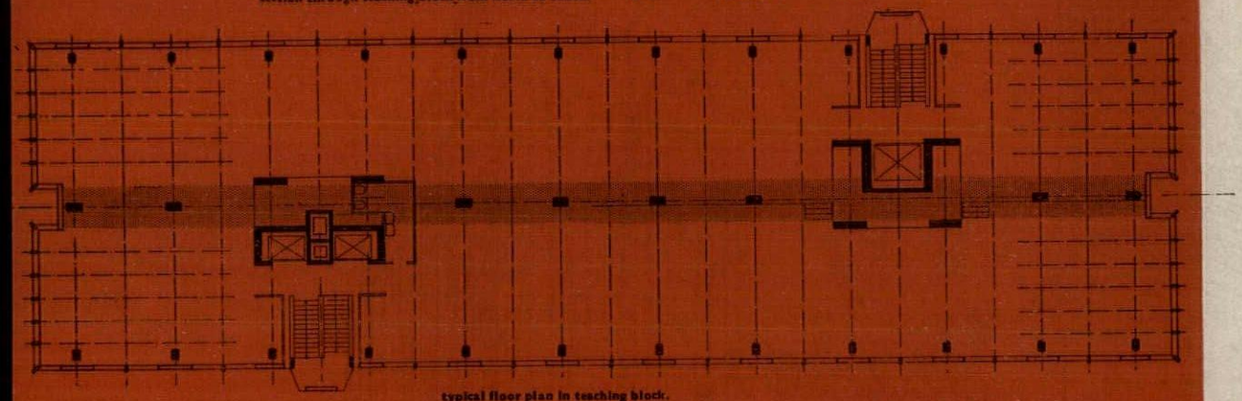
The Royal College of Art was first set up in 1837 in two or three rooms in Somerset House, one of which contained antiques and was to become the germ of the Victoria and Albert Museum. Later it moved to Marlborough House and from there to some temporary shacks off Queen's Gate. In 1863 it was established in what is now known as the Main Building in Exhibition Road, which today houses the Schools of Painting and Graphic Design and the administrative offices. Plans put in hand for a new building were frustrated by the first World War. It was again decided to rebuild in the late 1920's and plans were drawn up for a new College on the three-cornered island site facing the Victoria and Albert Museum, but this plan was postponed through the depression of 1931. A few years later, as a result of the report of the Hambleden Committee, a further decision to rebuild was taken and a very fine site was allocated to the Ministry of Education for the purpose in Kensington Gore, facing the Park and stretching between the Albert Hall and Queen's Gate, but before any plans could be drawn up the second World War broke out.

The proposal in 1955 to expand the Imperial College involved demolishing the Western Galleries, which housed three of the most important departments of the College. This, in turn, called for rehousing them on the new site in Kensington Gore. If this was done, it was clear that all the departments of industrial design and the administrative offices of the College should be concentrated upon this site, while leaving space to be occupied later by general accommodation, including a Hall and Common Room. Eventually a grant of £424,000 was made for a building of some 102,000 sq. ft. From the start it was apparent that the sum allowed would mean an austere

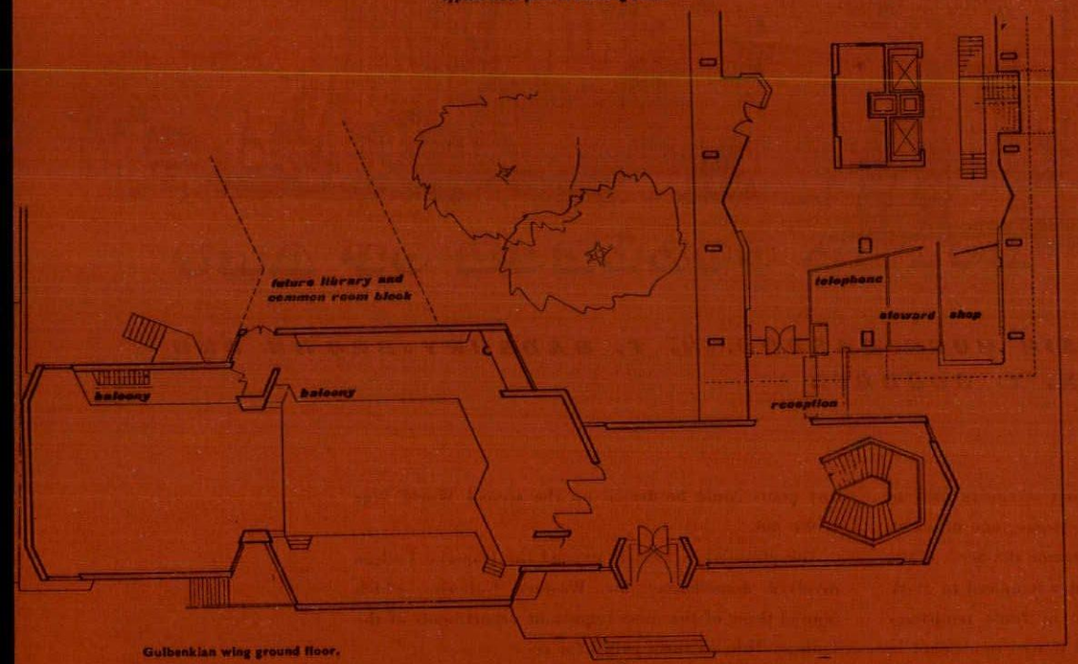




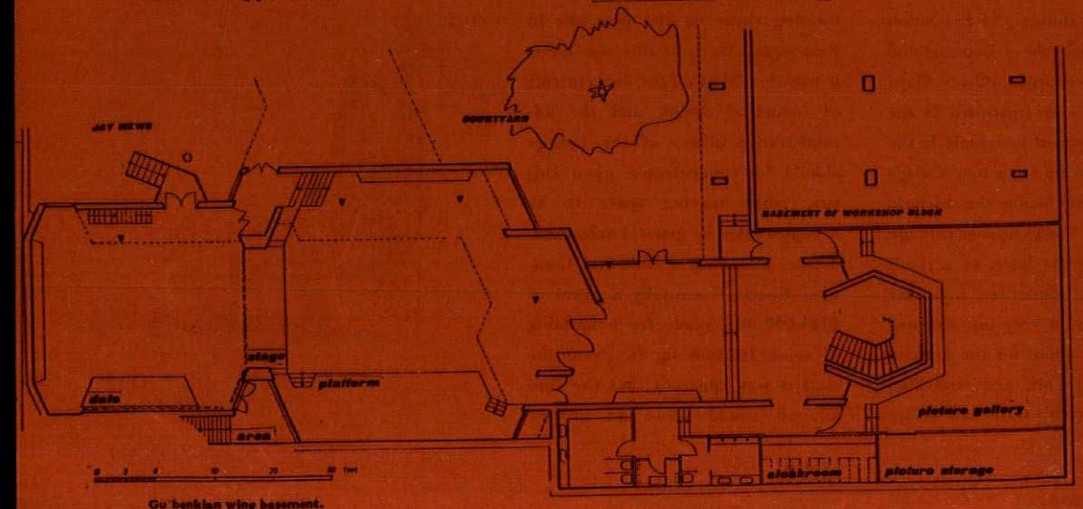
section through teaching block from north to south.



typical floor plan in teaching block.



Gulbenkian wing ground floor.



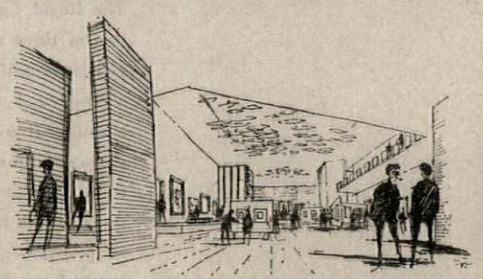
Gulbenkian wing basement.

ROYAL COLLEGE OF ART

building in the simplest materials. This need for economy posed great problems, but plans are now complete. Building is due to start early in 1960 and should be completed by the end of 1961.

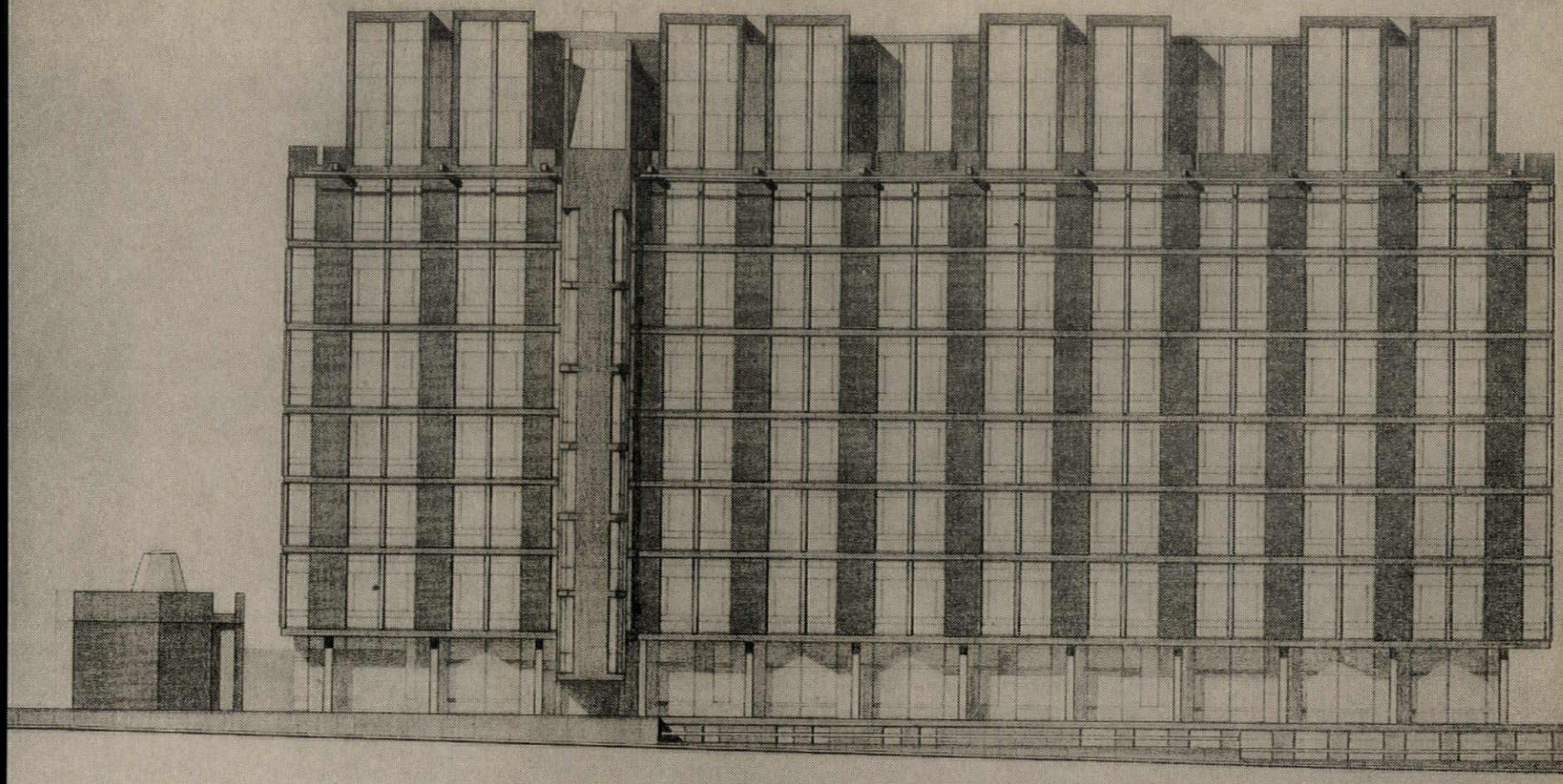
It was clear that the government would not agree to give the College the hall and exhibition space which it badly needed for a very long time indeed. An appeal was, therefore, made to the Gulbenkian Foundation, and the Trustees very generously gave £75,000. The planning of the hall was immediately started and it is hoped that it will be built at the same time as the main block.

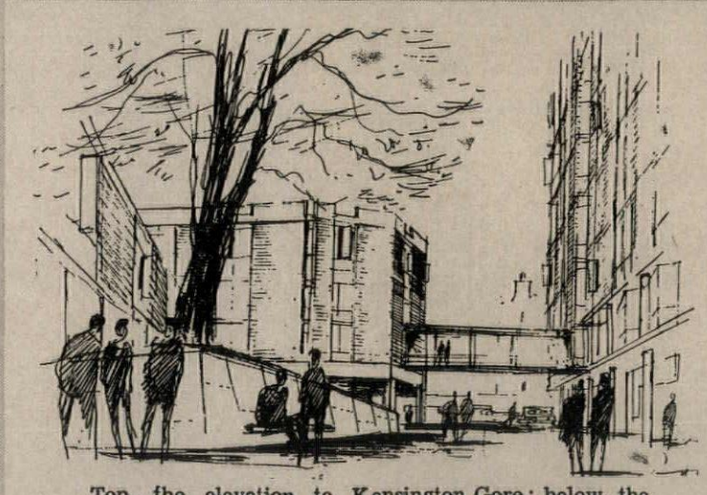
The main block runs along the northern boundary of the site, where height is not restricted. The Gulbenkian Hall will be on the east of the site; the common room block will occupy the south-west corner and will be linked by a bridge to the teaching block and by a library



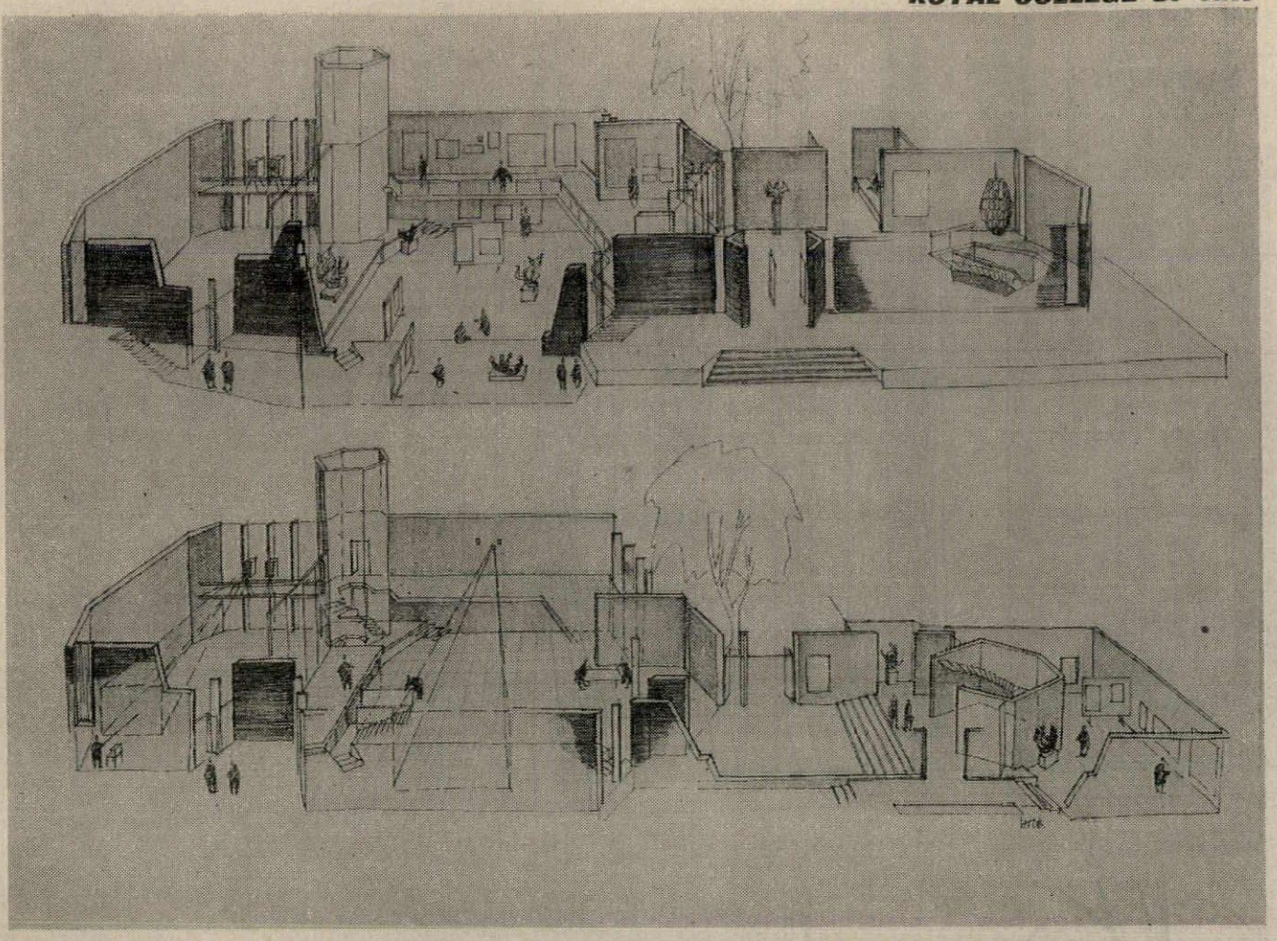
The Gulbenkian Hall, looking towards the stage.

and lecture room to the hall. In the teaching block, studios and workshops lead out of each other on every floor and the whole of each floor is designed to take a load of 150 lbs. a square foot. Floor levels are arranged so that each department has some ceilings 12 ft. high and some 10 ft. high. There are two towers of vertical circulation by lift and staircase, placed one on each of the long external walls and acting as wind braces. The structure consists of a reinforced concrete frame with

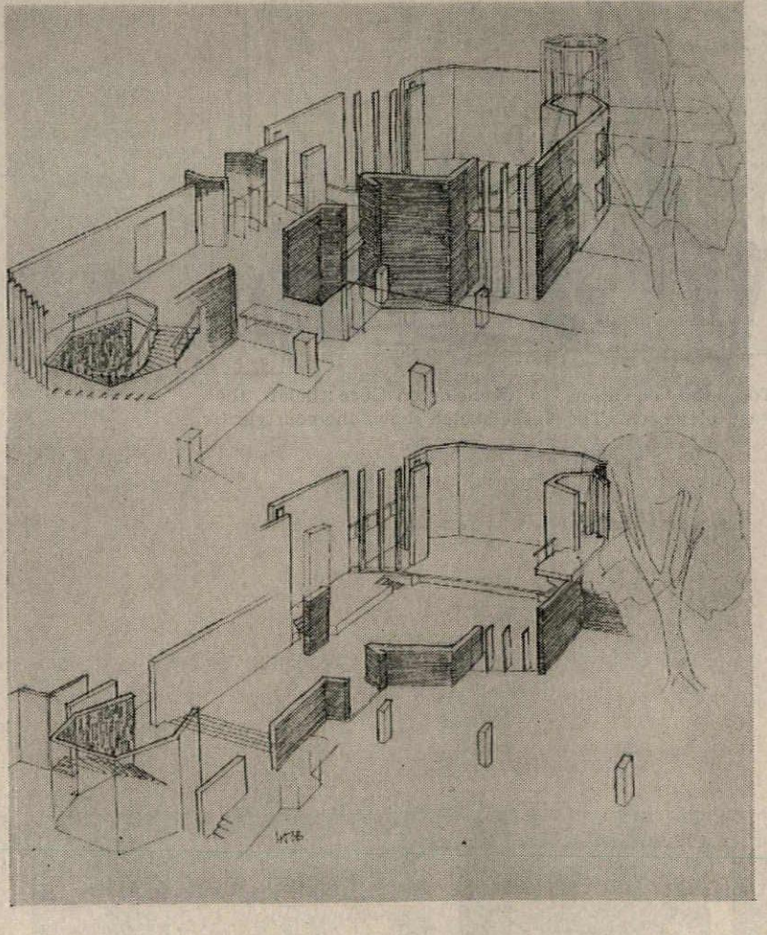




Top, the elevation to Kensington Gore; below, the east elevation. The inset sketch shows the courtyard.



Above, the ground floor of the Gulbenkian wing, used as an exhibition hall, and the basement, from the north. Right, exploded sections of the ground floor and basement, looking towards the stage.



hollow tile floors 15 inches deep to keep ceilings clear of beams. Externally the finishes are dark facing bricks, precast concrete panels with exposed aggregate and metal windows. Internally fair faced brickwork will be painted, doors and frames will be of wood.

The Gulbenkian Hall has been designed for use as an examination hall, exhibition gallery, large lecture hall, theatre and cinema, dance hall and for general assembly. What is effectively the axis of the room changes direction with change of use and the seating can be turned in a right angle. The varying levels of stage and gallery and the elaboration of the plan formed within the framework of a strict modular grid of diamond shape should provide an interior that is always interesting, whatever purpose it is serving.



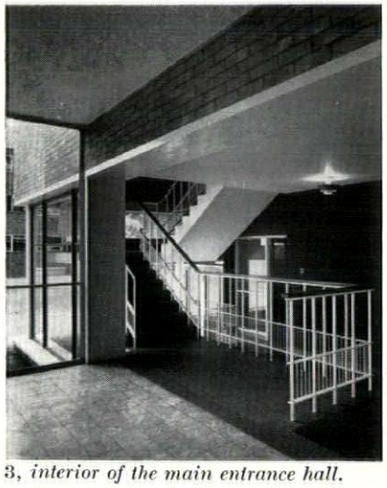
1, *view of the gymnasium and cloakroom block from the river garden.*

POLICE HOUSING AT CANONBURY

ARCHITECT: S. J. HANCHET, CHIEF ARCHITECT, NEW SCOTLAND YARD

The site was originally part of Canonbury Manor and adjoins two other groups of police housing for married men. Many of the mature trees have been retained and the design also takes advantage of the river gardens on the south. Accommodation is provided for 100 single men, in one three-storey bedroom block of 71 rooms, and one two-storey block of 29 rooms. To the left of the main

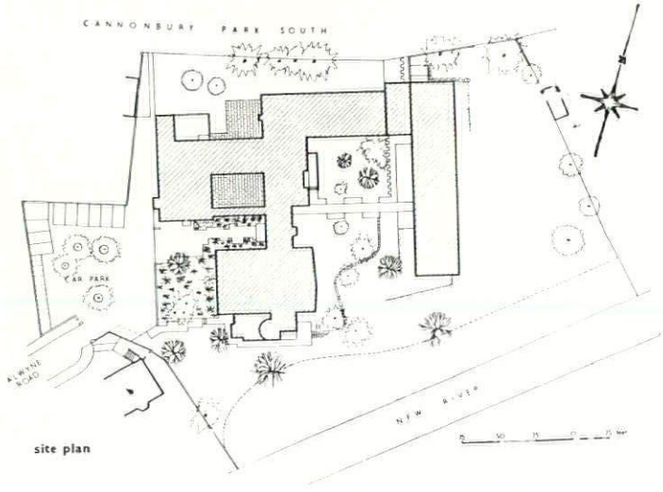
2, *the gymnasium block from the east, with the living quarters on the right.*



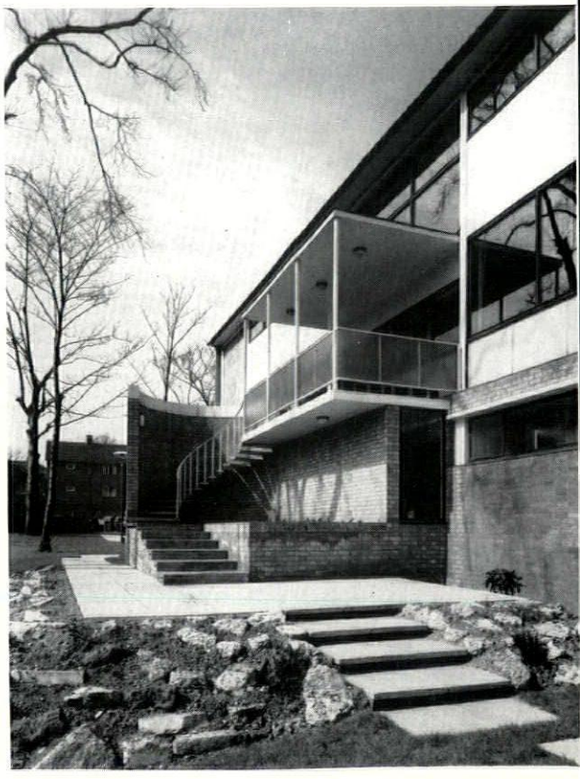
3, *interior of the main entrance hall.*

Police Housing at Canonbury

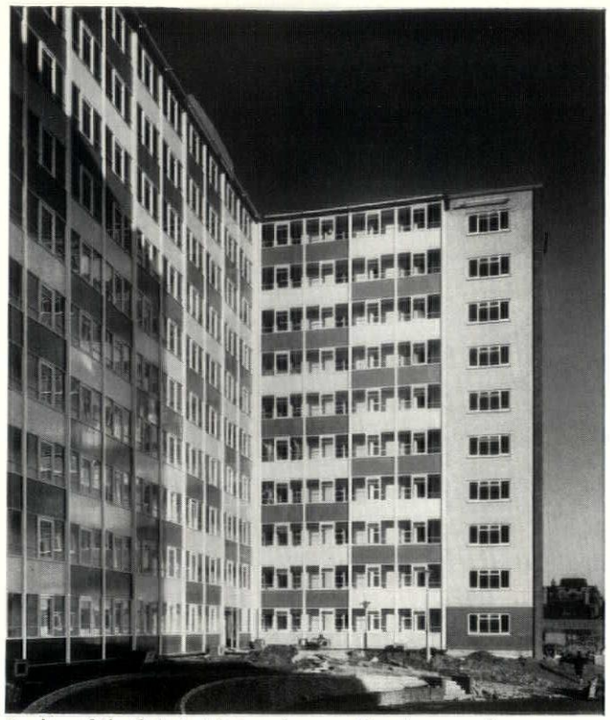
entrance there is a canteen, billiards and dining rooms, lounge and library. In a two-storey block to the right of the entrance are the gymnasium and cloakrooms, which can be used as a separate building. The three-storey blocks are of reinforced concrete frame construction with brick cladding; the lower blocks are of load-bearing brickwork and the gymnasium has a pre-cast portal frame. Open planning and low buildings were used to keep the costs as low as possible.



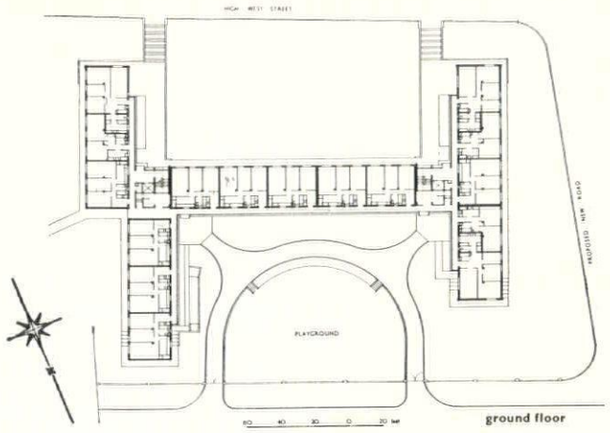
site plan



4, *south entrance of the gymnasium block.*



5, *view of the flats looking west across the playground.*

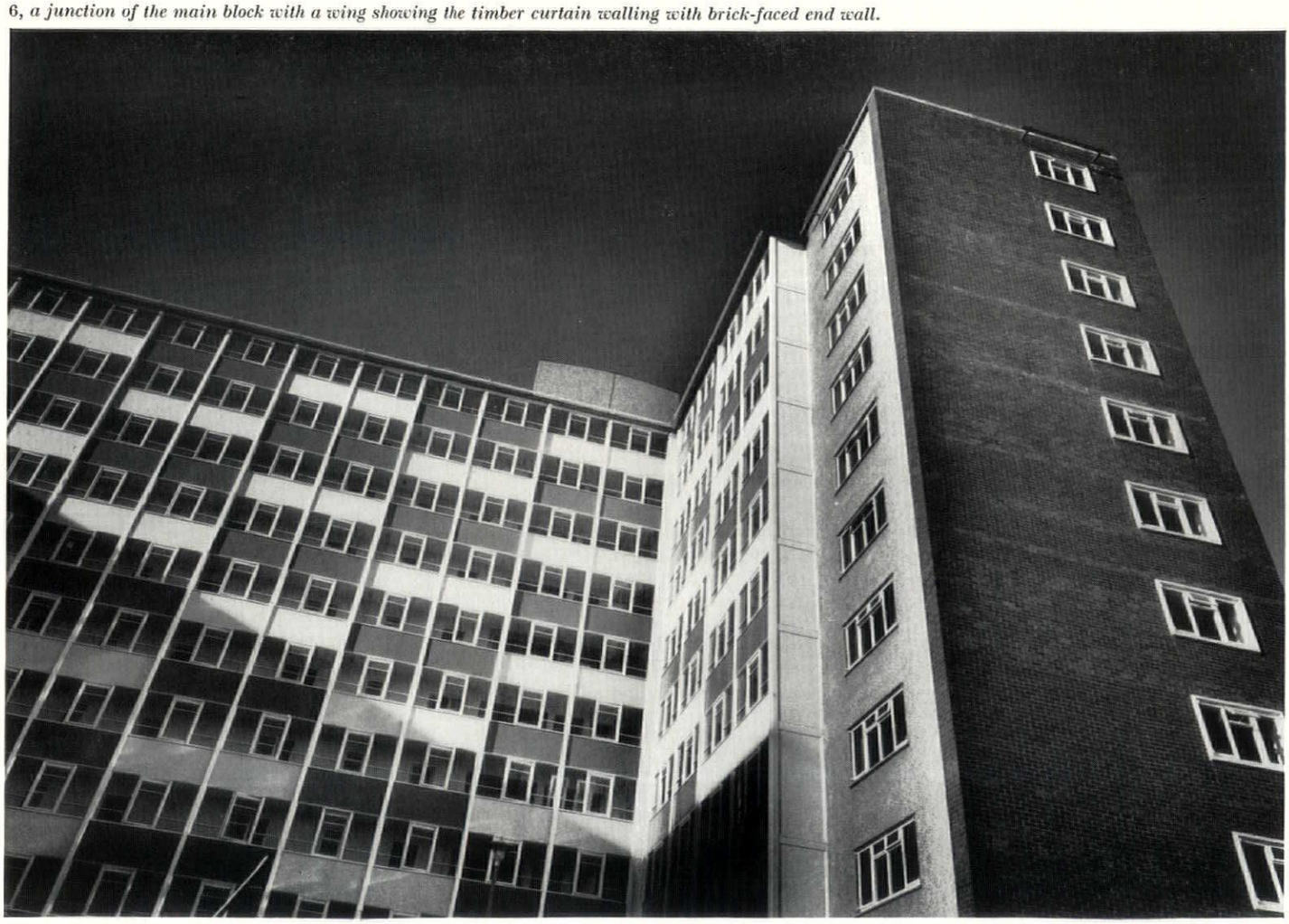


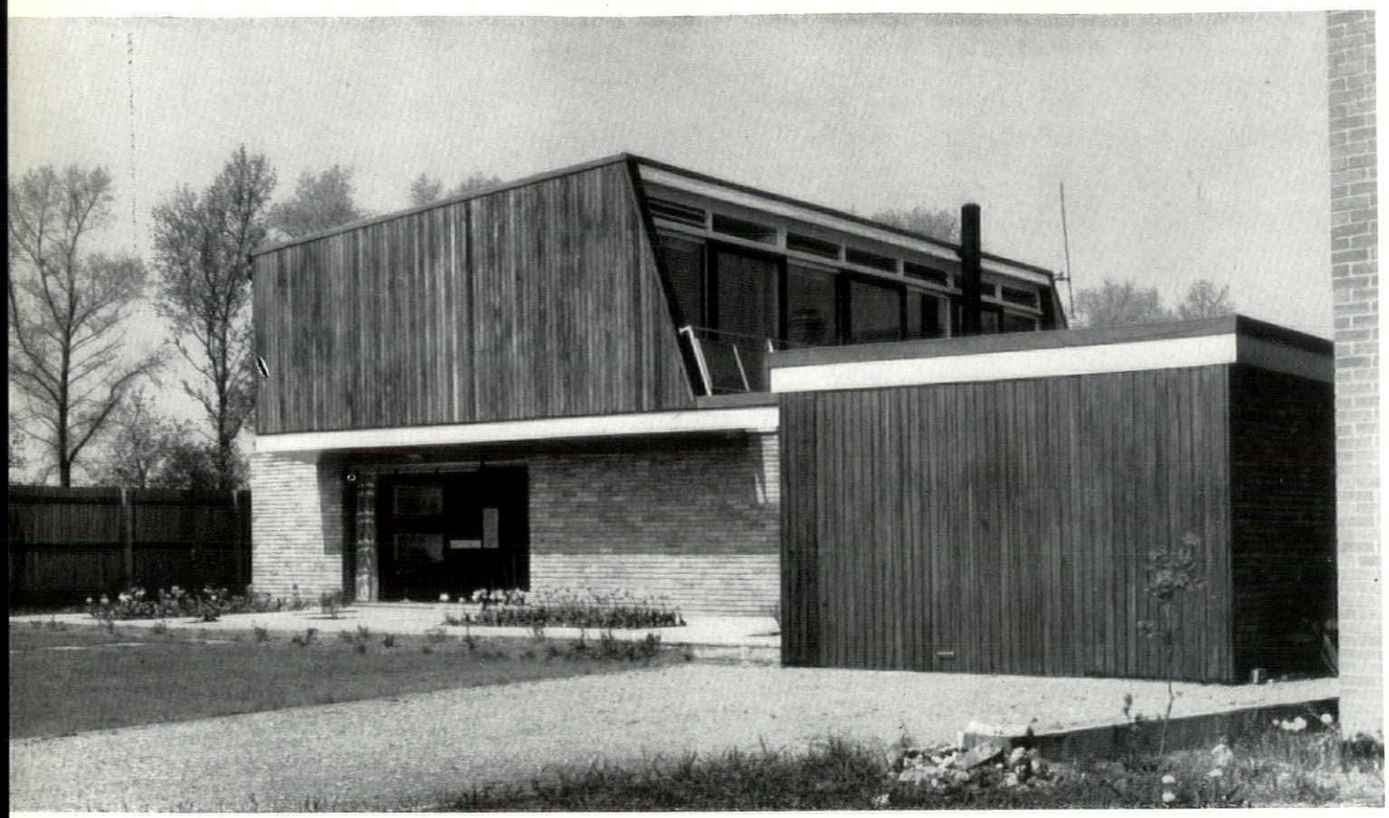
FLATS AT GATESHEAD

ARCHITECT: LESLIE BERRY (County Borough Architect, in association with G. F. Winters, Borough Surveyor).

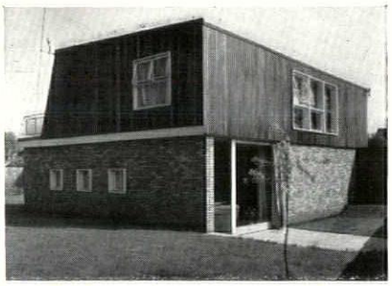
This ten-storey block of flats, built by the Borough Council at Ann Street in Gateshead, has a frame of no-fines concrete construction, with brick-faced end walls and timber curtain walling. The panels below the windows are of painted plywood. The flat roof is concrete with an asphalt finish. Internal floors are of concrete, surfaced with thermoplastic tiles. Walls internally are plastered and painted. Space heating and hot water are provided by gas convectors and multi-point heaters connected to a vertical duct which both supplies air for combustion and carries away waste products, eliminating the need for ventilators on external walls. Gas-heated clothes drying cabinets are also provided in each flat.

6, *a junction of the main block with a wing showing the timber curtain walling with brick-faced end wall.*





7, the garage and front door showing the timber cladding used for the first floor construction and yellow Dutch bricks for the ground floor.

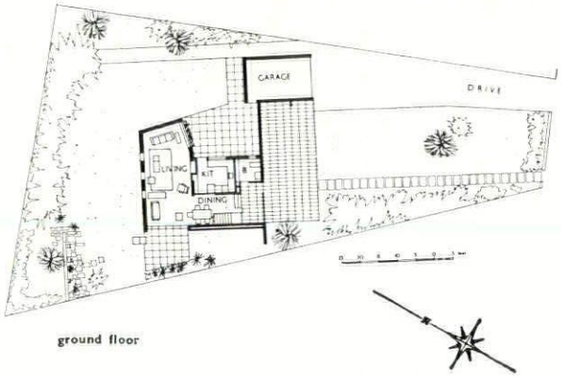


8, the house from the south-west, with the sliding window to the living room on the right.

HOUSE AT RICHMOND

ARCHITECT: M. HOWARD-RADLEY

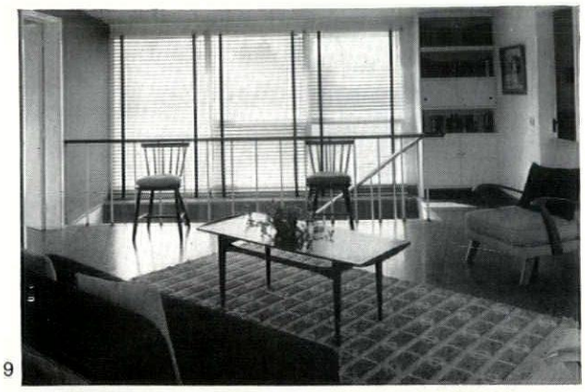
This house at Richmond, Surrey, is built on a small triangular plot with a view of Petersham Woods to the east. The design uses the change of level in the site to provide a sense of greater space, with the low-ceilinged entrance hall opening out into the living-dining area. The kitchen is enclosed by a completely sliding wall and the freestanding fireplace forms a focal point to the main living space. The large open landing on the first floor can be used as a study or additional living room. The ground-floor walls are of cavity construction; the first floor has a braced platform frame clad with 1¼-in. diagonal boarding and vertical mahogany boards. The roof finish is asphalt and all drainage is internal. Double glazing is used, and electric floor heating.



ground floor

9, large open landing for use as a study or additional living room.

10, front door of armourplate glass with a specially designed lock and push plate.



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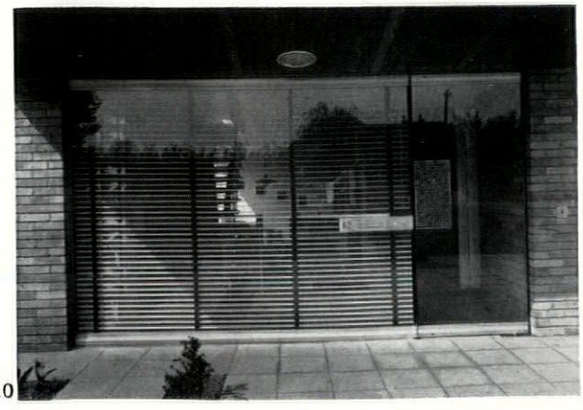
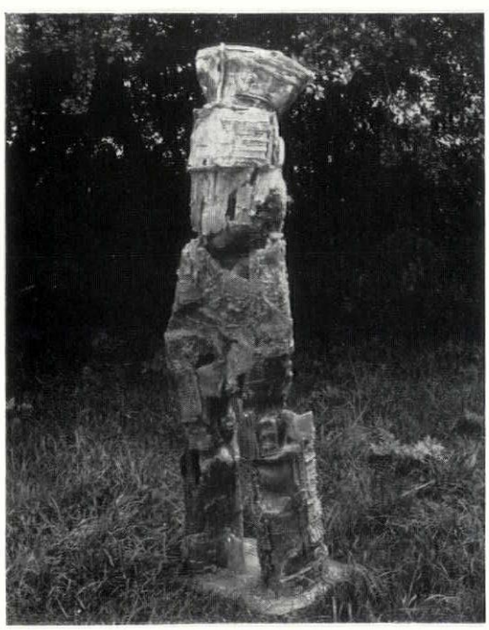


10

EXHIBITIONS

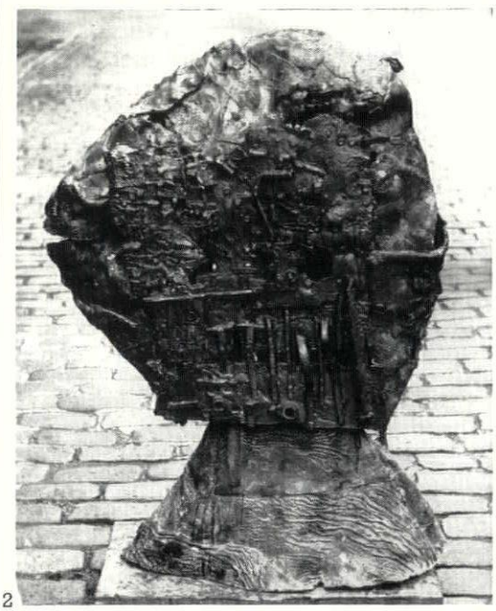
PAINTING AND SCULPTURE

In the margin of one of his wobbly drawings of a standing figure which looks like a ramshackle tower on legs, Eduardo Paolozzi has written, 'wonky and steadfast,' and it beautifully describes the standing figures in his exhibition of bronzes at the Hanover Gallery. Paolozzi is making his contribution to the stand-in for the human effigy after more than ten years of inspired messing about, and it turns out to have been time well spent. The messing about has assumed monumental proportions, and I am inclined to think that he has very nearly solved the most intractable problem of twentieth-century sculpture. Few contemporary sculptors feel that they are involved in the creative process unless they depart more or less radically from human appearance, but in the outcome they usually give the figure an inhumanly reduced range of attributes. The figure becomes a symbol of fear or anxiety or sexual vitality; it often discloses a nostalgia for lower forms of life or for some imaginary alternative from outer space, and even more frequently, it stands for man's inhumanity to man on account of the fact that it has had nasty, sadistic things done to it by the sculptor. Paolozzi doesn't turn up his nose at these fractional solutions; he includes them all and adds some more. His solution is to make a kind of primitive architectural hold-all. He has found a way of erecting monuments to the diversity of his interests, which includes horror films, science fiction, the life of the seashore, car-wrecking yards, factory tips, Zen Buddhism, collage, drip painting and the art of the Far East.



1

The two-legged verticality of his crude and tottering constructions, 1, has to stand for the human frame, and a couple of holes or knobs in the potato-like top storey of these constructions has to stand for the human gaze; but these absurd pieces of home-made architecture are encrusted with an agglomeration of automatic textures (obtained by taking impressions of an immense variety of objects)



2

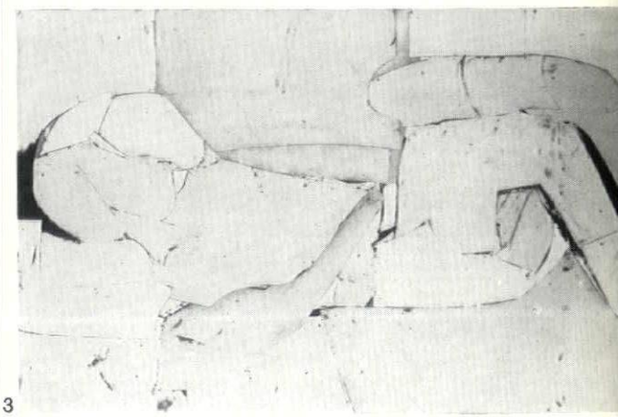
which, at the same time, contrives to be a highly allusive ornamentation. The effect of broken-down grandeur obtained by this mixture of calculated jerry-building and inordinate surface enrichment gives his figures and giant heads, 2, an air of having achieved, like warm, muddled humanity, some sort of balance between suffering and day-dreaming.

Even when the image is a shattered head, and the cruel streak in the artist is well to the fore, one is as much aware of the clumsy, kindly attempt to put the pieces together again as of the assault which preceded it. And it was perhaps the same accent on mending and patching-up in Corrado di Marca-Relli's large collage-painting entitled *Sleeping Figure*, 3, which made it so much more spontaneously alive than the strenuous efforts of most of the other exhibitors in the 'Seventeen American Artists' show at the new USIS Gallery, at 48 Grosvenor Square, to demonstrate their vitality. The Marca-Relli picture is composed of irregular pieces of painted canvas partly gummed and partly sewn on to a support, and the sense of a gentle hand at work which is inextricably involved in the pleasure it affords the eye, pervades the entire patched surface. It is as if the picture owes it repose (which the posture of the figure merely reflects) to the same sort of inner stillness that some mothers experience when darning for their children.

After Marca-Relli, Ellsworth Kelly made the most interesting contribution to what seemed to me to be an untidy and disappointing show. His smooth, sharp-edged black-and-white abstraction called 'New York' raises the suspicion that he has been putting a ruler to the art of Franz Klein, but the thing that makes his work tick is the romantic feeling for the big city which he shares with earlier American painters such as Demuth, Sheeler and Stella.

The largest exhibition of Russian paintings ever to be held in Western Europe is the smallest exhibition I have ever seen at Burlington House. It was obviously selected to serve an ideological purpose, and the impact of pre-revolutionary work appears to have been deliberately reduced partly to efface the image of Imperial Russia and partly to create the impression that spaciousness, exuberance and communal feeling are qualities only to be found in post-revolutionary Russian paintings. I can't think of any other excuse for not letting us see Repin's jolly cossacks.

The Ikons might have given a sense of the magnificence of the Russian contribution to Byzantine art if they had been crowded together on a single wall of one of the two galleries over which they were so thinly spread. As it was, the gold and the colour rose and fell like the light from a guttering candle, creating, so to speak, an optical illusion that the art of the Russian Orthodox Church was perpetually on the point of dying out, instead of being



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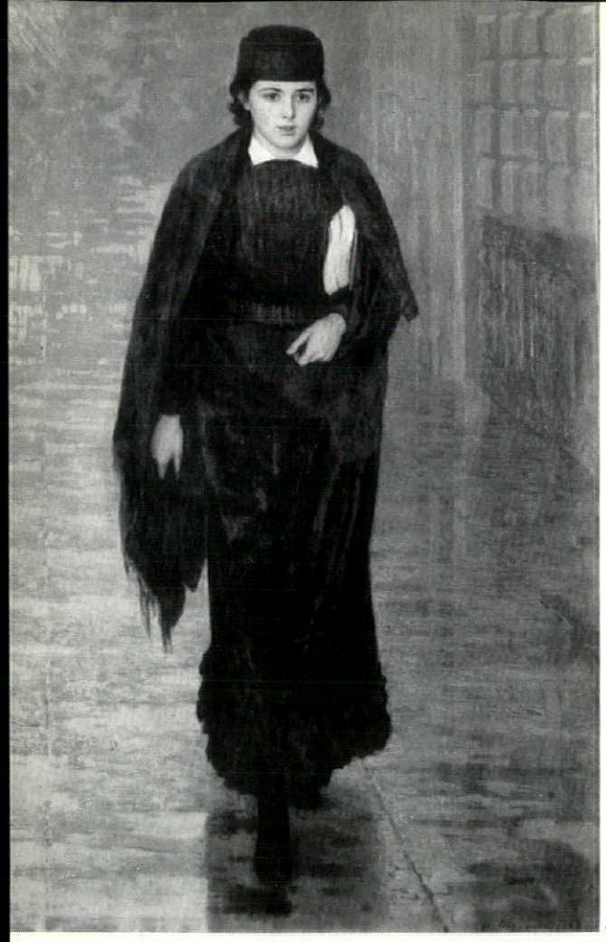

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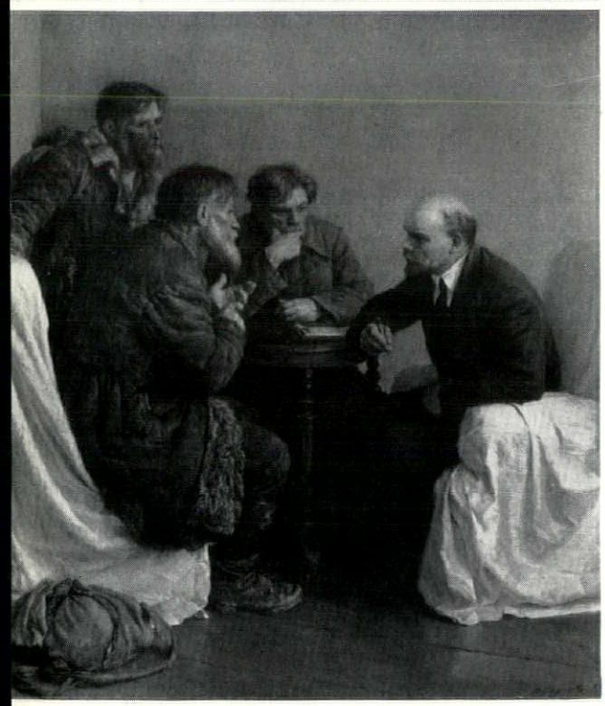

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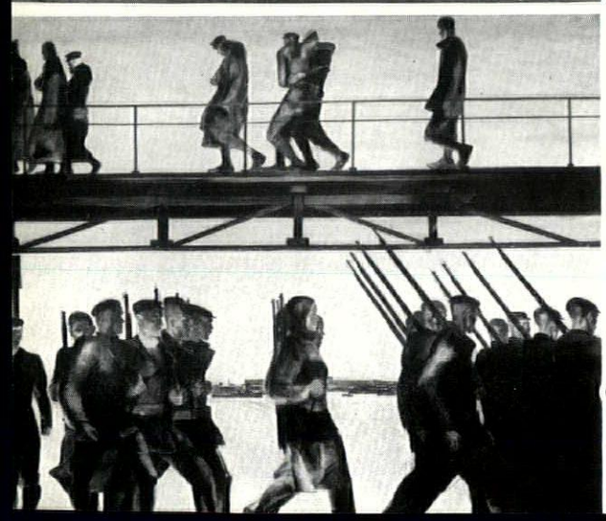


6

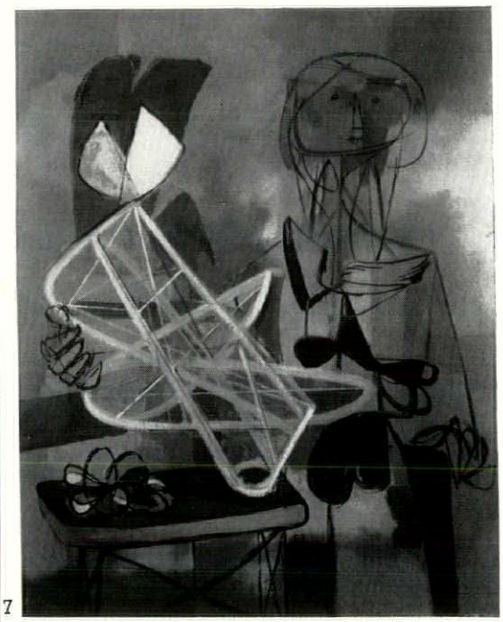
quite vigorously alive until the end of the sixteenth century. There is nothing from the seventeenth century, and the secular art of the eighteenth century is represented by only eight moderate-size pictures, presumably because almost all the work of that period reflected the life of the Court and the Gentry.

The nineteenth century provided much more material for a specious selection. It is represented by many naturalistic portraits of intellectuals and peasants, a number of topographical landscapes and a few—all too few—small *genre* pictures. An atmosphere of quiet and dull sobriety reigns over this group of works, and although the pictures are probably good examples of the narrow field they cover—Nikolai Yaroshenko's portrait *Girl Student*, 4, described in the catalogue as 'a typical image of a representative of the democratic intelligentsia,' even has charm—they do not console one for the absence of those pictures painted by a 'whole series of masters' which, according to the Deputy Director of the Tretyakov Gallery, dealt with 'the life of the village before the reforms, the social conflicts of the cities, women's problems, and all the most thorny questions.' And one has only to look at the short biographies at the back of the catalogue to realize that most of the nineteenth-century artists included in the show are represented by minor works and that they are famous in Russia for their battlepieces and history subjects, painted on a huge scale. Gruesomely enough, it is Vladimir Serov's *Delegates from the Villages visiting Lenin during the Revolution*, 5, painted in 1950, which best represented nineteenth-century 'history' pictures at the Academy.

The early twentieth century was very poorly represented for the simple reason that all 'formalist' pictures of the period were omitted and the theatrical designs of *Mir. Iskusstva*, founded by Benois and Diaghilev, were represented by two indifferent gouaches by Benois.

In the late twenties, Alexander Deineka made an attempt to create a kind of formal realism with a social content, based on Eisenstein's handling of crowd composition. His *Defence of Petrograd*, 6, is probably better known in the West than any other Soviet painting, and from the Western point of view it remains the most presentable. But it is really no more than a striking poster design, and it is not difficult to understand why the Soviet find it unsatisfactory, and describe it as 'strained and stony.' In his attempts to 'reform,' Deineka has horribly overdone the healthiness and the optimism, and his huge, crass painting of a relay race, painted in 1947, is a raspberry-pink caricature of the rosy atmosphere demanded of Soviet 'realism.' There are, however, several painters who appear to have the right kind of illustrational exuberance for the task of painting the laborious joyousness of the Russian people at work and play, and they cover large canvases with a juicy pigment in a way which reminds one of some of the lesser lights of action painting: the only difference is that when the action painters perpetrate an image it is liable to be James Dean's car after the smash.

The Obelisk Gallery in Crawford Street has been holding a small but fairly representative retrospective of Jankel Adler's oils, water-colours, drawings and monotypes, and two or three other galleries



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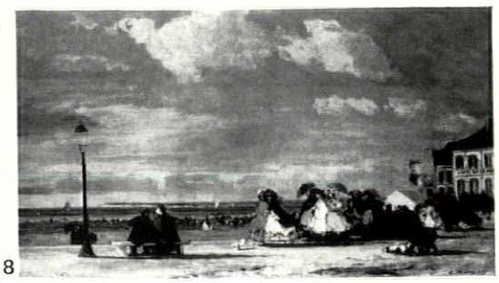
have acknowledged the occasion by bringing odd canvases out of stock and hanging them in mixed shows. I do not find Adler a very important artist, and the value of his quite staggering influence on some English and Scottish painters in the post-war years has, in my opinion, been vastly over-rated. His line is bold, his colour is bright but lifeless, and his figuration is decoratively robotic. The figure in his *Homage to Naum Gabo*, 7, is unusually lively because he has used a 'scribble' instead of his usual hard outline. Considered as homage to a serious artist, the picture borders on facetiousness.

There has been a large and well-presented exhibition of the paintings of Eugène Boudin at Marlborough Fine Arts



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which, through no fault of the Gallery, didn't quite come up to expectations. Boudin is a delightful minor artist who becomes monotonous when a large number of his works are seen together. Some of the beach scenes of the early sixties in which the holiday-makers are allowed to be bright colour accents instead of adjusting themselves to the greyness of sea and sky, tend, unfairly perhaps, to steal the show. *The Empress Eugenie on the Beach at Trouville*, 8, is a delectable example, brimming over with period charm.

Robert Melville

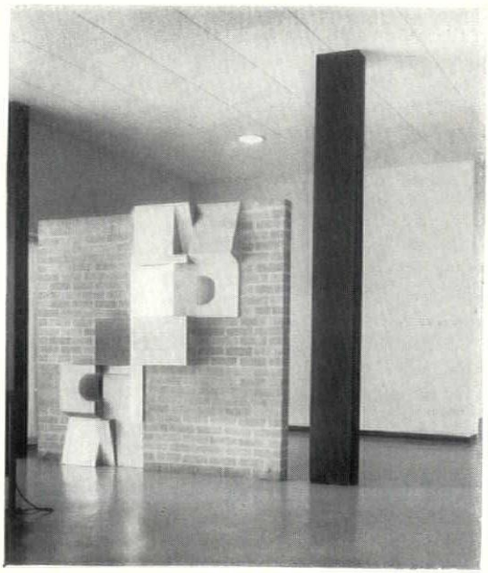
SCULPTURE

ARCHITECTURAL SCULPTURE

Much has been written and said lately about collaboration between architects and sculptors, but few satisfactory examples of sculpture employed in relation to modern architecture are to be found between the two extremes of the building conceived as a work of sculpture (when architect and sculptor are the same person) and the building which merely provides a suitable space for a work of sculpture (when collaboration can hardly be said to have taken place).

One promising approach to the problem is, however, illustrated by the abstract work of sculpture in the entrance hall of the recently completed wing of Musgrave Park hospital, Belfast (see last month's AR), in the design of which the sculptor, Mary Martin, collaborated closely with the architect, Richard Llewelyn Davies. Several points about it are worth noting which—apart from the intrinsic distinction of the work—may have contributed to its successful integration with the architecture.

One is that it is composed of the same materials that are used in the building: yellow bricks, natural plaster and stainless steel. Another is that it has a function to fulfil: to provide a partially transparent screen, directing traffic flow and giving some privacy to the waiting-space alongside the hospital entrance—needs which the sculptor has answered without compromising her own aesthetic conception. A third point is that the work of sculpture was constructed by the same process as the rest of the building: working drawings were prepared, quantities taken off for brickwork, etc. in the normal way, and the sculptural wall was erected by the bricklayers and other craftsmen already on the job, but under the sculptor's personal supervision.



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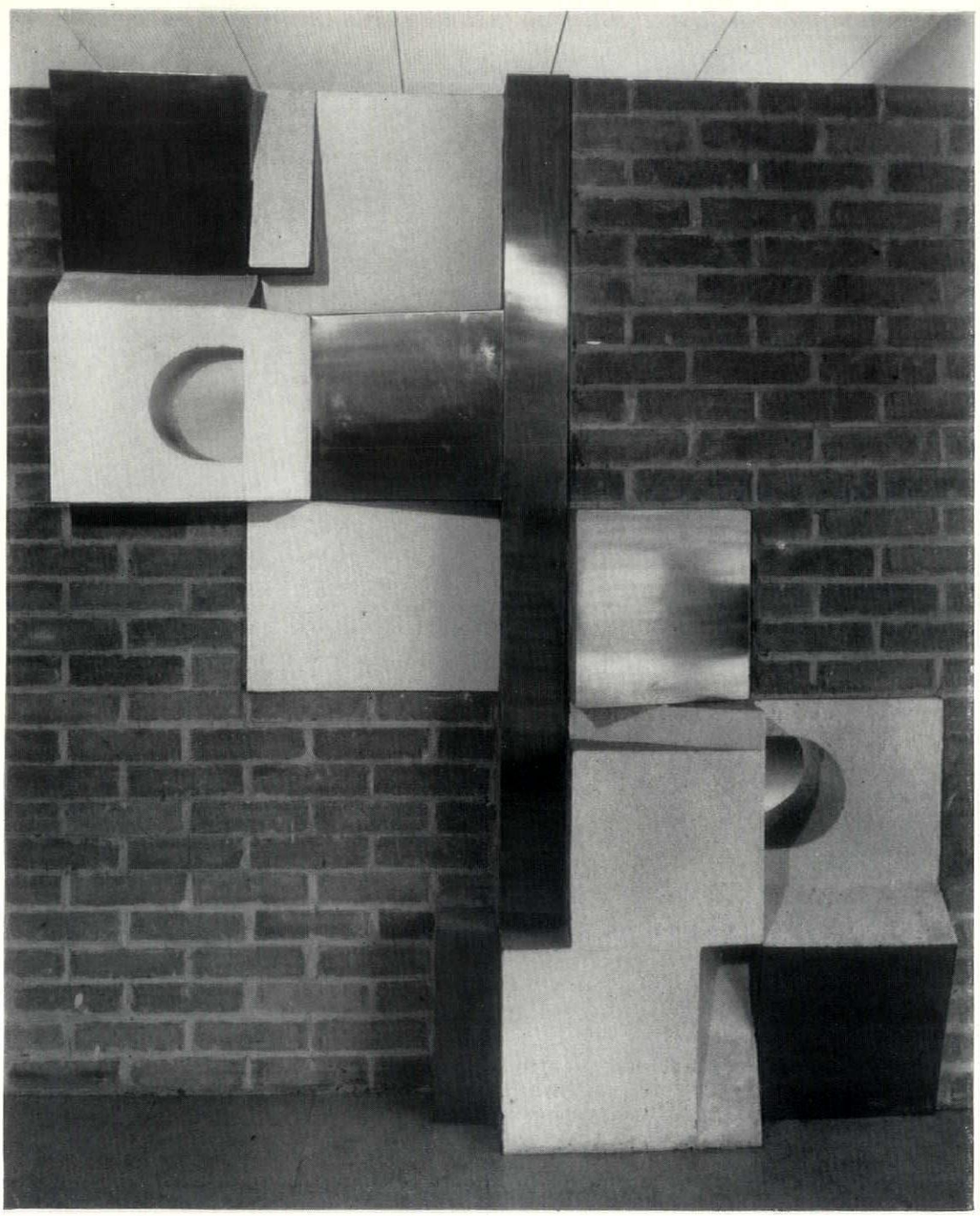

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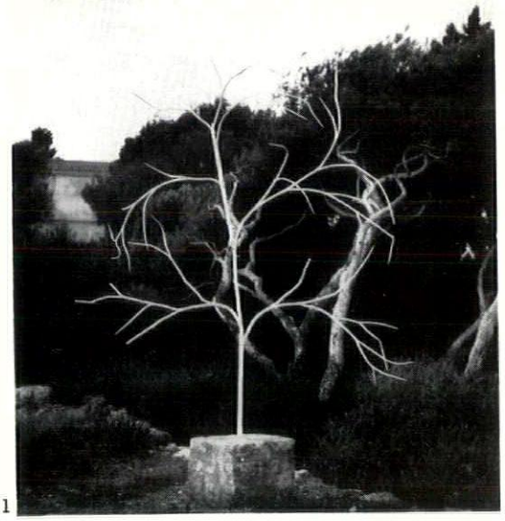
The wall is free-standing, and almost closes the gap between two stanchions. Its two halves, laterally, are slightly staggered in plan, to give it stability since it is not rooted in the floor-slab. The angular elements, climbing round a central vertical in a movement based on a double curve, are inserted into the brickwork and faced with either plaster or stainless steel. They are symmetrical in the sense that the projections on one side of the wall, 1, become recessions on the other side, 2, at the same angle of inclination, either vertical or horizontal.

J.M.R.

ART IN USE

FOUND OBJECT TRANSPLANTED

The philosophy of the objet-trouvé *depends more on the re-interpretation of the object in its new setting (statue in ditch, dead tree in art-gallery) than upon the original*



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nature of the object, but this nineteenth-century lightning conductor, 1 *and frontispiece, page* 158, *scores on both counts.* In spite of certain technological elegancies in its construction —white-painted branches of iron rod, tipped with brass ferrules that once held platinum points—its wild and organic form makes it look almost at home in its sea-coast setting of twisted pines. The re-interpretation is not shocking, nor its appearance incongruous. But its provenance is remarkable, since it was one of a pair that stood on the ridge of the roof of Cézanne's house in Aix-en-Provence. Beyond that, their origins are not known, but their gratuitously branching form seems to suggest a late recrudescence of sympathetic magic (presumably they were to conduct forked lightning, but not sheet) and a client-inventor relationship worthy of the pages of *Bouvard et Pécuchet* or Celine's *Mort à Crédit.* **Michel Santiago**

COUNTER-ATTACK

THE LCC'S NEW TOWN

The LCC wants to build a new town. 'The tentative conclusion has been reached, after investigating some 70 sites, that a site in the vicinity of Hook on either side of the Whitewater Valley in the north-east Hampshire [sic] probably presents the most favourable features.'

Hook is on the main railway line to Southampton and the South West; let us take a trip from Waterloo. After going through the solidly urban and the solidly suburban we pass Sheerwater (an LCC out-county estate), more suburbia at Woking, proposed LCC overspill near Farnborough, the Gas Turbine Establishment at Pyeslock and a big (and pleasant) pinewood suburb at Fleet. The train finally gets out into true rural countryside at—guess where?—Hook. Distance from London, approximately forty-two miles. On the main A30 road to the south-west exactly the same thing happens. The first real countryside is at Hook—except that it takes a good deal longer to get there because of the congestion due to outer London traffic using a road which is too small for it. This traffic falls off and the road gets wider leaving the true long-distance stuff comparatively unimpeded at a point just beyond—of course—Hook.

It begins to look as though there are not quite as many favourable features at Hook as there might be. One wonders in some alarm what the other sixty-nine sites were like, that Hook should be chosen to be the handmaiden of the LCC. A new town at Hook, in fact, however urban and conceived in whatever good faith, is in fact one more bit of legalized sprawl, extending London's penumbra another five miles to the south-west.

To forestall the letter-writers, angry or deeply hurt or partisan, I will start at another end of the problem with smooth mollifying phrases. Congestion in London—yes; dispersal of population to relieve it—yes, as long as it goes voluntarily; a specifically LCC organization for rehousing them —yes again, if only from the negative point of view that at this low ebb of provincial life the LCC architects' department will make a much better shot at the housing than the local bodies: the proof of this pudding, and what a pudding, is the awful new locally designed estate at Swindon for LCC overspillees.[1] But why a New Town?—unless it is in the Dominions, in which case the very best of luck to it. And, much more to the point, why a New Town within fifty miles of London. One wonders whether what the LCC in fact wants is a vast conurbation—Greatest London—covering most of South East England; they only looked at sites east of a line from the Solent to the Wash and applauded Hook for being 'at a convenient distance from London.' Beyond this, they seem to imply, as the medieval map-makers did, are wild men.

A nasty note has crept into this approach too: the letter-writers are appearing again over the horizon. Let us try just one more. Britain has a lot of spare land—though not of New Town size —spoilt, under-used, half-industrialized, often with its own economic problems. It is in fact the waste-land of our first Industrial Revolution, not necessarily in the sense of derelict land but in the whole pattern of industrial areas like Oakengates or north-west Glamorganshire. The only real way to prove this is through air photographs and this we are going to do (town planners and theorists could actually go round these places, but that sort of thing is a bit out of fashion at the moment). Meanwhile here is some sort of list to give an idea of the sort of place that could take[2] more people and will in many cases have to take new industry or die. First there are the little conurbations—the nests of small industrial towns, usually on coalfields, which have taken away all the original rural character without giving back anything else in exchange—around Coalville, Madeley, Mexborough, Gorseinon, Carluke. Take away the need for coal—and this is now quite a possibility—and these places are in for real trouble. There are the fishing ports and the dockyard ports: Lowestoft, Portland, Fleetwood, Immingham, Peterhead; and there are the country towns which have ceased to be self-supporting and which would absorb at most one factory and its workpeople. (Such a pity, not a grand statistic on a return which can be used as good political copy. Just a delicate subtle job of topographical plastic surgery which needs tact, sympathy and humanity, three qualities which are not very evident in the present merry-go-round.) In fact all of these places need something quite different from the present folie-de-grandeur which seizes a bit of Southern English field pattern and cries New Town,

[1] i.e. people: individuals, men and women.

[2] Voluntarily on both sides, that is: this is not a sort of topographical chess with family units as pawns.



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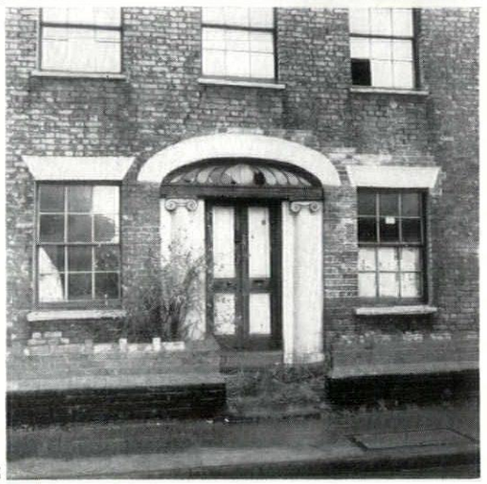

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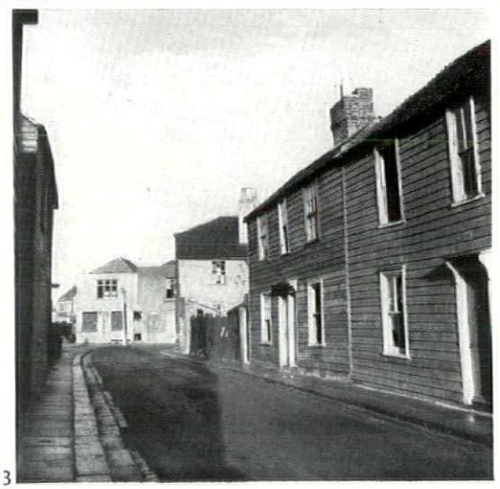

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New Town! Britain isn't like that. Wherever you choose to cut your first sod, somebody or something is there first and has been there for a very long time: we are not a new country but, by reputation, a mature, experienced civilized one. Let's act like it, and produce schemes which are related to the exact individual needs of the people and places involved, causing minimum interruption and maximum gain in character and vitality—and hence, if you like, industrial efficiency. The word for this—it has perhaps been heard before—is functionalism in its true sense, a functionalism which takes account of human situations as well as generalized social and economic ones, or rather takes care of them all indivisibly.

Most of these sites are far from south-east England. If the industrialists and the city officials have as low an opinion of the barbarous peoples of the North and of Wales as not to be prepared to move out of the Home Counties they are welcome to stay congested: they are trying to eat their cake and have it (apart from anything else, life really is more fun in Herefs. than in Herts.). But even on the LCC's apparently self-imposed terms there are friends-in-need of the

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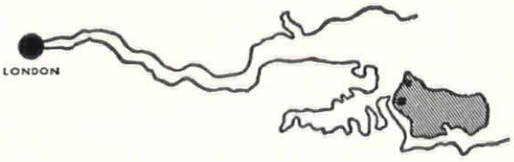

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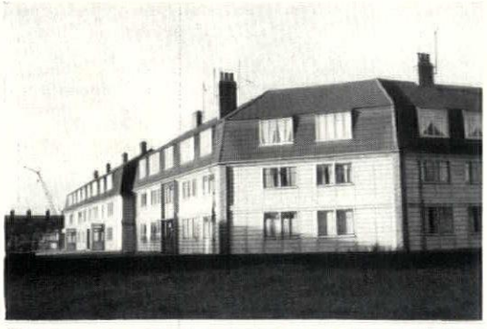
7

sort I have been trying to suggest. For those in search of a town to regenerate, how about Sheerness and West Sheppey?

Sheerness is a dockyard town; the dockyard is due to close and the local council, naturally enough, is very worried about it. Part is falling in quietly, 1 and 2, part has been given a push, 3, and replaced by flats which are really quite impressively bad, 4. It will have ready-made factory buildings in this dockyard (some of them impressive enough to be a tourist showpiece eventually, see AR, July, 1957, pages 31 and 32). It has plenty of flat land suitable for more factories, it has vacant lots in the centre suitable for the sort of small scale infill of flats (*good* flats, that is) and small family houses which the LCC do well. It has at Queenborough a tiny old town nucleus which could become some sort of professional and business centre, and it has to the east near Minster, 6, another area like the original Basildon which was laid out last century as a speculation and never properly filled up with buildings, that could become a first-rate garden suburb. It also happens to be on the seaside, 5, and to have the unspoilt south-eastern part of Sheppey at its doorstep. Here a 'New Town' could be incorporated, gently and carefully, without urbanizing a single view that is not compromised already. Meanwhile, however, the LCC is a 'bureaucratic ogre' and the men of Hampshire are 'rural backwoodsmen' and the people in Sheerness worry about their jobs. It's not a bad plot for a tragi-comedy.* **Ian Nairn**



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* At the time of going to press the LCC's proposal for Hook is being opposed by the Hampshire County Council. If the idea is not dropped there is the makings of a ding-dong public inquiry here. After this article was written, the advertisement, 7, appeared on the back page of *The Times*. Won't somebody put two and two together?

BOOKS

WHITE ON PERSPECTIVE

THE BIRTH AND REBIRTH OF PICTORIAL SPACE. *By John White. Faber & Faber, 63s.*

Dr. John White has at last produced that history of perspective down to the Renaissance, of which enticing fragments have appeared in learned periodicals, giving a foretaste of what was evidently to be a masterly treatment of a complicated and yet inescapable theme. To say that the result is slightly disappointing is only to say that expectations had probably been pitched rather higher than the nature of the subject and the circumstances of the times permitted. For let it be said at once that this is a remarkable and an indispensable book; and the reader who will give himself the trouble of following a difficult argument as tenaciously and as perspicaciously as the author himself will be richly rewarded: the disappointment comes from two main causes—one presumably inevitable and the other perhaps disputable. The first cause is the usual one—that the illustrations are too few and too small, with the result that a train of reasoning which would have been easy enough to understand with the help of lantern-slides on a large screen must sometimes be taken on trust in process blocks only a couple of inches square. The second cause is peculiar to the book, and arises out of a decision explicitly referred to in the introduction—namely, to deal first with the rebirth of pictorial space in the Middle Ages and the Renaissance and then to go into the question of its birth right at the end of the book.

This was an unfortunate decision. Dr. White adopted this arrangement, he says, because 'there is no escaping the fact that Greek pictorial art has almost vanished, while a relatively large proportion of the paintings and reliefs of the Renaissance has survived. It is possible to speak with certainty about many aspects of perspective theory in the fifteenth century. In antiquity its very existence must be proved . . . It is for these reasons that the art of antiquity is considered at the end, instead of at the beginning of the book.' Yet if we take his argument to pieces and reassemble it chronologically, the book becomes easier to follow, especially since the chapter on 'Spatial Design in Antiquity' is in some ways the most remarkable in the book in its own right, as well as serving as an excellent introduction to Dr. White's general method of analysis. It is, of course, a reduction of a long paper published in the *Journal of Hellenic Studies* in 1956; and those who read it in that form, and profited by its conclusions, naturally expected to find it at the head instead of at the tail of the complete book. As things are, we plunge without warning into the vexed question of Cimabue and the frescoes in the Upper Church of San Francesco at Assisi, and take some time before recovering our breath.

The most important discoveries of Dr. White's chapter on spatial design in antiquity are as follows: first, that Lucretius and Vitruvius meant what they said; and that the theory—or at least the practice—of vanishing-point, or 'plane,' or (as Dr. White chooses to call it) 'artificial,' perspective was known in antiquity; and that certain paintings in the so-called Second Pompeian style bear contemporary witness to this; and secondly that 'spherical,' or what Dr. White calls 'synthetic,' perspective was at least empirically understood in antiquity; and that certain paintings in the so-called Third and Fourth Pompeian styles hint at such an understanding. This is a conclusion of the first importance: it had hitherto been argued that while Pompeian painting, and therefore presumably Hellenistic painting, showed some signs of a rudimentary feeling for 'axial,' or 'spherical,' perspective,

'vanishing-point' perspective was not discovered till the days of Brunellesco and Alberti. But Dr. White's analysis of the crucial passages in Lucretius and Vitruvius, which is of great subtlety, does seem to prove his point; and his book is therefore rightly called 'The Birth and Rebirth of Pictorial Space.'

The chapters on the gradual and piecemeal conquest of foreshortening and perspective in the two centuries before Brunellesco and Alberti are elaborately and convincingly worked out; the development of the theory of 'artificial' perspective, and in particular the function of Ghiberti as an intermediary between medieval and quattrocento speculation on the optics of perspective, may then be demonstrated; and finally the part played by Uccello and Leonardo in raising the problems of 'synthetic' perspective is clearly shown—it was evidently the higher mathematics of 'spherical' projection that kept Uccello out of bed at night, as well it might. Contrasted with the Italian interests in theory, Dr. White shows us the Limbourg brothers and Fouquet in the north faithfully recording their ocular perception of the curvature of physically straight lines and their sense of perspectival diminution in a vertical as well as in a horizontal direction.

It is a pity that Dr. White has to stop just at the point where the dilemma of perspective becomes most acute, and most acutely felt—in mannerist and baroque painting. Because it is there that the shortcomings of plane perspective and the need for spherical perspective really become urgent: mannerist painting did indeed exploit for its own perverse purposes the extreme distortions of which plane perspective was capable when the vanishing-point was shifted from the centre to the edge of the visual field; and baroque painting, with its 'wide screen' requirements, became outrageously impatient of the fixed peephole viewpoint. Let us hope that Dr. White will deal one day with these fascinating problems in a companion volume: it would be delightful to see the analytical acumen which he has brought to bear on Vitruvius and Brunellesco and Alberti and Uccello applied to Tibaldi and Pozzo, to Saenredam and Carel Fabritius, to Hoogstraten and Houckgeest.

Roger Hinks

PECULIARLY SCOTTISH

THE ARCHITECTURE OF SCOTTISH POST-REFORMATION CHURCHES 1560-1843. *By George Hay. Oxford, Clarendon Press.* 63*s*.

Some years back, I took the bus from Edinburgh to Lasswade to see a church designed by Robert Adam. I knew what to expect, because Bolton reproduced the plan. But what I saw was not what I expected. Although of the right period, the building neither corresponded to the plan in Bolton's book nor, clearly, was designed by Adam. Who did design it? There seemed to be nowhere to look for the answer, and so the question was stowed away unanswered in that corner of the mind in which one keeps such mementoes of past holidays. And now comes Mr. George Hay with—no, not the answer definitive, but a suggestion that explains the character of the building as neatly as could be. Pointing out that the architect had evidently seen Adam's design, he continues: 'It is not unlikely that . . . (he) was John Clerk of Eldin. His wife was Adam's sister, Susanna, and he may have been responsible for commissioning his brother-in-law to prepare the first design.' He adds: 'After many years of structural neglect, this attractive kirk has been abandoned and left derelict.'

There you have an illustration of the circumstances that make *The Architecture of Scottish Post-Reformation Churches* a timely book: the subject has been neglected, and many of the buildings themselves have suffered the same treatment, or worse. Whether the book will have any effect on the latter state of affairs is of course doubtful; for one thing, the parish ministers who failed to reply to Mr. Hay's letters are unlikely to read his book. As a contribution to architectural scholarship it is admirable—a thorough and well-rounded piece of work.

Although Scottish church architects in the period under review might borrow their detail from the sources that happened to be convenient at the time—from the Netherlands at the beginning of the seventeenth century and even from England at the end of the eighteenth and beginning of the nineteenth—they showed an independence and often an originality in the broader aspects of design that enable one to regard them as a truly national school. Liturgically, the controlling factors were the necessity of giving prominence to the pulpit and the need for space in a central location for the long communion tables. One of the favourite solutions was the T-plan church, which is, as Mr. Hay says, 'a peculiarly Scottish manifestation.' It originated in the sixteenth century when to the typical simple oblong of the Middle Ages was added a wing (called in Scotland, with more respect for the origin of the word than English usage shows, an aisle) containing a family pew in a gallery, with a burial vault below; soon churches were being built to this T-plan from the ground up. If there was to be a tower, it was placed in the middle of the other long side of the church, opposite the 'aisle.' The result can be puzzling to English eyes, accustomed to western towers; confronted with such a church as that at Carrington, Midlothian (Fig. 16), or Yester, East Lothian (Fig. 17), we are temporarily disoriented.

Centrally planned churches were popular, getting a remarkable start, and for Britain a remarkably early start, at Burntisland, Fife in 1592; Mr. Hay shows that this church cannot very well have been inspired by Dutch models but must rather 'be regarded as a sturdy home product.' For cruciform churches, of which more were built in Scotland than in England in the seventeenth century, the Greek cross was preferred (e.g. Lauder, Berwickshire, designed by Sir William Bruce, Fig. 21 and Plate 8b); Canongate church in Edinburgh, 1, however (Fig. 22 and Plate 11b), is an aisled Latin cross—which incidentally seems to have been set out by its architect, James Smith, according to a system of equilateral triangles. In the late eighteenth century and the early nineteenth some



1, *Canongate church, Edinburgh.*

interesting octagonal designs were executed—as also, of course, in England; Mr. Hay's examples include Dreghorn, Ayrshire (Fig. 33), St. Paul's, Perth (Fig. 42), and Glenorchy, Argyll (Fig. 43). Then St. Andrew's, Edinburgh, designed by Andrew Frazer in 1785, has an elliptical nave, while W. H. Playfair's church of St. Stephen in that city, which dates from 1828, has a plan which, remembering the chapel at Florida Southern College, one is tempted to call Wrightian.

I have concentrated on the planning of these buildings both because that is where the heart of the matter lies and because the laudably numerous plans in Mr. Hay's book invite and facilitate such treatment. It remains to say that the six chapters on architectural development are followed by five shorter ones on features and fittings, an inventory of churches, and about a hundred photographs.

Marcus Whiffen

Shorter Notices

THE ROUND TOWERS TO ENGLISH PARISH CHURCHES. *Rev. C. J. W. Messent. Fletcher & Son, Norwich.* 30*s*.

This is a book of all the English round towers, each one with a description and a full-page drawing by the author; such a collation has never been attempted before and is very valuable. Nearly all are in Norfolk and Suffolk. How did they get there? We don't really know: why, if there wasn't enough stone for quoins was there always enough for windows (and why not round churches as well as round towers?). How did they come to look so much like Ravenna? How do they fit in with the Celtic round towers? Were the oldest ones after all some early kind of Martello tower against the Vikings which set an architectural fashion?

The queries are probably unanswerable. In any case, it is good to have all the existing towers illustrated in one book. One is missing from the list—the round tower of the old church at Tooting, of all places, which was demolished in the 1820's. Drawings of it survive.

I.N.

SKILL

SOIL AND WASTE PIPING

by John Carter

After a century of costly stagnation, sanitary plumbing has, during the last ten years, undergone rapid change. Foul air has been found to be less deadly in itself and to circulate in a different manner to what we had imagined. In this article John Carter recalls the official pronouncements on this; and illustrates equipment which has been developed to put our new-found theory into practice.

It is curious to notice in architectural history the way in which different fields in building technique advance out of step with each other. For some, we are content with the same solutions year after year; for others we constantly seek new and better adaptations.

Before the war, in the matter of structural frameworks, architectural students were taught both the 'how' *and* the 'why'—the calculations of stress relative to the shapes of members. But in plumbing they were taught only 'how' the pipes are to be festooned about the building. There was a body of theory to support the practice, but it was in the nature of an explanation of custom rather than a safe platform of criteria for departures from custom. Steel frames and sanitary plumbing came into extensive use at about the same time in the last century—and both are relevant to considerations of human health and safety. Yet while the one advanced, the other stood still. Engineers and scientists are more interested as a race in steel and concrete and these materials are the basis of large and wealthy industries. We know that the more ancient a craft, the more difficult it is for science to gain a foothold. Whatever the reason, it was not until 1949 that extensive hydraulic and statistical studies yielded criteria from which we could design simple piping to convey waste water from fittings to the underground drain without letting foul air into the building.

technique and aesthetics

Steel frames and sanitary plumbing may seem an unlikely couple for comparison but the relationship between their functional development and aesthetic standing reveals the paradox beneath the surface of architectural thinking.

Early steel frames had to be concealed from view—like servants who should work unperceived, without symbol in the scene they helped to maintain. But with the moral revival of functionalist theory in the 1930's this hierarchic order became intolerable and democratic aesthetics insisted that servant and master were equal. The frame must be 'expressed.' But for some reason the services—pipes and cables—were not admissible in this pursuit of democratic honesty. Sanitary plumbing had been 'expressed' for years—by compulsion of the byelaws yet the campaign to take them inside the building was not entirely from motives of frost protection. Stanchions and beams were felt to be ugly only by reason of the way they were shaped and arranged, but pipes were felt to be intrinsically ugly. Internal pipes were, and still are, chased or cased out of sight. Even those who are touched by the clarity and purpose of an installation put in by a plumber of sensibility, regard it as not belonging to the world of accepted forms.

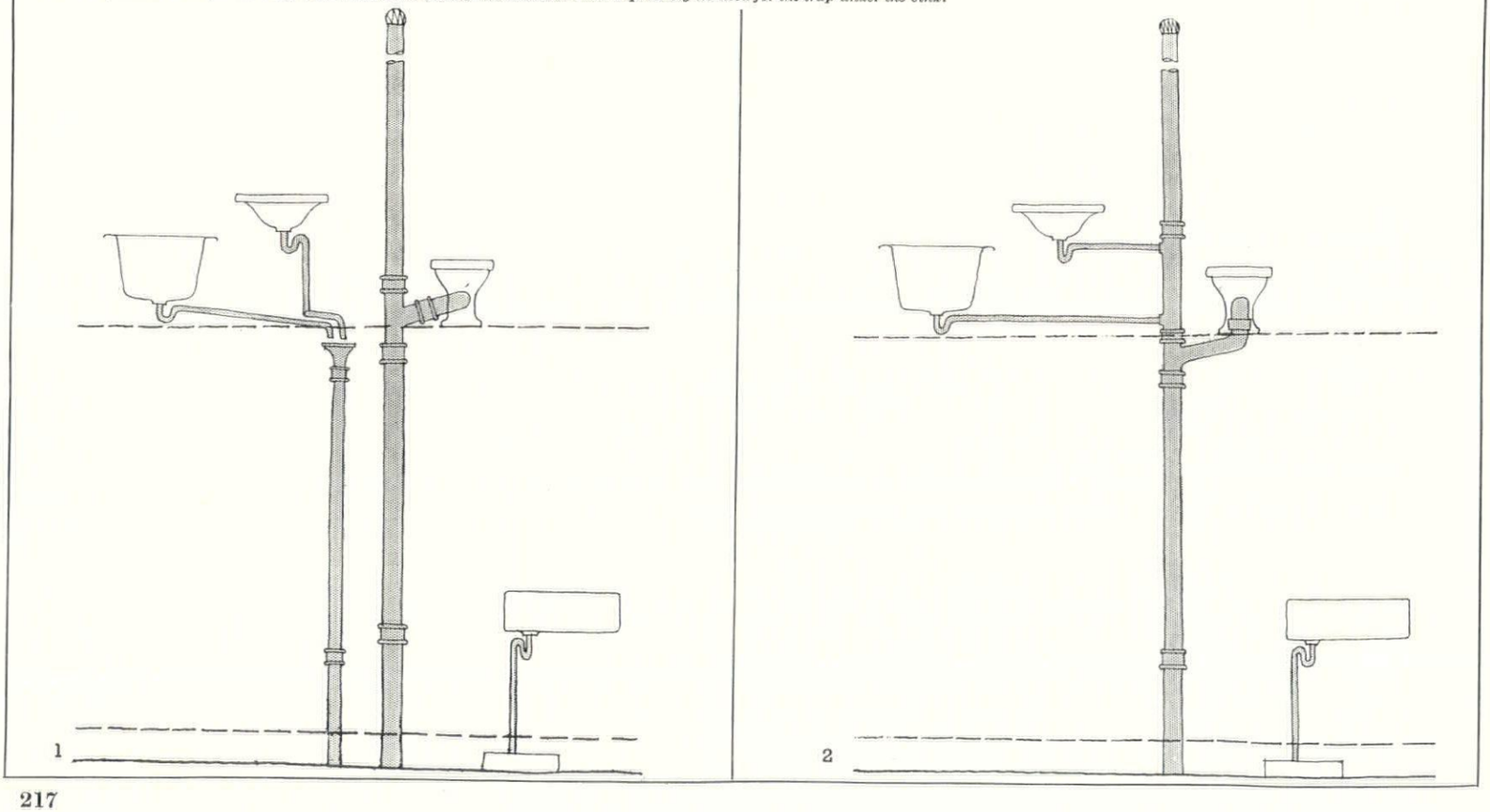
Water must come by routes unseen, to depart—at the pull of a plug—to destinations unknown. Likewise with electric wires and heating systems. Architects and architectural historians commonly regard the battle of the modern movement as having long since been won on the field of 'design' and to have moved into the field of organization; but these pockets of hierarchic aesthetics remain. And they remain significantly in those specialist spheres where the architect has little or no technical expertise—where all he can do is to provide a seemly packaging for goods he does not understand. The consequences are that the specialist must strain his resources, extend his repertory to an unfunctional and uneconomic degree to meet demands. Hence the weary proliferation of devices in catalogues and hence the bright promises of manufacturers' representatives. As late as 1943 an investigating committee[1] could say—'We have been impressed by the need that buildings should wherever possible be planned so as to allow good and economical plumbing to be carried out.'

theory and practice

It is not generally realized that internal single stack plumbing is really a return to the early nineteenth century when baths and closets were first installed *inside* buildings. In those days everything discharged

[1] Post-War Building Studies no. 4, Plumbing. HMSO 1944.

1, 2, *two-pipe and single-stack systems in houses. The new design criteria for the latter do away with the separate waste stack and bring a more disciplined order and clarity to the piping that remains. There is probably no need for the trap under the sink.*

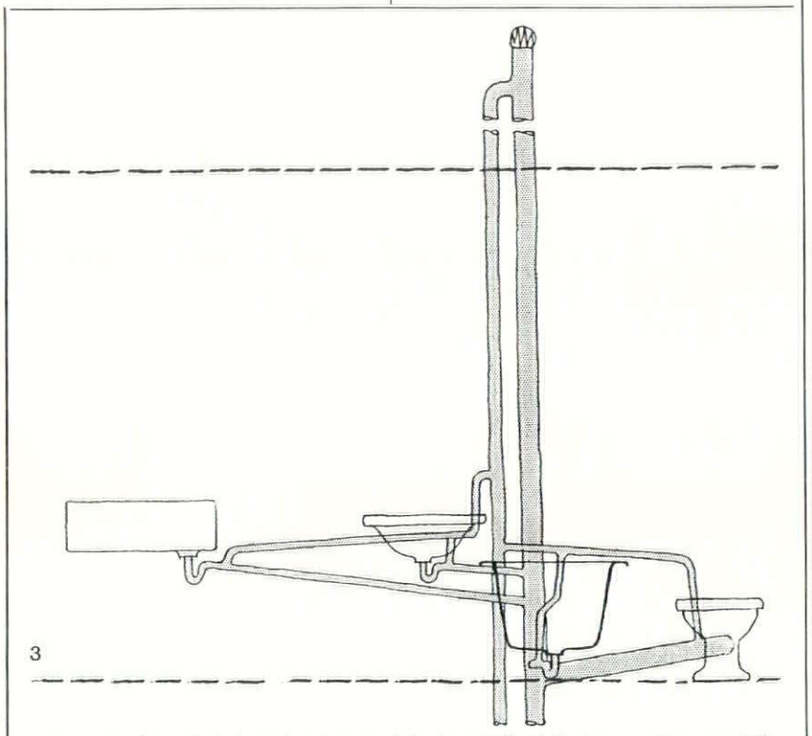


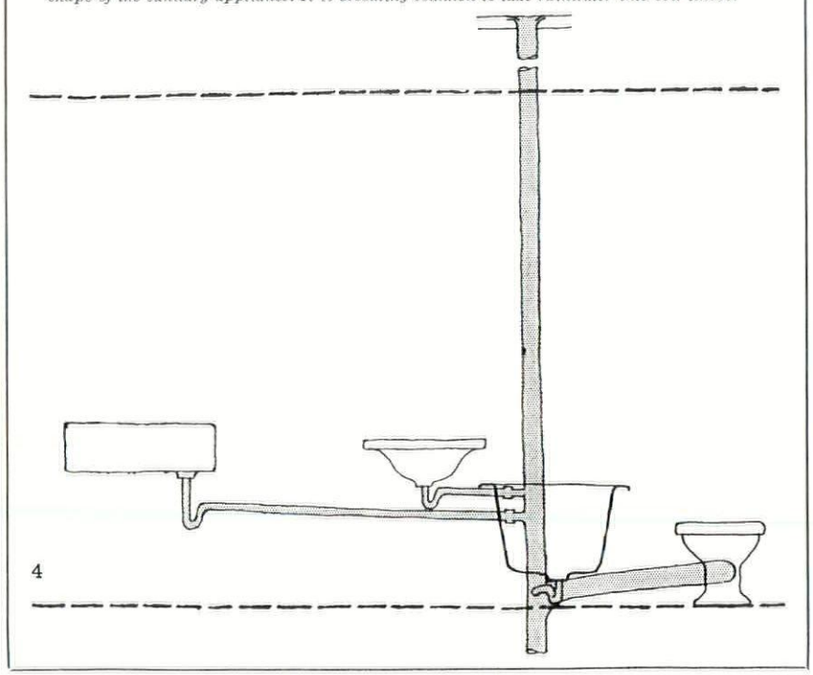
into one stack, leading straight to the cesspool, without traps or vents and all was of unreliable workmanship.

The escaping foul air and the danger to health that it was thought to be, caused the pipes to be put outside, where they remained for a hundred years or so. This practice was given legal force by byelaws like these: 'The person erecting any new building shall . . . not allow any inlet to any drain to be made within any building except such inlet as may be necessary from . . . any water closet and he shall cause the pipes . . . to be furnished with a siphon trap(s) and to be taken through an external wall . . . and discharge in the open air . . .'[2]

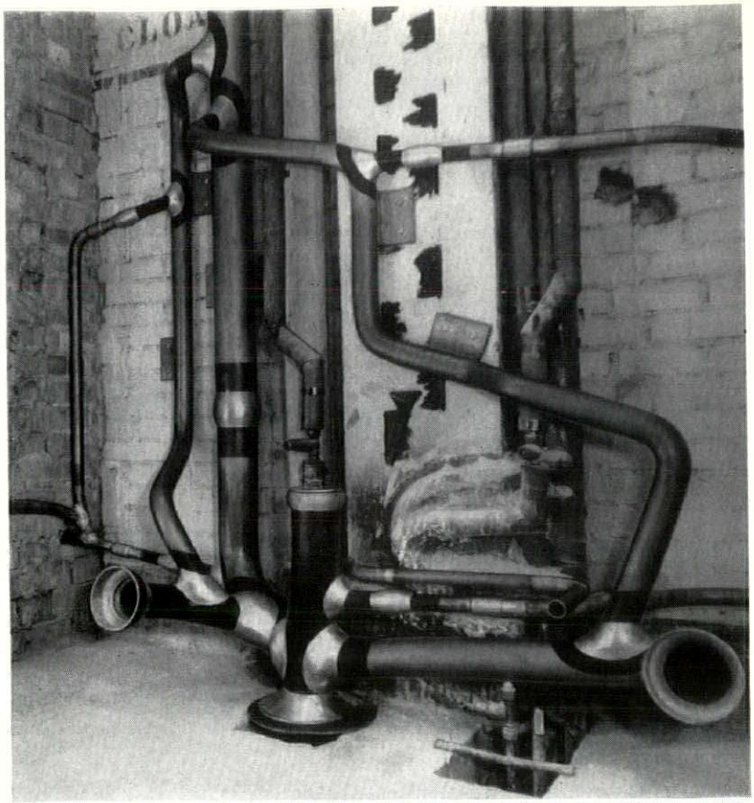
[2] Borough of Leeds. Byelaws for new streets and buildings. Approved by the Local Government Board 1878.

Thus it is that common practice presents that curious mixture of paradox and ambiguity which, according to foreigners, is characteristically British. The sequence of reasoning seems to be something like this. First, drain air smells foul and must surely be dangerous; so the pipes must go outside the building —with the added convenience that bursts when they occur will do no damage to the building and can be got at. Therefore, second, you fix traps at all the appliances to fence off the foul air, but these may not be a sufficient guarantee, so you fit a second line of defence in the shape of a gully trap and, more often than not, a third line of defence in the interceptor trap. The fact that the fouling of drains which did occur nearly always happened at manholes did not discourage their installation





3, 4, *one-pipe and single-stack systems in flats. Complexity of the former system, especially where it was not considered at the planning stage, often defeated the resources of the cast iron catalogues and had to be purpose made—sometimes very gracefully—in lead. Single-stack design criteria refer to depth of trap seal, shape of inlets to stack, length and fall of branches and the shape of the sanitary appliance. It is becoming common to take rainwater into soil stacks.*



5, *vanishing world . . . a plumbing installation at Bristol. Care in the shaping of black around the joints betrays the work of a plumber of sensibility. Photo courtesy Bristol corporation.*

at every junction, change of line or change of gradient—increasing the opportunities for blockage and fouling to take place. A final gesture was the insistence by the byelaws on the fresh air inlet, which more often than not made a splendid source of bad smells at a point where they would be most noticed. It may seem a little unkind to add that recent research[3] has proved that the enthusiastic embedding of drains in concrete, favoured by sanitary inspectors, increases instead of diminishes the risk of fracture.

Inside the building, bath wastes which 'glugged' when you pulled the basin plug, or w.c.'s which incontinently lost their seal water (leaving the paper behind) were as common as those which did not. Misbehaviour of this kind was quoted as fervently by those sanitary inspectors punctilious about vent connections not farther than 12 in. and not nearer than 3 in. to the trap crown, as by those who put their faith in anatomical looking re-sealing traps.

We had to put up with both lack of agreement between theory and practice, and the capricious variations in requirements from district to district—a feature of Public Health Act administration which stubbornly survives even acceptance of single stack design criteria.

post-war optimism

But in any tradition that has congealed into immobility there are, either within or outside, the seeds of new life. In the 1930's a very few experimental installations dared to connect bath, basin and w.c. directly to the stack—no gully, no hopper head, no separate waste stack, not even flanged and cross wired puff pipes. These were sought out by a Government Plumbing Committee, set up along with some 25 other committees in the closing years of the war, to look into the future. With sheets of newspaper and buckets of water the committee had tests made in London, Birmingham and Coventry of installations like these—and they measured the seal losses. They made other investigations, saw what was done in America and with an optimism characteristic of the middle 'forties came out with conclusions that were modest and hopeful:

'Simple one-pipe systems for one- and two-storey housing can be designed to operate under practical conditions of use without siphonage of traps, in spite of the absence of special trap ventilation.

'The size of traps and branches has a controlling influence on the liability to siphonage, the use of 4-in. stacks with 2-in. waste branches giving safer conditions than obtain with smaller stacks and branches.

'When the washbasin branch is run directly to the common stack it is much less liable to siphonage of its trap than when dropped vertically to the bath branch.'[4]

There was curiously little discussion in this report of the question of whether sanitary plumbing should be inside or outside the building. Some byelaws had relented on this point but habit was still strong.

The committee strongly recommended further research, but the ensuing seven years saw very little progress. All that the Housing Manual of 1949 had to say was 'Any one pipe system should have full trap ventilation unless it can be shown by tests that this is not necessary.' Internal piping was ambiguously discouraged: 'Internal soil stacks should not be adopted without careful consideration of possible health hazards by leakage, taking into account the quality of labour available locally for pipe jointing.'

[continued on page 219

[3] Symposium on New Trends in Plumbing and Sanitation. By Clarke, Sobolev and Griffiths. Read to the Royal Society for the Promotion of Health, October 16, 1958.

[4] Post-War Building Studies no. 4, Plumbing. HMSO 1944.

continued from page 218]

research at last

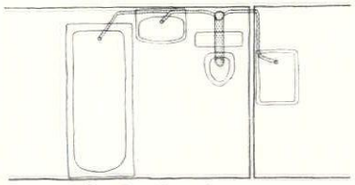
In the following year, however, research began, the first results reaching the technical public in 1952 through Building Research Station Digests 48 and 49. These confirmed the Plumbing Committee's hopes (if not their ideas about pipe sizes). Precise design criteria were given, referring to pipe falls, stack connections and the shapes of sanitary fittings which at last allowed confident design of single stack installations in two-storey houses.

Two years later, even more startling possibilities were demonstrated at a Press conference honoured by both the Director of Building Research and the chairman of the Building Research Board. These were that single stack plumbing could be used up to no less than five storeys in height without the venting of any trap. It was claimed that elimination of the waste stack and the anti-siphonage network would save £16 per dwelling.

Plumbing, perhaps for the first time in its life, made exciting technical news.

the industry

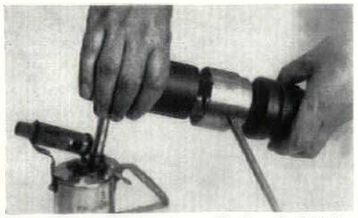
In this advance out of prodigal Edwardian custom, there was one flaw. The manufacturers of pipes and fittings, finding themselves in an unprecedented sellers' market in the post-war boom years had ignored the hints of the 1944 committee and thus were relatively unprepared for single stack plumbing. Eager architects searching the cast iron catalogues or the pages of BSS 416 : 1944 for fittings with which to construct such an installation were baulked or had to use purpose-made copper or lead at exorbitant prices. Behind the scenes persuasion by BRS eventually induced sections of the cast iron trade to make moulds for multi-



6, *costs: for the plan shown, the one-pipe system at five storeys uses about one-third more cast iron, nearly twice as much lead and costs £16 per flat more than the single-stack system.*

branch fittings. Catalogues began to appear showing what to all appearances were stock fittings, but enquiry soon revealed that they were regarded as 'specials'—made only to order (with price and delivery time to match). Behind this rather unsatisfactory situation lay two problems.

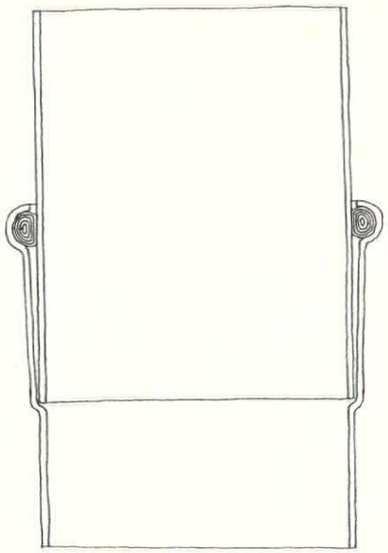
One was (and still is) that standardized arrangements of sanitary fittings—and therefore of waste connexion positions—have no place in up-to-date architectural thinking. The other, that byelaw requirements



7, the 'Polyfusion' method *of jointing plastic pipes. This mandrel is heated with a blowlamp, the spigot end of the plastic is pushed on to one side and socket on to the other. When the plastic surfaces are sufficiently softened, the two ends are withdrawn and pushed tight together, until the weld has cooled.*



8





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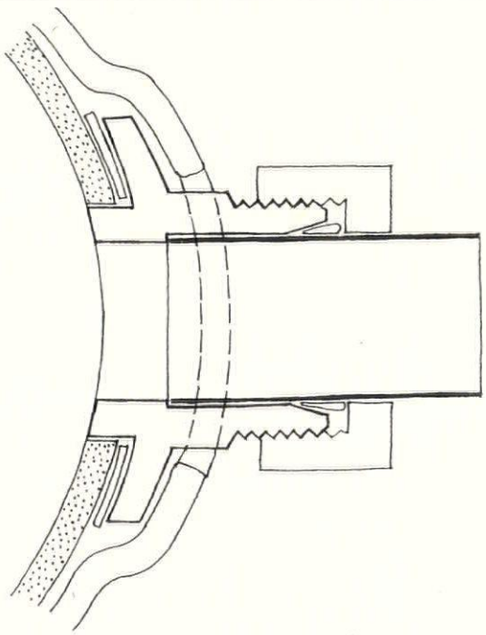
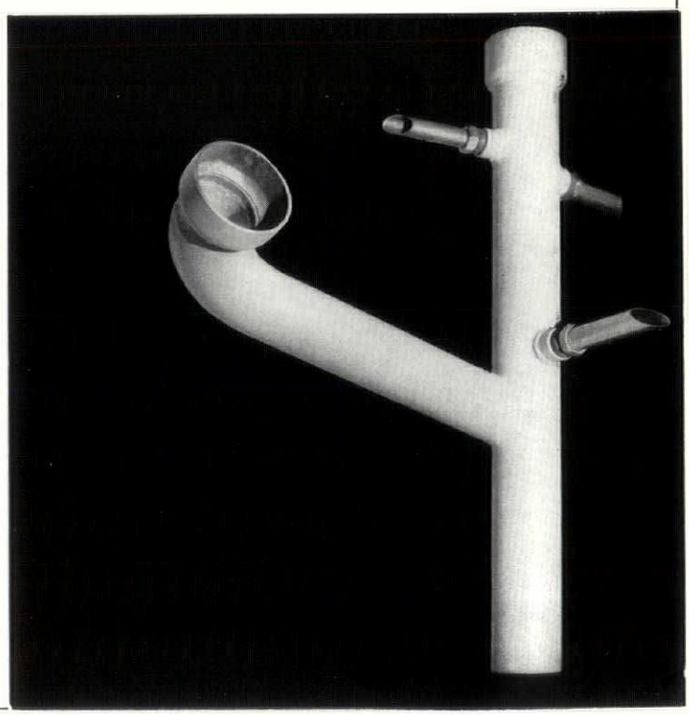


8, *jointing:* the 'push fit' method, *in which the spigot end of the branch pipe is smeared with oil or graphite and pushed into the socket, where the neoprene ring inside the flange effects a watertight seal.*
9, the 'Fixacon' method *for taking waste branches into cast iron stacks. A hole is bored into the stack (in situ if necessary) with a Crookes cutter. Next, the plastic saddle and washer are clamped on to the stack. The saddle has a screwed compression joint to secure the copper branch pipe.*
10, *a purpose made soil and waste fitting in copper.*



10



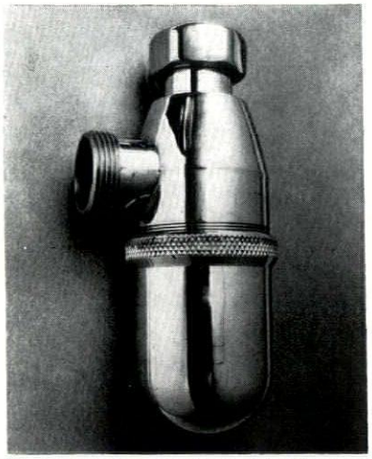
11, *plastic trap, branch and stack. This material has made greatest headway in the field of chemical plumbing, but it is beginning to find tentative use for waste plumbing. Note that the junction of branch with stack does not conform with single-stack criteria. The makers issue a warning that wherever the material is 'under strain or pressure' its temperature should not be allowed to exceed* 140 *degrees F for periods longer than that of a 'short flush.'*

—and even more the idiosynerasies of sanitary inspectors—vary from district to district. Thus the number of 'standard' multi-branch fittings for sanitary plumbing required to meet the variety of demand made rationalized quantity production very difficult.

Variation in byelaw requirements is quite indefensible when there exists a secure body of theory and when variety of 'local conditions' is of little significance. One authority will insist that the bath waste boss be *above* the w.c. branch—to avoid induced siphonage; another that it can be at the same height provided boss and branch are not diametrically opposed. A third will demand a parallel branch to bring the bath connexion 'at least 8 in.' below the w.c. branch and a fourth will smile sceptically at the words 'single stack' and make you vent the traps. And the zeal of sanitary inspectors in keeping foul air out of the building has not been diminished by the realization that drain air is not, after all, injurious to health. A Departmental Committee of the Local Government Board said: 'In sewers old and new, ventilated or unventilated, in which the sewage is moving and not stagnant, the air differs but little from that of the atmosphere outside.' This report appeared 46 years ago!

ranges of fittings

So far this story has been concerned with plumbing for dwellings, but other classes of installation have not been forgotten. Research into the behaviour of ranges of fittings—rows



12, *a neater than usual type of 'bottle' trap, easier to clean than most.*

of w.c.'s and lavatory basins—is now in its closing phase. Here too it has been the custom to connect basin traps and w.c. outgoes to two collecting pipes—one sloping downwards to take the waste, the other sloping upwards to vent every trap.



13, *traps. The swivel trap simplifies the problem of turning a corner in the waste branch for example, under the back of the lavatory basin.*

One simplification sometimes employed for basins is to connect waste tails direct to the collecting pipe—which terminated in a trap at its connexion to the stack. Sanitary inspectors are not always happy about the smell from such deposit as gathers along the invert of the collecting pipe. Research work has shown that in these cases, the collecting pipe should be of a diameter large enough not to fill up solid with water when a basin is discharged—and thus cause induced siphonage; but small enough for a depth of water sufficient to give a self-cleansing velocity. The sizes of pipe appropriate to ranges of basins with spray taps would not be the same as those for ordinary taps and waste plugs, because of the very different discharge rates of these two systems and it would be smaller than sizes used at present.

With ranges of w.c.'s up to eight in number it appears that the venting of traps to prevent induced siphonage is quite unnecessary for a top-floor installation, and might be unnecessary for two floors.

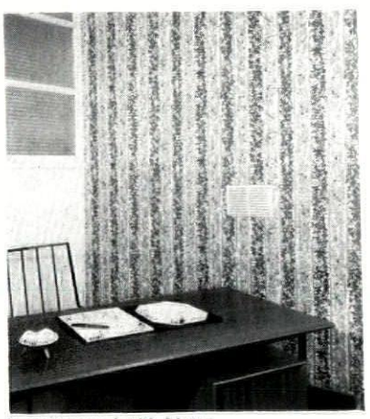
For a number of floors, where there is a likelihood of pressure in the stack varying from that of the atmosphere by more than a certain degree, some venting would be necessary, but not of every trap. The suggestion is, pending final results, that one vent to each collecting pipe below the topmost floor would be sufficient and that this need not be in the theoretically best place—at the upstream end of the collecting pipe. It could be at the lower end, nearest to the vent stack. It appears that neither the fall of collecting pipes nor the shape of w.c. connexions to them is very significant.

Standing back to survey this world of sanitary plumbing—a world to which the rational approach has come very late in life—one sees the need for two closely related further developments. One, the standardization of byelaw and sanitary inspectors' requirements throughout the country. Two, a standardization of stack connexion positions to permit a reasonable number of different plan arrangements of sanitary fittings, to give a defined framework within which the manufacturers of cast iron, copper, steel and plastic pipes and fittings can contend. To these we might add a third: to exert a necessary economic discipline upon the architect.

THE INDUSTRY

New wall finish

Wall finishes is an element for which older techniques—paint and paper—are holding their own against more recent (and often less sympathetic ones). A new alternative now appears, looking like paper, but with more durable qualities, Lintex. It is described as a plastic-fortified, cotton-backed covering and looks rather like matt paper-covered thin canvas. Unlike paper, it can be washed and will resist scratches.



1, *wall covered with Lintex.*

There are an alarming number of patterns—57 and the material is made in 9-yard rolls, 22½ in. wide, which cost 42s. This means that a 10 ft. by 10 ft. room could be done for about £10 or £12. Special Lintex paste must be used, applied to the wall and not to the material.
The Wallpaper Manufacturers Ltd., Manchester.

Building for warmth

Those who are puzzled and distressed by competition between our nationalized industries may take heart from a tiny co-operative venture by the three promoting organizations—for gas, electricity and coal. It is a small booklet called 'Building for warmth,' addressed to the informed layman 'about to build or to buy a house.' It begins by explaining in workmanlike terms, what heat loss is and how it happens. Following pages illustrate various constructions for walls, floors and roofs and windows, giving the U values. A concluding section deals with weatherstripping and insulation of the hot water system and finally there are two sketches—of a straggling house plan of high cube/super ratio compared with a compact house. It would be nice if this booklet could be followed by another giving the impartial facts about heating systems (with costs, capital and running).
British Electrical Development Association.
Coal Utilisation Council.
Gas Council.

Diverse properties of aluminium

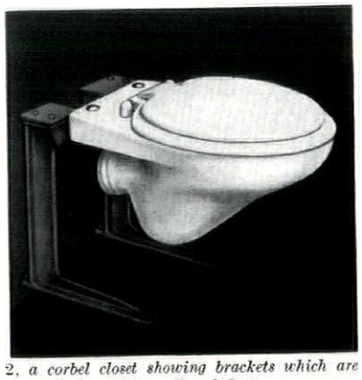
The Aluminium Development Association has in the past produced several good technical booklets to explain the uses and diverse properties of this material. Now comes a rather more ambitious production, on coated paper with colour photographs, called 'Aluminium Windows.' Section I uses large photographs of prominent buildings to show how many of the better known architects use aluminium windows. Section II tells us a little about different alloys, jointing methods and finishes; while Section III discusses installation and glazing. Section IV on weathering and maintenance is followed by two appendices. The first illustrates BS 990 : 1945—the familiar standard window types, of steel origin (with alternative horizontal bars dotted on) and the second is a glossary of terms and definitions. This includes the unfamiliar nomenclature of various aluminium alloys. On the back page is a list of the member companies of the Association.

This 60-page production, partly a technical treatise, partly a catalogue and partly prestige advertising would be quite useful for the architect to have on his shelf. Perhaps its strongest claim to serious attention is the honesty about corrosion and maintenance. We seem now to have passed the days when aluminium was presented as a maintenance-free material.

The Association has also issued a two-page chart of the colours (with samples) that you can get by anodising—referring readers to the Architects Journal Information sheet 41 B2 for appropriate specification notes.
*Aluminium Development Association, 33 Grosvenor Street, S.W.*1.

Corbel closets

At a recent Symposium held by the Royal Society for the Promotion of Health a speaker drew attention to the fact that corbel closets were coming back into favour. The great advantage of these is of course the



2, *a corbel closet showing brackets which are normally buried in wall and floor.*

easier cleaning of floors; the difficulty, that of supporting them adequately to take the superload without disturbance of the outgo joint. For the one illustrated, the makers suggest burying the muscular-looking brackets into wall and floor. This is for cases where the back wall is not able to tail down cantilevers; where it is, a more modest bracket is available.
*Ideal Boilers and Radiators Ltd., Ideal House, Great Marlborough Street, W.*1.

[continued on page 222

The Perfect Combination

Combinol Gloss Paint

and

Valspar Eggshell Lustre

Combinol Gloss Paint

Tough — Brilliant — High Gloss Finish.
Excellent spreading power and opacity.
Resists all weather conditions.
Recommended for coastal and industrial areas.

Valspar Eggshell Lustre

Beautiful Eggshell Lustre Finish.
Easy to apply with wide brush, roller or spray.
Resists steam and condensation.
For all interior surfaces.

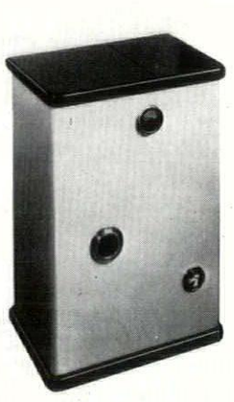
Also available in the British Standard Range (101 colours)

Manufactured by Goodlass Wall & Co Ltd

continued from page 220]

Paraffin boiler

A very neat oil-heated boiler of small domestic rating and unpretentious appearance has been produced. It is a 'blue flame' type using paraffin, giving a rated output (for heating) of 15,000 Btu per hour. Alternatively it could be used for hot water supply. The casing, which is 18 in. by 17 in. by 25 in. high, contains a 2½-gallon fuel tank. The oil flame is thermostatically controlled and a very high efficiency of 81 per cent is claimed. This little boiler might be very useful for small flats, perhaps conversion jobs, although it is not cheap—45 gns.
Mackey Bowley (Steelworkers) Ltd., 21 Caledonian Road, N.1.

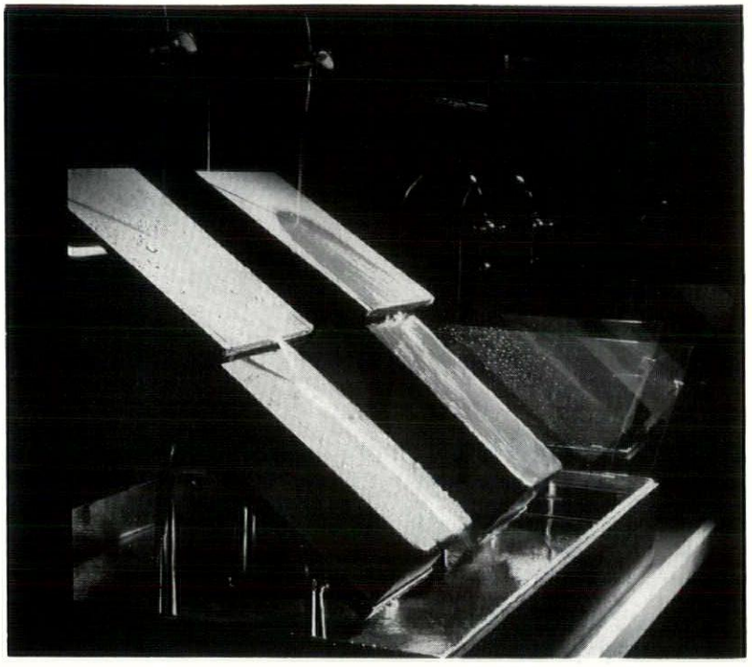


3, *thermostatically controlled paraffin boiler.*

Diversity of silicones

ICI have printed a cheerful pamphlet on silicones, the chief object of which is to illustrate the astonishing diversity of their uses—from babies bottle teats to the insulation of electric motor armature windings. For building, the main use is in the treatment of walls to resist moisture penetration. Silicone resins penetrate to about ¼ in. from the surface, lining but not closing the pores of brickwork or stone. The rather splendid photograph shows a treated and an untreated brick.
ICI, Milbank, S.W.1.

4, *silicone treated brick on left and untreated brick on right.*



Flush Door Brochure

A comprehensive brochure on flush doors beginning with a 'Statement of Policy' and ending with a 'Guarantee' has been produced by Leaderflush. It gives specifications for five main types of door—and prices. The cheapest skeleton framed internal door is 3s. 6d. per foot super and dearest solid core external door is 7s. per foot super. Doubtless these figures vary with size of order. The statement of policy tells us that only plywood is used for facing and that the object of the company is '. . . to provide architects and contractors with flush doors of a quality and reliability in which they may have absolute confidence.' The guarantee is of replacement, free of charge, should any door 'show defects of workmanship or material due to bad or defective manufacture, at any period, regardless of time or age, provided the doors have been stacked flat in a dry place. . . .'

One fact that was news to me was that only Western Red Cedar is used for the framing. We are able to announce that this firm has just established a London office and showroom at Bush House, Aldwych.
Leaderflush Doors Ltd., Trowell, Nottingham.

Control Gear

Moving now to electrical control gear, we have a revised edition of one of the better catalogues. If you want an MK switch or plug, you can find it quickly. The sections are clearly marked and the devices illustrated are in the main well conceived.

The 1959 version of the catalogue is the same as before, except that it includes a new series of round pin switched socket outlets, flush or surface mounted and made in ratings of 2, 5 and 15 amps to fit terminal boxes to BS 1363. Another new product is the 'Fused spur box with D.P. switch'—shown at the Electrical Exhibition in 1958. In plain language these are plugs for use with fixed appliances—clocks, refrigerators, water heaters, etc., where the switch disconnects both conductors so that it does not matter whether the line and neutral have been put

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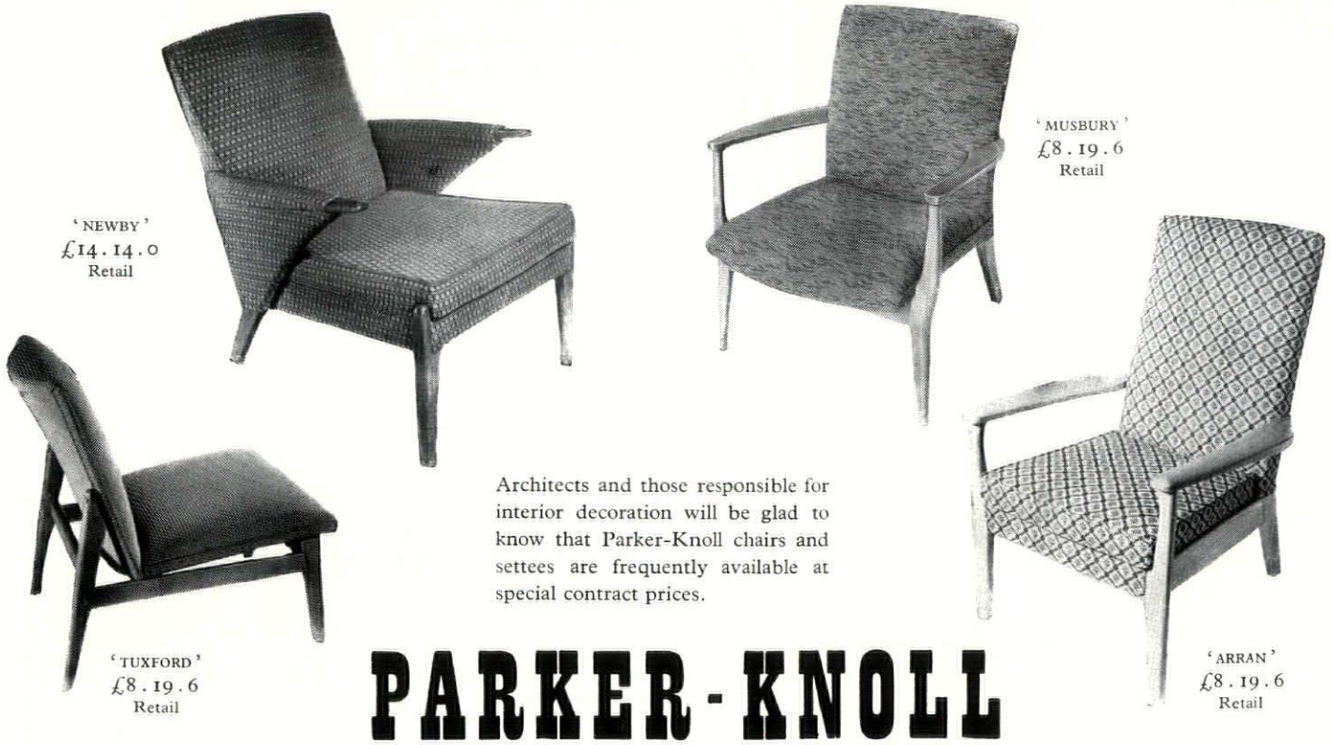

Architects and those responsible for interior decoration will be glad to know that Parker-Knoll chairs and settees are frequently available at special contract prices.

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Please write for details to: PARKER-KNOLL LIMITED CONTRACT DEPT., HIGH WYCOMBE, BUCKS
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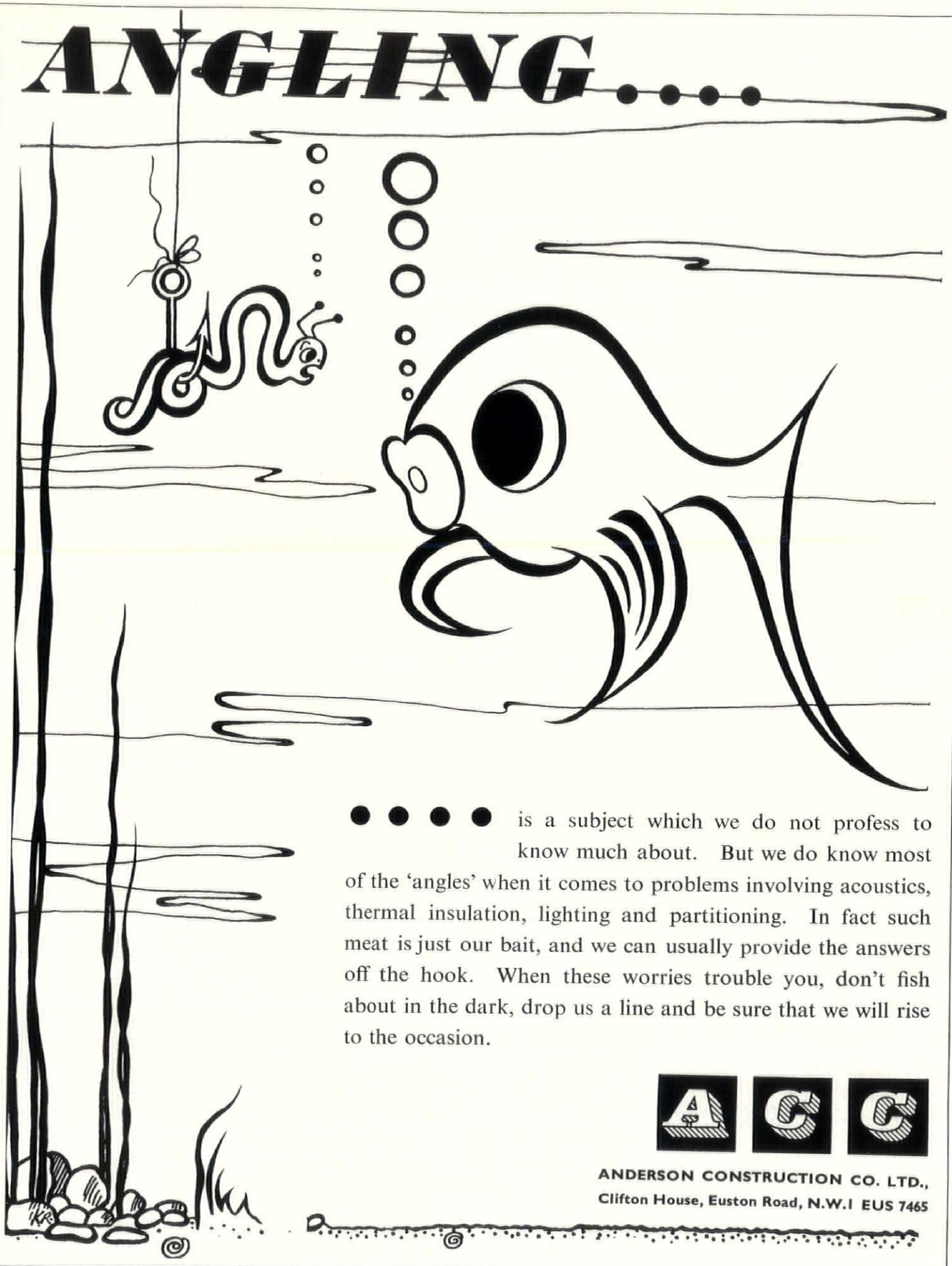
ANGLING....



●●●● is a subject which we do not profess to know much about. But we do know most of the 'angles' when it comes to problems involving acoustics, thermal insulation, lighting and partitioning. In fact such meat is just our bait, and we can usually provide the answers off the hook. When these worries trouble you, don't fish about in the dark, drop us a line and be sure that we will rise to the occasion.

A C C

ANDERSON CONSTRUCTION CO. LTD.,
Clifton House, Euston Road, N.W.1 EUS 7465

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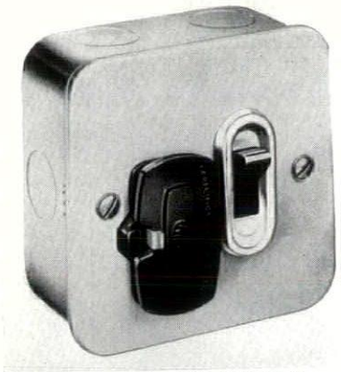


5, new fused spur box with D.P. switch.

in the wrong way round. These outlets are fused and made with or without pilot light.
MK Electric Limited, Wakefield Street, Edmonton, London, N.18.

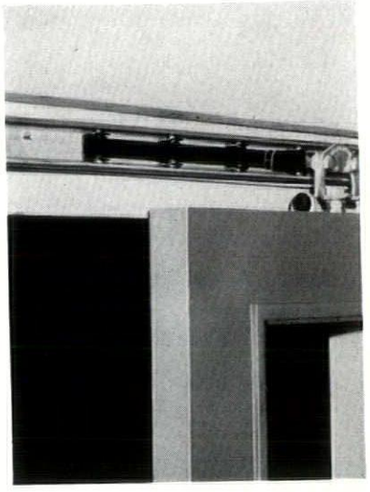
Lighting and fittings

Luminous ceilings enjoy an increasing vogue and one of two catalogues from Cromptons introduces a new one—the Modulume. This is obtainable in either 3-ft. wide strips or in 3-ft. squares of corrugated vinyl sheet. No technical details are given, but the latter appears to consist of inverted trough sections—the framing strips being lower than the sheet.

The other catalogue gives the company's range of fluorescent and tungsten fittings. For the former there are very welcome polar diagrams indicating the intensity of light output at various angles to the vertical. Tungsten fittings are, for the most part, pleasantly unexceptionable. The book concludes with a selection of spot, flood and 'eyeball' fittings.
Crompton Parkinson Ltd., Crompton House, Aldwych, W.C.2.

Domestic sliding gear

There was a time when it was difficult to get sliding gear for domestic size doors that was not bulky and intractible to neat detailing. Now, a number of these are on the market, to be joined by a newcomer from Hendersons. This is the S6 Marathon



track, suitable for doors up to 5 ft. wide and 150 lb. weight. Prices vary from 42s. to 110s.
P. C. Henderson Ltd., Harold Hill, Romford, Essex.

Patent glazing catalogue

Patent glazing must have been one of the earliest departures from traditional techniques for top lighting. It was originally developed for a building type with no historical antecedents—the large span, one-storey factory. Since that time it has found more varied uses as a new catalogue from Heywoods, of Huddersfield, shows. Various sections deal with lead clothed bars, aluminium alloy bars, with one pane and two or more pane glazing, with sloping or vertical glass. There are numerous trimming and finishing details and a concluding section covers methods of heat insulation. The catalogue is rich in what might be called rooftrusscape photographs and dimensioned full sizes—so that the architect can really see how things are put together. The catalogue is perhaps not so convenient to the shelf as it might be and some indication of cost—however approximate—would have been useful.
W. H. Heywood and Co. Ltd., Bayhall, Huddersfield.

CONTRACTORS etc

Offices in Knightsbridge. *Architects:* Guy Morgan & Partners. *General contractors:* Taylor Woodrow Construction Ltd. *Metal windows:* The Crittall Manufacturing Co. *Granite:* Fenning & Co. *Glass:* James Clark & Eaton. *Slate:* The Bow Slate & Enamel Co. *Stone:* Brookes Ltd. *Iron staircases:* S. W. Farmer & Sons Ltd. *Metalwork:* The Culford Art Metal Co. *Dampcourses, asphalt, waterproofing:* The Book Asphalte Co. *Stone:* The Bath & Portland Stone Firms Ltd. *Door furniture, cloakroom fittings:* Messrs. Comyn Ching & Co. *Plastering:* Jonathan James Ltd. *Marble:* J. Whitehead & Sons Ltd. *Stairtreads:* Zanelli (London) Ltd. *Mantels:* W. Turner Lord & Co. *Woodblock flooring:* Bennetts Wood Flooring Co.; Calders Ltd. *Fireproof shutters and doors:* Mather & Platt Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Partitions:* Luxfer Ltd. *Alarm system:* Burgot Rentals Ltd. *Shop fittings:* Hibberd Bros. Ltd. *Heating, ventilation, plumbing, gas services:* Ellis (Kensington) Ltd. *Electrical installations:* Troughton & Young (Electrical) Ltd. *Clocks:* Telephone Rentals Ltd. *Furniture:* Hille of London Ltd.; Aerofoam Ltd. *Telephones:* Automatic Telephones & Electric Co. *Tiles:* Carter & Co. *Artificial stone:* Girlings Ferro-Concrete Co. *Folding gates:* Haskins Ltd. *Signs:* Russell Signs Ltd.; Drakard & Humble Ltd.; Dent & Hellyer Ltd.; Wondersigns; G. Maile & Son Ltd. *Light fittings:* Allom Heffer & Co.; Falk Stadelmann & Co.; The General Electric Co.; Troughton & Young (Lighting) Ltd. *Stone:* Anselm Odling & Sons Ltd. *Lifts:* The Otis Elevator Co. *Brick suppliers:* Richard Parton (Builders' Merchants) Ltd. *Bricks (flint):* Cape Building Products Ltd. *Facing bricks:* High Brooms Brick & Tile Co. *Curtains:* Edinburgh Weavers. *Joinery:* Builders Supply Co.; (*main entrance hall*) Hibberd Bros. Ltd. *Boilers:* Bouellat Engineering Ltd. *Carpets:* John Lewis & Co. *Soap dispensers:* Newton, Chambers & Co. *Paving:* Fitzpatrick & Sons Ltd. *Special external rendering:* Clark & Fenn Ltd. *Postal delivery system:* Sovex Ltd. *Paving lights:* Lenscrete Ltd. *Roller shutters:* Dennison, Kett & Co. *Mosaic work:* Art Pavements & Decorations Ltd. *Ex-*

[continued on page 226

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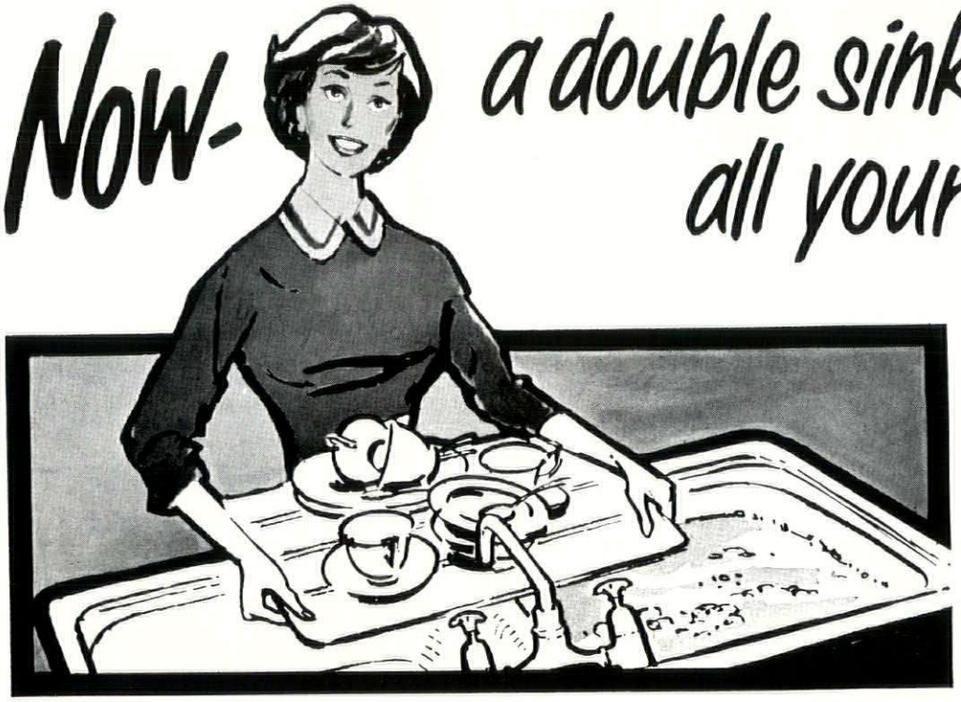

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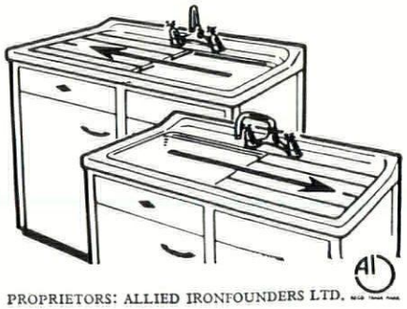

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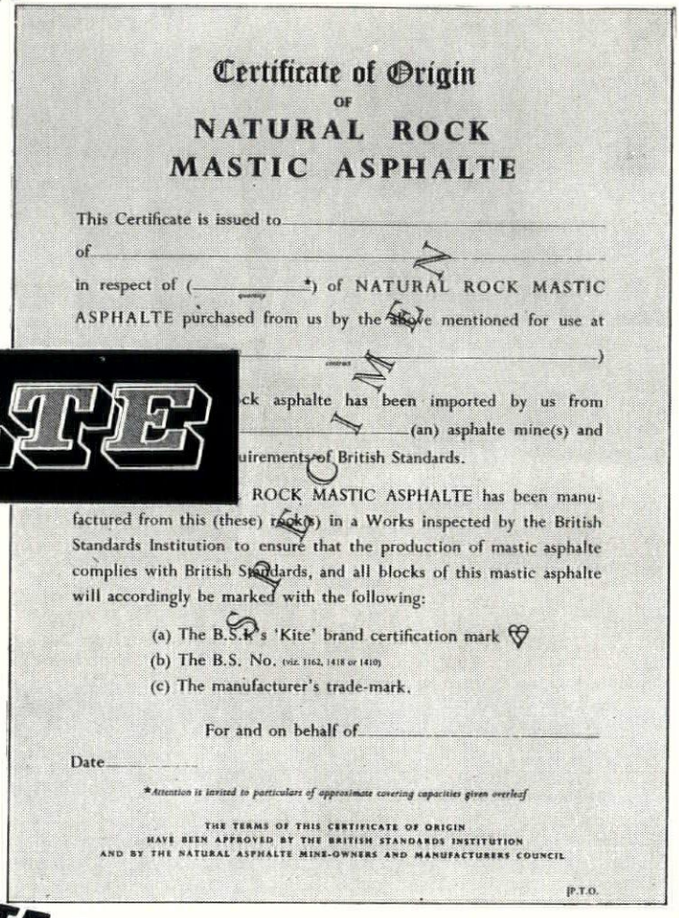

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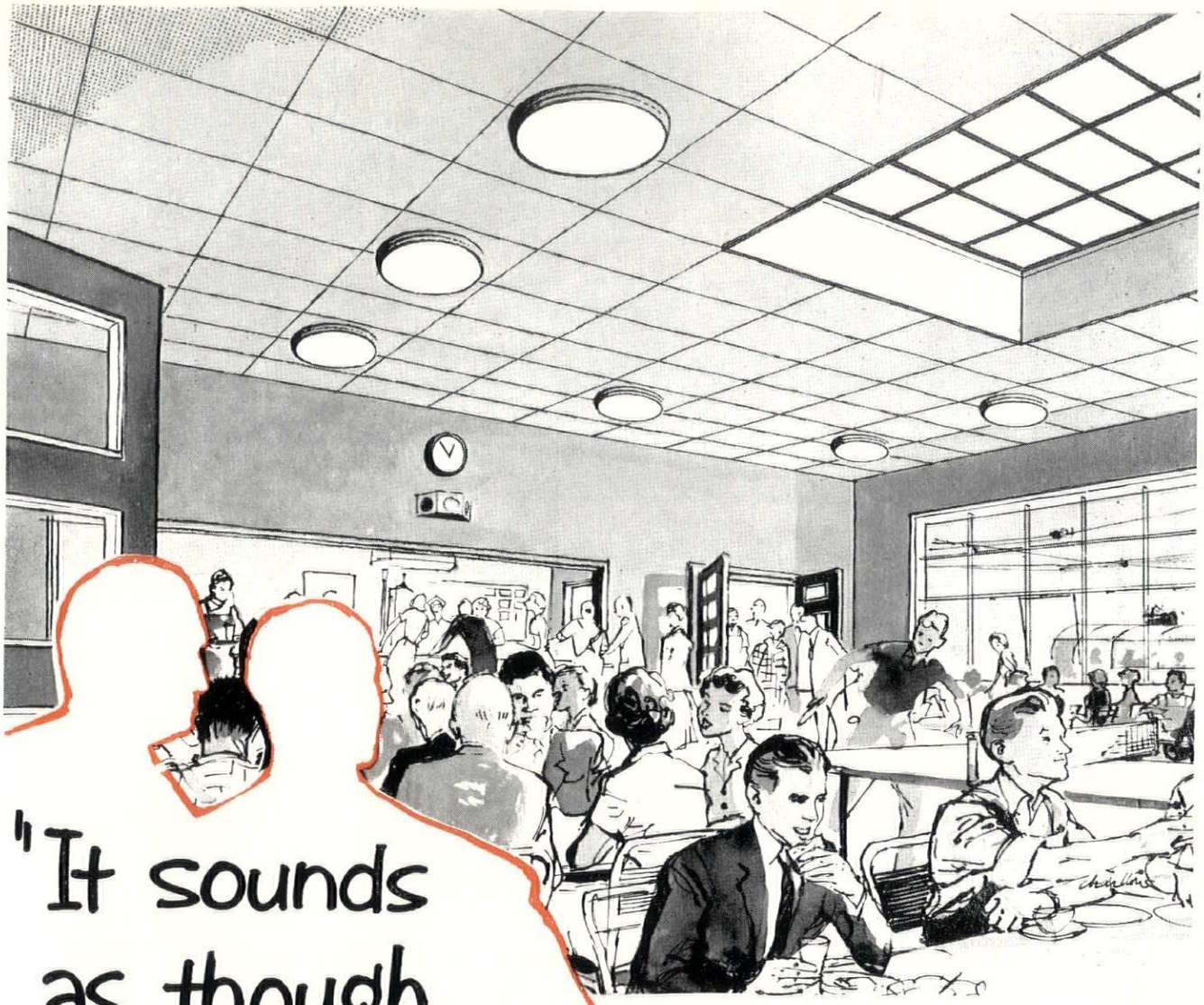

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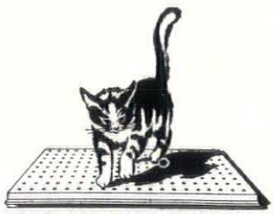

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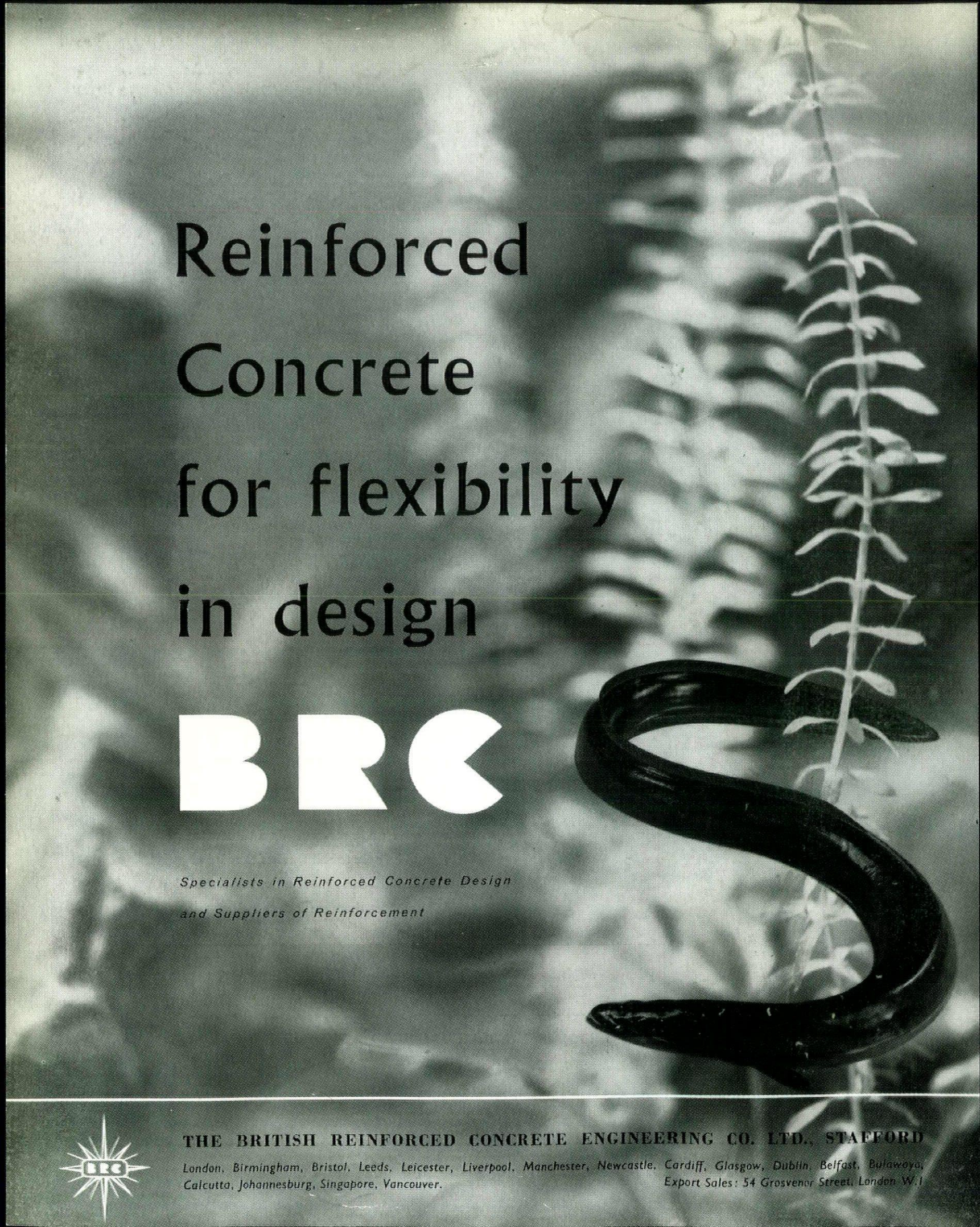

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THE ARCHITECTURAL REVIEW

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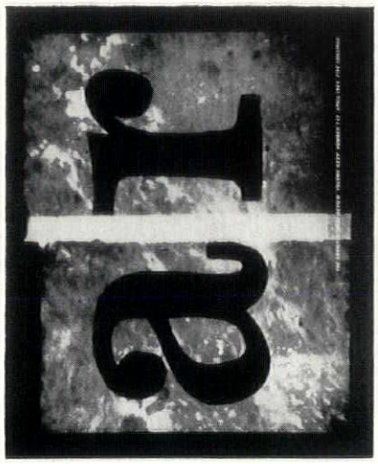

On the cover, a photogram by Kenneth Garland continues THE ARCHITECTURAL REVIEW'S policy of periodically appearing with a purely typographical exterior, in order to emphasize the range of possibilities in lettering that have been opened up by new graphic techniques, and to proclaim once more its belief in the importance of lettering among the companion-arts of architecture—a theme that is further emphasized in Nicolete Gray's article on *Expressionism in Lettering*, which appears on pp. 272–276.

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THE ARCHITECTURAL REVIEW
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CORRESPONDENCE

Engineering of Excitement

To the Editors.

SIRS,—Your November issue, just received, displays on its cover drawings of five combinations of hyperbolic paraboloids.

Your comment on the frontispiece mentions that these are studies by students of the American engineer Catalano.

I would hesitate to raise a seemingly trivial correction by pointing out that Mr. Catalano is not an engineer, were I not compelled by other motives than pedantry.

Mr. Catalano is an architect.

This fact is only important in one respect: it is the architect, and only the architect, who can finally combine structural ingenuity with spacial meaning and correct scale. We need not even mention Soane's breakfast room (however much it is a 'structural fake') or Galla Placidia's tomb to realize that scale and geometric and structural forms in the hands of an architect-designer combine into an absolute whole. I mentioned these two examples intentionally, as they are diminutive in dimension and vast in scale.

This is the architect's mastery displayed. We have for so long now had to take our lead from the engineer, due to our complete poverty in purely architectural knowledge, that we seem to be trusting him wherever he leads us.

Catalano is tackling his investigations from the correct end: his first and main consideration is that of scale, and I mean architectural scale. The fact that he is investigating a 'new' structural shape is completely irrelevant in the final assessment of spacial values. After all, we haven't —most of us—yet mastered the architectural consequences of a cross vault.

Yours, etc.,

Lagos, Nigeria. S. BUZAS.

Venezuelan News Letter

To the Editors.

SIRS,—Interesting and informative as your Venezuelan Newsletter (November, 1958) was, I should like to comment on some of the points mentioned by your correspondent.

The true splendour of the Banco Obrero housing schemes here in Caracas lies, I feel, not in the attempt 'to preserve a human scale on the often dramatically-terraced sites,' but in the achievement of exploiting these sites with long, high cliffs and slabs of reinforced concrete frames, infilled with brilliant primary colours. Set against the mountain range, the whole is magnificently monumental in a way that is entirely architectural, and needs no apology in 'human' terms.

Few Caraquenans imagine the schemes 'unite all classes of society' (in the common purpose of a better life). Admirable as they both are, one might as well refer to the Peabody Trust Housing with much the same degree of accuracy.

Lastly, and this on a point of

honour, the name of the largest scheme, the 2nd of December (used by your correspondent) has for some time been disused, as being associative of the old dictatorial regime. The new name, The 23rd of January, commemorates the day of revolution in which the scheme's inhabitants played such an important part.

Yours, etc.,
ROBERT ALAN CORDINGLEY.
Caracas, Venezuela.

Boston Manor

To the Editors.

SIRS,—The argument between Ian Nairn and Peter Chamberlin over The Boston Manor plan has shaped an ultimate question in model form: should a total architecture completely frame a community; or should architecture (and everything else, too) be totally subservient to that community, which expresses itself chiefly through the combination of individual desires and activities? Should things frame people, or people things? An 'overall coherent framework' may be a human requirement; it does not, necessarily, need to be an immediately visible (or, indeed, a consciously architectural) framework; certainly not a once-and-for-all framework devised by one small group; it will have many textures, of which architecture may not be the most important ingredient.

Chamberlin feels, in common with many other architects, that architecture, as well as being mistress of the arts, ought also to be mistress of everything else; especially sociology, of which, strange to say, few architects have made an intensive study. How revealing is his remark that Nairn thinks solely with his emotions! Emotion is what counts in the humanities, as also in art. In the last resort, contrary to Chamberlin's opinion, it is *not* the architecture which matters.

The sketches, which Chamberlin naïvely assumes will disprove inhumanity and sterility, can only be described as pitiful; the humanity lies, not in the dreary indications of 'architecture,' but in the pictures of plants, lanes, market stalls and people. It is interesting to try blocking out the buildings, and substituting almost anything else; the scenes do not suffer, and in some cases are distinctly improved.

Nairn, who has observed closely the interaction of individuals (not *usually* consciously) to produce facets building to a whole, and thereby expressing a social pattern, has come to realize an important truth—that conscious architecture in large quantities is a dangerous piling up of rigid frames against flexible man. This is equally true, too, of deliberately romanticized and randomized architecture in large quantities—Harlow is a warning example of this last; as Boston Manor might become of the first instance. Nairn's accusations—lack of identity, sterility, limitation of types, forcing of an aesthetic on people—although, perhaps, severe, are on the whole accurately levelled.

I, too, admire the Golden Lane scheme: it is, as Nairn observes, on a small scale; it is, in fact, small enough not to matter.

Yours, etc.,
C. FLEETWOOD-WALKER.
Birmingham.

David Bomberg

To the Editors,

SIRS,—Commenting on the choice of younger British artists to be exhibited in Australia, your contributor Robert Melville dwelt for a space on the art of David Bomberg, whose work was almost unknown until the Arts Council Memorial exhibition. Even there, the space available permitted only a few works to be shown, but they were a revelation to the younger generation, revealing a wide field of penetrative vision, and one of the most courageous spirits in the British revolutionary contribution to painting, as opposed to the utter sterility of the Academic tradition.

Bomberg was concerned with the emancipation of the brush-stroke and paint texture as a means—and a means only—of the appraisal of the whole, and I am surprised that your contributor should have chosen a work of the Palestine period (1923), smooth and concise in brushwork, to illustrate what he calls the demonstrative brush-strokes of the 1948 works. Bomberg was not concerned in the later period with the purely physical sense of form, but with form as an expression of Man's awareness through all the senses, translatable through the mind, influenced by collective archaic experience and inheritance—which coincides with Bishop Berkeley's view that the eye is a feeble and limited instrument of perception.

He conveyed his experience generously to his students at the Borough Polytechnic, but he endeavoured particularly to make his findings and approach known to architects, since a sense of form is so important a necessity in their field. The late Professor Reilly recognized this when he recommended Bomberg to the Bartlett School of Architecture, London University, where he taught draughtsmanship, as he understood it, to a limited number of architectural students.

Yours, etc.,
(Mrs.) LILIAN BOMBERG.
Hampstead.

Robert Melville replies:

I would have preferred to reproduce either 'Moorish Wall, Cyprus' or 'Rock Fortress, Cyprus,' both dated 1948, if they had been among the photographs I was shown at the Gallery, but I think I made it clear in my article that the picture reproduced was intended to illustrate not the 'demonstrative brush-strokes' but 'the good if conventional eye for the main features of a landscape.'

I agree with Mrs. Bomberg that it was intelligent of Professor Reilly to arrange for her husband, who was a very serious artist, to teach drawing at the Bartlett School of Architecture.

Lettering

To the Editors,

SIRS,—In my forthcoming book on Architectural Lettering, I shall be reproducing most of the illustrations which have appeared in the REVIEW in my articles on this subject. I should like to record the name of the designer, and the date and technique of the work in each case. If designers whose work has appeared would write to me giving me these details it would greatly help me to avoid omissions and errors.

Yours, etc.,
NICOLETE GRAY.
Greenwich.

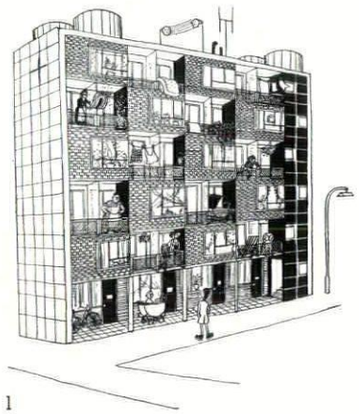
Articles appeared in the following numbers: 1954, April, June, August, October; 1955, April, December; 1956, August; 1957, April, October; 1958, July; 1959, April, May.

MARGINALIA

The Art of Reissuing—with a Flourish

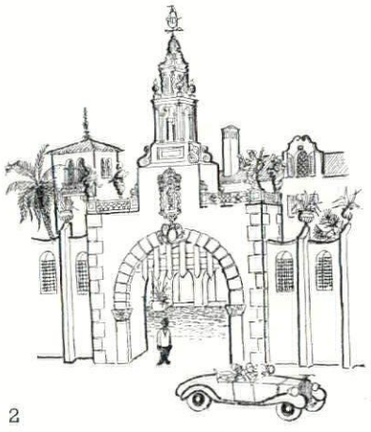
Osbert Lancaster's two unmonumental tomes on the history of architecture, *Pillar to Post* and *Homes Sweet Homes*, with their disenchanted view of the Modern Movement, were gentlemanly signals of a minor cultural crisis that convulsed educated English taste in the early Forties. They are as much a fission product of the disintegration of the Socialist - Abstractionist - Functionalist-Freudian intellectual package-deal of the Thirties as were the jeremiads of Cyril (Palinurus) Connolly. But they were more than that—in an age of pre-Hitchcockian innocence, they were a first guide through the maze of nineteenth-century architecture, complete with a set of terminologies that have gained permanent currency, even in 'serious' art-historical circles: Pont Street Dutch, Aldwych Farcical, Kensington Italianate, Edwardian Baroque, Bankers' Georgian, Vogue Regency and so forth.

Now the pair of them have been reissued in high style and a single cover, under the title *Here of All Places* (John Murray, 21s.), brought up to date and extended to cover the US as well. Some of the new material is as ferociously telling as the



1

old; *Festival Flats*, 1, for instance, pins down a moment in English architecture with lepidopterist precision, identifies and names a period already dead, with the epitaph '. . . a terrifying ingenuity was displayed in modifying or concealing the basic chequerboard imposed by the LCC's devotion to absolute residential equality.' The American



2

additions ('so subtly but yet so unequivocally different') discriminate between early and late skyscrapers, pay tribute to Carpenter Gothic, to Old Brownstone and to the genius of Addison Mizener, the man who was Florida, 2. But one wonders if the Lancastrian name for this last

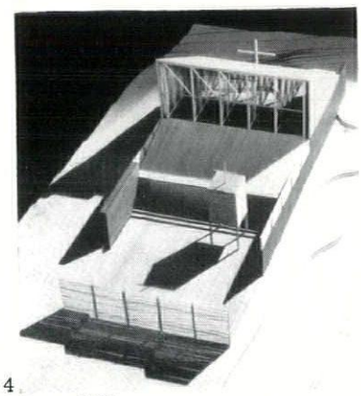


3

will become current, *Spanish Super-Colonial* is a mouthful compared with *Pseudish*, his earlier coinage for the tame European version of the same thing, and in any case, he is no longer alone in the name-game. His version of the Old Charles Addams House, to take one example, 3, is *Hudson River Bracketted*, but it will have to compete not only with Professor Hitchcock's resoundingly Johnsonian *Second Empire* and *Cognate Modes*, but also with John Maass's succinct and descriptive *Mansardic*.

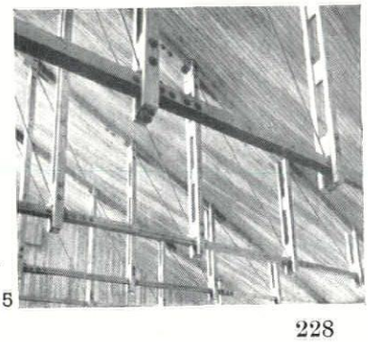
Ecclesiastical Sophistication

The degree of elegant sophistication that the Finns are able to conjure nowadays from mixtures of traditional and synthetic materials reaches something of a peak in the Forest Church at Otaniemi which has recently been completed by Kaija and Heikki Siren. The basic structural strategy is shown in the model photograph, 4, which shows the



4
Bauen und Wohnen

overall formality of conception, and the treatment of the church proper as a space roofed, and lit, by an exaggeratedly split-ridge roof, the higher pitch, which stands clear of the side walls, having an independent structure of 'clothes-pin and bracer' trusses, 5. Where the design reaches extremity is in the treatment of the east wall (liturgically speaking) as



5



6

Bauen und Wohnen

an area of unbroken glazing, so that the eye, unhindered by the almost-invisible chancel furniture, 6, passes straight through to the outdoor cross, and the screen of snow-laden forest trees beyond.

Threat to the Villa Savoye

Immediately following the publication of Dr. Pevsner's article in the March AR, discussing what time has done to Le Corbusier's buildings, comes the news that one of the most important of them historically, as well as architecturally, the Villa Savoye at Poissy, is threatened with immediate demolition. The local authority plans to expropriate the site for, it is understood, the expansion of a neighbouring school.

The plea put forward by Dr. Pevsner that the early Le Corbusier buildings should be scheduled as historic monuments thus becomes a matter of real urgency. A campaign has already been started, in Britain, America and elsewhere, to persuade the French Ministry of Cultural Affairs to take this action, but by the time this note appears the fate of this key building in the history of modern architecture may have been settled.

What would be ideal, if it is not too late, is to revive the scheme put forward in America some years ago, to acquire the building as some kind of centre for post-graduate students. That would constitute a lasting and fitting tribute to Le Corbusier at the end of his career.

OBITUARY

Felix Samuely, 1902-1959

Felix Samuely was one of a small group of exceptionally talented engineers who did much to influence modern architecture in this country. Most architects will be aware of his more important works, which started with the Bexhill Pavilion and Wells Coates's Palace Gate flats. He was the consultant engineer for Powell and Moya's South Bank skylon and a great many of the more interesting post-war commercial and industrial buildings, his last being the American Embassy.

He would have made an impression on architectural thought merely by his executed works, but to understand fully the impact that Samuely has had on our architecture, one must realize his enormous influence on students in the period 1938–1948. This was the generation that had the first responsibility of bringing his teaching into their work. Ten years is a short time to establish a new approach to the design of structure, and when one remembers that it coincided with the leanest years in the history of English building, one begins to see the magnitude of his task. Structural purity was not first on the list of the young architect's beliefs, and at this time the teaching of structures was rather limited in its approach. It was more concerned with how to make calculations than why calculations were necessary or the selection and investigation of structural possibilities.

Samuely was born in Vienna, he studied and worked in Berlin, and came to England in 1933. He began to lecture at the A.A. School in 1937, and his engaging manner and fresh approach found an immediate response among the students. At this time he gave only a few lectures in the upper part of the school, but in 1939 there was a demand from the students for a great deal more of his teaching. He increased his lectures over the whole range of structural theory, and during the war years he became one of the dominant personalities in the school. From 1939–45 he was extremely busy, but he always found time to journey to Barnet to give his lectures, and when the school returned to Bedford Square, and many new staff were needed to cope with the increased numbers, Samuely's knowledge and influence proved an invaluable link between pre-war and post-war methods.

He was obviously a first-class mathematician, and his life was full of experiment as well as instruction. In 1943 he designed the Heston hangar, which was a brilliant piece of engineering, a light braced welded frame. He was a master in the application of the trussed beam, and a fervent advocate of structural economy. He accepted economy both in its ordinary sense of saving money and in the visual sense of an extreme elegance and lightness of material. Fielden House, London Bridge, completed in 1954, had pre-cast floors which cost less than the price of shuttering for normal in-situ work.

Although he was interested in the structural possibilities of all materials, one is able to trace a progression of thought and experiment, beginning with light steel in the early forties, through the blending of steel and concrete in the trussed beams of the Hatfield Technical College in 1948, to the pre-stressed concrete work of his later life. More than any other of his contemporaries, he made use of the idea of pre-cast concrete units with rigid connexions. He was passionately interested in methods of joining structural members, and was always alive to the complexities of practical building. He did not force his ideas upon his clients, and he seemed more pleased than otherwise if the problem required some unorthodox solution. In teaching, he made it quite clear that he thought mathematics was important for the engineer, but not for the architect, and the attitude he demanded of his students was that they should have a clear, logical approach. His influence on teaching went outside the A.A. School and, through the agency of J. de C. Henderson, he was largely responsible for the complete revision of the R.I.B.A.'s examinations in structure.

He achieved his influence partly from his obvious ability, but also from his charm. He liked students and he liked them most when they were imitating some of his peculiarities. He enjoyed putting on fancy dress, and even took part in the A.A pantomime. His success as an engineer inevitably brought him more and more work, and very reluctantly he had to reduce the number of his lectures in 1955. It is a tribute to his sincerity that he continued with teaching when his office was one of the busiest in London. He will be missed by many architects, but also in education. The small man with the rotund figure, a slight wobble and a splendidly twinkling eye will be an immense loss.

Michael Pattrick

E. C. Gregory

Peter Gregory was a quiet, self-effacing business man from Bradford who had an almost Heraclitian sense of the inevitability of change, and lent his support, both as private benefactor and collector and as Director of a large printing and publishing house, to new movements in the arts even when these seemed absolutely opposed to the work of artists he held in high esteem.

The monographs on such contemporary artists as Moore, Nicholson, Gabo, Hepworth and Nash which stand to his firm's credit, and the one on Sutherland not yet published, reflect his abiding interest in artists who have made the grade and whose work he bought when they were little known, but the majority of his recent acquisitions are the work of much younger artists. He gave the hard-hitting, avant-garde magazine *Focus*, produced by A.A. students, the kind of backing that kept it going long enough to make its point, and at the other end of the scale, joined the board of *The Burlington Magazine* at a critical moment and made room for its Editor and staff in his London offices.

He was prepared to join the committee of any association or society and wait on Ministers with any deputation that was concerned with the encouragement of the arts. I first met him after the second world war when we were both attending the endless preliminary meetings that led many months later to the founding of the I.C.A. There was much quarrelling at those early meetings and the company was continually changing, but Peter Gregory, who was then in his late fifties, seemed already to have the smiling yet slightly remote tolerance of an old man and whilst showing interest in every point of view put forward, waited patiently and immovably for the moment when it would be worth while to proceed to the election of officers. He would never have allowed himself to be jockeyed into playing the leading role in the Institute, but he accepted the unenviable job of Treasurer, and with Roland Penrose and the late Peter Watson, helped it to survive a long series of financial crises.

Much of the good work he has done for the arts is of a kind that leave no trace of his intervention, and it is to be hoped that the Fellowships which he started at Leeds University for young poets, painters and sculptors, will somehow be perpetuated under his name. He once told me that he had been working for years on a long novel. If it should be found, it might shed some light on the philosophy of a man who had a genius for appearing to be a smiling and disinterested observer of the many activities of which he was the enthusiastic instigator.

He wanted to spend the last years of his life under a blazing sun, and was seriously thinking of going to live in India, where he spent several happy months watching the new city of Chandigarh coming into being. So it was not altogether inappropriate that when the end came he was very far from home. His imagination was captured by those building projects which seem to symbolize the efforts of an entire people to make a new life for themselves, and when he died on February 9, at the age of seventy-one, he was in the new state of Ghana, having gone there to see the buildings that his friends Maxwell Fry and Jane Drew are erecting in the capital.

Robert Melville

Laboratories at Rangoon

Acknowledgment should have been made in the March issue for the colour block on the cover, which appeared by courtesy of Messrs. Holland & Hannen and Cubitts Ltd., and Henry Hope Ltd. We apologize to both firms for this omission.

ACKNOWLEDGMENTS

FRONTISPIECE, page 230, *The Times*. NEOLIBERTY, pages 231–235: 2, Fototecnica Fortunati; 3, 4, 7–10, Casabella; 5, 6, 11, L'Architettura; 12, Michael Wickham in 'House and Garden.' OFFICES AT PADDINGTON, pages 236–241: Galwey, Arphot. ELEVEN DANISH HOUSES, pages 247–253: 1, 6, 7, 9, Harald Plum; 2, 3, 19, Strüwing; 4, 5, Thy Christensen Studio; 8, 11–14, 17, 18, K. Helmer-Petersen; 10, Erik Hansen; 15, 16, Hammerschmidt Photo; 20, Henrik Iversen. THE OPEN STAGE, pages 254–262: 1, Max Fleet; 2, 22, reproduced from Methuen's 'Outline of the Theatre' by H. and R. Leacroft, 1958, by courtesy of the publishers; 3, International Lighting Review; 4, Edward A. Bourdon; 9–15, 20, R. Leacroft; 16, Roberto Aloi; 17, James O. Sueddon; 18, Bauen-Wohnen; 19, Ben Schall; 21, Rada Photography. REMOUNTABLE PALACE, pages 263–265: Gernsheim Collection. INTERIOR DESIGN, pages 266–270: 1–3, Mann Bros.; 4–8, Priscilla Conran; 9–11, Alfred Cracknell. DESIGN REVIEW, page 271: 1, Da nalco. EXPRESSIONISM IN LETTERING, pages 272–276: 2, 3, 9, 28, McCallum, Arphot; 4, Galwey, Arphot; 5, Sadra; 6, 7, 11, I. de Wolfe; 8, Victoria and Albert Museum; 12, British Museum; 13, 14, 24, S. Lang; 15, 20, Toomey, Arphot; 16, Ernst Schneidegger; 17, 18, 23, 25, 26, Nicolete Gray; 22, National Buildings Record; 27, Gerrit Burg. CURRENT ARCHITECTURE, pages 277–280: 6, 7, Galwey, Arphot; 8–10, Essex Education Committee. MISCELLANY, pages 281–288: Exhibitions, 1, James Mortimer and Arts Council of Great Britain; 2, Arts Council of Great Britain; 6, Foto-Gnilka. Art in Use, 1–3, Galwey, Arphot; Centenary, 1, Eric de Maré. Counter Attack, 1, 2, 5–7, Nairn, Arphot. SKILL, pages 289–292: 3, H. Newport-Gwilt; 5, Stewart Bale Ltd.; 6, Commercial Studios; 7, Fox Photos Ltd.; 8, A. J. Bacon; 10, Langley London Ltd.; 9, Geo. M. Turrell; 11, Photowork Ltd. THE INDUSTRY, pages 294–296: 1, F. C. Pritchard Wood and Partners.



The giant scale of the works for the London-Yorkshire motorway, contrasted to the scale of an existing major British road—A45, Northampton to Weedon—which it crosses at Upper Heyford, opposite, emphasizes the dramatic break the new motorway programme will make with the existing detailing and dimensioning of the English scene. This, in its turn, emphasizes the need to build architects and landscapists into the motorway design-team right at the beginning, as Raymond Spurrier points out in an article on pp. 242–246, instead of calling them in late to cosmetic the raw edges of the road-engineers' work.

Reyner Banham

NEOLIBERTY

THE ITALIAN RETREAT FROM MODERN ARCHITECTURE

The present baffling turn taken by Milanese and Torinese architecture probably appears the more baffling to ourselves, viewing it from the wrong side of the Alps, because of the irrelevant hopes, the non-Italian aspirations of our own, that we have tended to project on Italian architecture since the war. Without realizing what we were doing, we built up a mythical architecture that we would like to see in our own countries, an architecture of social responsibility—stemming, we believed, from such political martyrs as Persico, Banfi, the younger Labo—and of formal architectonic purity—stemming from Lingeri, Figini, Terragni. This architecture, socially and aesthetically acceptable to men of goodwill, we saw embodied in particular in the Milanese *BBPR* partnership, of which the first *B* was the martyred Banfi, the terminal *R* was Ernesto Rogers, the hero-figure of European architecture in the late Forties and early Fifties.

The evidence of the eyes often contradicted the myth; again and again the architectonic qualities that we sought were to be found in work of the Roman school, notably (and surprisingly) in the work of Moretti, whom the Milanese would brush off as 'not socially serious' while the awkward questions of modern eclecticism raised by the work of Luigi Vagnetti had a way of being unformulable except in terms that put Milan on the spot as well. Nevertheless, our hopes continued to reside in Milan, in the *Triennale*, in *QT8*, in the *Compasso d'Oro*, in *Communità*, in *Domus* and, even more, in *Casabella Continuità*, Persico's famous magazine of the Thirties revived under Rogers's editorship.

But when *Casabella* began to publish, with manifest editorial approval, buildings that went far beyond Vagnetti's in historicist eclecticism, when the BBPR partnership staged

for the London Furniture Exhibition of 1958 an Italian section that seemed to be little more than a hymn of praise to Milanese *borghese* taste at its queasiest and most cowardly, and when, finally, the Italian exhibit at the Brussels Exhibition was seen, then confusion followed hard on disillusion. But behind our own private reactions there remain the buildings that produced them, and the attitude that produced the buildings, an attitude that even other Italians, like Bruno Zevi, clearly regard as wrong-headed and misguided. Indeed, these recent works of Gae Aulenti, Gregotti, Meneghotti, Stoppino, Gabetti, their associates and followers, and the polemics advanced in their defence by Aldo Rossi and others—all these call the whole status of the Modern Movement in Italy in question.*

Historically, the modern movement has always had a meagre foothold in the Peninsula, and has depended on flukes of patronage. Before the war, modern architecture hardly existed out of earshot of the railway line from Milan to Como, an area where the backstage influence of Marinetti (whom Sartoris once acknowledged in print as a patron of the movement) and other Fascist Modernists was most likely to be felt. Within that narrow zone, 'modern' was practised as a style, since it could not be practised as a total discipline—as the literally hollow formalism of Terragni's *Casa del Fascio* at Como brilliantly demonstrates. Since the war it has relied chiefly on a post-partisan mood of social responsibility and conscious avantgardism in the cities of the north, on foreign relief programmes, and—as we have all been forced to know by a brilliant public-relations campaign—on Olivetti. But let that mood wither, let those relief programmes pass into Roman hands, let Olivetti's stylistic determination waver . . . the bulk patronage of architecture still comes from the government and from the *borghese* classes, neither of whom has much use for out-and-out modernism, especially in domestic work, which is where the retreat from modern has begun.

Recall the crushing Fascist tenements in *Ladri di Biciclette*, the dark, overstuffed interiors of Moravia's early stories. Set against them the blocks actually being built for low-rental housing by SGI and even INA-Casa, or the interiors in which rising Italian film-stars are photographed 'at home,' and depressingly little has altered beyond the detailing, and some amelioration of space standards. Recall too the homeless, starving, couple in *Miracolo a Milano* whose first wish was a crystal chandelier, and you know something bitter about Milanese mental processes.

Practically everyone who is buying or renting domestic accommodation in Italy today wants forms and structures that give better immediate value for money than out-and-out modern affords, and giving, iconographically, immediate and reassuring evidence of the building's domestic nature—be it *signorile* at one end of the social scale, *casalinga* at the other. Such requirements do not necessarily rule out good architecture, as Quaroni's work at La Martella, in the face of economic desperation, and Moretti's *Casa del Girasole*, in the teeth of economic affluence, amply demonstrate. Above all, there is in both of these, and in some other comparable works, a degree of progressive aspiration, a forward-looking aesthetic, even when structural techniques and social orders seem a millenium behind those for which the modern movement was created.

But the retreat harks back, consciously and avowedly, to what Aldo Rossi calls 'the forms of a middle-class past,' to the *Tempi Felici*, to the good old days when the northern cities were growing fat on the proceeds of the industrial expansion of the early nineteen-hundreds, when the Simplon had just been triumphantly pierced, when the Milan International Exhibition of 1906 was the talk of Europe—and when *Lo Stile Liberty*, Italian Art Nouveau, still held sway, but was beginning to lose its fine careless flourish under influences from beyond the Alps.

Paolo Portoghesi seems to have been the first to call the style of the Retreat by the apt term 'Neoliberty' as late as the end of 1958,† but the Liberty content of the style has been clear from the start, and underlines the fact that this is not just an isolated piece of juvenilia (the Neolibertarians are all young) but something for which the whole body of Italian modernism must share the blame. For more than three years now, leading architectural periodicals in both Milan and Rome have been working over the remaining monuments of Art Nouveau in a degree of detail that bespeaks a more than historical interest. Works of Gaudi, Sullivan, d'Aronco, Horta, and the Viennese school, in particular, have been described and illustrated even to the extent of the original drawings and colour-blocks of their exteriors, supported by texts that were far less expository or explanatory, than they were eulogistic and rhetorical.

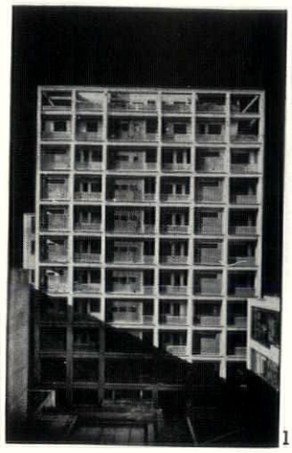
Where the oddity of this situation struck the present writer most forcibly was in the way in which Italian writers dealt with Sant'Elia, playing down his Futurism, playing down his influence on later architects, but emphasizing his *origini Liberty*. Again, Gillo Dorfles, most intelligent and least parochial

[*continued on page 235*

* Rossi's polemic, and illustrations of typical works of the Retreat, can be found in *Casabella*, No. 219 (other buildings had been illustrated earlier in No. 217), Zevi's editorial attack on 'provincialism' is in *l'Architettura*, No. 33, and there is a further worthwhile editorial comment, from a less committed position, in *Architettura-Cantiere*, No. 18.

† The term is apt chiefly in describing the *intentions* of the Retreat; its stylistic sources go well beyond the wild Liberty of, say, d'Aronco, and draw clearly from the *Wagnerschule* in Vienna, and even from the Amsterdam school (particularly from de Klerk) and the Glasgow school. From these last two sources come, presumably, the preoccupation with brick, and a tendency to square off the profiles and silhouettes of projections and roof-slabs. Nevertheless, the term *Neoliberty* can stand—if only because it was coined by someone close, and sympathetic, to the movement.

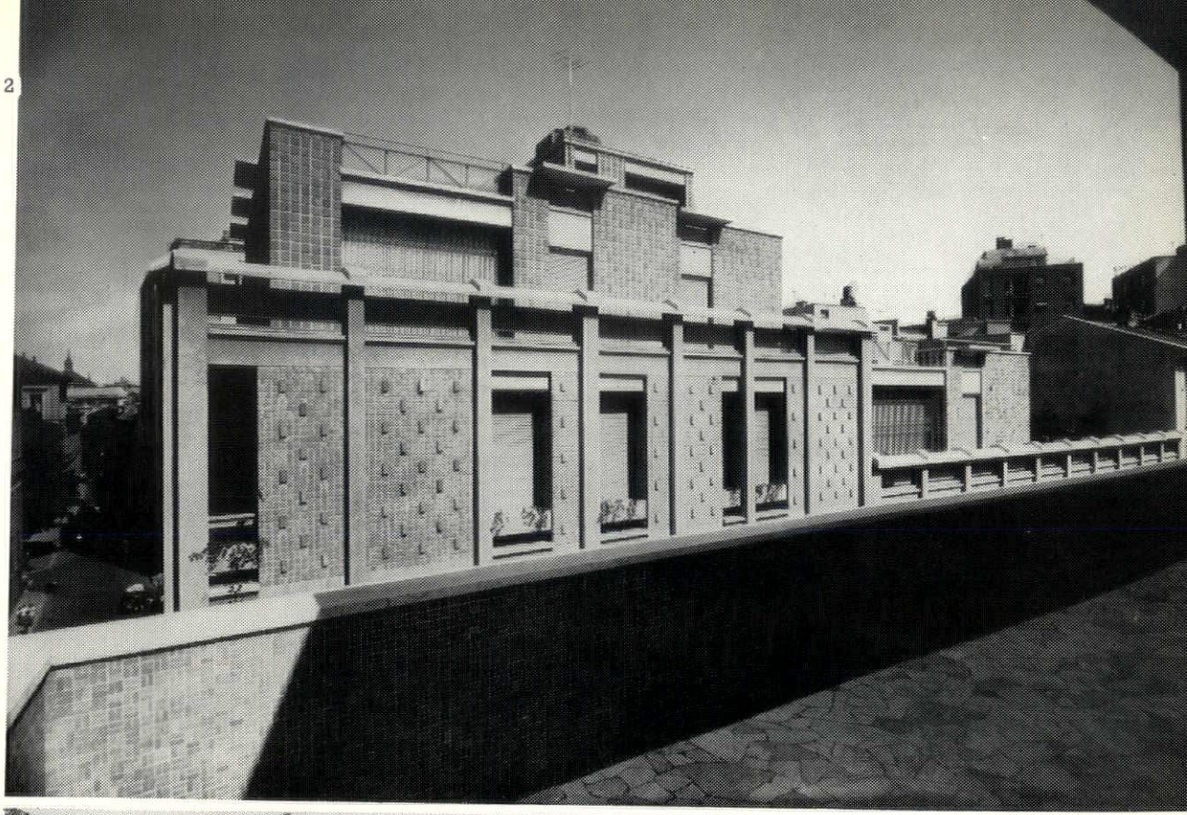
NEOLIBERTY



1

The extent to which the famous names of Milanese architecture have retreated can be judged by these two blocks by Figini and Pollini, one of 1949 *in the via Broleto,* 1, *and the other in the via Circo, completed last year,* 2.

3 *and* 4, *the relationship of the retreat to historical precedents can be measured by comparing two illustrations,* 5 *and* 6, *of a late villa by Otto Wagner (as they appeared in Bruno Zevi's magazine* l'Architettura) *with two recent works in which Ernesto Rogers was involved, the Aquila offices in Zaule, with their dummy pitched eaves concealing a flat roof behind, and the interior of the Italian Pavilion in Brussels, with its Wagnerian stained glass (and its stupendous outburst of Milanese Chandelierism).*



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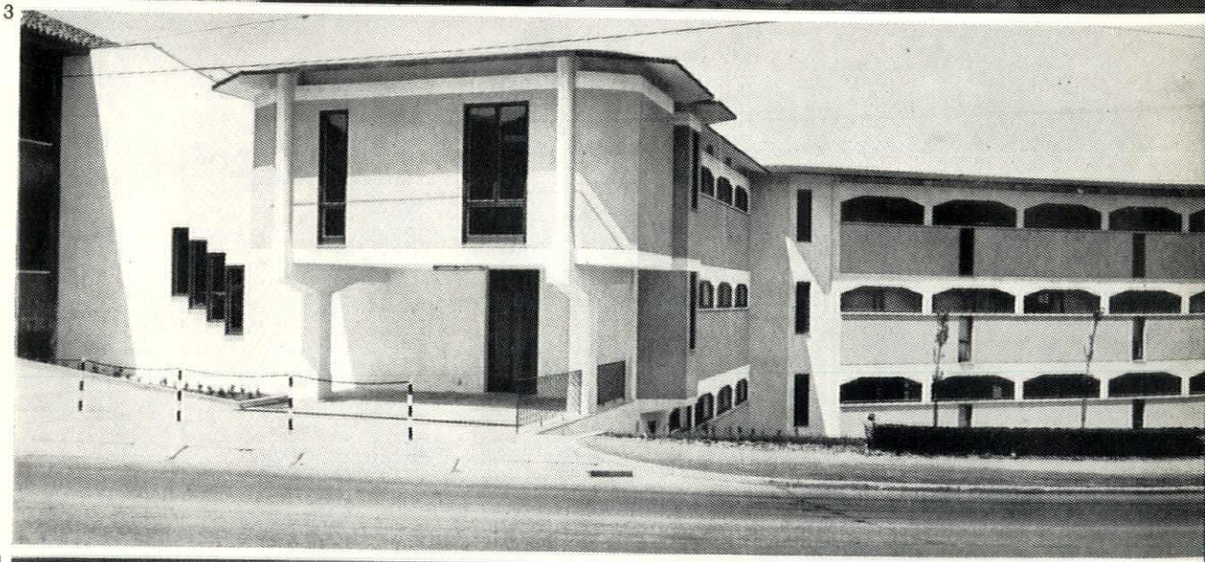

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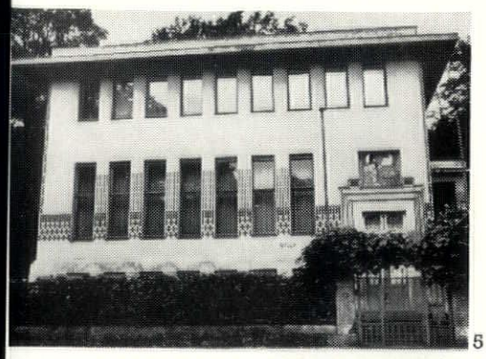

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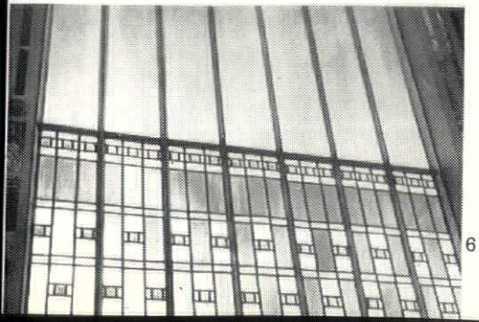

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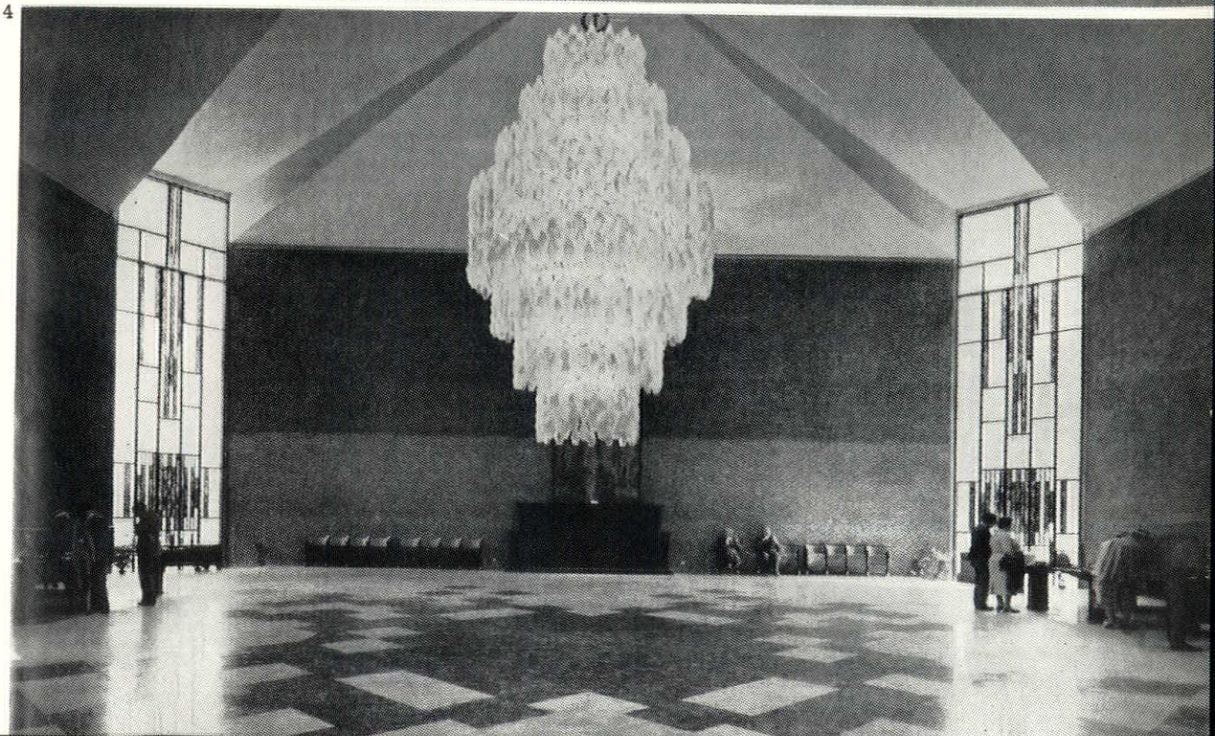

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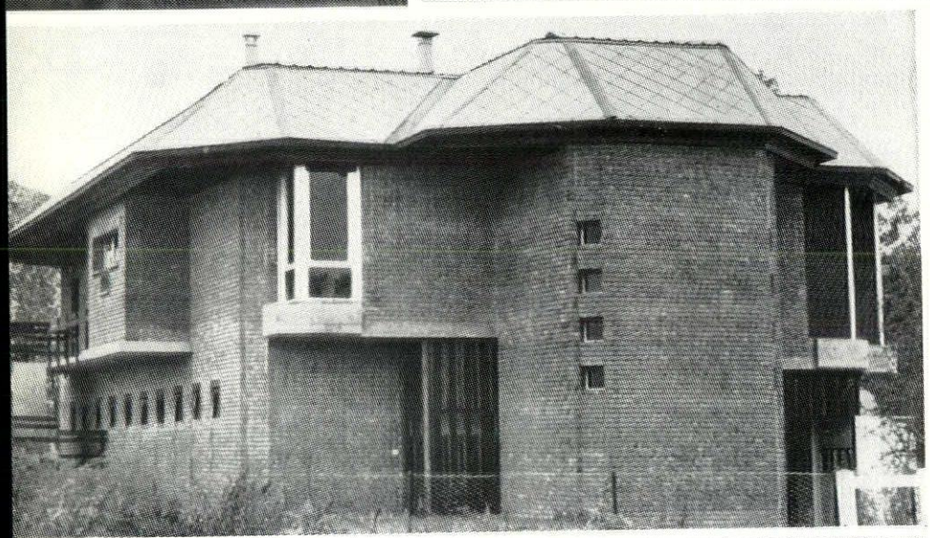
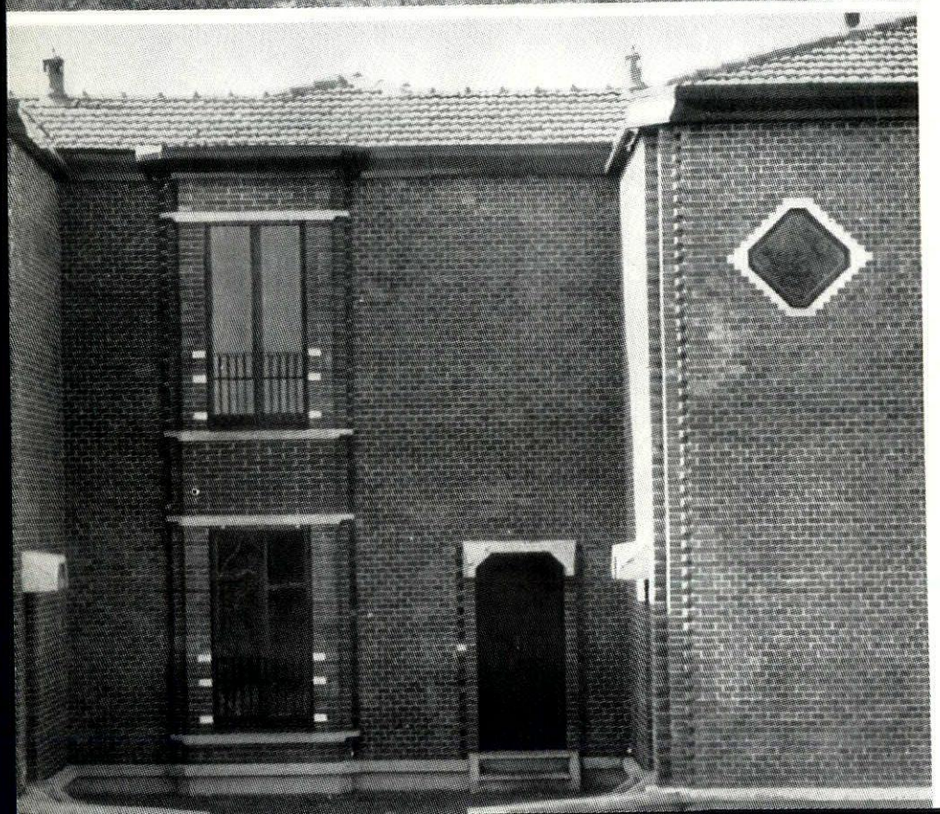




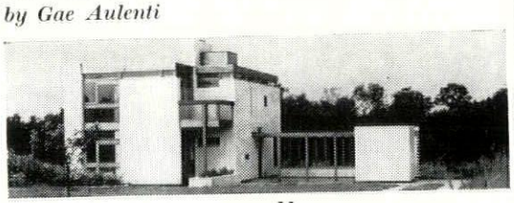
7 | 8
9
10

NEOLIBERTY

In spite of the work of their elders, it is the young who have been credited with the creation of Neoliberty, *as exemplified by their work in Turin, Milan and Novara.*

7 and 8, in Turin, the much-discussed Bottega d'Erasmo, by Roberto Gabetti and Almaro d'Isola, emulates the hard, brisk plasticity of Mackintosh on the front, and something softer and more Viennese at the back.

9, at San Siro, outside Milan, the stable-block designed by Gae Aulenti seems to draw on the same late nineteenth-century sources as the earliest Le Corbusier (AR, March, 1959.)

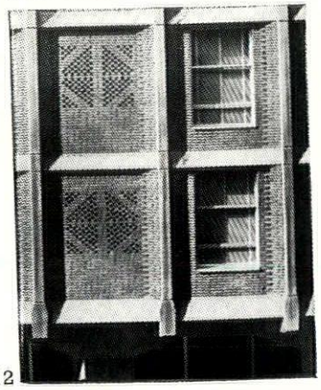


11

10, near Novara, the block of duplex apartments by Gregotti, Meneghotti and Stoppino, shows unmistakable likenesses to Amsterdam-school work that appeared in Casabella *about the time of their completion.*

11, apparent 'Modern Historicism' is not restricted to Italy—witness this house by David Gray at Lowestoft—but a case can be made for drawing on some periods rather than others.

12, finally, Neoliberty *is not limited to the North of Italy; this detail is from a new block in Rome designed by the well-known* Cooperativa di Reggio d'Emilia.



12

continued from page 232]

of Italian aesthetes, spoke of *lo Stile Liberty* in a recent book (significantly entitled *Oscillazioni del Gusto*) as a style 'very near to us.'

Questioned about his attitude to both Neoliberty and its forerunner, Dorfles replied, in a letter from which the following are quotations, 'Today . . . my position is critical towards the excessive stylistic and decadent indulgences of certain Milanese and Torinese groups (including *some* of the experiments of Aulenti, BBPR, etc.) without, however, considering it purely a piece of provincialism as Zevi does.' This, from Dorfles, should warn us that, for Italians, Art Nouveau, or its local variants, has some continuing validity that it has lost elsewhere, and he goes on to make a statement that opens up a wider question of more than Italian relevance: 'But I am convinced still, that the future in architecture, as much as in design generally, lies more in a stylistic continuation of the Art Nouveau than in the Bauhaus-style.'

Now the problem of alternatives to the 'Bauhaus-style' is one that clearly exercises the minds of younger architects in many parts of the world, even if they have not, as in England, an explicit hostility to 'the white architecture of the Thirties.' There is a widespread feeling that much that was of value in the architecture and theory current before 1914 was lost or buried in over-hasty stylistic formulations in the early Twenties, and then forgotten during the Academic phase of the Thirties—hence that preoccupation of younger architects, to which Henry-Russell Hitchcock has drawn attention, with architectural questions that were current about the time they were born.

But, even if the men of the nineteen-twenties were wrong, and the men of the thirties were stubborn in error, that is no reason for going back to the beginning and starting all over again. Events have moved too fast, even in the Forties, for there to be any time for architecture to go back and re-puzzle its earlier problems. Over and above this, there are particular reasons for not going back to Art Nouveau.

The only conceivable justification for reviving anything in the arts is that the reviver finds himself culturally in a position analogous to that of the time he seeks to revive—a return to something like classical sophistication and affluence in Fourteenth-century Italy justifies the Renaissance architecture of the Fifteenth, the achievement of something like Athenian democratic sentiment in the early nineteenth justifies *le style neo-grec*. What undermines these justifications is the presence of factors that notably were not present in the styles revived—Christianity in Renaissance architecture, industrialization in *neo-grec*—and where these intrusive factors are too large to be overlooked, the justification must fail.

Now a justification of Neoliberty on the basis that Milanese *borghese* life is still what it was in 1900 is indeed implied in the polemics of Aldo Rossi. But it will not wash, because that life is not at all what it was at the beginning of the century, as Marinetti, with his fanatical automobilism, already recognized *in Milan* in 1909, Art Nouveau died of a cultural revolution that seems absolutely irreversible: the domestic revolution that began with electric cookers, vacuum cleaners, the telephone, the gramophone, and all those other mechanized aids to gracious living that are still invading the home, and have permanently altered the nature of domestic life and the meaning of domestic architecture.

Parallel with this domestic revolution there was a thorough overhaul of ideas and methods in the plastic arts generally, marked by such signs as the Foundation Manifesto of Futurism, the European discovery of Frank Lloyd Wright, Adolf Loos' *Ornament and Crime*, Hermann Muthesius's lecture to the Werkbund Congress of 1911, the achievement of fully Cubist painting, and so forth. These mark a watershed in the development of modern architecture; there is a certain consistency about everything that has happened since, and a schism from what happened before. And Art Nouveau, *lo Stile Liberty*, happened before.

It has become a convention, based chiefly on paying too much attention to what the masters of Art Nouveau claimed they were doing, to regard it as the first of the new styles, but the evidence of the eye affirms that it was the last of the old, in spite of the signs of transition that can be found in its best works. To revive it is thus to abdicate from the Twentieth Century—which may have purely personal attractions, like going to live on a desert island, but is no help to one's fellow-men, and architecture, for better or worse, concerns one's fellow-men.

On the other hand, these objections do not—yet—apply to the tendency to a *de Stijl* revival visible in Anglo-Saxon countries, reaching an extreme point, as far as England is concerned, in David Gray's recent house at Oulton Broad. Even insofar as this revives the forms of Rietveld's work, it does at least revive forms created since the watershed, still possessing a marginal significance. But if the present disquiets of architecture resolve themselves in a crisis of ideas —such as the Neolibertarians claim is already upon us —and raise another cultural watershed, then the Rietveld revival, as well, will cease to have any live significance for us, and Neoliberty will become a revival of—not a pre-mechanical culture—but the last pre-mechanical culture but one.

But all such justifications are marginal; the lasting significance of the revolution put in hand in 1907 is that it has given Western architecture the courage to look forward, not back, to stop reviving the forms of any sort of past, middle-class or otherwise. The performance of the revolutionaries may not have matched their promise, but the promise remains and is real. It is the promise of liberty, not *Liberty* or 'Neoliberty,' the promise of freedom from having to wear the discarded clothes of previous cultures, even if those previous cultures have the air of *tempi felici*. To want to put on those old clothes again is to be, in Marinetti's words describing Ruskin, like a man who has attained full physical maturity, yet wants to sleep in his cot again, to be suckled again by his decrepit nurse, in order to regain the nonchalance of his childhood. Even by the purely local standards of Milan and Turin, then, Neoliberty is infantile regression.

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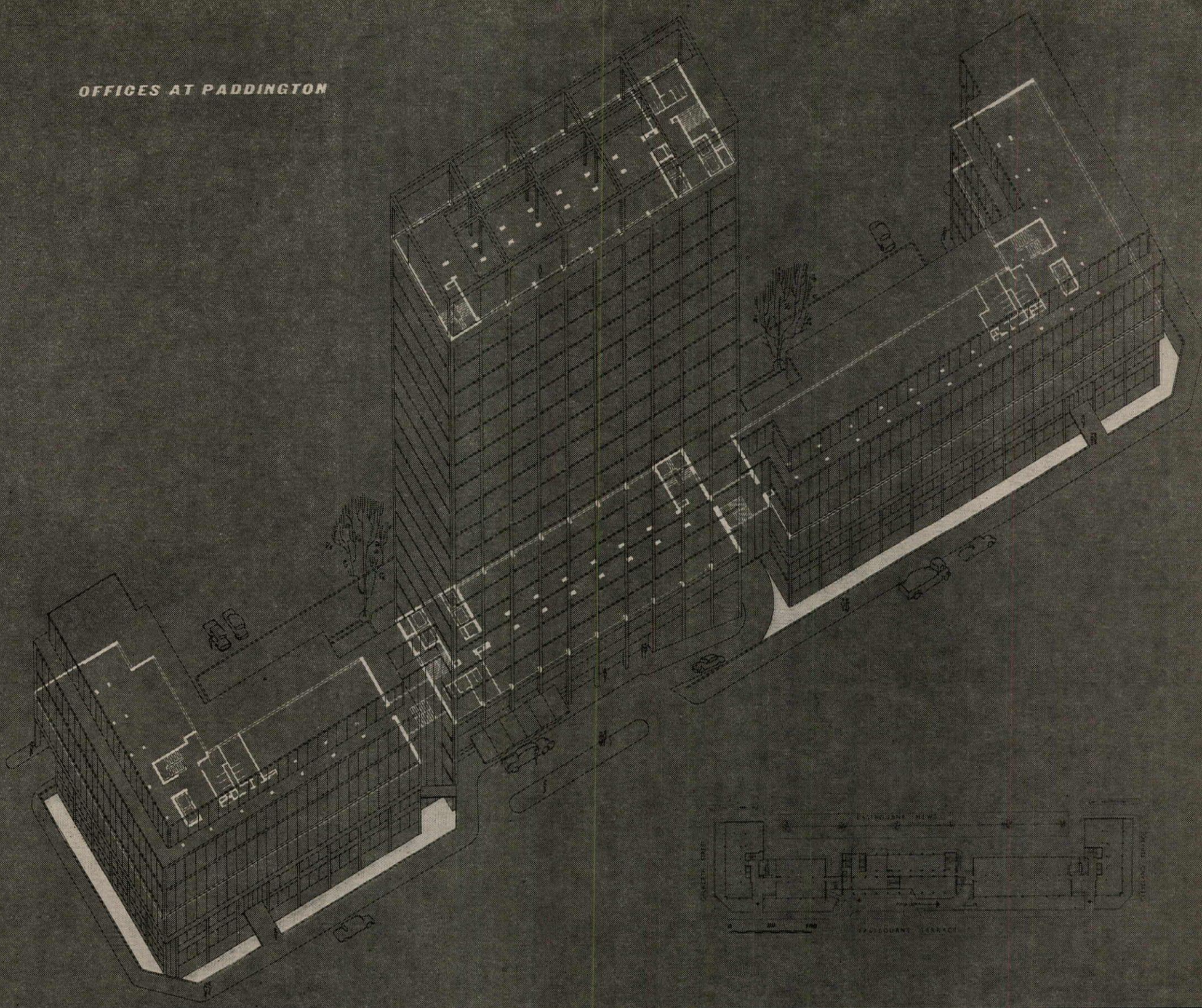

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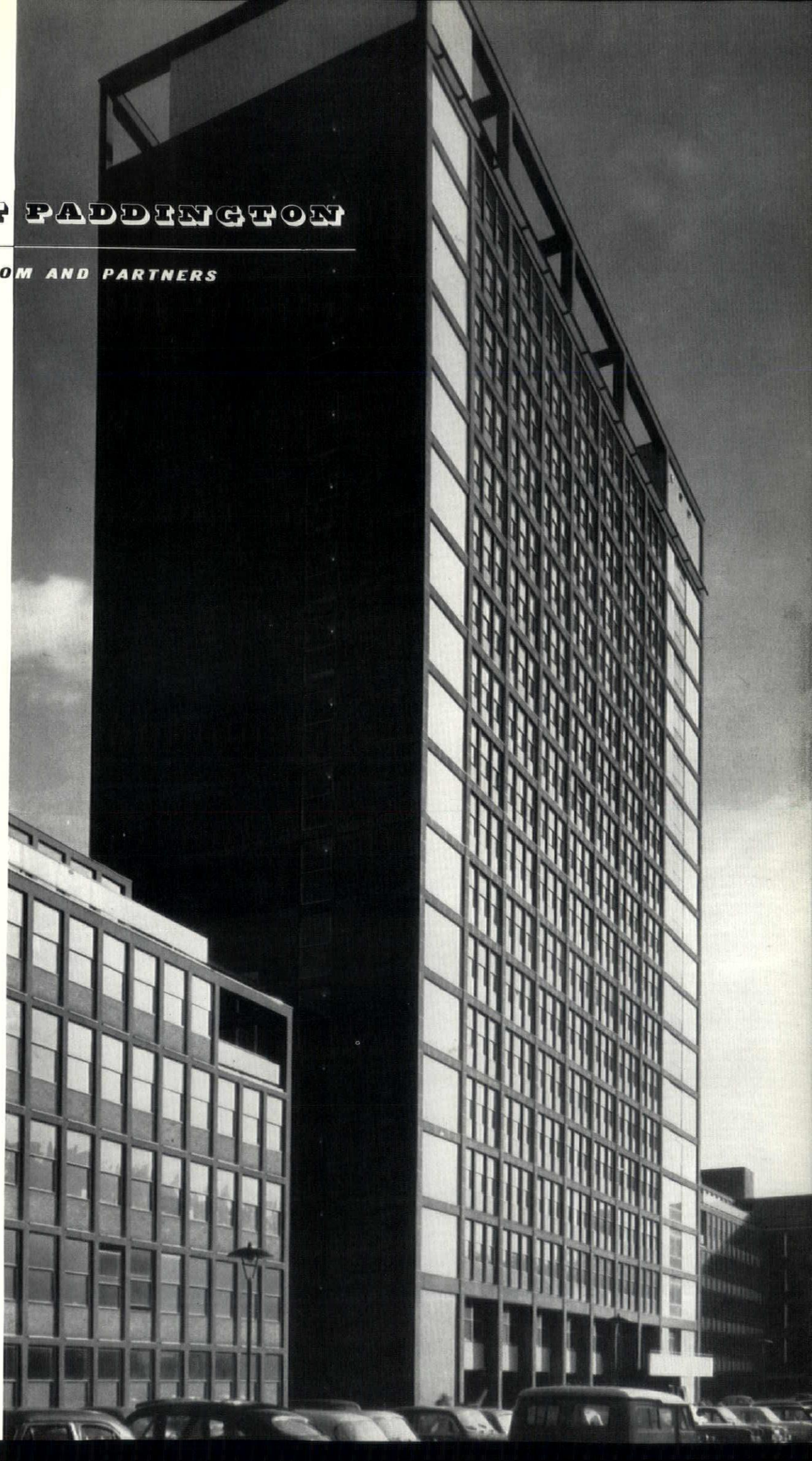
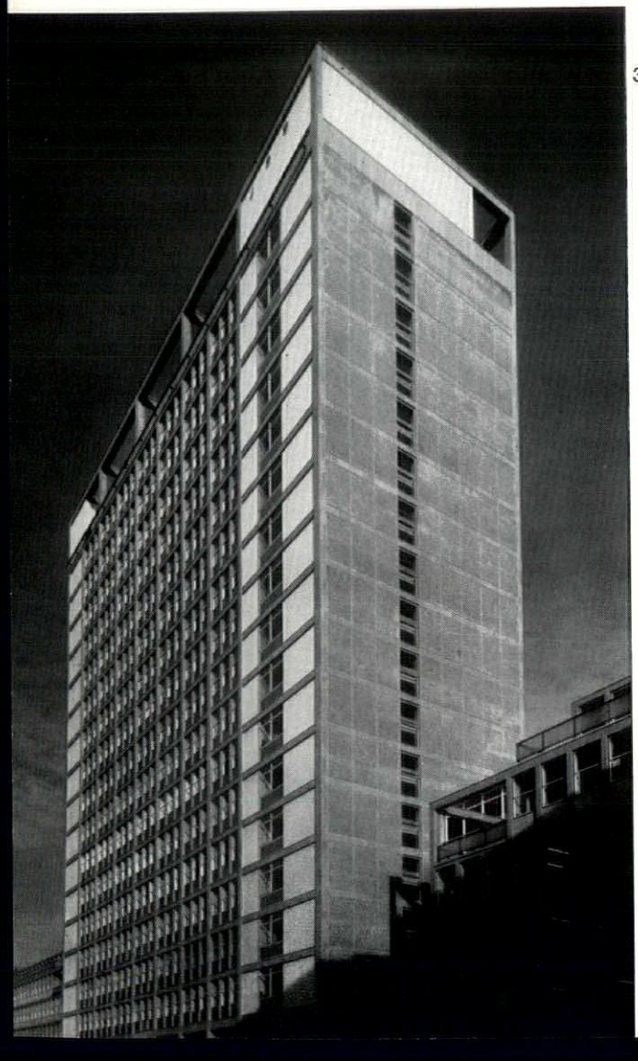


1, western side of the 18-storey tower. The frame is of precast concrete with exposed aggregate; the end wind-brace walls are faced with purple-brown bricks and the solid panels on the west front with ceramic mosaic. The panels below the windows are in blue glass mosaic cast integrally with the precast concrete spandrel panels. The windows are double hung aluminium, double glazed above the eighth floor.



2



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4



5 The site occupies over 1,000 ft. of the length of Eastbourne Terrace, London, W.2, but is only 120 ft. deep. Each building has been designed to have a separate identity, without losing the coherence of the street façade and the buildings are of varying sizes to give flexibility of letting. An 18-storey tower block on the northern half of the site is the focal point of the scheme. The narrowness of the site determined the siting of the block parallel to Eastbourne Terrace and light angles to the Mews properties at the rear controlled its length. A smaller tower block, nine storeys high, occupies the southern end of the site. The buildings are of constant depth and are generally planned on a module of 5 ft. longitudinally. Normal foundations were used on the southern half of the site, with bored cast in-situ piles on the northern part. Reinforced concrete construction was used in preference to steel frame, as being more economical and just as fast. The small longitudinal module made it possible in the lower blocks to eliminate internally projecting columns between the windows by using the mullions as load-bearing members. Visible beams at the outer edges of the floor slabs are also eliminated, and the long unbroken wall surfaces thus produced give clear office spaces. In the two taller blocks, the greater difference between the loads carried on the upper and lower floors made it necessary to use normal structural columns. These are expressed externally and run without a break from ground to roof level. Flank walls on the lower blocks are framed, with a cavity wall infilling of brick and insulating blocks. Flank walls on the 18-storey block are of solid reinforced concrete to provide wind bracing. Infilling panels below windows are generally brick-faced on the lower blocks and mosaic faced precast concrete on the taller blocks.



6



7



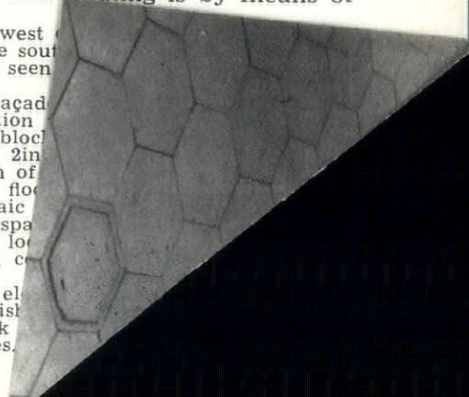
8



9

Each building is supplied with central heating and domestic hot water from one of two boiler-houses, which are sited in the basement of the two tower blocks, so that the flues can be taken above the highest roofs. There are two complete heating and hot-water systems each supplying all the building on half the site. Heating is by means of

2, night shot of the west
3, the tower from the sou
4, the west elevation seen
bourne Terrace.
5, part of the west façad
6, north west elevation
longest of the low bloc
aggregate frame and 2in
7, the south elevation of
Finishes up to first flo
glazed ceramic mosaic
glass mosaic on the spa
8, view of the street lo
the bottom left hand c
two storey block.
9, part of the north el
patterned wall is finis
blue, white and black
the scissors staircases.



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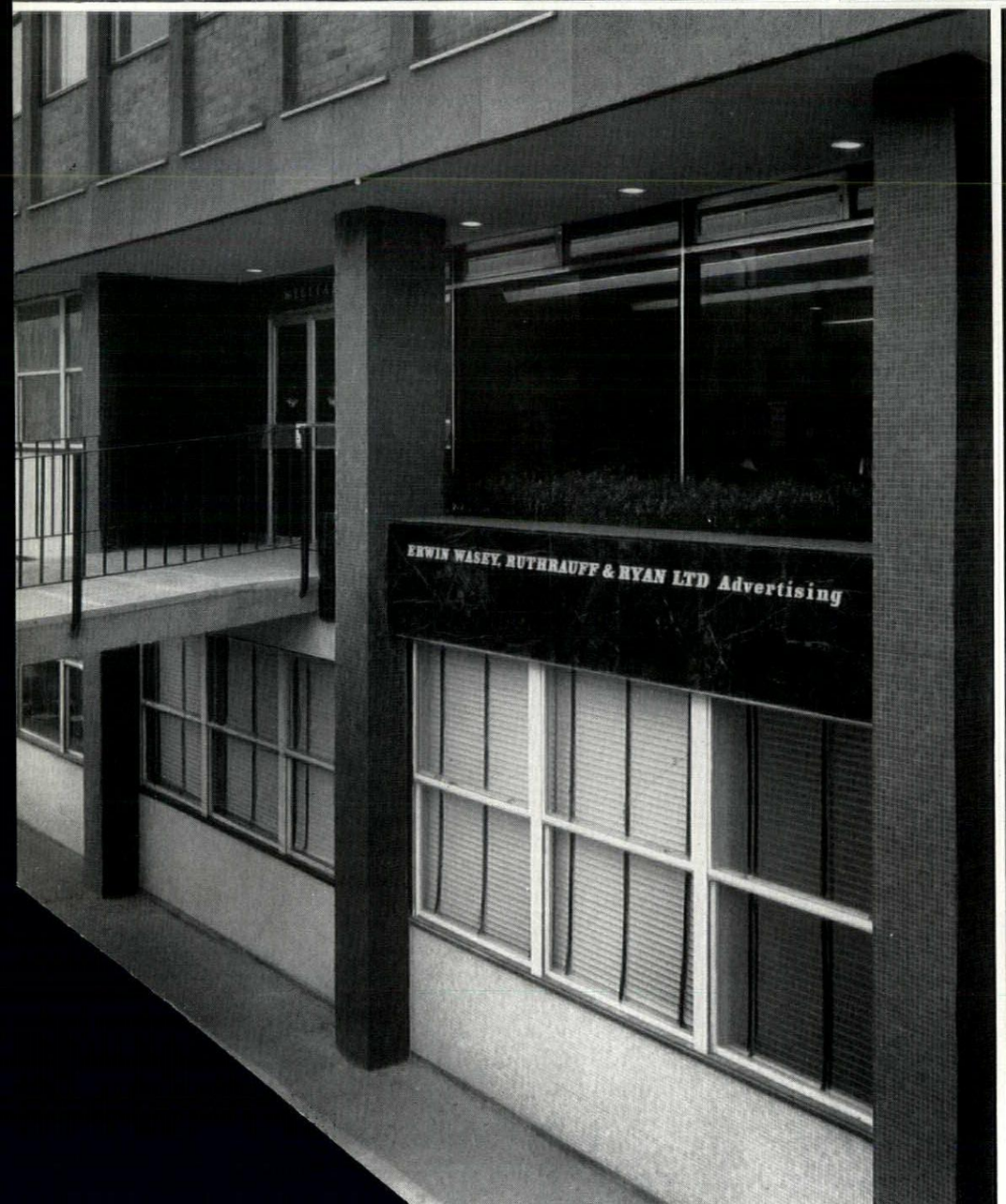
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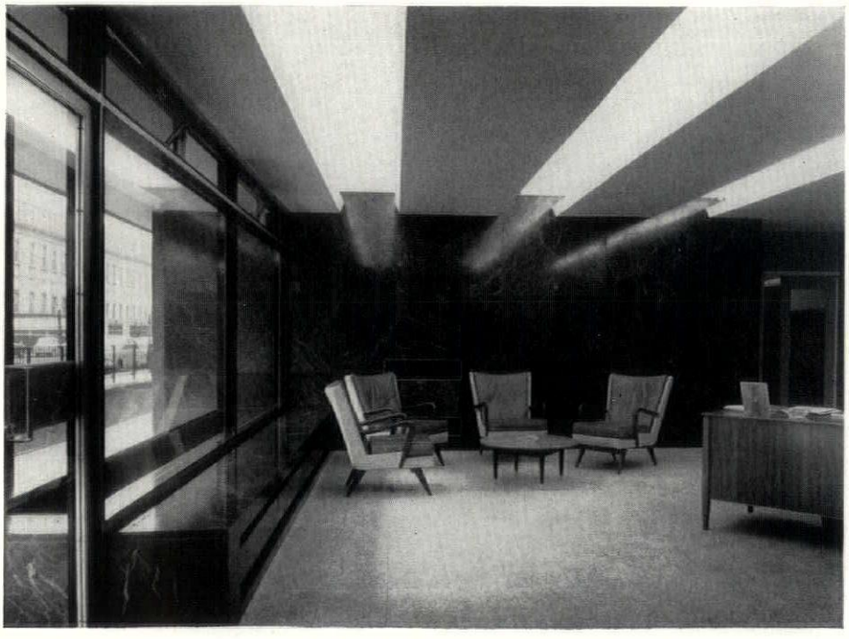
10, detail of one of the rear entrances from the car park.
11, detail of entrance screen and door.
12, entrance to one of the shorter low blocks, showing the bridge crossing the paved low-level court.
13, connecting link and escape staircase between the tower and the northernmost low block, with the car ramp passing below.
14, view of the terrazzo-finished three flight staircase at the centre of the longest low block.
15, general view of the entrance.
16, interior view of the entrance to one of the low blocks, with a suspended ceiling of fibrous plaster and terrazzo floor.

OFFICES AT PADDINGTON

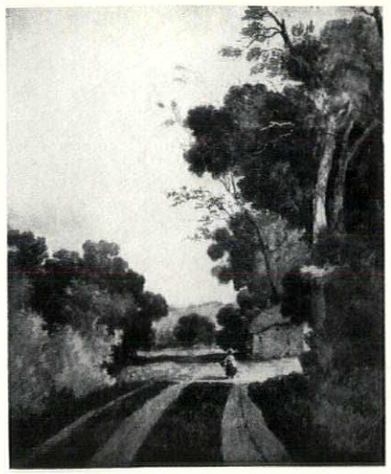
pressurized medium temperature hot water which is circulated through specially developed continuous convection heaters under the window cills. Hot water is supplied from storage calorifiers in the boiler-house, with separate boilers for summer use. All boilers are oil-fired and underground oil storage tanks are provided in the car-parking area at the rear of the buildings. Lifts are provided in all buildings and in the 18-storey block are driven by gearless motors and are capable of a speed of 700 ft. per minute.

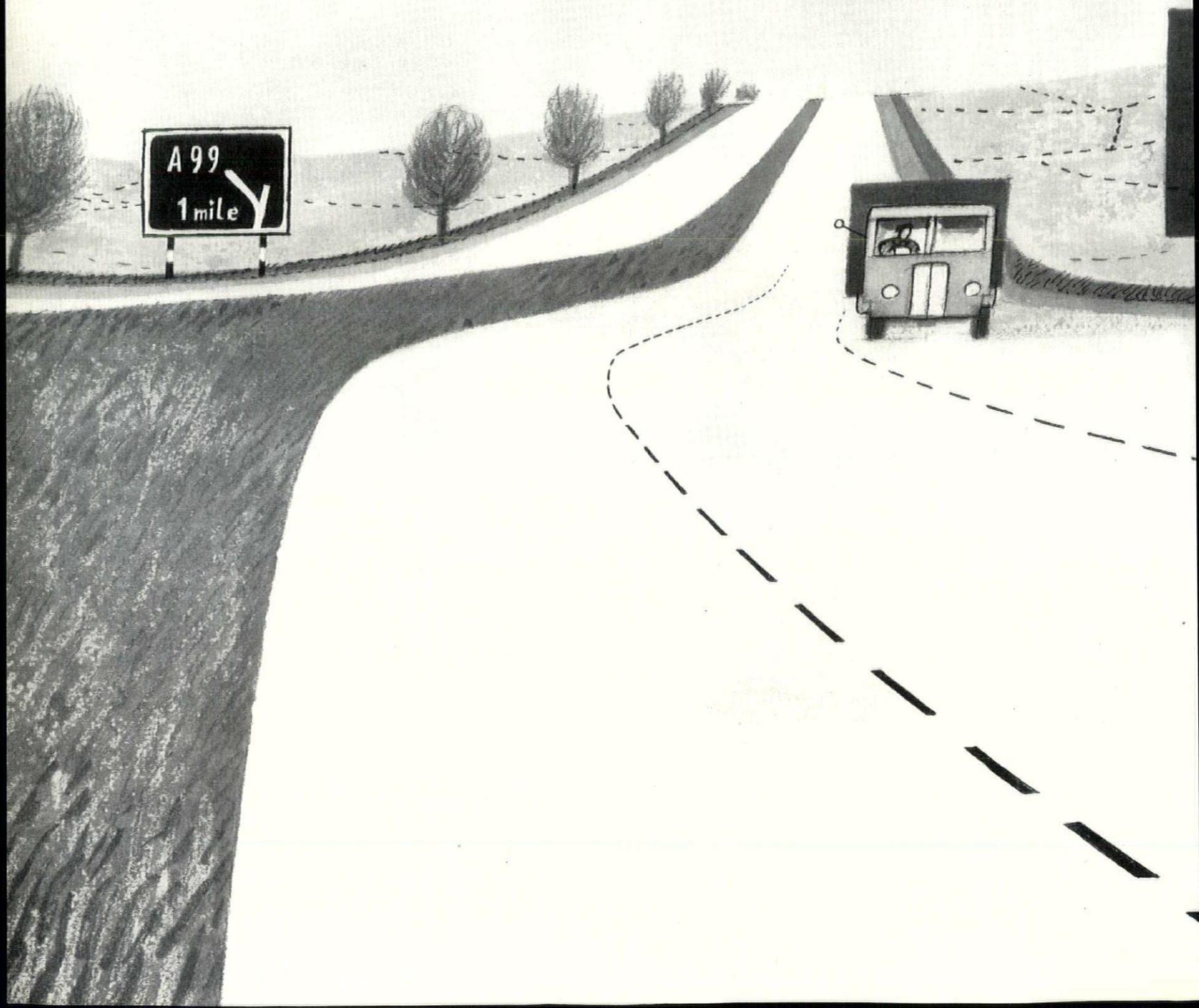




assistant in charge:
F. P. Softly
assistants:
J. L. Smith and A. Artur

John Crome's watercolour of *The Shadowed Road*, right, shows us a pattern of road and landscape in the horse-drawn ages, adapted to the needs of its traffic, integrated with the surrounding scenery, interesting as an unfolding experience to the traveller. The average landscape of the average motor-road in Britain, below, is none of these things, except possibly the first, but even that is doubtful, since the boredom of its endless road-ribbon and its undesigned surroundings can adversely affect a driver's attentiveness. In the article which begins opposite, Raymond Spurrier emphasizes the need for motorways to be fully thought-out visual conceptions, comparable in quality to the horse-drawn road, but re-phrased on the scale of high-speed travel.





Raymond Spurrier

CAUTION - ROAD WORKS

At last money is being spent on meeting the need, which has been evident for a long time, for more, bigger and better roads. Helicopters are hovering over hundreds of bulldozers and scrapers as they tear great wounds across the countryside for new motorways that will make as great an impact on the landscape as on traffic movement. This article is concerned with the aesthetics of motorways; it is concerned that 'what is given to man the motorist is not taken away from man the philosopher.'* The engineers can confidently be left to produce improved traffic arteries; but will these be better roads? Will they be roads that 'add to the exhilaration of daily life;' will they be such that a long journey upon them will be a 'continuous and positive delight?'

It might almost be stated as a maxim that a road which is not visually satisfying is inefficient; the bored or irritated driver becomes a lethal driver and this alone should be sufficient justification for spending time, thought, and even money on visual design.

But how? What is the nature of the problem?

Firstly, it consists in realizing that whilst mathematics may express beauty, two ribbons of tarmac—however alluring the curves—are not necessarily beautiful in themselves; secondly—that 'roads beautification' is not some sort of treatment that you spray on after the engineering work has been done. The motorway—112 feet wide—will be a dominant element in the landscape and the problem is therefore one of landscape design —or more accurately redesign: how to integrate the road with its surroundings; to absorb a standard linear product into a variety of spatial settings; to reconcile a conveyer belt

* quotations are from the very important Rees Jeffreys Triennial lecture 'Motorways—Their Landscaping, Design and Appearance' given by Mr. G. A. Jellicoe to the Town Planning Institute on the 9th October, 1958.

with a humanized countryside; to relate large-scale proposals to a small-scale country; and conversely: to organize small-scale views for high-speed travel.

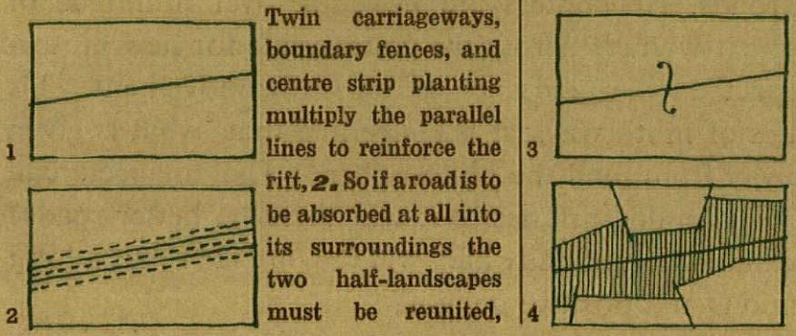
These principles are—or should be—well enough known. In 1943 the Ministry of War Transport's circular 575 implied them, and pointed out the need 'not merely to safeguard existing amenities, but to add to them'. In 1954 the then Minister of Transport, Mr. Lennox-Boyd, with an apprehensive glance at the dwindling amount of unspoilt land in Britain, commended a joint committee report which set out details for *The Landscape Treatment of Roads*. We have known how to apply the principles since the Mickleham by-pass was built in 1936-37. And yet Mr. Jellicoe was hard put to it to find enough examples of good road design in this country to illustrate his paper. He cast disturbing doubts about the future despite our particular native ability in landscape design.

It is this national tradition—the technique of creating a series of unfolding views, so firmly established by the eighteenth century Picturesque Movement, that should so obviously be applied to motorway design. Only the sequence of views must now be geared to upwards of a mile a minute appreciation by the motorist as well as being designed in relation to the landscape as a whole.

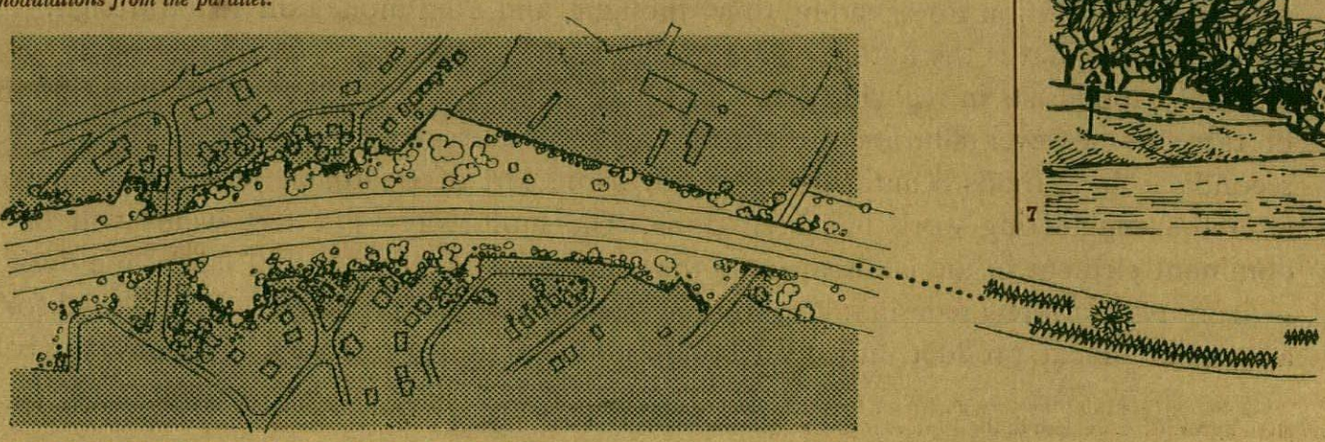
Here are some basic ideas for design and to begin with the obvious: landscape exists. Good landscape like ours, precious and irreplaceable, is all of a piece, a unity with a rhythmic sense of flow. An alien object like a motorway, thoughtlessly introduced, will impede that flow with its own strident lines of force. It will disrupt the unity. It will divide the landscape as positively as a line drawn across an empty page, converting one space into two separate spaces, *1.* Twin carriageways, boundary fences, and centre strip planting multiply the parallel lines to reinforce the rift, *2.* So if a road is to be absorbed at all into its surroundings the two half-landscapes must be reunited, *3.* There are several ways of setting about the task.

If our field pattern is enlisted to form irregular boundaries the relentless parallelism will be reduced, *4.* The road will then pass through spaces defined by existing trees and hedgerows—a link with what lies beyond. This method is used with great effect along the Connecticut Turnpike, *5.* Here existing planting is augmented along and within the highway limits to screen other development from the road and the road from it; private housing is considered to be as much in need of screening as industry.

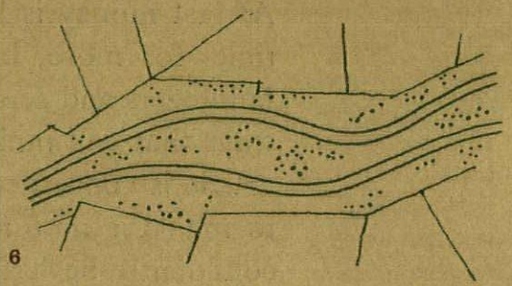
The better solution to the dichotomous landscape is to avoid splitting it before you start. If each carriageway is allowed to run its separate course, *6* and *7*, the road



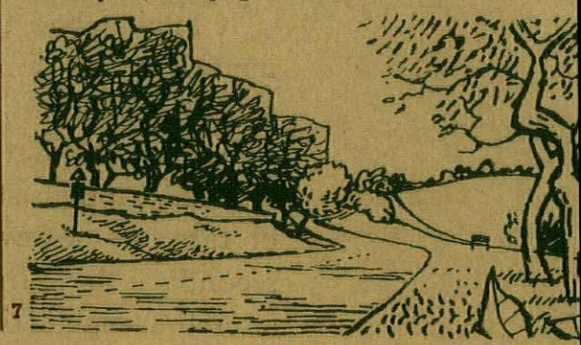
5, the American parkway becomes a self-contained landscape. In this case landscape design by A. Carl Stelling commenced at the beginning of the highway design stage. Note how even the planting on the centre strip is varied to create miniature modulations from the parallel.



5 CONNECTICUT TURNPIKE



7, the Shadowed Road—modern style. Divided carriageways welded together with the landscape by planting and landform, and by light, shade, and texture.



begins to embed itself in the countryside and the landscape to flow across the road. There are good examples along the Mickleham by-pass and the A40 into Oxford. Each track hugs the contours; cut and fill is reduced on cross slopes; parallelism is practically eliminated and so is headlight dazzle. Although the overall highway limits are greater the apparent width is less since the second track is virtually out of sight most of the time. The central reservation now becomes, and should be treated as part of the landscape, not part of the road. This type of fitted highway is ideal for our intimate countryside.

Both these techniques need extra land however—a luxury which the new motorways are unlikely to enjoy. Paradoxically, those continental countries with land to spare produce seemly results by other



8

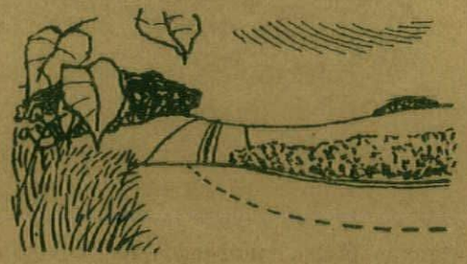
means, ***8***. The secret here is the absence of visual boundaries which would accentuate the road line. Other peoples land—which is free to look at—becomes part of a scene that sweeps across the road unobstructed. The curving carriageways do not obtrude because other more prominent marks in the landscape draw the eye. This effect will only work in certain types of country: through marginal land or in areas of 'open field' cultivation.



9

The Belgian road above, ***9***, in a different type of setting borrows trees from outside the highway limits to help counteract a mechanical ruled parallelism. Set in rows at right angles to the line of advance, the trees recede like the borders on a stage to give a sense of depth and space penetration in a flat landscape. Divisionism is disguised.

Where, however, it cannot be overcome by any of these methods the division must be cultivated as a virtue. If the insistent line is accentuated by the erection of a high visual barrier (trees) along one side of the road only, space will be reorganized. The road will run along the edge of the space it defines, like a field path at the edge of a wood and the eye will be deflected outward to the view, ***10***. If the road can be made to run



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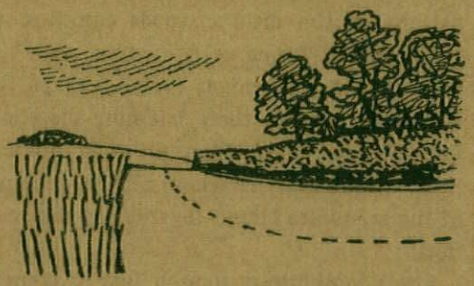
alongside a wood, so much the better. Any centre-strip hedge must be kept low enough to see over and it will be read as one with the background from the returning carriageway, ***11***. When a central reservation can be contrived wide enough to take a really effec-



11

tive tree screen, both carriageways, insulated from each other, will enjoy similar effects. These effects can be switched for variety and according to the terrain so that the open view is first one side, then the other. For a change the view can be blotted out altogether by planting on both sides. But beware of avenues. A drive through a wood is usually considered to be picturesque and desirable; a long trip through one of those *routes forestières* favoured by the Michelin maps soon proves how monotonous and claustrophobic this can become. Judicious thinning at the edges of the road and on a wide centre strip can however give more of the sensations of a stroll through woods where you are among the trees, ***12***, not hemmed in by an arboreal corridor. Entry into the wood and emergence into open country again should be arranged gently



12

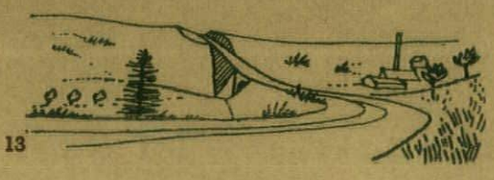
for motoring reasons as much as for aesthetic ones.

These then are a handful of ways in which the road as a linear concept can be made part of a three-dimensional landscape. All sorts of permutations and variations are possible providing the transitions are geared to high speed motoring. All are simple—perhaps obvious, but all need the artist's eye to assess the capabilities of the landscape and to exploit them to effect. These effects do not need to be startlingly beautiful all the time but they should always be competent, they should unfold naturally, and they should be in scale.

The Enclosure Acts gave us for the most part a cosy, friendly landscape. The motorway is anything but cosy in conception. Planting and earth moving must therefore be on a scale compatible with the road itself and the speeds attainable. Little ornamental trees suitable for garden suburb layouts will not do. Road curves designed for 70 m.p.h. driving need to be echoed with 70 m.p.h. views. Luckily perhaps, there is a tendency for the agricultural pattern to become larger so that tomorrow's landscape may well be more in harmony with tomorrow's roads. But whatever may be the total pattern, it is important in road design to give a sense of the landscape through which one is passing. The driver should be as unconscious of the road itself as he is of what is going on beneath the bonnet. When either mechanism or road begin to obtrude, something has gone wrong.

The point at which the basic design of road and setting becomes one of road and adjuncts is not clear cut since the view is composed of everything that is visible. Details are therefore as important as the broad conception; they must be part of it. Earthworks belonging to the road should look as if they belong to the landscape by merging with the predominant forms.

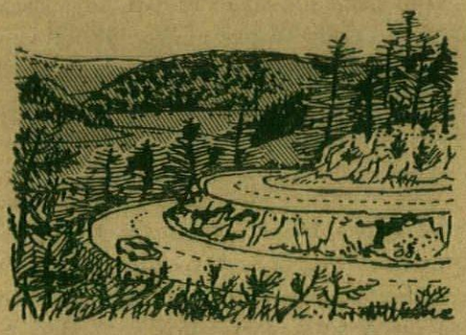
In turning over pictures of German autobahnen, so competent in detail, it comes almost as a relief to find a piece of roadscape that doesn't work, ***13***—an example of how not to do it (the only one in this article). Embankment and cutting are obviously artificial and clumsy; more sympathetic bulldozing and careful planting could have



13

improved the appearance and redeemed an already bleak piece of country.

Intractable terrain causes engineers to think and the result below, ***14,*** is a road that clearly belongs to its setting. Vertical separation of the tracks makes each one invisible from the other. This is probably the best method of assimilating large and complicated junctions too. A roundabout



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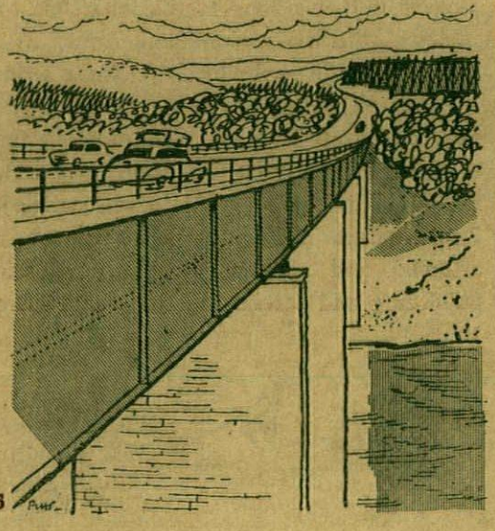
or a clover leaf crossing is a very unsatisfactory landscape feature and the parts are best treated as ordinary lengths of road. The more they are disguised the less likelihood there is of confusion for the navigating driver.

Bridges, from an engineering point of view are problems of span, loading, and construction. Gaps may be spanned in a number of ways. The sides can be delicately laced together by a suspension bridge; they can be held apart by the sheer mass of an arch or a slim structure can wedge itself neatly in place. A bridge can leap across gracefully or go galumphing over leaving great clumsy imprints. These are visual images of course but a bridge is a visual event in the road's progression—a frequent event too. The London-Yorkshire Motorway will have 131 bridges in 55 miles. Visually, each of these may perform a different function; a standard solution may not be applicable.

Below, ***15,*** is a superb example of a



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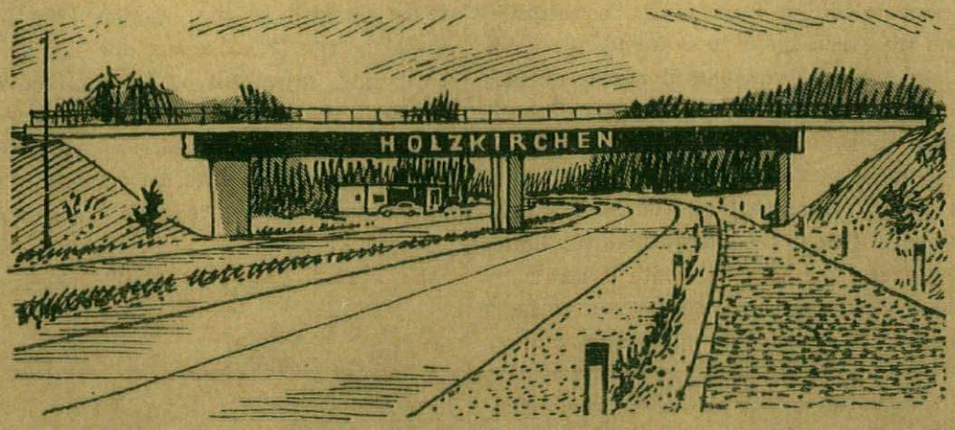

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German bridge tailor-made for its setting. Originally flat, it has been rebuilt to a dished profile so that the road could cross the river and proceed up the hill in one continuous sweep. This logical assembly of wafer thin stone piers, uncluttered girders, unfussy railings makes a bold gesture almost thrown away in its simplicity. Note too the linear pattern of the distant woods changing to bushy-topped forms as a contrast with the precision of the bridge. (Well perhaps the trees were already there but note the effect nevertheless.) This represents road building in the grand manner where all the elements of the scene are bound together by the road itself.

Less breathtaking though just as competent is ***16,*** a minor bridge across an autobahn. Designed for its own position it forms part of a scene remarkable for its unity. From the massed trees right down to the last detail there is a look of inevitability about the composition. See how the arches punctuate the progression without interrupting the continuity; they frame a view (which includes an unobtrusive petrol station) with a promise of a new scene beyond.

And yet there is the feeling that it could go on just like that for hundreds of miles. It probably does; so do continental landscapes. You could build a road from the Urals to the Pyrenees across the Great Lowland Plain using the same scenic ideas all the way. But those ideas will not do for us. In the 110 miles between London and Birmingham there are six different geological formations, each generating its own particular type of scenery and building style. This makes for a high density of interest and if the differences can be respected and not ironed into uniformity by the impress of the road, we have to hand a ready made cure for monotony.

This does not of course do away with the need to think. That memorable journey in 'Outrage' from Southampton to Carlisle demonstrated how easy it is to iron out differences with standard, off-the-peg solutions.

The road itself is a standard ribbon but it can be stitched into the scenery using the vernacular of the district. The most obvious place is at the boundaries where natural stone, whitewashed stone, timber post and rail, white painted timber, iron railings, hedges of all kinds are just a few of the local variations available without recourse to the universal concrete and chicken wire.

In addition to boundary fences all sorts of other roadside details subject to the design process can be enlisted as aids to local absorption. Since details usually form the foreground to the view, all the trouble taken over landscaping can be ruined in a single rude gesture by a badly placed sign, or ill designed trim. The great crime and the mark of the amateur is over-design. Vernacular, traditional, or good foreign precedents exist for most roadside objects so it is only a question of taking trouble to adapt them.

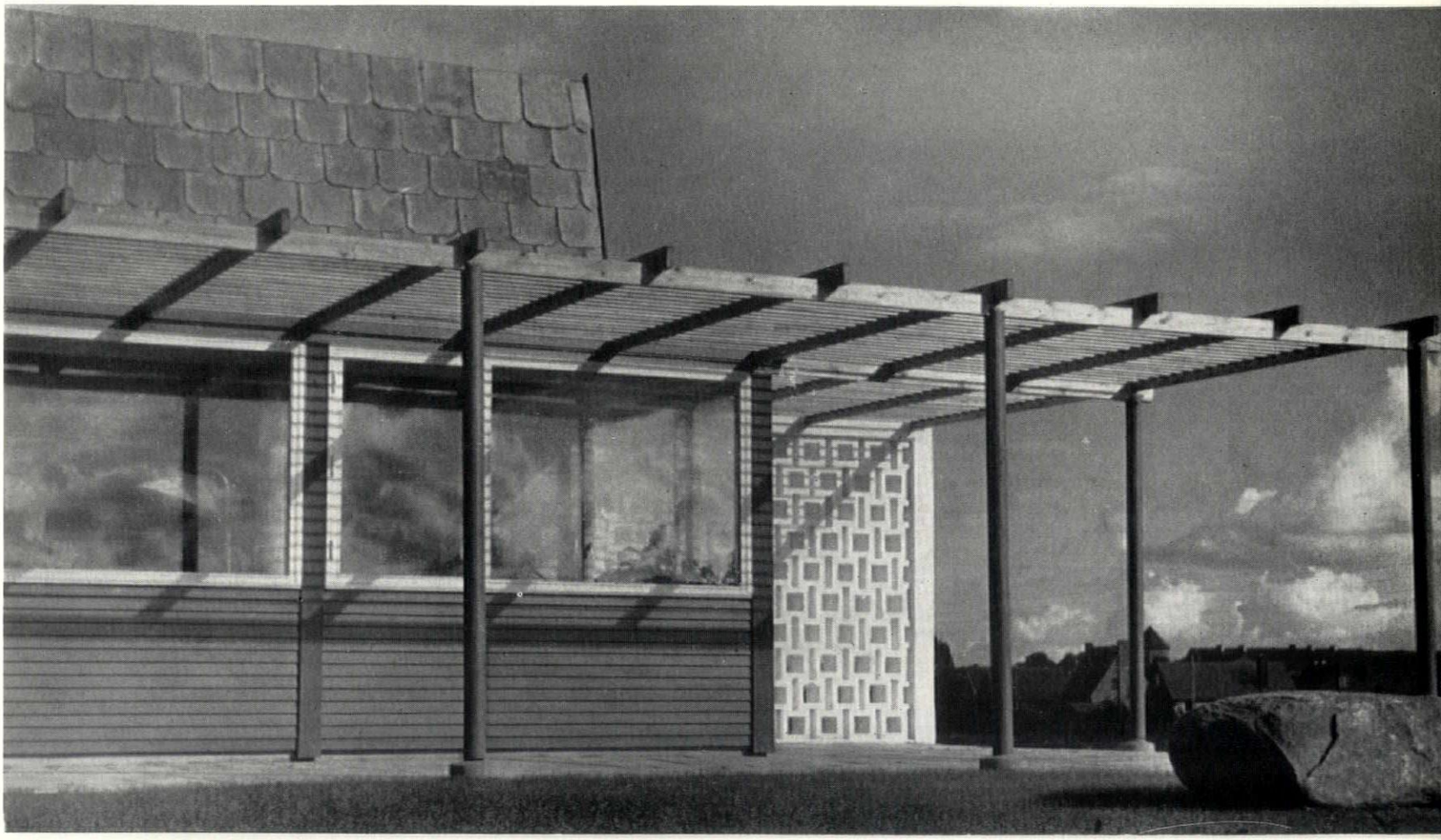
Just as the best details are those with least fuss so the best roads are those with least accessories. A motorway designed comprehensively at the outset should not need all the unplanned extras that clutter most of our roads now.

Mr. Jellicoe's lecture ended on the note that no rules or guidance ever produced a work of art. Time and skill have though and at least the Ministry of Transport and its advisers have had plenty of time to make a comprehensive design for the London-Yorkshire Motorway. They say in a handout that the six and a half years 'was quite valuable, as it afforded ample opportunity for the contemplation and solution of the novel problems involved.' So perhaps after all Mr. Jellicoe's doubts and our fears about the future are unjustified.

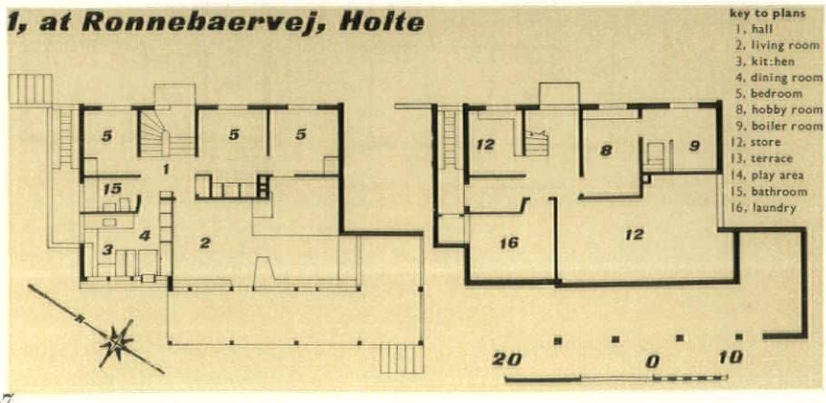
These eleven houses in the country round Copenhagen are all by the same architects, and although they vary in size and purpose they share a similar construction of lightweight concrete blocks, timber and brick. They have wide sun terraces and most have clerestory windows to give sunshine to bedrooms facing north.

ELEVEN DANISH HOUSES

ARCHITECTS | **HENRIK IVERSON AND HARALD PLUM**



1

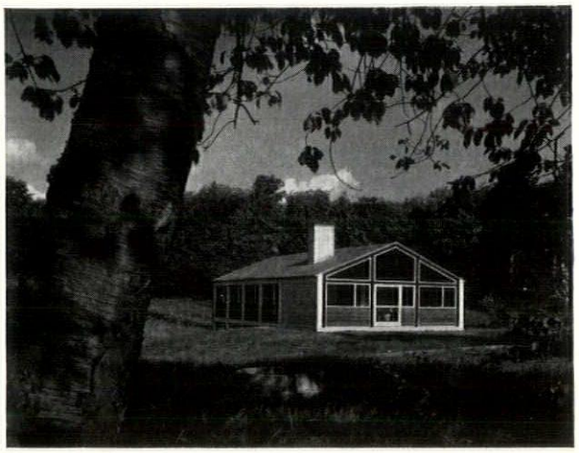


A house set on a hillside with all living-rooms overlooking the garden. 1, the pergola-covered terrace outside the living - room, with pierced screen wall behind. The concrete blocks are painted white and there are panels of dark boarding below the windows. 2, the south side of the house.

2

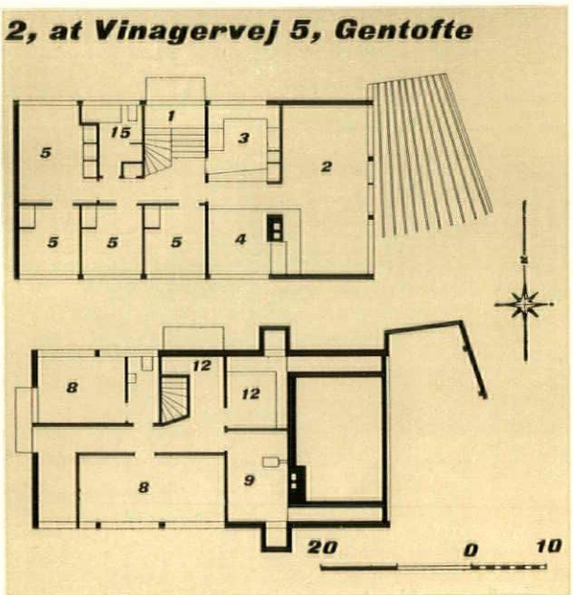


ELEVEN DANISH HOUSES



3

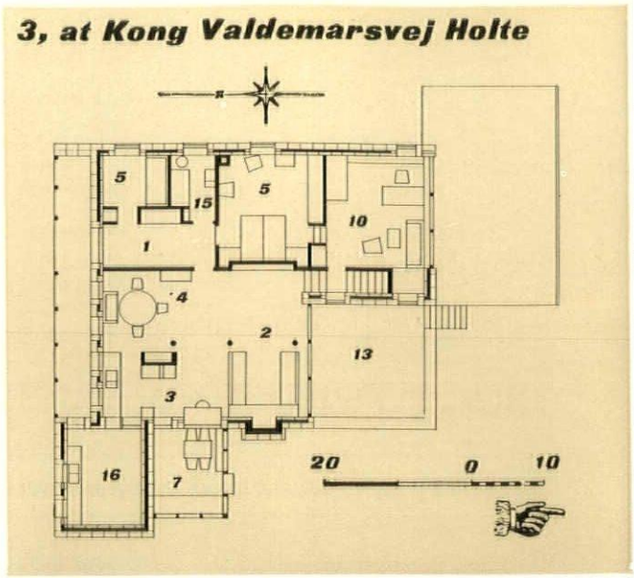
2, at Vinagervej 5, Gentofte

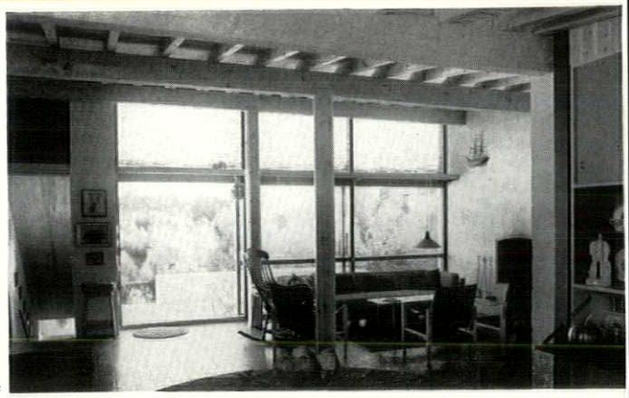


Designed for a married couple who are both doctors, this house stands close to a major road and has a screened courtyard to keep out the noise of traffic. 3, from the garden the lower floor of the house is completely hidden. The big windows of the living-room are carried right up to the roofline.

key to plans
1, hall
2, living room
3, kitchen
4, dining room
5, bedroom
6, studio
7, sun room
8, hobby room
9, boiler room
10, study
11, garage
12, store
13, terrace
14, play area
15, bathroom
16, laundry

3, at Kong Valdemarsvej Holte



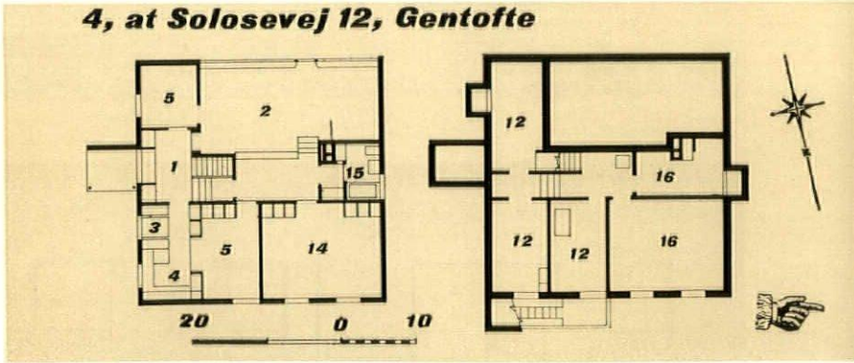


4

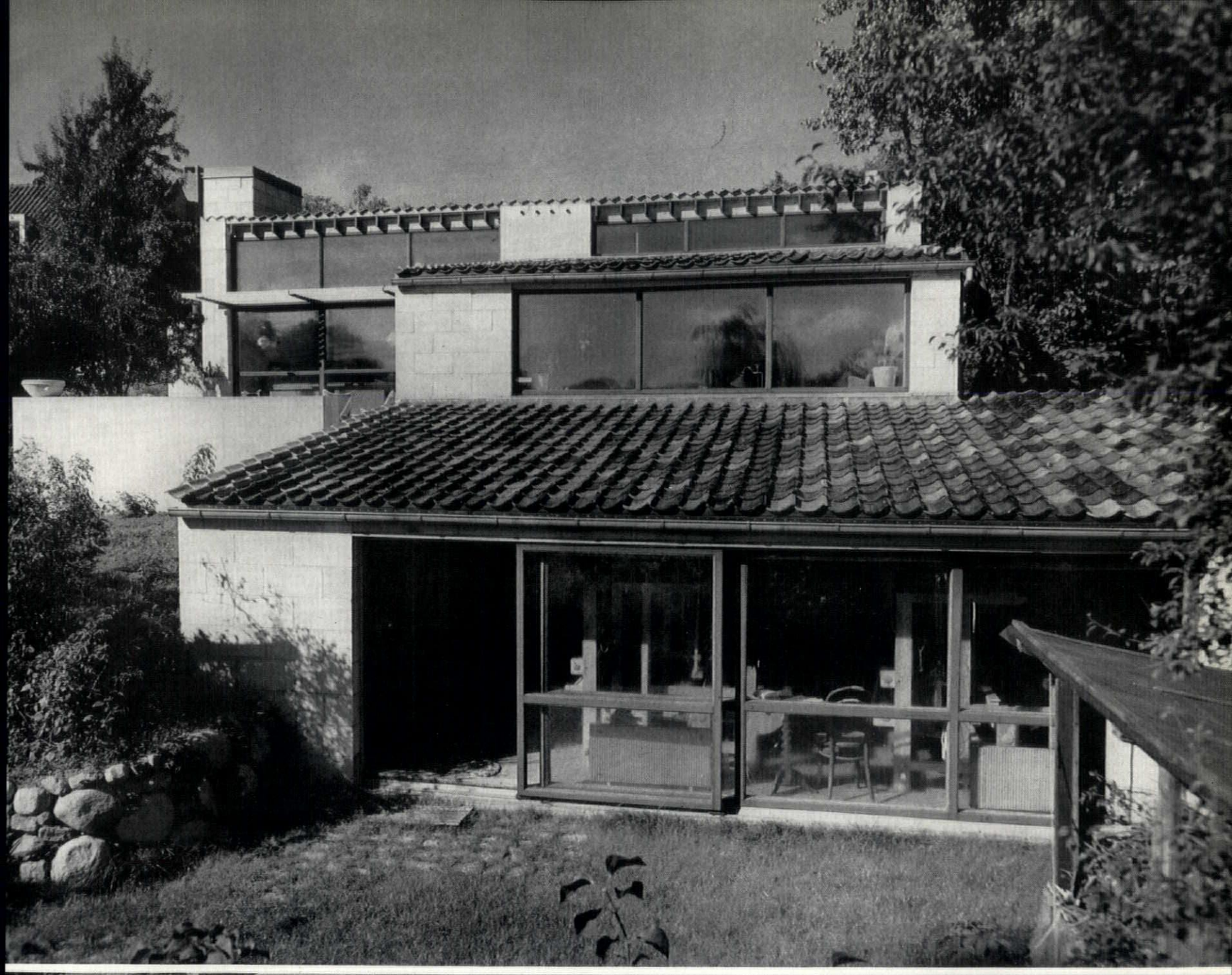
The study, living-room, dining-room and kitchen of this large house all have direct connection but may be shut off from each other by sliding doors. 4, the living-room looking towards the terrace with the stairs down to the basement on the left. 5, opposite, the garden front, with the basement workroom, terrace and study above and bedroom windows beyond.

5
6

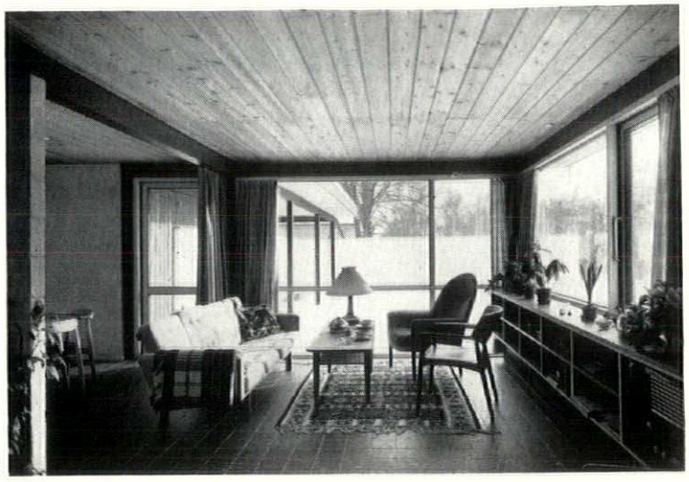
4, at Solosevej 12, Gentofte



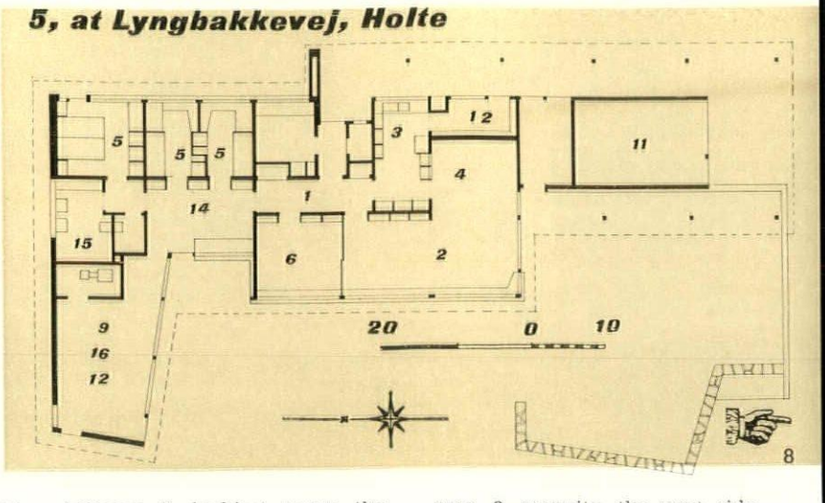
A very simple house on a square plan. 6, opposite, shows the living-room opening on to the terrace, with the clerestory windows lighting the bedroom and playroom.





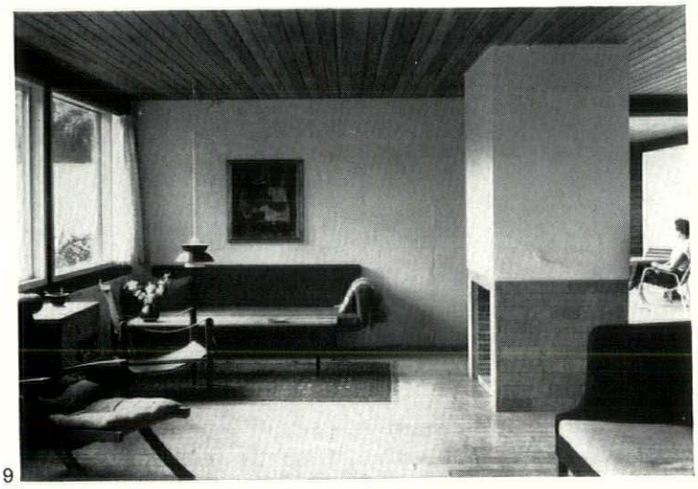


7



8

This is a large house, divided into children's rooms on the north and parents' rooms to the south, and with two outdoor terraces. 7, looking across the living-room to the parents' terrace. 8, opposite, the west side of the house from the garden.



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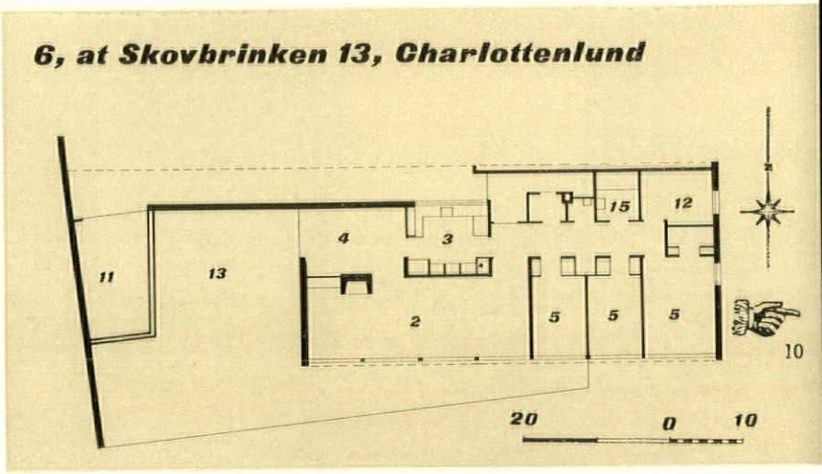


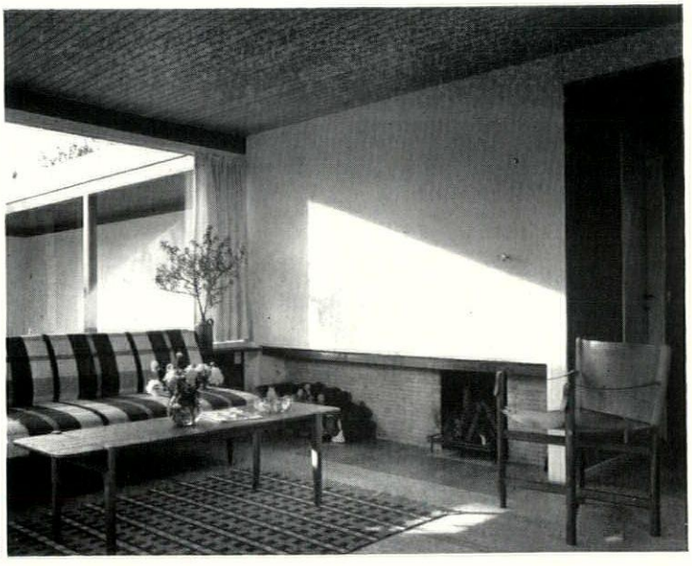
10

A house for two adults and two children, with a basement under the bedrooms at the eastern end. 9, the fireplace end of the long living-room, with the terrace beyond. 10, opposite, the south front, showing the terrace screened by the living-room and garage.

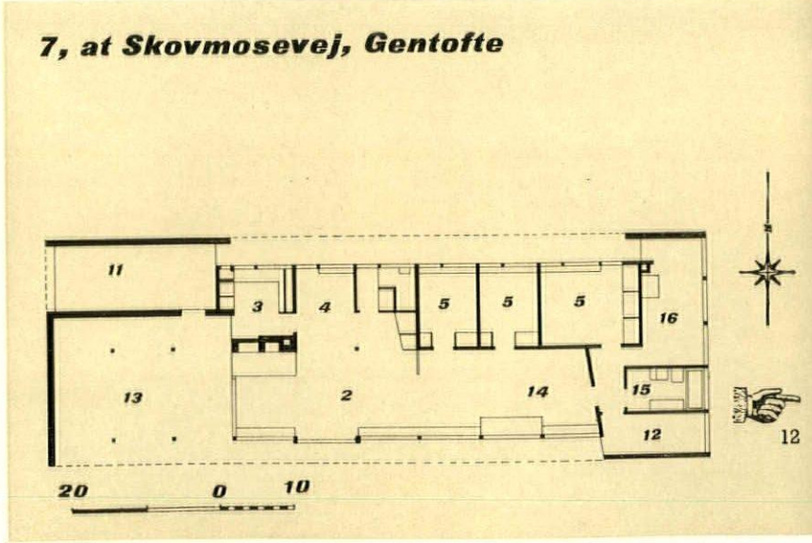
key to plans

1, hall	9, boiler room
2, living room	10, study
3, kitchen	11, garage
4, dining room	12, store
5, bedroom	13, terrace
6, studio	14, play area
7, sun room	15, bathroom
8, hobby room	16, laundry

ELEVEN DANISH HOUSES



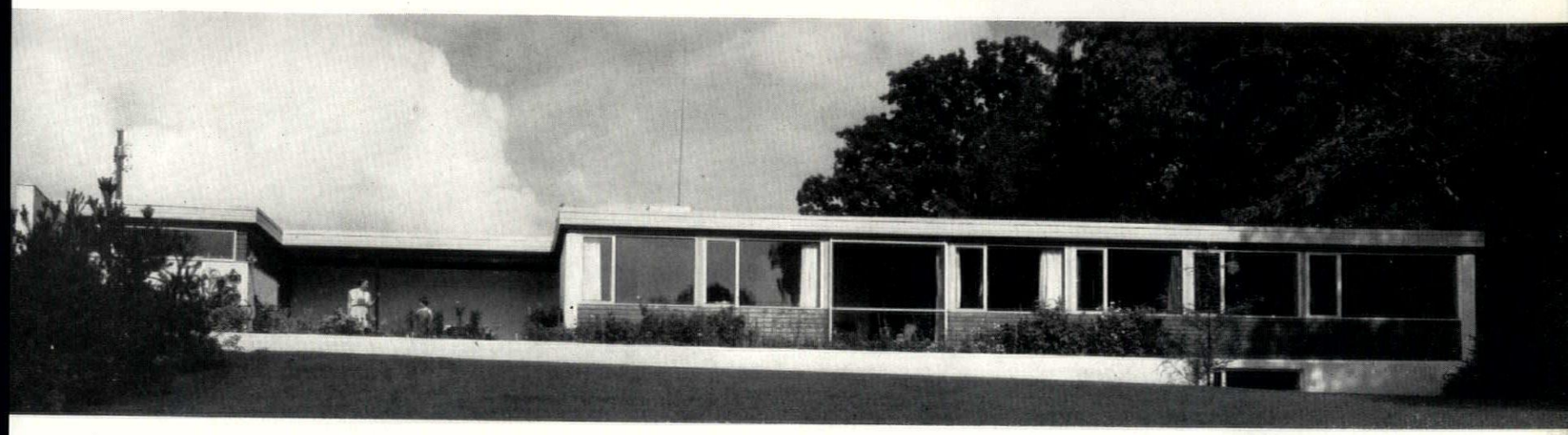
11



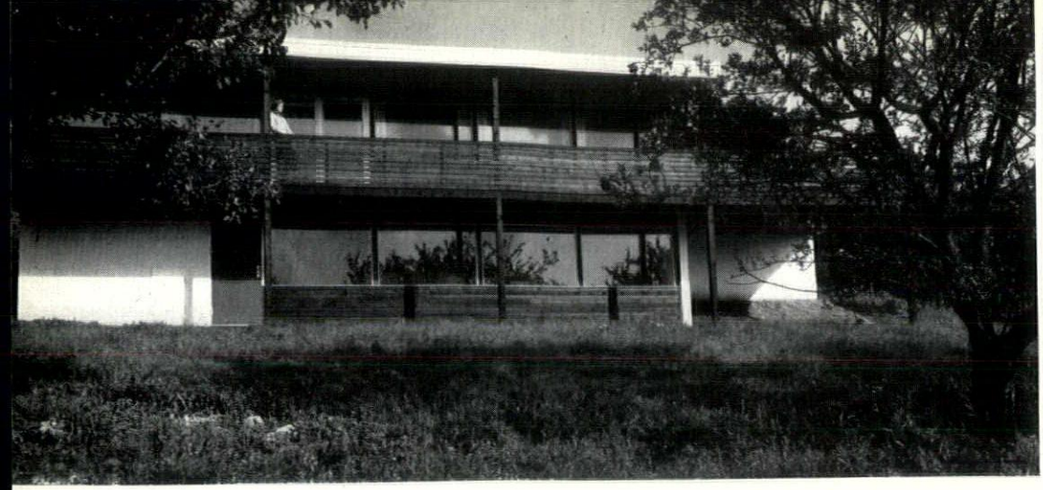
12

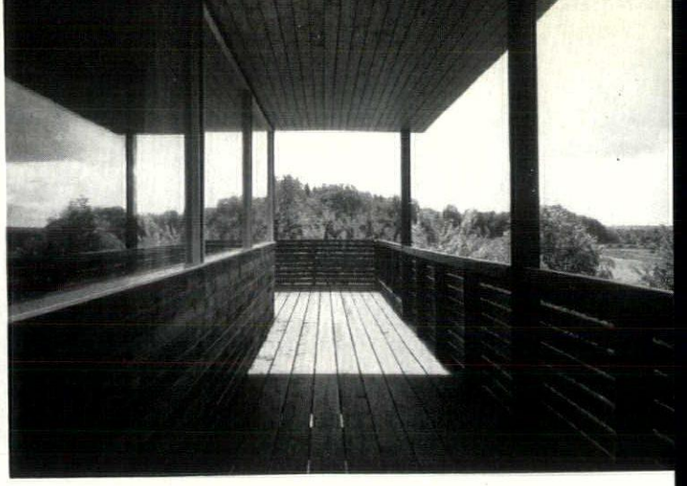
A long low house, its lines extended by the terrace at one end. 11, the fireplace end of the living-room with the terrace beyond. 12, opposite, the house from the south-west. The overhanging roof is continued across the front of the terrace.



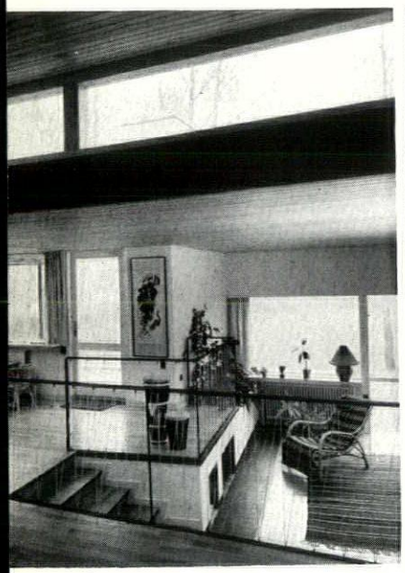


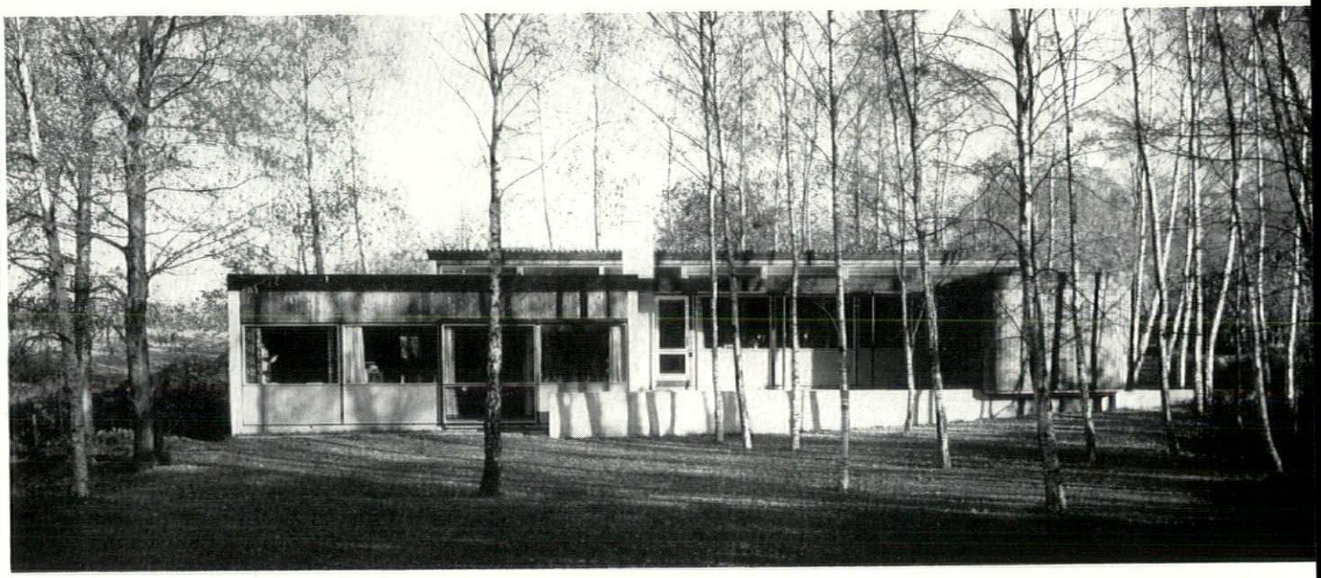






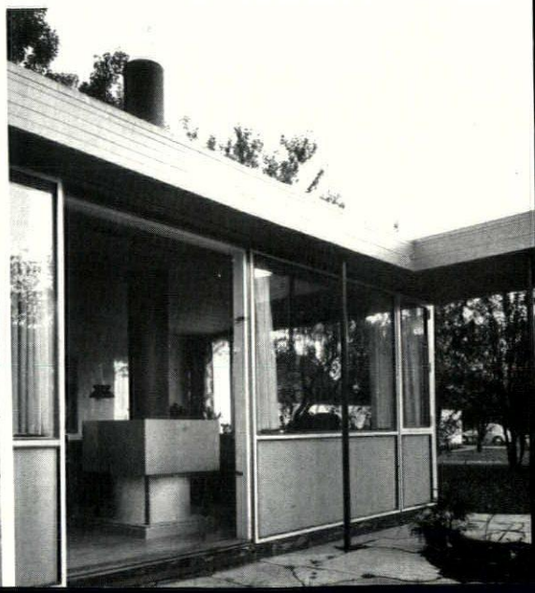
13, the garden front shows the two storeys, with a hobby-room at low level and dining-room and living-room above. The site slopes steeply so that these rooms are at road level on the north. 14. the first-floor balcony which runs the full length of the west side.



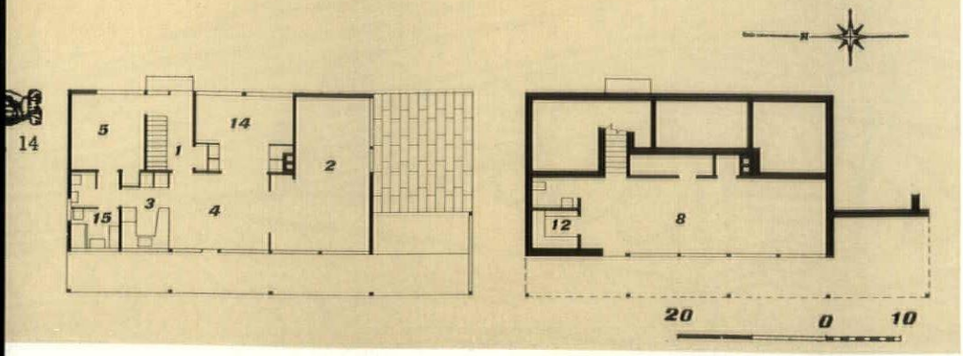


The house is designed in three wings, enclosing a sheltered courtyard, which is partly roofed over and connected with the living-room and hobby-room by glazed sliding doors. 18. the house from the south-east looking across the garden and courtyard towards the hobby-room. 19. the living-room seen from the courtyard.





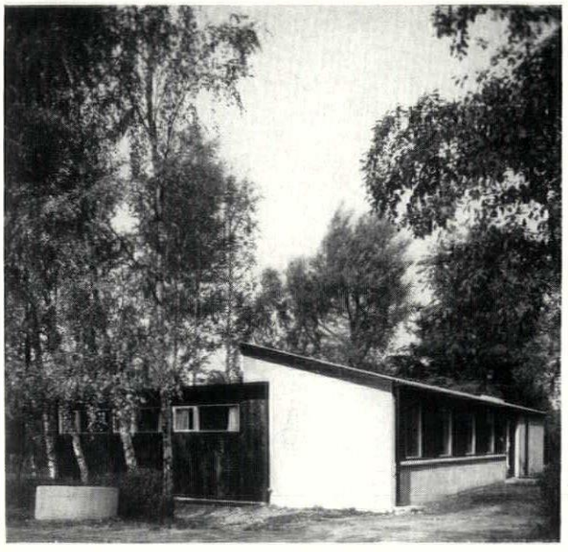
8, at Vasevej, Holte



14

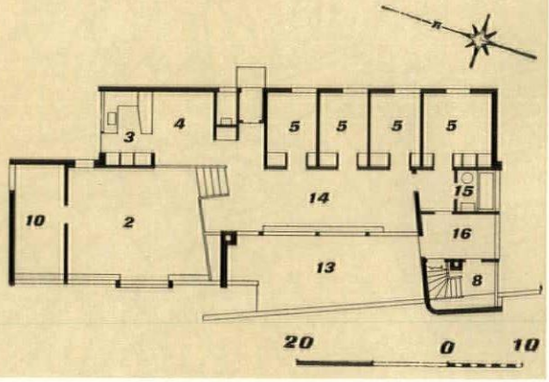
15, looking from the dining-room across the two-level living-area to the terrace. 16, the house is set in a small birch wood; in this photograph the living-room is on the left and the terrace in the centre. The clerestory windows give additional light to the dining-room and bedrooms. 17, the south-east corner of the house.

5, 16



17

9, at Harestien, Skade

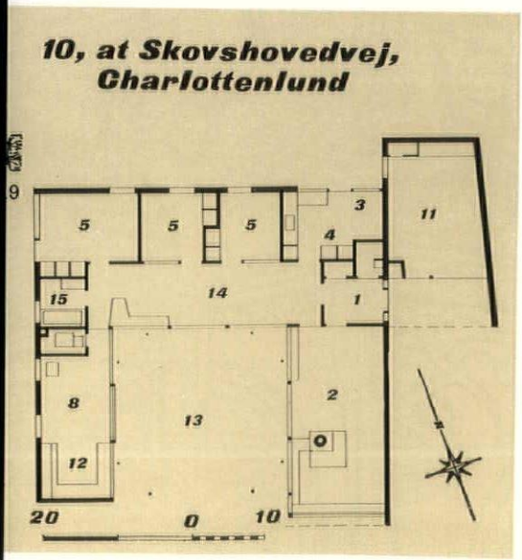


key to plans

1, hall	9, boiler room
2, living room	10, study
3, kitchen	11, garage
4, dining room	12, store
5, bedroom	13, terrace
6, studio	14, play area
7, sun room	15, bathroom
8, hobby room	16, laundry

20, the south window wall of the living-room and two bedrooms, and the screen wall of the hobby-room, which is of light yellow bricks.

10, at Skovshovedvej, Charlottenlund



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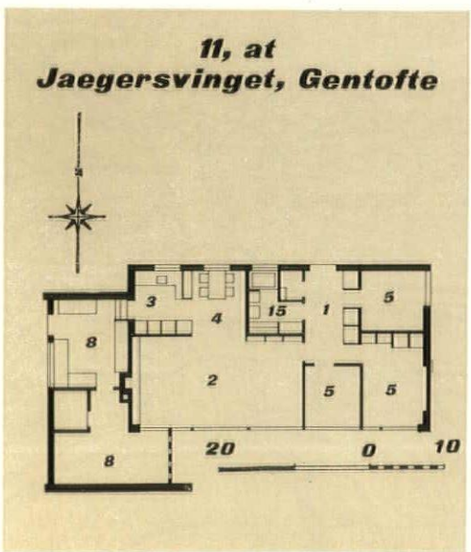
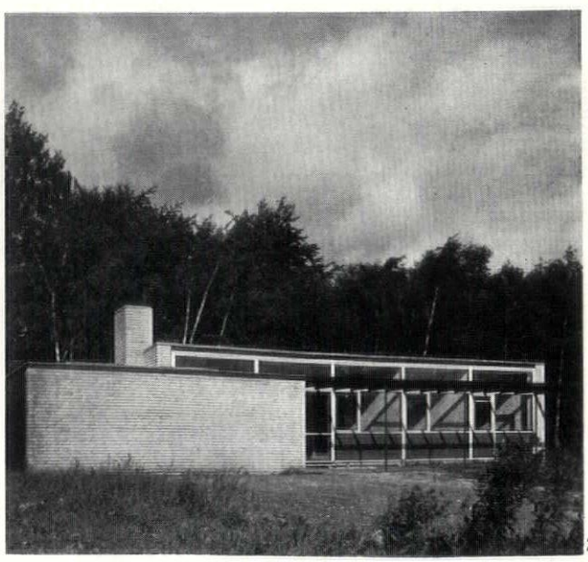
11, at Jaegersvinget, Gentofte





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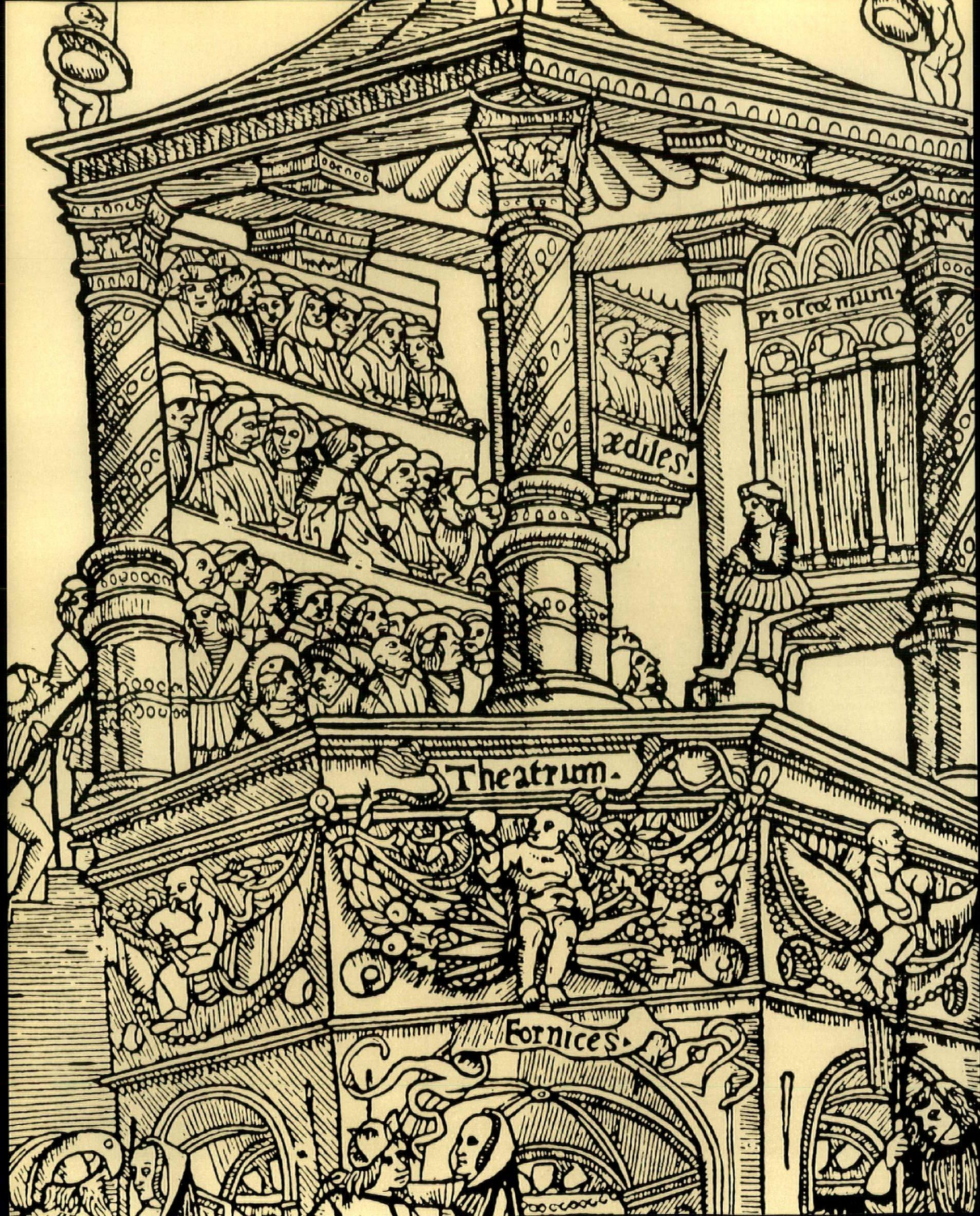

Proscenium.
Aediles.
Theatrum.
Fornices.

The crisis of the open stage appears to be as old as the literary theatre in Europe—the woodcut opposite,  *from the Lyons edition of Terence's* Comedies, *dating from* 1493 *and based on garbled literary descriptions of Roman Theatres, already uses the word* proscenium *to describe something that contains the seeds of the picture-frame stage. But the solitary actor is apparently coming down on to what is still an open* platea *or* arena, *not yet invaded by the audience who sit in tiers round the sides of the structure, so that the whole approach is substantially what Richard Leacroft, in the article below, would describe as that of three-sided staging.*

Richard Leacroft

THE OPEN STAGE

Just over one hundred years ago the English actor was finally confined, protesting vigorously, behind a gilt picture-frame, where his performance was subordinated to the overwhelming demands of pictorial illusion. Previously the actor had performed on a stage within the auditorium, the scenic machinery being confined to a rear stage. As a result of managerial desire to accommodate the larger audiences drawn by the attractions of scenic illusion, the actor was gradually pushed back amid the scenery, and his now 'useless' area of stage was replaced by seating. The theatres of Restoration England were both small and intimate,* as indeed were those of Shakespearean times, their gradual replacement by bigger, but not better, theatres coincided with a period during which drama was subordinated to spectacle. In these large theatres of the late eighteenth and nineteenth centuries the actor was forced to adopt vocal gymnastics of rhetoric to enable his lightest asides to be heard in the dim recesses of the huge auditoria. Today this scenic form of entertainment is better provided by other media, which have taken with them those members of the audience who are satisfied by the spectacular productions of mass entertainment, leaving behind a smaller public interested in taking part in purely dramatic productions; an audience which is, in the main, too small to fill the existing theatres.

The removal of the spectacular production to other fields has left the actor in a position

* Wren's Drury Lane, *The Architectural Review*, July, 1951.

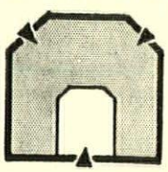
where he may once again dominate the scene, and, as might be expected, the experimental sections of the theatrical profession which have grasped at the possibilities inherent in this situation have tended to swing to the opposite extreme, and throwing overboard all vestiges of the scenic illusion which has held them in bondage, have stepped right out of the picture-frame back into the centre of the audience. Such extremes are not perhaps fully desirable, and the retention of a degree of controlled scenic illusion should be a feature of any attempt to arrive at an ideal theatre, if such a thing is possible.

The departure of the mass-entertainment audience has made possible a return to the smaller theatres which were the natural product of the era when actor and drama held sway, and it may well be advisable to take advantage of this situation and provide buildings in which it would be possible to achieve the intimacy of voice and action generally considered ideal today. The desire to break free from the picture-frame is in itself no new thing, and many experiments have been made since the middle of the last century which range from the Elizabethan experiments of Max Krüger and William Poel to the productions of Max Reinhardt at the Grosses Schauspielhaus and the Redoutensaal, of Jacques Copeau at the Vieux Colombier and of Okhlopkov at the Realistic Theatre.

Whilst the aesthetic demand for a closer integration of actor and audience was the major motivating cause of these experiments, the mounting cost of providing orthodox picture-frame theatres led, particularly in America, to the adaptation, and later to the construction, of open-stage theatres. The Penthouse Theatre, Washington, erected in 1940, was one of the earliest of these theatres, and, as the accompanying illustrations suggest, this solution to the problem of providing adequate, economic premises for presenting drama, has now become established in America, France and Italy. In England, however, the open stage has not as yet found commercial favour, and examples are limited to John English's tented Arena Theatre, the Edinburgh Festival adaptation of the Assembly Hall, the—as yet incomplete—Mermaid in the City of London, the Library Theatre at Scarborough and the Royal Festival Hall. In addition to these examples there have been further adaptations of halls such as that used by the Cockpit Theatre Club.

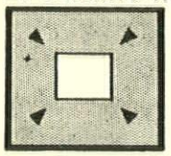
The idea of the open-stage is, however, now gaining some acceptance, and it is only as to the actual form that the open-stage should take that there is any real controversy. In all forms the actors and audience are in the same room, but the stage and seating can be arranged in a variety of ways which fall under three main headings, each relationship having its own particular contribution to add to dramatic experience:—

1. *The Three-sided Platform Stage.* The Acting Area can here be a flat area of the auditorium floor, but it is more generally a raised stage, projecting forward from one wall of the hall and surrounded on three sides by an audience. This stage may be equipped with a certain degree of scenic illusion, and it has the advantage of providing entry for the actors both through the audience and also direct through the stage wall.*

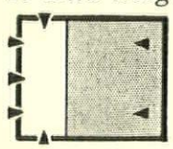


Although the stage and hall are more often rectangular, both the Arena Theatre, Birmingham, and the Festival Theatre, Stratford, Canada, are variants on this form being of a horse-shoe plan.

2. *Theatre in the Round or Central Staging.* The Acting Area is usually an open area of floor—circular, oval, octagonal or rectangular—in the centre of the auditorium, but it may on occasion be raised. The audience is disposed on all sides as equally as the shape of the hall permits, although in one variant on this form the audience is disposed in two blocks on opposite sides of the acting area, with access for actors and scenic furnishings on the remaining two sides as may be seen in the small adaptable theatre at Mannheim and in the Teatro S. Erasmo, Milan. In all other forms entrances for the actors must be made through the audience, and there should be access to each side of the acting area; at least one access way being arranged at acting level to permit movement of furniture. Scenery is normally confined to such units of furniture, or variations of acting level, as are required by the action of the play.



3. *End Staging.* The Acting Area is placed across one end wall of the auditorium, with the audience seated before it. The arrangement being similar to that which existed for the picture-frame theatre, but here the two units are now contained within the same room. Variations can be made to the shape of the front of the stage, which may be angular or curved, with a corresponding fan-shape for the seating. Actors' entrances can be made through the audience or through the rear or end walls of the stage.



Variations on these stage arrangements are also possible, and the *Flexible Stage* permits the Acting Area to be placed in a corner of the auditorium, or at any other point appropriate to the differing productions. Various projects also exist which permit the rearrangement of the units so that any of the above forms may be assembled within the same building, an example of such a building being the Ring Theatre, Miami.

These new forms of theatre require revised techniques from the actors, playwrights, audience and, of necessity, the architect. Whereas the actor had previously to project his personality and his voice in exaggerated gestures and tones across the span of

* The exponents of this form of stage tend to refer to it as The Open Stage, this title is, however, misleading as all these forms are open stages.

orchestra well, stalls and pit to the far recesses of the circles and galleries, he must now adjust himself to conditions in which he may express himself in normal gestures, easily appreciated by the new audience now seated under conditions previously enjoyed only by those occupants of the stalls who had provided themselves with opera glasses. In all but form 3 the actor is wholly or partly surrounded by his audience, and he must therefore perform three-dimensionally, and learn to act as competently with his back as with his face.

Whilst all forms of plays have been performed under the new conditions, including those first written for realistic production on the picture-frame stage, the most suitable plays are those originally written for performance under similar open-stage conditions, which place the emphasis upon the drama and the actor. The open-stage conditions of the Canterbury Festival of 1935 produced *Murder in the Cathedral*, and the productions of Theatre in the Round are already encouraging new dramatists.

The audience too must adapt itself to the new relationship which permits a view of their opposite numbers seated beyond the actors, and this it usually manages to do quite readily, although those persons strongly conditioned by the conventions of the picture stage sometimes find the necessary adjustment difficult to make. It is, however, noticeable that the younger audiences, as yet uninhibited, find no difficulty in accepting what is at best merely another theatrical convention. The loss of elaborate scenery is in itself no great detriment, indeed its absence permits the imagination free rein undisturbed by attempts at simulating realism with the conventional items of scenery: flats, rostra and the seldom perfect back-cloth. Where scenic items, furniture, clothing, etc., are used, the items must be perfect, as otherwise their nearness to the audience reveals any flaws, and the audience that is not carried away by the force of the acting may well become only too aware of the last minute safety-pin or the goose-pimples on an otherwise fair skin.

These new considerations affect the architect concerned with theatres in two ways. In the preparation of designs for new theatres, and in designs for the multi-purpose halls which are such a standard feature of civic and scholastic life, and which have never been of much value for orthodox theatrical presentations, when sight lines have been limited by the necessity of retaining a flat floor to the auditorium.

An architect conversant with the general requirements of open staging can design a multi-purpose hall in such a way that it can serve a really useful theatrical purpose. The adaptation of such a hall to these new needs will require the introduction of some method of raising each consecutive row of seating to provide adequate sight lines for all the audience. The Studio Theatre Company, who have had wide experience in touring their productions of Theatre in the Round, make use of collapsible theatrical rostra 6 ft. by 3 ft. and 3 ft. by 3 ft., varying in height from 1 ft. to 4 ft. These rostra, together with some adaptable units for making up the uneven widths of halls, provided the range of variations illustrated here necessitated by the differing shapes of each hall visited. The problems encountered by this company suggest that new halls be designed with the module of similar rostra in mind, and that walls be kept free of such projections and obstructions as may be caused by pipes and radiators.

The introduction of a gallery or galleries is not prohibited by the new uses to which such a hall may be put, but their design will be conditioned by the new and shortened sight-lines which will result; additional galleries could well be introduced along the sides of the hall above any side passages. Wherever possible doors should be arranged in the side walls of the hall permitting access to each corner of a centrally-placed acting area. These doors should be connected outside the hall so that they may be used interchangeably by the actors, who will also require



1

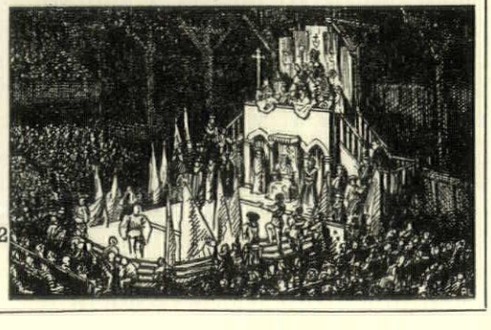
three-sided platform stage

FESTIVAL THEATRE, STRATFORD, ONTARIO, 1957
Architects: Rounthwaite and Fairfield

1, *seating, 2,190. A three-sided platform stage surrounded by a horseshoe of seating on two levels. 17 rows of seats, none farther than 70 ft. from the stage. The theatre is designed primarily for Shakespearean productions and the stage—30 ft. by 39 ft. including steps—has a permanent balcony and inner stage. Steps lead to the balcony from the stage and both can be reached from back stage.*

below: THE ASSEMBLY HALL, EDINBURGH

2, *three-sided platform stage production of 'The Three Estates' by Tyrone Guthrie, 1948. This adaptation of an existing hall was a precursor of the Festival Theatre, Stratford.*



2

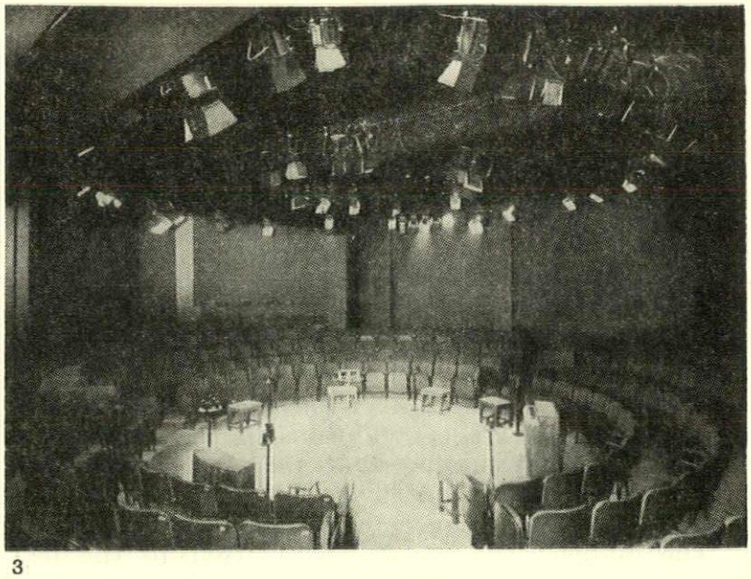
access to the dressing rooms and a small furniture or scene store. The inclusion of a normal raised stage at one end of the hall for lectures and other similar functions will permit ready access to the acting areas of either End or Corner staging. Wherever possible separate entries should be provided for the audience and the actors, but where this is not possible some provision must be made in the seating arrangement so that the inevitable late-comer may reach his seat without using a door allocated to the actors. As scenery is seldom used in these productions the normal fire-restrictions relative to the picture-frame stage do not apply, but the arrangement and fixing of the tiered seating must be confirmed with the local authority.

In the various forms of open stage illustrated here some suggestion at illusion has been sought, although it may be no more than an attempt to separate the real world of the audience from the illusionistic world of the actor by lighting the latter and blacking out the former. It will be appreciated that it is no easy task to prevent the illumination of the audience by reflected light from the acting area, particularly in an existing hall where wall and ceiling surfaces are probably of a light character. In new buildings erected specifically for theatrical purposes every attempt should be made to ensure that these surfaces are non-reflective, and preferably unobtrusive both as to their form and decoration. Whilst dark tones are preferable a sombre note is neither necessary nor desirable; dark maroon and similar colours have proved suitable and the use of broken surfaces could well provide the necessary light trap. The appearance of the actual hall should not however be too clinical, and some degree of theatrical atmosphere must be conveyed, possibly by the use of variable coloured light. Exciting effects of light and decor should however be reserved for foyers and refreshment rooms where the patrons can be encouraged to gather before and after the performance.

For forms 1 and 2 the stage light fittings should be placed at high level so that their beams fall at an angle of from 45°–60° and do not intrude on the vision of the audience. For this purpose provision should be made in multi-purpose halls for supporting temporary units of stage lighting high up at any point on the side walls of the hall, where they can be connected to plugs wired to the switch-board. The position of this board must be planned to permit observation of all parts of the hall. In addition it should be possible to hang further light units above whichever part of the hall is to form the acting area. These could conveniently be supported, together with a loudspeaker, in a hanging fitting which might be designed to act as a sounding-board to reinforce the actors' voices for the benefit of the audience seated directly behind them. A similar fitting should also be incorporated in new theatres, and to simplify maintenance it would be advisable to arrange this so that it may be raised and lowered. Access should also be provided to the light units arranged around the circumference of the auditorium in wall or ceiling so that adjustments may be made during a performance.

Whilst the short-time advantages which can accrue to drama from the occasional use of a multi-purpose

theatre in the round or central staging



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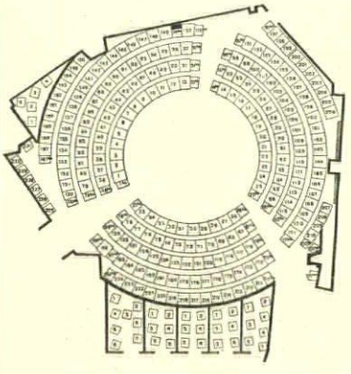
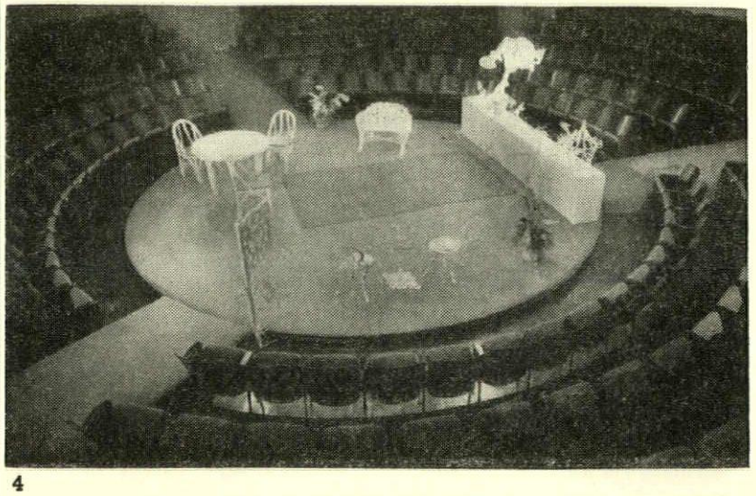


THEATRE EN ROND, PARIS, 1954
Architect: George Leblanc

3, *seating*, 305. *Circular acting area* 17 *ft.* 4 *in. diameter. Ceiling, black; walls, dark red; chairs, red upholstery; carpet, deep grey. Lighting units are suspended in full view of the audience, but the light beams are masked by shields attached to each spotlight. Individual box for orchestra and five boxes for audience.*



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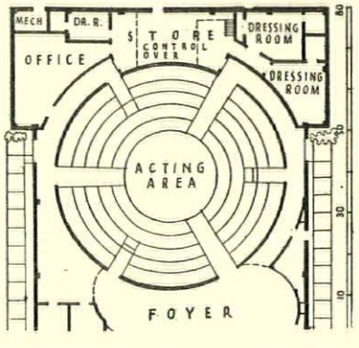
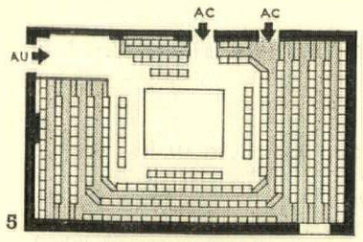


HOUSTON, PLAYHOUSE, 1951
Architect: B. J. Greenwood

4, *seating* 306. *Overall diameter of hall* 54 *ft. Stage diameter* 22 *ft.* 3 *in. Seats are painted black with dark red upholstery. Interior of acting area, charcoal; walls and ceiling, black. The circular stage, slightly raised above the floor of the first row of seats, houses a turntable.*



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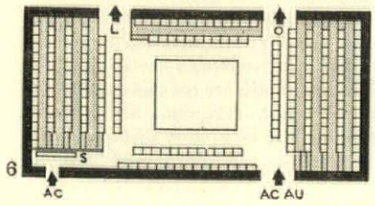

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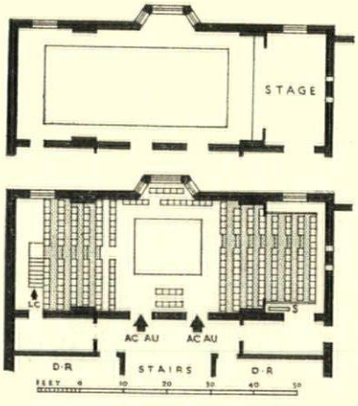
5, Studio Theatre adaptation of Theatre Centre, Birmingham, for the tour of Phaedre.
6, Library Theatre, Scarborough.
7, Studio Theatre adaptation of Vaughan College Hall for Phaedre; above, the orthodox arrangement; below, theatre in the round.



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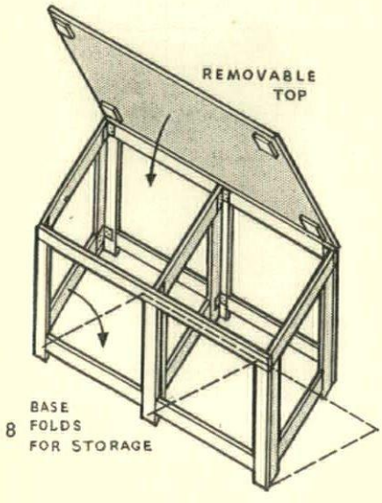
8, detail of the rostrum.
9, Studio Theatre: unloading units from the lorry; 10, *unassembled units, including rostra bases, a rostrum top and safety rails;* 11-14, *the rostra being assembled.*
15, the production of Phaedre at Vaughan College, Leicester.



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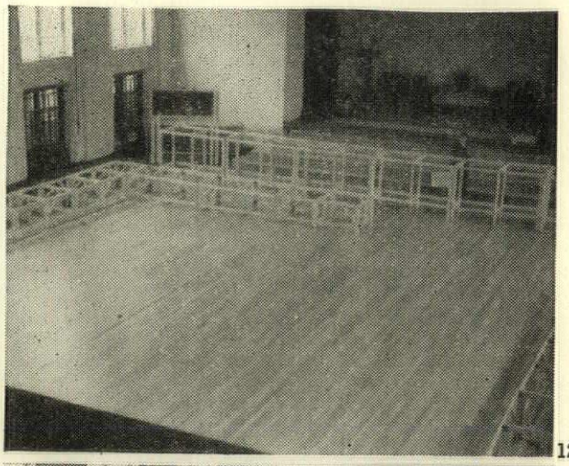

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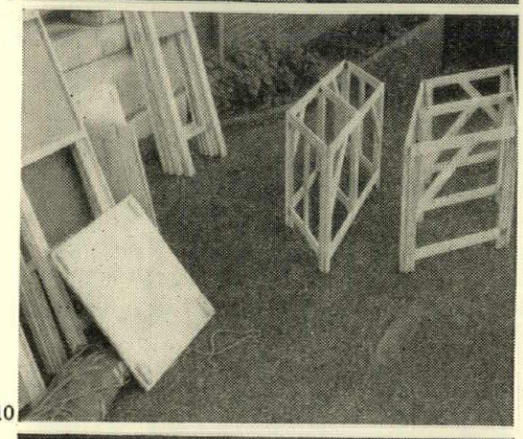

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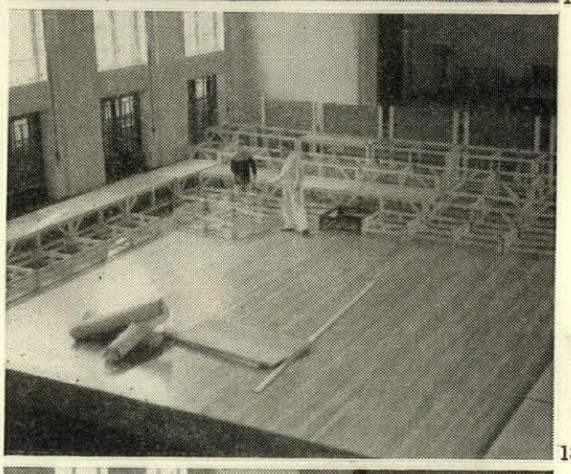

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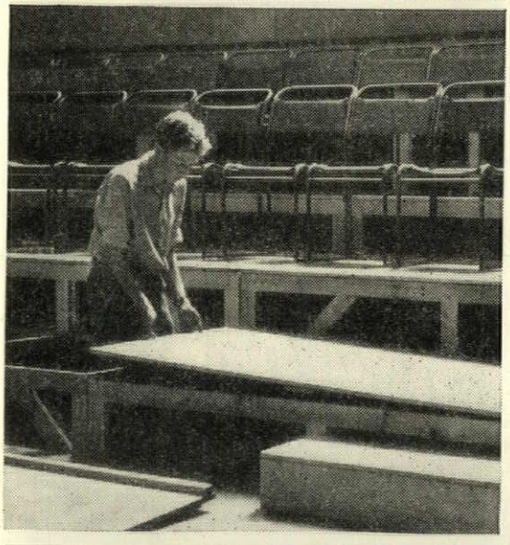

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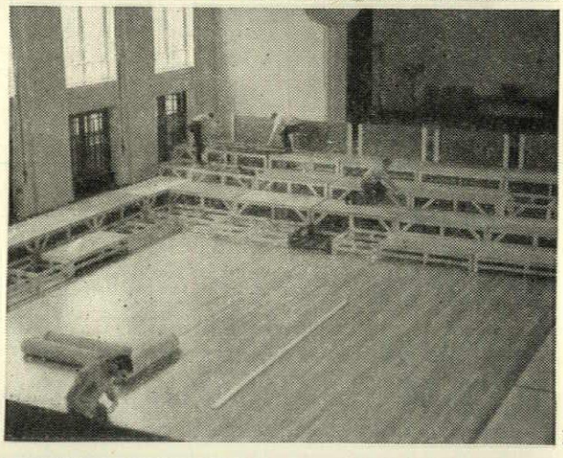

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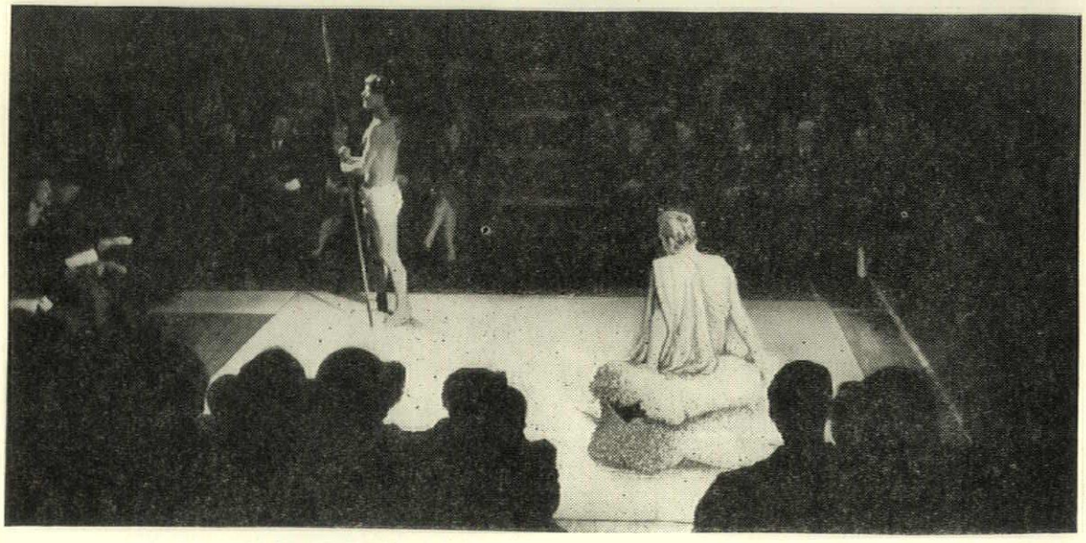


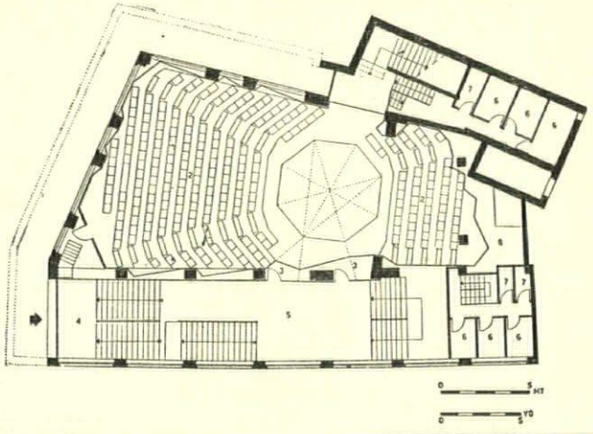
15

theatre in the round or central staging



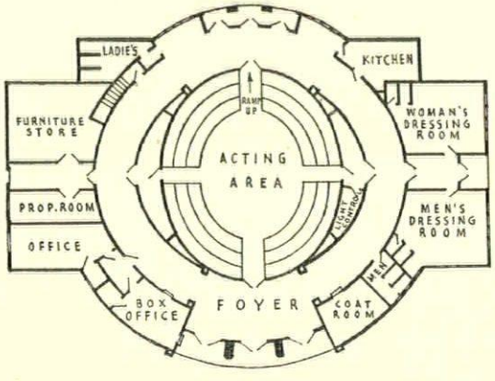
TEATRO SANT' ERASMO, MILAN, 1953
Architect: Carlo de Carli

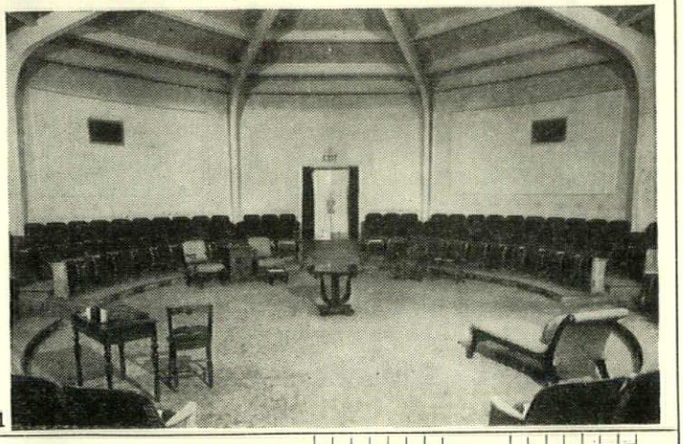
16, *Seating 250. An example showing the arrangement of seating in two blocks on opposite sides of the acting area. Two curtained entrances for actors and scenic items on the other two sides, with balconies above as lighting booths. Further stage lighting units and a loud speaker are concealed above the white acoustic ceiling. Walls are red and upholstery a dark blue velvet. Octagonal acting area 18 ft. 9 in. across; maximum distance from acting area to rear seat approximately 31 ft.*

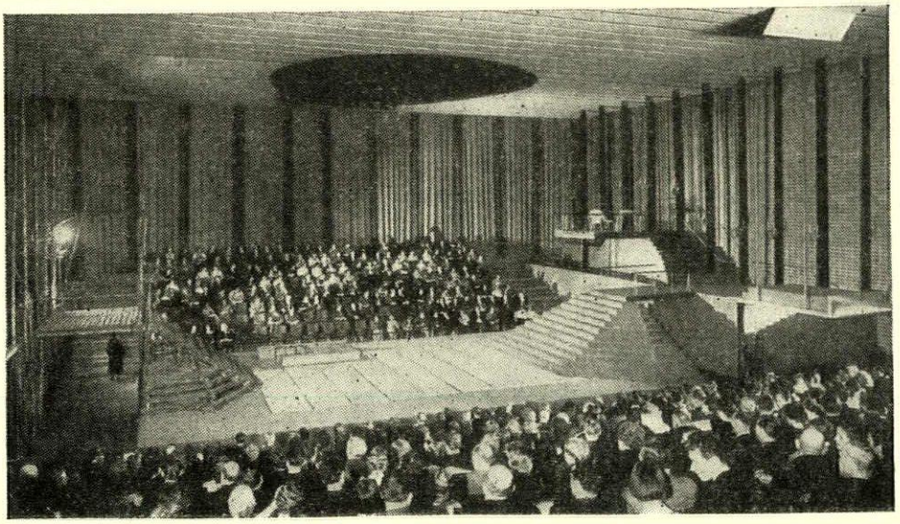


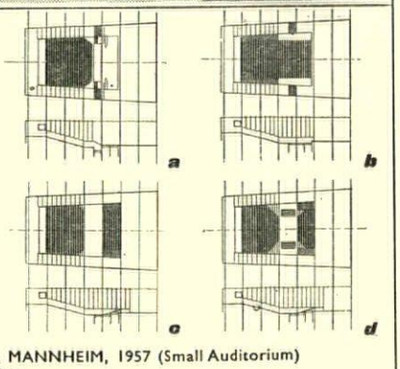
PENTHOUSE THEATRE,
WASHINGTON, 1940
Architects: Professor Glen Hughes and Carl F. Gould

17, *Oval acting area with three rows of seats.*









NATIONAL THEATRE, MANNHEIM, 1957 (Small Auditorium)
Architect: Gerhard Weber

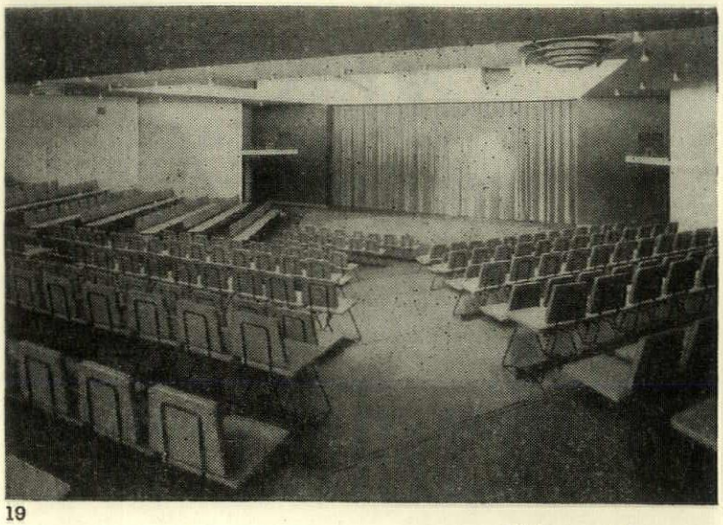
18, *seating 680. Central staging with the seating arranged in two blocks on opposite sides of the rectangular stage area. It is designed as a flexible theatre, varying from a proscenium stage with or without a fore-stage and seating some 606 people; a lecture or concert hall seating 775-871, or a theatre in the round seating 680.*

hall are of obvious importance in enabling touring companies to bring drama to those towns and villages unable to support a live theatre, it is also necessary to consider the long-term policy of providing permanent homes for drama to replace those which have fallen into decay or been deliberately demolished for their site value. Many towns and cities may well be unable to raise the £2–300,000 necessary to provide a minimum fully-equipped orthodox civic theatre, but they should be able to provide for the more economic open-stage theatre which dispenses with the costly stage volume, large scene stores and workshops required for a scenic stage. Furthermore if the cost of new building is still too great many old halls and chapels can easily be converted for open-stage productions where an orthodox proscenium stage would be an impossibility. However whether a permanent theatre is provided by converting existing premises or by new building most of the considerations outlined above will apply, the main difference being that the tiered seating may now be permanent; unless the intention is to provide a flexible theatre where the seating and acting area may be regrouped for the varying purposes of each individual production.

Where the provision of a new civic theatre capable of presenting any form of production is under consideration one advantage deriving from the new forms of staging is the possibility of erecting a theatre by degrees. If the auditorium is designed for use with open staging—preferably End staging as the sight lines are similar to those required for a scenic stage—the building can be brought into operation and the company can begin to establish itself and accumulate revenue. Then, when it becomes convenient, a scenic stage may be added to the existing auditorium beyond the End stage, which should be demountable. It is no part of this essay to suggest that scenic illusion has no part to play in the future of the drama, and although the open stage can bring new life to drama and acting, future theatres should make some provision for the necessary equipment required by the scenic stage, but this should not be allowed to dominate the scheme as it has done in the past. It is certainly essential that plays which depended upon scenic realism for their original portrayal must be capable of being performed in revival under their correct conditions.

It has already been suggested that a return to the dimensions and intimacy of our earlier theatres would be ideal; indeed where theatres type 1 and 2 are concerned the distance to the farthest member of the audience cannot be great as the actor's voice must be heard as well behind him as before. It is claimed that the main advantage of these forms over the orthodox theatre is that a large audience can be accommodated much closer to the actor than is otherwise possible, but it must be appreciated that, although they will be able to see more clearly, they may well be unable to hear as well as those members of the audience who, although seated farther away, will yet receive the direct sound from an actor on an End stage. These distances can be reduced by the use of circles, but these must not resemble the huge shelves of contemporary theatres and cinemas which split the audience into differing sections; wherever

end staging



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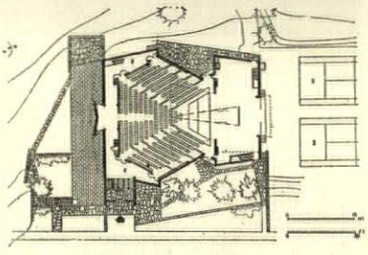
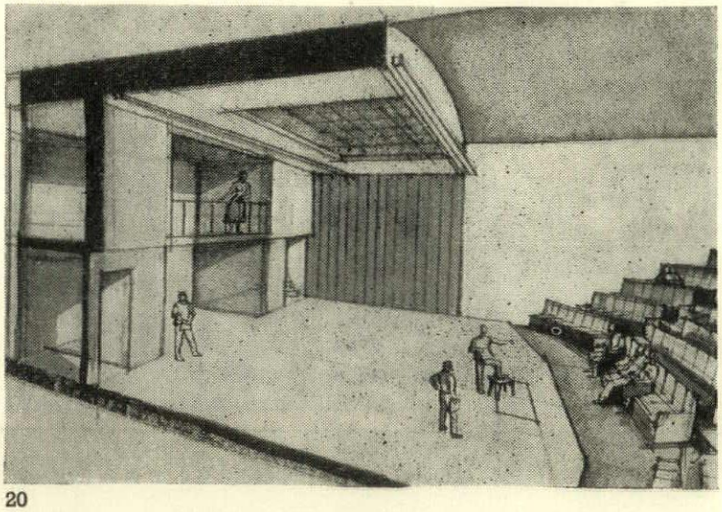


SARAH LAWRENCE THEATRE, BRONXVILLE, N.Y., 1952
Architect: Marcel Breuer

19, *seating* 500. *Three-sided end stage arranged in front of proscenium opening. The open stage is in two sections removable to provide orchestra well or additional seating area. This theatre illustrates the relationship between the seating arrangements of end staging and the picture-frame stage.*



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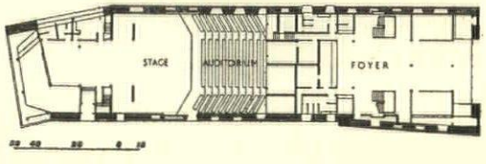
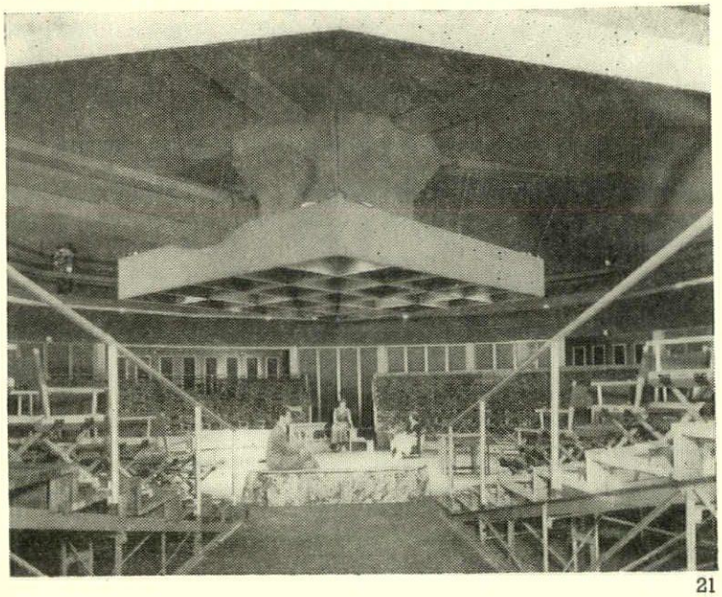
MERMAID THEATRE, PUDDLE DOCK, LONDON
Architect: Elidir Davies

20, *seating* 500. *End stage facing one tier of seating of* 19 *rows, in a rectangular auditorium conditioned by the adaptation of the remaining walls of a bombed warehouse. Stage raised* 9 *in. above level of lowest seat floor;* 48 *ft. wide by* 28 *ft. deep, with additional depth up to* 70 *ft. Rear row of seats* 65 *ft. from stage.*



flexible theatre



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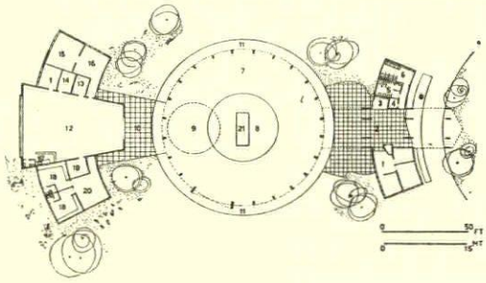
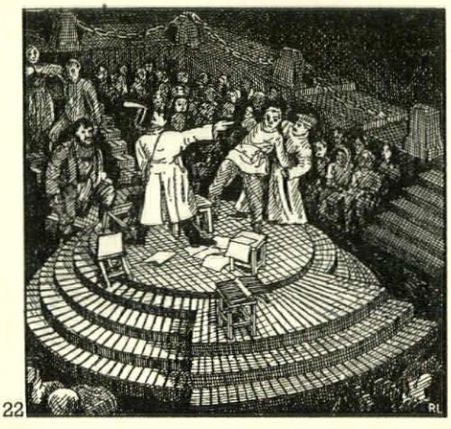
RING THEATRE, MIAMI, 1950
Architects: Robert Murray Little and Associates



21, *seating* 400-900. *Diameter* 100 *ft. A flexible theatre, permitting productions in the round, three-sided platform staging and end staging by movement of scaffold units of seating tiers. A revolving stage is included, and a lighting grille and ventilator is suspended over the central acting area.*



22

REALISTIC THEATRE, MOSCOW

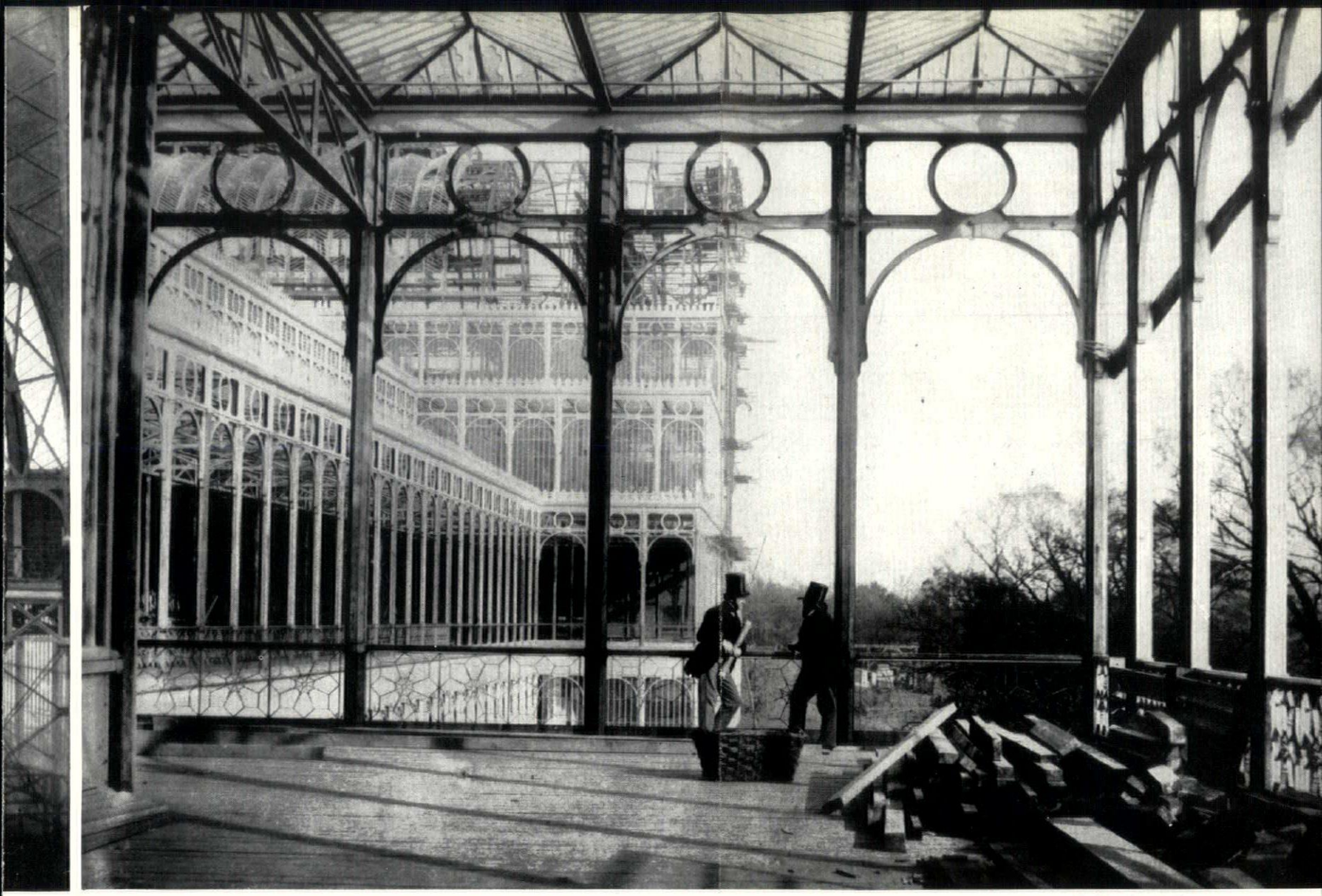
22, *Here shown arranged by Okhlopkov as a theatre in the round for the production of 'Mother.'*

possible the single slope of seating is preferable for unifying the audience and actor. In the Festival Theatre, Stratford, Canada, the maximum distance from stage to rear seats is 70 ft., and by the use of a gallery it is possible to accommodate over 2,000 persons. This is, however, most certainly a maximum, and in the average theatre it would probably be best to limit the size of the building so that it is possible to use intimate vocal effects even under the extreme conditions of central or three-sided productions. The average provincial theatre will most certainly be unable to draw on an audience comparable to that which the Stratford theatre enjoys in its unique theatrical situation in Canada, and their more limited numbers will—in most instances—be adequately accommodated in a theatre seating from 500–700.

If this suggests some form of sponsorship to provide financial support for the venture—and today this is almost a foregone conclusion whatever form of theatre is concerned—then the immediate financial aid required to float the open-stage enterprise will not be so great as would be required for a scenic theatre. Today the economic quality of the open-stage is likely to prove a saving factor in the life of the drama. Theatre is needed whatever the conventions it may assume, and there is a wide audience, particularly among the young who are not yet inhibited by past conventions, ready and willing to accept any theatrical convention that is offered.

Unfortunately the attitude of far too many members of the theatrical profession, who should be energetically exploring every possible method of presenting their art to the public, is only too well summed up by the curt and disparaging comment of one theatrical critic who dismissed Theatre in the Round as theatre on the cheap. To those others who are not too hidebound to see the wider implications of theatrical history, drama can be seen to be as well served by the unadorned performance of the humble stroller on his market scaffold, as by the lavish and spectacular marvels of the renaissance court; to such the economic advantages of the Open stage, and the new challenge which it offers to dramatist, actor, audience and architect, are obvious.

The author would like to acknowledge his debt to Mr. Stephen Joseph, director of Studio Theatre Ltd. for allowing him to draw on his experience of open-stage productions.



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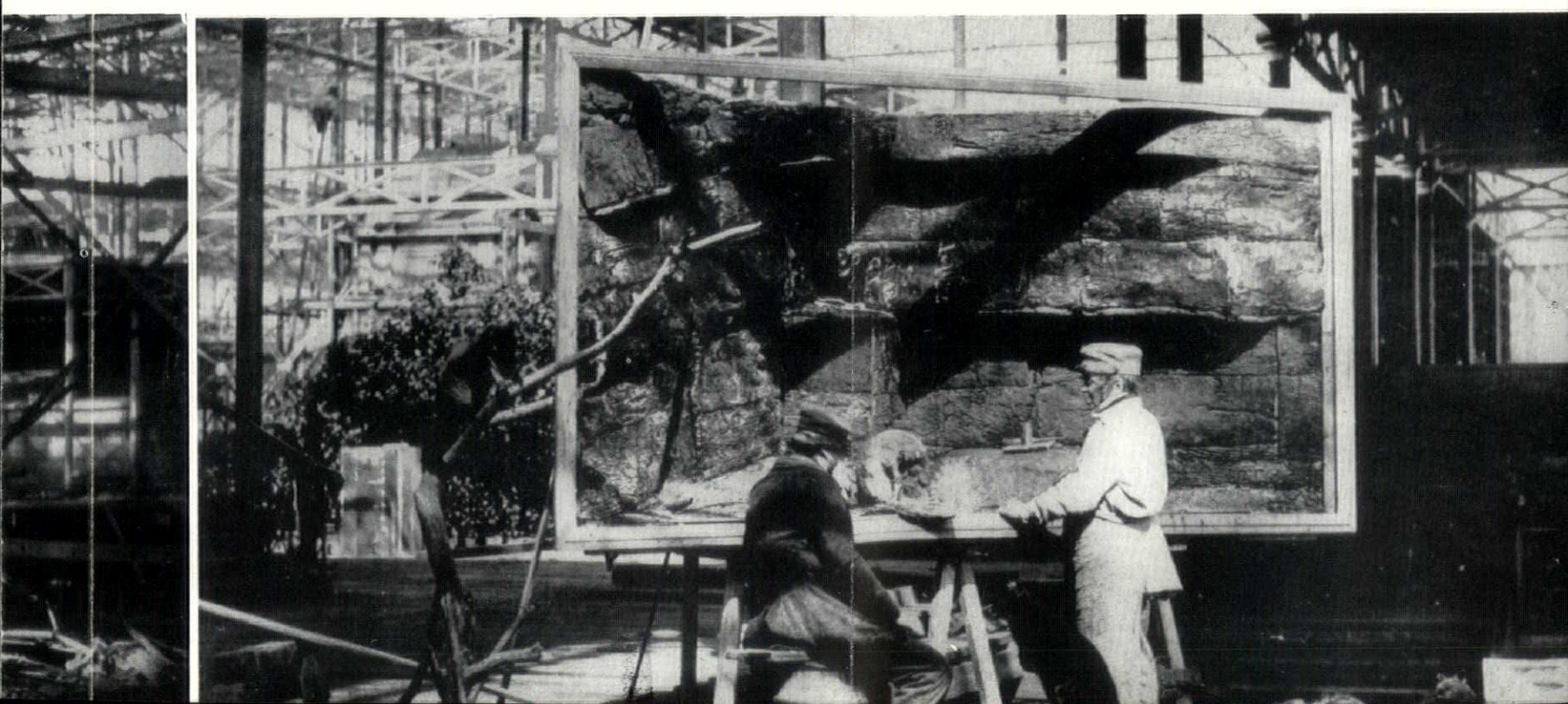
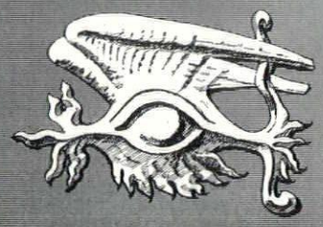
made in 1859, some impression of the sheer length of the building is given. ***4,*** the machinery used in building the first version of the Palace is well known from engravings, but that used at Sydenham was photographed by Delamotte along with the rest of the works—the engine seen here was used to drive the winch to haul up materials for the work proceeding on the great transept in ***2.***

5, one of the most baffling images from the heroic period of photography, with something of the hallucinatory 'double-take' quality of a surrealist painting by Dali or Magritte, this Delamotte views shows the assembly of one of the dioramas for the 'Aquarium' of the Crystal Palace—hence the exotic wild life (stuffed) in the right foreground.



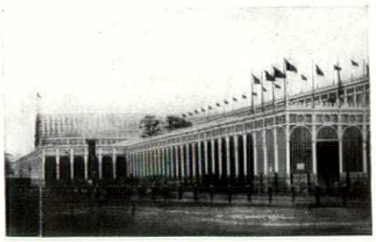
3





the exploring eye

Hitherto unpublished photographs by Philip H. Delamotte record in every detail the re-erection on Sydenham Hill of the world's first demountable structure, the Crystal Palace. It is always accounted among that building's major virtues that Joseph Paxton and his engineers, Fox and Henderson, devised a structure that was not only a pioneer of prefabrication, but detailed it so ingeniously that it could be erected at miraculous speed, and could also be demounted and erected elsewhere when the Great Exhibition of 1851 was over. The facts are well known—it was taken down in 1852 after standing in Hyde Park for fifteen months, and re-assembled, in spite of interruptions from the elements, in time to be re-opened by Queen Victoria in June, 1854, in a magnificent garden setting by Paxton on the south slopes of Sydenham Hill. The ruins of that setting remain*, but hardly a column or girder of the Palace and its ancillary structures survive, all destroyed in a fire—now as much part of London folk-lore as the Great Fire of 1666—in 1936.



Nicholas Henneman, Photographer on Paper to the Queen, made his views of the Crystal Palace in its original form to serve as illustrations to the personal copies of the Report on the Great Exhibition that were presented to the Commissioners. This view (one of the few that have been previously published) of the park side shows how unimportant, visually, was the vaulted transept of the original version, set back, on this face of the building, behind projecting arcading.

By that time it had been canonised as one of the sacred sites of the Modern Movement, and its image lives on in the history books. But it is a muddled image, since the building that went up at Sydenham was not the building that came down in Hyde Park. Most significantly, it now had a half-cylindrical glass vault over the main vessel, carried on metal arches, whereas the original had a flat roof to the nave, and a vault (to clear Colonel Sibthorp's notorious elm) on the transept only, carried on wooden arches. The photographic ikonography of the Crystal Palace has so far covered the completed second version almost exclusively, and the original is known chiefly through pre-photographic images, such as engravings, though a handful of paper prints exist.

However, the Gernsheim Collection of historical photographs contains in addition to views of the Palace as it stood in Hyde Park, taken by Nicholas Henneman for the Commissioners' reports on the Great Exhibition, an invaluable comprehensive photographic record, of the re-erection at Sydenham, made for the Crystal Palace Company by Philip H. Delamotte, Professor of Drawing at Kings College, and one of the pioneers of art photography.

Delamotte appears to have taken over a hundred and twenty altogether.

* And are the subject of an article to appear in the REVIEW shortly.



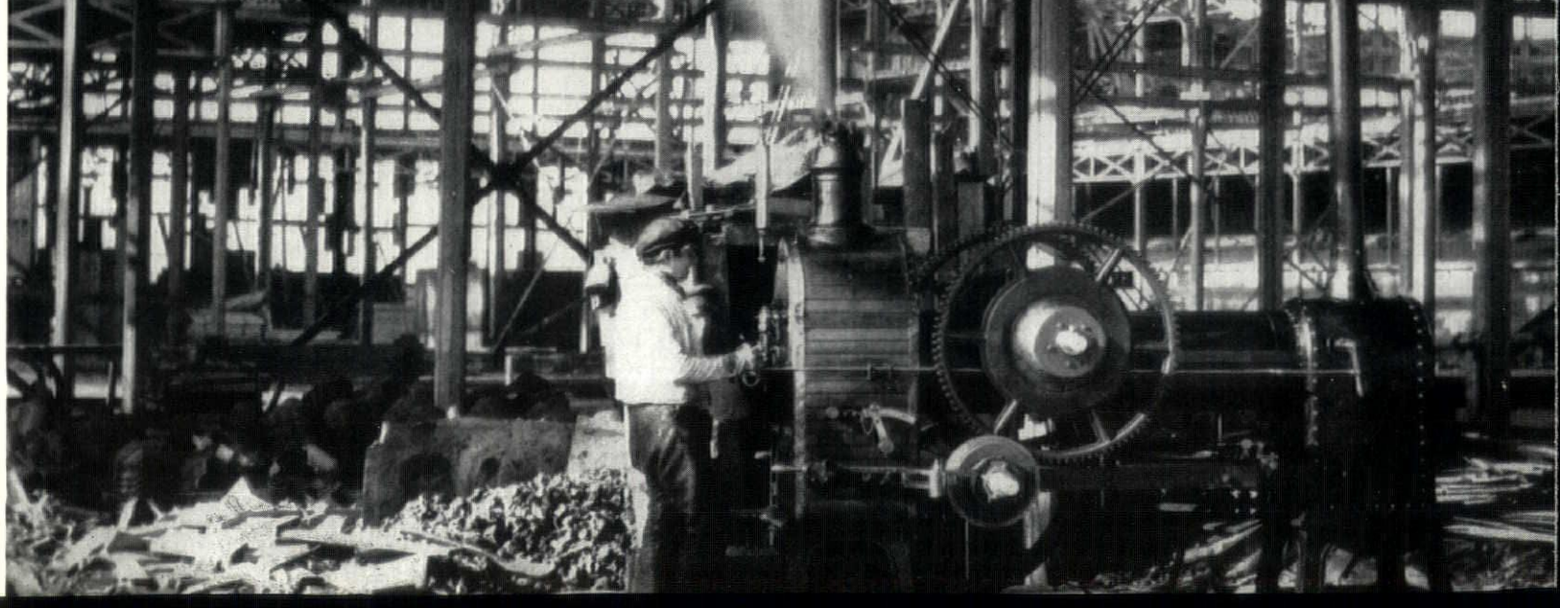
1, 2

1, with the adoption of glazed vaulting over both the main spaces, nave and transept, of the Crystal Palace, important structural changes were made. Where the vaults intersected, the joins could not be effected as in a groined vault of stone, and spandrel-plates, seen in the upper right of this view, had to be introduced. In addition, large lattice strainer-arches were set up in pairs along the vaults, and were grounded on the large circle-in-square castings seen here spanning the balcony.

2, the scale of the Crystal Palace was so vast even by the standards of the twentieth century that it can hardly be appreciated by those who never saw it for themselves. It is brought out well by this progress shot (note the glazing of the transept still in course of completion sets human figures again standard bay-structure with the whole was faced, and the ridged, green-house gla the roof-work.

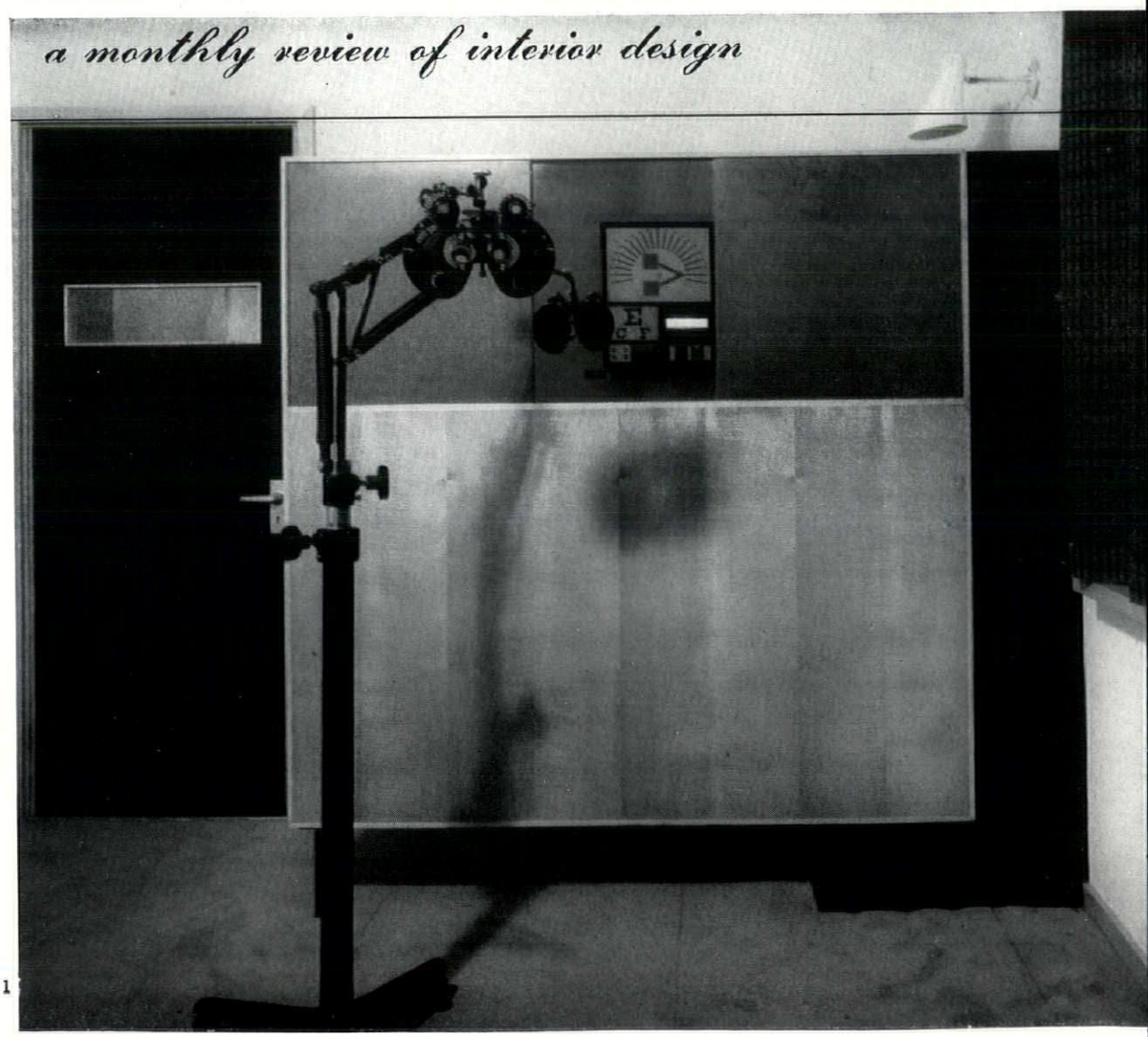
3, here, in a late Delamott

4, 5



ID

a monthly review of interior design



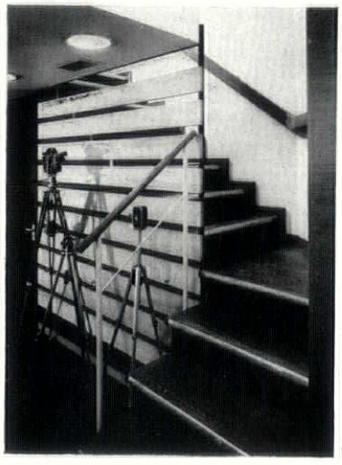
1

Showrooms in Bond Street *architects: Gordon and Ursula Bowyer*



2

These premises for Dollond and Aitchison have departments for the sale of photographic equipment and binoculars on the ground floor, with larger photographic equipment displayed in the basement and a small optical department on the first floor.
1, the optical test room.
2, the photographic department, with display fittings of teak and weathered sycamore, lined with white plastic.
3, the staircase has mild steel strings with hardwood treads faced with cork. Risers are of stove enamelled metal and the balustrade is formed from mild steel rods welded to the strings.



3

Shop in Knightsbridge

designers: Conran Design Group



4

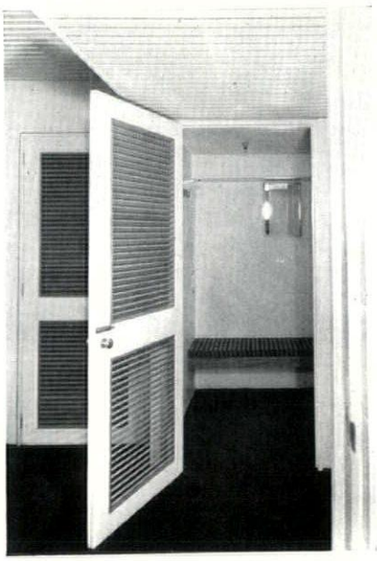
The clients required a simple, unobtrusive design which would not conflict with the clothes on display, and a large number of storage and display units. This has been achieved by a combination of white walls, grey carpet, natural timbers and muted leather colours.

4, the shop front has an unusually low transom of Honduras mahogany.

5, louvred timber doors to the fitting rooms under the mezzanine.

6, the display fitting on the mezzanine and above it the pine slats of the false ceiling.

7, the staircase leading to the mezzanine display area and offices has teak



5

treads, a Columbian pine string and steel brackets.

8, on the facing page , the central counter for jewellery display is of rosewood with brass trim and has a leather top. It is lit by a cluster of 35 lamps with the lamp-holders encased in brass sleeves.



6



7

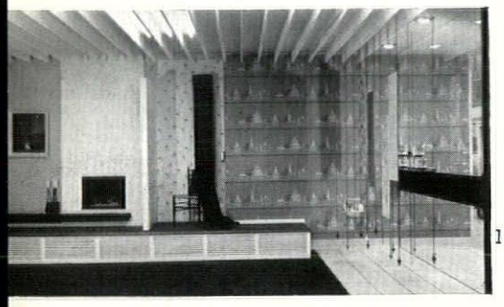




9

Showrooms in Nottingham

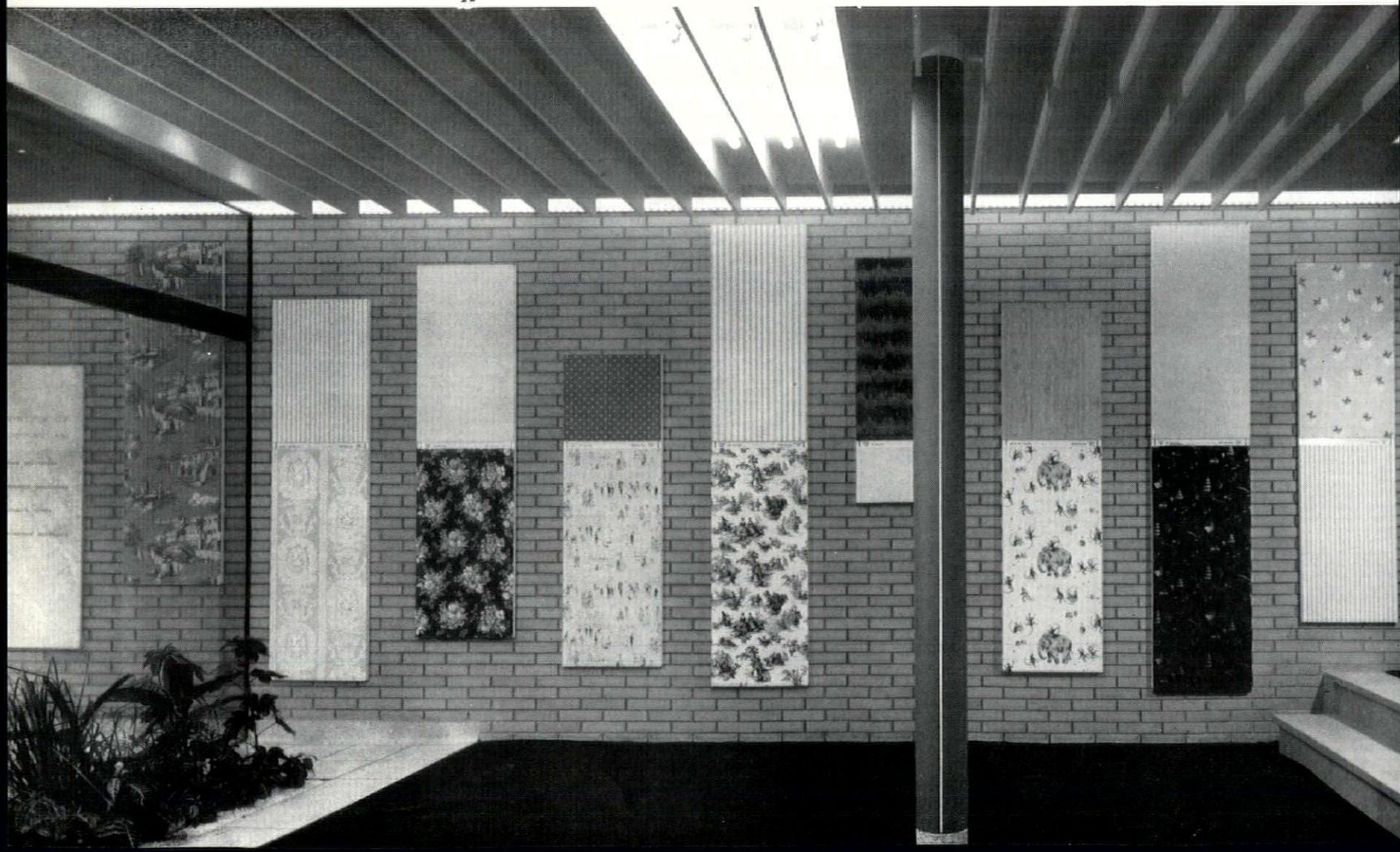
architects: James Cubitt and Partners



10

This L-shaped showroom, with a deeply recessed shop front, is in part of a Georgian terrace.
9, the shop front of galvanized steel in a combination of flat and angle sections, with the trade counter on the right and showroom on the left.
10, the display wall, intended to be seen from the street, with wallpaper panels suspended on weighted chains.
11, the display area, with wallpaper panels, showing the recessed lighting and the steps leading to the sales area at the back of the shop.

11



DR

design review

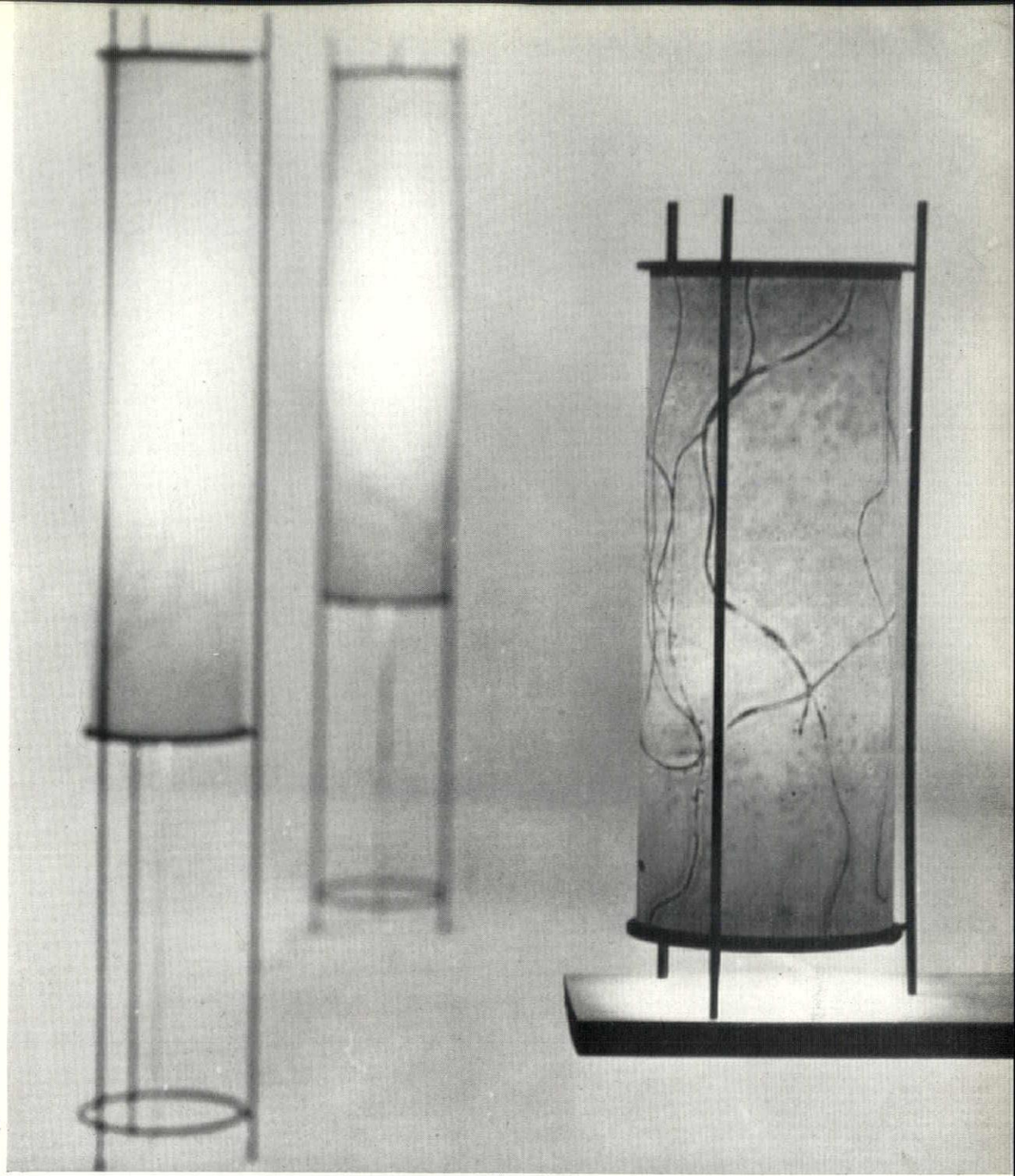
Danish light cylinder

1, *the table standard which Danasco are importing is a new range of light fittings from Denmark designed by Lief Michaelsen.*

The shade is a paper cylinder 20 *in. high and* 6½ *in. in diameter capable of taking at least a* 100*-watt bulb. The paper is basically natural colour and is screen printed over blots and thin threads. After printing the threads are removed and a shadowy abstract pattern reminiscent of root forms remains. The pattern is slightly different on each shade giving the rare advantage of combining mass production and the individuality of craft work. A plastic finish makes the shade washable and fireproof. The final colours are white and muted versions of red, olive, purple and yellow.*

The cylinder fits into a delicate square section metal frame with a matt black rustproof finish.

The retail price of the table lamp is about £8. The range also includes three sizes of pendant fitting and the floor standard, No. 14*, dimly lurking in the background.*



1

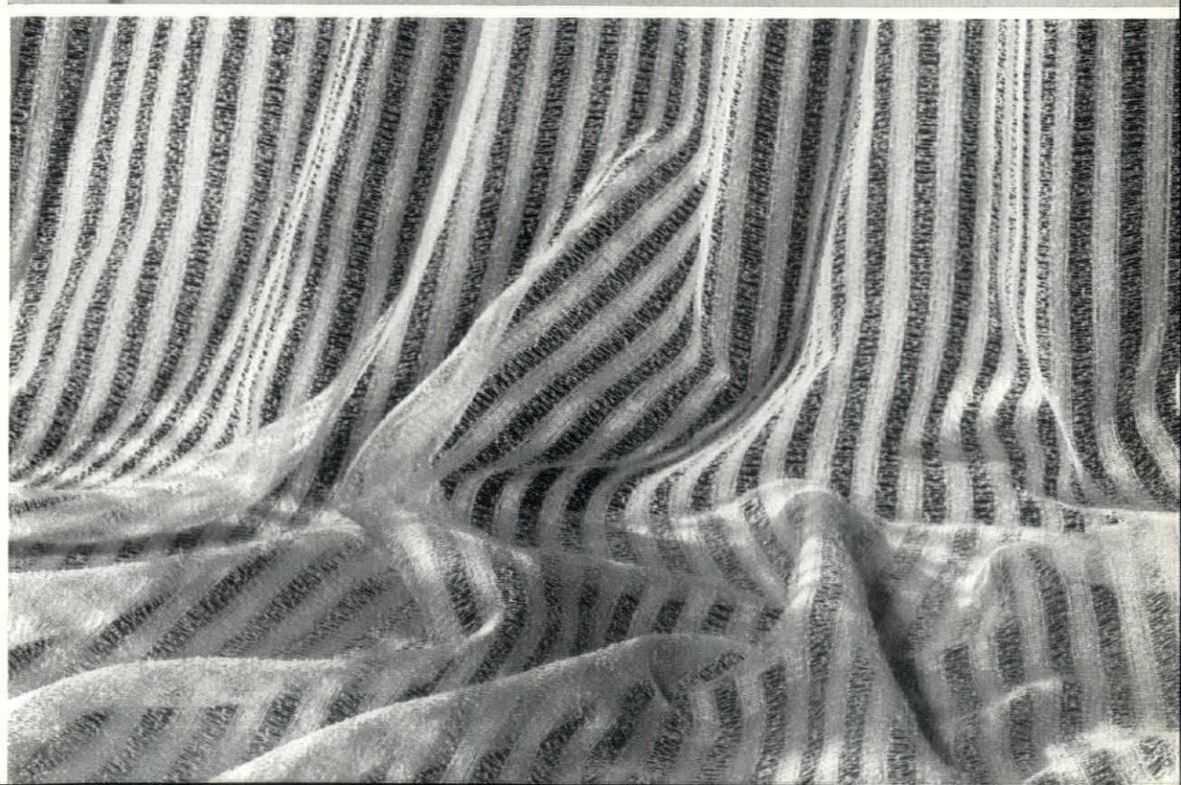
fibre glass fabric

2, *fibre glass fabric, which has been used extensively for 'glass curtains' in America for many years, is now on sale here. It is made by Vetrona Fabrics, a Tootal subsidiary, in some of the North of England cotton mills on modified looms.*

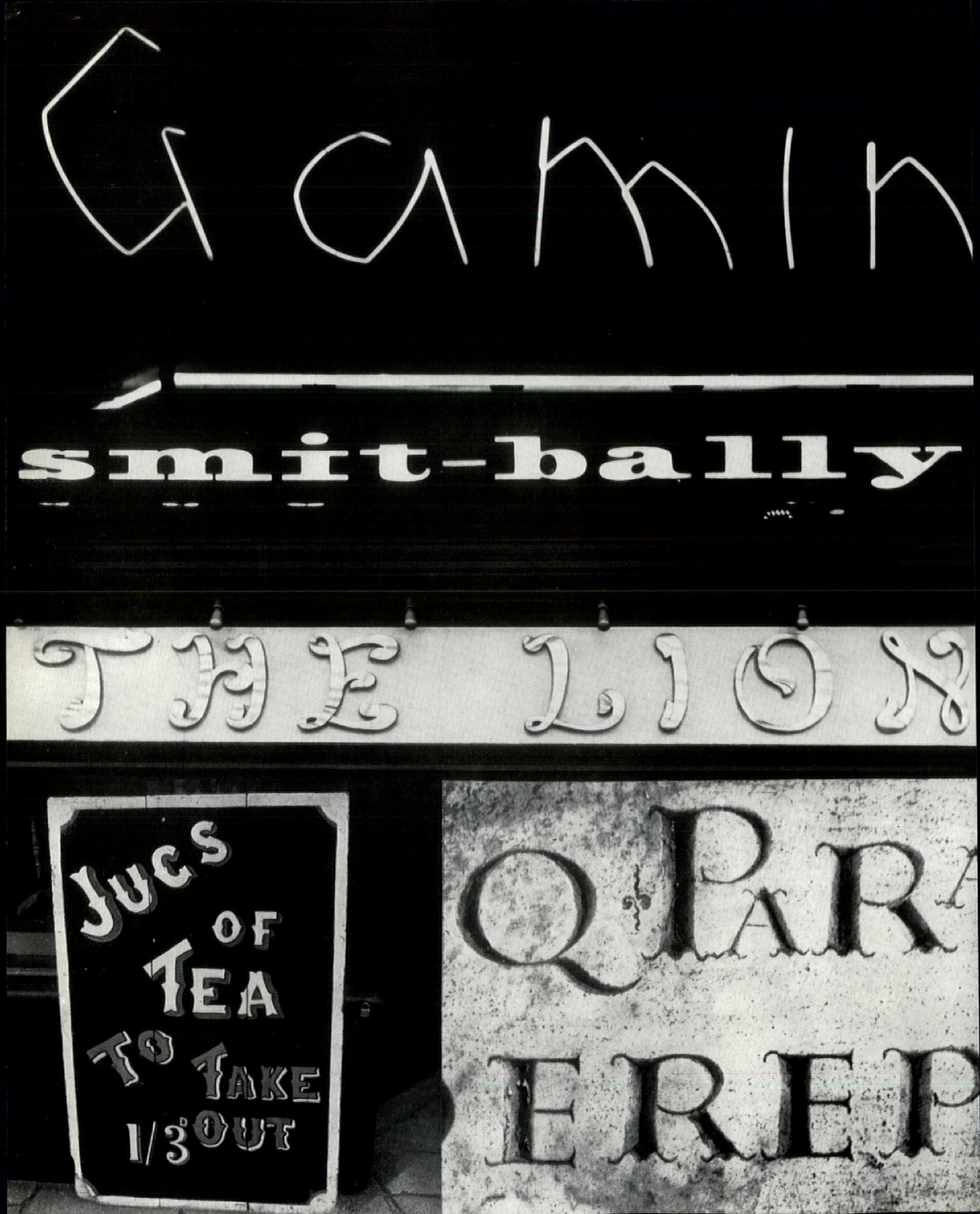
To make the continuous filaments glass marbles are fed into a platinum furnace and melted electrically. The molten glass is drawn away in fibre form, and for the Vetrona yarns 204 *individual filaments are gathered together and treated with size to form a single strand. After weaving, the loom state cloth is brittle and unyielding and must be 'heat cleaned,' dyed or screen printed, and finally finished to protect the yarns and colours, and make the fabric pliable. The result is a fireproof, verminproof and fadeless fabric which the manufacturers claim will not shrink, sag or crease.*

Vetrona is made in a variety of weaves, textures and colours and is also printed. The quality of design in the patterned versions is not good enough, but the plain nets and bouclé yarn marquisettes have wonderful qualities of translucence.

The striped marquisette with bouclé yarn is 46 *in. wide, and the retail price is approximately* 22*s.* 6*d. per yard.*



2


Gamin
smit-bally
THE LION
JUGS OF TEA TO TAKE OUT
1/3
QUARTERED

Nicolete Gray

EXPRESSIONISM IN LETTERING

Varieties of intention and effect expressed in lettering ☞ 1, *from Nice,* 2, *from Brighton and* 4, *seen in Redcar, vividly suggest the invitation which they offer the reader. At the other end of the scale,* 5, *celebrates the triumph of the Church [Rome fourth century]; while* 2 *expresses the architectural idea of which it is part, echoing the horizontals of canopy and smart shop interior.*

A piece of lettering is not just an abstract design. The design is conditioned not only by the material from which it is made, and the purpose for which it is made, but also by the idea in the mind of the designer, which can never be purely formal because he must be aware at least of the meaning of the words which he is inscribing. In my general article of August, 1957, I reproduced examples to show how lettering is capable of being charged with imaginative content on the grand scale, but this same element has an immense gamut. It can range from the expression of a sense of objective reality (as in the Lindisfarne Gospels) to extreme subjective self-expression, or to that of the ephemeral, the commonplace, or finally it can exist in the almost purely functional, as in London Transport lettering in which function and design overwhelmingly predominate, but which has a dignity derived from a consciousness of fitness and clarity. In the opposite direction there is the lettering which sets out to make an impression on the reader. Such lettering can be intolerable, it may get at you against your will, but it certainly is not always so; it can be superb, 5. One is up against the difficulty that lettering which is predominantly expressionist is introducing something which does not correspond to aesthetic standards. A work can be very expressive and very effective without being good, and indeed while striking one as positively bad. For instance the sort of lettering which is repulsive itself but admirably expressive of the repulsive goods which it advertises, both of which clearly have their market and are by its standards highly successful in their purpose.

By what standard is it that we say that such lettering is bad? I find that there are three. First a standard of design; as a visual thing to be pleasing it must make at the least a pleasing pattern. The sort of lettering I have in mind, such as 6, gets its effect by some sort of distortion from the current normal, as does all expressionist lettering, good as well as bad. Norms have the great advantage that they have been worked out so that they do make reasonably satisfactory patterns. Innovation requires great skill; it is certainly lacking in 6. Secondly one demands sincerity; not necessarily very deep or very serious; for the vulgar, for instance, or the exuberant, provided it is whole-hearted, can undoubtedly be good in its way. Thirdly one must judge what is expressed; some things are not worth expressing, like timidity and smugness, both of which one sees a good deal; very many others express some half- or quarter-thought out idea, or a crudely exaggerated suggestion of a trivial one. Or, finally, though the idea in itself may be inoffensive it may be so through being inappropriate to its purpose or position, and one is back again at fitness, which is a criterion which applies to all lettering.

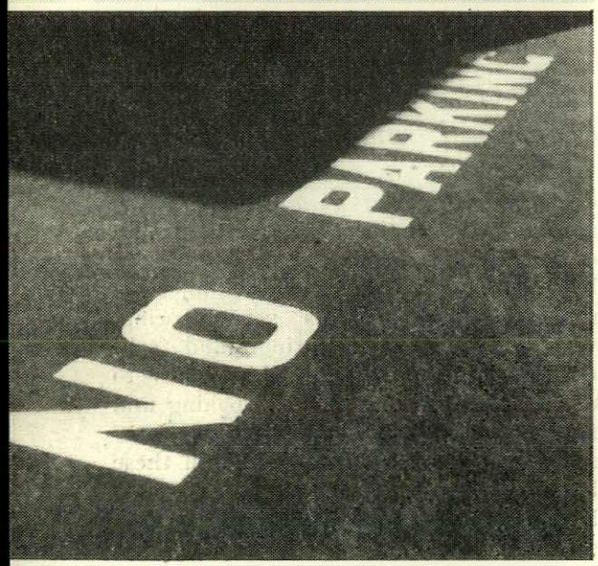
Having defined the limits of expressionism in lettering—and I would like to note that I have deliberately done this without reference to canons of good taste or of letter-formation and deformation, as such canons are most elusive if not meaningless—having thus decided on what grounds to exclude the bad I propose discussing examples which I find good. I want to discover the range of mood, and the means by which it is conveyed, and to discuss potentialities. You can start off by excluding two extremes; subjective self-expression, such as you associate with expressionist painting, and self-effacement, of the type which tries to eliminate the pause between looking and reading so that the looking is not consciously registered at all. Neither of these is normally desirable in architectural lettering. You might perhaps think that some public notices ought to come under the last heading; but when you come to consider examples you discover that these normally intend to convey their message with some sort of intonation, authoritarian as in *No Parking*, 7, or polite, as a foreigner recently pointed out to me, as usual in our *Please keep off the grass* notices. Or they are substantial physical objects like road signs and street name plaques, which cannot be eliminated.

To begin with the lowest charged examples that come to mind, I reproduce examples of Romans within a fairly small range of formal difference. In none of these do you feel that the designer has consciously intended to make his lettering express a definite idea (as for instance the designer at Temple Newsam intended to convey the spirit of his text), but all reflect his attitude to the job and the taste of his world. 8, reflects a great modesty and simplicity, also the unexpectedly tentative attitude of the lesser masters of the early Renaissance to the revolution against the Gothic in lettering. 9, of a century later in provincial England is far more brave and spacious, though

also very consciously classical in a world where a variety of bastard forms were the current mode, but also not quite secure. 10, from Peckwater Quad, Oxford, is entirely secure, the wide forms and pointed diagonal serifs of his time are native to the designer, who uses them spaciously to make a superbly grand inscription; one could of course continue the catalogue almost indefinitely. Mood is something which we all recognize in works of art, more easily perhaps in the abstract than in the representational.



6



7



8



9



10

Next come the examples where one feels the letterer would, if he were pressed, admit that he did wish to convey an idea and make an impression but probably never formulated as much to himself. It is the artless pride of Mr. Gibbons' work, 11, which makes it far better than competent, bored professional sign painting. In the same category is the unpretentious but loving epitaph of the Roman boy, 12. One should note, however, that both are rather well designed. Also I think to be classed with these is *The Lion*, 3. This must be a style of lettering chosen, perhaps from many others, out of a book. Its effect is gained from the curves and bows of the simulated material, a common Victorian (and Elizabethan) conceit. You can see why the landlord chose it; it is jovial and welcoming as befits a pub, and the letters have also a lion-like majesty while within the O waves the tail of the beast. It is impossible to find a modern example because there is not now a range of this sort of letter to choose from.

The Lion shows the two means most naturally used to make lettering expressive; the exaggeration or alteration of forms in a purely abstract way, in this case by curving all the lines, and the introduction of more or less realistic suggestions like the tail. In the latter there is scope for wit but it needs a very light touch. The nicest example that I know is *Waterproofers*, 13, in Piccadilly; a clever modern example is, 14, with its wing ideograph and italic flight, which are becoming almost a formula for air lines. The suggestion in *Greek Line*, 15, of Greek script through even-line and diagonal terminations is perhaps more subtle in idea but much less interesting in design. In this direction we very soon reach the limits defined in our second paragraph. The alternative method is very much more interesting and more repaying.

Examples of what were surely conscious attempts to express and to impress diverse ideas and feelings through lettering are shown 1, 4–7 and 13–16. 5, is a wholly new style conceived and accepted as an official expression of the church triumphant at the end of the fourth century. It was never effectively used after the disillusion of the first sack of Rome. On a more familiar level *Francaise et Anglaise*, 16, is a clear expression of the boulanger's idea of the difference between French and English, and the lay-out of *Jugs of Tea*, 4, is intended to suggest modest but friendly refreshment. In all these examples, as in *No Parking*, 7, the impression is made by purely abstract means. The existence in people's minds of current norms of familiar shape and proportion means that slight deviations are immediately significant and enable the designer to get an effect through very subtle means; through elongation, exaggeration of weight of line differences, unexpected tilting of horizontals; through differences in terminations, extra-neat, or swagger, or crudely blunt. These little things which are the irreducible symbolism of all abstract arts, are in lettering things which have an immediate and also perfectly popular connotation. There is nothing high-brow about most of these examples.

These effects are made out of letter formations. They are not however made necessarily out of letters designed for each particular occasion. It is the intention with which they are chosen and used which is quite as important. A sensitive use of a good standard letter can be quite as good if not better than an individual design which is an artist's job; unsuccessful attempts account for most of the worst lettering that one knows. Whereas *Cold Stores*, 17, made up probably of stock period letters is most expressive, the tight curled S's make you feel quite chilly, and the difference between *Beer Bay Tea Rooms*, 18, and *White Horse Hotel*, 20, give you a vivid impression of very different establishments, though the cast letters used in both cases are the same, actually rather mannered, design.

In all these categories of expressionism the architectural letter is at a disadvantage. It is at least semi-permanent and cannot indulge in the sort of vagaries which are amusing or moving in an advertisement or in a book or even a museum, but which would in a permanent form on our streets be intolerable. The real architectural opportunity for flamboyant expressionism is in the illuminated letter, but so far it has been used with little skill or daring; the most interesting experiments (see AR, July, 1958) have instead been in formal directions. 1 (and 18) is a suggestion of the sort of possibility that I have in mind, which offers immense scope for development. In another way however the architectural letter has unique potentiali-

[*continued on page* 276

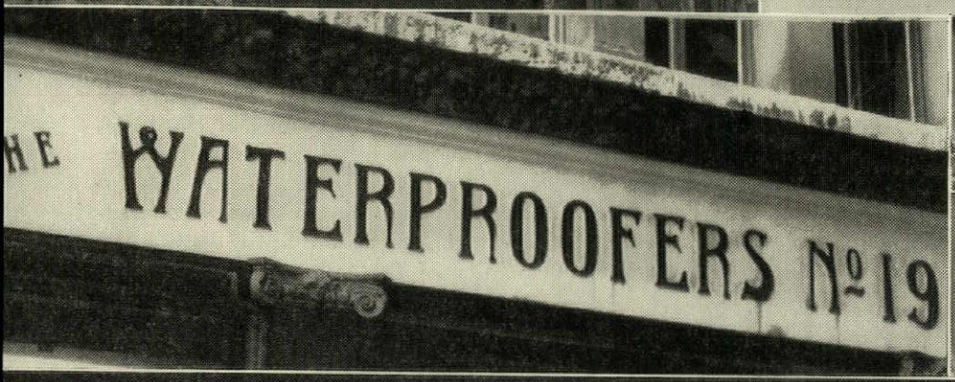
6, *outside limit to expressionism; French.*
7, *modern authoritarian lettering.*
8, *an early Renaissance inlaid inscription.*
9, *the Gate of Wisdom, Cambridge*, 1567.
10, *Christchurch, Oxford*, 1707.

11, *Westport, Ireland.*
12, *Roman modesty, first century* A.D.
13, *suggesting water-drip, Piccadilly*, 1902.
14, *suggesting flight, Bond Street.*
15, *recalling the classical, Piccadilly.*
16, *contrasting simulated surfaces, Paris.*
17, *Liverpool.*
18, *neon shop sign.*
19, 20, *contrasting use of the same stocky Victorian letter.*

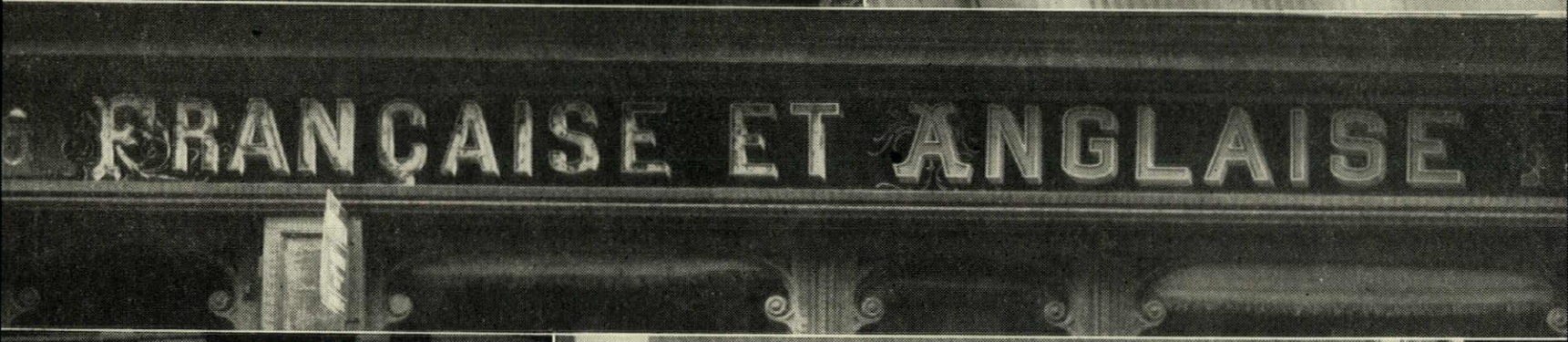
11	12
13	14
	15
16	
17	19
18	20


JOHN GIBBONS
JOINERY CONTRACTOR
AND UNDERTAKER
SHEET GLASS STOCKED AND CUT TO SIZES
CABINET MAKING EXECUTED ON THE PREMISES


GENIO
LVLIO·EMA
VIXIT·ANNIS XV
MESIBVS VI·DIEB·XX

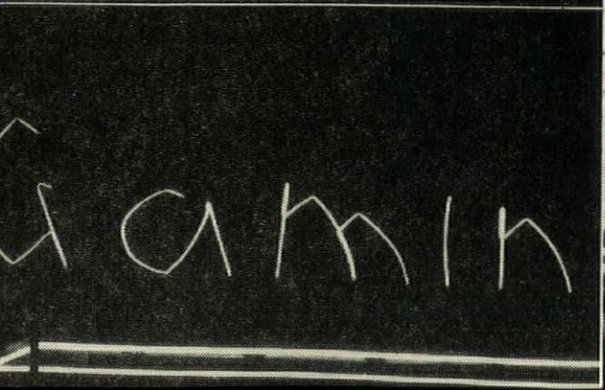

HE WATERPROOFERS Nº 19


PANAIR DO BRASI
GREEK LINE

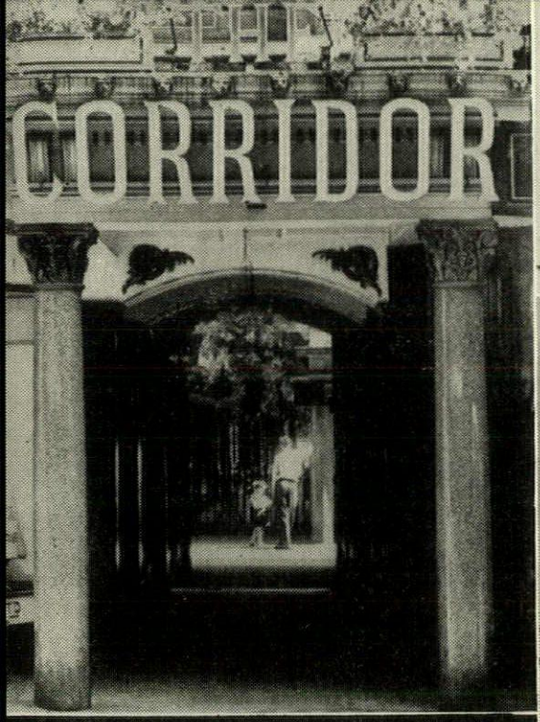

RANÇAISE ET ANGLAISE

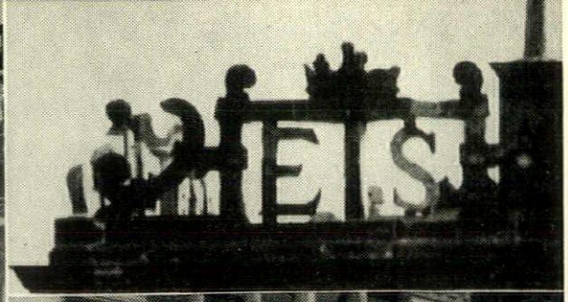

COLD
STORES


THE
BEER BAY TEA ROOMS
PLEASURE BOATS


Camin


WHITE HORSE
HOTEL



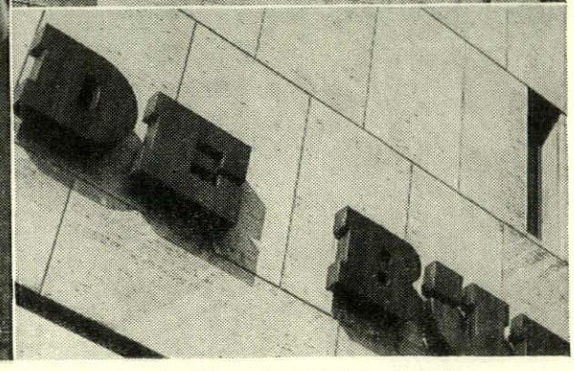












21 | 22
23 | 24
25 | 26
27

21–28, *lettering expressive of aspects of the buildings of which it forms part.*
21, *Bath.* 22, *Hardwick Hall.* 23, *Munich.* 24, *London, c.* 1902. 25, *London.* 26, *London.* 27, *Rotterdam.*

ties. It should of its nature be part of a whole. In fact it has often to be stuck on to some existing building; even so, even if the building is bad and unsympathetic the lettering will be better and more effective if it is adapted to the architectural motives in which it is involved. The most important lettering, the new lettering that we need to create is that which is conceived as part of the architecture to which it belongs, which from the expressionist point of view therefore epitomises the idea of the building which it should also embellish. In a very simple but complete way this is done at *the Corridor*, 21, at Bath. The entrance way is, I suppose, earlier than the lettering and not perhaps sympathetic in its proportions to the

continued from page 274]
designer of the latter; he has chosen to disregard the obvious procedure of engraving on the architrave. Instead he has chosen to epitomize not the opening but the passage. He was lucky of course in the letters of *Corridor* but as formed one after another with their squared curves and rounded section they echo the enclosed extended space beneath them. Their scale and spacing, the whole width of the architrave, but detached, with space again behind, is also masterly, contributing to the same idea. *Victoria Passage*, 23, is a contemporary example from Munich of a horizontal working out of the same theme. Searching for more monumental examples one notes that the classical style naturally permits of only a very limited range of expression, as of technical experiment. The interesting examples come in the transitional periods. The initials of Bess of Hardwick on the sky-line of Hardwick Hall, 22, the first of the English balustrade letters, correspond both to the grid of windows which is the outstanding characteristic of the house, and to the dominating personality of the builder. With the late nineteenth century however comes the beginning of the real opportunity; the practical demand for almost every building to be labelled, coinciding with an extremely fluid and experimental typographical tradition in lettering, set the architect a problem to which the easiest and most contemporary answer was expressionist lettering. The type used was that which seemed sympathetic to the style of architecture chosen; as for instance that of the Leicester Galleries; the Venetian style, obviously suited to an art gallery, is echoed by the compressed inscription, and by the nice piece of iron work over the door, 24. It is the mood which is echoed, by a purely contemporary letter, not a revived Venetian. Boultings mosaic inscription of 1903 is a much more integral and original example of the same idea, 25. Finally I give three modern examples; Olympia, where the rather grim building is enlivened by the rather grim great letters, 26; and two of very different scale, but both masterly, from Rotterdam, 2, and 27. In 27 the heavy square Egyptians echo the slit windows in the vast cube of the Byenkorf, while their mahogany colour and silkiness contrast with its texture. On a more modest scale the expanded forms and drawn out serifs of 2 repeat the lines of the shop interior behind it and emphasize its recession; both the lettering and the interior being forms created by artificial light.

The relation between this sort of lettering and the history of the modern Movement is a question which I propose to work out in another article.

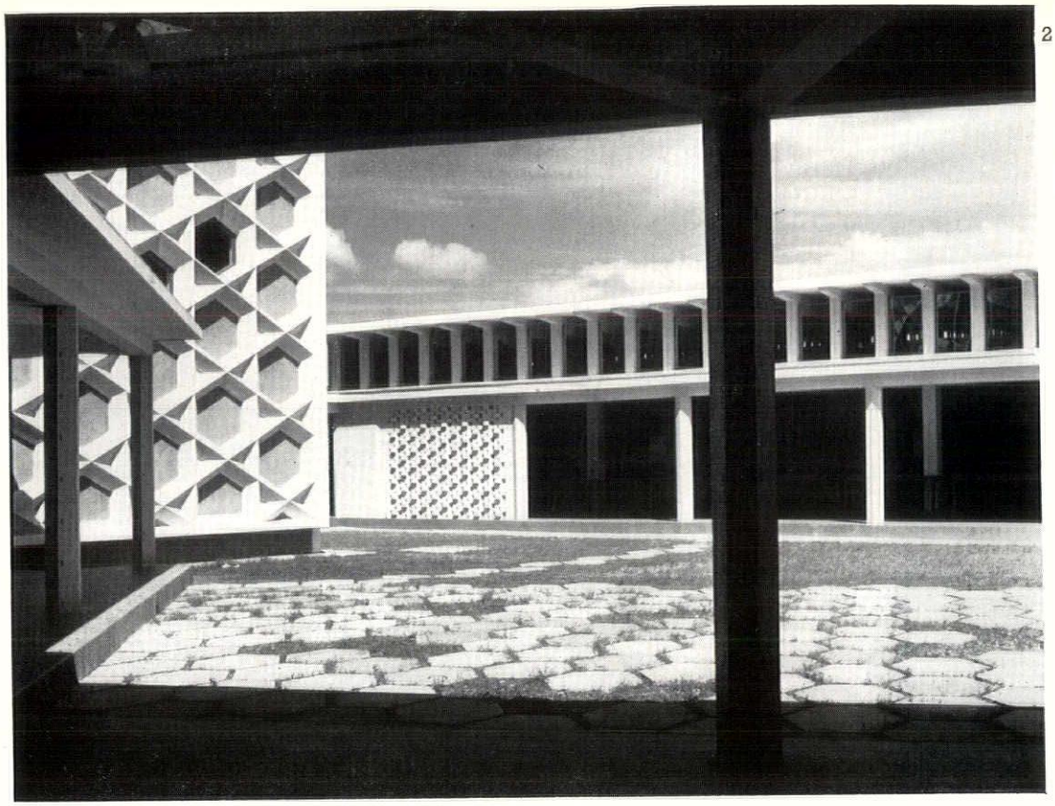
1, *the residential block and assembly hall from the sea.*



SEAMEN'S HOSTEL AT SINGAPORE

ARCHITECTS: W. W. WOOD SONS AND PARTNERS

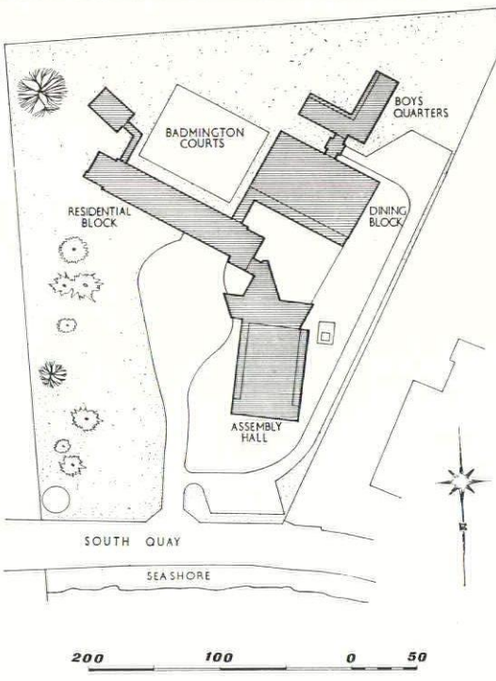
The club, which is sited on the foreshore close to the harbour and the centre of Singapore, provides accommodation for seamen in transit and recreational facilities for local seamen. The dining room seats two hundred and has separate kitchens for Chinese, Muslims and Hindus. Owing to the different structural and planning requirements, the units of the club were planned separately, with the residential block sited to obtain the maximum benefit from the prevailing winds, and to avoid the morning and evening sun. Facing bricks and glazed tiles have been used as external finishes to reduce maintenance costs;



2

Seamen's Hostel in Singapore

2, the dining block seen across the courtyard. The fixed metal windows to the clerestory stop 12 in. short of the ceiling for permanent ventilation.
3, the facade of the residential block, with internal reveals painted alternately terracotta and grey. External reveals are white, columns and the underside of cornices, daffodil yellow.



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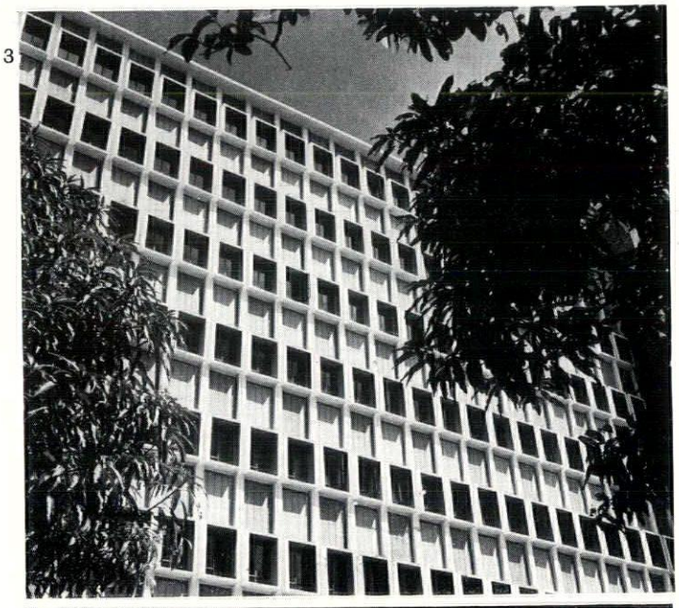
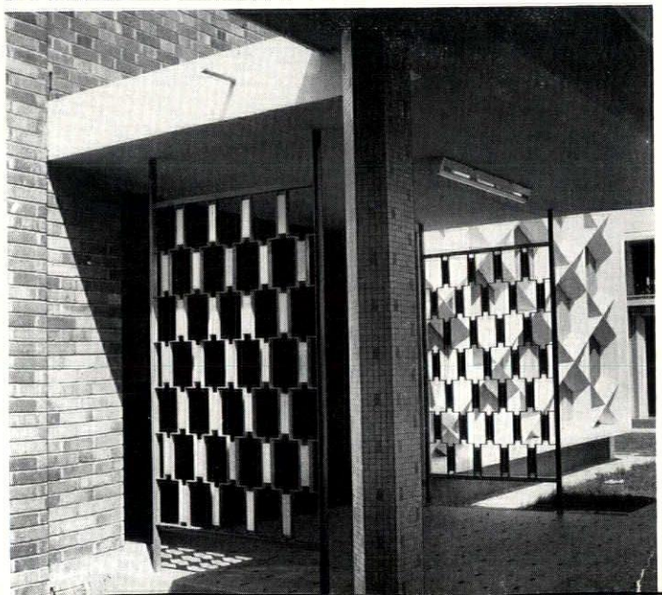


internally all plaster has been treated with a protective silicone solution. Local hardwood is used for the parquet flooring in the assembly hall and the first floor of the residential block. Bedroom floors are of asphalte tiles, all other floors are patterned mosaic. Flush doors and bedroom partitions are faced with laminated plastic. Room partitions on the third to seventh floors have timber louvres above a height of 7 feet to provide cross ventilation.

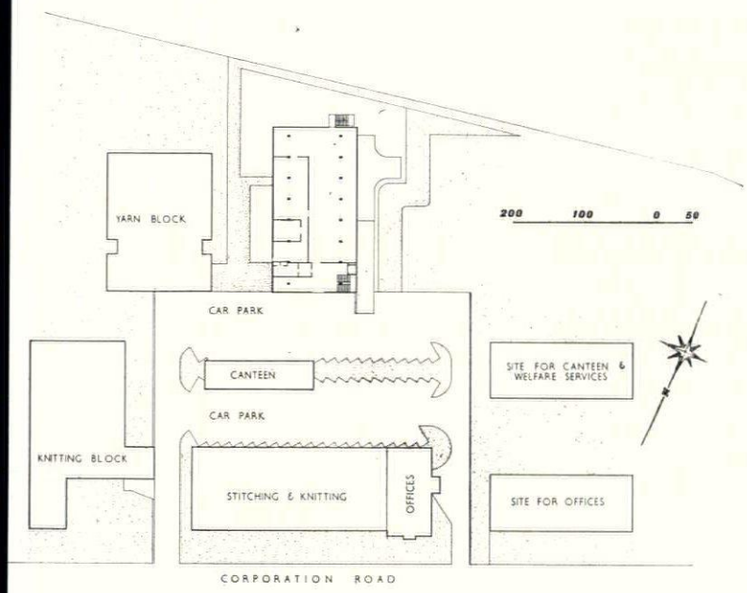
4

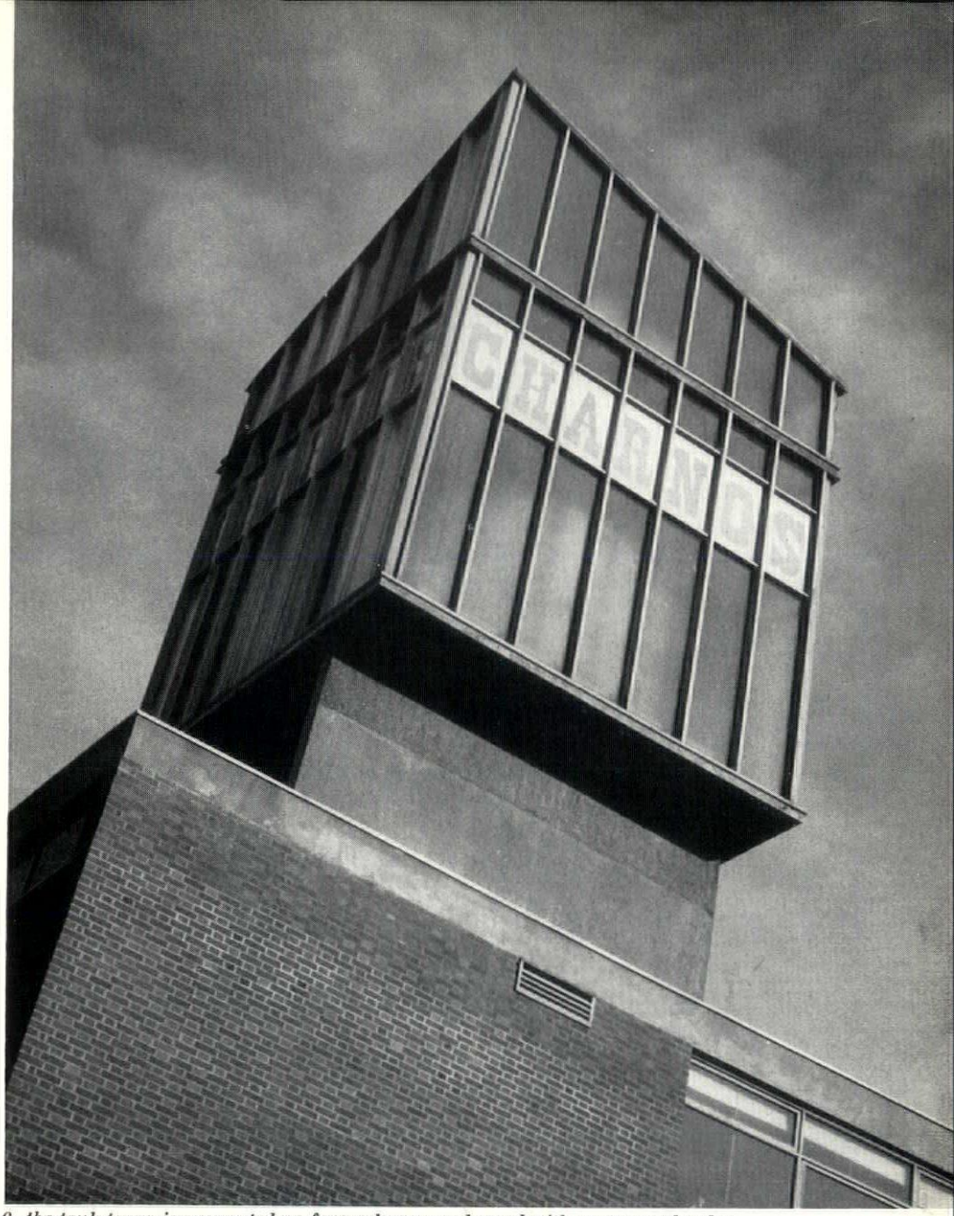




5

4, the link between the residential block and foyer. The screen has alternate solid panels of blue and yellow laminated plastic, with the mosaic column in the same colours.
5, the west front of the assembly hall.



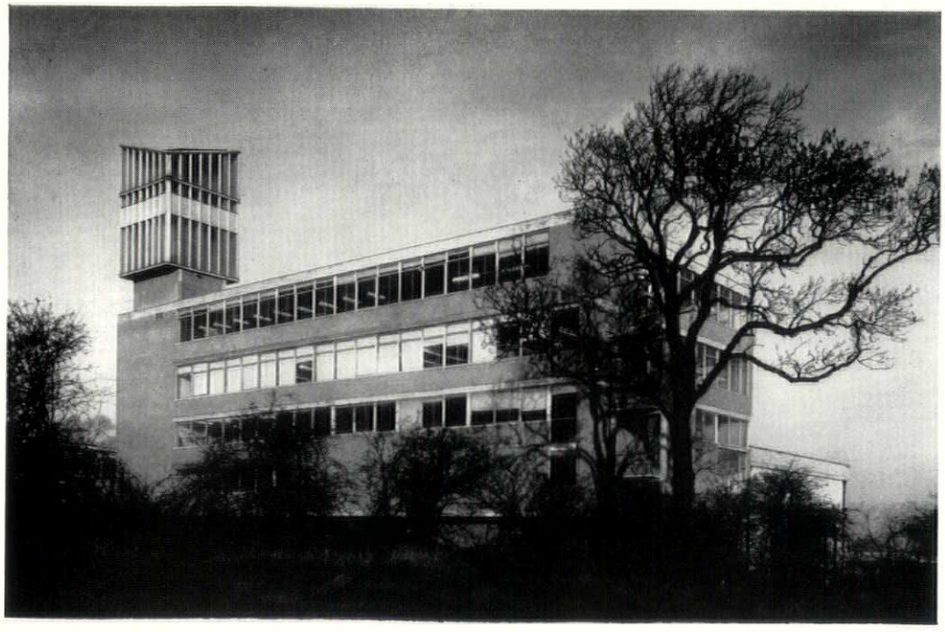


6, the tank tower is supported on four columns and cased with western red cedar.

FACTORY AT ILKESTON

ARCHITECTS: CLARKE HALL, SCORER AND BRIGHT

7, general view from the north west.



Built on a site which slopes to the east, this extension to a stocking factory houses the dyeing, finishing and despatch departments, and the boiler house. The top two floors are used for light machinery, sorting, grading, inspection and wrapping. Finished goods are stored, packed and despatched at mezzanine level. The dyeing machinery is on the ground floor, with the boiler house, fuel store and service area below. The construction is of *in situ* reinforced concrete, with two rows of columns supporting main beams with cantilevers. Floors are solid except in the dyehouse, where they are hollow tile to accommodate services. External cavity walls are in fair-faced red brick; the external staircase and retaining wall are independent reinforced concrete structures. The roof is finished in 1-in. cork three-ply roofing felt with white spar chippings. Columns, beams and concrete ceilings and plastered walls are finished with emulsion paint.



8

TECHNICAL COLLEGE AT COLCHESTER

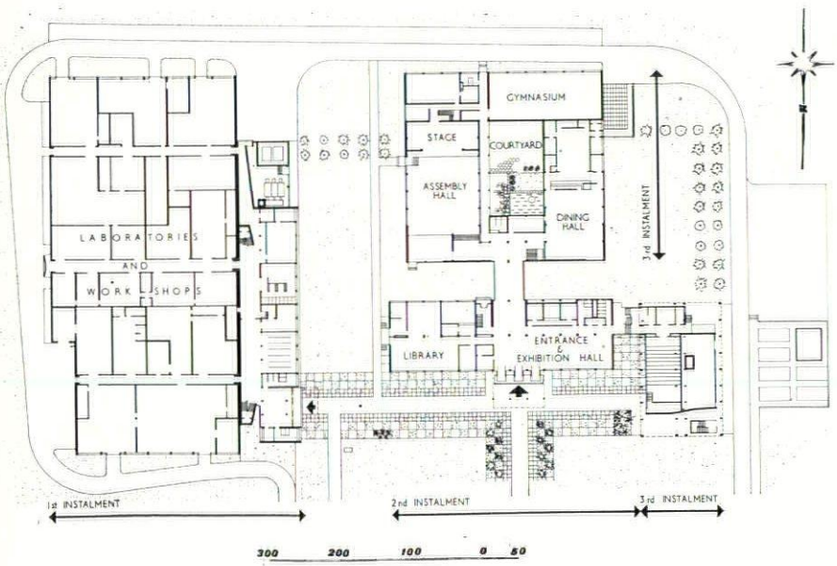
ARCHITECT: HAROLD CONOLLY, ESSEX COUNTY ARCHITECT

This is the second stage of the college; the first stage was illustrated in the AR in August, 1954, and the third stage should be completed by September, 1959. The building is of five storeys with an *in situ* r.c. frame and floors. Solid r.c. gable walls and lift well act as stiffeners to the main structure. The curtain walling has main members of Portland stone with an infilling of metal windows with precast concrete slabs under. The roof is asphalte finished. Floors are of missanda blocks generally, with rubber flooring in the corridors and cork tiles in the Principal's rooms, boardroom and library. Joinery is in West African mahogany. Walls are plastered and painted; heating is by means of low pressure hot water boilers and radiators.



9

8, the wide entrance canopy is structurally free of the building and carried on a welded steel frame.
9, general view of the college from the north.
10, the staircase has green and black terrazzo treads and mahogany handrail.





10

EXHIBITIONS

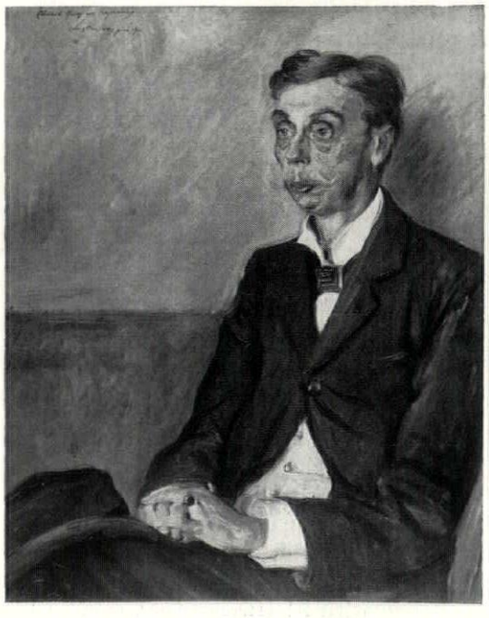
PAINTINGS

Before the exhibition called 'Hundred Years of German Art' came to the Tate Gallery in **1956**, *Lovis Corinth was not much more to me than a name attached to some reproductions of draughty-looking landscapes* in a distressingly muscular and belatedly impressionist manner. I knew that he was from East Prussia and that he died in the twenties when he was in his late sixties. I knew too that some of his paintings had been granted the distinction of being removed from German museums in 1937 and put into the 'Degenerate Art' show in Munich, but this didn't seem to make sense except as a case of Nazi eating Prussian. Even after the *Hundred Years* show, when I had to acknowledge that Corinth was a highly gifted painter, I thought of him as one of those unexportable geniuses who are geared to some of the less agreeable collective traits of their own countrymen, so although I looked forward to seeing the retrospective exhibition of his work which was recently brought to the Tate under the auspices of the Arts Council, I thought it was just the sort of exhibition that the officials of one country would be likely to offer to the officials of another, and I felt that Mr. Gabriel White was overdoing it a bit when he said that it was 'long overdue.'

Now that the show has come and gone I am in a humbler mood about him, and feel less inclined to blame him for the fact that I have little sympathy for his showy, blustering kind of vitality, but I am still wondering what twist of Nazi policy confused him with the 'degenerates.' He sometimes put a jerk into reality but never set out to distort it; his virility was never in doubt, and his paganism was of a kind that anyone who has ever been wildly drunk can easily comprehend. Perhaps some spiteful Academician told them that his later work was expressionist. If so, post-war German critics have taken it to be the best way of praising him, for they now tend to place him alongside such painters as Beckmann and Kirchner and call him one of the great masters of Expressionism.

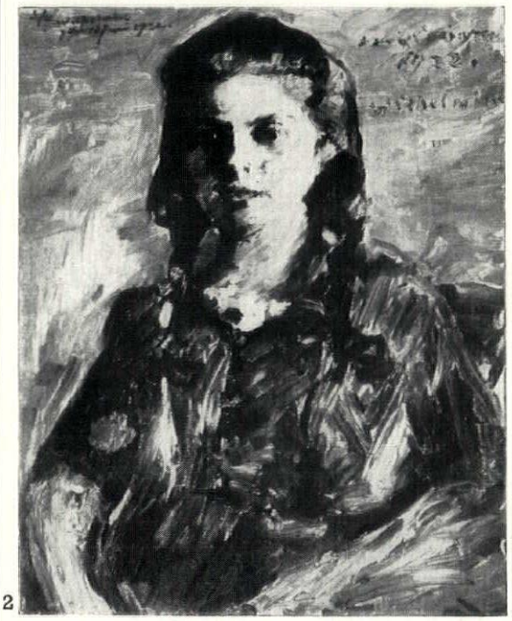
He seems to me to be a great realist at his best. The master he had in mind throughout his career was Franz Hals. He has something of the same exuberance and force; his portraits have a similar broad truthfulness; his brushstrokes sometimes have an almost equal dexterity and vitality. His palette was lightened by the example of Impressionism. He was not an Impressionist, but he painted many landscapes in the open air with a kind of excited literalism. There is a lot of movement in them—especially in the famous Walchensee series, painted in the so-called expressionist period—but it springs far less from the systematic study of shifting cloud formations and changing conditions of light than from the slap and wriggle of paint marks made for their own hearty sake. Are the critics referring to Corinth's obvious delight in manipulating paint when they speak of him as an Expressionist? There is surely more to Expressionism than that. I suspect that they are being influenced by recent developments in painting, and that at this rate they will soon be finding intimations of 'abstract expressionism' wherever there is bravura in the manipulation of paint. If Corinth intended to identify his landscapes with some highly-charged emotion he did not succeed. His landscapes remain vividly banal.

In a picture called *After a Bathe*, which is a brilliant, swiftly executed open-air portrait of a half-naked woman, there is a similar conflict between what the artist observes and how he paints; between the warmth and serenity of the woman he depicts, and the restless activity of the brushmarks. The paint wriggles all round her and over her with a kind of impatient possessiveness, but the fact that in this context Corinth's characteristic brushwork acquires an erotic significance simply indicates that this is another case of excited literalism.



1

Corinth was a fine portrait painter in every phase of his career. His portrait of Edward Count Keyserling, uncle of the philosopher, 1, painted in 1900, is a superb example of verisimilitude. It owes part of its fascination to the sitter, who would have been a glorious find for any artist who liked painting people as he found them, but no one could deny that Corinth was equal to the occasion. His portrait of his daughter, 2, painted in 1922, three years before his death has greater stylistic interest for us. It has a nakedness of pigment and emphasis of gesture that is more in tune with contemporary sensibility than the tonal realism of the earlier portrait, but it does not disclose greater psychological insight, nor does it show any sign of being knocked out of shape by emotional stress and strain. It is a fine and sober portrait, painted in a vigorous manner from which all showiness has finally drained away.



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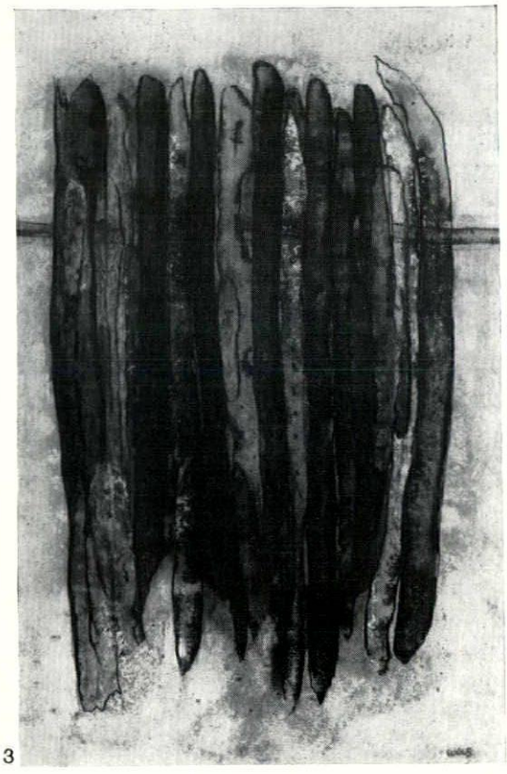
There remains the remarkable series of self-portraits. He was not afraid to make faces in the mirror to recapture the outward evidence of his excessive exuberance, and a painting of himself in a state of frantic joy is called *Self Portrait as a Bacchanalian;* but he is still painting from the model, and the violence and distortion are already in the mirror image. He is a great painter because of his uninhibited response to the living human presence. All the same, I still think that most of his pictures would have returned to Germany

even if he had been exhibited here when his work could be bought.

It is not that we are unresponsive to German art. Far from it. Quite apart from our love for Bavarian rococo and our hatred of the work of some of the great Expressionists, there is a kind of painting which many of us find marvellously and satisfactorily German. It has an air of secrecy, a touch of the necromantic. It looks as if it might have been done by the light of a candle in a lonely hut in the middle of a dark wood. Some of Dürer has this air of secrecy, and much of Altdorfer. In our own time it is a characteristic of a good deal of Klee and of the German work of Feininger. It is powerfully present in Max Ernst's forests, and, above all, in the small watercolours of Wols. Wols, who painted in Paris and died in 1951 at the age of thirty-eight, is one of the most mysterious painters of our time, and I find it impossible to account for the way in which one of his tiny images can dominate a mixed exhibition. He is never shown in anything but distinguished company, but his work can make all the other exhibits look shallow and diffuse. This happened in the elegant show at Arthur Tooth & Sons called *Actualités*. The watercolour by Wols was 8¼ in. by 5 in. and it was entitled *Longs Batons Verticaux*, 3.

In spite of its size, it caught my eye straight away. It is a bundle of long



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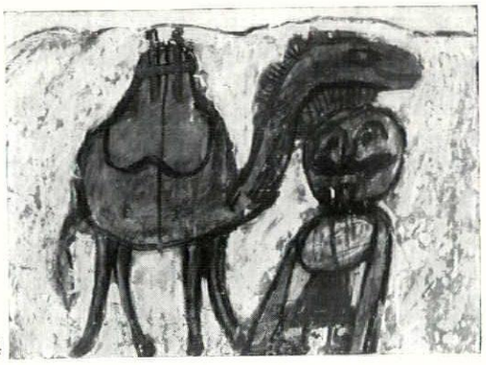
narrow 'things' which appear to be skewered on to a transparent rod. Some of these 'things' are brown in colour, others are dark red or dark blue, and they are bathed in a dusky orange radiance. Things have happened to these things. One or two of them have been pierced and have gaps in their side, some have abrasions along their entire length, some are scabbed, some have patches of soreness where the skin has peeled. Some are dusty, others are bright and moist. There are differences of substance: some look rather like dead earthworms, others might be plant tubers. They could be hanging in the corner of a witch's kitchen; they could be the remains of a child's cruel game. When I turned away, the image bored into my back and I felt compelled to return to it again and again, to stare without comprehension, but with puzzled delight. Some of its fascination is due to the precision, the inordinate care, with which Wols paints



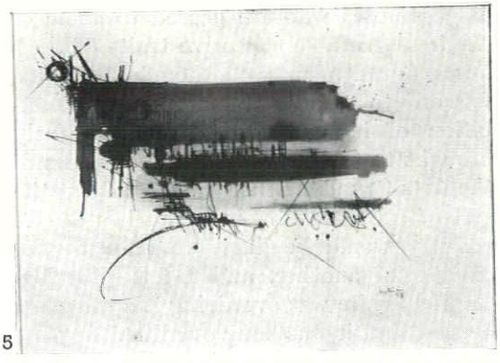
4

the unidentifiable. But there's nothing new about that in an age of surrealism. Michel Tapié says that it is 'lyrical abstraction,' but this is too light a term for its dark enticements. Wols is also one of the artists who is called 'other.' If the word were reserved for Wols alone, I would begin to see the point of it.

Most of the 'other' artists were included in the show at Tooths. It was devoted to watercolours, gouaches and oils on paper, and the modest size of them and the lightness of the substance that stained the paper produced a rather thin effect of sophisticated aestheticism. Apart from Wols, Dubuffet was the only exhibitor who had something more than artistic good manners, He appeared in his celebrated role of child artist, before a lively North African audience, 4.

The others brought 'other' art charmingly into line with those mixed shows from Paris of work by artists other than 'other' which are frequently held at the same gallery. This being the case, there will probably have to be some modification in the claims made for it in the explanatory literature of the movement. If I have correctly grasped what Mr. Lawrence Alloway is saying in his introduction to the show, he is claiming that before this group of artists came along drawings and watercolours were always considered to be stages on the way to a painting and that it has been left to such painters as Sam Francis, Appel and Mathieu to show that a watercolour need not be 'an expendable contribution to a painting,' but can be 'level' with it! Having thus established their historical situation, his next task—that of persuading us that everything in the show is beyond criticism—is comparatively easy. He has only to lean on the support of no less an authority than a Mr. Harold Rosenberg, who is quoted as saying that 'if a painting is an action, the sketch is one action, the painting that follows is another,' and that therefore 'the second cannot be " better " or more complete than the first.' So there you have it. 'Other' art is 'other' because nothing is ever better or worse than anything else. In fairness to some of the exhibitors, I should add that their work does not need this kind of protection.

Avoiding any hint of a desire to evaluate the Mathieu watercolour *Gris et Bleu*, 5, I would like to quote a statement of his which is reproduced in the catalogue: 'Previously, signs were always invented for things: the thing came first, and a sign was invented to designate it. Today the sign comes first, and will endure (and therefore really be a sign) only if it finds an incarnation for itself.' I think that this is well-argued, and I have reproduced his watercolour in the hope that it may serve a practical purpose. If you should ever see a long-snouted animal come drifting in from outer space, with a battered behind and a submarine attached to its belly,



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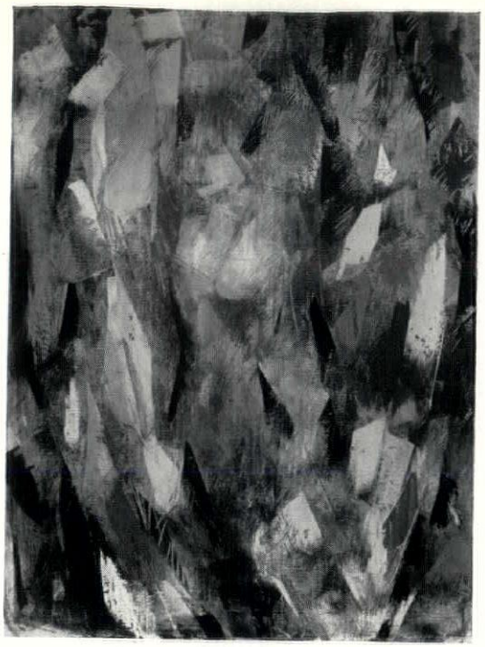
you may well be able to calm the fears of others by pointing out that it is simply an incarnation of Mathieu's sign.

Theodor Werner, who is one of Germany's veteran abstractionists, was represented by two pictures in 100 *years of German Art*, and I am sorry I cannot remember them, because all the pictures in his handsome one-man show at Marlborough Fine Arts are of recent date, and the earlier examples might have provided a clue to his development. Will Grohmann's introduction is not helpful in this respect.

The recent paintings are 'free abstractions,' or, as Herr Grohmann puts it, they are 'produced by the vibrating motions of the act of painting in which the painter himself seems to participate only to a limited degree.' I must admit that I didn't feel that the artist's participation was particularly limited. The paint goes its own spontaneous, carefree way within



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very carefully prescribed limits and the paintings left me with the very strong impression that they contain much camouflaged calculation, as if the artist had come over from the ruler-and-compass school without entirely severing his old connections. It seems clear that he has lyrical intentions, but the lyrical impulse is nowhere given free rein. The painting reproduced here is a notable example of his work, 6, and it is done with great technical virtuosity, but as far as I can see nothing happens in it that is beyond calculation, and far from producing what Herr Grohmann calls a 'multiplicity of results,' establishes an over-simplified relationship with some earlier treatments of the same theme. It's the 'nude in the forest' theme, superbly treated by Rousseau, which was transformed by Picasso in analytical cubism and became a nude cornered by sharp-edged space. The woman in Werner's picture is trapped in freely painted yet neatly contrived 'planes.' Unfortunately, she has no presence to speak of, and the theme has lost most of its magic.

Robert Melville

ART IN USE

PAINTING IN A NEW CHURCH

The employment of a distinguished modern painter to collaborate in the decoration of a new church is sufficiently rare for Mr. Robert Medley's recently completed painting at Plymouth to be something of an event, quite apart from its interest as a good example of his work, 1 and 2.

The church, (architects, Robert Potter and Richard Hare) is at Crownhill, and it



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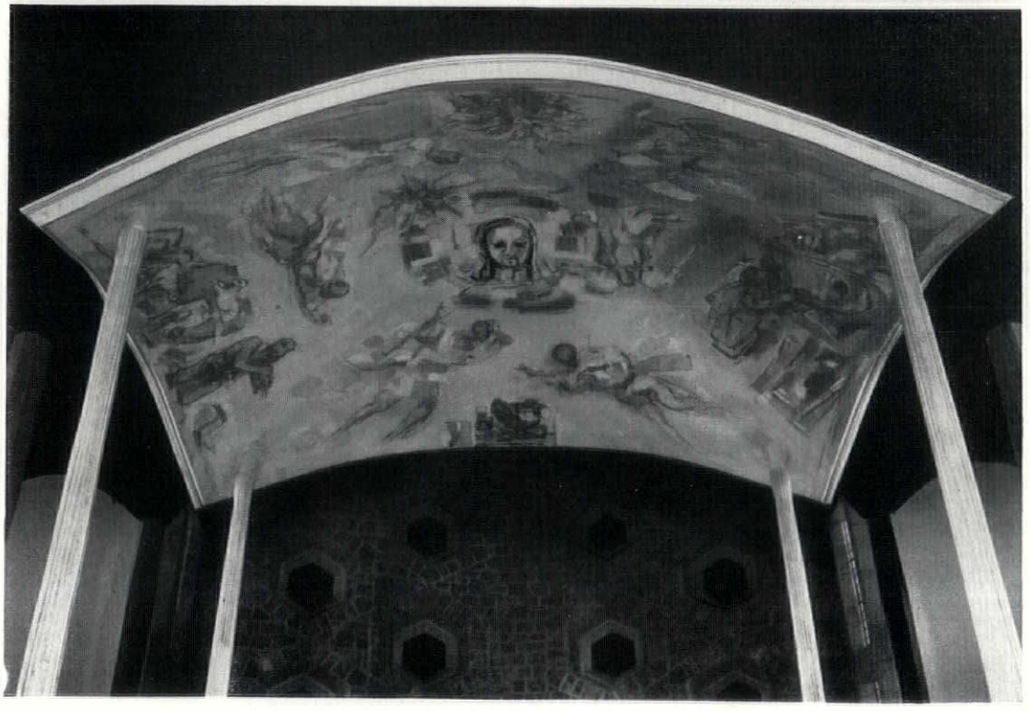

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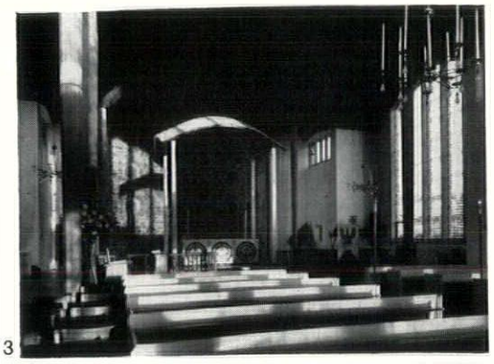
was at the suggestion of the vicar, the Revd. Eric Turnbull, that Mr. Medley was invited to paint the underside of the ciborium over the altar, 1. The intention was to create a lyrical, rather than an emblematic or symbolic, design and the iconography of the decoration finally evolved by the artist is based on the Four Elements, over which hover celestial beings who are to be understood as representing Air. The centres of the long sides depict the Sacraments, represented by a still life of Bread and Wine in a basket, and Fire, represented by a burning bush. On the short sides are Earth represented by a hillock with a morning scene of sheep and a shepherd playing a pipe, and Water, represented by an evening scene with a fisherman casting his net into a stormy sea, 2.

The predominant colours are blue, white and green, and the architects collaborated with Mr. Medley when choosing the colour of the vaulted ceiling of the church itself



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and of the gilding on the columns that support the ciborium, 3.

The painting was done in oil paint on a gesso and oil ground. It has a matt surface and will be given an eggshell wax varnish after it has had some months to settle. It was executed on the site, partly because it would have needed so much space in a studio, and partly because of the difficulty of visualizing off the site the effect of the particular lighting conditions on the curved surface. This meant, however, that although the design was ready in cartoon form, the work itself could not be begun until after the erection of the ciborium in the church. This was completed in mid-November, 1958, and the painting was finished a few days before the consecration of the church on December 6.

J.M.R.

CENTENARY

SALTASH BRIDGE: 1859-1959

The Royal Albert Bridge over the River Tamar at Saltash was opened by the Prince Consort on May 2, 1859. The first wrought iron bridge of

1, *the Royal Albert Bridge at Saltash, designed by I. K. Brunel and opened by the Prince Consort in 1859.*



large span was Robert Stephenson's Britannia tubular bridge over the Menai Straits which was opened nine years earlier, but I. K. Brunel's Saltash bridge represents a considerable advance both in engineering technique and design.

The Britannia Rock had provided Stephenson with a convenient surface base for a central pier, whereas to find a rock base in the Tamar for his central pier Brunel had to go down through 80 ft. of water and mud. Again, because the Cornwall Railway was a comparatively poor company Brunel had to devise some form of superstructure more economical than Stephenson's great rectangular tubes.

Brunel's answer to the problem of the central pier was to design and construct what was called 'the great cylinder' of wrought iron 90 ft. long, 37 ft. in diameter and weighing 300 tons. This was in fact the first large compressed air caisson ever used. The inclination of the rock bed on the site of the pier had previously been plotted by means of a small cylinder, 6 ft. in diameter, and the bottom cutting edge of the great cylinder was shaped to suit this inclination. It was floated out by means of pontoons and sunk in June, 1854, but it was not until the following February that it reached bedrock.

As constructed, the cylinder contained two working chambers, a central one, which was in effect a diving bell with an open access shaft, 10 ft. in diameter, above it, and an outer annular compartment, 4 ft. wide and subdivided by bulkheads, which was designed to be pressurised. Access to this was provided by the 6-ft. diameter cylinder which had been used earlier for exploration. It was provided with the necessary air-locks and installed within the 10-ft. access cylinder.

Unfortunately a major fault in the rock base was soon opened up and through this water poured in such volume into the central chamber that it overwhelmed the pumps. Brunel decided that the only solution was to pressurise the central compartment also. The 10-ft. cylinder had not been designed to withstand pressure so before his plan could be carried into effect yet another cylinder, 9 ft. in diameter, had to be built and installed within the 10-ft. cylinder as reinforcement. When this most difficult operation had been successfully completed, work on the pier was resumed and it had been carried up to a temporary cap above water level by December, 1856.

The two main trusses of the bridge represent the development of a design which Brunel had previously used at Chepstow. Each 455-ft. span consists of an oval wrought iron tube 12 ft. 3 in. high by 16 ft. 9 in. wide from which the bridge platform is suspended by chains and vertical rods. The tube is curved to a radius equal to the arc of the suspension chains, and as the width of the tube is equal to that of the platform, these chains hang vertically. In these two respects the design was an improvement on Chepstow.

These two great trusses, each weighing 1,060 tons, were built parallel with the shore line on the Devon side of the river and successfully floated into position on pontoons. Brunel personally superintended the floating of the first (western) span on September 1, 1857, but his chief assistant, R. P. Brereton, supervised the second in July, 1858, as Brunel was by this time seriously ill.

When the trusses were in position, water ballast was admitted to the pontoons so that the trusses settled onto the temporary pier caps. Three hydraulic presses at each end were then used to raise them to their final position 100 ft. above high water level. The masonry of the land piers and the sections of the octagonal cast iron columns which form the upper portion of the central pier were built up beneath them. This central pier is 190 ft. high from bedrock to rail level, while the top of the girders stands 260 ft. above the high water mark. There are seventeen approach spans of varying dimensions on stone piers which bring the total length of the bridge up to 730 yards.

When Brunel died a few months after the bridge was opened, the directors of the Cornwall Railway ordered that the inscription 'I. K. Brunel, Engineer, 1859' should be placed over the shore archways. Brunel's last masterpiece of railway engineering thus became his memorial. In recent years the wrought iron girders of the small approach spans have been replaced by steel, but otherwise the Saltash bridge stands today exactly as it was built, a splendid tribute to one of Britain's greatest engineers. It cost £225,000 to build, considerably less than half that of the Britannia Bridge.

L. T. C. Rolt

COUNTER-ATTACK

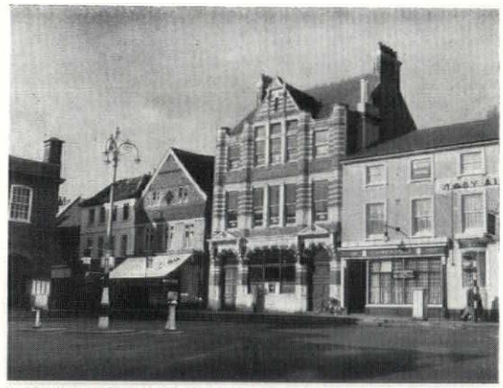
THE DILEMMA OF 'AMENITY'

In 1938 *J. M. Richards made a prescient and prophetic study of Reigate, Surrey, as a typical example of London's outer ring towns whose pattern has been completely changed by commuting yet which still keep their old country-town shape.* His message was quite clear—adapt or be swamped: keep whatever is worth while from the past, without attempting to copy it in any of the new buildings, and create a new purely twentieth-century suburban centre. How is Reigate doing, now that the article has come of age? Well, let a recent report in the *Surrey Mirror* speak for itself:

'I see that the Borough Town Planning Committee have come to very reasonable terms with its owner and his architect on the question of its removal' (an eighteenth-century house in Church Street) 'and replacement with a new three-storey building—offices on the ground floor, residential accommodation above. On the understanding that this new building shall be "Georgian in character," the County Records and Ancient Monuments Committee raise no objection to the development, and the Borough Council have approved a proposal that the South-East Surrey Area Planning Sub-Committee be recommended to consent. The committee have also been able to take a benevolent view of the proposals affecting shop premises on the Old Town Hall side of High Street, which led to a discussion at the November Council meeting. It has been found that "no major setback" is required for new buildings on this site, and that if the present shops are taken down and a new building erected on the same building line as that of the next premises to the west, about two feet of additional footpath will be provided. The Planning Committee have been informed that the applicants have expressed their willingness to undertake that the new two-storey building proposed shall be designed in elevation "in Tudor or Georgian style to harmonize with the general tone and atmosphere in the High Street." The Records and Ancient Monuments Committee, however, are said to be stipulating that the new building shall be of Georgian character—not Tudor. The Borough committee recommended consent to the outline application on the condition that they shall see what the building will look like before it is built—and approve what they see.'



1, *Church Street; the house to be demolished is on the right.*



2, *the composite visual character of part of the centre of Reigate*

For incredulous readers, this does in fact come from a paper of 1959, not of 1929: and photographs of recent buildings in Reigate make it clear that this desperate slavering after the past is being interpreted to perfection. One wonders what the Town Planning Committee wears in session—buckles and periwigs, or simply doublet and hose? Is a condition of consent that the building should have sanitation in Tudor or Georgian style, is the building cost provided at Tudor or Georgian rates



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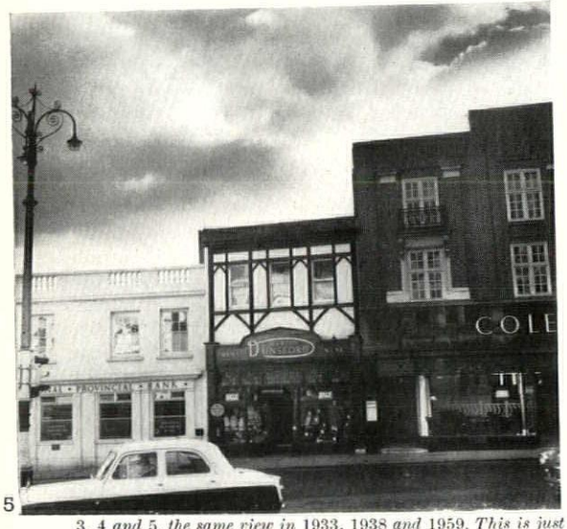

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3, 4 *and* 5, *the same view in* 1933, 1938 *and* 1959. *This is just a farcical game of architectural musical chairs.*

of exchange and are the building workers employed according to Tudor or Georgian contracts?

It is all hot nonsense. And when it is so clearly done with such good intentions no kindly words of reproof can do much good: they are simply metamorphosed into a statement of solidarity by exactly the same process as makes the Town Planning Committee able to see Georgian style elevations maintaining the character of the High Street: 'this chap thinks the same as we do, really; a few differences over details, perhaps, but general agreement.' The only thing that may work is a shock, so here it is, much more in sorrow than in anger:

I know intimately every town in Surrey and most towns in South-East England. In that context Reigate is a job lot of Home Counties rebuilding, already three-quarters spoilt by gentility and characterless fakes. Except for the inside of the Priory, the eighteenth-century buildings are pleasant but unremarkable; the Market Hall is nicely placed but a rough design, the High Street is a pleasant shape but the only general tone and atmosphere is bad suburban of (about) 1936—even the crisper, slicker new suburban spirit of towns like Uxbridge or Staines is



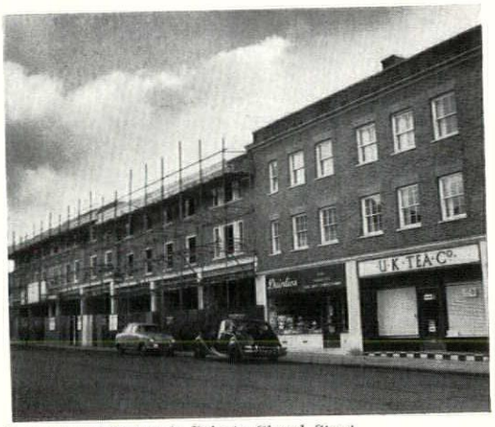
6, *recent architecture in Reigate: High Street.*

quite absent. The one unique thing in Reigate, the road tunnel which used to throw southbound travellers into the very middle of the town, has its effect emasculated because one-way working ensures that travellers only use it when going north, out of the town. In fact, from the point of view of honest character, there is more to be said for despised Redhill on the Brighton Road with its honest late Victorian offices and jazz-modern Odeon. At least, Redhill is a genuine recognizable place; Reigate is now just a pasteboard fake.

There are of course co-partners in this dismal picture. If the Town Planning Committee are asking for all the wrong things, the architects, jolly fellows, are happily supplying them. For each of these buildings in Tudor or Georgian style up and down the country—and there are so many of them—there must be some poor chap actually drawing out the dripstones and pediments, most likely fresh out of architectural school after years of learning how to design modern buildings. How must he feel abed o' nights?—after a few years he stops feeling, after a few more he is designing the dripstones and pediments himself. Just suppose he and his mates all went on strike—even a token strike, to get publicity: they are in a strong position, for *somebody* has to draw the working details. But the profession does not seem to have that sort of spirit any more: perhaps it is typical that 'Anti-Ugly,' the only live expression of student opinion on architecture, started as an organization of students of art, not architecture. In fact Reigate itself ought to be protesting also. The Reigate Society is flourishing and active, its vitality a model for other amenity societies. It is pledged to preserve the town's character, and nothing is doing more damage to what remains of this than architectural fakes concocted to meet false ideas of what a gracious-living Reigate might have looked like if that awful nineteenth century hadn't got in the way.

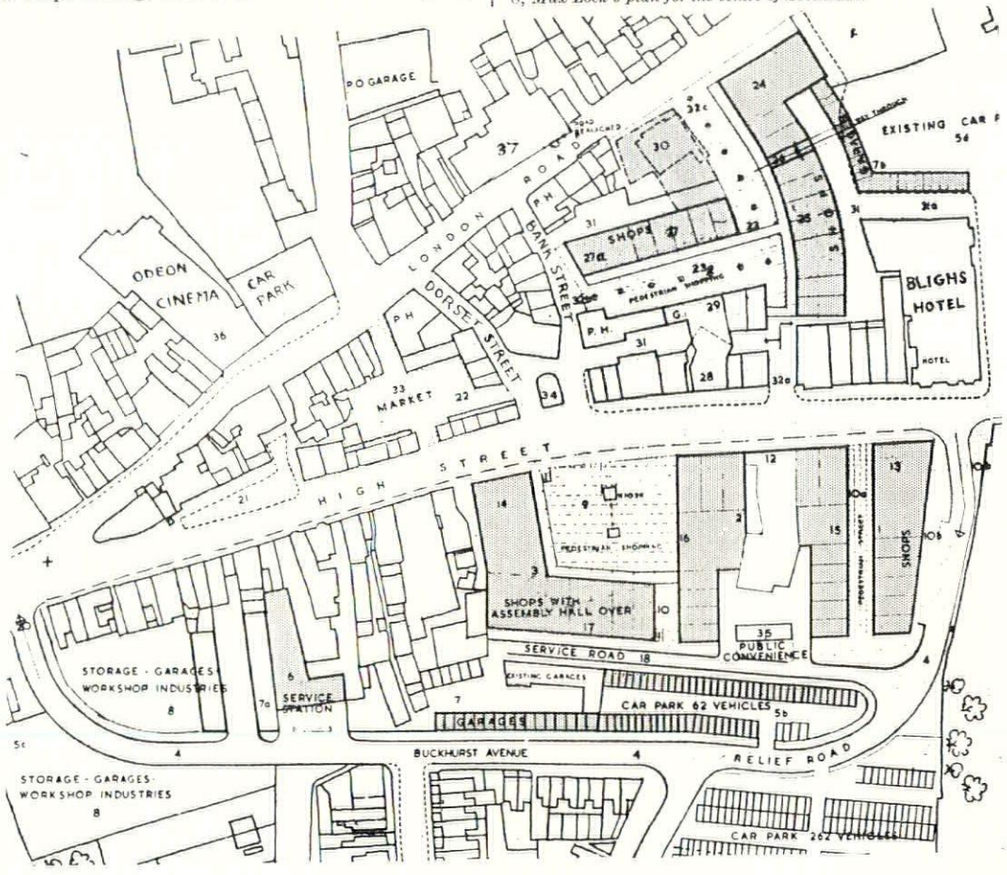
To be fair, someone who is both of Reigate and an architect has done so—this letter by J. R. Stammers to the *Surrey Mirror* sums up the case against fakery as well as could be done: it is astonishing that it should need to have been written at all.

'We emerged just before the war from the time



7, *recent architecture in Reigate: Church Street.*

8, *Max Lock's plan for the centre of Sevenoaks.*



when mock Tudor found favour with some; but it seems that mock Georgian is still thought to be safe and respectable in this historic town. How long must it be before we develop a truly critical approach to the architecture of our own age? In the last few years we have seen a number of new buildings in the centre of Reigate; hardly one of them purports to be an honest building of the mid-twentieth century. Those who built the Old Town Hall and the Barons that we admire so much thought only of building in the best and latest way they knew. We should be truer to that tradition if, instead of concerning ourselves with imitations and styles we looked at present-day architecture with a selective and critical eye and found the best of 1959 to place beside our architectural treasures of the eighteenth century.'

And in fact if Reigate looked twenty miles east along the Weald it could see the sort of adaptation it ought to be making. At Sevenoaks, which was actually one of the 'outer ring' towns listed by J. M. Richards in his article, part of the centre of the town has just been replanned by Max Lock, grafting in suburban-centre amenities in exactly the right way to exactly the right scale. The plans have been submitted for public inquiry before they have been passed so that people can say what they think about them. Obviously the whole thing could still stand or fall by inept elevations but here at least is a town facing up to its present destiny, not trying to dream itself into a mythical past.

Ian Nairn

BOOKS

MAP MAKING

ARCHITECTURE: 19th and 20th CENTURIES. VOLUME OF THE PELICAN HISTORY OF ART. *By Professor Henry-Russell Hitchcock. Penguin Books.* 70*s*.

In the hundred and fifty years covered by the Architecture—Nineteenth and Twentieth Centuries volume of the Pelican History of Art not only did the actual output of Western architecture increase by a fantastic amount, but it both spread geographically to cover the greater part of the inhabited world, and produced many types of buildings—dockyards, railway stations, department stores, sky-scrapers, factories, hotels, and so on—which had existed before, if at all, only in an embryonic state. Others have written about architecture of certain areas, or dates, or types within this period; but Professor Henry-Russell Hitchcock is probably the only person living who has a knowledge both wide and deep enough to enable him to undertake the formidable task of writing about it all.

The result is a book which will never cease to be invaluable if only for the immense amount of information which it contains. Buildings of all types in some twenty-five different countries are illustrated or described, and in the process many what will be to most people quite unknown schools are comprehensively dealt with: the French Second Empire style and its progeny, for instance, and the Romantic Classical Architecture of America. The chapters on commercial architecture and the nineteenth-century Anglo-American house are the first really thorough studies of two vitally important subjects. The field covered in fact is a huge one, nor is its lay-out muddled; with a sure touch piece by piece is fitted into its correct place in the puzzle, until out of the confused (if at times exciting) picture of Victorian architecture gradually emerges the features of the modern style. It is immensely stimulating to have the whole panorama of nineteenth- and twentieth-century architecture thus laid out before one for the first time, and to be able to watch the complex and fascinating game of shuttlecock that was going on between the countries concerned; Germany and France, for instance, sending their round-arched and mansard styles round the whole world, and England and America in their turn fertilizing Germany with their own domestic architecture. Seen in their international setting certain architects appear strangely transformed, such as that inspired mediaeval play-actor William Burges, who proves to have been a formative influence on H. H. Richardson, and thus, ultimately, on Frank Lloyd Wright.

It must, however, be admitted that Professor Hitchcock has written a book primarily for architectural historians (and perhaps architects) which the average well-informed layman will probably find unreadable. Certainly nothing has been done to smooth his way. Professor Hitchcock's approach to the architecture with which he deals is an extremely, perhaps a deliberately, narrow one. No effort is made to relate buildings to the social or political movements of the time, and very little to analyse the different approaches to architecture engendered by natural traditions: the academic Beaux-Arts tradition in France, for instance, as opposed to the individualistic pupil-master relationship in England. We are told little or nothing of the personalities or background of the various architects, or of what they themselves thought or wrote or said, or of what their contemporaries thought or wrote or said about them. The book lacks almost completely such contemporary quotations; and Professor Hitchcock's own style makes no concessions to elegance, nor even, at times, to clarity.

The decision (if decision there was) to limit so strictly the lines of approach was perhaps a right one, however tough going the results may be. The book, comprehensive as it may seem, is in fact already very selective, leaving out (quite rightly) whole schools of architecture the quality of which did not merit their inclusion. A less narrow approach would have involved still greater selectiveness. This might have been preferable in treating of a well-worn subject; but in a work which explores for the first time so many unknown tracts of territory it is probable that the more buildings and their architects named, the better. Certainly the great number of buildings included in the book will immensely enhance its value as a book of reference.

Correct though this treatment (which comes, at times, perilously close to cataloguing) may be, the questions it leaves unanswered remain, and it is perhaps as well to refer to some of them. There is, for instance, no more startling or dramatic story in architectural history than that of the rise and fall of cast-iron. More and more daring construction in the nineteenth century culminated in the building of the Crystal Palace of 1851, when it seemed that a new architecture was about to be born. The coming nativity was widely proclaimed by contemporaries, while peasants in the remotest parts of Germany hung lithographs of the new marvel on their parlour walls. But within ten years functional iron and glass architecture had been universally discredited; and the short and easy step from the Crystal Palace to the Fagus Factory was not in fact taken for sixty years. Professor Hitchcock, of course, describes this reverse, as many have done before him; but a really exhaustive and penetrating analysis of the causes behind it remains to be written. It is not enough to put it down, as Giedion and other protagonists of the modern movement rather naturally have done, as a victory for the forces of reaction and convention; in England at any rate, as a quick look at the photographs in the book under review will show, the opposition was led by men of genius, conviction and originality, whose work was ultimately to lead, though by quite different paths, to the modern architecture of today. The reaction was, I suppose, part of the great anti-rationalist movement of the mid-nineteenth century; and perhaps Pugin's attacks on the Crystal Palace, Dickens's crusade against the Poor Law, Disraeli's hatred of the Utilitarians, and Newman's conversion to Rome, were all different aspects of a similar frame of mind.

Just why did the Chicago School collapse before the American neo-classic revival of the early twentieth century? Why was Italy such a dead end during nearly the whole of the period under review? What different frames of mind underlie the curious love-hate relationship between Frank Lloyd Wright and the European modernists? The truth of course is, that the architectural history of this period is still in its infancy. Professor Hitchcock is the first to have mapped the whole period in detail; it remains for the architectural geologists to come and tell us why the mountains and rivers are there, and what their significance is to us. But of course they could never have worked without maps; and for one man to have written alone the necessary pioneer work, of so vast a scope, and of such accuracy and discernment, is an achievement which will always deserve salute.

Mark Girouard

RUSHLIGHT TO NEON

THE SOCIAL HISTORY OF LIGHTING *By William T. O'Dea. Routledge & Kegan Paul.* 42*s*.

'I was bred and brought up by rushlight, and I do not find that I see less clearly than other people. . . . Potatoes and taxed candles seem to have grown into fashion together.' So Cobbett wrote in 1821 and he ended his advocacy of the rushlight: 'You may do any sort of work by this light; and, if reading be your taste, you may read the foul libels, the lies and abuse, which are circulated gratis about me by the "Society for Promoting Christian Knowledge," as well by rushlight as

you can by the light of taxed candles.' The SPCK may not have changed but the demands of factory production made more powerful illumination a necessity. Mr. O'Dea lists the essential dates. The Argand lamp came in 1782, Henry Lodge's cotton mills near Halifax were gas lighted in 1805, the snuffless wick candle was invented in 1820 following the discovery of the fatty acids, the South Foreland lighthouse was electrically lit in 1858, the use of kerosene on a large scale began about 1869, and the first efficient electric lamps were produced by Swan in 1878 and Edison in 1879, after Sprengel had invented the vacuum pump. This marvellous speed, the product of the interaction of scientific research, mechanical inventiveness and commercial skill is characteristic of the nineteenth century. Mr. O'Dea, with the learning one expects from a Keeper of the Science Museum, has written a standard account of lighting equipment, or rather catalogued it and added much interesting and useful information from extensive reading. It is only to be regretted that he did not do the job a little more artfully. By dividing his book by subject he is forced over the same facts chapter after chapter—the eighteenth century is all over the place, under the home, the theatre, the lighthouse, and so on. It does not make for consecutive reading or give any impression of the astonishing acceleration of discovery. The material in the last two chapters might well have been in the first two, and the splendidly revealing fact that Smeaton's Eddystone had to do its job by means of a two-ringed corona of 24 tallow candles ought not to have been held back.

So interesting is the story it survives an indifferent telling. Mr. O'Dea is a scholar and he offers the facts, indexes them and provides good illustrations. But it is a pity that the competent scholars in these technical and scientific subjects do not seem to know, when it comes to book writing, which side their subject is buttered. For all that it's good to have the facts on record and here they are, from rushlight and oil to neon.

Peter Ferriday

DESIGN FOR SOUND

ACOUSTICS, NOISE, AND BUILDINGS. *By P. H. Parkin & H. R. Humphreys. Faber*, 70*s*.

This is the first comprehensive book on building acoustics to take into account the results of all the new work which has been done on the subject since the last war both in this country and abroad. From this mass of material the authors have extracted all that they consider to be reliable and of practical value so that their book gives a very complete summary of current ideas and practice.

Some of this material, for example the BRS work on sound insulation of dwellings, deals with problems which architects have long been familiar with; other parts of it, such as speech reinforcement systems and the control of noise from industry, traffic and aircraft, introduce new problems which will increasingly force themselves on our attention in the future; others again, for instance the measurement of sound, are not within the architect's sphere at all. Thus the book is not addressed solely to architects nor to any one class of readers, but since it is the word 'buildings,' and by implication their occupants, in the title which has defined its subject, architects will find that much of the information which does not seem immediately relevant to them is of considerable interest and helps to throw light on the specifically architectural parts. This is all the more so because the authors have been scrupulous in avoiding scientific mystification and complex mathematics; a most welcome feature is the way in which charts and nomograms have been provided for avoiding lengthy calculations. Only information which is of practical use has been given and purely theoretical topics are excluded.

The first part of the book is on auditorium design. It suffers somewhat from compression, necessary no doubt to keep the book to a reasonable length. It is a pity that this subject could not have been treated at greater length with more illustrations, particularly plans and sections, and analyses of actual buildings; such photographs as are provided are not outstandingly interesting. As it is, though what is said is excellent, it suggests that the subject is duller than it is. Two specialized chapters follow, one admirably done on studios, and one on speech reinforcement systems; this should be read even by those who will not follow the technicalities, because it makes clear the potentialities and limitations of such systems and some simple principles on which they can be improved.

In the second part of the book sound insulation is dealt with as a part of the problem of noise in general and it is emphasized that the need for elaborate and expensive insulation can frequently be avoided by good planning or by suppressing the noise at its source. In fact, apart from floating floors, good insulation is shown usually to depend more on the intelligent use of normal construction than upon special expedients whose results are so often disappointing.

The authors have tried throughout to give definite recommendations and acceptable standards for insulation and noise levels in various classes of building, some their own (e.g. for offices and schools in Chapter 8) and others, from various authorities, grouped together in Chapter 10 as Criteria for Sound Insulation and Noise Control. This is one of the most useful features of the book, provided that their warning is heeded that their figures are at present all only tentative and may need to be revised in the light of experience. Chapter 9, on Measurement and Calculation, is invaluable to those whom it concerns, and there are excellent appendices giving all the general data required.

This book will certainly be the standard authority on its subject for English readers, a position previously held by Bagenal and Wood's 'Planning for Good Acoustics.' If the present work lacks the stimulating quality of its predecessor that is partly because the subject has grown and become difficult to confine to a single volume; within this compass the authors have passed on to us as much as they could of their wide experience.

Hugh Creighton

GREEN KEEPING

GROUNDS MAINTENANCE HANDBOOK (second edition). *By H. S. Conover. F. W. Dodge Corporation*. $10.75.

In the planning of open spaces, landscape architects are constantly urged to consider the problems of future maintenance; indeed, the need for economical upkeep is often the chief factor in deciding the treatment of an area to be developed.

A further practical reminder of this need comes to us in this book by an American landscape architect. Mr. H. S. Conover worked for many years for the Tennessee Valley Authority both in the development of their reserves and as manager of public services. His Grounds Maintenance Handbook, originally intended as an operational manual, was compiled from pamphlets and instructions issued by the Authority for internal use. Subsequently it was revised and broadened to appeal to a wider public.

The result is an important standard work of reference, 500 pages long and with 220 illustrations and charts. Inevitably, because it is written round the landscape of the Tennessee Valley, some of the matter is not directly applicable to this country; but even when this is so, the approach is of interest and often suggests an adaptation to our own problems.

L. Milner White

Shorter Notices

STUDIES IN ROMAN QUATTROCENTO ARCHITECTURE. *By Torgil Magnuson. Stockholm*, 1958. 60.00 *Sw.Kr.*

The author of this book belongs to the circle of pupils of Gregor Paulsson of Uppsala, who has done so much to make Sweden a centre of international research into the history of art—apart from being the *spiritus rector* of the Svenska Slöjdförening. Mr. Magnuson's is a learned book, although it is not based on direct research in archives. Enough on his subject had been published by Müntz, Egger and others to make do with it. The book does not set out to deal with the whole of fifteenth-century architecture in Rome. On the churches a German scholar, Dr. G. Urban, worked concurrently, and his results will shortly come out in the year-book of the Hertziana Library. Mr. Magnuson's three studies are concerned with town-planning, the building schemes of Nicholas V about the year 1450 and private palaces. As regards town-planning the principal problem is the Borgo Leonino, i.e. the orderly layout of the area between St. Peter's and the river, or rather the Castel Sant'Angelo. Nicholas V's plans were for the Vatican Palace and for a new St. Peter, of which the east end in a style close to Alberti's was actually begun. Mr. Magnuson's treatment is here closely linked to his interpretation of Giannozzo Manetti's biography of Nicholas written immediately after his death. The palaces are considered from the beginning of the century to, and exclusive of, the Cancelleria. The centre piece is of course the Palazzo Venezia. Few realize how completely the position of this palace with the adjoining palazzetto and garden was ruined by the opening up of the Piazza Venezia and the building of the national monument to Victor Emanuel II. On attributions Mr. Magnuson is exceedingly cautious. The volume is accompanied by five excellent maps and plans. The 68 illustrations in half-tone are on the other hand not quite sufficient.

N.P.

SKILL

PITCHED ROOF COVERINGS

by Peter Whiteley

1, unit coverings

It is an odd fact that the first casualty at the onslaught of functionalism was the pitched roof, the most functional of all the elements in our building tradition. Perhaps because he had nothing to say about the roof, the architect learnt to put it out of sight and thence out of mind. For this reason the roof has received less critical attention than other parts of the building. To help remedy this, we have planned a series of three articles on pitched roof coverings (i.e. on all roofs which offer a visible surface when seen from the ground). The object of these articles is to line up all the different materials which can be used, to discuss their functional performance, the claim they make on the underlying structure and their comparative cost. The author of these articles, Peter Whiteley, begins his trilogy by considering small unit coverings—in effect, tiles and slates.

The roof is a most critical area of any building and one where thoughtless economy and ill-considered or inappropriate detailing will eventually cause both trouble in the supporting structure and recurring maintenance costs.

In spite of the observable fact that on functional grounds the pitched roof is of longer life and more maintenance free than the equivalent flat roof (cost for cost), there is still a general reluctance on the part of the modern English architect to consider a pitched roof solution for any building other than the occasional house, unless a pitched roof comes incidentally as a by-product of economies in the whole roof structure. This would seem to be caused by an inability to think consciously of the roof as a building element with its own range of effects and expression. The pitched roof in all its forms is still customarily and unself-consciously used only in those parts of the world where there is both a lively regional architecture and a climatic necessity to pitch the roof.

These articles will present as many useful comparisons of facts as can be deduced about pitched roof coverings with the hope that they may be chosen more on grounds of fact—visual, structural and economic—rather than for reasons of habit, prejudice or sentiment.

A recent market survey (UK only) by a company producing one of the newer roofing materials has shown that, in area, 85 to 90 per cent of domestic roofs are still laid in slates and tiles of all kinds; whilst in the field of industrial roofing, 65 to 70 per cent of roofs are asbestos-cement products, up to 15 per cent are metals or protected metals and the remainder are roofed with predominantly asphaltic and bituminous products.

weather resistance

The primary function of a roof covering is to exclude water from the structure below; and in circumstances of combined high wind and rain (or snow) tiles and slates may fail to do this. But before examining the main reasons why roofs of this type leak, it is important to see how, precisely, the different patterns of slate and tile keep out moisture.

In the case of all interlocking and single-lap tiling each course of tiles overlaps only the course below, hence the term 'single-lap.' The side joints of the tiles vary according to the design of the tile, but most types have side ridges and channels, and any water that may be driven across the roof by wind is diverted to the eaves by either a ridge or a channel. But this happens only if it has a clear path and it is essential, therefore, that all side channels should be kept free from obstruction. The commonest form of obstruction is that caused by mortar bedding: interlocking tiles must, therefore, only be bedded where absolutely necessary, i.e. at verge and ridge, and here particular care must be taken to see that no mortar is left in the side channels.

In addition the torching of tiles on the underside may create capillary paths for moisture to penetrate. Hence on page 12 of CP 142 (1958) it states firmly 'that in no circumstances should tiles or asbestos-cement slates be torched.' On the fully-interlocking tiles, joints at the head are just as important as side joints, and for this reason the tail of each tile must sit correctly on the head of the tile below, which can happen only if the battens are properly spaced. Single-lap tiles such as the 'Grovebury' (Leighton Buzzard Tiles Limited) or the 'Ludlow' (Marley Tile Company Limited) have a variable head lap (which should not be less than 3 in., but may be more) and, therefore, are only partially interlocking. It follows that a fully interlocking tile (at sides and head) such as the 'Sterreberg' interlocking pantile (Langley London Limited) can be used safely on roofs of lower pitch than can, say, an ordinary English pantile that has no weather stops.

Slates and plain tiles, unlike single-lap tiles, are (more or less) flat slabs or sheets laid in courses side by side with open side joints. It is inevitable that there should be penetration of water between adjacent units. So it is necessary in both slating (including shingles) and plain tiles (*a*) that there shall be at least two thicknesses in every part of the roof, and (*b*) that each course shall overlap the next course but one below. Water passing between slates on to the centre of the slates in the course below will not enter the roof if the covering material is impervious and if the slates or tiles are laid with a sufficient head lap and side lap on a roof of suitable pitch.

For example, on a slate roof of 35° pitch the head lap should be not less than 3 in. (for a site of normal exposure) and should be increased to 3½ in. for a pitch of 30°.

Side lap is the distance by which the side of the slate overlaps a slate in the course below. It provides lateral protection against water creeping diagonally sideways between the slates and penetrating the roof through the nail holes of the slate below. It should be noted that the lower the pitch of the roof the wider will be the 'angle of creep,' and conversely the narrower the slate, the shorter the distance that has to be travelled from the joint between the slates where the water enters and the nail holes of the slates in the next course below. Creeping is not dangerous in slating, provided that slates of adequate width proportionate to their length are used, which accounts for the recognized minimum ratio of width to length of individual slates, e.g. 24 in. by 14 in. and 12 in. ; 20 in. by 12 in. and 10 in.; 12 in. by 10 in. and 8 in., and so on.

While it will always occur on a slate roof under certain circumstances, creeping can also take place between plain roofing tiles. At one time plain tiles were invariably made quite flat with no camber in their length so that they fitted close together like slates. It was found that because of creep in long periods of wet weather the tiles tended to remain wet, particularly between faces, and so speed up frost action and delamination of the tiles. Most tiles of clay and concrete are now made with a camber in the length and sometimes also a slight cross camber. Because of camber an increase in the lap of plain tiles decreases the pitch of the individual tiles by raising the lower edges, and so the lap should not exceed one third of the length of the tile; the optimum for most conditions being 2½ in. to 3 in.

The causes of leaks in slated and tiled roofs may be one or combination of a number of the following:

1. Water may find its way over the heads of the slates or tiles, or through the nail holes. In a majority of cases this is due to the rafters having too low a pitch for the type of roof covering.

2. Water may find its way through the covered parts of the side joints between adjacent slates and tiles. This kind of leak is more usually associated with slating, and is due to the side lap being less than the minimum necessary for that particular length of slate.

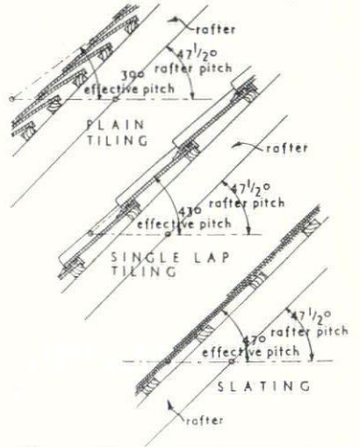
3. Water may actually penetrate the covering direct if it is of a very porous nature and there are extreme conditions of exposure; but this is less likely to occur on a steep pitch than on a shallow one.

4. Leaks frequently occur where the slating or tiling finishes, or joins, surfaces of another material—verges, abutments, ridges and open valleys are such situations. These are places where poor workmanship will become apparent soonest; and if such junctions can be kept to a minimum by designing roofs of simple form, so much the better for the life of the roof. Of these four cases, 1 to 3 are closely related to the pitch of the roof.

roof pitch

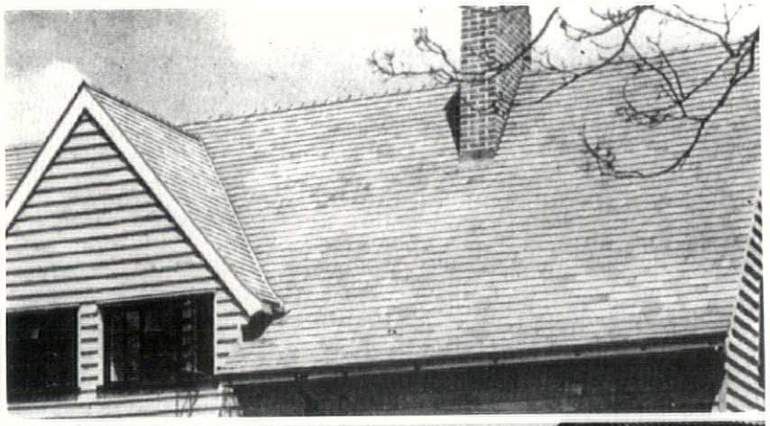
The effective pitch of both slates and tiles is less than the pitch of the rafters. This is an important point that must be taken into consideration when a pitch is being chosen for a particular covering. 1 illustrates effective pitch in plain and single-lap tiling and slating. In each case the rafter pitch is 47½°; the effective pitch of the plain tiling is 39°, of the single-lap tiling 43°, and of the slating 47°. It follows from this fact that slating may be safely fixed on a roof having a rafter pitch that would be too low for plain tiling.

Experience has proved that a slate whose width is half its length does, unless the pitch is very low and the site exposed, give sufficient side lap to ensure that creeping shall not reach the nail holes; which can be summed up as follows: use proportionately wide slates on low pitches,



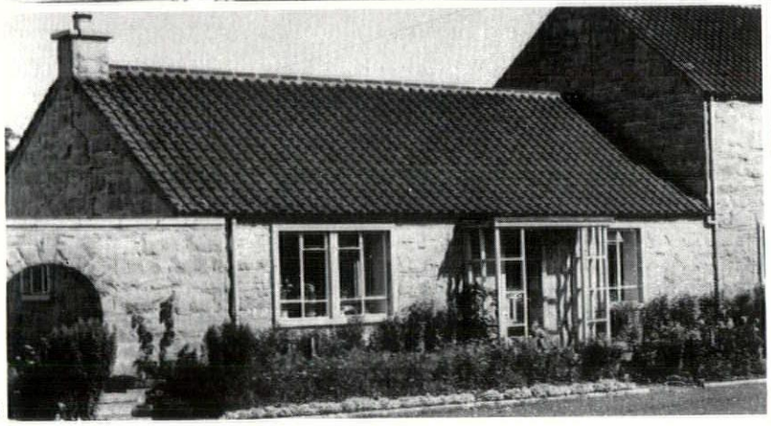
1, *diagram illustrating 'effective pitch' as applied to plain tiles, single lap tiles and slates.*

2,3





4,5



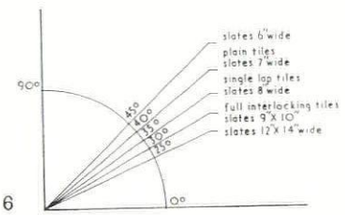


2, *Colt Canadian Western Red Cedar Shingles.*
3, *Ancona single Roman hand made concrete tiles.*
4, *Bambino hand made interlocking clay tiles.*

5, *Priory bold roll interlocking clay pantiles.*
6, *minimum actual or rafter pitches for unit roofing materials.*

Table 1. Sized Slates Laid to 3-in. Lap.

name	size in.	gauge in.	number of slates required to cover: one square	number of slates required to cover: 1 sq. yard	area covered by 1,000 slates: squares	area covered by 1,000 slates: square yards	ft. run of battens: per square	ft. run of battens: per sq. yard
	30×16	13½	67	6	15.00	166.7	89	8.01
	30×14		76	7	13.13	145.8		
	28×16	12½	72	6	13.89	154.3	96	8.64
	28×14		82	7	12.15	135.0		
Empresses ...	26×16	11½	78	7	12.78	142.0	104	9.36
Small empresses ...	26×14		89	8	11.18	124.3		
Princesses	24×14	10½	98	9	10.21	113.4	114	10.26
Duchesses	24×12		114	10	8.75	97.2		
Small duchesses ...	22×12	9½	126	11	7.92	88.0	126	11.34
Marchionesses ...	22×11		138	12	7.26	80.6		
Wide countesses ...	20×12	8½	141	13	7.08	78.7	141	12.69
Countesses ...	20×10		169	15	5.90	65.6		
	20× 9		188	17	5.32	59.0		
	18×12	7½	160	14	6.25	69.4	160	14.40
Wide viscountesses	18×10		192	17	5.21	57.9		
Viscountesses ...	18× 9		213	19	4.69	52.1		
	16×12	6½	185	17	5.41	60.2	185	16.65
Wide ladies ...	16×10		222	20	4.52	50.2		
Broad ladies ...	16× 9		246	22	4.07	45.2		
Ladies	16× 8		277	25	3.61	40.1		
Wide headers ...	14×12	5½	218	20	4.58	50.9	218	19.62
Headers	14×10		262	24	3.82	42.4		
Small ladies ...	14× 8		327	29	3.06	34.0		
Narrow ladies ...	14× 7		374	34	2.68	29.7		
Small headers ...	13×10	5	288	26	3.48	38.6	240	21.60
	13× 8		360	32	2.78	30.8		
Doubles	13× 7		411	37	2.43	27.0		
	12×10	4½	320	29	3.13	34.7	267	24.03
Wide doubles ...	12× 8		400	36	2.5	27.8		
Small doubles ...	12× 6		533	48	1.88	20.8		
	10×10	3½	411	37	2.43	27.0	343	30.87
Singles	10× 8		514	46	1.94	21.6		
Units	10× 6		686	62	1.46	16.2		



6

and small, narrow slates on steep pitches.

6 is a guide to minimum (actual) pitches for a number of tiles and slate types. A good underfelting is assumed for all the above coverings at the stated pitch.

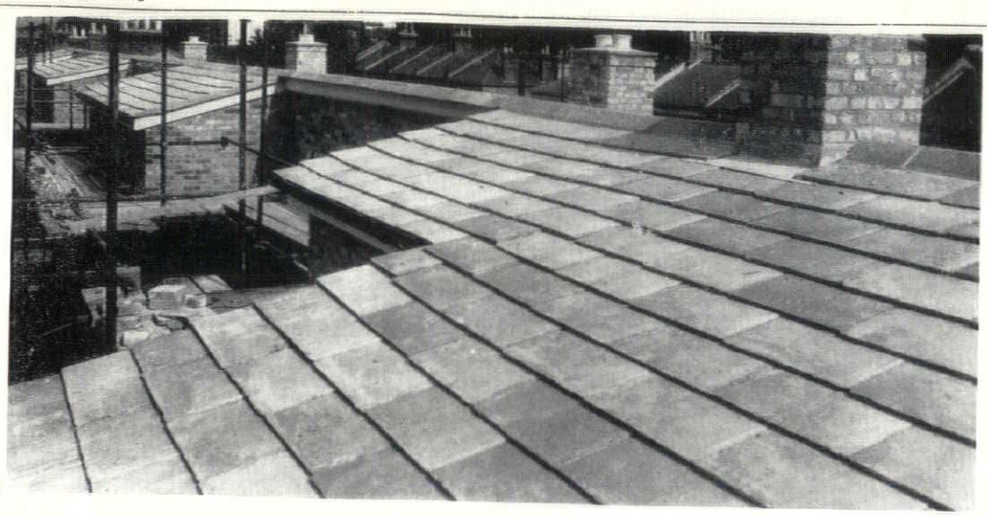
CP 142 sums up the matter of suitable pitch for tiles and slates as follows:

'It is known that some patterns and qualities of single-lap tiles are satisfactory for use with pitches less than 35°, but these are the exceptions at present. Therefore, the user should ensure that there is sufficient evidence available to prove any claims made for the use of pitches less than 35°. The best proof of any such claims is the citation of examples of roofs covered with such tiles that have behaved satisfactorily for 15 years or more.'

It is undoubtedly the architect's responsibility to see that the pitch of the roof is appropriate to the roof covering chosen; and conversely, if his design seems to require a pitch appreciably below 35°, then tiles and slates are not the right group of coverings for the job.

[continued on page 291

continued from page 290]



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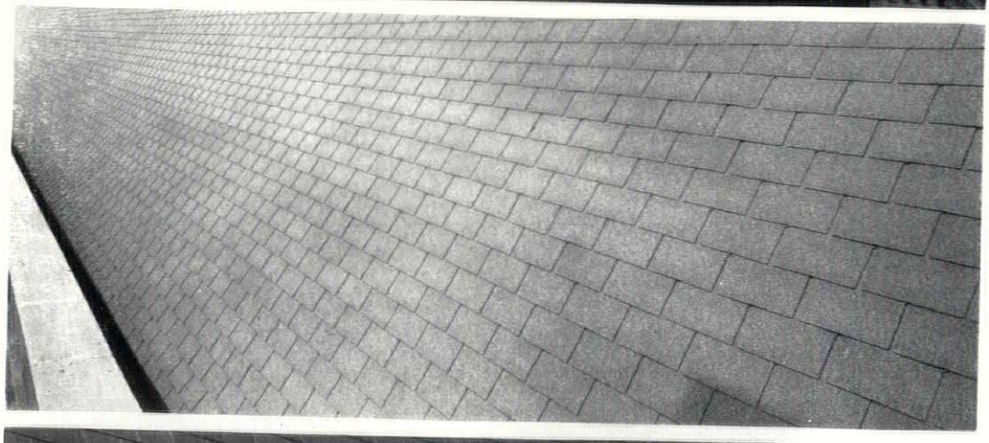

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10

heat losses through roofs

The choice of whether adequate insulation against heat loss should be made in the plane of the roof (thus providing a heated roofspace) or whether the main insulation should be at ceiling level, is probably decided on other grounds than that of choice of roof covering. However, if good practice for this group of materials is observed then a roof of tiles or slates on battens, counter-battens, felt and boards would already give the U value of .35 without ceiling and it would be comparatively easy to provide the additional insulation required, to bring the total U value down to .18 to .2, at ceiling level.

Tables 16 to 19 of 'Thermal Insulation of Buildings'* give many alternative ways of providing ceiling insulation to certain U values together with the cost per square yard.

definitions

Not all of the terms used in this class of roof covering are as familiar to architects as they should be. Here are some of them, taken from BS 2717 : 1956 'Glossary of Terms applicable to Roof Coverings.'

Shingle. A short thick rectangular piece of timber, usually tapering in thickness along the grain, used in the same way as tiles for covering the roofs and sides of buildings. (See BS 565.)

(*a*) Dimensions. Western red cedar shingles specially cut to uniform instead of random widths and obtainable in 16-in. and 18-in. lengths by 5-in. and 6-in. widths and 24 in. long by 6 in. wide.

(*b*) Five X or XXXXX (5X). The name given to Western red cedar shingles cut to 16-in. lengths with a thickness of five butts measuring 2 in.

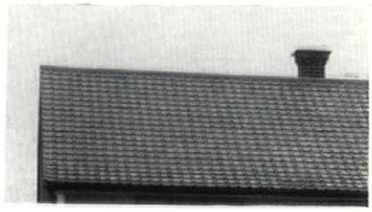
(*c*) Perfections. Western red cedar shingles cut to 18-in. lengths with thickness of 5 butts measuring $2\frac{1}{4}$ in.

(*d*) Processed shakes. Ordinary sawn Western red cedar shingles that have been specially textured on the face to resemble the irregularities of riven shingles.

(*e*) Royals. Western red cedar shingles cut to 24-in. lengths with the thickness of four butts measuring 2 in.

(*f*) Sawn singles. Shingles produced by sawing from a block of wood as opposed to being cleft or riven.

(*g*) Saxon shakes. Hand cleft or riven shingles of Western red cedar, 24 in. long, random in width and ranging in thickness from $\frac{3}{4}$ in. to $1\frac{1}{4}$ in. at the butt. They are usually hand split to double thickness and subsequently sawn diagonally edgewise to provide a flat back for even laying. Shingles are also obtainable in oak and Swedish pine.



11

* HMSO, 12s. 6d.

7, *Hardrow concrete slates laid to a pitch of* 15°.
8, *Stonewold interlocking concrete slates.*
9, *Ruberoid square butt strip slates.*
10, *Poilite asbestos cement slates.*
11, *C.D.N. Belgian types fully interlocking clay pantiles.*

Table 2. Interlocking and Single-lap Tiles

name of tile	size	gauge	number required to cover		area covered by 1,000 tiles		wgt. of 1,000 tiles	weight of tiling		feet run of battens required	
	in.	in.	1 square	1 sq. yard	squares	square yards	cwts.	per square (cwts.)	per sq. yard (lbs.)	per square	per sq. yard
Acme	15¼ × 8¼	12¼	150	14	6.7	74	40	6	61	97	8.73
Bambino	13½ × 10½	10½	150	14	6.66	73.5	50	7½	76½	115	10.35
Beauvais	12¼ × 8⅝	10⅜	187	17	5.3	59.5	40	7½	76	113	10.17
Cloister	11¾ × 8½	9⅞	200	19	5.0	55	39	8	82	122	10.98
Double Roman—											
Double Roman ...	16½ × 14	13½	85	8	11.8	130	70	6	61	90	8.10
Large interlocking ...	16½ × 14	13½	85	8	11.8	130	70	6	61	90	8.10
Major's patent	18 × 14½	15⅝	75	7	13.3	148	80	6	61	80	7.20
Patrician	13½ × 13½	10½	110	10	9.09	100	62¼	7	72	115	10.35
Rainbar	16½ × 13	13½	90	8	11.11	125	70	6	61	90	8.10
Reynardo	16½ × 14	13½	85	8	11.8	130	70	6	61	90	8.10
Small interlocking ...	15 × 11	12	120	11	8.4	92.5	51	6½	63	100	9.00
Gilardoni marne	16 × 9⅝	13⅜	134	12	7.46	83	54	7¼	73	90	8.10
Goxhill pantile	13½ × 9½	10½	172	15½	5.82	64.6	45	7¾	79	115	10.35
Blyth's pantile	13½ × 9½	10½	172	15½	5.82	64.6	45	7¾	79	115	10.35
Homestead	15½ × 8	12½	165	15	6.0	67	40	6½	67	96	8.64
Langboro	16⅝ × 9⅛	13⅝	132	12	7.6	84.2	50	6½	66	89	8.01
Langhome pantile ...	13½ × 9½	10½	180	16¼	5.55	61.7	40	7¼	73	114	10.26
Langley's bold roll interlocking pantile... ...	14⅞ × 10½	12¼	146	13¼	6.86	76.3	50	7⅓	74	98	8.82
Langley's C.D.N. interlocking (the 'Courtrai' tile)	11½ × 8½	9½	208	19	4.8	52	33	7	71	126	11.34
Langley's interlocking improved pantile	13⅞ × 10	11½	147	14	6.8	75.5	43	6¼	63	104	9.36
Langley's model 'O' interlocking pantile... ...	14½ × 10	11¾	158	14¼	6.33	70.2	51½	8¼	82	102	9.18
Langley's mulden interlocking tile	16⅛ × 9¼	13½	135	13	7.4	82	50	6½	66	89	8.01
Marseilles	16½ × 9¾	13½	127	12	7.9	87.5	45	5¾	58	90	8.10
Old English pantile ...	14 × 10	10¾	155	14	6.45	71.6	40	6¼	62¾	112	10.08
Paragon	15¼ × 10	12¼	125	11	8.0	89	45	5½	57	98	8.82
Poole's patent (large) ...	16 × 14	13	90	8	11.1	123	80	7¼	73	93	8.37
Poole's patent (small) ...	12½ × 9½	9⅛	150	14	6.7	74	50	7½	76	127	11.43
Priory	13⅞ × 10½	11¼	141	13	7.09	78	54	7½	76	107	9.63
Rectory	13 × 11¼	10¼	140	13	7.15	79	50	7¼	73½	117	10.53
Sitfast pantile	14 × 10	10⅛	168	15¼	5.95	65.5	45	7½	76½	118	10.62
Somerset patent interlocking no. 13	15½ × 8	12⅓	155	14	6.4	71.5	40	6½	67	96	8.64
Somerset pantile	13½ × 9½	10½	170	15	5.9	65	40	6¾	68	115	10.35
Sterreberg interlocking pantile	13¾ × 9¼	11½	165	15	6.0	67	50	8¼	84	104	9.36
Treble angular	15 × 13¼	12	95	9	10.5	116.5	60	5¾	58	100	9.00
Treble corrugated ...	16½ × 14	13½	85	8	11.8	130	70	6	61	90	8.10
Triton pantile	13½ × 9½	10½	165	15	6.06	67.4	56	9¼	94	115	10.35
Triton romulus	13¾ × 11¼	10½	150	13½	6.66	73.5	72	10¾	109½	115	10.35
Spanish and Italian types											
Italian (Colthurst Symons)	15½ long	12½	100*	9*	10.0*	111*	40†	8	81½	96	8.64
Lido	16¼ long	13	100*	9*	10.0*	111*	40†	8	81½	93	8.37
Spanish (Colthurst Symons)	14 long	10½	125*	11*	8.0*	89*	35†	8¾	89	115	10.35
Triton Milan	15⅛ long	11½	116*	10⅓*	8.62*	95.8*	54½†	12½	127½	105	9.45
Triton Seville	15⅜ long	12⅜	122*	11*	8.2*	91*	57†	14¼	145	98	8.82

* Pairs, i.e. one over and one under tile. † 500 pairs.

Table 3. Plain Tiling

size of tile	gauge	lap	number required to cover		area covered by 1,000 tiles		feet run of battens per square	weight of tiling	
in.	in.	in.	1 square	1 sq. yard	squares	square yards		per square (cwts.)	per sq. yard (lbs.)
10½ × 6½	3½	3½	633	57	1.6	17.5	343	14	140
	3¾	3	591	53	1.7	18.8	320	13	131
	4	2½	554	50	1.8	20.0	300	12	123
	4½	1½	492	44	2.0	22.5	267	11	109
11 × 7	3½	4	588	53	1.7	19.0	343	13½	136
	3¾	3½	549	49	1.8	20.3	320	12¾	127
	4	3	515	46	2.0	21.8	300	12	119
	4¼	2½	484	44	2.1	23.0	282	11¼	112
	4½	2	457	41	2.2	24.3	267	10½	106

table 2

Since a number of the types of tile named are produced by various manufacturers there are slight variations in size, gauge, etc. It is advisable, therefore, to delay battening until the tiles are on the site when the best spacing can be decided.

Slates. Pieces of true slate rock or other laminated stone, split and dressed for use as roof coverings. (See BS 680.)
(*a*) Peggies. Small sizes of slates of random sizes which are sold by weight.
(*b*) Ton slates. Large sizes of slates which are sold by weight. The terms 'bests,' 'seconds,' 'medium,' etc. (according to the district of mining), refer to thickness (and weight) and not to quality of the material.

Tiles. Shaped pieces of fired clay, moulded concrete or other suitable artificial material for use as roof coverings. The following are the names given to tiles:
(*a*) Interlocking pantile. Single-lap tiles so designed that adjacent tiles interlock at the head and side.
(*b*) Italian tiles. Single-lap tiles used adjacently in pairs, the under tile (tegula) being flat and the over tile (imbrex) rounded in horizontal section.
(*c*) Normal roll pantiles. Pantiles with roll of equal width from head to tail.
(*d*) Pantiles. Single-lap tiles moulded to a flat S-shape in horizontal section the corrugations running from the head to the tail of the tile.
(*e*) Plain tile. Rectangular tiles without moulded surfaces with projecting nibs on the back for fixing and slightly cambered in their length and sometimes also in their width.
(*f*) Single-lap tiles. Tiles so designed that those in any course overlap only the tiles in the course below.
(*g*) Spanish tiles. Single-lap tiles used adjacently in pairs, the under-tiles and over-tiles being rounded in horizontal section.
(*h*) Tapered roll pantiles. Pantiles in which the rolls slightly increase in width from head to tail.

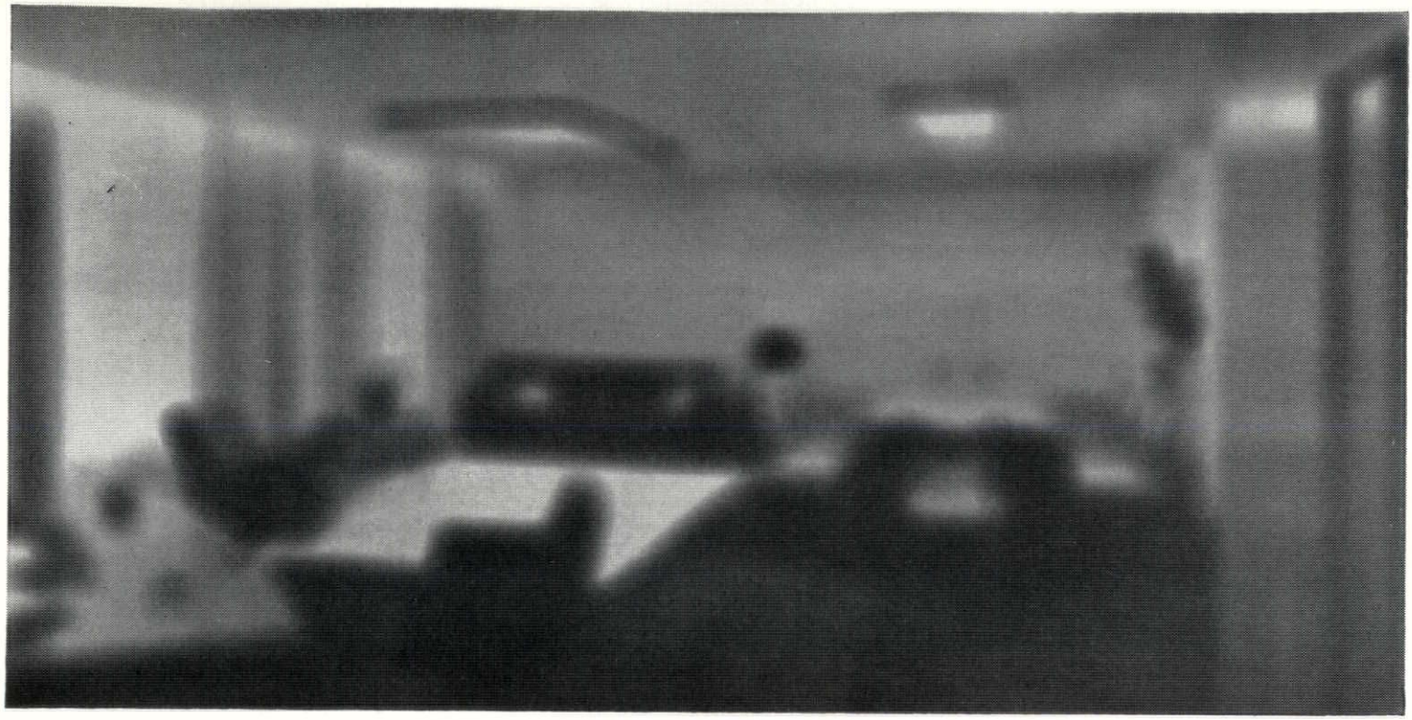
covering capacities of tiles

Tables 2 and 3 give the covering capacities of each kind of tile, then weights and the foot run of battens they require. This data is of value as it is customary to quote the prices of tiles per 1,000 and the coverage (and hence the weight) varies very considerably. All calculations are net, no allowance having been made for breakage and waste.

In next month's issue we publish a set of tables which carries this data a stage further and compares both the physical properties and the cost of all the coverings mentioned in this article. The subsequent articles in the series will do the same for the other types of pitched roof coverings so that, when the series is complete, readers will have a comparative reference for virtually all varieties.

table 3

Plain tiles of different makes vary in weight between relatively wide limits. For the purpose of this table the following weights have been taken:
10½ in. × 6½ in. tiles—22 cwts. per 1,000.
11 in. × 7 in. tiles—23 cwts. per 1,000.



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Hollow mould floors

Mills, the scaffolding people, have joined forces with the great Nettlefold group to produce a new suspended floor system. The floor has a coffered soffite which results from the sink-like 'pan' shutter units that are the essence of the system. These, 2 ft. 9 in. square on plan and 9 in., 12 in. or 15 in. deep, are made of glass fibre reinforced plastic and rest on propped centres. They are immensely strong and resistant to impact damage, are sufficiently light in weight for six pans to be carried by one man, and are claimed to give a finish smooth enough to decorate direct, although much depends on the quality and laying of the concrete. No mould oil is needed.
Mills Scaffold Company Ltd., Hammersmith Grove, W.6. GKN Reinforcements Ltd., 197 *Knightsbridge, S.W.7.*

Float glass

Plate glass costs between four and six times as much as drawn sheet. This is because of the great expense of making, installing and running the grinding and polishing plant—one of the problems of which is its extraordinary length of 2,140 feet. Pilkington Brothers have now announced their invention of a new process for making glass of a quality very close to polished plate, but without these attendant difficulties.

Glass technologists have always regarded the 'fire' finished surface of drawn sheet glass as superior to the ground and polished surface; it is brighter, confers proportionately more strength and of course requires no 'process' to achieve. Like the dreamers of cold light or perpetual motion they have sought a means of combining fire finish with parallel plane surfaces. Such a means has now been found, and not without difficulty, it took seven years and cost £4 million to develop.

In principle it is very simple. Molten glass from the furnace is rolled on to the surface of a molten metal where additional heat allows it to settle like a liquid to an exactly constant thickness. It passes across the metal, which does not mar its surface, to a cooler end of the metal bath where it hardens sufficiently to be taken by rollers through an annealing lehr and thence to a final cutting process. This whole process occupies a length of only 646 feet.

At present its cost will be the same as that of plate glass—to pay, the Company says, for the expenditure on its development.
Pilkington Bros. Ltd., St. Helens, Lancs.

Ready made buildings

Ready made buildings seem now quite common—and surprisingly alike. A system is being offered under the name Cygnacrete, consisting of precast storey height columns, transverse beams and trough unit floors, or roofs. It can be obtained with flat or portal frame pitched and north light roofs and no limit is given for the number of storeys. The plan with perimeter and one centre row of columns has an overall width of building varying from 40 ft. to 72 ft. The single span frame has overall widths of 38 ft. or 40 ft. It is perhaps unfortunate that the brochure does not indicate how corners or staircases are managed, nor does it say very much about external walling possibilities, finishes or accommodation of services. The company appears to supply or to supply and erect, the frame only.
William Townson and Sons Ltd., Higher Swan Lane, Bolton.

Two new lighting catalogues

Two new lighting catalogues are reviewed this month. The fittings shown in them do not differ so very greatly from each other, which emphasizes all the more the importance of presentation. Vivid photographs, systematic layout so that items are easy to find and all the information needed by an architect to choose what he wants for his building—these are the essentials.

In the introduction to their new catalogue of commercial lighting fittings, Siemens Ediswan remark that 'even where the purpose is purely functional, fittings have been designed with an eye to good appearance' . . ., etc. One feels, looking through the range, that attention to appearance has perhaps been a little too self-conscious. There are sections dealing with fluorescents, pendants (ceiling and wall), spot and floodlighting fittings and what the catalogue refers to as 'architectural' fittings. These are, in fact, strip lights.

The concluding pages of the catalogue include some refreshingly old-fashioned fittings which have words

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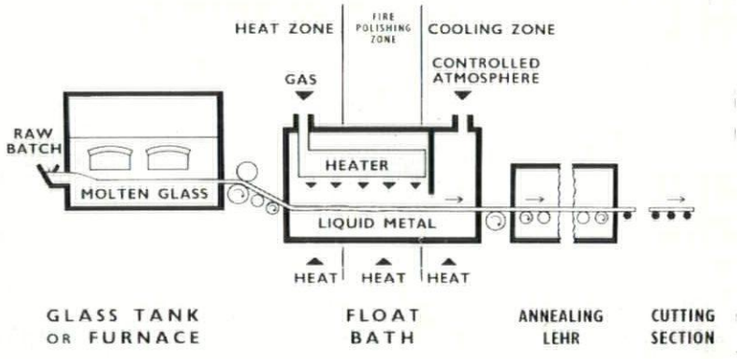
1. diagram of the new 'float' process of making glass; the nature of the liquid metal on which the glass floats is kept secret.





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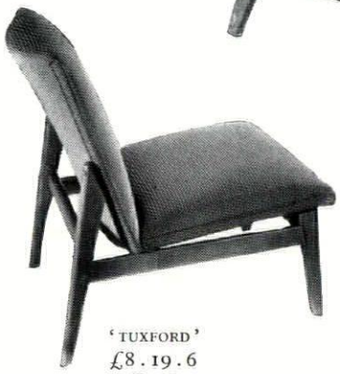

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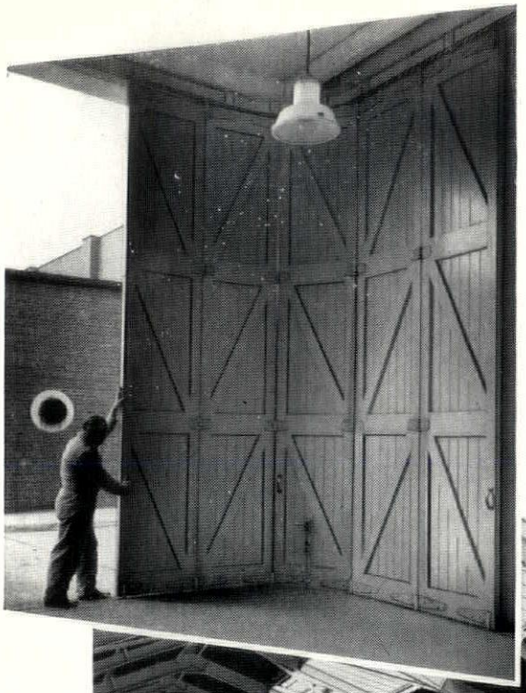

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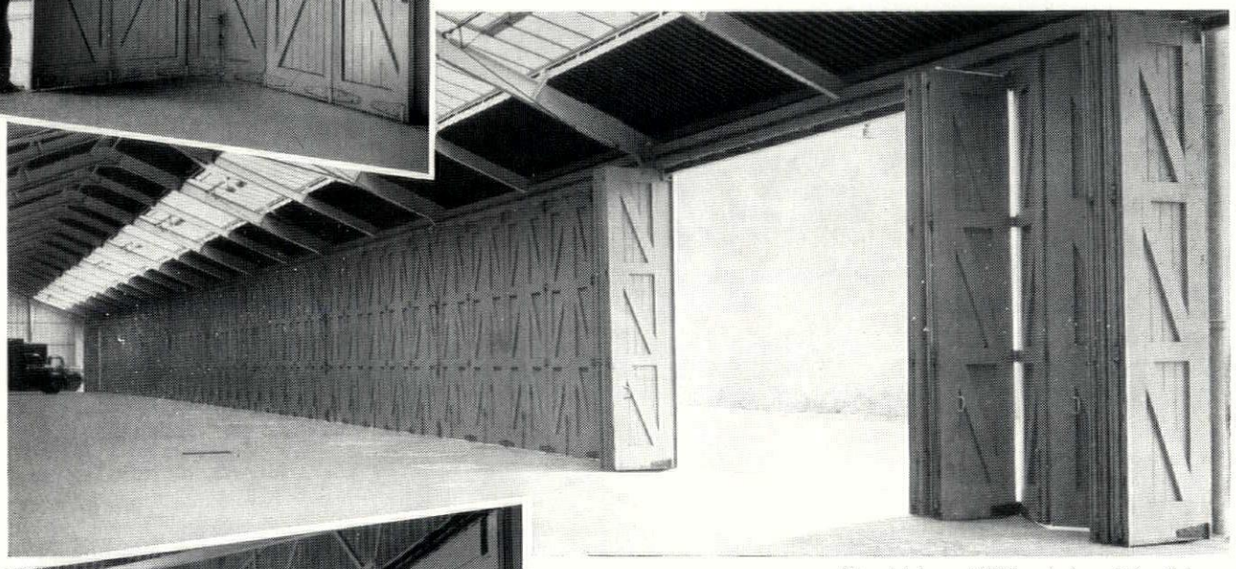
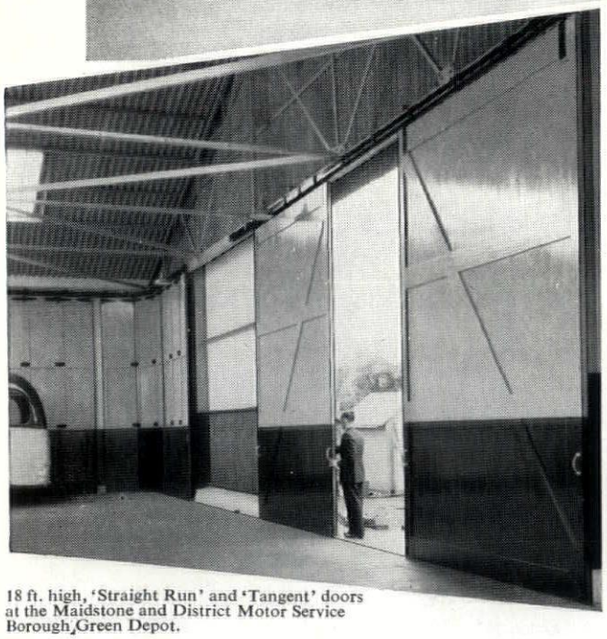


Despatch bays of William Jackson & Son Bakery, Stockton-on-Tees. Opening 84 ft. wide overall.



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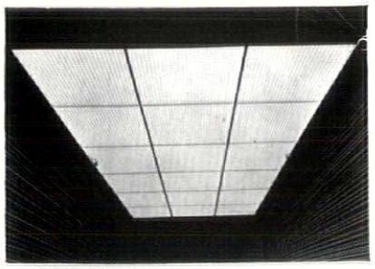

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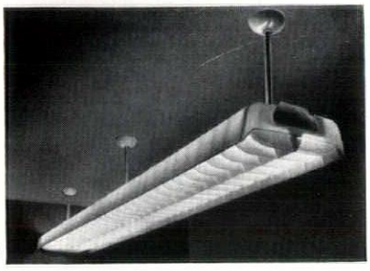

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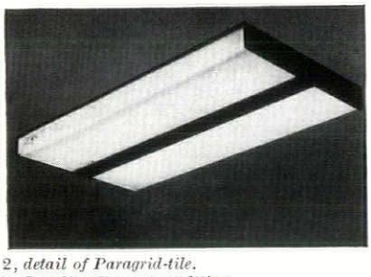


4

2, *detail of Paragrid-tile.*
3, *Luveline fluorescent fitting.*
4, *Four two one fluorescent fitting.*

on them like Exit, Cloakroom and Dentist. For recherché architects I note that the firm still makes those ribbed reflector fittings with gallery fixing.
Siemens Edison Swan Limited, 38 Upper Thames Street, London, E.C.4.

A decidedly more sophisticated range comes under the name of Handslite (a subsidiary of the Harris and Sheldon shopfitting organization) in a plushy thumb index catalogue. The first page makes it clear that the firm has its ear to the architectural ground—for it gives strips of colour sample with both the BS and the Munsell references—for the colours in which the fittings can be obtained. The first section deals with fluorescents and accessories including two recent products. First the Luveline, a polystyrene egg-crate type of diffuser made in lengths which clip on to the body of a two-tube fitting. The lengths of diffuser hinge down from one side for easy cleaning and can be put together in 'trains' to make a continuous fitting. The next new product is the Paragrid tile: square, 16 in. by 16 in., of plastic egg-crate—with much smaller squares than is usual (28 strips in the 16 in.) and with the strips going one way lower down than those going the other way. To quote the makers: 'this gives the ceiling a very delicate and distinctive texture . . .' It also gives greater freedom of the spacing and mounting heights of fluorescent tubes above the Paragrid. The tiles are fixed into channel sections at 32 in. cc, which in turn are wired to the structure above.

The catalogue continues with a number of good plain industrial fittings and concludes with an immense range of tungsten wall, ceiling and table fittings all of which are very à la mode—especially the ones with bottle-shaped pendant globes (you cannot call them shades) —patterned and coloured. Among the fluorescents is a rather appealing echo of the 1920's German design—the 'Four two one.' It is only 3¾ in. deep, the control gear being housed between (and not above) the two twin tubes, and is intended for places where headroom is scanty.
Harris and Sheldon (Electrical) Limited, Ryder Street, Birmingham, 4.

It would improve the usefulness of these catalogues if they could show an explicit diagram to scale of each fitting and some indication of its lighting characteristics—the output at various angles and the surface brightness of visible parts.

Lifts

Hammond and Champness, the lift people, recently issued a booklet which earned them a Certificate of Merit by the RIBA and the Building Centre. Now appears a supplement intended to serve as an indication of the infinite variety of treatments which can be applied to lift entrances. Individuality can be expressed still further by the introduction of specially designed call and indicator panels. There follows a great many photographs of everything from American commercial, through Contemporary and Modern even to a Brutalist lift entrance.
Hammond and Champness Limited, Blackhorse Lane, Walthamstow, London, E.17.

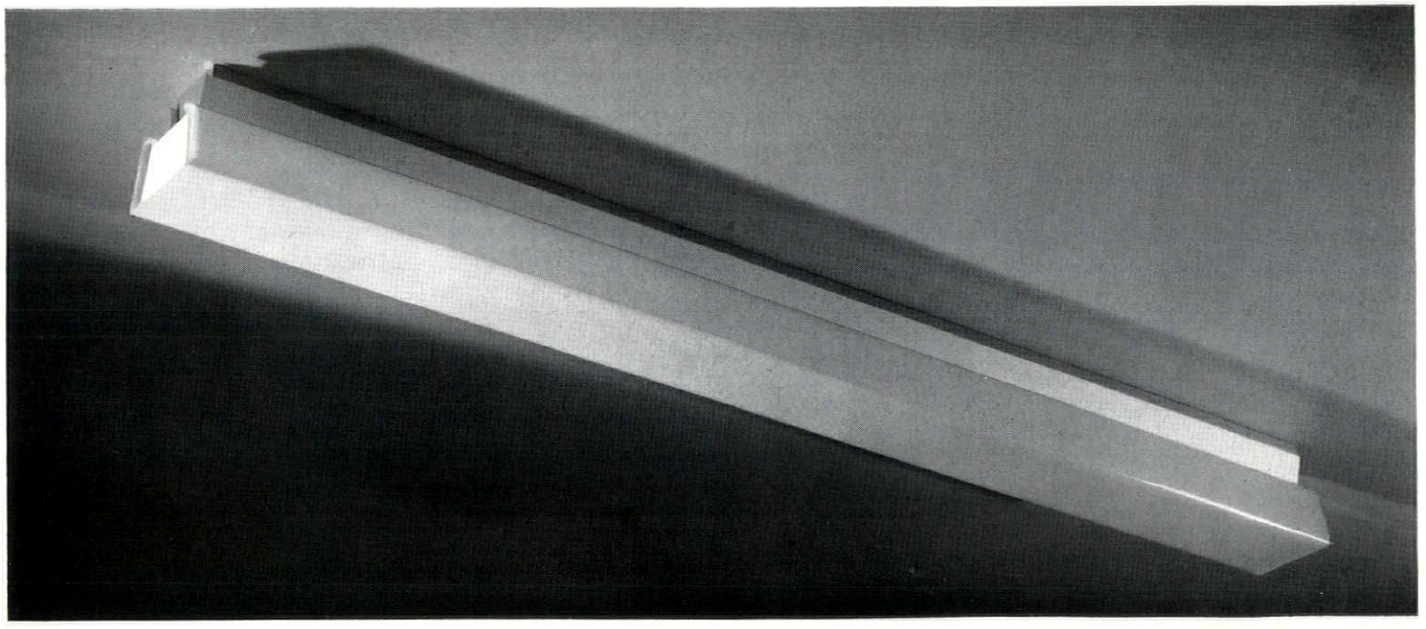
Copper roofing

A new kind of copper roofing of waffle like appearance came on to the market last year. It consists of very thin soft copper (42 SWG 0.004 in. thick) bonded to a single layer of glass fibre based bitumen sheet. The resulting 'sandwich' weighs 6 lb. per yard super and is laid in a manner similar to traditional copper —i.e. with rolls, drips, standing seams, etc.—on a base of reinforced glass fibre underlay, fixed to the deck (timber or concrete). It is appropriate for pitched or nominally flat (1 degree minimum slope) roofs and is fixed only by the makers themselves, not by accredited contractors. The indented waffle pattern of the copper is 'designed to accommodate the effects of thermal expansion' although the technical literature appears to suggest that the traditional means are necessary as well. The makers emphasize that the roof acquires the time-hallowed patina of basic copper carbonate, the intention would thus seem to be that you get a copper roof at less cost than the orthodox article, although no prices are given.
The Ruberoid Company Ltd., Commonwealth House, 1–19 New Oxford Street, W.C.1.

Thermal insulation

Thermal insulation and U values were things unknown to the architect before the war but with the intense fuel economy campaign and the general air of redeeming our inter-war shortcomings that marked the 1940's, U values became common property. Now every architect below a certain age level can bandy the figures and do calculations with them. It appears, however, that for all this time we have been bandying the wrong figures. The London Brick

[continued on page 298



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One of a series of Fluorescent Fittings priced from £6 1s. 4d., which have been styled by Noël Villeneuve for commercial and industrial uses. *Brochure series 303*

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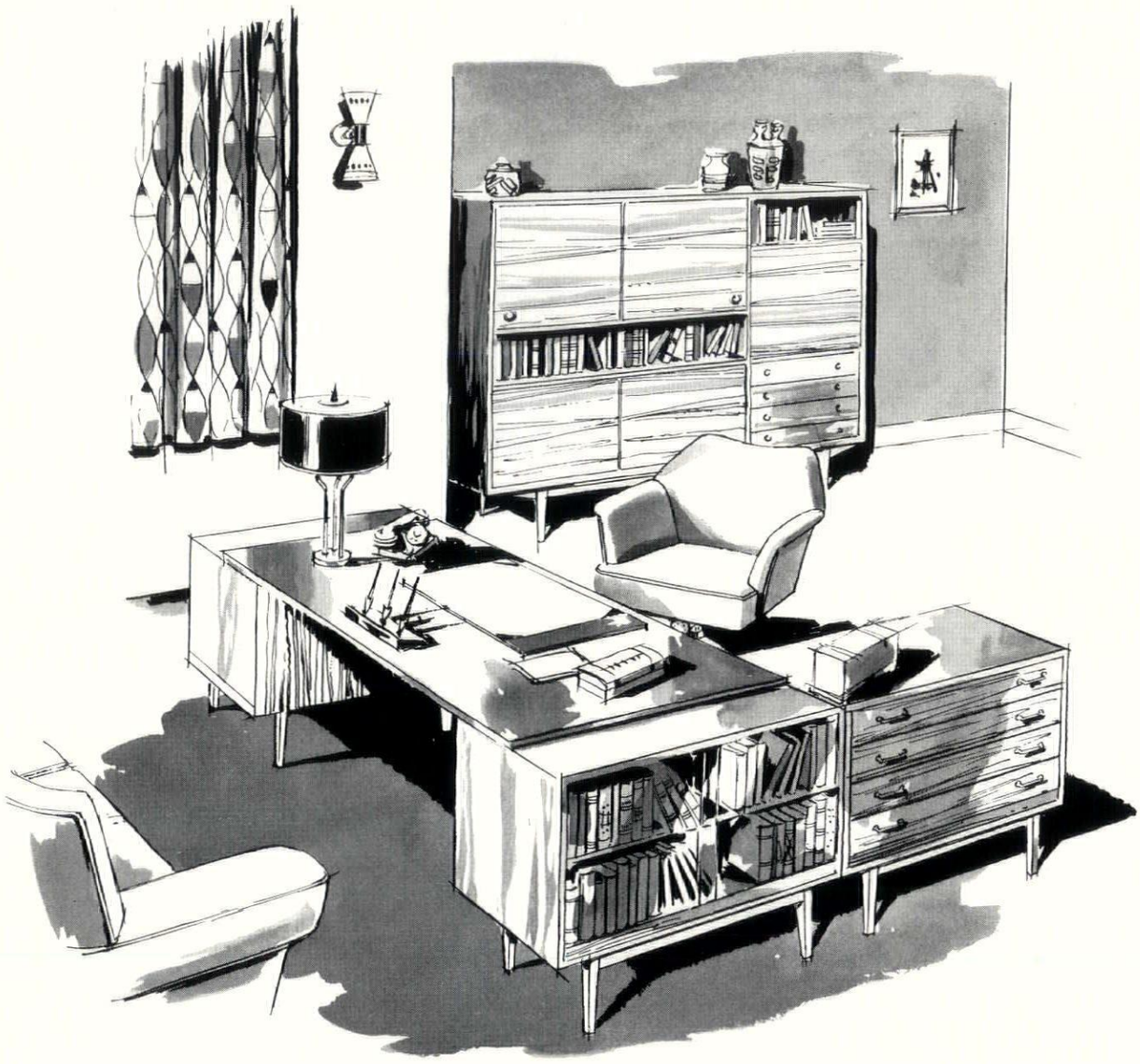

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continued from page 296]

Company have recently completed a four-year investigation of the actual thermal losses in real conditions at their research establishment at Stewartby in Bedfordshire. They say that the figures we all know, for example 0.30 for brick cavity walls, are based on laboratory data that failed to account fully for factors such as moisture content, radiation losses to sky, wind, degree of exposure, etc. Thus the 0.30 value should be 0.28, a clinker block, cavity, brick wall should be 0.26 and not 0.20. Various other combinations of material give similar differences from those commonly accepted.

The company have shown a graph, plotting the day-to-day variation in U value of a wall whose average is 0.28 which extends from just over 0.20 to 0.40—a variation due to the factors mentioned above, the chief of which may be moisture content. Subsidiary studies of this problem show that clay products absorb moisture less readily and give it up more quickly than concrete products. Whether the new values make a great deal of difference to our calculations of heat loads remains to be seen.

The results of their investigations have been summarized in a 16-page booklet. If you are interested in U values, and you should be, this is a booklet that should be on your files. *The London Brick Company, Africa House, Kingsway, W.C.2.*

CONTRACTORS etc

Offices at Paddington. *Architects:* C. H. Elsom & Partners. *General contractors:* Tersons Ltd. *Lifts:* Otis Elevator Co. *Heating, hot water and ventilation:* G. N. Haden & Sons. *Internal plumbing, rainwater plumbing, dry riser and hosereel installation:* Matthew Hall & Co. *Electrical installation:* Phoenix Electrical Co. *Metal windows, ventilation, glazed roof, balcony balustrading:* Williams & Williams Ltd. *Lightning protection:* R. C. Cutting & Co. *Terrazzo pavings, wall linings and lavatory partitions, mosaic wall facing:* W. B. Simpson & Sons. *Thermoplastic flooring:* Armstrong Cork Co. *Metal balustrades, core rails, guard railing, staircases, etc.—South Site:* George Wright (London) Ltd. *Metal balustrades, core rails, guard railing, staircases, etc.—North Site:* Light Steelwork (1925) Ltd. *Staircase plastic handrails:* Marley Tile Co. *Rolling shutters:* Haskins Rolling Shutters. *Marble wall lining:* Art Marbles Stone & Mosaic Co. *Entrance hall screens:* James Gibbons Ltd. *Bored piling:* The Cementation Co. *Special damp-proof courses:* Ruberoid Co. *Fibrous plaster and acoustic tiles:* Jonathan James Ltd. *Boardroom and members' room furnishing—Block C:* Hille of London Ltd. *Horticultural work:* Gilliam & Co. *Boardroom panelling—Block C:* H. N. Barnes Ltd. *Venetian blinds—Block C:* J. Avery & Co. *Special rendering:* Mineralite Ltd. *Cradle runways:* Palmers Travelling Cradle & Scaffold Co. *Bricks:* Richard Parton. *Incinerators:* Sloan Electric Co. *Ironmongery:* Alfred G. Roberts Ltd. *Floor springs and overhead door closers:* Comyn Ching & Co. *Flush doors:* Gliksten Doors Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Precast concrete mosaic faced infilling panels and exposed aggregate cladding units:* The Modular Concrete Co. *Dry riser inlet boxes and outlet covers:* George Wright (London) Ltd. *Glass dome lights:* T. & W. Ide Ltd. *Folding ladders:* Loft Ladders Ltd. *Special light fittings:* F. H. Pride Ltd.; Frederick Thomas & Co. *Rubber door mats:* Redfern's Rubber Works Ltd. *Double glazed units:* Hollowseal Glass Co. *Glass cladding units:* Plyglass Ltd.; Pilkington Bros. Ltd. *Concrete paving, bollards and planting bowls:* Mono Concrete Ltd. *Electric clocks—Block C:* English Clock Systems Ltd. *Thiokol rubber jointing compound:* British Paints Ltd. *Paint:* Hadfields Ltd. *Special wall tiles:* Langley London Ltd.; Carter & Co. *Glass mosaic:* Proctor & Lavender Ltd.; Dennis M. Williams Ltd.

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Factory at Ilkeston *Architects:* Clarke Hall, Scorer and Bright. *General contractors:* Bovis Ltd. *Roofings:* Wm. Briggs & Sons. *Lettering, tank tower:* Plyglass Ltd. *Patent flooring:* Semtex Ltd. *Central heating:* Young, Austen & Young Ltd. *Sanitary fittings:* Adamsez Ltd. *Rolling shutters:* J. Taylor (Syston) Ltd. *Metalwork:* Lewis & Grundy Ltd. *Lifts:* Evans Lifts Ltd. *Water-softening plant:* The Permutit Co.

Technical College at Colchester. (Second instalment.) *County architect:* H. Conolly. *Contractors:* Hutton (Builders) Ltd. *Sub-contractors and suppliers: Mechanical and heating:* Corton & Bergin Ltd. *Electrical:* Christy Bros. Ltd. *Piling:* The Cementation Co. *Lifts:* Express Lift Co. *Metal windows:* Crittall Manufacturing Co. *Laboratory fittings:* Geo. M. Hammer & Co. *Portland stone:* E. P. Austin. *Chalkboards:* Tabula Chalkboards Ltd.; Mann & Egerton Ltd. *Lettering:* The Lettering Centre. *Woodblock and strip floors:* S. Bennett & Son Ltd. *Thermoplastic and P.V.C. floor tiles:* Rowan & Boden Ltd. *Rubber floors:* The North British Rubber Co. *Cork floors:* Haskel Robertson Ltd. *Asphalte:* Pilkington's Asphalte Ltd. *Terrazzo:* The Arcanum Terrazzo & Stone Co. *Architectural metalwork:* Light Steelwork (1925) Ltd. *Asbestos spray finish:* Turners Asbestos Cement Co. *Door furniture:* James Gibbons Ltd. *Sanitary goods:* Adamsez Ltd. *'Palladio' wallpapers:* Wallpaper Manufacturers Ltd. *Paints:* John Hall (London & Bristol) Ltd. *Acid catalysed wood lacquer:* W. W. Hill & Son & Wallace Ltd. *Tiles:* Carter & Co. *Laboratory taps:* J. S. & F. Folkard Ltd. *Preformed copper traps and wastes:* Econa Modern Products Ltd. *Taps and waste fittings:* Barking Brassware Co. *Curtains:* Heals Ltd. *Lighting fittings:* Forrest Modern Fittings Ltd.; Merchant Adventurers Ltd.; Troughton & Young (Lighting) Ltd.; Frederick Thomas Ltd. *Clocks:* Gent & Co. *Blackout and sunblinds:* J. Avery & Co.

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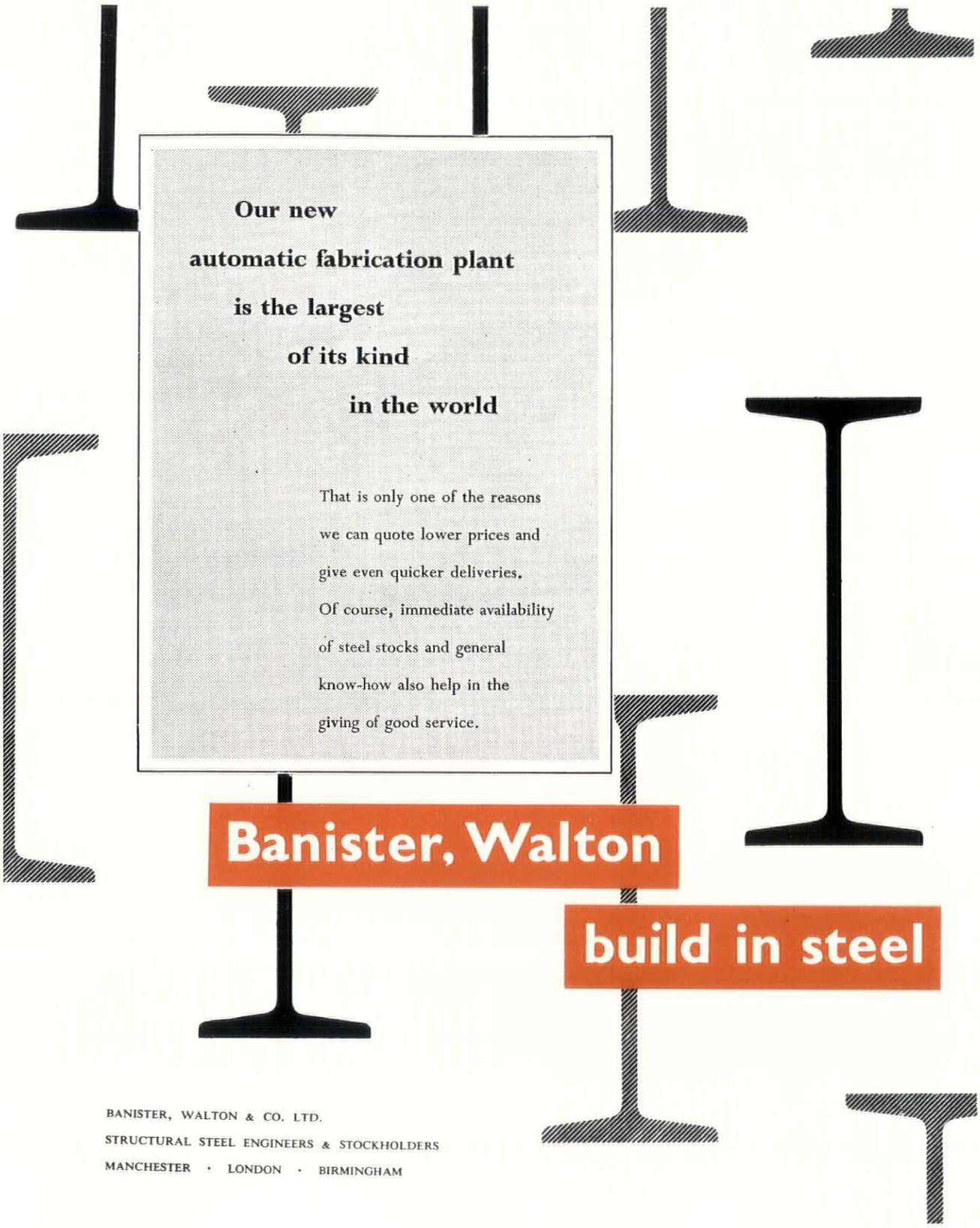

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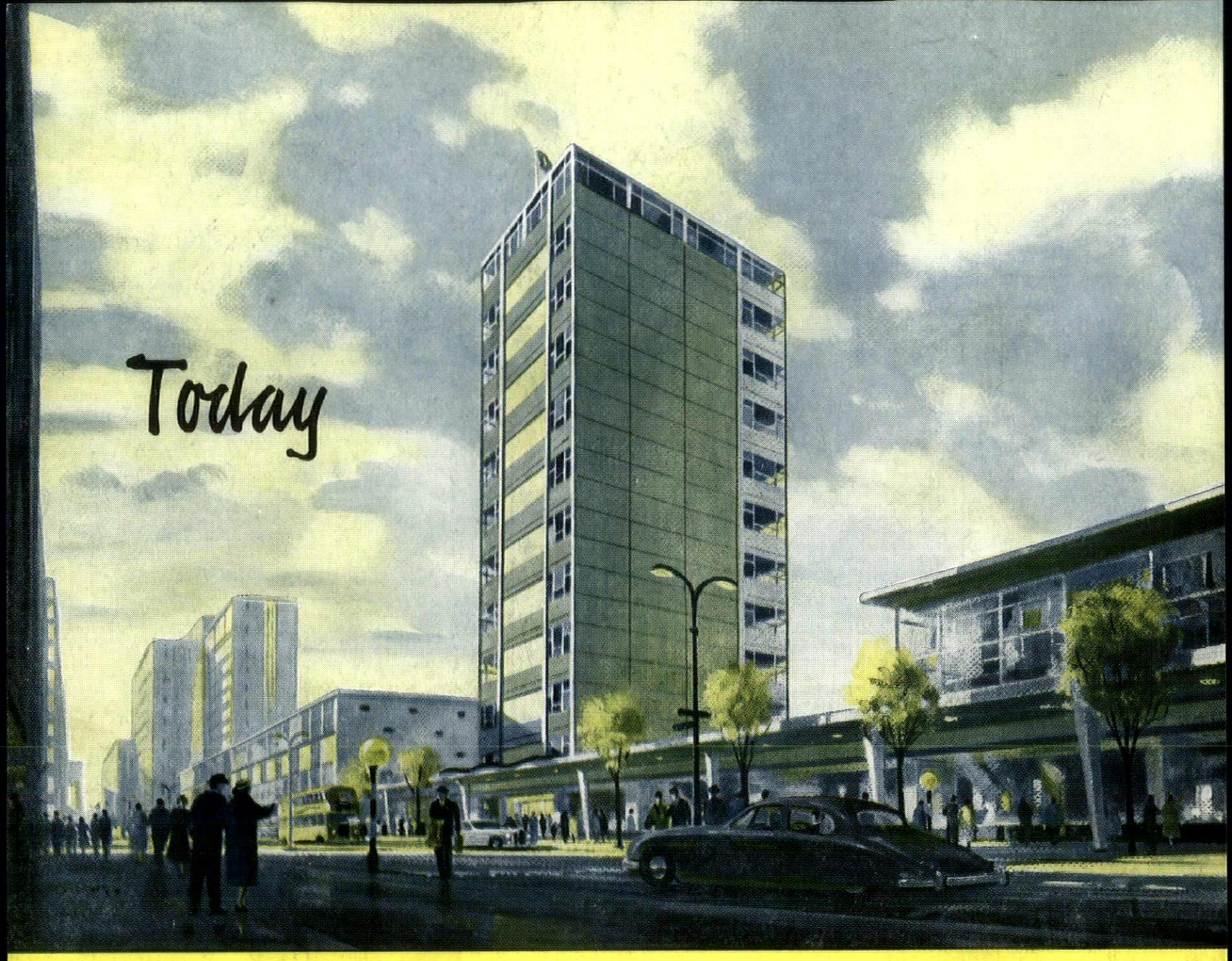
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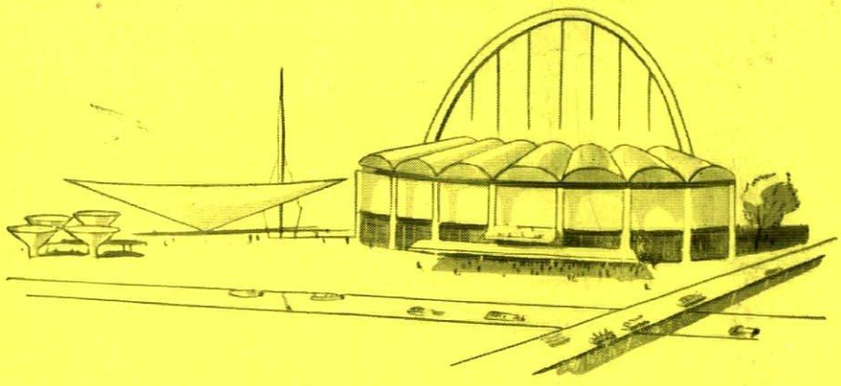

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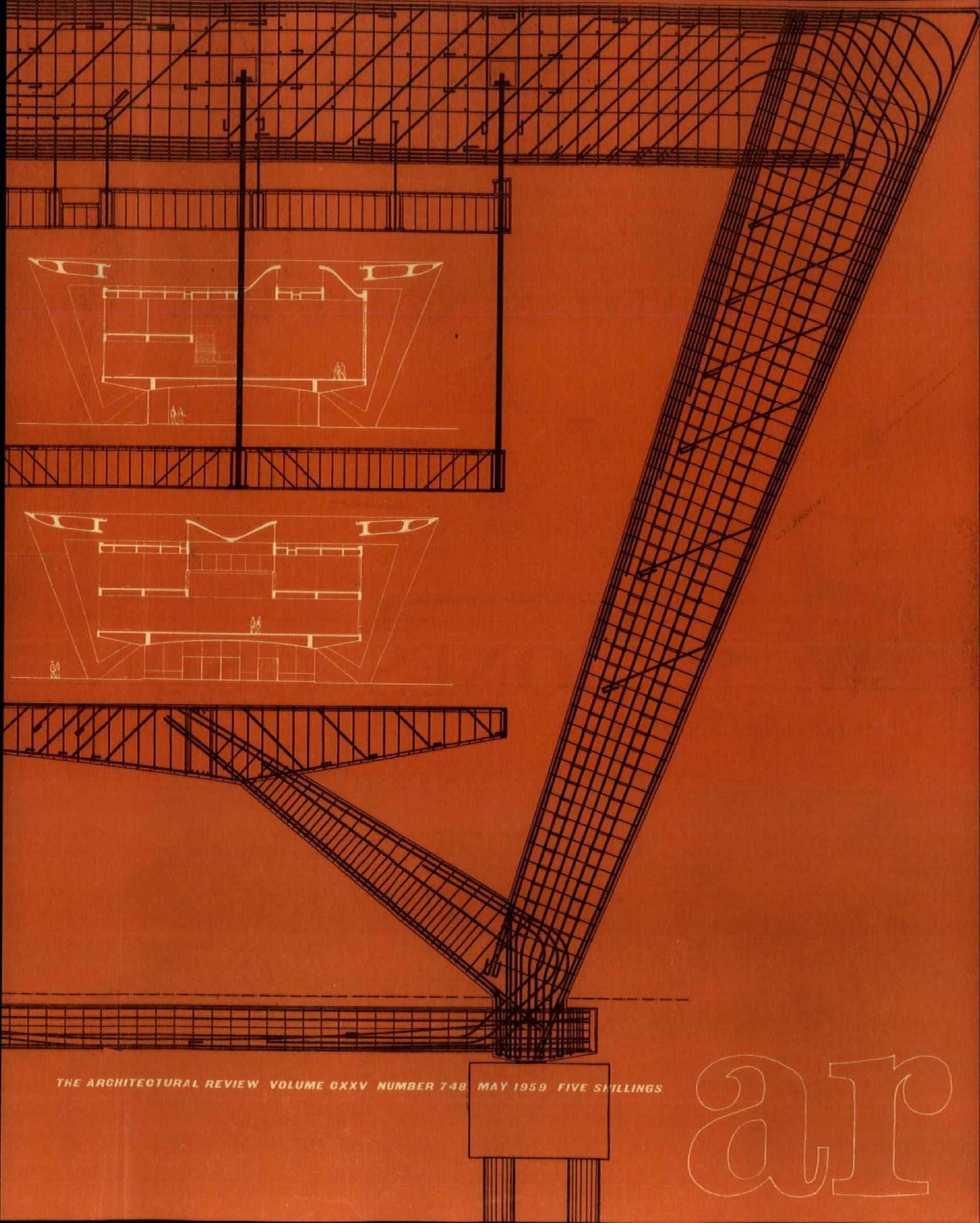

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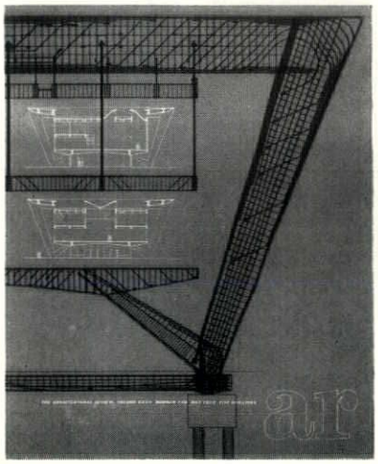

The cover shows a detail from a drawing for the reinforcement of the giant concrete portal frames that will carry the overhead structure of the main block of the new Museu de Arte Moderna, Rio de Janeiro, designed by Affonso Eduardo Reidy. Much of the museum structure will be suspended from these frames, thus giving freedom in plan, in section, and in the distribution of top lighting, as the two sections of the gallery-block show. Reidy's design, the pioneer purpose-made museum of modern art in South America, is one of a number of recent contributions to gallery design discussed and illustrated in Michael Brawne's article on pages 314-325, which coincides with the handing in of the competition designs for the *Sunday Times* competition for a National Gallery extension.

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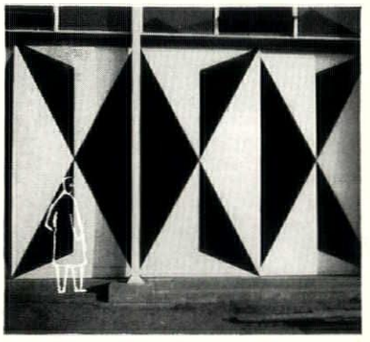
CORRESPONDENCE

Anonymous Architecture

To the Editors.

SIRS,—Reading the review of Sybil Moholy-Nagy's book *Native Genius in Anonymous Architecture* in the December, 1958, issue of your magazine, it occurred to me that you may be interested to see the enclosed photograph.

It shows three of a set of four doors giving access to a boilerhouse



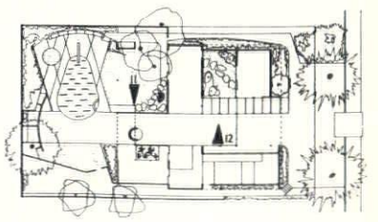
extension. The scale of the doors, which are a little over 13 feet high, can be judged from the size of the figure on the left. The colours are black and white and the pattern varies as the position of the leaves is changed.

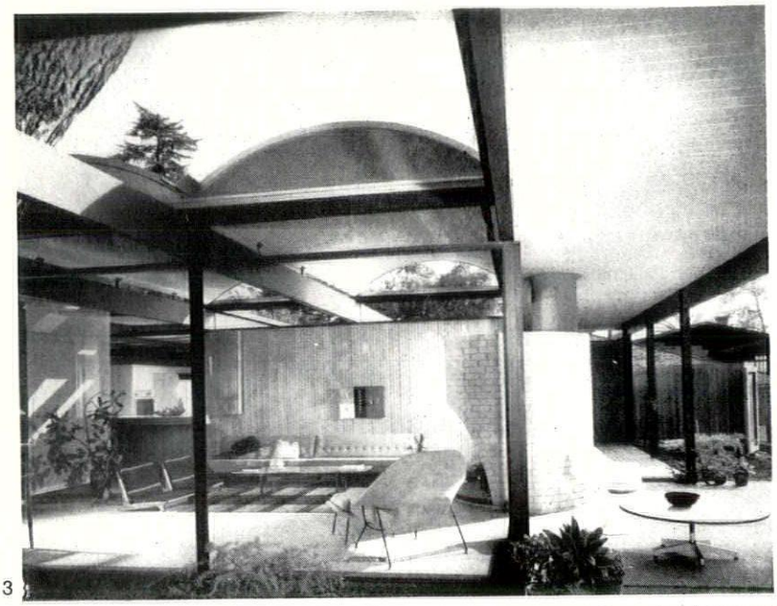
Yours, etc.,
REX I. SAVIDGE.
Nottingham.

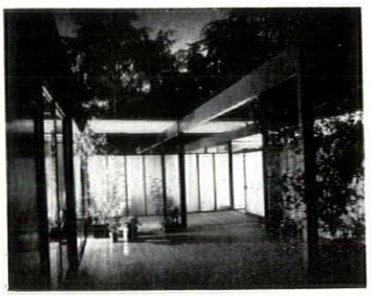
MARGINALIA

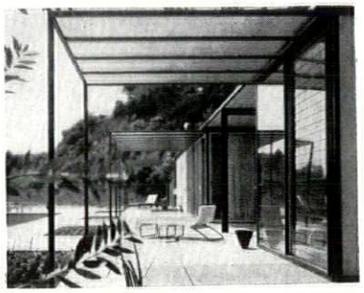
Case Studies—Twenty rising Twenty-one

One of the most distinguished and influential architectural research programmes ever inaugurated, the *Case Study House* series promoted by *Arts and Architecture* is about to achieve its majority—the twentieth house is completed and the twenty-first under way. The twentieth, the Saul Bass house, in Altadena, Cal., was designed by Buff, Straub and Hensman in close association with their client, and reveals the extraordinary level of architectural sophistication that is now taken almost for granted in Pacific Coast work. A courtyard plan is employed to extract the maximum performance from a fairly limited site, but fitted









3, *view across the living room of Case Study House 20.*
4, *dining-entry area of the same house.*
5, *the terrace of Case Study House 21, by Pierre Koenig.*

with such ingenuity into the relatively simple structural frame that the house cannot be understood from any single viewpoint. However, the basic plan depends quite simply on groups of rooms on either side of central, tiled, living-spine that runs almost the full depth of the site, 2. The main structural emphasis, as marked by both the main beams and the preformed plywood vaults that cover parts of the living area, is at right angles to this spine, producing spatial effects such as 3, and surprising internal perspectives such as 4.

In the meantime, work is proceeding on Case Study House 21, an all-steel structure as to both frame and cladding, 5, designed by Pierre Koenig with William Porush as engineer. Indeed, by the time this note has appeared in print the house will probably have been completed, and have replaced Case Study 20 as the place for young home-makers to visit on a Sunday afternoon.

Church Art and Architecture

There appear—at last—to be real signs of that re-awakening of live interest in church design in Britain that many writers have looked for in recent years. The correspondence in the AR and elsewhere following Peter Hammond's article *A Liturgical Brief* (AR, April, 1958) was a clear sign that church design can now be discussed in this country at a level well above the Gothic-Genteelism of the recent past. The new mood can be seen also in the thirteenth Annual Report* of the *Central Council for the Care of Churches*, which one might well expect to be conservative since its function is conservation. Much of what is printed, or reprinted, in the report, however, is quite otherwise—particularly the address given by the Rev. A. C. Bridge to the Council's 1958 Congress, and beginning on the very 'functional' note *Art is a language, a means of communication*. If the illustrations to the report do not always support this tough line, it should be remembered that they show what exists, and was commissioned before the new approach had any real foothold in the Church of England.

Even more important, because inter-denominational, architectural, and specifically aware of the Liturgical Movement, is the formation of the *New Churches Research Group*, with a body of vice-presidents who range from the Warden of Keble to Alison and Peter Smithson, from John Betjeman to Sergei Kadleigh, and a programme of research and functional analysis, of publicity and the gathering of information. The Group, which is open to anyone in general sympathy with its aims, has its headquarters at present at 10a Dacre Street, London, S.W.1, and all enquiries should be addressed there.

* Church Information Board, 3s.

Motif

Motif is a *journal grande luxe* devoted to the graphic and visual arts. Since it appears under the imprint of the Shenval Press, value for money is guaranteed even at 20s. per copy. Although the second issue will have appeared before this note is published, the first is worth recalling on a number of counts. Any successor to *Alphabet and Image*, Shenval Press's well remembered venture of the late Forties and early Fifties, will clearly have to surpass a high given standard and extend the previous coverage. *Motif* 1 does both with a bang, in the shape of the first instalment of what promises to be a monumental three-decker article by Helmut Gernsheim on *Aesthetic Trends in Photography Past and Present*, mostly illustrated, of course, from the Gernsheim collection. Instalment 2, which should include the Bauhaus, is eagerly awaited.

Other articles in the first issue cover the book illustrations of Jean Lurçat, the type-faces of Vincent Figgins, views of Brighton by Linton Lamb, views on illustration by Edward Ardizzone, views on art students by Professor Richard Guyatt, reviews of exhibitions and books as one might expect, and a note by George Nash on a painting by John Orlando Parry, 6, executed in 1835 and now in Messrs. Dunhill's collection, that appears to offer the best synoptic view of early (very early) Victorian advertising faces to be found outside St. Bride's Institute. Parry, a musical entertainer as well as a watercolourist of parts, seems to have left here a document as valuable to the theatrical historian as to the historian of type.

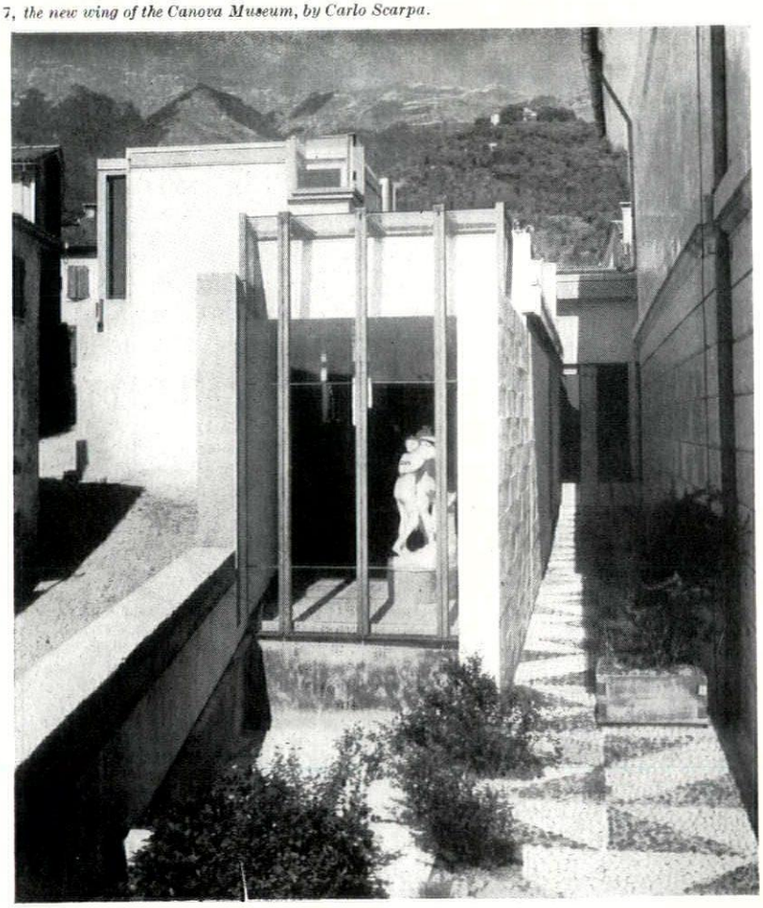


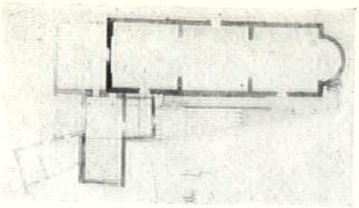
6, *Victorian advertising faces, detail of a painting by John Orlando Parry, from* Motif.

More Space for Canova

Carlo Scarpa, most accomplished and original of the 'organic' or Wrightian persuasion among Italian architects, has recently completed an ingenious extension to the Canova museum at Possagno. The space available was limited to a triangular plot with an appreciable fall in the ground, alongside the old *Gipsoteca*—a nineteenth-century structure of basilican plan, built to house plaster-casts. The new work is separated from the old by a narrow path, seen in 7 (which also shows the window at the narrow end of the new block), but otherwise occupies the whole of the land available, and exploits the gradient to add interest and create natural zoning of the interior—9 is view of the interior from a point alongside the sculpture group visible in 7. Although allowances must be made for exigencies of site, and for Scarpa's stylistic pre-suppositions,

7, *the new wing of the Canova Museum, by Carlo Scarpa.*





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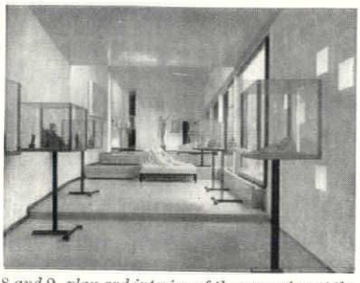


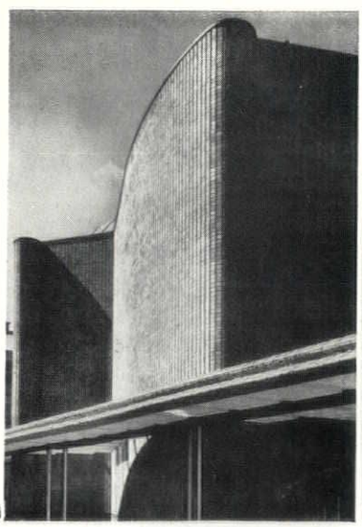
9

8 and 9, plan and interior of the new wing at the Canova Museum.

this small gallery seems to provide powerful visual arguments against the widely-held dogma that sculpture galleries should be neutral in feeling, for fear of 'competing' with the exhibits.

Aalto Auditorium

A striking departure from the 'traditional' type of Palace of Soviet Export Culture (as epitomized in Warsaw) has been made in the case of Helsinki, where local Communist organizations waived their stylistic commitments and commissioned an architect without political commitments, Alvar Aalto, to design their House of Culture. The scheme comprises a range of buildings, somewhat in the manner of his Pensions Institute (AR, April, 1957) enclosing two sides of a square court and a free-form auditorium building, 10 & 11, occupying the third side and a good deal of the court itself. The asymmetrical shell-like form of the plan, 12, not only simplifies the accommodation of the building to the site, but also provides an interior of contrasting character from one part to another—at one end an intimate, flat-floored theatre only eleven seats deep, at the other running back for twenty-eight rows with the prolonged rake of a great amphitheatre.

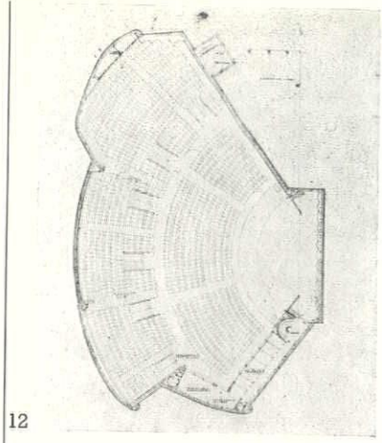


10



11

10, 11, Helsinki House of Culture, by Alvar Aalto



12

Mirador

Accidents of geography, politics, and what-not, have tended to make us see the contemporary culture of South America through Rio de Janeiro, Sao Paulo or Caracas, and to ignore the far south almost completely. Yet Buenos Aires has had quite a bright intellectual life even under the Peron regime, producing at one time the magazine *Ver y Estimar*, and also *Nueva Vision*, which was edited by Tomas Maldonado, now the head of the Hochschule at Ulm. More recently there has appeared *Mirador*, which describes itself as a 'panorama of industrial civilization,' and is in many ways comparable to the famous Italian journal *Civiltà delle Macchine*. However, it differs from *Civiltà* in ways which are specific to its point of origin—no. 3 for instance was devoted to (one could almost say pre-occupied with) problems of power and its sources, Argentina being far from self-sufficient in power-sources, while no. 4, the most recent to come to hand, had nearly half its pages devoted to agricultural problems.



13, *wall of ceramic-faced tiles in a house by the Argentine architect, Antonio Bonet.*

But this is not to say that *Mirador* is culturally provincial—far from it. These same two issues also contain numerous articles derived from foreign sources, as well as studies of the work of Le Corbusier, Juan Gris, Charles Chaplin and Antonio Bonet, 13, and articles on Brasilia, the psychology of architectural space, mass-communications, cybernetics and interplanetary navigation. It is, in short, one of those wide-awake, polytechnical journals capable of taking a synoptic view of contemporary culture, that seem to spring up almost spontaneously at the extremities of Western technology, but never at its centres. Yet how much richer Anglo-Saxon culture would be if there were an English-language periodical of the same aims and stature.

The Turn of the Century

Arts Yearbook is the first of a promised series of annual publications about art by *Arts*, the American monthly magazine. It looks in many ways very like its parent publication, decked out in stiff covers, has a similar layout and most of the regular *Arts* advertisers. This first issue is devoted to the state of the arts at the turn of the century, and has a disappointing first essay on, precisely, Modern Art at the Turn of the Century—disappointing because it sees nothing outside Paris, discusses none of the developments in Germany, Italy, Scandinavia, Britain or the US, that made modern art an international adventure. On the other hand, there is a useful international chronology, starting with Aurier's article on van Gogh and ending with the Armory Show in New York, threaded through the ads. like the gallery notices in the magazine.

In addition—indeed, in justification of *Arts Yearbook* 1—there are three other full-dress essays of first-rate importance and one nearly so. The latter usefully documents the discovery of Negro and primitive art, the others deal respectively and illuminatingly with: the *World of the Eight*, an excellent study by Leslie Katz, of Sloan, Glackens, Luks, Shinn and their connection of pioneer American modern realists; *New Perspectives on Old Masters*, in which Alfred Werner examines the effect of Berenson and Wolfflin on Twentieth Century ideas about the art of the past; and *From Pre-Raphaelitism to Bloomsbury*, a witty chronicle by Vernon Young of English aesthetics and art under the shadow of Whistler and Ruskin.

The Face of the Pub

The 'Monson Arms' at Redhill, illustrated in *The Face of the Pub* in the December AR, was incorrectly attributed to the Architect's Department of Ind Coope & Allsopp Ltd. It was, in fact, designed by Mr. Michael Brashier, to whom we apologise for the error. The illustration below is a general view of the pub and shows the use of tarred weatherboarding and rough stone.



14

INTELLIGENCE

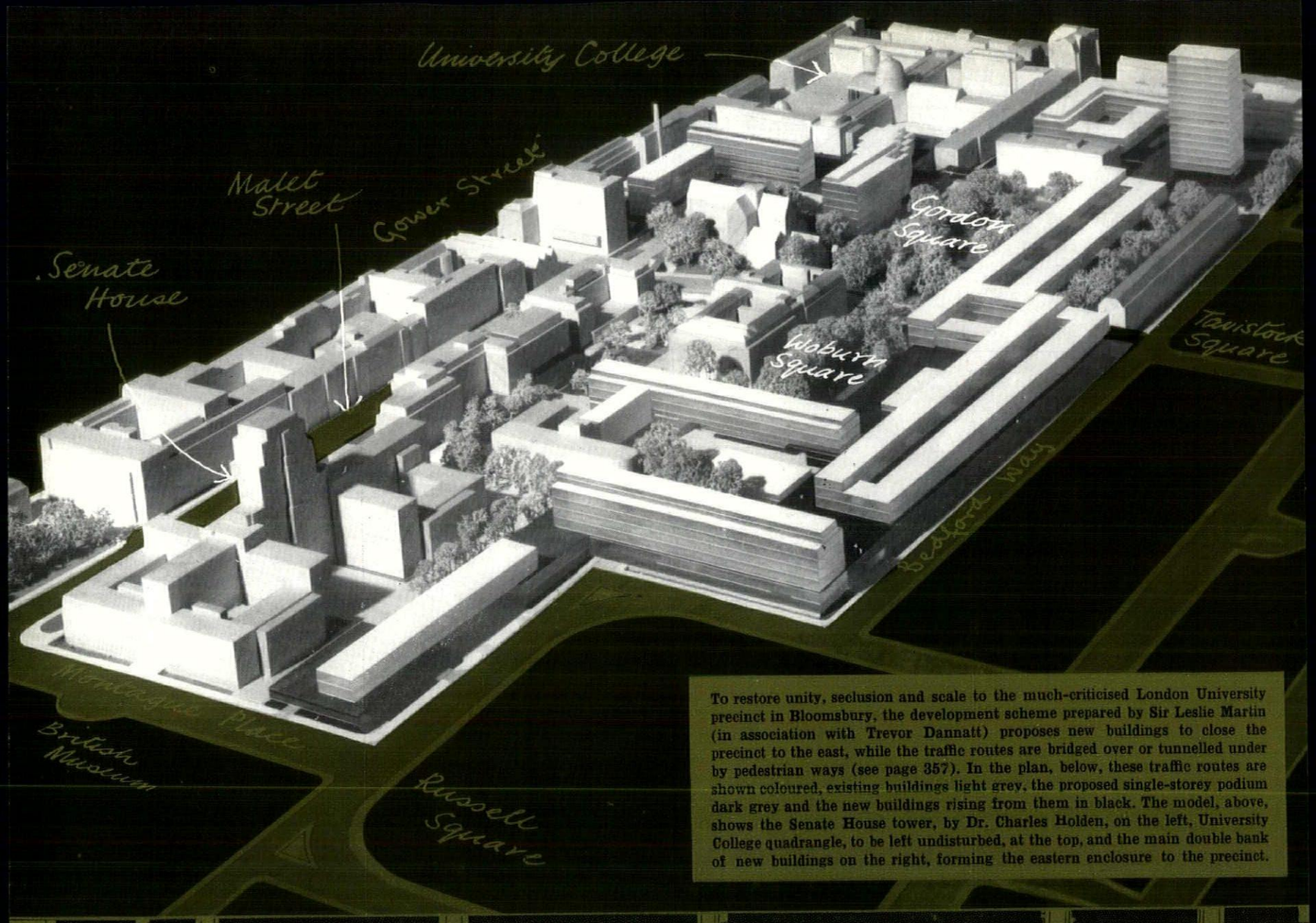
The *Centro Internazionale di Studi di Architettura 'Andrea Palladio'* whose location, not unnaturally, is in Vicenza, has announced its first summer seminar, on Palladio and Sanmicheli, which is to run from August 27 to September 15, 1959. Teachers will include, among others, Rudolf Wittkower, André Chastel, G. C. Argan, Ernesto Rogers and Bruno Zevi, and enrolments (open to graduates and students in Faculties of Arts or Architecture) close on July 15. Further details may be had from the Secretary of the *Centro*, Basilica Palladiana, Vicenza, Italy.

The Society for the Protection of Ancient Buildings is holding a one-week course, in London, on the repair of ancient buildings, from May 25–30. The course, which costs £6 6s. will include lectures, visits to buildings, practical demonstrations and studies of work in progress. Details from the Secretary, 55 Great Ormond Street, London, W.C.1.

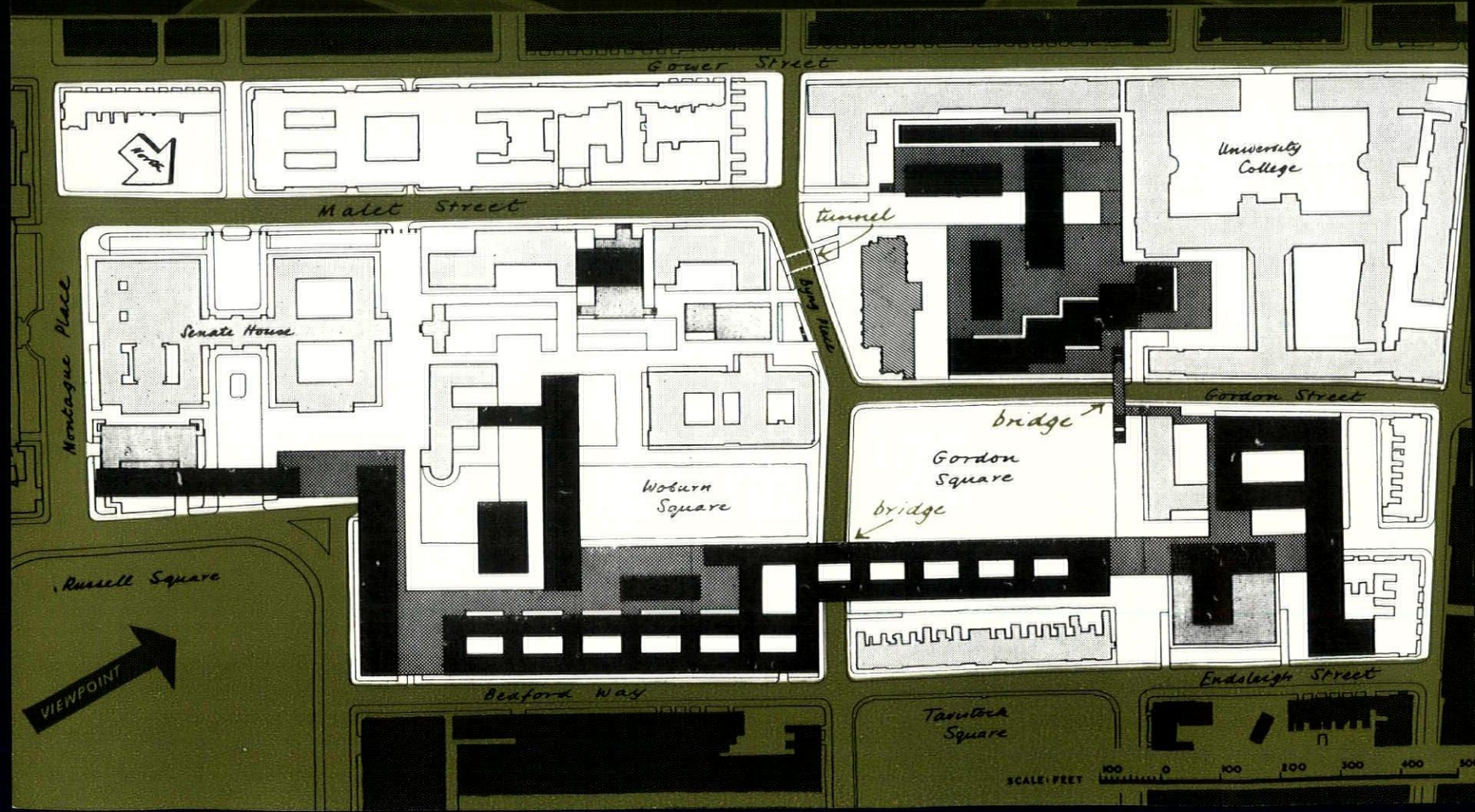
The Minister of Health has appointed Mr. W. E. Tatton Brown, Deputy County Architect of Hertfordshire, to be Chief Architect to the Ministry of Health, a new post following the decision that the Ministries of Health and Housing and Local Government should have separate architectural departments.

ACKNOWLEDGMENTS

FRONTISPIECE, page 302: The Times. Two LCC COMPREHENSIVE SCHOOLS, pages 306–313: Galwey, Arphot. THE PICTURE WALL, pages 314–325: frontis., Jesper Høm; 1, 2, Architecture and Building; 3, Sam Lambert; 4, 41, Cervin Robinson, Arphotus; 5, Ezra Stoller; 8–11, Andreas Feininger; 12, 15, Gemeente Musea van Amsterdam; 13, 14, Studio Hartland and Melchers; 16–18, 21, Ignazio Gardella; 19, 20, Martinotti; 22, 24, Giacomelli; 23, Agnes Varda; 25, Casabella; 27, 28, 29, Jesper Høm; 30, 31, Maurice Miller; 32, Munson-Williams-Proctor Institute; 33, Louis Checkman; 34, Hahn and Roberts; 35, 36, Arkitektur; 37, 'Museum'; 42, Sydney W. Newbery; 43, 44, l'Architettura. PLYMOUTH CENTRED, pages 326–331: frontis., top, Aerofilms; frontis., bottom, Tom Holland. GARAGE AT POOLE, pages 332–335, Galwey, Arphot. THE MODERN MOVEMENT, pages 336–340: frontis., 1, Foto GFN; 2, Victoria and Albert Museum; 3, S. Lang; 4, National Buildings Record; 5, Public Works Congress (1933); 6, Printers International Specimen Exchange; 7, 12, 13, Toomey, Arphot; 9, Larisch; 10, Otto Wagner; 11, A. Loos; 16, Courtauld Institute of Art; 17, E. Lissitzky; 18, J. B. van Loghem; 19, H. R. Hitchcock; 20, McCallum, Arphot. SPIRAL TOWER, pages 341–343: Bunji Kobayashi. INTERIOR DESIGN, pages 344–347: 1, 5, Toomey, Arphot; 2, 3, 4, McCallum, Arphot; 6, 7, John Maltby; 8–13, Henk Snoek. DESIGN REVIEW, page 348: 1, 2, Heal Fabrics. CURRENT ARCHITECTURE, pages 351–354: 1–4, Colin Westwood; 5, 6, 8, Thompson; 7, Mr. and Mrs. Sidney Darby & Son; 9, 12, Kenneth Shepherd; 10, 11, Adolf Morath. MISCELLANY, pages 355–360: Exhibitions, 1, Soichi Sunami for the Museum of Modern Art; 2, Arts Council of Great Britain; 5, Wallace Heaton; 7, James Mortimer. Magdelen Street, Norwich, Browne, Arphot. Counter Attack, 1, J. W. Kitchenham; 2–5, Sydney W. Newbery.



To restore unity, seclusion and scale to the much-criticised London University precinct in Bloomsbury, the development scheme prepared by Sir Leslie Martin (in association with Trevor Dannatt) proposes new buildings to close the precinct to the east, while the traffic routes are bridged over or tunnelled under by pedestrian ways (see page 357). In the plan, below, these traffic routes are shown coloured, existing buildings light grey, the proposed single-storey podium dark grey and the new buildings rising from them in black. The model, above, shows the Senate House tower, by Dr. Charles Holden, on the left, University College quadrangle, to be left undisturbed, at the top, and the main double bank of new buildings on the right, forming the eastern enclosure to the precinct.



Lionel Brett

THE ENVIRONMENTALISTS

A group of young architects, planners, engineers, sociologists and economists, calling itself The Society for the Promotion of Urban Renewal, has been meeting regularly for some months to discuss and initiate research into the various aspects of its subject. It has been inspired by, among other things, impatience that the official policy of decentralization to new towns, necessary though it has been, should now take second place to the rebuilding of old ones; disappointment with the results in terms of townscape of the 1947 Town and Country Planning Act; determination to fight the social and visual disintegration of the television age; anger at the spread of officially-sponsored subtopia and piazza romanticism picked up abroad. This month, SPUR puts on its first exhibition at the RIBA, and simultaneously the RIBA itself has organized a series of meetings on the subject. In the following article, Lionel Brett, the chairman of SPUR, gives a personal version of some of the arguments that lie behind the group's activities.

I suspect—anything more positive would be foolish since we cannot read all the thoughts of the past nor history's verdict on ourselves—that our generation is the first to take a truly comprehensive (or what Mumford calls a synoptic) view of our man-made environment. But before justifying the suspicion, I must define it. By 'generation' I mean (as is customary) 'a few people in our generation in Britain'. And by 'comprehensive' I mean a view which literally sees all that is there, which is not blind to the manhole cover or the abstract objects on the office roof, which has invented floorscape and wirescape, explored space from foxhole-scale to cinerama and beyond, and enjoyed the Victorian lamp-post's reflection in the curtain wall, or the offbeat vulgarism in the Cotswold village.

It has been claimed that something of this outlook existed in the Picturesque movement of the English eighteenth century; but if one reads its literature one finds something entirely different, in fact opposite: a rule of Taste, a Snob's Guide, which sought to make all landscapes alike instead of exploiting their differences, which turned that blind eye which was to become the Englishman's secret weapon upon everything that was really moulding and would soon transform his landscape. Behind the clump was the pithead machinery, and one just had to hope that the latter wouldn't grow faster than the former.

(Yet 'screens of suitable trees and shrubs' remain the panacea, even into the age of nuclear power.) Moreover, as J. M. Richards has pointed out, the Picturesque movement never tried its techniques on townscape. There, the vista-mongers carried all before them, turning *their* blind eyes, as did Haussmann, upon the bits and pieces of old cities that got left out of the pattern. Nobody saw cities as living things, interwoven of past and present, and when the German curve-mongers came in they were just as narrow-minded as anybody else. You can search town-planning from Hadrian to Abercrombie (but perhaps exclusive) and you won't find a theorist or practitioner who saw that the essence of cities was their continuity, complexity and dramatic contrast of old and new.

This we do see, but if we take credit for it we must at once answer the charge of indifference. To allow everything ugly the alibi of 'character' is as emasculating as to permit cruelty on the principle of toleration.* To let it be thought that by abolishing planning and letting everything rip we can achieve a civilized, rich and meaningful environment would be the ultimate *trahison des clercs*, and would simply mean, in an age as physically powerful as ours, that somebody else would do the planning. The fact is that our awareness of its visual complexity and our enjoyment of its accidents and by-products makes urban renewal, like painting and poetry, all the more difficult and professional a job.

We should regard this gift of the 'unblinking stare' as a tool only, parallel on the mental plane with that other priceless physical tool, multi-level circulation, and equally capable of abuse. You can use multi-level circulation like Victorian railway and modern road engineers as a technical tour-de-force, that treats the living city below it with contempt, and in due time wrecks it both as an environment and as an economy. Or you can use it as an architect and a humanist, to lift people (since it is people we are concerned with) above their means of transport and restore to them the freedom of their cities and all those pleasures of urban living on which I need not dilate, since they are as common a component of the reader's fantasies as any sun-dappled hillside or Mediterranean cove.

We (or, to continue accurate, certain designers and writers in this country) have this comprehensive vision, and we have the physical means to realize it. Yet look how we are divided. Banded together in separate organizations we have the pure preservationists, whose motto remains 'anything new is worse'; the amenity-mongers, withered offshoot of the Picturesque movement, with their tree screens and harmonies; the welfare state planners, with their point blocks, plot ratios and compulsory curtain-walls; the subtopians with their frontal defences and prunus avenues; the anarchists and architectural solipsists, whose motto is presumably that of the Dukes of Clermont-Tonnerre: 'etiamsi omnes, ego non.' Surveying the busy scene, one can hardly blame the President of the RIBA for proclaiming that planning committees should be abolished. Yet all this muddle and waste of energy is due to one thing only: that though we have the people, and we have the job, we haven't introduced them to each other.

The people are the Environmentalists. One could best describe them by naming them, or, in default of that, locating them. Some write or draw in this REVIEW; others work for a handful of enlightened city authorities; a few have built their ideas; a few more work, in varying degrees of frustration, for an old borough or a new town. Their means of expression are the relationships between buildings and between spaces, and the element in which they work is time. A kinetic vision plus a sense of history lead them to reject any single viewpoint in space or time, their humanism never to forget immediate needs or the shortness of life. Their own eyes have taught them absolute catholicity of taste, and given them the ability, if they had the chance, to pull out all the stops between immediacy and grandeur. These people are few, but enough for the job.

The job is to make the best of the cities and towns most British people live in, using all the methods (moral, aesthetic, financial, technical) now to hand. 'Rebuild,' 'renew,' 're-create,' are words I avoid in this context, since they imply varying degrees of condescension to places many of which are thick with character, guarded by the wry affection of many people, and short only on imaginative leadership. But I do not thereby minimize the scale of the job to be done, which includes the rehabilitation of the centre and the inner ring and (in the larger cities) internal decentralization of business and high-density living into what is now suburbia, so saving what is left of the countryside. The space for redevelopment is there, inside the conurbations, inside the old towns, even inside the villages, but to use it needs courage of various kinds, courage above all to refuse the easy way out of grabbing cheap farm land and leaving outworn urban areas to rot. To stop the rot, to turn retreat into advance, and in the second half of this century to exorcise the escapism that nearly wrecked our environment in the first: that is the job. What is at stake now is not the individual building (which nine times out of ten is either harmlessly bad or reasonably good) but our whole national environment. Given a bit of peace, there is no reason why every mile of Britain should not by 2000 have its point.†

With all this needing doing, it seems ludicrously out of scale that some of our best people should be devoting a lot of energy to sapping, sniping and skirmishing (or whatever other obsolete *l'Attaque* phraseology you prefer) on the perimeter of local authority planning. Behind the barricades there are, of course, some almost unbelievably ham-fisted officials and councillors; but there are good people, too, devoting anonymous lifetimes to getting the previous paragraph rolling. Nobody denies that the control of elevations, the sore point, has been scandalously abused, even at ministerial level. But on the whole it seems better that this general power should exist, than that we should attempt the misguided and for

* 'The tolerance of men who have strength and are prepared to use it is meaningful. The tolerance of those whose muscles are flabby and spirits are unwilling is simply "don't-hit-me" masquerading as mature agreement.' (Richard Hoggart.)

† 'The . . . approach should be to ensure that the whole apparatus of living is woven into a landscape which can give pleasure to those who live, work and travel in it. It should not be necessary to journey through miles of ugliness to reach an (over-worn) oasis of beauty. The beauty should be ubiquitous.' (Sylvia Crowe.)

ever out-of-date task of restricting it to beauty-spots, or risk Bedford Square and the High by abolishing it altogether. It is an offence to let off a firework or cause an obstruction, but public opinion sees to it that the police let us do both a good deal. With these planning controls, the best thing would be for the burglar to turn easy-going policeman; next best, to attack the police rather than the law.

The real trouble is that, by and large, urban planning is being done by the wrong people, and is, therefore, in danger of turning into a job that no environmentalist could conceivably take on. And here we need to be careful with the English language. 'The wrong people' doesn't mean 'inferior people.' It is as if the carpentry was being done by the plumber. Or, on a higher intellectual plane and more precisely, we have the Scientist doing what is essentially a job for the Arts man. (The same used to happen in reverse in medicine and astronomy). No modern architect is in any danger of underrating the engineer; indeed, we hold them in superstitious awe, born of their staggering achievements in the last two centuries. But their job is to solve a problem, ours to set a scene. We look through the eyes of history, which was correctly bunk to Henry Ford. For the engineer's mind is trained to concentrate on the thing itself, the architect's on the thing behind the thing, and on things in relation to people. Experience shows that these relationships are the essence of townscape.

But even if the technical people were to sort themselves out in a rational manner, and the environmentalists were to get themselves into the right jobs, we should still have far to go. Councillors are another problem. Distrust of the expert, which is a normal and not entirely reprehensible part of their make-up, is found in its most extreme form when the field of expertise is aesthetic. Accepting this, we must ask ourselves whether elected (or nominally elected) representatives are the only possible constituents of local planning committees. Other spenders of public money such as the Forestry Commission, the Agricultural Executive Committees and the supply and transport undertakings seem to play around with our landscape and townscape without being solely manned by locally elected representatives. It might not, therefore, be thought necessarily immoral for our cities and large towns to set up Reconstruction Committees containing a strong minority of enthusiastic and responsible outsiders, whose main qualification would be a readiness to think hard and imaginatively about urban renewal.

Deeper than any of these administrative and interprofessional currents lies a national indifference, a failure of will, which is too apt to hide behind an eschatological alibi. The H-Bomb's first casualties are purely mental. Bertrand Russell is no ostrich in these matters, so I end with his answer:

'I find men in our dangerous age who seem to be in love with misery and death, and who grow angry when hopes are suggested to them. . . . I cannot agree with these men. To preserve hope in our world calls upon our intelligence and our energy. In those who despair it is very frequently the energy that is lacking.'

TWO LCC COMPREHENSIVE SCHOOLS

ARCHITECTS

HUBERT BENNETT, ARCHITECT TO THE COUNCIL
MICHAEL POWELL, SCHOOLS DEPARTMENT
G. F. HORSFALL, ASSISTANT SCHOOLS ARCHITECT

Of all building types known, the British school has been subject to the most ruthless and scientific functional, structural and economic analysis—the record of the Ministry of Education and of a number of local authorities in this respect is an example to the world. Yet—in spite of what has been said about science as the enemy of art and of freedom of expression—the British school remains one of the least predictable of building types in terms of its architectural form.

The two schools illustrated on the pages that follow are about as different in their architectural conception as the present range of possibilities in the Modern Movement admits, yet both were designed by the same division of the same local authority, Schools Division of the Architect's Department of the LCC, and both were designed to serve substantially the same function, that of a large comprehensive secondary school, serving some 2,000 pupils.

The architectural product is, in the case of Kingsdale school, more or less what the superficial student of current architecture might expect for an economically designed structure of its size and type—bright, neat, slimly-detailed, curtain-walled and rectangular in its block-forms. Yet Garrett Green, built at a competitive cost-per pupil, eschews the obviously machine-made element, the standard cladding and the smooth surface, substituting weatherboarding, exposed aggregate, strongly accented window-frames, a plastic rather than a planimetric treatment of facades.

Nor should it be supposed that these are simply different faces to mask a similar plan. At the point where it might be supposed that science and economics would impose the tightest limitations on architectural imagination, i.e., the use and arrangement of work-spaces, the two schools diverge more dramatically than in their elevations. Kingsdale houses most of its accommodation in a rectangular block around a bisected courtyard, with most of its circulation ways absorbed within the building envelopes. Garrett Green, on the other hand, has a loosely distributive plan of isolated blocks, connected by a network of covered corridors and communicating bridges that are an independent and important part of the architectural conception.

But plan and elevation together raise another important point which is marginal to these building-complexes when considered purely as schools, but not when considered more generally as complexes of buildings serving widely varying functions. In terms of built volume, occupancy, pedestrian circulation and relationship to surrounding areas, these school complexes are paradigms of small city-centres, created outside the current polemics of urbanism. Architecturally they crystallize two dominating concepts of city planning—Kingsdale being in a sense the traditionalist version, with piazzas and lengthy street-facades of repetitive architecture, Garrett Green, by contrast, with its communication-net linking diversified building types, summarizing ideas about the communication-city, or mobility-city, that are still not to be seen in any designed city-scape that actually exists.

KINGSDALE SCHOOL, DULWICH



GARRATT GREEN SCHOOL, WANDSWORTH



KINGSDALE SCHOOL, DULWICH

The site in Kingswood Drive was originally eight plots each 100 ft. wide and containing rows of mature trees, as many of which as possible have been preserved. The teaching accommodation is planned in a three-storey building around a large courtyard, which is divided by a single storey building containing the assembly hall, administration rooms and kitchen. Open planning on the ground floor allows views through to these courtyards. The assembly hall and dining area have a T-shaped plan, and can be used for large meetings with a platform at the junction of the three arms. The central portion of the assembly hall floor is dropped to form an area for dancing or display, and can be used as a theatre by screening off the sides and one end. Music practice rooms directly behind the stage can be used as dressing rooms.

The gymnasia and workshops are in two separate blocks connected to the main teaching block by a covered way. The planning and construction grid used for the buildings was also carried over the whole site.

The three storey classroom block is of patent unit construction with continuous curtain wall glazing to the first and second floors. The assembly hall, kitchen and administration wing have a reinforced concrete frame. The single storey workshop block is of load-bearing brickwork with a prestressed concrete roof and cladding of brickwork and glazing. The gymnasia are all in reinforced concrete frame construction with curtain wall cladding, and changing and shower accommodation linking the blocks.



3





4,5



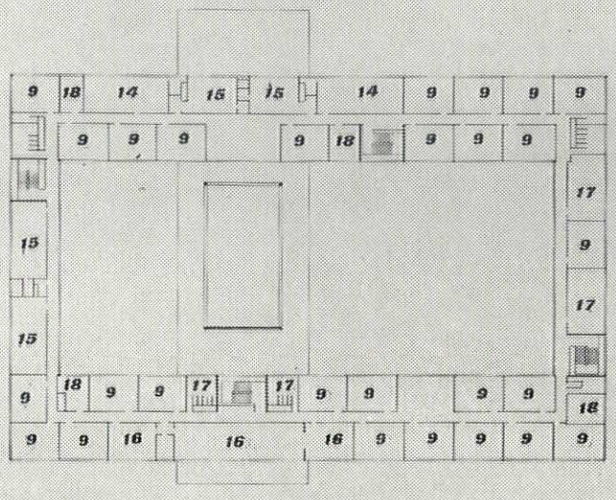
6

3, north end of the teaching block, with the gymnasia on the left beyond the covered way.
4, the staircase in the teaching block has precast granolithic treads and black painted balustrades.
5, the assembly hall has grey walls and black columns.
6, the assembly hall seen from the courtyard, with the teaching block beyond.

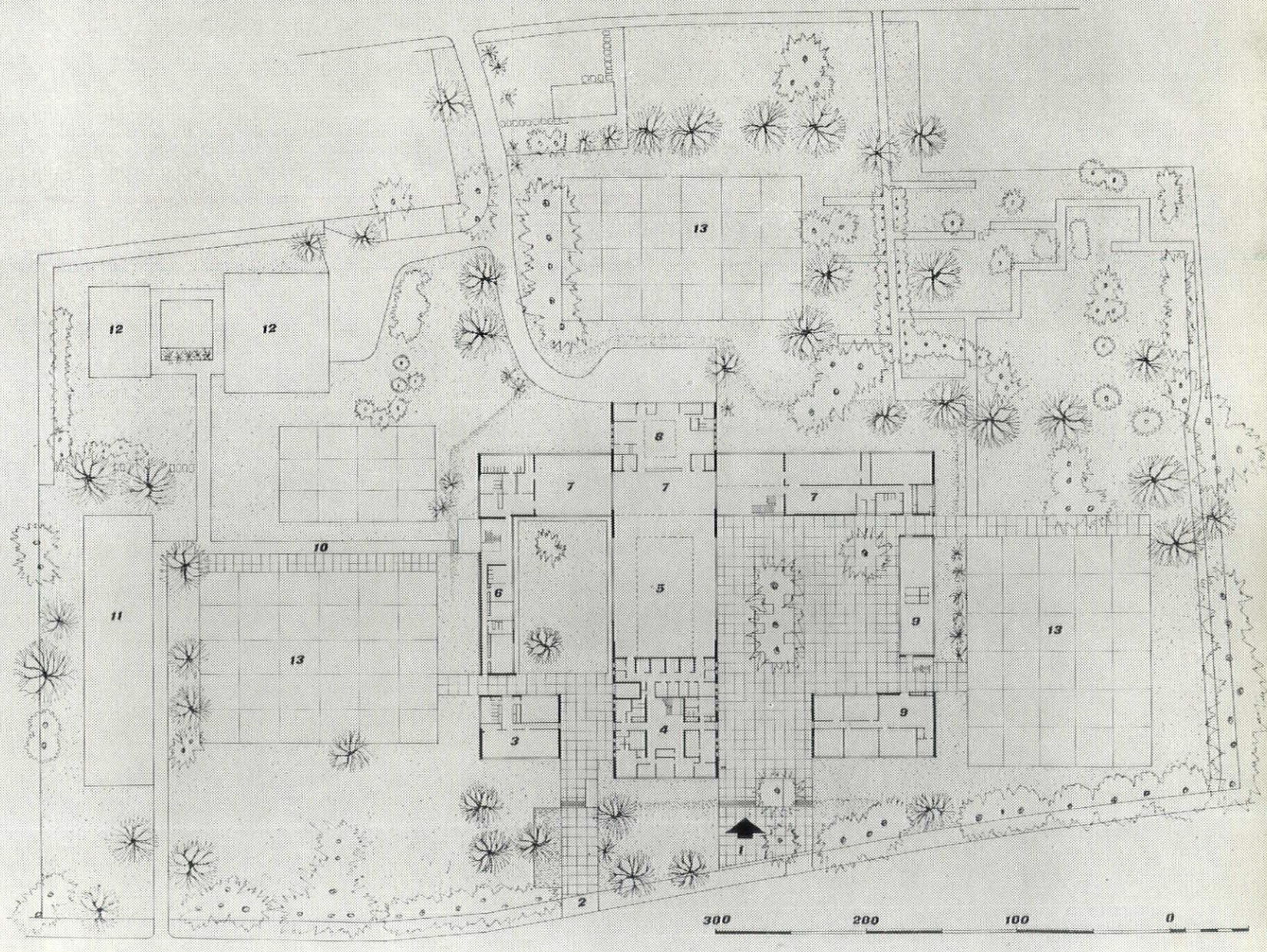
KINGSDALE SCHOOL, DULWICH

key
1, main entrance.
2, staff entrance.
3, staff.
4, administration.
5, assembly hall.
6, medical inspection.
7, dining room.
8, kitchen.
9, classroom.
10, covered way.
11, workshops.
12, gymnasium.
13, Games pitch.
14, Arts & Crafts.
15, Geography.
16, Library,
17, History.
18, Study,

first floor



ground floor



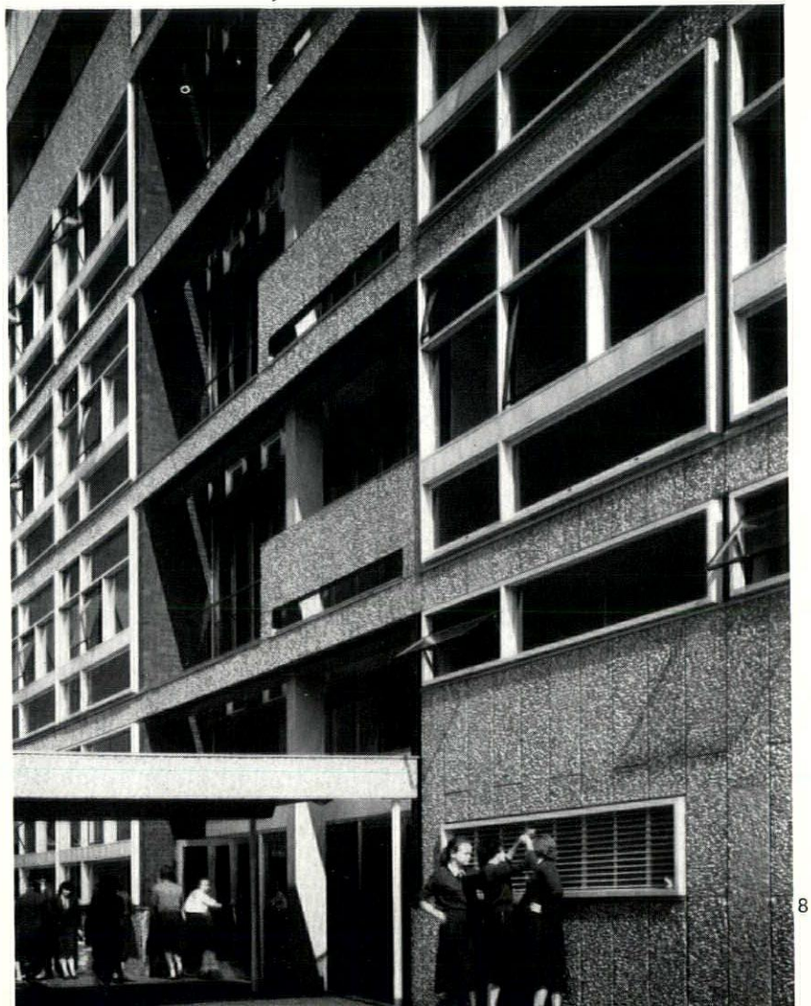
GARRATT GREEN SCHOOL, WANDSWORTH

This school in Aboyne Road is for 2,200 girls and to avoid an impersonal, monumental atmosphere has been designed as a group of buildings integrated with a series of outdoor spaces which lead into one another and differ in function, size and treatment. The buildings are unified by a common dimensional grid and a network of paths and covered ways. The assembly hall contains a drama hall with raked floor and fixed seating within the main hall ; the stage is formed with a double range of sliding-folding doors dividing the drama hall from the main hall, which has a semi-sprung floor and can be used as an unequipped gymnasium. The teaching blocks have specialist rooms grouped for ease of supervision and to concentrate services. Art rooms are on the top floor to give top lighting; the fifth floor of the upper teaching block has a model flat with a small enclosed roof garden.

The physical education block has a heated water swimming pool at ground floor level, with sprung and fixed diving boards, and three gymnasia above. House rooms are in two blocks, each with a kitchen, tuck shop



7



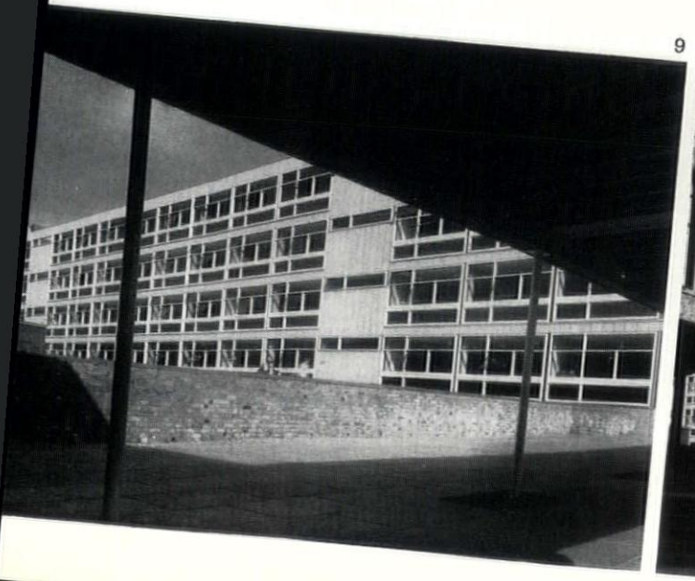
8

7, the assembly hall from the south-east. The fascia is of western red cedar above an aluminium curtain wall. The precast concrete plinth has an exposed marble aggregate. The bridge on the left links the hall to the administration block.

8, the main staircase windows of the upper teaching block.

9, the upper teaching block from the covered way, and

10, from the lower teaching block.



9



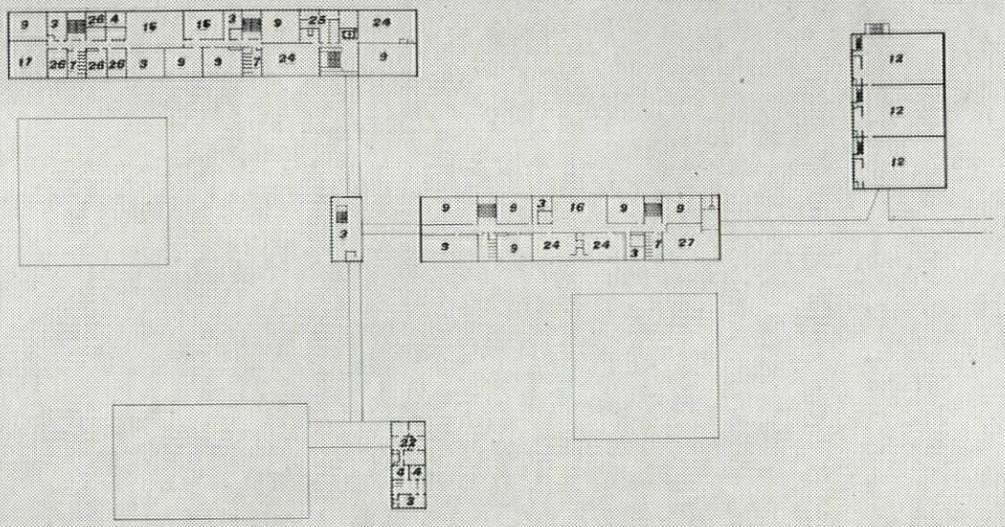
10

key

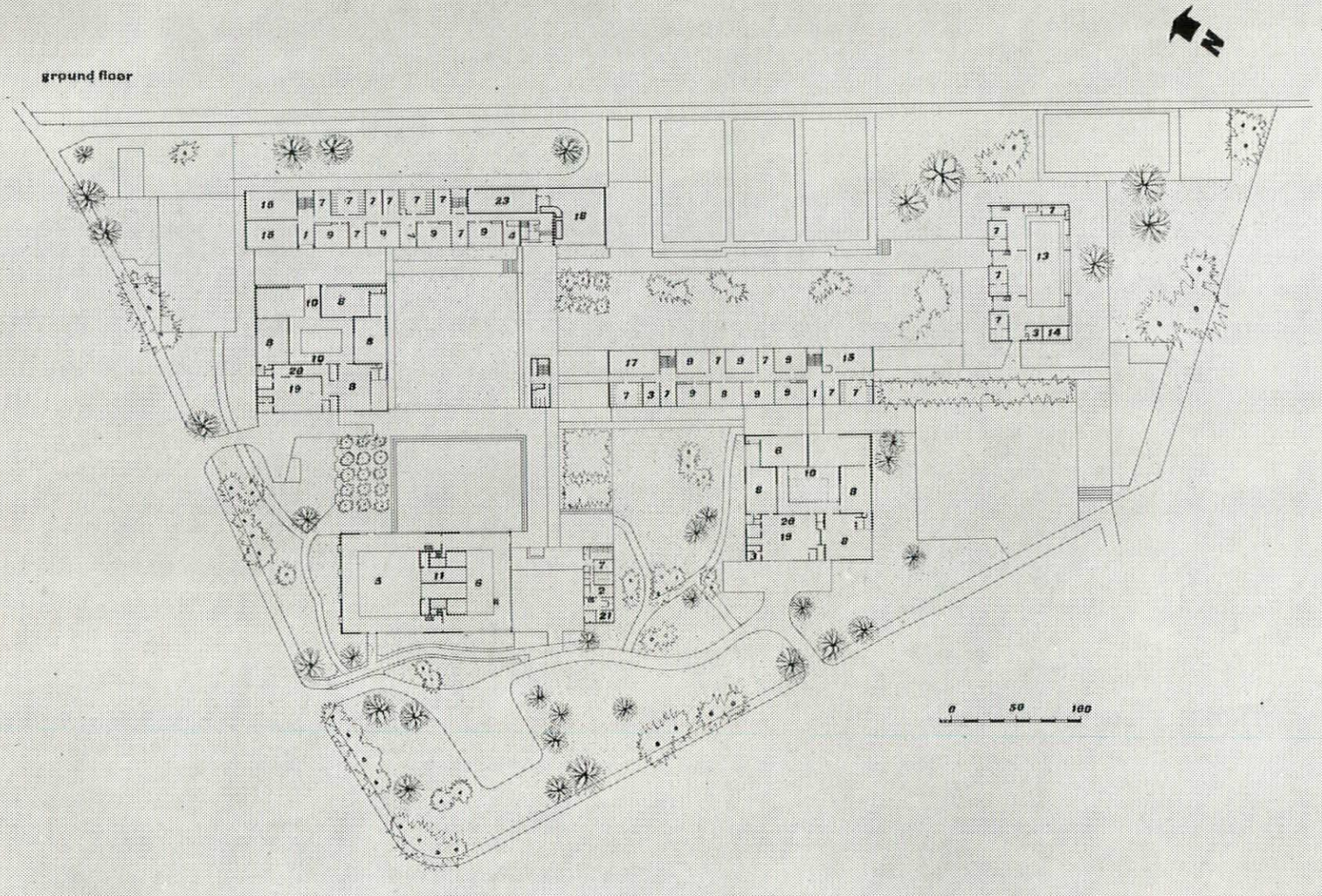
1, main entrance.
2, school keeper.
3, staff.
4, office.
5, assembly hall.
6, foyer.
7, cloakrooms.
8, House room.
9, classroom.
10, covered way.
11, store rooms below drama hall.
12, gymnasium.
13, swimming pool.
14, filter room.
15, Geography.
16, Library.
17, History.
18, boilers.
19, kitchen.
20, service.
21, Radio.
22, medical inspection.
23, oil store.
24, Arts & Crafts.
25, store.
26, Study.
27, Housecraft.

GARRATT GREEN SCHOOL, WANDSWORTH

first floor



ground floor

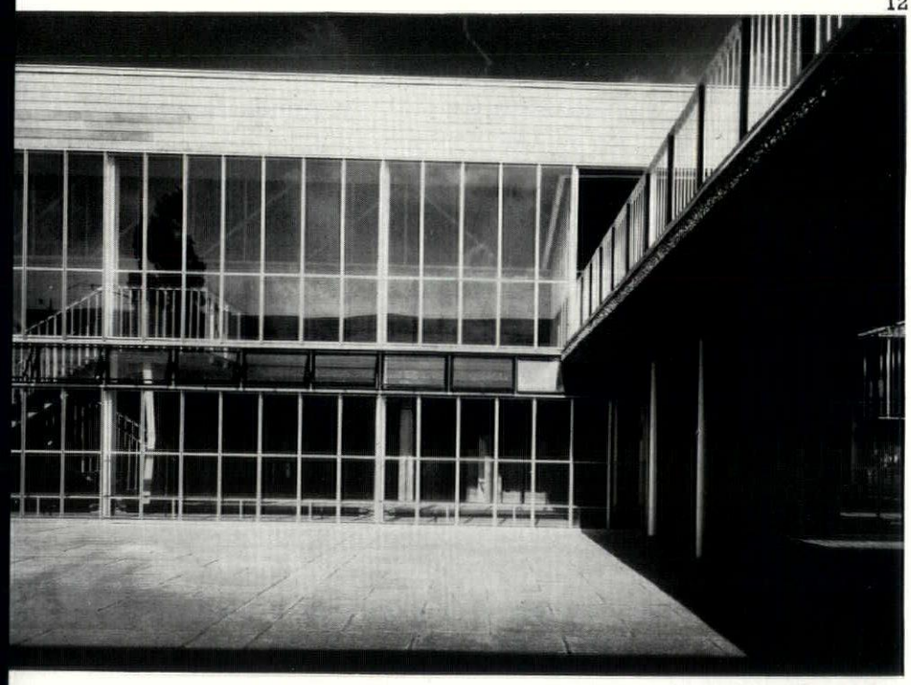


GARRATT GREEN SCHOOL, WANDSWORTH



11

11, the foyer of the assembly hall with the raked floor of the drama hall on the right.
12, the entrance courtyard.
13, the interior of the assembly hall, showing the plywood acoustic reflector.
14, the drama hall seen from the assembly hall, with the connecting sliding folding doors opened.



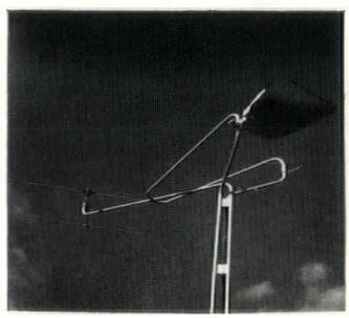
12



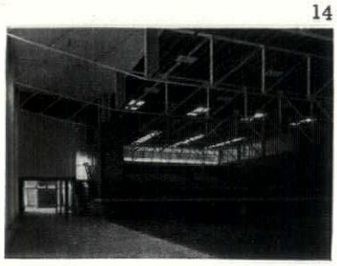
13

and rooms for dining and club meetings. These rooms have their own enclosed gardens and are roofed with exposed laminated timber beams, to give a different and freer atmosphere than the classrooms.

Most blocks have an *in situ* reinforced concrete frame, and the assembly hall has 80 ft. welded steel trusses. Internally the finishes are largely painted common bricks and painted concrete; externally concrete is faced with marble aggregate slabs.



15, radio and lamp mast standard in the entrance courtyard.



14



The Louisiana Museum at Humlebaek outside Copenhagen designed by Joergen Bo and Vilhelm Wohlert is among the most distinguished of recent art galleries.  *In its calm, positive handling of space, structure and landscape, it has been strongly influenced by the architecture of Japan. The result is a successful museum environment although, of course, the idea of the Museum is a purely Western concept. To the Japanese, as to most Oriental cultures, the appreciation of art, except in the religious sense, presupposes ownership and its contemplation in seclusion: the unfurling of a scroll in the tokonoma, the handling of a carving during the tea ceremony.*

Michael Brawne

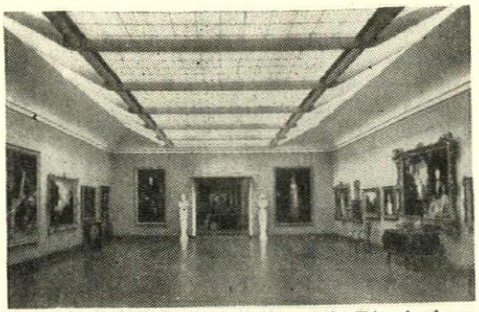
THE PICTURE WALL

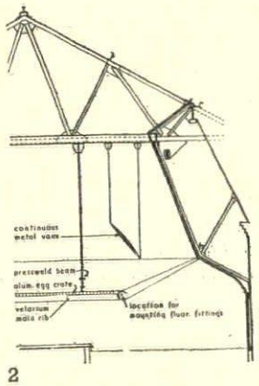
Art in the mass for the masses is an artificial creation demanding the most deliberate handling; essentially it is a piece of exhibition technique. Originally a branch of Victorian pedagogic idealism enshrined in the great civic monuments of the commercial renaissance, it has recently been admitted to be as much pleasurable entertainment as moral elevation. As a result our notions about the museum—its purpose and its appearance —are undergoing a radical change.

Few works of art are created with the intention of being seen among several hundreds of their kind as part of a concentrated emotional and intellectual experience. Whether they gain or lose through this juxtaposition is evidently debatable but at the moment, in any case, irrelevant. What is important is that the resultant impact of each individual creation is modified and that there is an involvement in a new kind of experience; the museum as a totality becomes as much a means of communication as each of its exhibits. It may be argued that this is merely the application to art display of the general notion that objects have little graspable reality in isolation. It probably goes further than this though. Reproductions, films and books on art, what Malraux calls the 'museum without walls', have made it possible to judge an individual painting and its details, visual as well as historical, in seclusion. They have done for painting what the gramophone has done for music. But just as a concert performance is an event in its own right, influenced directly by the form and feeling of the concert hall, so a museum display is an event in

its own right, an experience which goes further than the study of individual works. It is the translation into building terms of this particular challenge which is perhaps the main architectural problem.

Museums of one kind or another are favourite subjects in the curricula of schools of architecture since they are assumed to allow for the unhampered display of architectural virtuosity. This is, of course, a highly questionable assumption. The few which have actually been built in the last fifteen years or so have, fortunately, seldom started from this false premise. They have more often experimented with the new notions which have been developed about art viewing. Recent museums in Scandinavia, Italy and both North and South America are serious and fresh appraisals of displaying and preserving an accumulated art treasury. One must hope that the awakened interest in the architectural aspects of the picture gallery now current in this country will produce equally significant solutions.





1 *and* 2, *the lighting installation at the Birmingham City Museum and Art Gallery by Sheppard Fidler in conjunction with the Building Research Station is a development of the work done earlier at the Boymans Museum, Rotterdam.*

This interest has been largely awakened by the competition for the National Gallery site.* It is a great pity, however, that the conditions have been framed in specific terms limiting the possible solutions. This is particularly unfortunate since neither the social role nor the technical equipment of a picture gallery is by any means defined. There is certainly no agreement on the most suitable methods of lighting and yet these are precisely stated in the conditions. The whole organization of the gallery hinges on this initial choice.

Derek Phillips discussing the Building Research Station work on the lighting of the converted Birmingham Art Gallery has suggested the following criteria for desirable viewing conditions:

1. The distribution of light should be such as to give the greatest amount of light on the paintings.
2. The brightness level of the wall should be related to that of the pictures so that the eye can adapt to the two and see detail clearly.
3. No bright source, sky or artificial light, should be seen when viewing pictures.
4. Reflected images should be avoided.
5. The room as a whole should appear well lit.

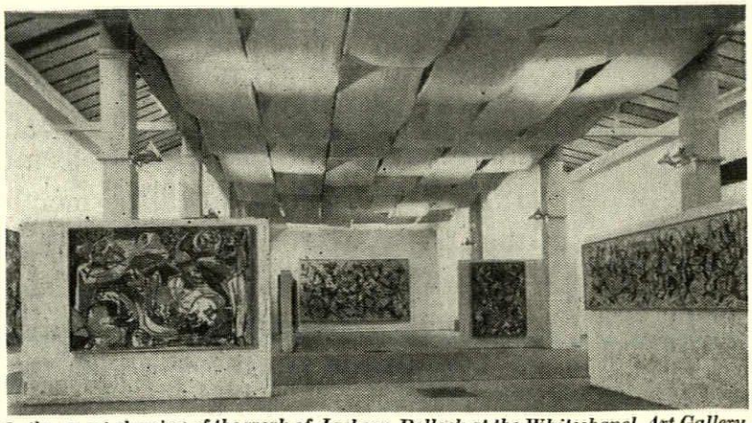
These are the basic principles of visual comfort applied to the particular problem of looking at pictures and must in most cases be satisfied. These desirable criteria tend, however, to assume an undue importance in the design of some galleries and to be extended too readily into the belief that there is in fact a closely definable, single condition which produces an ideal environment. This, it would seem, is a mistaken notion of primitive functionalism which in turn only too easily leads to the sort of result visible at Birmingham, 1 and 2.

Two considerations have been lost sight of: the first, that pictures are not all alike, the second, that the eye, like the rest of our body, does not function at its best under static conditions.

It could be argued that, to be completely rigorous, paintings should be seen in the sort of light in which they were produced if their colour rendering is to be correct: Florentine primitives in the diffuse light characteristic of a palazzo, the Dutch masters in the controlled illumination of narrow deep and shuttered windows, like a vertical series of stable doors, post-Impressionists under the open sky. No art gallery has yet tried to re-create such individual environments; perhaps no gallery should, for looking at pictures is, as has already been said, an artificial occupation which needs to be recognized as such and which would not be made more natural by pastiche illumination. But the opposite does not hold true. Successful gallery lighting does not consist of reducing every room to an even, supposedly ideal condition. There must be changes of lighting form, changes of mood and, most important, rest stops. These variations should be related to the exhibits so that space and paintings can form a coherent experience.

Something of this sort was suggested by Sir Kenneth Clark when he discussed an 'ideal' National Gallery in which he would hang Early Florentine pictures in low, severe and simple rooms, the Venetians on red silk in richly decorated spaces and Dutch paintings in small panelled chambers lit from the side. The architectural unity of the gallery must, nevertheless, as Sir Kenneth emphasized, be kept intact and override the individual elements.

At a very simple, but perhaps rather more subtle, level this variety was demonstrated within a single room at the recent Jackson Pollock exhibition at the Whitechapel Art Gallery, 3. Under a baldachino of



3, *the recent showing of the work of Jackson Pollock at the Whitechapel Art Gallery, in a setting designed by Trevor Dannatt, demonstrated the great virtues of a varied layout related to the exhibits.*

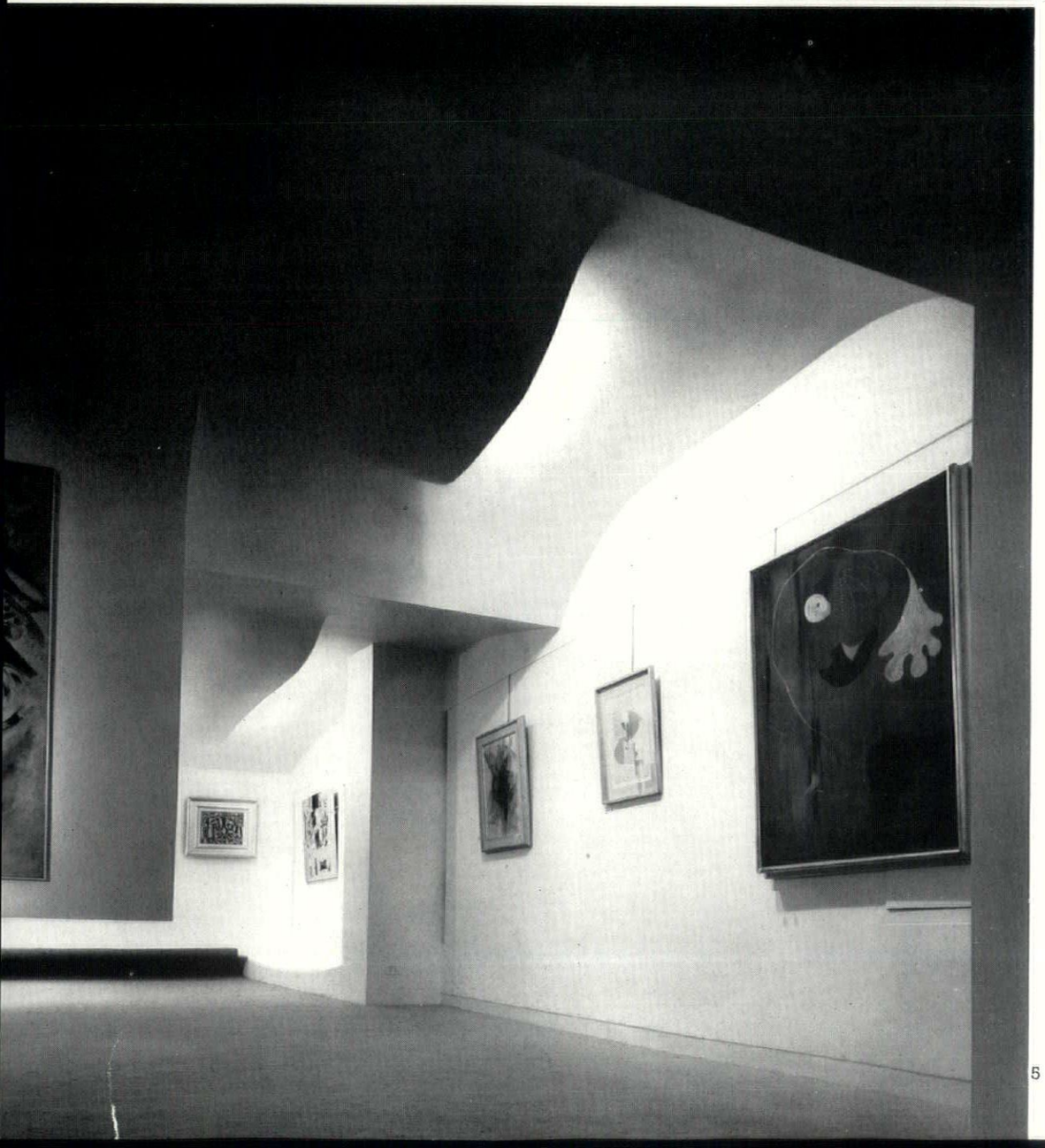
* The *Sunday Times* Competition for an Extension to London's National Gallery. The handing in date was May 8th and it is hoped that this article and the accompanying illustrations will help towards an informed assessment of the designs when they are made public.

[*continued on page* 323



4

4, Louis Kahn's Art Gallery at Yale University, New Haven, concentrates the drama of its architecture in two elements: the ceiling and the staircase enclosure. Both are of bare shuttered concrete. They thus become the massive and unifying elements of the building between which the pictures and sculpture, spot-lighted by lamps set within the tetrahedra of the ceiling, shine with an almost gem-like quality. This is not the emasculated architecture in which works of art were to find their rightful place by being in a neutral setting, but a virile environment genuinely complementary to the great treasures it shelters. 5, the World House Gallery in New York, though executed in a different idiom, starts with much the same intention. It is an attempt by Kiessler to provide a sculptural space which paradoxically enough through its fluidity would at the same time be a dominant visual element and a subdued background.



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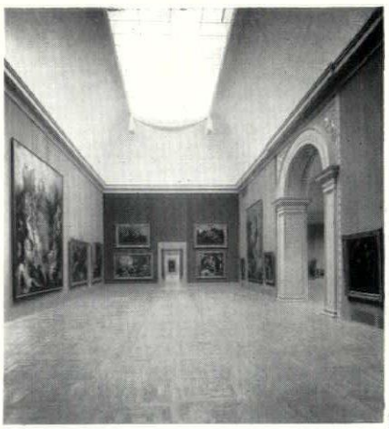


7

6 and 7, the Rubens Room at Munich's Alte Pinakothek before and after the war shows only too clearly the so-called improvements done in the name of 'correct' lighting. In the earlier room it is difficult to decide where one art form ends and the other begins; in a very different idiom this seems equally true today of the Yale Art Gallery or Kiessler's continuous envelope.

8, *Ahrbohm and Zimdahl's museum at Linkoping in Sweden is one of the early examples of lighting controlled by means of louvres. As at the Boymans in Rotterdam,* 11, *artificial lighting is also concealed above the fins,* 9. *Unlike the Boymans, however, the lighting is not symmetrical in relation to the room so that the fourth wall is relatively dark.* 10, *behind this wall is a continuous storage space for pictures not currently in exhibition. By present-day standards the storage is perhaps small; in some recent cases it has been as high as* 40 *per cent of the area used for exhibition purposes.*



8

15, *the new addition to Amsterdam's Stedelijk Museum was designed by the City Architect and expresses to a large extent the ideas of its director, Carl Sandberg, who has for long been an eloquent protagonist of the new role of the museum. Both the ground floor,* 12, *and the first floor,* 13, *are side lit with the lighting controlled by Venetian blinds. On the upper floor the artificial light is at night reflected from the bank of closed Venetian blinds,* 14, *so as to simulate directional daylight.*



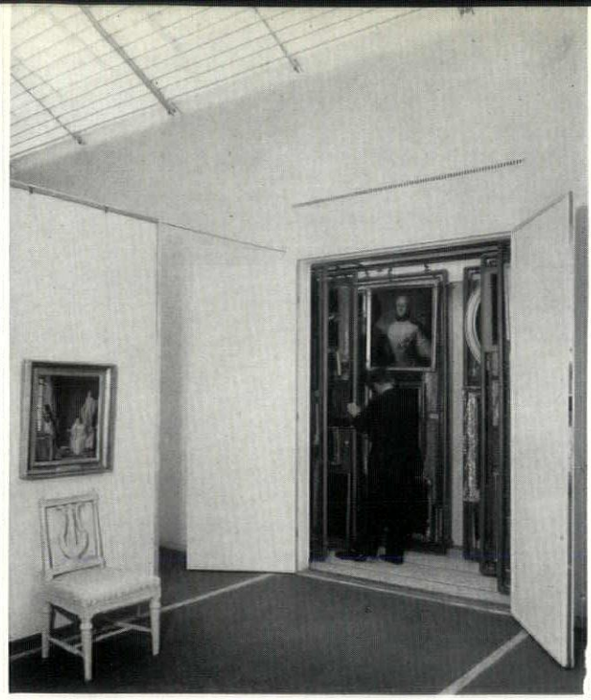
12

Ignazio Gardella's Museum of Modern Art in Milan is in the great tradition of post-war Italian museum design, a single volume articulated by means of changes of level and movable screens. The sculpture gallery is side lit so that the modelling may stand out and the lowest level faces a heavily wooded park. 21, *this glass area is covered at night by counterbalanced grilles, here seen raised.* 16, *at a half level above the gallery is the main exhibition area with its movable screens enclosing room-size spaces,* 17. *At a half level above is an open gallery for small pictures, and beyond,* 18, *the long gallery for etchings.* 19 *is a plan at the level of the picture gallery,* 20 *a section showing the three levels.*



16





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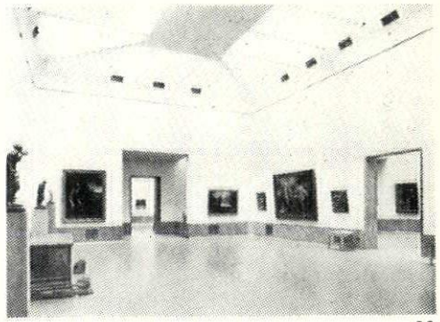

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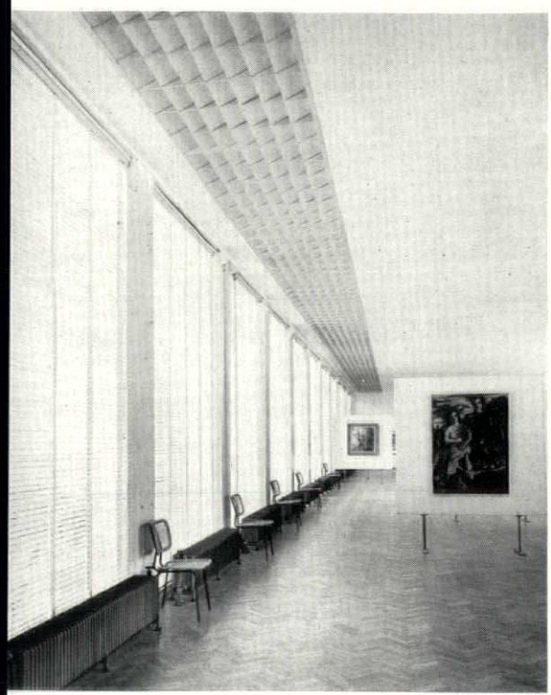



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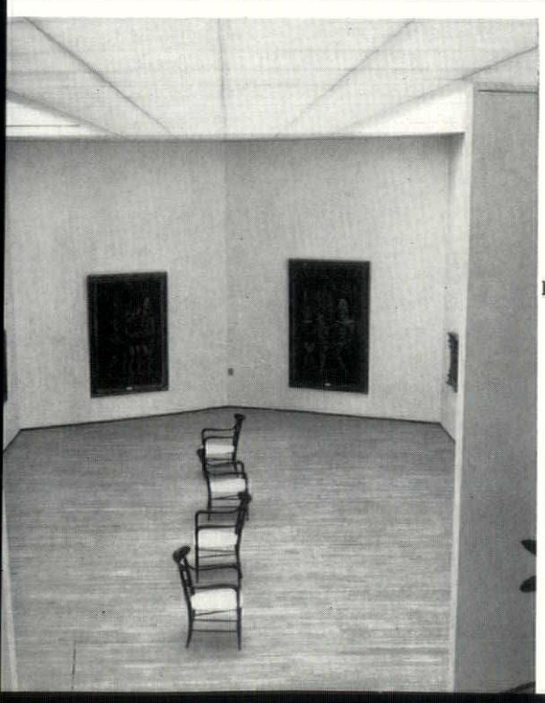

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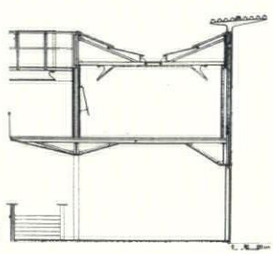

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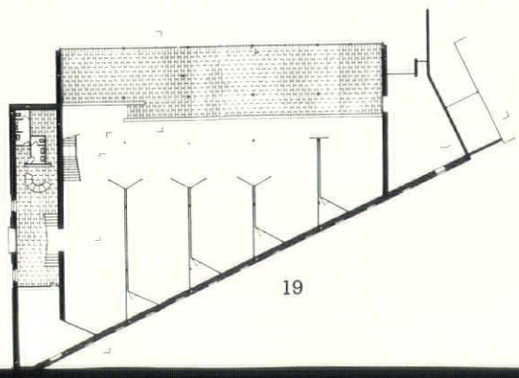

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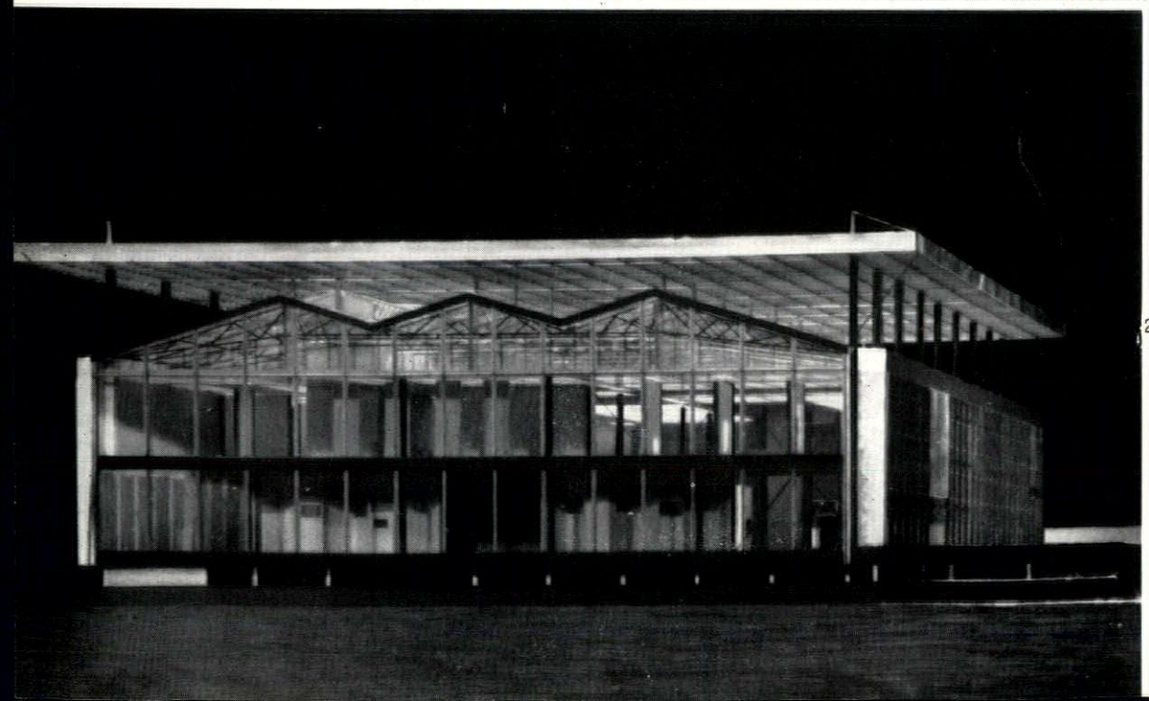

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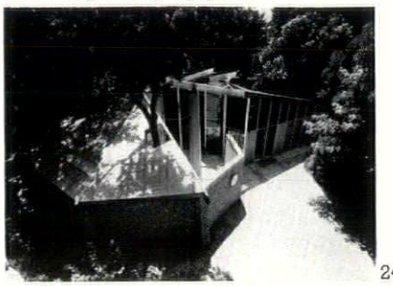
Gropius has suggested in an essay on the 'Form of the Museum' that there is at times a need to bring the visitor to that 'neutral state' from which further intensive appreciation is possible. The view beyond the picture wall may easily provide that necessary change of pace.



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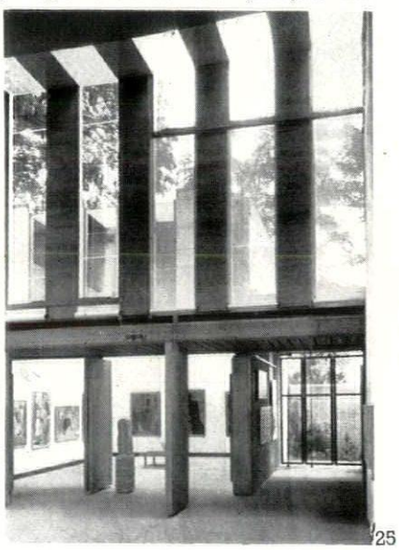
22 and 24, Studio BBPR's Canadian Pavilion, and 25, Carlo Scarpa's Venezuelan Pavilion, both at the Venice Biennale, use the rich park-like setting to occasionally draw the eye upwards into the dapple of foliage. Whether this justifies the



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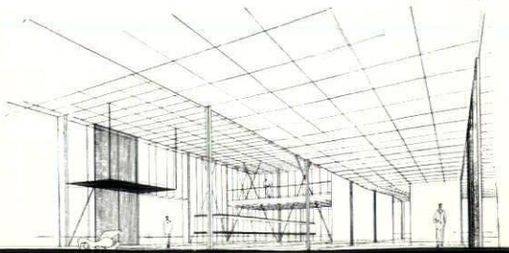
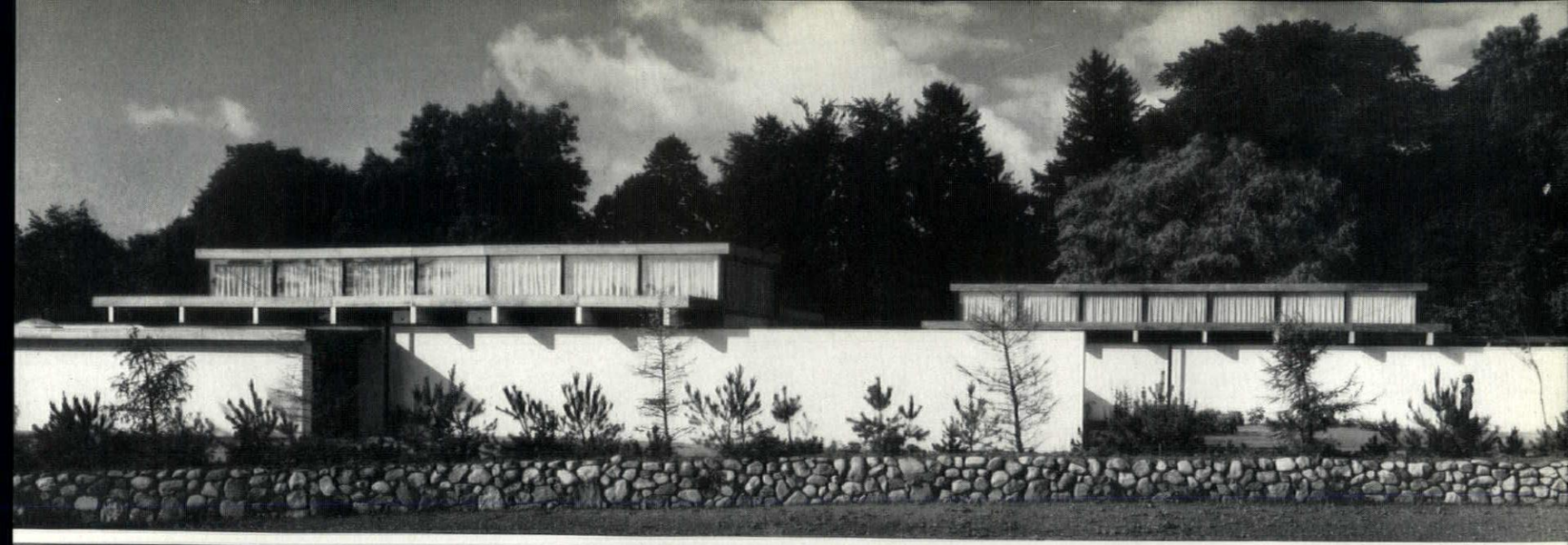
28 → 29

placement of pictures against a glass wall is, of course, open to question. 27, 28, 29 (and page 314), the Louisiana Arts Museum, built as a series of linked pavilions overlooking on one side a lake, on the other a Sound, at Humberlæk, Denmark, contrasts enclosed spaces, such as 28, containing water colours likely to fade with open sunlit rooms. On the grand scale Affonso Reidy, in Brazil, has done much the same thing, bringing the panorama of Rio de Janeiro into the display, see cover. 23 and 26, Audigier and Lagneau have gone even further and designed the Museum at Le Havre as a complete glass envelope shielded by an aluminium umbrella.

26



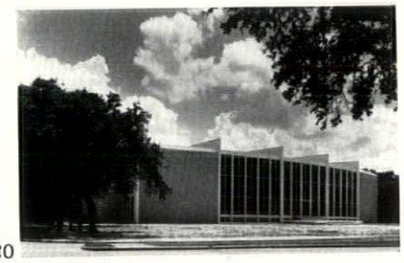






THE PICTURE WALL

The concept of the great room, a single open space infinitely flexible, has long been associated with Mies van der Rohe. It has much to commend it as an exhibition space, particularly if used imaginatively by the museum director. In certain circumstances it may be the only possible answer and the design must concentrate on the enclosure and a variable method of display and relate the two in terms of space and lighting. Mies has unfortunately only been able to



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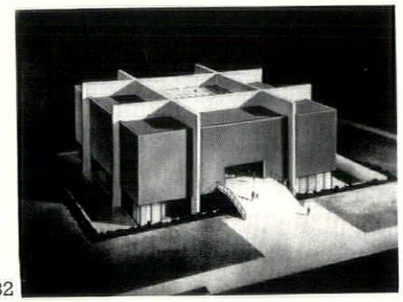
execute one picture gallery. 30, 31, *Cullinan Hall is in fact an addition to what was the back of Houston's Museum of Fine Arts. This may partly explain why it falls short of the project for a museum,* 38, *which he designed in* 1942 *and which is still the archetypal building for that particular museum form. The exhibition space at Houston is a great hall* 10,000 *sq. ft. in area,* 30 *ft. high, lit by a wall of grey glass in a steel frame.*



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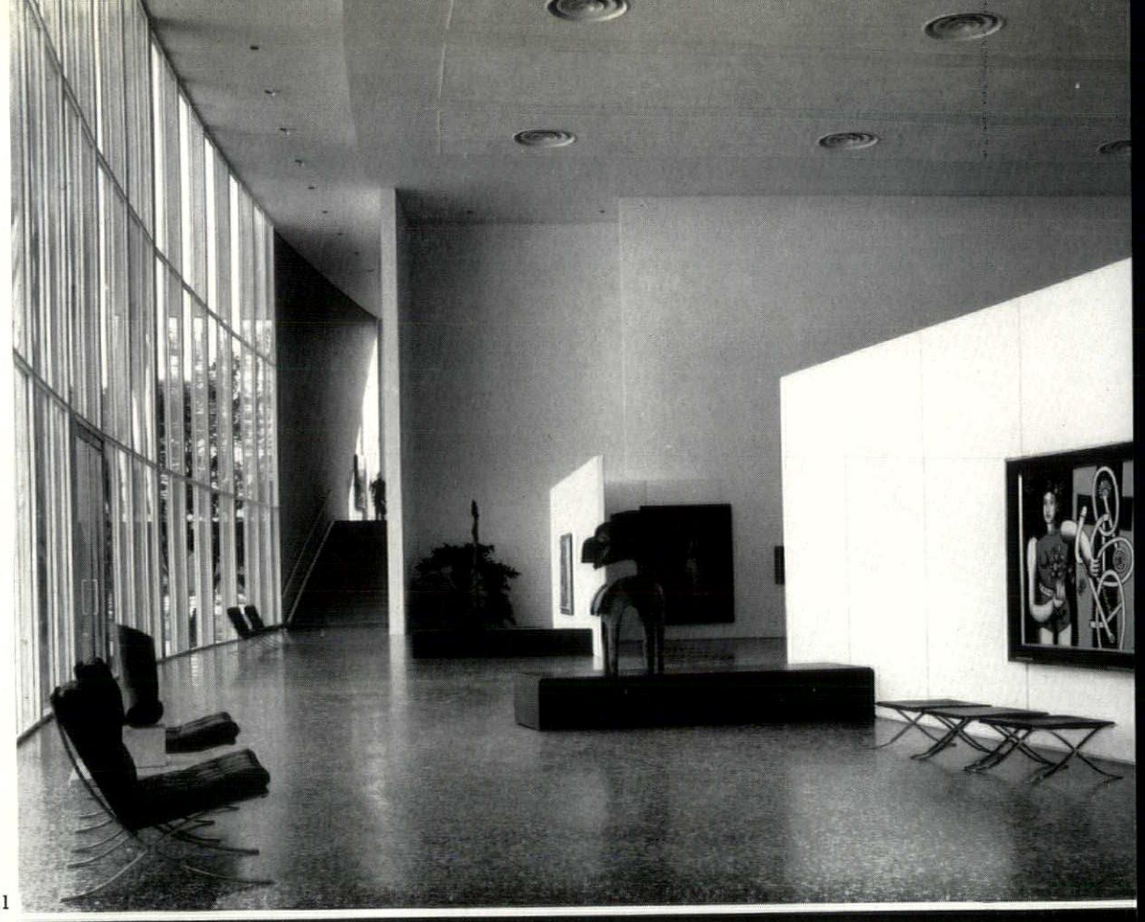
32, 33, 34, *the idea of the free space has obviously also influenced the design of the new building for the Munson-Williams-Proctor Institute at Utica, N.Y., only here Phillip Johnson has chosen to light it by a vast central skylight composed of plastic domes. The upper level of the museum is suspended from the roof so as to leave the main floor completely unobstructed.* 33, *the main entrance.* 34, *entrance façade with one wall of the model removed.*



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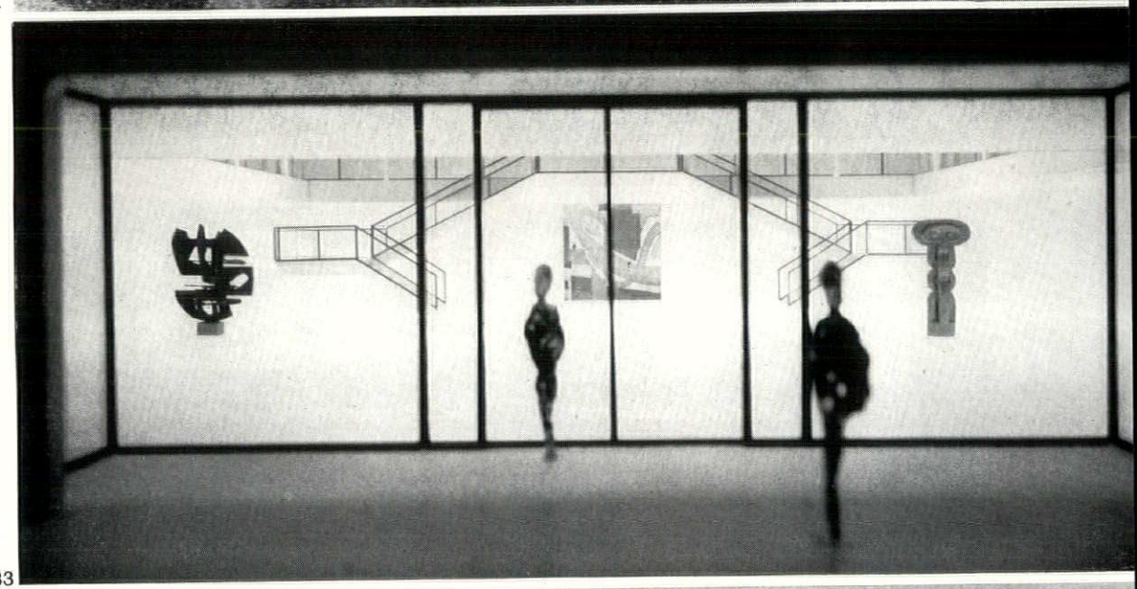

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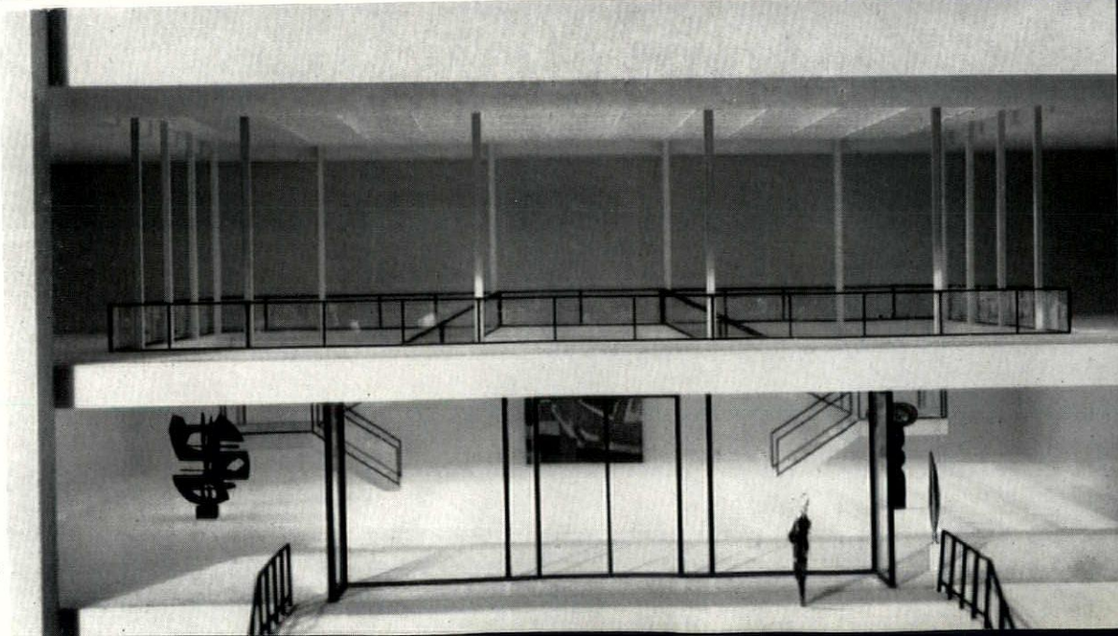

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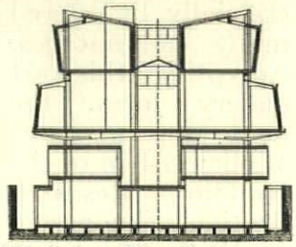
continued from page 316]

white muslin the space was organized somewhat like that of a cathedral: the nave had low blockwork walls on which the smaller paintings were hung, at the crossing the floor finish changed, there was a pause, one looked right and left to see at the end of the north and south transepts large paintings brilliantly lit from the side, and beyond that, at the east end, were two vast canvases illuminated from the floor, the largest and most strongly lit exhibits in the gallery. The exhibition became thus both a series of paintings to be seen and felt individually as well as a progression that gave some meaning to the whole.

This kind of change is in any case highly desirable if the eye is to remain alert. It has been known for some time that in terms of bodily comfort the continually and slightly fluctuating conditions of a warm spring day are those which are at the same time the most stimulating and comfortable. Much the same appears to be true of vision. Physiological research on the mechanics and chemistry of the eye has shown that there is a continuous photochemical reaction going on in the receptor rods of the retina and that the retina itself is in constant vibration shifting the image across the receptors. The eye relies in fact for effective sight on alternate moments of action and inaction, the most apparent symptom of which is blinking. It is in this instant of darkness that the photochemical process is reversed and regenerated. It would seem that on the larger scale of vision as a whole, as a means of perception, very similar conditions are needed. Museum fatigue may thus be due not only to the inevitable mental and emotional concentration combined with the physical effort of standing and walking, but also, perhaps, to the tiring effects of static illumination. The museum visitor may often, though probably less consciously, be as eye tired as he is foot sore, particularly since seeing is such a dominant part of the whole activity.

In this context, several characteristics of the illumination within a gallery are capable of being varied. Colour, intensity, direction, quality may change—north to south, light to shade, top to side, diffuse to directional—as one walks from room to room or, as one saw at the Jackson Pollock show, even within one room. The art gallery at Lund, opened in the autumn of 1957, successfully attempts a number of these changes within the limits of a small urban site. The space is mainly top lit from north-light type roof trusses, but these face north, south and east. In addition, there is side lighting from east and west windows on to a central courtyard and directional illumination from narrow slots which also connect one visually with the world outside, 35 and 36.

Each of these characteristics is, of course, variable both in terms of space and in terms of time. Photography and the lightmeter have made us keenly aware how acute these fluctuations are, for example, in a visually comfortable outdoor setting. We have not yet, however, been able to re-create this sense of variety and reconcile it at the same time with the exacting demands of museum lighting. Perhaps not enough galleries have been built in recent years to make the challenge sufficiently real. Too much of the available effort may also in any case have been concentrated on the elusive quest for the ideal cross-section of a top lit gallery. This is particularly unfortunate since top lighting may not in fact be the most desirable method. Its great architectural drawback is that space tends to lack direction, acquires often almost a sense of unreality. Its chief difficulty in terms of illumination is that it can produce an area within the field of vision which is considerably brighter than the picture on the wall. If, on the other hand, this source is rigorously shielded, it may not be able to throw sufficient light far enough down the wall. The wall is then graded from light to shade between ceiling and floor and the pictures are again competing with surfaces brighter than themselves. When this happens one's perception of colour values may be affected.



37, it is seldom that so uncompromising a personal vision as Bassi and Boschetti's design for the Museum of Modern Art in Turin is awarded the first prize in a national architectural competition. It is still incomplete and its extremely ingenious lighting arrangements have yet to be appreciated.

The great argument in favour of daylight has to some extent been based on its ability to provide part of this variety automatically, as it were. The changed social role of the museum—its function in the leisure activities of a wide public—has, however, meant that it must remain open during parts of the day when artificial illumination is inevitable. Attempts have, therefore, been made to blend the colours of electric light to produce an illumination as close to daylight as possible. The most satisfactory answer so far seems to be a combination of two kinds of fluorescent tube, 'daylight' and 'warm-white de-luxe.' Fluorescent tubes may in some instances not be advisable, though, since there is an invisible ultra-violet radiation from the mercury vapour discharge. This radiation has a spectrum band of very short wavelength which can cause photochemical deterioration of certain exhibits. There is little agreement as to the amount of harm which is likely and fluorescent lighting is thus in widespread use.

The result of colour-corrected fluorescent illumination is evidently only an approximation to natural light, but this itself is so often, after all, 'artificial' in relation to a particular picture. A Uccello in the glimmer of a murky midwinter sky in London cannot have the same colour rendering as in the light of an

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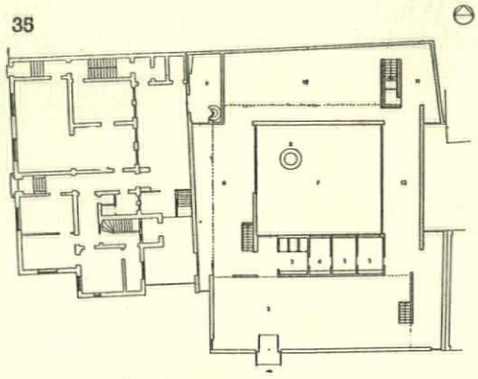
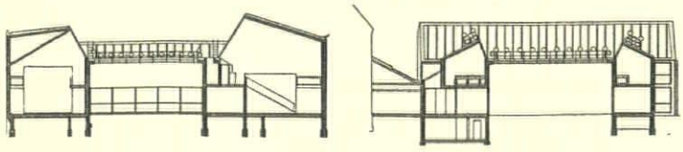
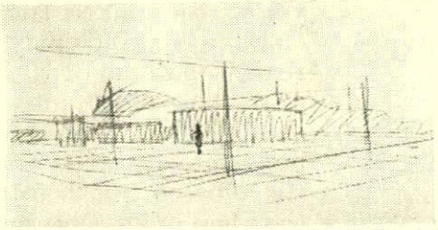


35, 36, the plan and sections of Klas Anshelm's art gallery at Lund in Sweden show clearly the spatial variety and the differences in lighting possible in even a small building.

36

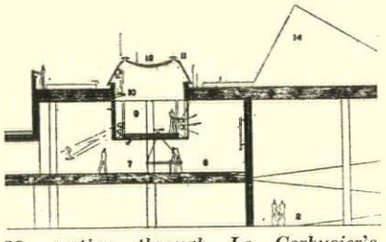


Apennine hill town. Perhaps, therefore, it has been suggested, daylighting can be abandoned altogether. The notion is particularly tempting since large glass areas tend to increase the running costs of the air-conditioning system and the sun and glare control devices which become necessary are expensive. Cleaned air makes it, of course, possible to remove the glass from the pictures and thus produce much more tolerable seeing conditions. The two problems are related. The condition is, perhaps, somewhat analogous to factory design where a similar search for an 'ideal' section was frustrated by economics and the obstruction caused by overhead equipment, and the opposite solution of an unbroken space artificially lit offered many advantages. Accepting this art gallery form, the next step may, as William Allen of the Building Research Station suggested for the factory, be to puncture the space with patios purely for visual escape. The prototype for such a design is, Mies van der Rohe's Museum project for a Small City, 38.

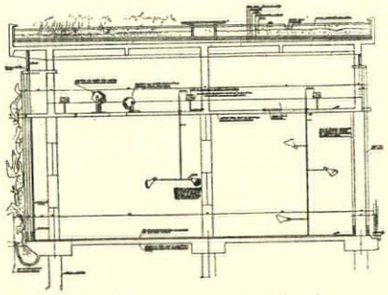


38, *project for a Museum for a Small City by Mies van der Rohe,* 1942.

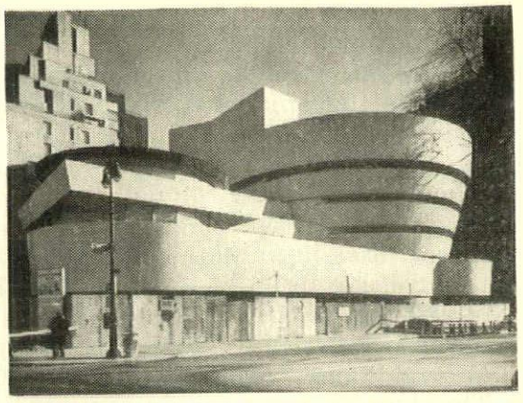
One of the considerable potentials of artificial light is that it makes highly controlled illumination possible. Light can be localized to create dramatic situations. Two of Le Corbusier's as yet unfinished buildings will explore these possibilities. Borrowing the techniques of the theatre, there is an electricians' gallery in Tokyo's 'National Museum of Fine Arts of the West' from which projectors can be manipulated to light exhibits, 39, and at Ahmedabad simpler methods attempt the same thing, 40. Le Corbusier has described the installation with characteristic enthusiasm: 'Henceforth it will be possible to employ the illumination in solo, in duo, in trio, in symphony—uniformly subdued or sharply accented—analogous to the system of a musical score. The illumination has become an integral part of the museum's impression on the visitor. It is raised to the level of emotive power. It has become a determining element of the architecture.'



39, *section through Le Corbusier's Museum in Tokyo with the electricians' gallery in the centre and,* 40, *above, a section through the exhibition hall of the Museum at Ahmedabad.*



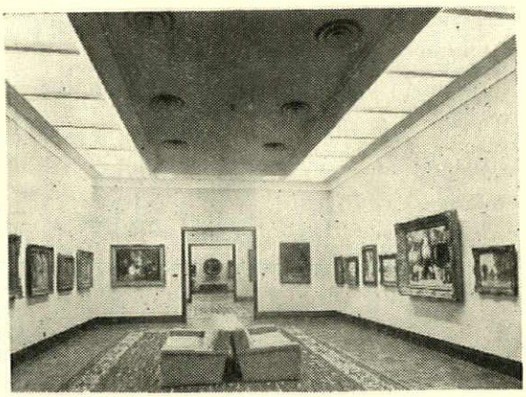
Illumination both as a variable element and as a method of emphasis is in large measure related to the system of circulation and the attitude towards display technique. The tightly grouped rooms typical of the great national collections do not easily lend themselves to a flexible daylighting technique; a small gallery like the delightful Louisiana Arts Museum in Denmark does. Wright, with considerable determination, demonstrated a fusion of lighting and circulation in the nearly completed Guggenheim Museum. Whether the unchanging relationship of picture, lighting and the observer on the way down the spiral ramp will, in fact, provide a satisfactory solution has yet to be seen. One has a considerable suspicion that the 'organic' form of the gallery will preclude an 'organic' functioning. In fact, the Guggenheim is really an extension on the section of Le Corbusier's project for a Museum of Modern Art done in 1931. Unlike the Guggenheim, however, the Corbusier design and its subsequent refinements at Ahmedabad and Tokyo do not insist on a closed system of circulation.



41, *the opening of Wright's Guggenheim Museum is awaited with interest so that the success of the continuous spiral as an exhibition space may be properly gauged. At the moment it is still only a dramatic gesture facing Central Park.*

This distinction between a free and a closed system—between a choice of what to see and what not to see at a certain time and the necessity to go through the cultural production line from beginning to end—has been under debate for a considerable period. The great picture galleries of the last century tended towards an endless series of rooms from which escape was difficult or impossible; more recent museums have, as part of their changed outlook on their function, adopted less constricting circulation patterns. While there may be some argument in favour of a predetermined sequence for certain parts of some museums, such as a chronological order for archæological exhibits or the steps of a scientific discovery, there seems little need for it in relation to the aesthetic experience of an art gallery. One knew, after all, even before the more recent museums produced their liberating influence that the most pleasurable places were the free, almost domestic museums, like Soane's Dulwich Art Gallery or the palazzo at Urbino or, despite its execrable lighting, the curious Elizabeth Gardner Museum at Boston.

Whatever their precise layout, galleries, like all other buildings, were until recently always a series of



42, *it is a pity that London's only gallery built since the war—Adams, Holden and Pearson's Courtauld Institute—should house such a splendid collection in so dull a space. The gallery feels like a conversion; in fact it is a new building.*

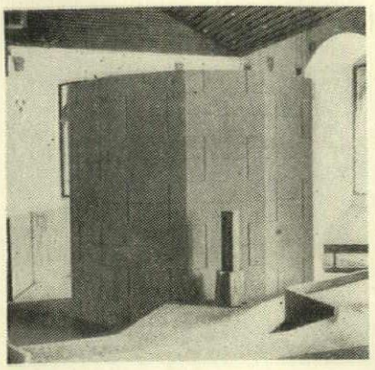
related rooms—a set of closed boxes—and it was an exhibition building which in Europe first convincingly destroyed this space concept. The German Pavilion at the 1929 International Exposition in Barcelona formulated instead the idea of space as a continuous flow channelled and regulated by screening planes. Picture galleries are ideal applications of the theory of enclosure by non-structural elements arranged so that one is led from one vertical plane to the next. It makes possible, for example, the grouping of pictures by one painter on the same screen, the arrangement of paintings belonging to the same school on adjacent screens within the same enclosure, as well as surprise juxtapositions of related pictures by revealing these not contiguously but in sequence. As the extent and position of these screens is variable, the scale of the enclosure can also be manipulated. The impact a picture makes is never entirely unrelated to its surroundings. Rogier van der Weyden's small Portrait of a Lady used to hang in a comparatively narrow communicating passage in the National Gallery, uncrowded by other paintings. It is now in a large room on a wall full of pictures. Its visual appeal is still the same, but the impact it makes is different.

Problems of circulation are not, of course, confined to the spaces within an art gallery. They extend especially to its perimeter. Two obvious alternatives immediately present themselves: the gradual approach through vestibules past post-card counters to antechambers or the precipitous plunge from market place to art gallery as at Lund, 35. The choice in the last resort probably depends on a decision on the function of art in society. It may be that what is now necessary is an almost imperceptible transition so that the apparently separate realities of outside and inside may become less divergent. To make possible, in fact, a cross-reference between painting and street so that the first may become more real, the second less squalid.

Both lighting and circulation are only architectural tools in the process of making an art gallery an enriching experience. Equally so is the actual disposition of the exhibits, the assumptions behind the display technique. The fundamental question to be decided is whether the exhibits are to be positioned more or less regularly on the walls with the few exceptions now decreed by tradition, such as the placing of tryptichs altar-like in the middle of end walls, or whether they are to be shown so that circulation and lighting are related to the content. It is a decision which despite the urge towards limitless flexibility must be made early in the design of an art gallery.

Studio BBPR's decision in the remodelling of the Museo del Castello Sforzesco in Milan was clear cut. It is particularly evident in the arrangement of the space around Michelangelo's Pieta Rondanini, 43 and 44. A wide hall steps down towards what appears as a fortress-like embrasure, the steps narrowing and pointing obliquely at the side, forcing one between the wall of the room and the faceted screen. At the foot, one turns through ninety degrees and there, suddenly revealed within the enclosure, is the rough hewn form of Michelangelo's marble.

The drama of that display is, as all gallery arrangement, dependent on the relation between a stationary exhibit and a moving observer. This is, however, not



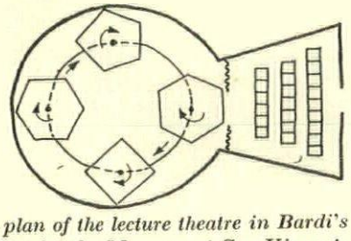
43



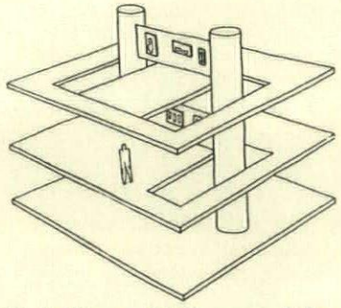
44

Studio BBPR's conversion of the Castello Sforzesco; 43, *the approach down the steps towards Michelangelo's Pieta Rondanini,* 44.

the only possible method of looking at works of art. The position can, in fact, be reversed. Lina Bo Bardi, the architect of the Sao Paulo Museum, has suggested a lecture theatre in his project for a museum at Sao Vincente in which paintings are hung on revolving drums mounted on a revolving stage so that a large number of pictures can be shown to a seated audience, 45. This is obviously a useful technique where a spoken commentary has to be illustrated with examples. Ciceros Diaf has put forward an idea for a gallery in which the pictures are hung on turnstiles safely housed within large drums. Outside the drum there is a panel of reproductions and switches by which the paintings can be chosen. The turnstile releases the selected painting which is then moved out of the drum on to a wall. Two or three pictures can be placed there simultaneously and are returned when no longer needed. In the scheme put forward by Diaf the storage drums are also the structural supports of the museum and the space is organized around these and the related wall space, 46.

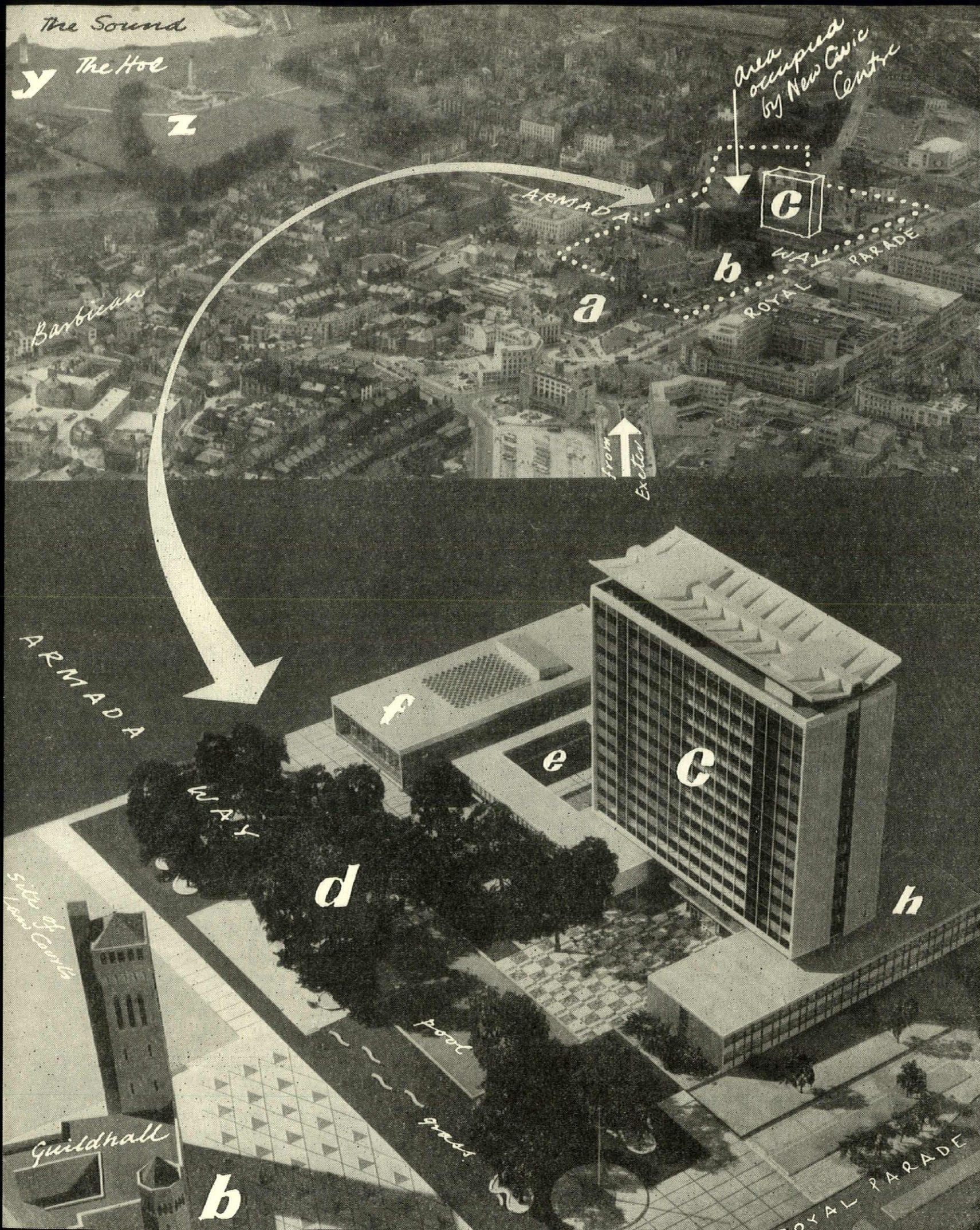


45, *plan of the lecture theatre in Bardi's project for the Museum at Sao Vincente showing a revolving stage with a number of hexagonal revolving 'picture' drums.*



46, *in Ciceros Diaf's proposal for a picture gallery the paintings are housed on turnstiles within large drums and mechanically selected to appear on a wall before the visitor.*

Both these projects are in some degree akin to the technique of the cinema and have probably been influenced by it. Both suffer from similar drawbacks. The most serious objection is, of course, that an appreciable number of paintings cannot be seen together and a constant direct, visual comparison made between them. Nevertheless, the two projects are extremely useful reminders that the form of the art gallery which we have inherited unchanged since the north wing of the Athenian Propylæa is not necessarily the only, or even the best way to view pictures.

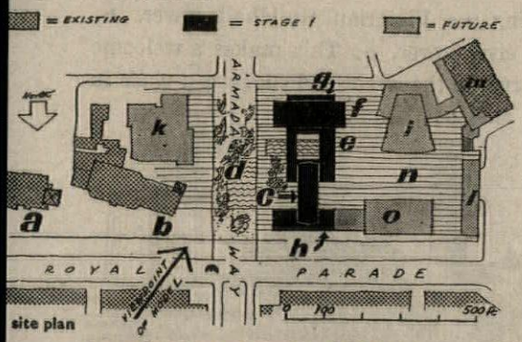

The Sound
y
The Hoe
z
Area occupied by New Civic Centre
c
ARMADA WAY
b
ROYAL PARADE
Barbican
a
from Exeter
ARMADA WAY
f
e
c
d
h
Site of Corn Exchange
Pool
Guildhall
b
ROYAL PARADE

Kenneth Browne

Plymouth Centred

Plymouth's plan for its new civic centre marks a decisive breakaway from the Beaux Arts formalism of its 1943 master plan. To its credit, the city council approved this scheme by their new city architect, H. J. W. Stirling, and it has since received international acclaim. Now stage one, designed by Jellicoe, Ballantyne and Coleridge (shown in model opposite) is taking shape and in this article Kenneth Browne assesses the value of the whole scheme as townscape.

To appreciate the visual implications of this scheme (plan below, site in air view opposite) it is necessary to know something of the lie of the land.



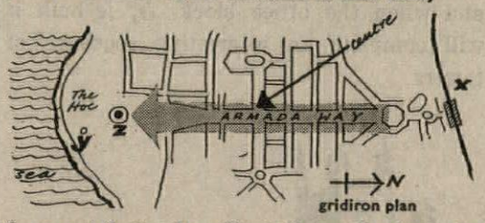
key to drawings and frontis opposite

a, St. Andrew's Church	i, concert hall
b, guildhall	k, law courts
c, 14 storey block civic offices	l, offices
d, The Great Square	m, cinema
e, town clerk	n, inner square
f, council chamber	o, city treasurer
g, Lord Mayor's Parlour	y, lighthouse
h, housing dept.	z, naval memorial

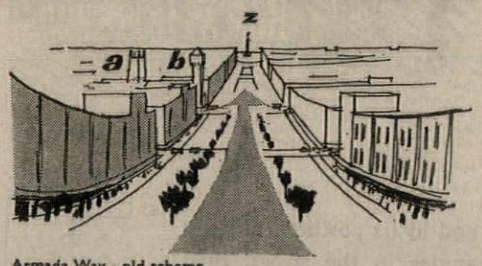
On a map, the geographical position of Plymouth looks magnificent, and judged from The Hoe it is. What the map doesn't show, is that the natural centre of the city lies in a depression. In consequence the sea, the very reason for Plymouth's existence, is out of sight. The section north-south is roughly like this with



the centre here. Standing in the middle of the city the effect is depressing. Instead of the exciting view over The Sound, half a mile away, which you might expect from your map, the ground slopes steeply up to end in sky, not sea. At the same time there is little in the centre itself to hold your attention, and your eye is led away up to the Naval Memorial, *z*, on the Hoe. The post-war gridiron plan, which replaced the blitzed jumble of old Plymouth and is like this,



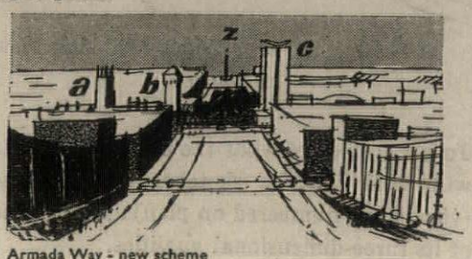
does not help. In effect it emphasizes the distances to be covered and speeds the eye out of the centre in every direction by straight corridor streets. The main feature, Armada Way (marked by arrow) is 1,000 yards long, 150 ft. wide, dead straight and



Armada Way - old scheme

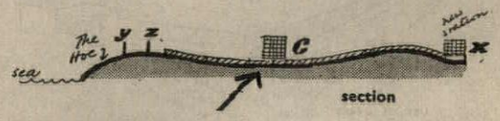
ending in sky at both ends.

Something was desperately needed to pin the whole thing down, something around which the city could revolve: a focal point. The Stirling plan for a civic centre provided just that and its 14 storey office block, *c*, reinforcing the two existing towers of St. Andrew's Church, *a*, and the Guildhall, *b*, linked to them by the trees of the Great Square in between, stops the eye in just the right place.



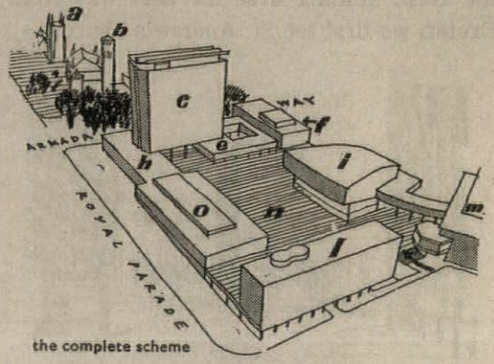
Armada Way - new scheme

The height (close on 200 ft.) of this office building is of great importance. It could perhaps be higher but certainly not lower. It states, like an exclamation mark, the importance of this as a place and it gives an uplift at the



lowest point just where it is needed. When the new Plymouth North Road station tower, *x*, is built there will be a visual link between the highest points; station—civic centre—naval monument.

Approaching from the station the civic centre with its shaded lawns and pools will occur at exactly the right halfway mark for visitors to stop, rest and look around before climbing up to the Hoe. The layout of the centre (sketched below) is asymmetrical and in complete contrast to the grandiose pre-war conception of civic buildings in this country, with their useless towers, massive bronze doorways, etc. The group is dominated by the tall office block, *c*, and encloses an inner square, *n*,

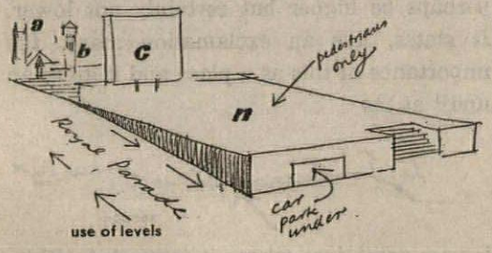


the complete scheme

(containing the concert hall, *i*) which is for pedestrians only. Though surrounded by buildings this inner square allows the eye

to escape where the buildings are raised up on columns. This space will be in pleasant contrast to the traffic-dominated streets outside. Though the axis of Armada Way is not in fact blocked, the Great Square will link across to the existing Guildhall, ***b***, and St. Andrew's Church, ***a*** (now restored by the city architect) and also to the future law court building, ***k***. The group being three dimensional in conception will provide (unlike buildings in corridor streets) infinite change of aspect to the visitor and, thanks to the absence of traffic, he will be able to move about and look at the buildings in safety.

Clever use has been made of levels, for there is a fall of 18 ft. on Royal Parade. Instead of dissipating this, the designer has used it to dramatize the civic conception and present his buildings on a raised platform which is strictly pedestrian territory.

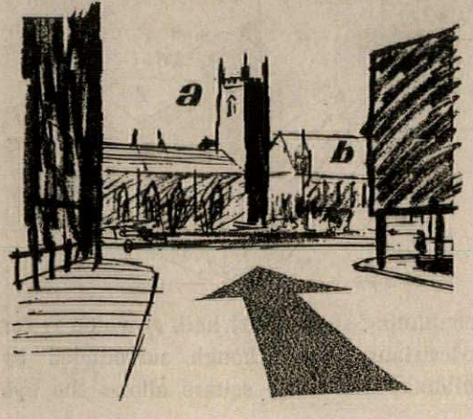


use of levels

The space below is used for car parking with direct access to the buildings above.

The Great Square comes in stage one of the programme and its site has always been a natural place to rest and get your breath back between the station and the Hoe. In this scheme the pedestrian comes first, a welcome change, and the emphasis is on relaxation. Everything is done to make the square attractive by subtle use of trees, paving, water and grass. The trees drift across the square tying one side to the other and the surface pattern, using a superb local marble, reinforces this.

We have seen the value of the tall block from the North or Station approach. From the East, coming over the causeway from Exeter, we first see St. Andrew's Church, ***a***,

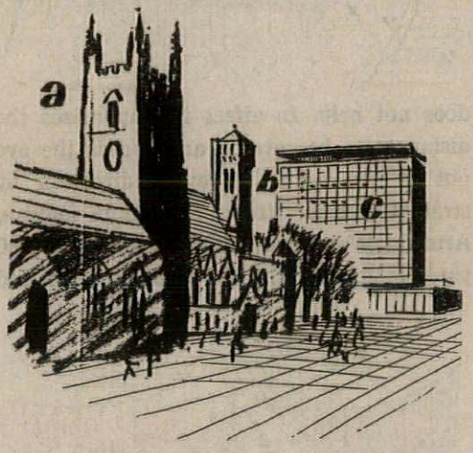


between flanking buildings

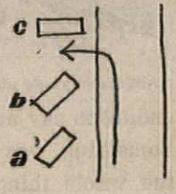
then the scene opens up revealing the Guildhall, ***b***,



and when the office block, ***c***, is built it will complete an interesting sequence of towers



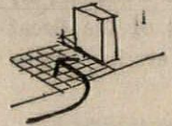
and by its position, at right angles to the street, turn the eye into the square lying between ***b*** and ***c***.



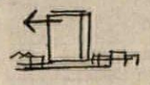
This building does the following :—



it acts as landmark to the whereabouts of the civic centre

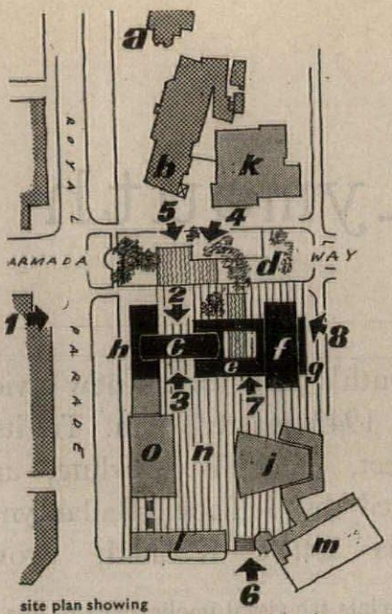


it turns the eye into the square



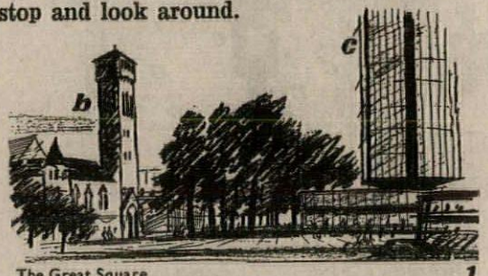
it provides a linking view of the sea.

To get an idea of what the complete scheme will look like the sketches which follow (viewpoints numbered on plan) explore some of its three-dimensional qualities.



site plan showing stage 1 in black and viewpoints of sketches

First of all, seen from Royal Parade, ***1***, fine existing trees drift across the square linking the Victorian Guildhall tower, ***b***, and civic tower, ***c***. This makes a welcome contrast to the street and suggests a place to stop and look around.

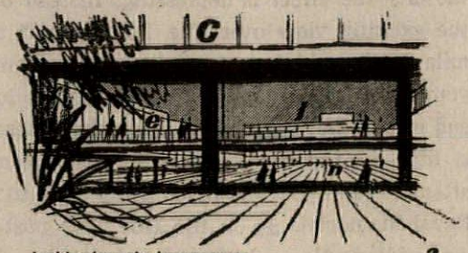


The Great Square 1

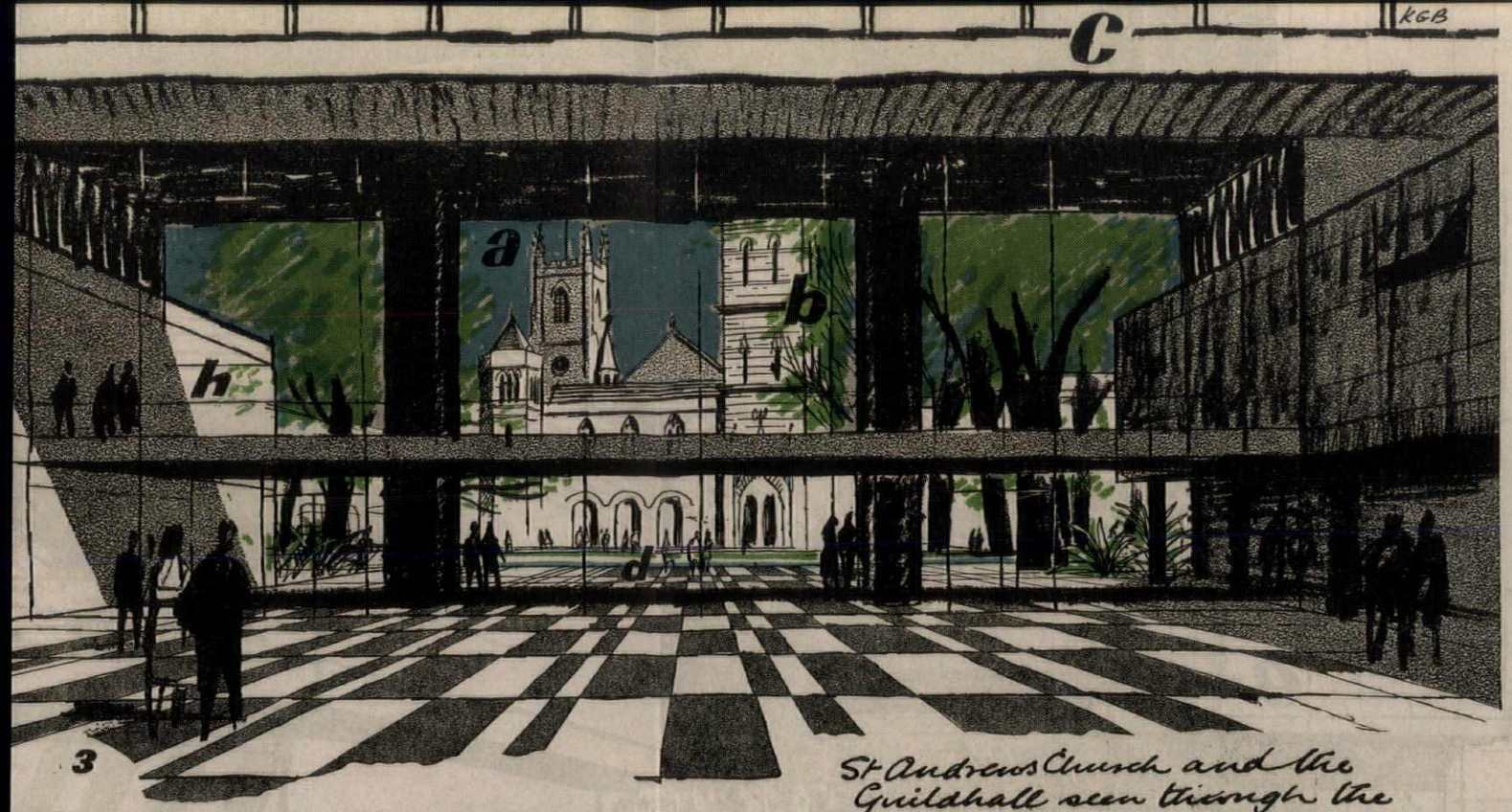
Entering the square and looking right ***2***, the visitor will see through the glazed entrance hall of the high block, ***c***, into the paved inner square, ***n***, beyond. A hide and seek glimpse of buildings, partly screened, which will tempt him to explore further to see what goes on.

Having penetrated under block, ***c***, and looking back, ***3***, he will see St. Andrews and the Guildhall framed in a slit view, the buildings part hidden by trees. The patterned paving which passes unchecked through the entrance hall emphasizes continuity of vision between the outer and inner squares.

Back in the Great Square, ***4***, there is a welcome chance to rest on the seats which ring the trees. This is a good spot to relax



looking into the inner square 2



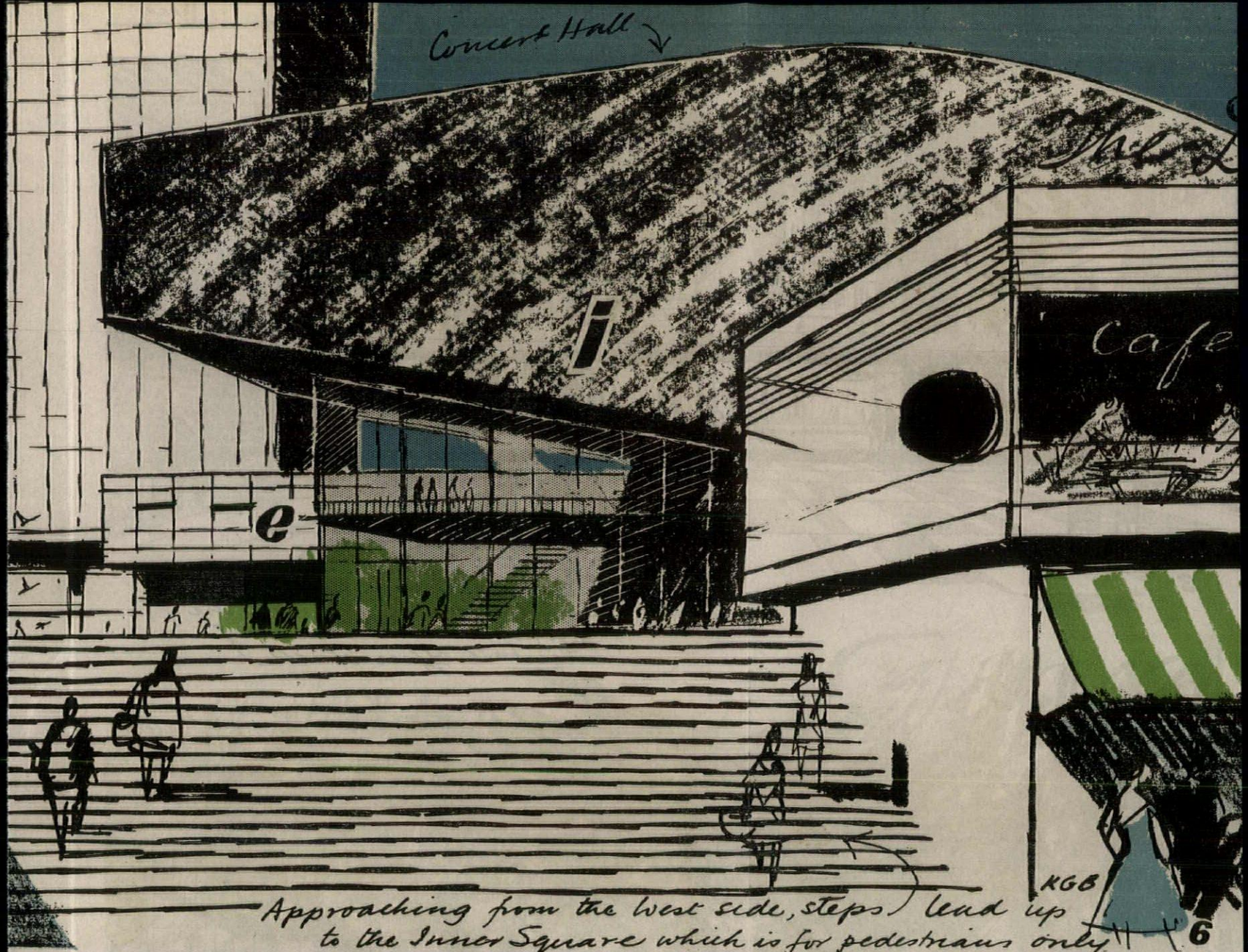
3

St Andrews Church and the Guildhall seen through the glazed entrance hall of the tall office block



4

In the Great Square



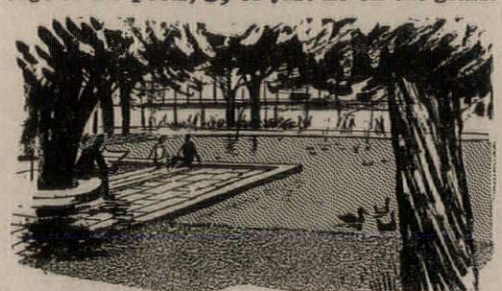
Approaching from the west side, steps lead up to the Inner Square which is for pedestrians only

6



8

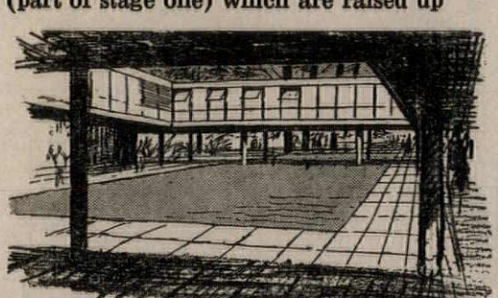
in the shade and enjoy the surroundings with the weight off your feet. Large stretches of grass and water add attraction, while the buildings are part hidden by the foliage. There are no loose seats to clutter the scene. You can sit under the trees, on the stone edge of the pools, *5*, or just lie on the grass.



in The Great Square 5

Approaching from the other end of the site, *6*, an exciting panorama of buildings unfolds as you climb the steps to the level of the inner square. This is where the intelligent use of levels comes in. From the street, with its entrance, *p*, to the underground car park, you cannot see into the square and this creates just the right feeling of suspense.

Crossing the inner square you can look through under the Town Clerk's offices, *7* (part of stage one) which are raised up



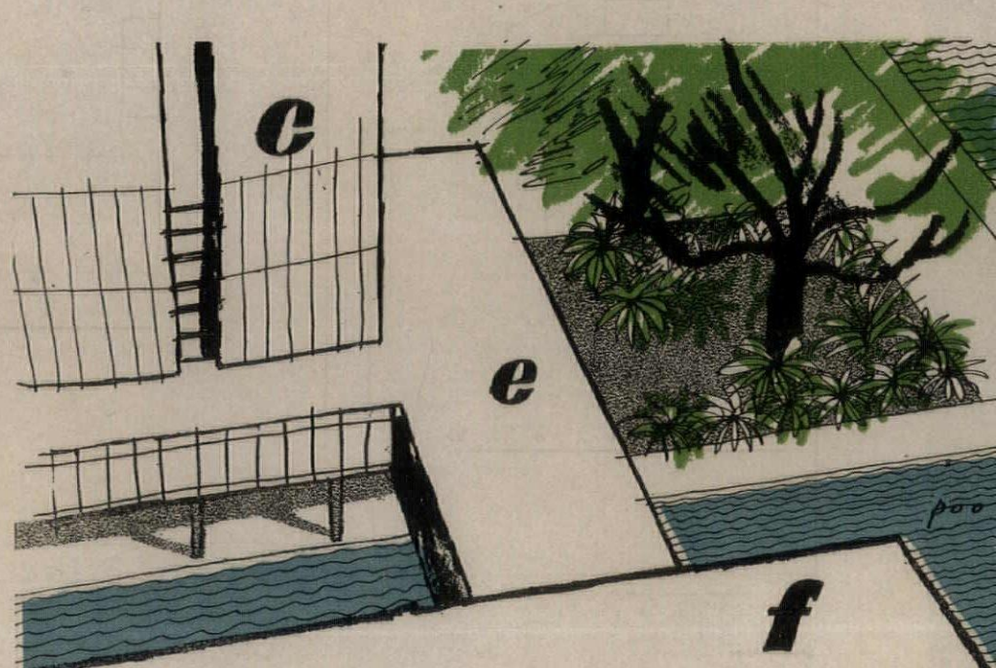
looking through under the Town Clerk's office 7

to form a colonnade. This is a top-lit, slit view with the pool carrying your eye on to the trees of the Great Square beyond.

Sketch *8*, shows the informal way in which the architects have treated the surface of the main square. There is an interesting contrast of hard (paved) and soft (grass) surfaces interlocking and the trees penetrate apparently at random.

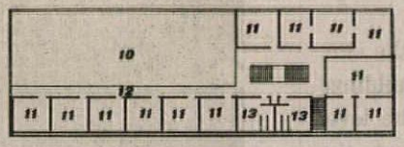
The route which the Lord Mayor's procession will take from the Council Chamber, *f*, to the Guildhall, *b*, is no formal way but a casual winding route across the varying patterns of paving and in between the trees. When completed Plymouth civic centre could be the finest in the country and add enormously to the prestige of that city, something worth going a long way to see. However, it is a bold plan which demands a bold execution; an entity which will permit of no half-hearted whittling away. It's all or nothing.





The Lord Mayor's
leaving the Council House and cr
The Great Square on its way to the Gu

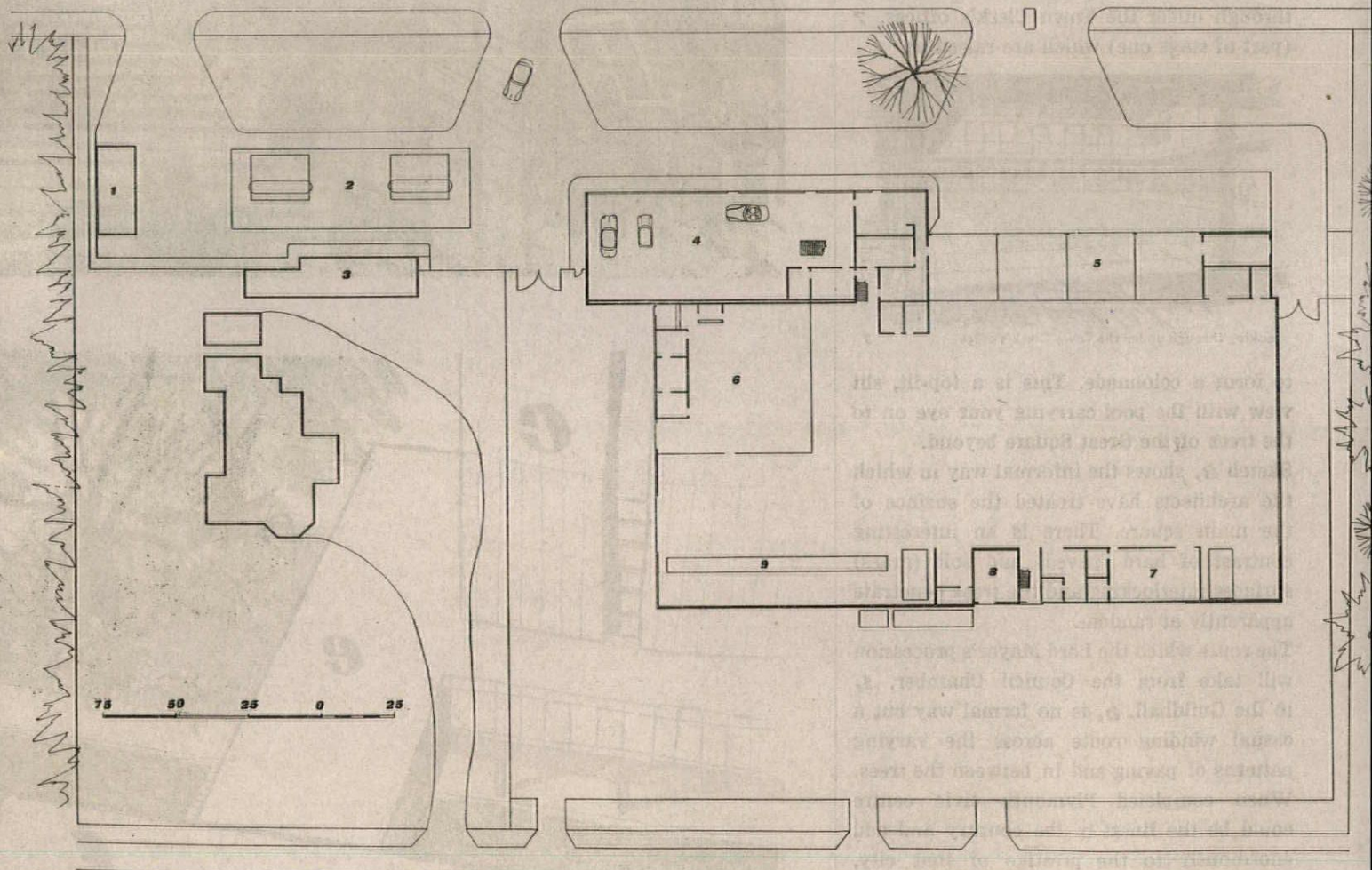
GARAGE AT POOLE



first floor

key
1. petrol storage tanks
2. pump island
3. filling station
4. showroom
5. lubrication and washing bays
6. workshop
7. engine shop
8. boiler house
9. pits
10. upper showroom
11. office
12. balcony
13. cloakroom

N



ground floor

GARAGE AT POOLE

ARCHITECTS	FARMER AND DARK
partner-in-charge	E. M. C. Butcher

1, the showrooms from the road.

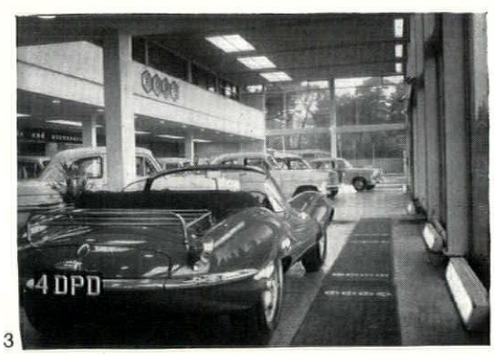


The site in Poole Road was occupied by three large Victorian houses, one of which still stands but will be demolished later to make way for the next phase. The basic requirements were for a showroom, offices, lubrication and washing bays, a maintenance area and a petrol filling station. The canopies over the petrol pumps are built up from glued plywood strips, in two layers, forming a self-supporting stressed skin. The sales room, with a tile mural of a model T Ford, will eventually be pulled down to make way for an extension to the showroom and offices.

The main part of the showroom is two storeys high and fully glazed on the north and west sides. The black terrazzo staircase leads to the offices which open off a gallery on the south side of the building, with the sales counter beneath. Natural wood, parana pine, oak and

2

2, the pump island with its cantilevered plywood canopy.
3, the interior of the showroom, with the office balcony on the left. The floor is of oak, specially treated to withstand oil and tyre marks.
4, the retail counter has direct communication with the stores behind.



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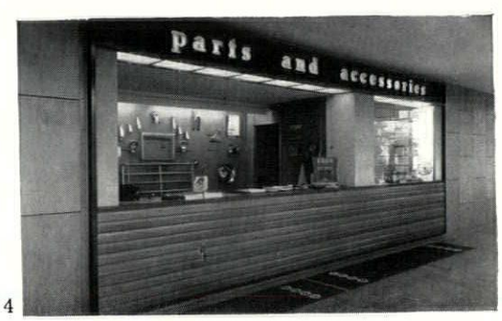
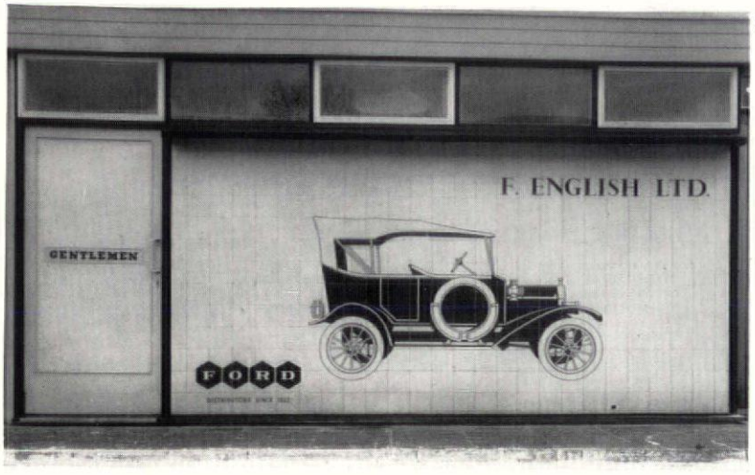


4

western red cedar, treated with a matt varnish, is used to contrast with the painted surfaces. Each rooflight contains eight fluorescent tubes behind opal perspex, with recessed spotlights to give sparkle. Heating is by warm air convectors, radiators and a continuous heating coil below the large windows. There are also anti-condensation pipes running through the rooflights.

The four lubrication bays and two washing bays have quarry tile floors and full height, aluminium-framed glazed folding doors. Waste sump oil is automatically pumped to a tank behind the building where it is used as boiler fuel. The maintenance shop has a height of 15 ft. 6 in. to the underside of the steelwork, which allows for overhead services and two storeys of small workshops and cloakrooms. The main lattice roof trusses are placed above the level of the roof and support the glazed roof lights. The roof is of insulated galvanized steel decking, covered with bituminous felt. All external

GARAGE AT POOLE



5

walls are clad with vertical patent glazing, capped by a fascia of ribbed aluminium sheet above an 8 ft. high plinth wall of buff and sand lime brickwork. At each end are 18 ft. wide sliding-folding doors. The stores occupy two bays at the back of the showroom and are of patent slotted angle.

All rainwater pipes are mounted internally on the centre row of stanchions. In the maintenance area all steelwork is painted light blue, with walls of natural brickwork treated with a clear glaze. Externally the exposed structure is light stone colour, all opening window frames are light blue and all fixed windows dark blue/grey.

5, a tiled mural of a model T Ford designed by I. C. Case forms one wall of the sales room behind the pumps.
6, at the rear of the building an 8 ft. high plinth wall of buff sand lime bricks is topped by vertical patent glazing, with a fascia of ribbed aluminium sheet.

6




nederland
SABENA
IGIO PACE VICTORI

Nicolete Gray

THE MODERN MOVEMENT

The contrast between the skyline lettering of a recent building in Rotterdam, opposite top ☞ *and the inscription in the arcade frieze of the Palazzo Ducale at Urbino, below, underlines the emergence of a new relationship between building and lettering. In both cases the forms of letters are appropriate to the forms of other decorative elements in the architecture but, as Mrs. Gray points out in the article below, in many modern buildings the lettering is not merely decorative, but functionally necessary, thus necessitating a new attitude on the part of the architect.*

We have in previous articles surveyed many different sorts of lettering, different types and different ideas and uses, but the problem which arose in the very beginning still remains to be answered; which of the traditional styles of lettering are best adapted to the modern style in architecture or does it demand a new or exclusive letter of its own?

The relation between lettering and building is new today. In the past it has been an extra, something deliberately chosen and added by the architect or client, because they wanted it for some reason of their own. Today for many types of building it is a necessity and this change seems to work both ways. Sometimes and for some sorts of work, for instance for shop fronts, it is more considered, planned from the start as one of the conditions given. But more often, particularly in large buildings, it would seem to be ignored and treated as an unimportant detail, a fitting that is added at the end. It still has no recognized,traditional place and treatment in the vernacular of modern architecture, as it had, of course, in the far more uniform scheme of classical building, where it had its place on the architrave, under the pediment. The Renaissance added the practice of placing the inscription above the courtyard colonnade, as in the Palazzo Ducale at Urbino. Finally, there is the inscription inside, round the dome, as at Anet or St. Eligio-degli Orefici in Rome. What are, or what should be the modern counterparts?

The first quarter of the nineteenth century saw the invention in England of a completely new sort of typography, new in function, in idea, and in its component letters. In some ways the play bill, with its arrangements of great heavy patterns and reintroduction of decorated letter design is nearer to the medieval manuscript than anything intervening. It also reintroduces the three-dimensional element, used, for instance, by the Carolingians (AR Aug., 1956) with its shaded and its perspective letters, 1. As we have seen in previous articles the typographical innovations were paralleled, if not preceded, by architectural letters of the same design; heavy if not true fat-face Romans, Egyptians, Tuscans, and rather later, sans-serif. The early nineteenth century printer made up his material into wonderful pictorial abstract designs, the builder and engineer incorporated his into the sub-classical domestic vernacular and the early functional architectural terms of the time. We have already shown how the new designs grew out of, or were adapted to the new and the greatly increased variety of materials coming into use. To recall the sort of letter which was being invented we reproduce a magnificent cast iron Tuscan, still to be seen in Covent Garden, 2. The extent to which lettering might be felt to be part of the new movement of expansion and discovery is demonstrated in the cast-iron bridge at Bettws-y-Coed by Telford, in the year of Waterloo, 3. 4 shows a later example, using a sans letter of the same idea, this time on the Abermule bridge over the Severn built in 1852. Most of this lettering is as anonymous as the contemporary type design and composition, and the building which it decorates. It is typical, however, of the cultural unity that still survived, if precariously, that the lettering on Nash and Smirke buildings (as at Chester Terrace and Adelaide Place, Charing Cross, AR April, 1957 and June, 1954) are of the same school as the commercial letters.

Good architectural lettering seems to have lasted longer than good popular typography. The developments we have been considering were all pre-Victorian. You see plenty of good letters well applied to early Victorian buildings, whereas though a multitude of fascinating type-faces were invented it seems that they were too much for the Victorian compositor. After about 1840 he seems to lose command of his material, to choose his type solely on the basis of whether it would fit the copy into the line, combined with the principle of using as many different founts together as possible. The results are often enchanting as type-specimens, but no longer designs in their own right. In the late 'seventies, however, a second revolution took place, and *artistic* printing and lettering begins to appear, 5. Again it seems to be a movement which was commercial and anonymous in origin. It is easier, at least in the present while the architectural material is unstudied and uncollected, to follow its development in printing, though



1

2

3

1, *Victorian theatre bill.*
2, *cast and painted metal letters, Covent Garden.*
3, *detail of the Waterloo Bridge, Bettws-y-Coed,* 1815.

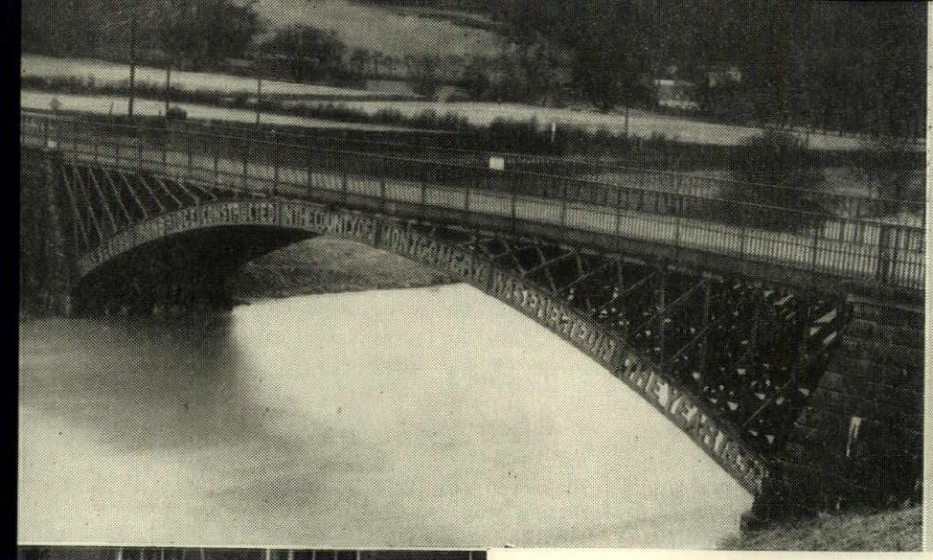
the two spheres must have been closely parallel, if not intimately connected. In printing the revolution was greatly influenced by the introduction of the platen press, which made possible the printing of elaborate jobbing work in colour, also by the great prosperity and comparatively low wages of the period which made it feasible for a compositor to spend whole days on the setting of an invitation card or letter head. This time the first centres were in the United States, Harpel's *Typograph or book of Specimens,* published in Cincinnati in 1870 is a landmark. W. J. Kelly, editor of the *American Model Printer,* was a pioneer. It became very popular in Germany, and in England, through the Printers International Specimen Exchange organized in 1880, by which printers exchanged the requisite number of copies of their own design and received in exchange specimens of those of all the other printers. The volumes which contain these exchanges, which continued until 1898, show a very remarkable and sophisticated international school of design. The interesting features are the incorporation of a semi-abstract type of ornament, made up of combinations of rules, and units of typographical ornament, into a design of lettering; the fact that the principles of this design were asymmetrical; the creation of surface textures at various levels in relation to the surface of the page, making a design in three-dimensions; and, finally, the use of a repertory of type-faces which are neither Roman nor Gothic but free and fluid in form. The sources of this repertory were provided by enthusiastic scholarship which searched manuscripts, brasses and tombs and reproduced almost every variety of alphabet discovered there, in books ranging from the impressive publications of Henry Shaw and Noel Humphries to cheap paper covered alphabet books. The commercial type designers of the period had the advantage that not being scholars they departed freely from their models without inhibitions, and produced a series of designs of which the motives are almost always expressionist. In doing so they freed letter design, for the moment at least, from the exclusive dominance of the square Roman.

The architectural counterparts of 'artistic' printing are to be seen in most cities, sophisticated combinations of free, almost always compressed, letter forms in terracotta, in mosaic, combined with ironwork, or less often applied. 6, gilt wood letters from a shop front in Cheltenham is typical, particularly in the way in which the lettering is integrated with the balcony and in proportion to the windows. The architectural letter was, of course, at a disadvantage in not being free, but being a component part of an art which was almost in dissolution.

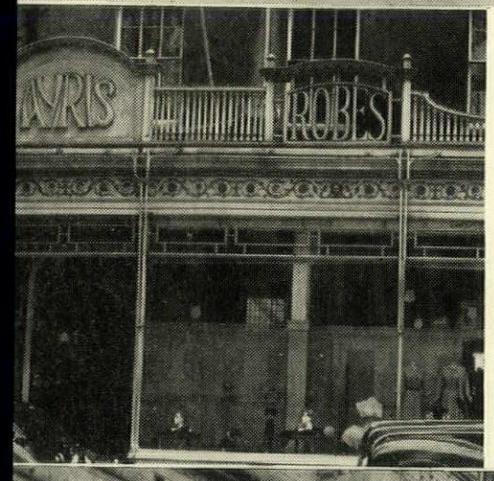
At this point the history of lettering joins up again with that of the modern movement. The connection between 'artistic' lettering and *art noveau* is obvious if indirect. In the 'nineties this free tradition was taken over by the conscious, educated artists. In the graphic arts there is a mass of material in books, posters and in the aesthetic magazines which proliferated; the interest in lettering is unparalleled since the Renaissance. It differs from 'artistic' printing in many ways. Gone are the banal printers ornaments of cranes and Japanese fans and parasols, but not the Japanese influence. It is all simpler and the lines now have rhythm and life; but the free compressed letter-forms used belong to the same pre-Renaissance idea, and they are now incorporated into pictorial patterns even more directly. The focus seems to be the school of Rudolf von Larisch in Vienna. Larisch published his book *Uber Zierschriften im Dienste der Kunst* in 1899, and in 1902 he was appointed to the Kunstgewerbeschule, the same year that Johnston was appointed to the Royal College of Art in London. Their methods and results were, however, quite different. Both revived and studied the calligraphy of the past, but Larisch was much more interested in the unity of the piece than in the type of letter, 7. He wrote 'in this field norms have done more harm than good.' He made his pupils experiment in all sorts of materials, wood, leather, glass, metal, ceramics, textiles, adapting the letter forms to the tool and the material. Most interesting are the first of a series of portfolios of specimen lettering which he produced between 1900 and 1926. They are interesting partly as very illuminating exercises in his doctrine that it was the rhythm between the letters rather than individual forms which needed to be studied, that the space around was as positive as the shapes superimposed. Secondly, they are interesting for the names of those who contributed, some of the most alive people in Europe and many of those who were in particular working for the integration of art and the machine, and laying the foundations of the modern style in architecture. The names include Mackintosh, Ashbee, Walter Crane, William Nicholson, Grasset, Valloton, Berlage, Wagner, Behrens, as well as Ehmcke, Hupp, Weiss and Koch. The examples are very varied, some clearly anticipate neoplastic and constructivist elements in the abstract movement of a decade later; this portfolio, 8, was published in 1902.

Contemporary architecture also reflected the integration of the arts, which was one of the great contributions of this period, and the vitality of its lettering. 9 is an example of the lettering of the Viennese architect Wagner. 10 shows a design by Loos, very clearly related to the Larisch experiments, though most of the lettering on his other shop fronts is not so interesting. The tradition continues in the work of Behrens, who was himself a type-designer of distinction.

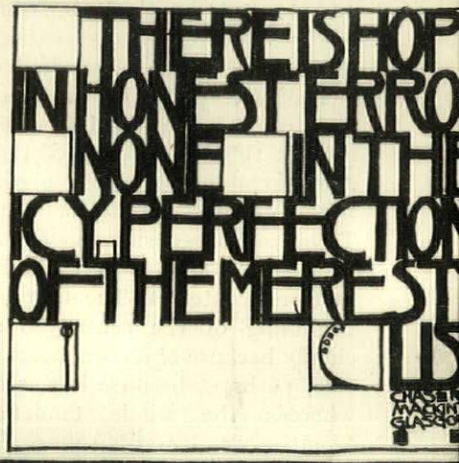
One might have hoped for similar developments in England. The ground seemed all prepared. Lewis Day's *Lettering as Ornament,* published in 1902, provided what is still easily the most stimulating collection of examples of historic lettering. Minor works such as the Boulting building (AR, April, 1959) are promising, and the commercial tradition must have been still alive up to 1914. In Scotland all Mackintosh's lettering is interesting, 11. What lacked, after his failure, was the architectural experiment. The most interesting example that I know in this tradition is Hay's Wharf, built in 1930 by Goodhart Rendell. Here the lettering is still both free,



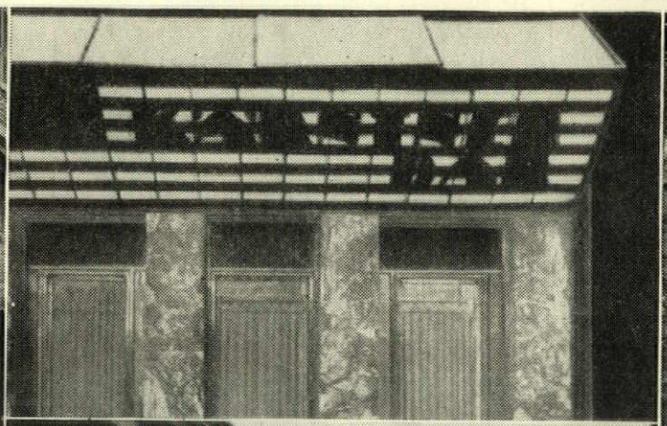




QUADRATUR SCHUBERT FAY
PULVERDAMPF KASTENGEIST
ZEIT TODTENKLAGE BAJAZZO
VORWÄRTS GÖTZENKULTUS
BOLERO GALILÄA POSSE MAX



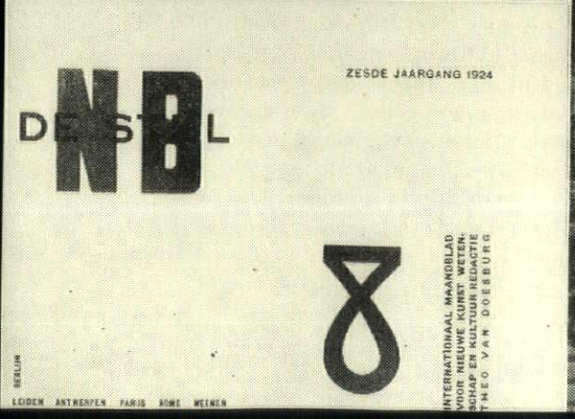






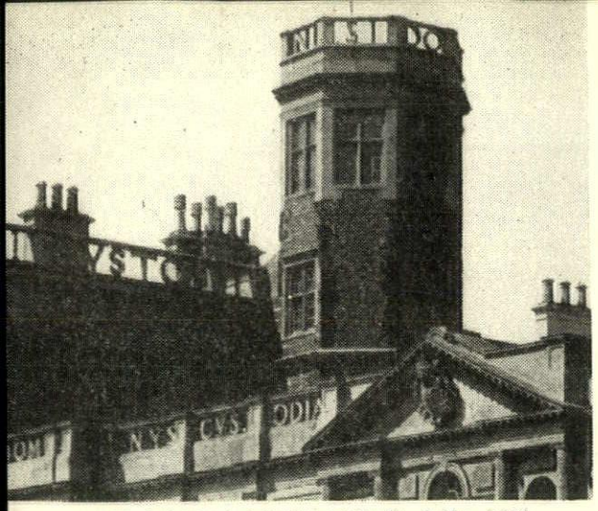






4		5
6	7	8
9	10	11
12		
13	14	

4, *Abermule Bridge over the Severn*, 1852.
5, *American 'artistic' printing*, 1880.
6, *shop front, Cheltenham, c.* 1914.
7, *exercises in lettering design by vom Larisch and*
8, *by Mackintosh.*
9, *lettering on building by Wagner, Vienna*, 1905.
10, *shopfront by Loos, Vienna*, 1907.
11, *tombstone by Mackintosh*, 1907.
12, *wood letters on Hay's Wharf*, 1930.
13, *cover of De Stijl magazine*, 1924.
14, *design by Oud, Rotterdam*, 1925.



15, *balustrade lettering at Castle Ashby*, 1624.

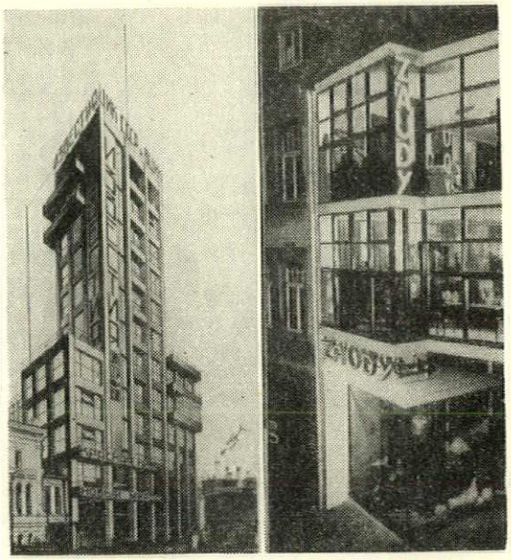
and integrated with the building; the style is the same for both elevations, but the proportions are notably adapted, 12.

The next phase of the modern movement was also vitally interested in lettering, as the typography of its magazines demonstrates, one only needs to recall the Futurist Manifesto, De Stijl, or Tschichold's exposition in *Die Neue Typographie*, 13. There was a definite recession in formal interest. The free letter of the beginning of the century was rejected, chiefly because of its ornamental tendency, also, perhaps, because it was compressed, whereas the whole tendency of the twenties was towards square forms. They consequently took the square sans serif, as a functional symbol, though one notes that in Tschichold the theory is at least as expressionist as it is functional, since the object is to make a 'sight poem,' to evolve a typographical structure in which the meaning of each word of the text shall find a formal expression. In one direction this tendency led away from possible architectural application to Dada typography. In its formal experiments in the building up of asymmetrical designs out of the geometric shapes of sans serif letters this movement produced a new style in the history of architectural lettering. The De Unie café of Oud, 14, built in 1925, is a very successful example. One notes that it is fundamentally two-dimensional in design, like a page, and that the brutal, unengaged nineteenth century sans is preferred to anything approaching Johnston's scholarly design, with its completely worked out proportions. The preoccupation is with suiting the letter to the architectural forms, not with the perfecting of letter forms. The 'twenties went further, however, and discovered an integral place for the letter in the new architecture, on the sky-line. It was not a new invention, as we have seen it is a feature of Jacobean country houses—we reproduce the finest of all the English examples, Castle Ashby, 15, dated 1624, as a reminder—but it seems likely that it may be epoch-making in the history of townscape as well as of architectural lettering. 18 reproduces a drawing by the Russian architect G. Barchin of 1925; the project was never built, but it must with 16, a factory designed by Perret 1920–1* be one of the earliest twentieth century examples. Today the idea is being used extensively in Holland and Germany, 17 and frontis. With modern methods of illumination it is even more exciting.

Nearer the eye level the felicitous place for the letter seems yet to be discovered. It needs perhaps a more three-dimensional approach to the problem than is common. 19 suggests such an approach; seen also occasionally in more recent shop fronts.

All these later examples have used a sans letter. Is this the only suitable form, or can we not use some of the other inventions of earlier phases of the modern movement? The stage which architecture has reached today is not one that can be covered by a single theory; the modern style seems to be developing in many directions and moods. It certainly includes a classical tendency, in the sense of a seeking for perfect proportions, and this seems to call for a classical letter in the same sense. This is not to suggest a return to the Roman letter, whose primary characteristic, the bracketed serif, belongs to the chisel or pen-made letter and has little meaning apart from these tools. Though its other characteristic, the graduated line, is an invention by which the letter can be adapted in proportion and feeling to the building of which it is part; avoiding the uncompromising geometrical attributes of the even-line sans serif, and opening possibilities of a far more elegant and versatile norm than any hitherto evolved.

* I am indebted to Professor H. R. Hitchcock for telling me of this example.



18

19

18, *project for Iswjestia building, Moscow, design by G. Barchin*, 1925.
19, *shop in Wesel with lettering on two planes. G. Rietveld.*

But all modern architecture is not so pure in intention; there seems to be plenty of room for a greater variety of formal play in the wide gamut of letter shapes which are current and which offer, indeed, the chief decorative means of enlivening shop and street in a contemporary idiom—more particularly by night. The Egyptian face is full of potentialities, though we do not yet seem to have found any satisfactory standard relation between the letter and its background, to replace the Victorian relation which was based on the continuity of letter and wall, and the consistency of letter and architectural detail. Today both these conditions have disappeared. Finally, modern architecture also envisages arbitrary forms and expressionist purposes, for which, perhaps, it may well need to regain the formal freedom which was attained at the end of the last century, which reached after all a far higher level than the graffiti of Le Corbusier at Ronchamp.

But new forms are creations, of their nature unexpected, though needing perhaps a large background of trial and error and experiment: that the last few years have certainly provided. The sterile uniform Trajan imitation is dying and lettering is beginning to regain its integral place in the modern movement.





16, *possibly the earliest modern balustrade lettering. Perret factory at Montatoire*, 1919–20.
17, *recent example in Rotterdam.*

What Western eyes admire in Japanese historical architecture is the detailing, and the ingenuities of the plan with its consequent subtleties of spatial relationships. At a time when sections of buildings are not much discussed, the sections of Japanese buildings are not discussed at all. But vertical movement from floor to floor, or other changes of level, have never been much considered in Japanese architecture and, in consequence, staircases are not features of any importance.



According to tradition, the creation of the Sazae-Dō *at Wakamatsu is due to two men—a carpenter of the Yamashigi family, who built it, and the monk Ikudō of the Jissō-ji temple in Wakamatsu, who conceived it. This portrait statue of Ikudō on his elegant chair was displayed in the* Sazae-Dō, *but the carpenter's only memorial was the tradition honouring his family name.*

For these reasons, the subject of the photographs on these pages is of unique interest in the history of Japanese architecture, since it appears to be the sole survivor of a never-very-numerous group of late eighteenth-century structures whose entire existence depended on the idea of a spiral ramp. The *Entsā-Sansōdō* or *Sazae-Dō* in Wakamatsu, a city in the Prefecture of Fukushima, can be compared functionally to the *Sacri Monti* of Italy—it was a pilgrimage centre, and within it a processional route took the pilgrim past thirty-three statues representing the *Kannon* or sacred places of the Buddha, and to have visited the *Sazae-Dō* was taken to be equivalent to having made a pilgrimage to the thirty-three sacred places. But whereas the *Sacri Monti* are a unique landscape conception, the *Sazae-Dō* is a unique architectural conception, a two-start spiral ramp making two complete turns around a central core, one spiral for ascending, the other for descending, connected by a bridge at the top. Each ramp is invisible from the other, but the footsteps of persons moving in the other direction are heard overhead.

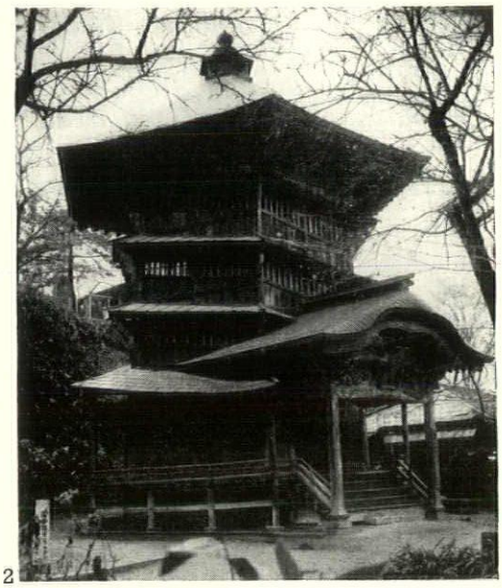
Multi-start spirals, whether ramped or stepped, are a rarity in world architecture—most of them are in the note-books of Leonardo da Vinci—but in Japan the only parallel appears to have been an earlier *Sazae-Dō* at Edo (now Tokyo). The Edo version, completed some time before 1786, appears to have been the inspiration of the Wakamatsu structure, since both were called *Sazae-Dō*, which means literally, 'top shell hall,' implying a smooth spiral, rather than a system of steps.

At all events, the completion of the Wakamatsu tower in 1796, so soon after its forerunner in Edo, suggests that the idea of spiral ramps must have had a validity in Japanese ideas at that time that it has lost since. In spite of its practicality, and the influential standing of the Zen Buddhist sect that sponsored it, there have been no attempts to revive the idea, even for the purpose that it serves so well.

BUNJI KOBAYASHI

Since this was written, Yūzō Nakamura has advised me that the sculptor Kō-un Takamura (1852-1934) wrote of the double ramp of the Sazae-Do at Edo in his memoirs (Kō-un Kaikodan) which appeared in Tokyo in 1929. Apparently the Edo tower stood until at least 1808, but it is not known how soon after that it was pulled down.

1



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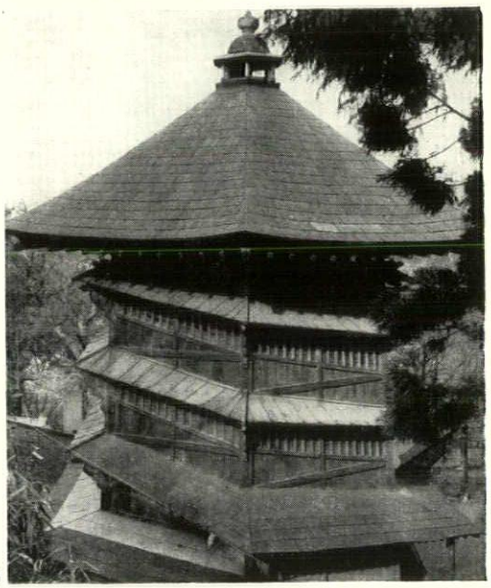


3

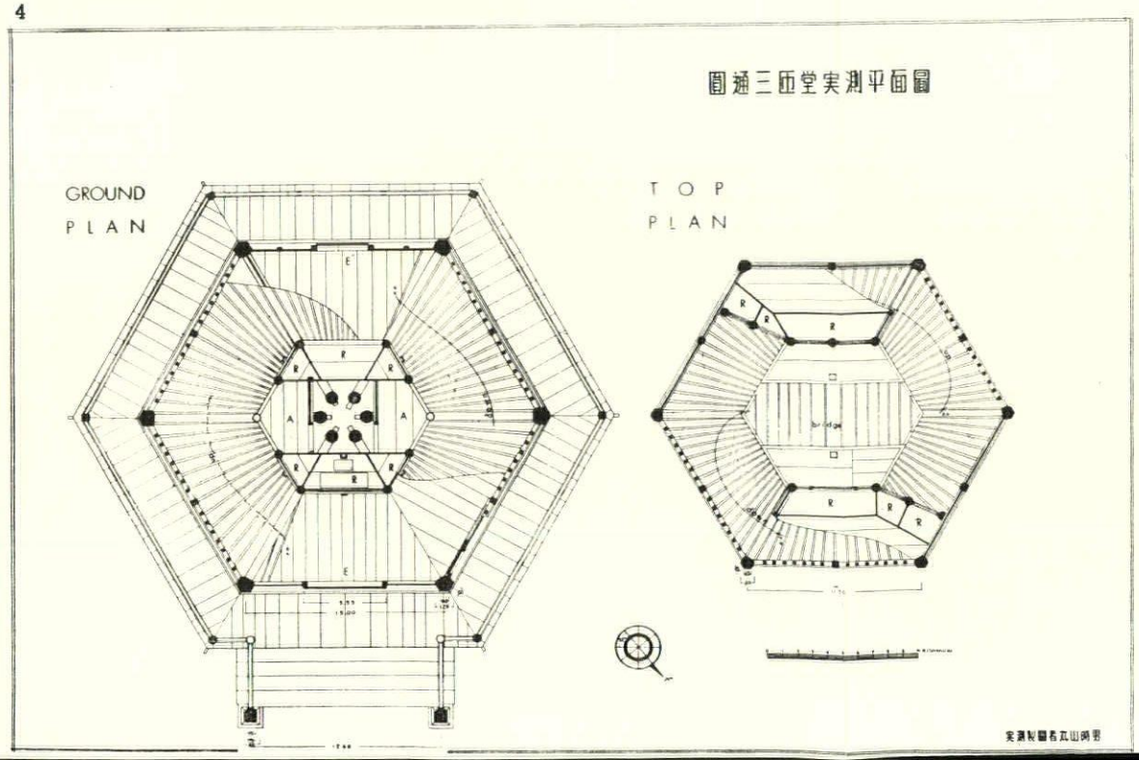
4

1, a print in the possession of the Yamashigi family, one of whose members was the master carpenter for the tower, records its original appearance—an all-wood structure 51 feet high, 13 feet to a side, with its walls battering in toward the top. Comparison with ***3*** shows how little it has been altered.

2 and ***3,*** front and rear views of the Sazae-Dō at Wakamatsu. The rather casual mating of the porch and the spiral roof suggests the unfamiliarity of this type of architectural conception to Japanese designers of the time. On the other hand, the neat and workmanlike management of the horizontal and inclined structural members, the roofs and the window-grilles, as they appear in the rear view, suggest that once the spiral was established, then the design was under control.

4, Professor Kobayashi's measured drawings show the hexagonal plan of the Sazae-Dō, the cluster of six wooden posts that accept the inner end of the beams supporting the ramps, the two ramps themselves and the bridge that connects them at the top. Marked with *R* are the recesses to hold the Kannon figures that were the object of the pilgrimage to the tower.

5, 6, 7 and ***8*** (reading upwards), the upward ramp, rising from the front entrance (the descending ramp finishes at the rear door) up to the roof, plastered with paper seals, ***8,*** put there by generations of pilgrims. In ***6*** two of the central structural posts can be seen, and also the narrow connecting way to the descending ramp. People living in Wakamatsu remember using these connecting ways, when they were children, in elaborate games of hide and seek. ***7,*** at the top of the ramp, shows the bridge running off to the right, and two of the recesses in which the Kannon statues were displayed—these have now been replaced with pictures of the Twenty-four Dutiful Children.



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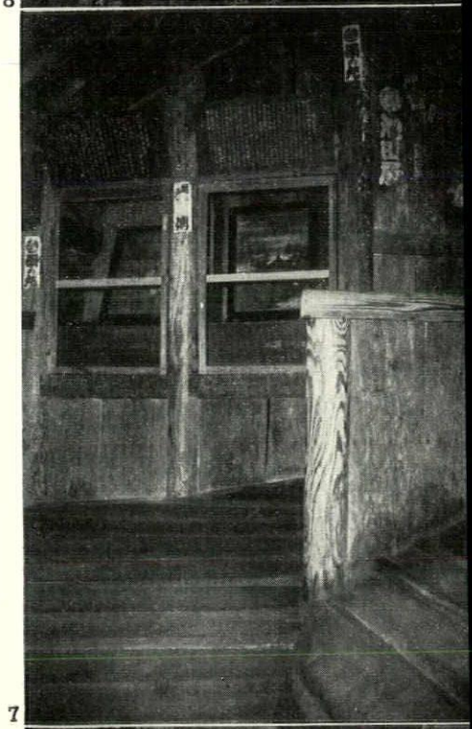

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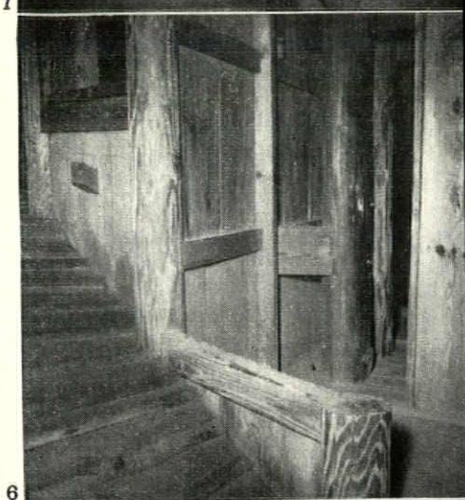

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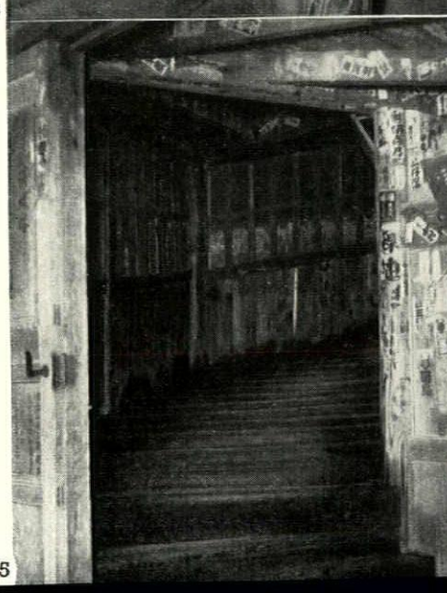
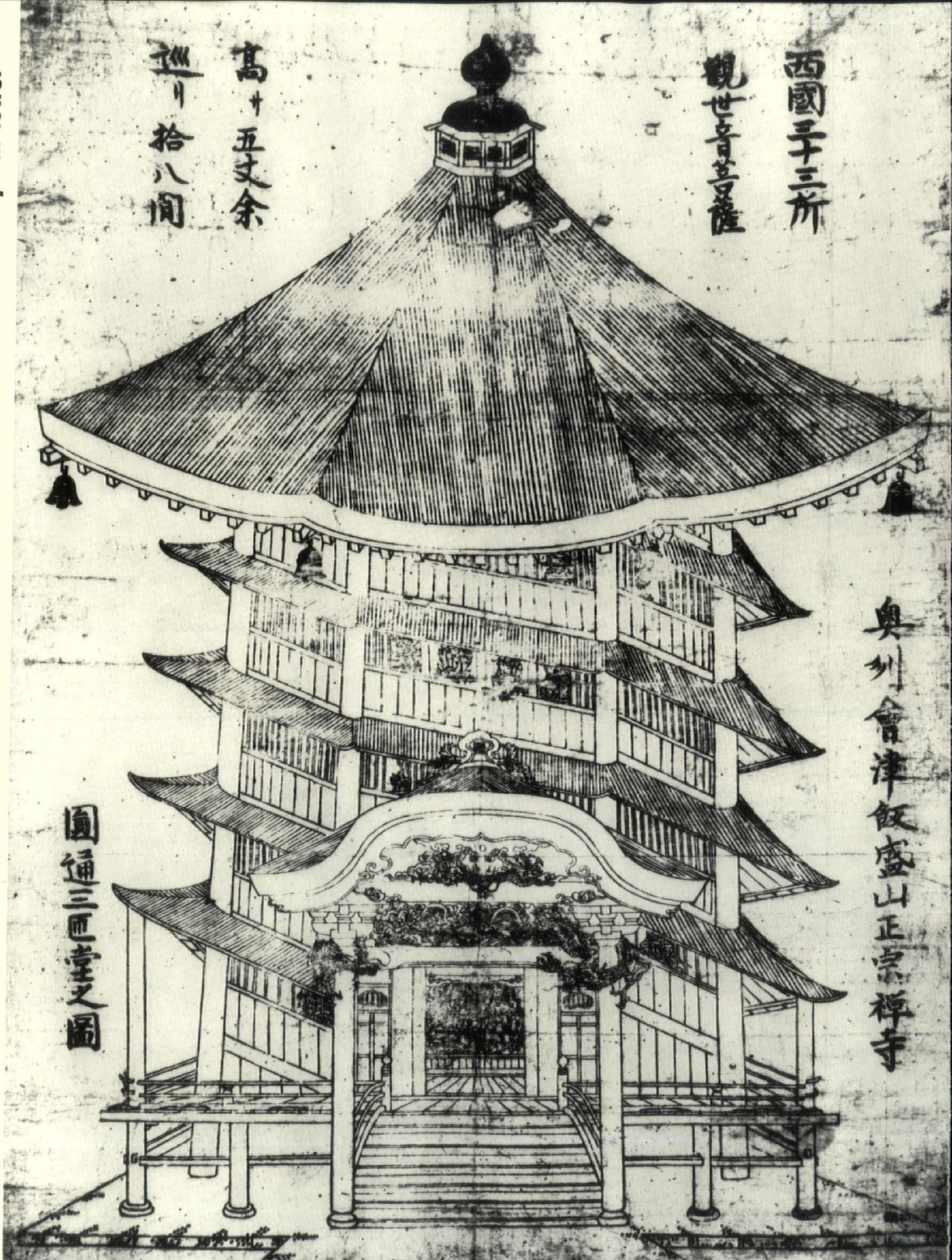
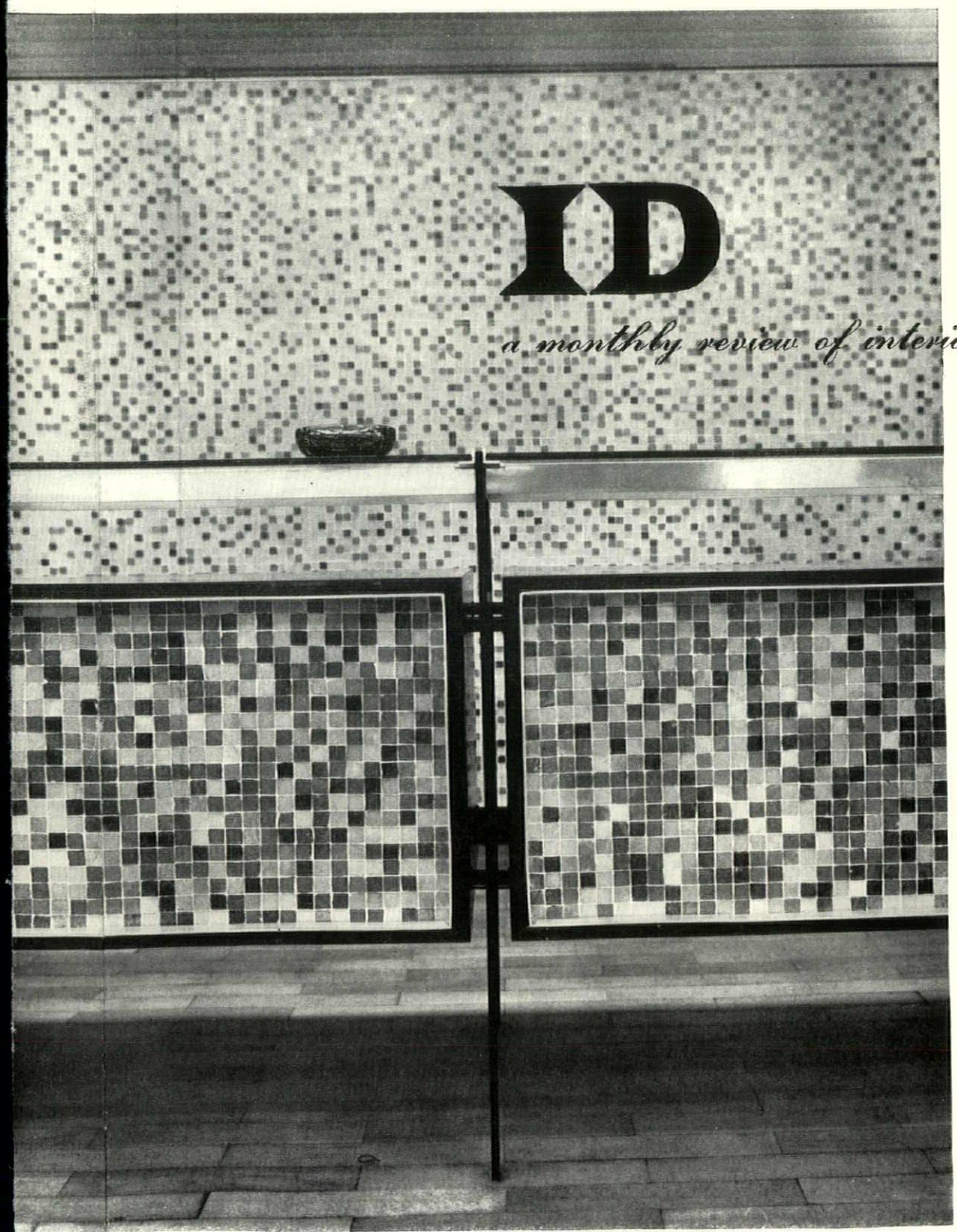


spiral tower

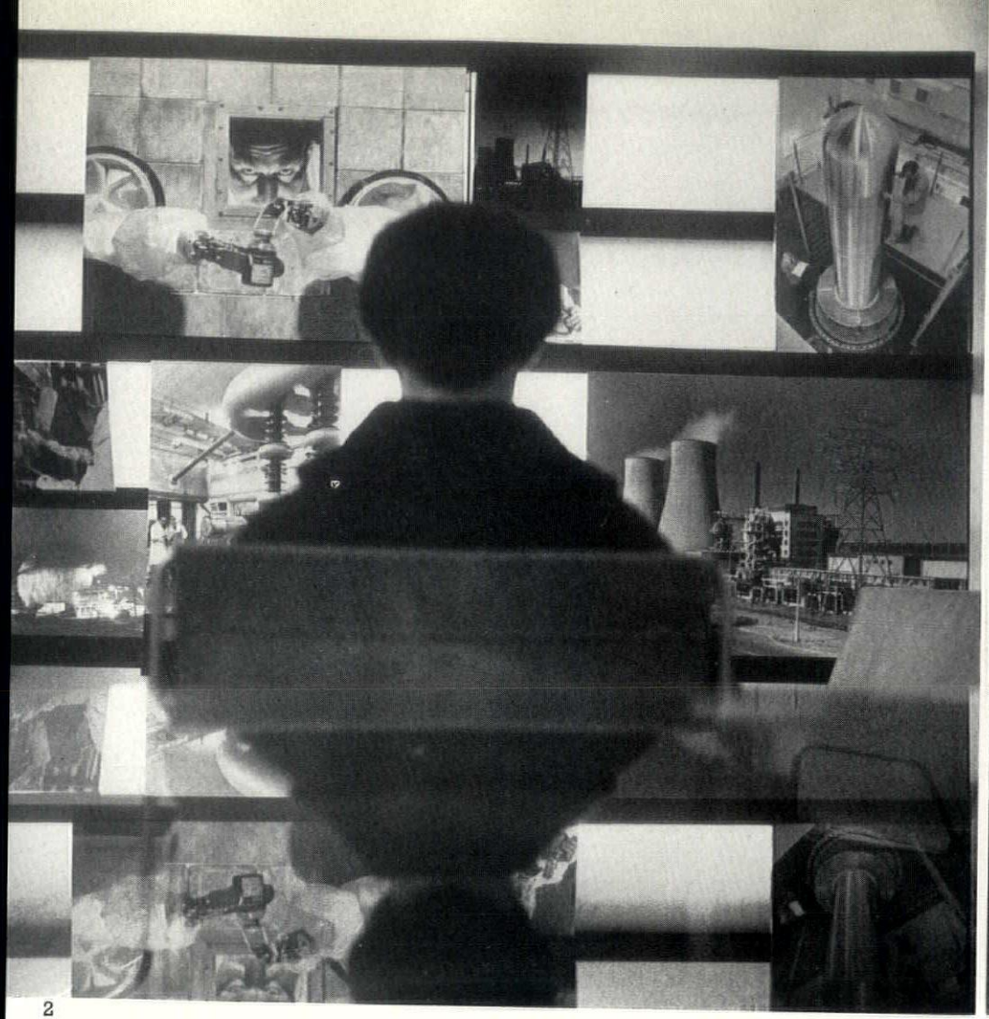




ID

a monthly review of interior design

1, mosaic-fronted counter in the Atomic Energy Authority's offices.



2



3

Offices in Charles II Street

designer: Kenneth Grange

These offices in the Atomic Energy Authority's new building off the Haymarket in London contain the information and photographic libraries and are the only part of the building accessible to the general public.

1, opposite, detail of the counter front, with glass top supported on aluminium alloy rails. The other metalwork is black mild steel; the counter front and the screen behind are faced with mosaic on blockboard.

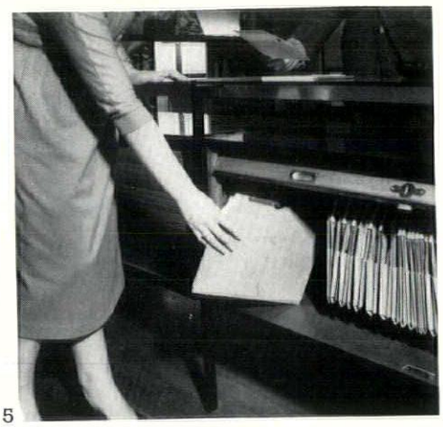
2, at the far end of the office is a metal frame designed to carry a display of photographs of varying sizes.

3, to the left of the photograph display, the metal racks carry cupboard units faced with stove enamelled hardboard.

4, the information counter near the entrance. The screen separating it from the private office area has two windows, one for observation when seated, the other when standing.

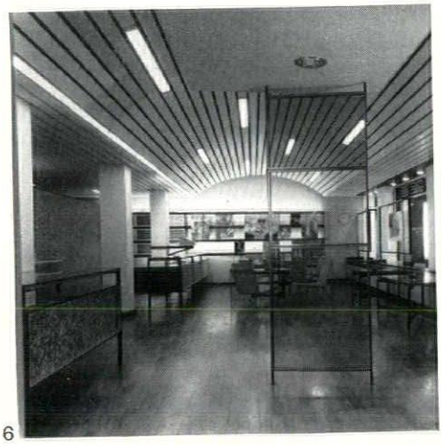


4



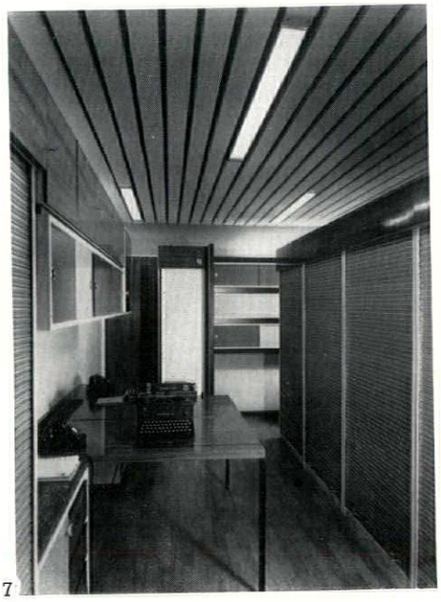
5

5, the back of the counter, with specially designed storage racks protected by a roller shutter.
6, general view from the entrance looking towards the photograph display. The glass screen deflects visitors towards the counters on the left.



6

7, the photographic library office. The storage units on the right form the back of the mosaic screen seen in 1. The ceiling is of fibrous plaster, with slots for artificial ventilation and purpose made fluorescent fittings.



7

The fabric of the building was designed by Trehearne and Norman, Preston and Partners, in association with Norman and Dawbarn.



8

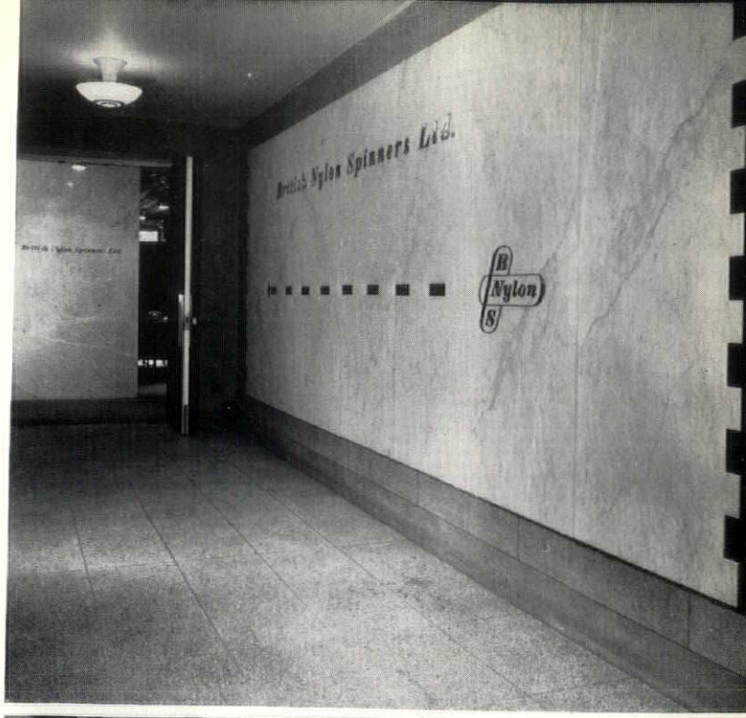
Showrooms in Knightsbridge, London

architect: Dennis Lennon

These showrooms on the first floor of Bowater House, Knightsbridge, were designed for the display of nylon goods and occasional use for fashion shows, with a reception area serving both the showroom and the adjoining offices. All the furniture and fittings were specially designed by the architects.
8, the windows are screened with slatted aluminium and blue perspex blinds which slide behind blue, nylon-covered panels on the walls. The louvred aluminium ceiling conceals batteries of small lights and spotlights.
9, the end wall of the showroom is of Italian white marble briquettes, with plate glass shelves slotted into it.
10, general view of the showroom, showing the semi-circular display stand covered in black velvet on the left. The wall on the right is panelled in blue leather and contains a nylon cloth index library.
11, lobby panelled in white marble.



9



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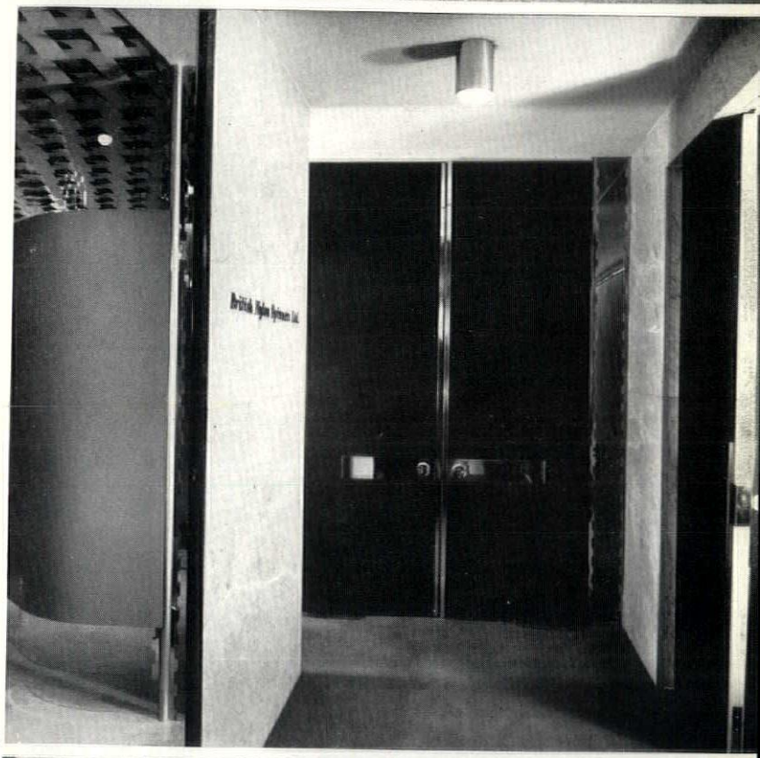


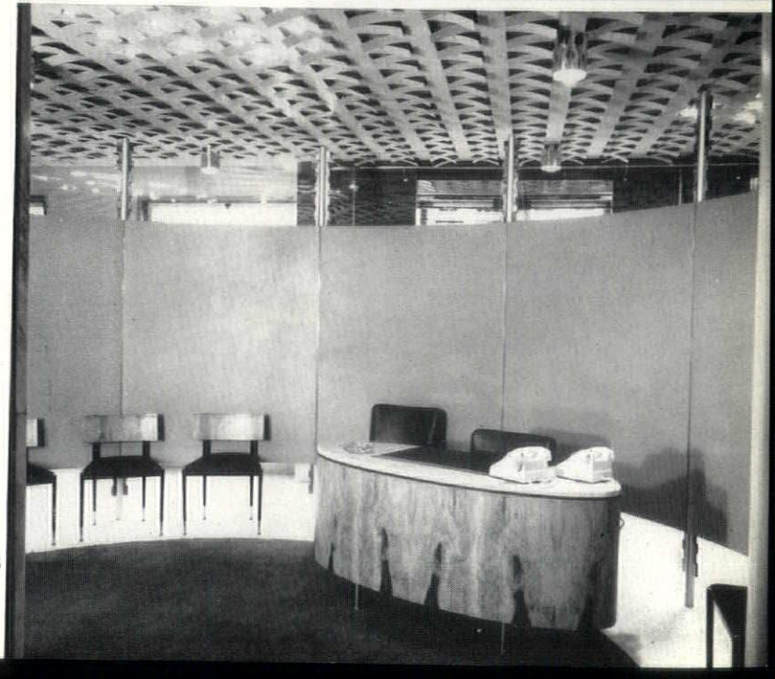
12

12, blue leather doors leading into the circular reception area.

13, the panels enclosing the reception area are covered with natural leather, with plate glass panels at the top, and are carried on brushed steel and polished brass rods. The white marble floor continues into the showroom. The oval desk is of yew with a white marble top ; the chairs have yew backs and seats of blue nylon velour.



10



13

DR

design review

Timo Sarpaneva

Timo Sarpaneva, the Finnish designer, is still only in his early thirties but he already has a dazzling record of international success. He is best known in England for his glass for Iittala but he is also a talented and unconventional graphic and textile designer and an exhibition planner.

Woollands (in collaboration with Conran Contracts) put on a stimulating and memorable exhibition in February of his textiles and glass. The fabrics are variations on broad bands of miraculously blended colours and related tones, as much a revelation of the masterly use of simple colour as the Finnish rugs shown at the V and A last year. They must be handled to be appreciated and this can be done at Woollands and Conran Fabrics.

***1,** a selection of the glass is shown below. The pieces range from the larger decorative vases and jugs like the tall conical one in the centre with the heavy base, costing £7 13s. 3d., and the practical carafes in thin glass costing about 27s. 6d. each, to the smaller glasses and bowls. These are for everyday use and cost from 36s. 6d. to 65s. for six, depending on size and shape. The colours are clear, grey, purple, olive and steel blue. All the designs have a mathematical assurance of line difficult to associate with the fluid state of molten glass and evidence of brilliant technical skill.*

Heal's Fabrics

In Heal's fabric collection there are roller printed cottons, not always exciting, but good value at 11s. 9d. and 13s. 6d. a yard, 48 in. wide. Several are the work of young designers, and it is characteristic of the firm that they are all given full credit.

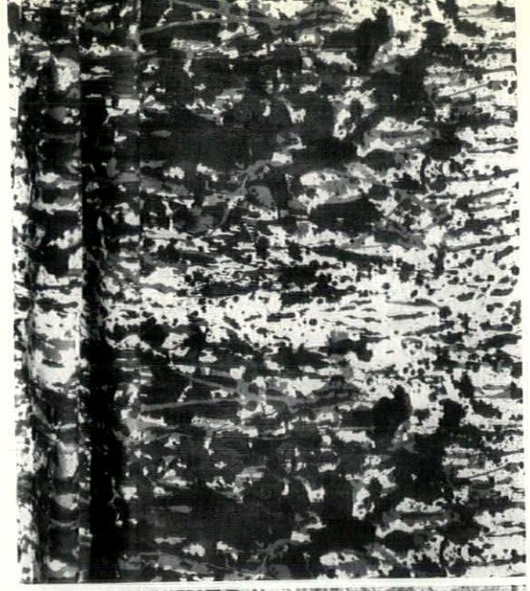
***2,** the handscreen prints are not so successful, but 'Nebula', designed by Betty Middleton-Sandford, is outstandingly good. There is only one colourway; close toned blue, green and purple printed on white textured cotton, presumably carrying out the designer's original intention. It costs 21s. 9d. a yard, 48 in. wide.*

This is a rare instance of a good fabric design derived from the work of "Tachist" painters.

Tachism relies on texture and contour as well as colour for its impact. Any attempt to translate such a technique too literally on to light cotton, use it as a repeat and then drape it into folds is dangerous. The close-toned arrangement of colours sparingly used on a clean white background give this design depth and sparkle. The repeat, though clearly defined, is sufficiently restrained to produce an all over pattern which drapes well.

***3,** another example of the same feeling is 'Pavonian Spray' by Gordon Dent. The design is printed on cotton in subtle versions of olive green, dark red, purple and blue and the fabric costs 24s. 9d. a yard.*

Here 'tachism' has become confused by an uneasy hint of naturalism and the design, though pleasant enough by virtue of the richness of the colours, appears false by the insistence of the repeat.



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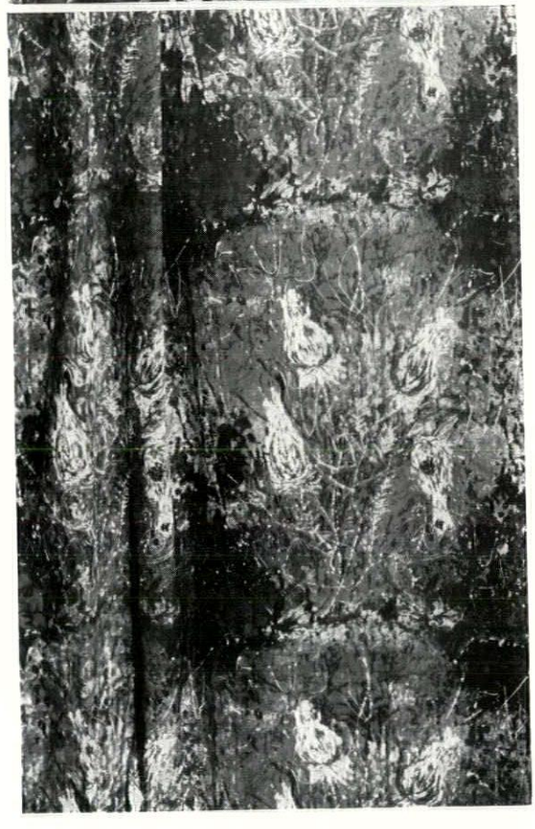

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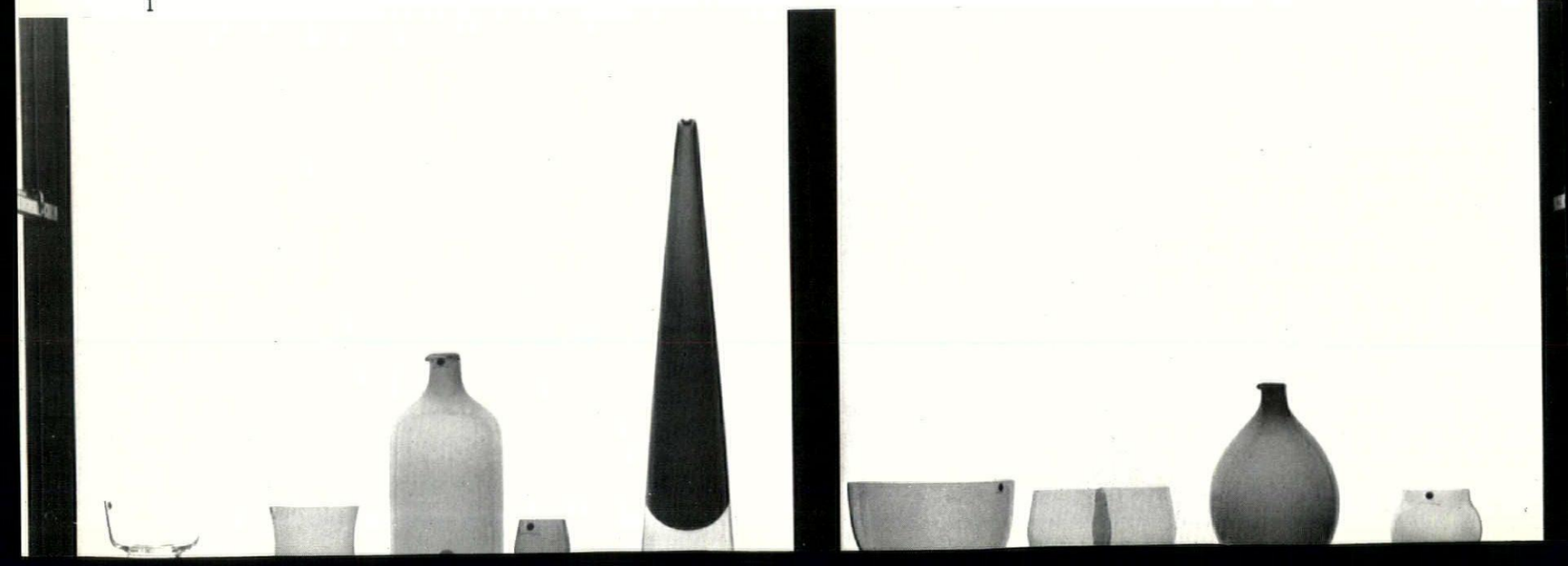


ELMES

DAVID WAINWRIGHT



Harvey Lonsdale Elmes is famous for St. George's Hall in Liverpool, but his Shaw Street school is less well known. Whatever its merits as architecture, it involved Elmes in wrangles over professional status and responsibility that reveal much about himself and the position of architects in early Victorian England.

The quality of St. George's Hall, Liverpool, as a notable piece of Victorian Renaissance design is unchallenged, though its architect, Harvey Lonsdale Elmes, was only 24 when building began in 1838. He had trained in Bath and his office was in London, at 11 Park Street: but his sudden reputation naturally brought him several commissions locally in Liverpool for suburban houses.

Two years after he won the competition for St. George's Hall he entered for another competition for another public building in the town, but one of a very different style.

In the summer of 1840 the committee of the Liverpool Collegiate Institution advertised for a design for their new school. Space was needed for three schools, Upper, Middle and Lower, the boys of which were to be rigorously segregated so that the delicate natures of the Upper School boys might not be contaminated by the influence of the robust sons of the working classes in the Lower School (their parents were similarly kept apart at official functions in the Lecture Hall).

The Instructions to Architects stipulated that the building was to be of red stone, encased in bricks, and 'in the Tudor style of architecture.' Partly this rule was due to the common Victorian belief that Gothic was proper for educational establishments; partly to local feeling that Liverpool—whose maritime prosperity had flowered within the century—ought to fulfil its want of a good representational Tudor building; and partly to the success of Charles Barry's New Street design for King Edward's School, Birmingham, which had been opened two years previously.

Elmes won the competition, his motto on the plans and on the sealed envelope containing his name being 'Tria Juncta in Uno' in a triangle. Second prize was awarded to Messrs. Scott and Moffatt. But Elmes's relations with his clients were far from happy. With a certain youthful impetuosity he seems to have compromised himself over the arrangements for the building of St. George's Hall: and the contemporary Minute Books of the Liverpool Collegiate Institution's Board of Management* show that he was forced to use every weapon in the armoury of his professional probity to try and extricate himself—and then he failed.

There is no suggestion that the Board, of which the two Rectors of Liverpool were Chairmen, acted other than with strict honour. They had a narrow budget on which to plan, and indeed incurred a debt of many thousands of pounds which it took twenty years to wipe off. Perhaps, again, they were aware of the situation at Birmingham, where Barry's building, however triumphant architecturally, had put that school into economic doldrums.

For the erection of the schools a limit of £15,000 had been set. The Secretary, John Gregory Jones, wrote to Elmes on 23 July, 1840, to tell him that he had won first prize 'provided you can shew them, as you purpose, by a detailed estimate, that it can be executed for the sum of £15,000.'

Elmes replied by return of post that he would be happy to supply such an estimate: 'but before entering into an elaborate calculation of that kind I am desirous of knowing whether it is the intention of the Committee to employ me in the usual manner to superintend its execution.' If that were so, he went on, he would like his drawings back to prepare the estimate.

The Secretary wrote back that he was putting Elmes's letter before the Board; and he asked whether the architect could dispense with any of the drawings, as they were wanted for public exhibition. Elmes replied that he needed all of them except the perspective view of the exterior.

But his letter crossed with one from the Secretary, rather abrupt in tone. 'I am directed by the Building Committee . . . to state . . . that until the first Premium has been positively awarded they do not consider themselves authorized to enter upon further arrangements, and that all which they require from you is, such an estimate as may guide them to that result.'

Elmes kept his temper. Within two days he had put in the post four and a half pages of cold logic, suggesting that 'some practical man in Liverpool' should be asked whether he thought Elmes's building could be put up for the price. The suggestion was imprudent. By it he gave his sanction for local interference, if only in one aspect of the case. But he concluded: 'If the Committee so far approve my design as to honor me with their further commands I will *then* make such an Estimate as shall not only satisfy them of the amount but on which I would then willingly stake my professional character. And if it is found *necessary* I could thereupon consulting with them make such modifications in it (without destroying its general character) as should bring the amount within their means. In this case I should of course forego all claims to the Premium . . .'

Four days later a Liverpool surveyor, Edward Argent, presented a rough estimate

* Quoted here by permission of the Headmaster and Council of Liverpool College.

of £14,370 for the work. Thereupon the prize was formally given to Elmes.

Early that August he was in Liverpool, in connection with St. George's Hall. Samuel Holme, a retired builder and railway financier who was a member of the Board of Management, saw him at the request of the Board. They discussed terms, and Elmes subsequently stated those terms in another letter.

'The usual charge for working plans, specifications and superintendence are 5 per cent on the outlay and travelling expenses.† Mr. Holme, however, explained to me that although he was sure the Committee desired to treat me liberally and honourably, yet their means are at present confined in proportion to their proposed expenditure. He also mentioned the circumstance of distance as somewhat objectionable. I therefore shall endeavour to meet the views of the Committee as far as lies in my power and am willing to undertake the superintendence of it for 5 per cent on the amount of the Contract and pay my own travelling expenses. I must say I object entirely to preparing working drawings and specifications without having the entire superintendence especially of a public work. . . . These are my definitive terms. . . .'

Then follows this curious offer: 'If the Committee honour me with the superintendence of this building, I shall be most happy to place my initials H.L.E. in the list of subscribers or donors for £100. But I can on no account whatever do an injustice to my professional brethren by undertaking business at anything under the usual terms.'

A sub-committee appointed specifically to come to an agreement with the architect determined to answer money with money, and Elmes was informed that £105 had been lodged in his account at Messrs. Roberts, Curtis' Bank, being the prize of 50 guineas and an extra 50 guines 'as a presentation from the Committee as a mark of their appreciation of the talent displayed in your design for their intended Institution.' But this could not ameliorate their decision not to accept his terms and to make other arrangements.

Elmes wrote back immediately thanking the Committee, but stating that he felt that his professional character would be affected if his building were handed to someone else to put up, and requesting the return of his drawings. 'I entered this competition . . . with the firm conviction that the successful competitor would be employed in the usual manner. But if the Committee can find any other persons who will wilfully degrade their profession by acting as I have refused to do, I must willingly retire from such a competition.'

On the day the Board in Liverpool received this letter, they were already putting the work in hand: the same Edward Argent, surveyor, who had earlier been employed to estimate costs, was taken on at two-and-a-half guineas a week 'to make working drawings, specifications, etc., for, as well as to superintend the erection of the intended building.'

As they came to this decision Elmes was putting pen to paper for his heaviest broadside.

† This is borne out by Barry's terms at Birmingham.

'The Committee must be aware that if they had employed at first, without competition, a respectable Architect in Liverpool, to design and superintend a building for them, they would have been called upon to pay him his fair and usual professional remuneration. Why then let me ask do they expect an Architect at a distance of 200 miles not only to incur travelling expenses but to undertake the work at less than the usual remuneration, or what is worse to leave the execution of the work to persons perchance devoid of all taste and probably ignorant of every true principle of the art. . . . I will rather submit to the loss of professional employment for years than I will undertake any building without having the entire superintendence and control of its execution.

'As my name has now appeared in the public prints as the successful competitor I think it right to inform you that I intend publishing your last letter and my answer, in defence of my professional character.'

He enclosed with this letter a paper written in protest by the architects of Hamburg in 1836, when the Senate and Burghers of the city offered a competition for an Exchange, and reserved to themselves the right not to employ the prize-winning architect.

Unmoved by their architect's arguments but pricked by his comments, the Committee passed a resolution that Elmes had used expressions reflecting on the conduct of the Board 'which were unjust and uncalled-for.' Meantime they took legal advice on whether they might retain the drawings.

They further brought up the precedent of St. George's Hall. In that case 'you acted otherwise. You prepared a detailed estimate.' The Board of the Liverpool Collegiate Institution were well aware of their facts: their chairman, Rector Jonathan Brooks, had been chairman of the St. George's Hall committee at the time. 'The Committee have not acted without precedent. In the case of the Middlesex Lunatic Asylum, an architect of the name of Alderson was the successful competitor, but the Middlesex magistrates did not employ him.

'It was gratuitous on your part to insinuate that the Committee had any intention to "degrade your profession" or to add that "you most willingly retired from *such* a competition." Indeed under the present circumstances you can hardly consider yourself badly paid by the award of £55 beyond the stipulated premium when, as you stated, the drawings only occupied you a few days and were almost entirely the work of your own hands.'

That letter closed the correspondence. The foundations were excavated, and the foundation-stone laid with much civic and ecclesiastical pomp by Lord Stanley, 'the Rupert of Debate,' on 22 October, 1840. In the six weeks from the date he received the Committee's ultimatum, Elmes must have decided to make the most of a bad job: to superintend the building as best he could on his visits to Liverpool for the paid purpose of assisting in the erection of St. George's Hall.

He was, at any rate, sufficiently reconciled to attend the ceremony that October: and he listened, with what inner feelings one can only guess, to Rector Brooks inform the gathering in Shaw Street that 'it has so happened, by the regulations adopted, that it does not fall to the lot of this gentleman to carry into execution the plans he has furnished; and in justice to him, I have been requested by the committee to make this public statement, that the reason why he has not been entrusted with the future care of the building, was in consequence of the committee feeling that, as trustees of an institution of this nature, and with the means they possess . . . they would not have been justified in going to the extent of his claims as a remuneration for his services. They could not but acknowledge that his motive in making that claim was one deserving of great commendation: he did not feel authorized to break through the known rules of his profession.'

A footnote in the printed programme of the day records that 'Mr. Elmes has since offered, in the most honourable and handsome manner, not only to furnish working drawings for those portions of the edifice which affect its architectural character, but to superintend their execution free of all charge.'

Liverpool had most certainly beaten him. He made his final offer, he wrote, 'because I fear when (the building) is finished and publicly criticised, I shall be obliged in self defence to repudiate it, a course I conceive attended at all times with unpleasant if not ill feelings, and which may now ere it is too late be avoided by the Committee placing that part of the structure only under my care'—'that part' being the principal front upon which all the detail was concentrated.

This was all agreed: but the Board and the Committee in Liverpool went on chopping and changing their internal plans, even where they affected the principal front. There is no record of Elmes's reaction to the final letter in this correspondence, in which the Secretary announces that they are dispensing with two small windows shown on the plans, so that the walls flanking the central doorway can be thickened 'for the purpose of sustaining a central tower should it be subsequently determined to erect one.'

The schools were formally opened by William Ewart Gladstone in January, 1843. Four years later Elmes was dying in Jamaica. He saw the completion of the Liverpool Collegiate Institution, over which he had encountered such trouble: but he did not live to see St. George's Hall finished, his finest memorial.

The Liverpool Collegiate School now occupies the Shaw Street building which Elmes designed—an amalgamation of the two lower schools of the original foundation. The Upper School, under the name of Liverpool College, abandoned the crumbling heart of the city after only 40 years for a more salubrious suburb.

Elmes never publicly repudiated his part in the building. But time has been kind to him. St. George's Hall sits massive and monumental on its plateau, the first Liverpool building, and the finest, seen by those arriving on Merseyside by rail. Only duty takes one to admire the Collegiate Gothic facade in a back street, gloomy with the grime of a hundred years.

1, *the central dome of the southerly group viewed across the lily pond.*

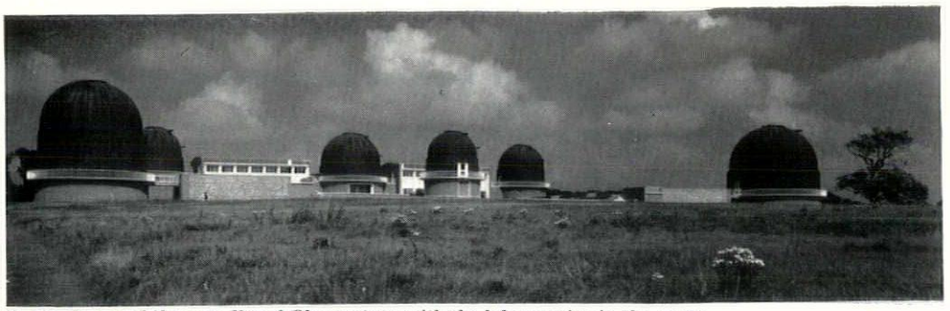


ROYAL OBSERVATORY AT HERSTMONCEUX

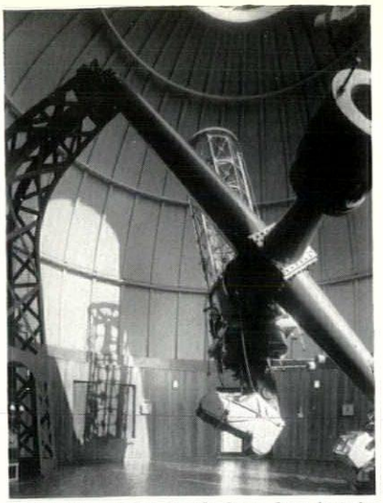
ARCHITECT: BRIAN O'RORKE

The Royal Observatory has been moved from Greenwich to Herstmonceux to avoid the increased interference with observations caused by street lighting and atmospheric pollution. In the existing castle are offices, library, conference room, staff canteen and a residence for the Astronomer Royal. New buildings include the Meridian and Equatorial Groups, the Time and Nautical Almanac Building and a works pound with boiler house and garage.

The Equatorial Group consists of six domes, set on high ground east of the castle. The general design of the domes

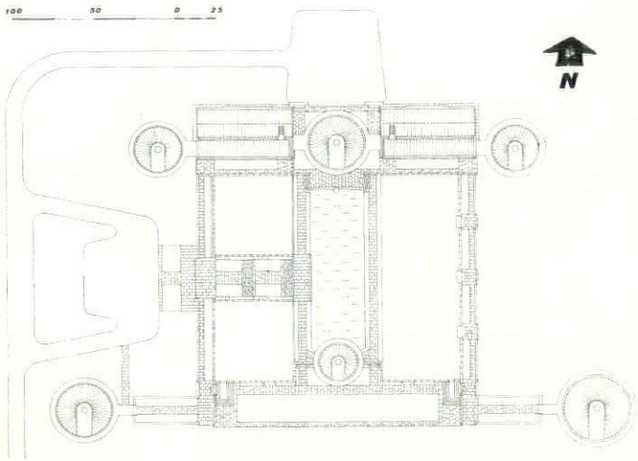


2, *six domes of the new Royal Observatory with the laboratories in the centre.*



3, *interior of the north dome housing the 36 in. Yapp reflector.*

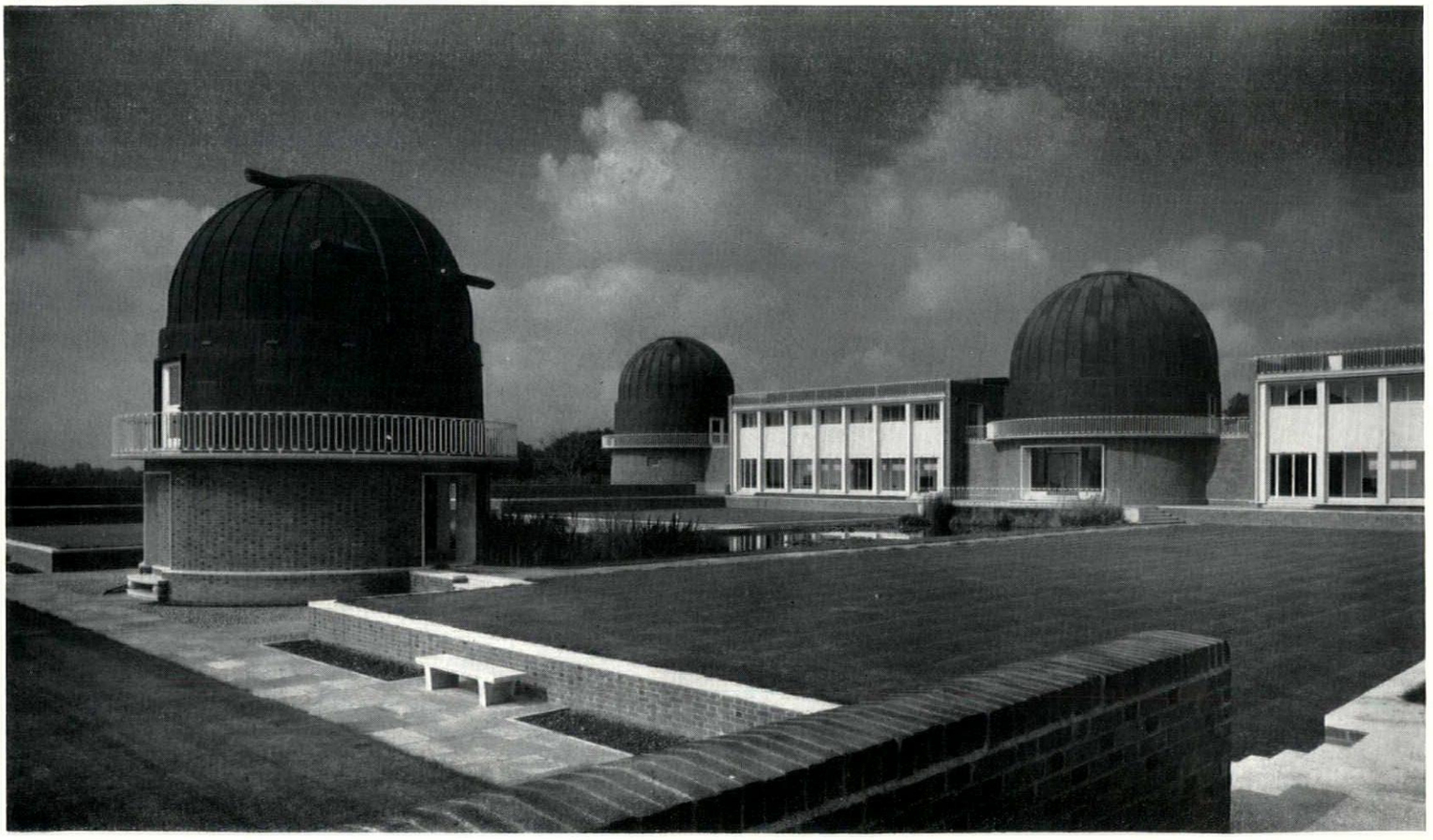
Royal Observatory at Herstmonceux

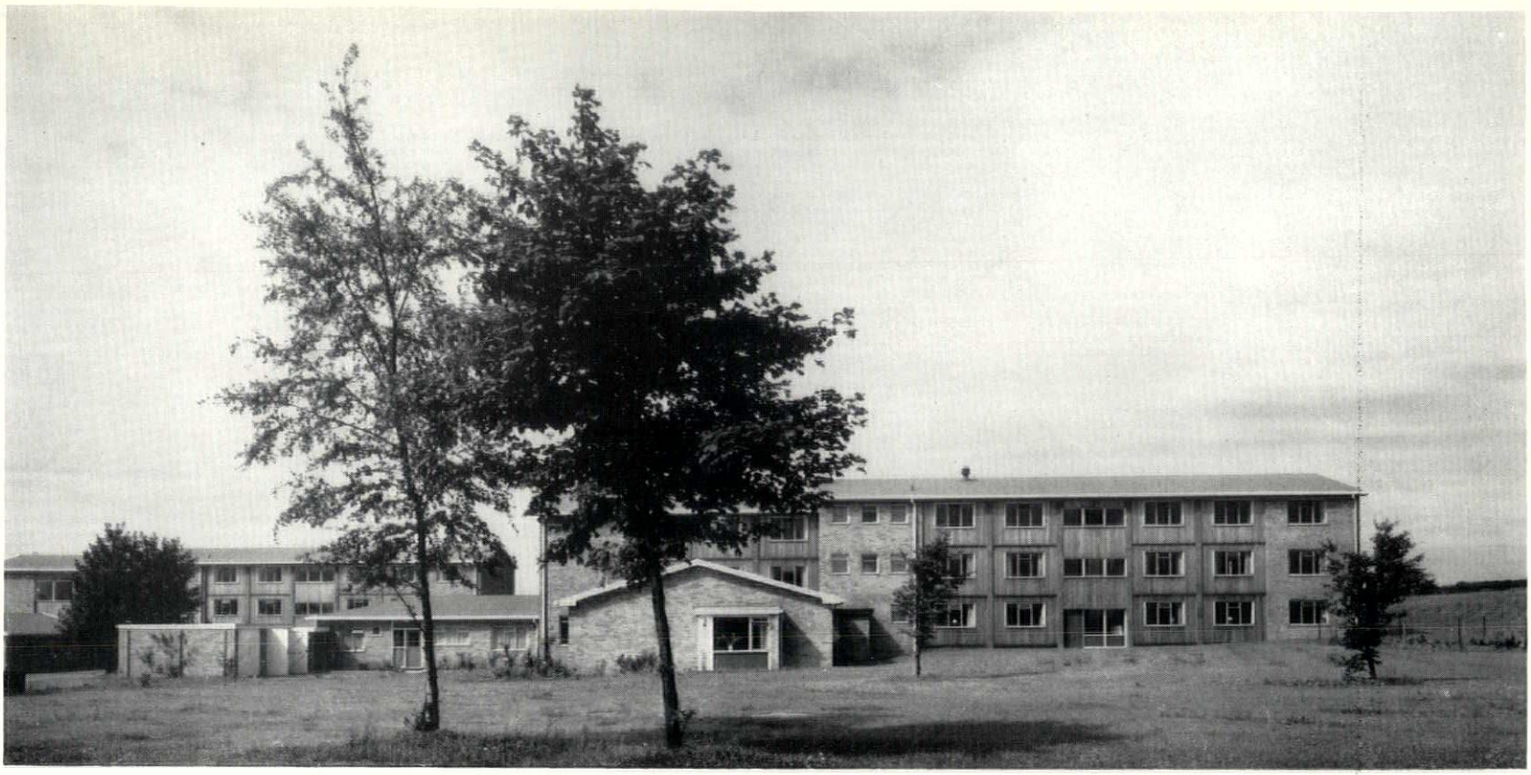


layout plan

is similar but diameters and floor levels vary. Deep foundations are carried down independent of the buildings. The construction up to floor level is of reinforced concrete with brick facing, with a cavity between. The dome drums are in light steel faced on the outside with copper on boarding and internally with removable vertical board panelling. The revolving domes are framed-up with steel tube horizontals and channel ribs to which wood grounds are fixed to take a sandwich covering of super hardboard with glass fibre insulation and copper covering. The linking buildings are steel framed with double cavity walls and the windows along the south side have counter-balanced sash louvred metal shutters. The buildings are faced with traditional Sussex wood-burnt bricks with blue-grey headers and the balconies, copings and window surrounds are in Portland stone.

4, *laboratories and dark-rooms seen from the south.*



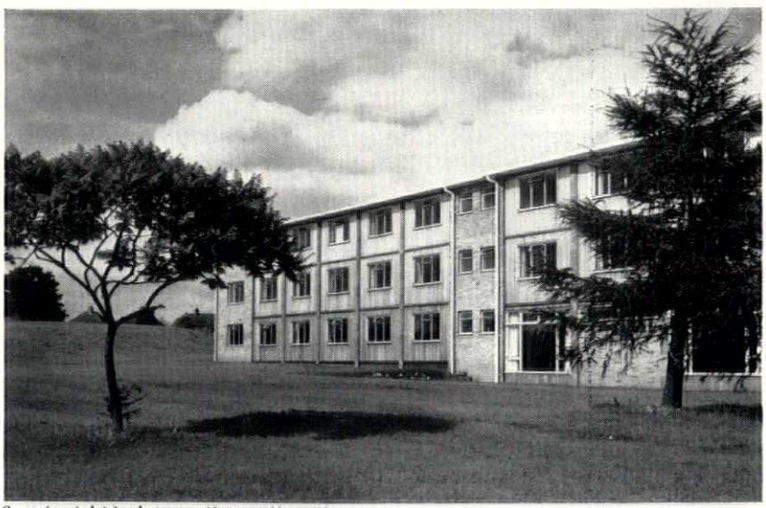


5, one of the halls of residences seen from the east; infill panels are of cedar boarding.

TEACHERS' TRAINING COLLEGE AT COVENTRY

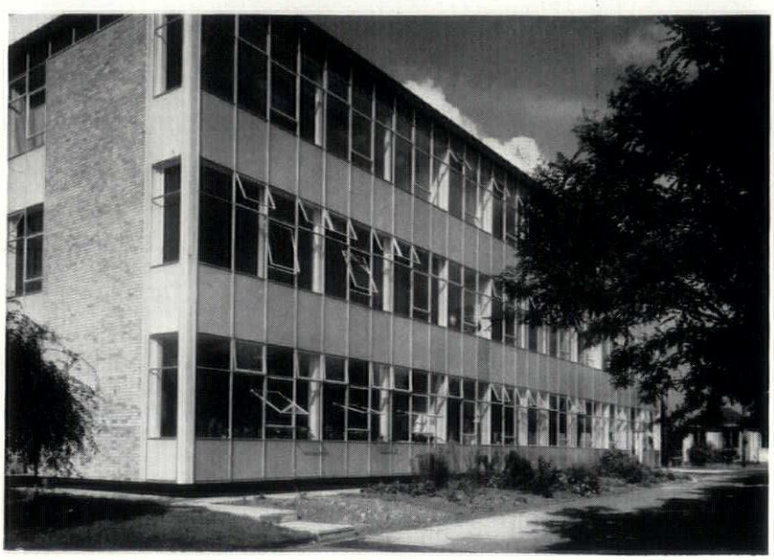
ARCHITECTS: W. S. HATTRELL & PARTNERS

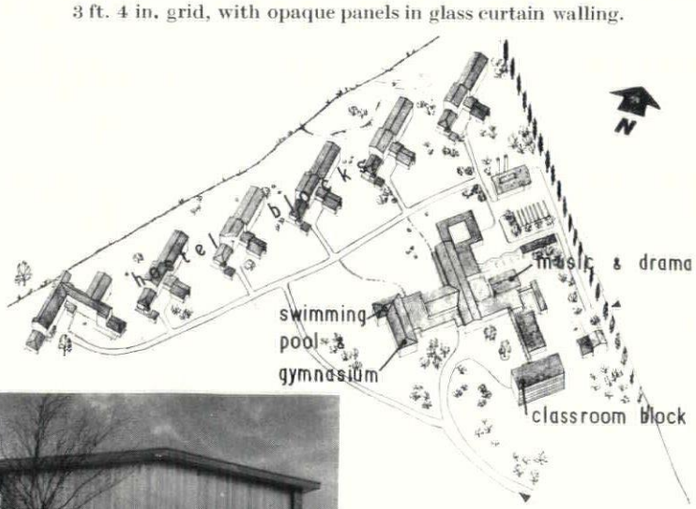
This teachers' training college is at Canley, south-west of Coventry and has been built at irregular intervals since the war to replace the temporary buildings originally used. One hall of residence accommodates 75 students and 6 staff, with five smaller halls, each for 45 students and 3 staff. These halls are of three storeys, with study-bedrooms facing east or west, and with a laundry room, kitchen and bathrooms on each floor and a common room, workroom and small room for entertaining on the ground floor. The blocks are of cross wall construction with floors of prestressed r.c. planks and hollow blocks, and timber felt-covered roofs. The infill panels are of cedar boarding and the ends of the cross walls are faced with Hornton stone. The classroom block is of unit construction on a 3 ft. 4 in. grid, with opaque panels in glass curtain walling.

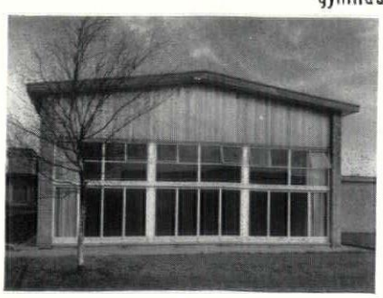


6, a hostel block from the south-east.

7, class-room block with glass curtain walling.







8, exterior of the music and drama block.



9, entrance façade with the main office block on the right.

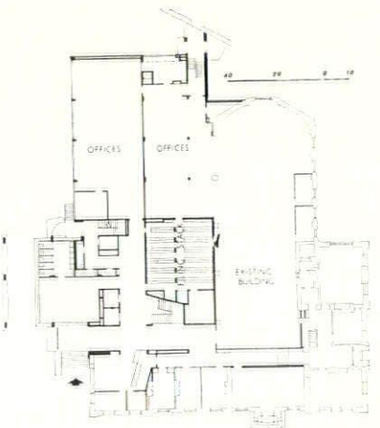
OFFICES IN KENDAL

ARCHITECTS: RAMSEY, MURRAY, WHITE AND WARD

This building, in Stramongate, a stone-built town in the Lake District, forms the first part of the extension of the head offices of an insurance company. To avoid conflict with the scale of the surrounding buildings it has been set back from the road to appear as a tower rising behind the street facades. The central core of the building is formed by a nine-storey artificially ventilated filing stack contained in a fireproof concrete shell and with a floor-to-ceiling height of 7 ft. 6 in. One wing to the south-east contains four floors of offices, another to the north-east contains cloakrooms, offices and the directors' dining room and kitchen. Suspended ceilings of acoustic tiles mask electrical conduits and allow the fluorescent fittings to be fixed flush. Floors are of wood blocks except in the entrance lobby, where nabresina marble is used. The walls of the entrance lobby are glass mosaic with black bean timber linings; staircase walls and floors are faced with off-white terrazzo. Externally the facing materials are Portland stone and Westmoreland green slate. Window frames are aluminium.



10, reception desk in entrance lobby

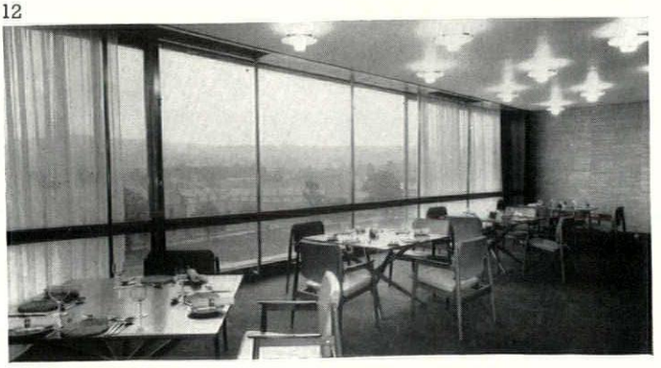


11, main staircase from the entrance lobby.
12, view from the directors' dining room on the top floor.



11

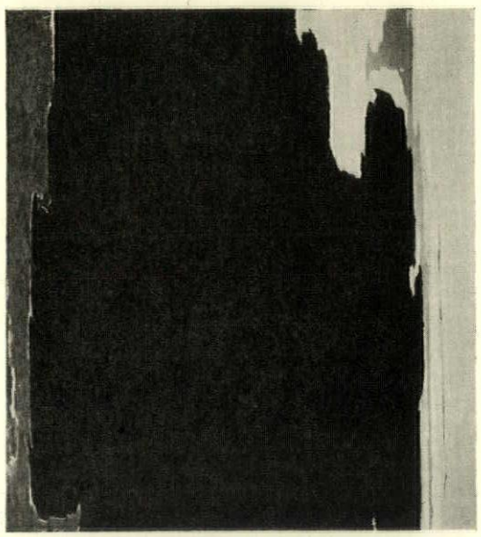
12



EXHIBITIONS

PAINTINGS

If the spectacular exhibition of The New American Painting recently held at the Tate Gallery under the auspices of the Museum of Modern Art and the Arts Council is anything to go by, there are no spectacular new developments to report since we were shown examples from the Museum's own collection in 1956. The new selection was devoted to the work of seventeen artists—five more than in 1956—and no more than three or four of the canvases have been here before. The painters who stood out as leaders in the earlier show have not lost any ground, but one of them, Clyfford Still, seems to have rejected his own fame: he has not held a one-man show since 1951, and was not represented at the Tate by anything later than the famous 'Painting, 1951,' 1, which is one



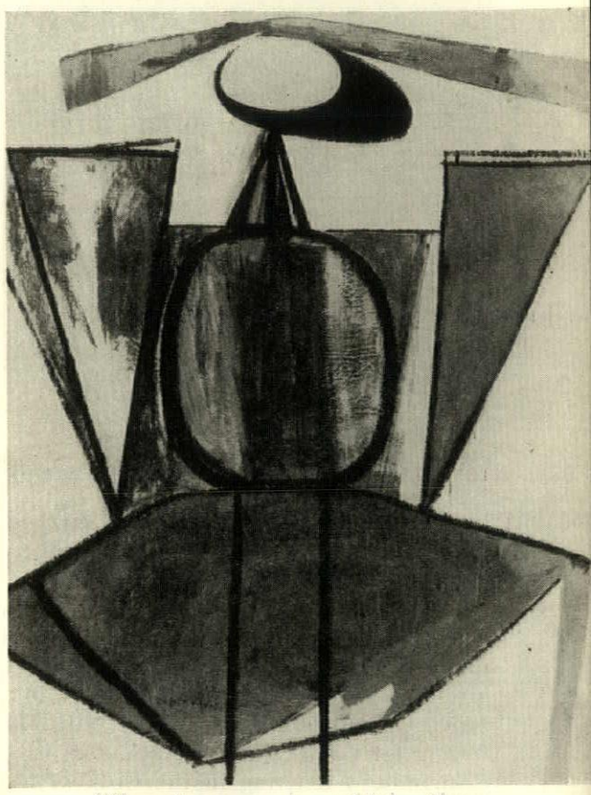
1

of the pictures that has been here before. Built entirely for forceful confrontation, and carrying only unintentional messages, it remains a typical product of the movement.

It was Clyfford Still who, a few years back, remarked that 'from ancient times the artist has been expected to perpetuate the values of his contemporaries,' and who thought that things like 'Painting, 1951' constituted an unqualified refusal to go on doing so. He was mistaken; and no doubt his refusal to exhibit reflects his dismay at having become one of the honest Abes of The New All-American Painting. It's a bitter pill for him to swallow, but it is now only too evident that his kind of painting is just what a large, rich, naïve civilization, clinging to the myth of the individual and operating the biggest entertainment industry in the world, might expect its 'fine art' to be. Whether the artists like it or not, their work has been turned into a National Asset, and these big, strong, uncommunicative paintings have become posters, advertising America's 'spiritual values' in a properly spectacular way.

Of the five artists who were not exhibited in 1956, Barnett Newman, Adolph Gottlieb, Jack Tworkov and James Brooks are all over fifty years old, and each of them adds his portion of 'rugged individualism' to the movement, without being in the slightest degree disruptive. The fifth, Sam Francis, who works in Paris and for that reason is better known here than any of the others, is only thirty-six. His placidly beautiful 'Big Red,' painted in 1953, was the largest picture in an exhibition of large pictures: but his work has a quiet, monotonous refinement, and if his exhibits had been typical the show would have been just about as interesting as the room of Indian carpets at the V and A. He can cover a large canvas as nicely as anyone, but his 'cellular' approach means that size does not really present him with a challenge, and his work lacks the tension, the large gesture, the sense of adventure that gives the paintings of his seniors their spectacular qualities.

We are not likely to see any very radical changes in the work of the men who created the movement. As Alfred H. Barr says in his excellent catalogue preface, 'the artist's concern with the actual painting process as his prime instrument of expression . . . tends to eliminate imitative suggestion of the forms, textures, colours and spaces of the real world;' and as a matter of fact the latest exhibition strengthened the impression one had in 1956 that when references to other realities appear in these works they always bear the look of a facetious or muddled intrusion, and invariably weaken the impact of the paintwork. In this respect, I have in mind the fanciful figures of Baziotes, the fragments of impressionist appearance in Hartigan, de Kooning's satirical images of women, and in Robert Motherwell's 'Personage with Yellow Ochre and White,' 2, painted in 1947, the almost stupid reference to the many studies of a woman seated in a chair, made by Picasso in 1938. But in 1947 the movement was in its infancy, and Motherwell is not likely to make such a tactical error again. It wasn't particularly fair to him to put it in the show, but it served as a sample of the



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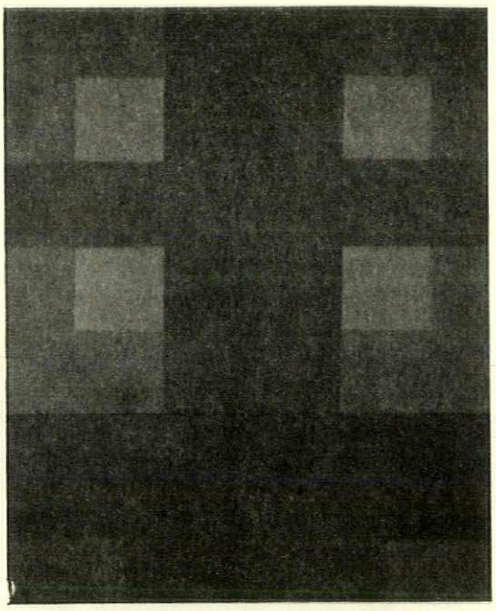
many different ways in which these painters were working before they decided to put all their faith in paint performance, and it provides a partial explanation of the remarkable differences between the work of one painter and another. Each man's work seems to carry, however obliquely, the impress of his previous figurative and visionary preoccupations. This applies, at any rate, to the older generation. A younger man like Sam Francis hasn't the same background of figurative struggle: he has been an 'abstract expressionist' since his student days, and his work hasn't anything like the same impact as that of the older men. There are now hundreds—literally hundreds—of young painters attached to the movement who have never been anything but 'abstract expressionists,' but what little one has seen of this vast acreage has been far from impressive and much inferior to the work of Francis—which suggests that this kind of activity is now merely an aspect of American behaviour.

It begins to look as if 'abstract expressionism' considered as a serious art form is primarily the contribution of one generation of Americans.

Perhaps the work of a young painter like Ellsworth Kelly—a few samples appeared in the USIS Gallery in Grosvenor Square a few weeks ago—is a sign of the way American painting may start 'communicating' again. Kelly makes large but abstracted references to the American



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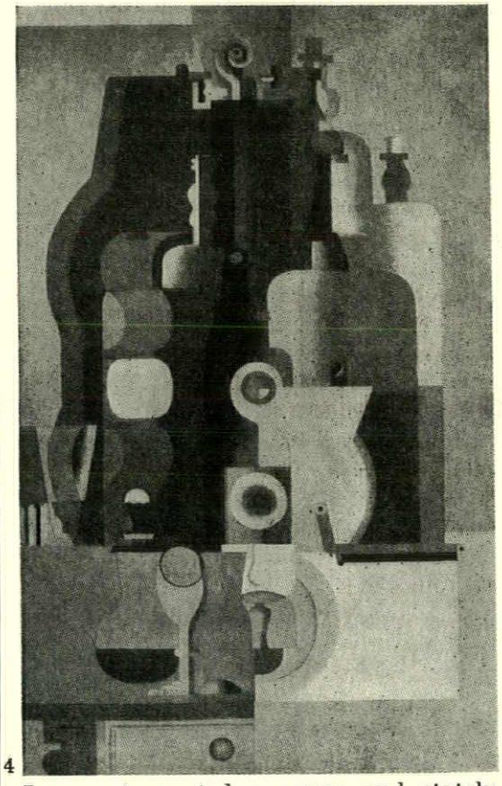
scene, 3, and at the same time very severely disciplines his paint performance. Furthermore he has a sense of monumental scale that enables him to paint small pictures without losing face, and to paint large pictures that look even larger than they are. He appears to have slipped back into romantic puritanism, but he retains the feeling for painting as spectacle that is so evident and exciting in the work of the abstract expressionists.

The Purist paintings by Le Corbusier included in the touring exhibition which came to the Building Centre were, like some of the buildings recently described by Professor Pevsner, in need of care and protection, and it is to be hoped that they will soon be in the comparative safety of public galleries. They are his best contribution to painting.

Little was said about them at the time of the show, but Reyner Banham made an interesting reference to them: 'The invention of Purist painting is clearly the work of the sophisticated mind of Ozenfant, but its best pictures are all the work of the ready hand of Charles Edouard Jeanneret.' This is true in a way. It's true that the best pictures are by Jeanneret, but not because he had a *ready hand*. Ozenfant put the theory into practice lightly, brilliantly and with a very ready hand. He had a perfect grasp of his own theory and knew exactly what he wanted to do. Jeanneret, on the other hand, had to grope his way into an understanding of it, and there are signs of the struggle of a simple but true painter in the earliest examples, signs that it was only in the act of painting that he could discover what the theory demanded of him. Some of these very early works, in which he couldn't bring all the objects on to the picture surface, and because he thought they had to have somewhere to stand, made funny little pockets of space for them, must have sent Ozenfant round the bend, but I find them as moving and precious as the first cubist works of Gris.

It is worth remembering that the Purist experiment occurred immediately after the first world war, when very few artists were in the 'dada' mood, and feared even the great pre-war period of cubist experiment. The desire for some sense of security led to general reaction under one of those calls to order which usually designate fear. Picasso himself gave the lead, and although it was an extremely equivocal one it led to various kinds of neo-classicism. Purism was involved in this neo-classical revival, but it was, to my mind, an outstandingly intelligent and constructive aspect of it. It was an attempt to reassert the importance of the objective world without sacrificing the formal discoveries of the cubists, and at their best Ozenfant and



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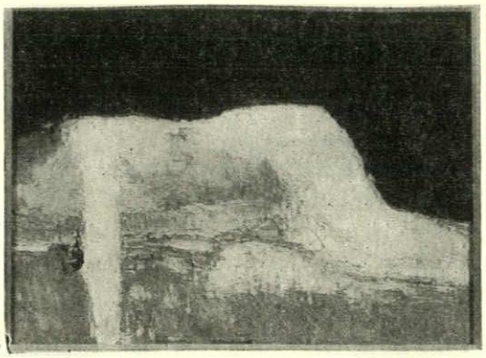
Jeanneret created a serene and stately pictorial architecture that was completely contemporary in spirit.

Jeanneret's contribution to Purism was curious. It is the work of a follower, but the pictures have greater presence than those they emulate. He was more human than Ozenfant in his pursuit of purity; far less immaculate. There is something of the solemn child and something of the alchemist, in the way in which he became totally absorbed by a magic formula for putting common objects above themselves, and patiently built up a masterpiece like this still life of 1922, 4.

I go to many shows, and sometimes I scribble an odd note or two on the catalogue, but they hardly ever prove to be useful because they reflect a day-dreaming



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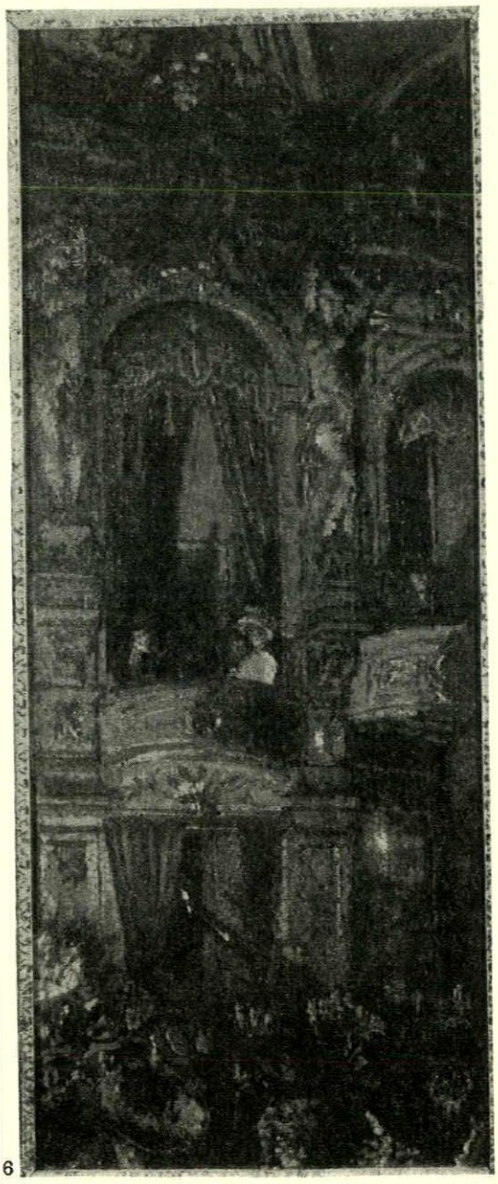
state of mind in which the pictures are treated as extensions of reality. About Peter Kinley's 'Nude,' 5, which was one of the handsomest pictures in the Arts Council show of recent CAS purchases, I wrote: 'Would have to scrape off paint to see what girl is really like,' and I found that I had much the same thing to say about the latest batch of Bratbys at the Beaux Arts: 'What a fearsome world! There's paint over everything!' At Tooth's mixed show of English work, I didn't have anything to say about the pictorial values in Sickert's delightful little oil of



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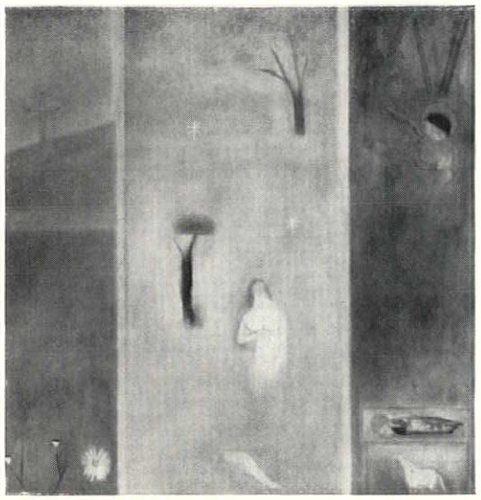
'The New Bedford,' 6, but simply noted that the statue between the two boxes was more real than the people and looked as if she were about to walk across the auditorium on a wire. Craigie Aitchison, whose one-man show preceded Bratby's at the Beaux Arts, gave me the rare and presumably reactionary pleasure of being able to forget the performance of the paint. I have no doubt at all that it was performing very adroitly but I was too absorbed by the images it projected to notice it. Aitchison paints flowers as if



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they have minds of their own, and quite clearly has a preference for those rather naïve yet slightly sinister beauties who start life in an ordinary bourgeois garden but take to reading Baudelaire and Rimbaud and get it into their lovely heads that they smell of incense. His curious, pale, tenuous 'Triptych,' 7, has a genuinely devotional air, yet the more I look at the centre panel the more it seems—with its witches' tree and will-o'-the-wisp stars and naked women emerging from nowhere—to be the prelude to a long, wakeful night for St. Anthony.

Robert Melville



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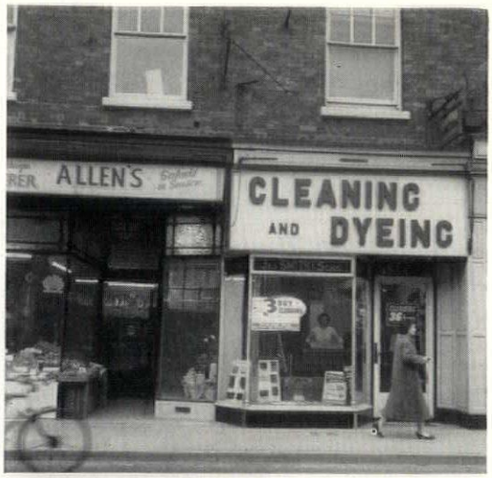



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1, typical clutter of street furniture in Magdalen Street, Norwich. 2, close-up of its unrelated fascias. 3, their effect on the length of the street. 4, typical view of Magdalen Street.

TOWNSCAPE

MAGDALEN STREET

Magdalen Street has been described as Norwich's 'Colourful native quarter' but—apart from the bustle of the crowds—its charms are of the deciduous kind that result from huddles of variegated buildings of varying ages, styles and degrees of commercial modification—precisely the sort of thing that can degenerate into squalor in very short order.

However, Magdalen Street has been lucky, in the sense that it's the object of a pilot research project sponsored by the Civic Trust, due for completion this month—a project in what could be called 'street-scape reclamation,' an attempt to do something about run-down buildings, badly aligned fascias, shop-fronts increasingly out of relationship with the façades above, ill-designed and worse-placed street furniture.

The first hurdle in such a project is one of practical democracy—getting any number of independent shop-keepers to co-operate. This was achieved chiefly through energetic public-relations work on the part of the trust. Next comes the problem of variety-in-unity, or whatever you like to call the integration of differently converted and designed buildings into a satisfactory urban scene. This was taken care of by allocating groups of shops to each of five members of a panel of local architects, under the co-ordination of Misha Black and Milner Gray (of Design Research Unit). The co-ordinators prepared a manual giving general guidance on lettering and colours, and they and the architects met frequently for discussion and mutual criticism.

Clearly this is a kind of work in which it is necessary to tread warily—excess of enthusiasm or originality could result in too much being swept away; old lettering, even though it conflicts with current tastes, and old paint-work, even though it be dirty, may both deserve to be treated with respect. Magdalen Street was not yet finished when this note was written. The results must be judged on their merits—they are bound to be hotly discussed—but the pioneer experiment undertaken there can be unreservedly welcomed, at the social level as well as the aesthetic.

P.R.B.

UNIVERSITY IN BLOOMSBURY

The existence of a university precinct in Bloomsbury was recognized as long ago as the Abercrombie-Forshaw plan for London of 1943, *but its architectural form has remained a subject of doubt and misgiving* until the recent publication of the development scheme drawn up by Sir Leslie Martin and Trevor Dannatt.

Until that time, the University of London's development of the area had been the object of some alarm. The piecemeal implementation of the University's own building programme, extending northwards from Sir Charles Holden's rigidly planned central area with its monumental Senate House tower, was advancing to-

wards the equally piecemeal extension of University College, eastwards and southwards from Wilkins's fine quadrangle. There was no co-ordination between these independent encroachments on the traditional townscape pattern of Bloomsbury, and the buildings were of a bulk and generally neo-Georgian style that promised increasing offence to the *genius loci* at a rate considerably greater than their merely increasing numbers. (See, particularly, AR, October, 1957, and December, 1958, Backyard Mentality.)

The Martin-Dannatt scheme, which is illustrated as the frontispiece of this issue, page 302, endeavours to restore a comprehensible scale, capable of co-existing with surviving buildings from the original Georgian development of the area, and at the same time to create some sense of precinctual unity and character. These considerations are obviously interconnected, and deal with size, nature and location of buildings, but there is another factor that can be dealt with first—traffic.

There can be no precinctual character in an area that is punched open by through traffic routes, as Bloomsbury is at present. The development scheme proposes to restrain through traffic to a single east-west route, and a single north-south route, the former on the line of Torrington Place, the latter by way of Malet Street and Gordon Square. Ideally, it would be preferred to eliminate through traffic altogether, and these proposals are in a sense, *faute de mieux*, pending rearrangement of traffic outside the precinct. Apart from these two through roads, all other roads entering the precinct are, in the Martin-Dannatt scheme, to become service-ways or access to car-parking, much of which will go below ground; and to prevent the two through roads carving up the precinct into four isolated zones, pedestrian circulation is to be bridged over them or tunnelled under them where necessary—the project envisages the creation of a first-floor 'podium' for the higher structures which should form a natural basis for high-level footbridges and walkways.

The problem of what sort of buildings, their location and size, is obviously a complex one. Decisions had to be made about what to keep from the eighteenth century—the terrace facing Tavistock Square has been suggested for 'certain preservation'; so has the terrace at the bottom end of Gower Street, which is visually part of Bedford Square. But against the desirability of preserving the best surviving terraces must be set the need for room to manœuvre in the disposition of new blocks, particularly since comprehensive planning offers considerable freedoms that should not be sacrificed. The most important of these is the ability to view the plot-ratios of the whole area synoptically, instead of site by site. The LCC have fixed the plot-ratio at 3.5, and while building proceeds in small pieces the tendency will be for every site to be built up independently to about this figure. But proceeding comprehensively it is possible to set areas that fall below this figure against others that may now exceed it if necessary.

Armed with this technique and some general guidance as to the University's probable floor-space requirements, Sir Leslie and Mr. Dannatt have been able to distribute building volume much more flexibly than is at present the case, to keep the scale down where the existing character of the scene requires it, and to make up the floor-space provided by building higher where circumstances permit or visual considerations justify it. Acceptance of the development plan will thus ensure the end of those giant, identically-bulking blocks that have caused so much alarm by their unsympathetic scale, but the plan makes no detailed architectural proposals, and the University's attitude to the style of the new work is not clear. It would be a tragedy if—the scale problem having been solved—the architectural realization were to remain in the neo-Georgian doldrum of the present situation, and thus vitiate the promise of the new approach.

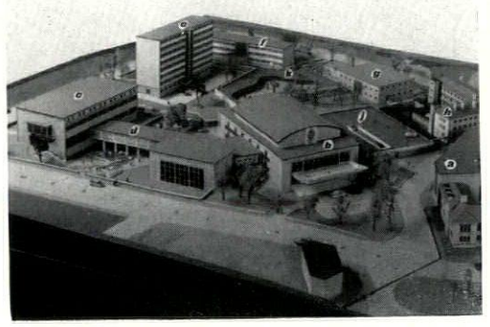
C. Forehoe

COUNTER-ATTACK

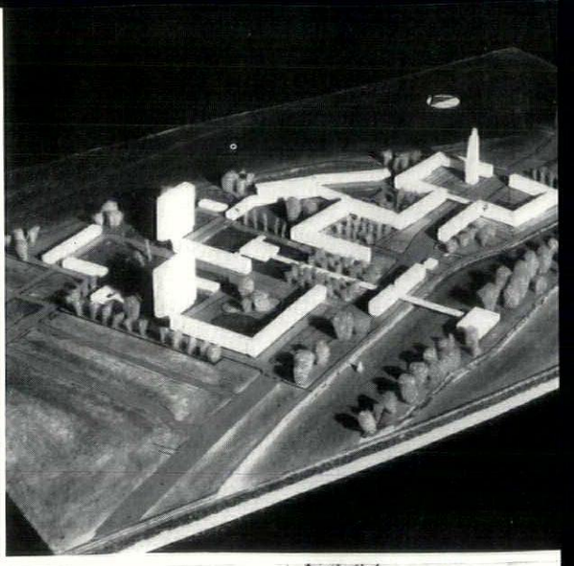
CIVIC CENTRES

A natural pessimist is always being pleasantly surprised. Every time this writer becomes really depressed about British architects and architecture something turns up, often in the most unexpected place, to make him think that the modern movement may be growing up after all (the current alternatives seem to be general paralysis or second childhood).

Two schemes for town centres have recently appeared: one for Poole, a civic centre in the strict sense, and one for Brentford, a new urban centre on what will largely be reclaimed industrial land. The Poole plan was prepared by the Borough Engineer, V. R. Barron, the Brentford plan by P. de Saulles, a private architect. Both have the same qualities of interlocking volumes and spaces and re-use of what is already there which are what the mathematician would call necessary conditions if redevelopment is to make sense in its complex surroundings: without them nothing.



1, model of the Poole civic centre.



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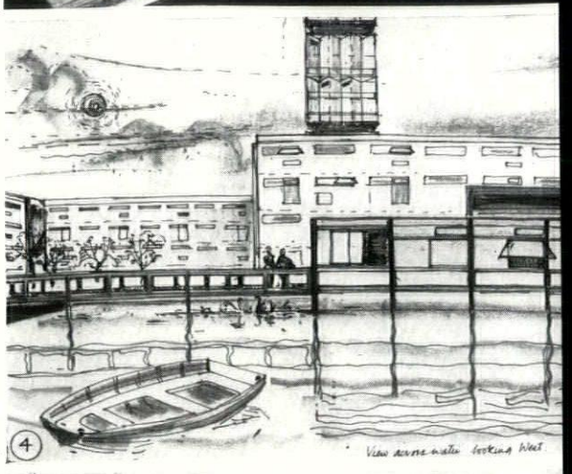

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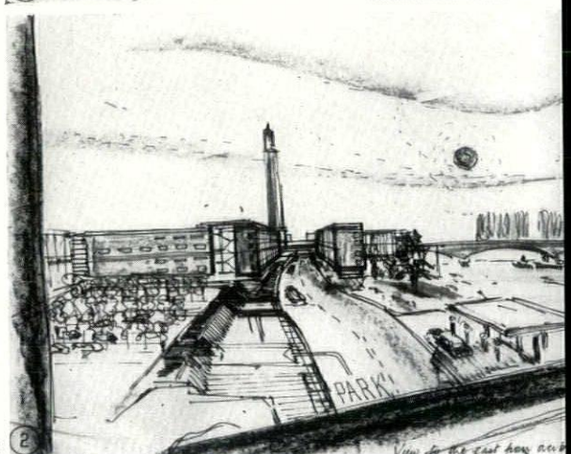
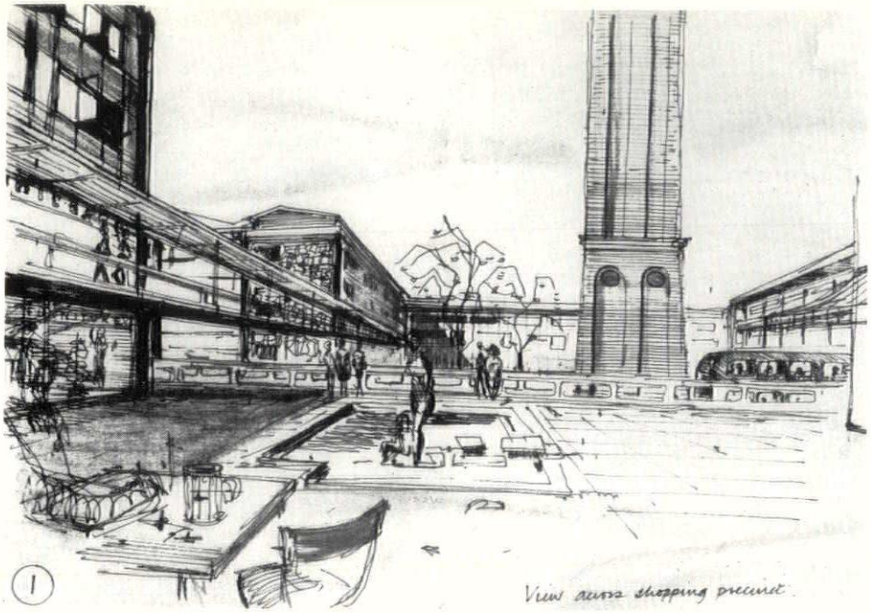


4 (2)

2, model of the scheme for Brentford, looking north-east. 3, view across the Thames, with the seventeen storey block of maisonettes in the background. 4, looking east from the pedestrian bridge over the main road towards Kew Bridge.

At Poole the site is a five-acre wedge behind the rather fearful 1930-Gothic municipal buildings, a. A previous condition was that the axis of the Town Hall, b, should 'run through the memorial clock tower on the Park Gates Roundabout.' We have heard that one before, but in fact the result, screened by a half-moon of trees, must surely be 1959's gentlest axis. Everything else fits in deftly and humanely: central library at the north-east end of the site, c, exhibition gallery, d, linking it with the town hall, eight-storey office block for the MOW behind, e, central clinic



5, the Brentford plan: view across the shopping precinct to the foot of the waterworks tower.

behind that, f, and law courts, g, next to the existing police station, h. In between are existing trees and two-storey car parks, j and k, which have a good chance of being attractive objects in their own right. Every pedestrian walk one can compute through and around the buildings looks as though it would be fun, and the fact that some of the elevations (which are only diagrammatic anyway) may look a bit gauche is much less important when the buildings themselves are dovetailed together.

The Brentford scheme is bigger and will probably have a much harder time of it for one reason and another. Old Brentford is a one-time country town High Street tottering into decay because the Council has rehoused everyone away from it. The present scheme, Council sponsored, adjoins it on the east and is intended as some kind of a replacement—the old street has gone too far to be saved—and a very good scheme it is too. The outstanding thing about it is that it is intended to be built very largely on land now occupied by the Metropolitan Water Board and the Gas Works. There will be no need for wholesale rehousing, though there will doubtless be wholesale writing of letters and passing of memoranda before such an un-English scheme of co-operation between authorities can come to pass; the Brentford and Chiswick Council have my heartfelt sympathy in this.

The architect has planned a truly urban sequence of squares making a brilliant re-use of the famous 'minaret' of the waterworks as a kind of campanile, approached under a pedestrian bridge which should give a most delightful 'stop it—I like it' effect; at ninety degrees to this axis another pedestrian link runs directly out to Brentford Ait, a narrow wooded islet in the Thames which has up to now remained quite unused. Both of these are axes which mean something and can be seen to mean something, not axes for their own sake. Existing reservoirs are re-used as pools, existing gas holder bottoms are made into oases in the bustle, car parks are to be gravelled and planted with trees like a French *place*. It is a dream: but it is practicable, it would seem truly Thames-side for the visitor and be a good place to live in for the Brentfordian.

In short, both Brentford and Poole are schemes that you could imagine yourself enjoying a walk in—and this is a lot more than can be said for most of today's redevelopment schemes.

Ian Nairn

BOOKS

ROMANTIC LANDSCAPE WITH CHIMNEYS

THE LANDSCAPE OF POWER. *By Sylvia Crowe. Architectural Press.* 16*s.*

There used to be people—perhaps there still are—who spoke of power stations as the cathedrals of the modern age. I'm not sure that Miss Crowe isn't sometimes guilty of muddying the difference in spiritual status between the two. Her challenge, certainly, is firm:

'If the emphasis on power proceeds beyond a point, perhaps not far distant, an unbalanced position will be reached in the life of this country where the excess of speed and mechanism, over repose and organic growth, will inevitably be reflected in an unbalanced landscape; a landscape devoted to industry at the expense of agriculture and to materialism at the expense of aesthetics, philosophy and contemplation. This country will then become an industrial estate. It may possibly be a well-ordered estate equipped with parks, but it will only represent a balanced life when seen against the background of the world as a whole. It will no longer be possible to lead a complete and satisfying life within Great Britain.'

But Miss Crowe has a weakness for *wanting* the landscape to 'reflect the nation's life.' For Miss Crowe this means that new machines should not be encased in traditional architecture, and that latticed masts suggest to her a 'scaffolding for new ideas.' But in a rather obvious sense *any* man-made landscape, any building, reflects the life of the nation which made it or built it or allows it to remain. That's just the trouble in fact. Housing estates, industrial estates, motorways and TV aerials are a perfect expression of the nation's welfare-state mind, just as the pre-war suburbs couldn't shout more clearly, 'Blow you, Jack, I'm going to leave my mess on someone else's doorstep.'

I think we've had enough expression for the moment, and we'd better leave it aside until we find something worth expressing. It might be a good idea for a change to be a step ahead instead of a step behind. Put a man into a suburban semi and only the toughest can avoid turning his front garden into a car-park decorated with Japanese cherries. Make a decent environment for people to live in, and what happens? Nothing, probably—the other forces are still too great. But at least we shan't be standing in the way of a decent way of living, and we might even make something decent to look at.

This is where Miss Crowe really comes in. Some time ago in the AR, Miss Crowe called on us all to stop sighing about the past and fight for our very lives now. Her part was to make herself into one of the most dogged challengers of contemporary commercial orthodoxy. And it is in this context that *The Landscape of Power* is so valuable. The book is full of the imaginative insight which makes Miss Crowe so good at tackling problems like the landscaping of Bradwell, full of keen observation and a fine understanding of the needs of different landscapes. But among all the helpful examination of detailed problems, the statement of two new standpoints seems to me of major importance.

First, the industrialization of a landscape is not limited to the area within the security fence. The effect of a large new industrial building may well be to create a zone of urban influence many times larger than the machine itself, and a zone of psychological influence larger still. Thus, if the Milford Haven scheme goes through, the whole of the area on both sides of the estuary from St. Ann's Head to Pembroke Dock will be lost; just as Fawley refinery has made the whole of Southampton Water into a suburban scene. Government departments and industrial combines must no longer be allowed to get away with the claim that they are occupying only so many acres. It's the square miles of influence which count (especially, of course, since expansion is so easy under the 'spoiled already' argument).

Second, the new machines are so big that the attempt to humanize them is basically wrong. They can only be accepted as a complete contrast with a humanized landscape, unsullied by any attempt to tamper with their scale by fancy human

dressings. Just as the occasional car doesn't destroy the intense stillness of real country, because it is so total a foreigner, so a TV mast or a cooling tower is tolerable only while it remains impersonal. We cannot make them into fine humanized objects like the great Derbyshire mills—they are now beyond our own scale. What *this* may mean in human terms it's alarming to think; but anyone who doubts the visual point might compare the 'artist's impression' of Dounreay that Miss Crowe prints with the photograph of the real thing which appeared in the AR in September, 1958.

The quietness with which Miss Crowe makes these two points may blind the casual reader to the momentousness of the change of outlook she proposes. Taken together they represent a huge challenge to the current orthodoxy of industrial siting, an entirely new approach to the problem of letting the landscape have its say, and finding out what it can take.

Speaking as a member of a youngish generation I slightly resent being informed that 'It may be that the younger generation can accept the superimposed grid of structure which represents cosmic forces harnessed to everyday life, just as they can accept a background of perpetual noise.' If it can, so much the worse for it and the country. The standard of living we have to keep up is much more than an economic one, and personally I'm not inclined to risk it.

Andor Gomme

BUILDINGS OF THE NORTH

SCANDINAVIAN ARCHITECTURE. *By Thomas Paulsson. Leonard Hill (Books) Ltd., London.* 42*s.*

This is the first complete history of Scandinavian architecture to have been published either in English or in any of the Scandinavian languages. The author, son of Gregor Paulsson and well known in Sweden as an architectural critic, writer and broadcaster, reveals this surprising fact in his preface. He adds that in 'the great classic work of Banister Fletcher the Nordic countries were not even included.' His book therefore deserves a special welcome in spite of the failure of his publishers to ensure that the translation was idiomatic. (On one page it is incomprehensible.) The photographs, generous in quantity, are sometimes inadequate too.

But can it be said that there is such a thing as a Scandinavian architecture? Though today the four countries are distinct realms, their historical, geographical, linguistic and cultural ties have been so tightly knotted together in the past that the answer, with some qualifications which the author makes clear, is yes. He is concerned to show how particular styles and types of buildings and towns were created by the social-economic conditions of each period. Advisedly he subtitles his work: 'Buildings *and Society* (my italics) in Denmark, Finland, Norway and Sweden from the Iron Age until Today.'

The influences (and indeed many of the architects) through the centuries came from the rest of Europe, in particular from England in mediaeval times and after the Reformation from Holland, but more space might have been given to the indigenous and delightful timber vernacular of the peasant cultures. The nationalistic phase of the early part of this century is dismissed rather curtly; the Stockholm City Hall, for instance, is given only a line or two and no picture. That masterpiece of a fairy-tale, climax of the handicraft movement, may be in disfavour today but within its own terms it is a landmark and a work of genius. However, the author is not greatly concerned with aesthetic judgments (nor with structural techniques). His approach is austere and the main interest of his book lies in his intelligent perceptions of how historical and social forces conditioned the buildings of the north.

Scandinavia is not plagued as we are with overcrowding, the effects of *laissez-faire* and with Subtopia, and Mr. Paulsson appears to be content with the present social conditions of the Scandinavian countries and with the architecture they produce. He reveals no personal hopes or visions for the future, but he does conclude with an important statement: 'The large city, as well as the small, exists to a great extent in the fluctuating play of a variety of forces and these are not only economic, or social, or technical. Other forces are those only partly calculable valuations that people make of their surroundings, their world. These valuations and forces are not yet fully comprehended.' Can they ever be? Or rather, can they ever be fully and rationally expressed in words? All we can do is to question the prevailing assumptions. But how many architects, town-planners, sociologists, economists or even writers like Paulsson, who take a broader view than most, are doing so today?

Incidentally, is it true to say that Art Nouveau was 'a style which within art was inspired by the painter Seurat'? A good case has been made out that the progenitor in painting was William Blake.

Eric de Maré

MILAN BUILDS

NUOVE ARCHITETTURE A MILANO. *By Roberto Aloi. Milan, Hoepli* 1958, 900 *lira.*

This book deals with buildings in Milan erected during the last six or seven years. It is a sequel to Piero Bottoni's Edifici Moderni in Milano, 1954, but while Bottoni's book is in pocket format and consists of itineraries, this new book is quarto and discusses building after building in order of types, with five to ten pages for every building including plans, technical details, etc.

One is impressed by the large volume of building going on at Milan, and the large number of architects participating. Of the best known people little is illustrated: nothing by Albini, two by B.B.P.R., two by Figini & Pollini, two by Gardella, two by Nizzoli. There is evidently a great deal of talent about at Milan and an even greater deal of ingenuity. The delight in novelty exceeds what even the most fanciful architects over here would venture to do. Of the Mies-Eiermann style, hardly anything appears. Architects play with chequer-board patterns of windows and even more random fenestration, and plans are not infrequently butchered to fit facades. Yet, what the book contains is extremely stimulating. The boldest three-dimensional experiments are once again Luigi Moretti's. Illustrations of the new Pirelli building by Gio Ponti and Nervi are included although the building is still incomplete. It promises to be of great beauty and it is obviously quite unmannered. Its prow shape gives it elegance and its qualities are already beginning to have an effect on other skyscrapers in Milan and outside.

N.P.

Shorter Notices

EARLY MUSLIM ARCHITECTURE. *By K. A. C. Creswell. Penguin,* 8*s.*6*d.*

The reputation of Professor Creswell (who will soon be eighty years old) in the field of Muslim architecture depends on a series of massive volumes that appeared in Oxford in the Thirties—academic publishing at its most lavish and opulent. The present Penguin volume is a drastic condensation of the first two of them, but it is far from being a 'cut version,' and includes information that was not available at the time the older volumes went to print—fragments of wood from the Nilometer at Quairawan are recorded as smelling of cedar, and having been sent to Kew for analysis, in the first version: the new edition records that Kew identified them as *Ficus Sycamoris*, and the earlier guess that the wood came from the Lebanon has been dropped.

There is something very Creswellian about this revision—he must be one of the most practical-minded historians that any school of architecture has been blessed with. He uses his imagination to get the available facts into comprehensible and creditable patterns, not to spin theories of origins or influences: the book is about buildings. The first paragraph concerns the dwellings of the primitive Arabians, the second plunges straight into the problem of the rebuilding of the Kaa'ba in the thirty-fifth year of the Prophet, and the rest of the book is strictly about bricks and mortar. For those with any interest at all in Muslim history down to about 270 H. it is required reading, obviously, but those with purely architectural interests will also find here the best introduction there is to the stones of Islam—rarely has the application of luminous commonsense to the facts of structure and the forms of planning done so much to reveal the mind of an architecture.

Michel Santiago

NEW WAYS OF BUILDING. *Edited by Eric de Maré. Third edition, Architectural Press Ltd.,* 45*s.*

This useful book comes to us in its third edition, thoroughly re-edited and much enlarged. All sections have had something substantial done to them, but that on steel has been completely re-written by a new and refreshingly lucid author, Dr. H. Gottfeldt. Among the other new additions in the text, mention must be made of Philip Reece's good account of recent TDA work on timber joints and W. B. McKay's masterly presentation of calculated brickwork. Brian Grant has virtually re-written the section on light metals, and K. Cheesman has much expanded that on glass. All these and the photographs (of which more are new than old) establish the work's unquestionable up-to-dateness.

L.W.

SKILL

PITCHED ROOF COVERINGS

by Peter Whiteley

2, unit coverings—*continued*

Last month Peter Whiteley began his series of articles on pitched roof coverings by considering the physical properties of slates and tiles. This month we publish comparative cost tables relating to slates (both natural and manufactured), shingles and concrete tiles. Next month we will complete this section by publishing the cost tables relating to clay tiles and, when the series is finished, readers will have a complete cost comparison of virtually all the chief pitched roof coverings available in this country.

In the first of the cost columns, the cost is given ex-works, including trade discounts and transport cost within 100 miles of the supplier. The next column, B, gives the cost of the materials when laid, including battens, and when required, nails; including also an allowance for waste, for hips, verges, ridges and soakers, and for profit and overheads. The third column, C (which is the most interesting of all) gives the cost per square, on plan, of the total structure, including the ceiling. To make the comparison still more realistic, we include also sufficient insulation to bring the 'U' value of the roof down to a standard value of 0.18.

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
NATURAL SLATE (including stone)								
THE BROUGHTON MOOR GREEN SLATE QUARRIES LTD., Coniston, Lancashire								
Broughton Moor Westmorland Green Slates	random widths (proportionate)		30°	three named colours; (permanent) coarse grained texture	£ s. d.	£ s. d.	£ s. d.	available also in silver-grey-green and mixed shades
olive green, bests	18 in. to 9 in. long	9½ cwt.			12 2 0	15 18 0	43 17 0	qualities: bests, seconds, thirds, special peggies, second peggies. fixing 2 nails/slate
	20 in. to 12 in. long				14 19 0	18 13 0	46 15 0	
seconds	18 in. to 12 in. long	11½ cwt.			11 16 0	15 14 0	43 13 0	'Bro-Moor' reconstructed slate ridging at 8s. 6d. per ft. run
light sea green, bests	18 in. to 9 in. long	9½ cwt.			14 14 0	18 10 0	46 14 0	
	20 in. to 12 in. long				17 12 0	21 10 0	49 17 6	
seconds	20 in. to 12 in. long	11½ cwt.			17 5 0	21 4 0	49 9 0	
THE BURLINGTON SLATE QUARRIES LTD., Kirkby-in-Furness, Lancashire								
Burlington blue-grey slates			30°	blue-grey (permanent)				available in 7 numbered qualities
best pattern no. 1	any size, length and width	8 cwt.		medium to smooth texture	11 16 0	15 12 0	43 11 0	fixing 2 nails/slate. mainly random length slates in each particular quality, unless specially ordered
best sized no. 2	any length up to 25 in. by proportionate widths	8 cwt.			10 8 0	14 7 0	42 16 0	
best mixed no. 4	lengths 14 in. to 22 in. by proportionate widths	8+ cwt.			9 1 0	13 11 0	41 10 0	
FREEMAN & SON, The Camp, Stroud, Gloucestershire								
Cotswold stone tiling	maximum length 24 in. random widths 6 in. to 24 in.	16 cwt. lap 4 in. at eaves to 1½ in. at ridge	45°	Cotswold stone slabs	—	approx. £32	60 10 0	
J. W. GREAVES & SONS LTD., Portmadoc, Caernarvonshire. (Mines at Blaenau-Ffestiniog)								
'old vein' and 'deep vein' Portmadoc slates	24 in. by 14 in.	5 cwt.	26½° with 4 in. lap	blue-grey (permanent) medium rough texture	12 10 0	17 9 0	43 7 0	available in 4 classes best old and deep vein, mediums, strong deep vein and seconds, in full size range 26 in. by 16 in. to 10 in. by 6 in. fixing 2 nails/slate
	16 in. by 10 in.	4¾ cwt.			9 14 0	14 15 0	40 13 0	
best old and deep vein, class 1	10 in. by 8 in.	5½ cwt.			5 17 0	11 10 0	37 8 0	
strong deep vein class 3	24 in. by 14 in.	5 cwt.			11 2 0	15 11 0	41 9 0	
	16 in. by 10 in.	5 cwt.			8 16 0	13 16 0	39 14 0	
	10 in. by 8 in.	7 cwt.			5 12 0	11 9 0	37 7 0	

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
THE OAKELEY SLATE QUARRIES CO. LTD., 4, Old Mitre Court, Fleet Street, E.C.4. (Mines at Blaenau-Ffestiniog)								
					£ s. d.	£ s. d.	£ s. d.	
Ffestiniog slates best old vein mediums strongs extra strongs	24 in. by 14 in. down to 10 in. by 6 in.	5 cwt. (b.o. Veins) to 7 (extra strongs) in large sizes 5¾ cwt. to 8 cwt. in small sizes	25° with 4 in. lap	blue-grey (permanent), smooth in best old vein to coarse and rough extra strongs	£12 for 24 in., 22 in. and 20 in. (length) in b.o.v. down to £5 for 12 in. and 10 in. in extra strongs	18 16 0 13 12 0	46 15 0 41 11 0	available in full B.S. size range fixing 2 nails/slate, centre nailing
(MANUFACTURED SLATE) RECONSTRUCTED STONE AND CONCRETE								
ROBERT ABRAHAM LTD., 43, Bankhall Street, Liverpool 20, and Hawes, Yorkshire								
'Hardrow' concrete slates	28 in. by 18 in. by 11/16 in. 18 in. by 18 in. by 9/16 in. 18 in. by 12 in. by 9/16 in.	18 cwt. 14½ cwt. 14½ cwt.	15° (4 in. lap) 20° (3 in. lap) 25° (3 in. lap)	obtainable in colours: yellow stone orange light grey dark grey brown thatch green surface texture rough and irregular colour approximately one-seventh of total thickness	5 0 0 4 2 6 4 2 6	11 3 0 9 5 0 9 11 0	39 2 0 37 4 0 37 10 0	slates have been laid for 30 years + and have shown no signs of deterioration or colour fading manufacturers strongly recommend hanging by 2 nails (at head of slate) (copper or galvanized) over the batten for all pitches up to 40°; which together with internal fillet pointing with hair lime mortar on vertical and horizontal joints only (and the proportions of the slates) enables very low pitches to be satisfactory
COTSWOLD DALE STONE CO. LTD., Magdalen Works, Tetbury, Gloucestershire								
reproduction Cotswold stone slates	lengths 20 in. to 6 in. in 2 in. decrements widths 7 in., 9 in., 11 in. and 13 in.	18 cwt.	45°	Cotswold stone aggregate, granular finish which weathers in similar way to natural stone in rural atmosphere	9 5 0	15 16 0	43 15 0	intended to be laid in diminishing courses and random widths single nailed slates, every third course to be fixed. Extra care needed in laying because brittle when 'green'
REDLAND TILES LTD., Castle Gate, Reigate, Surrey								
'Stonewold' interlocking slates (concrete)	17 in. by 15 in.	9½ cwt.	22½° (to 45° maximum)	obtainable in lichen green, moorland stone slate grey integrally coloured concrete permanency claimed	5 9 4	6 13 0	32 11 0	held by nibs—no nailing required fully interlocking side lap; partially interlocking head three angles of ridge and hip tiles to suit most pitches between 22½° and 45° vertical joints up the roof are broken as in stretcher bond
(MANUFACTURED SLATE) BITUMINOUS SLATE								
THE RUBEROID COMPANY LTD., Commonwealth House, 1-19, New Oxford Street, W.C.1								
ruberoid strip slates, square butt	strips of 4 in one piece 40 in. by 12 in. visible area of each slate when laid 9½ in. by 5 in. (4½ in. on exposed sites)	1¾ cwt. (approximately)	30°	mineral granule finish in Westmorland slate green, venetian red, Delabole slate grey, Bangor slate blue also in asbestos base felt in grey	grey, green, blue, £4 red £4 10s. 0d. grey (asbestos) £5 18s. 0d.	5 18 0 6 12 0 8 6 0	28 7 0 29 1 0 30 15 0	a minimum maintenance free life of 25 years can be expected of Ruberoid slates flexible and easy to lay; fixed by galvanized clout nails on ¾ in. (min.) tongued and grooved boarding
octagonal	strips of 4 in one piece 40 in. by 11 in. visible area when laid approximately 9½ in. by 4 in.	1½ cwt.	30°	colours: Westmorland slate green, venetian red, Delabole slate grey	grey, green £3 13s. 6d. red £4 3s. 0d.	5 13 0 6 2 0	28 2 0 28 11 0	

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proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
(MANUFACTURED SLATE) ASBESTOS CEMENT SLATE								
THE UNIVERSAL ASBESTOS MANUFACTURING CO. LTD., Tolpits, Watford, Hertfordshire								
					£ s. d.	£ s. d.	£ s. d.	
Hendon purlin tiles	2 ft. 1 in. by 6 ft. 4 in. long (effective cover 6 ft.)	—	—	natural a.-c. grey, can be painted with a.-c. paint in appearance (form only) like a fully interlocking tile	11 0 0	13 5 0	37 7 6	should be laid from end to end of each course, lapping over on eaves undercourse and secured at each end of every tile through the valley corrugations which act as a built-in purlin; each tile will be exposed 10½ in. to the weather
pantiles	16 in. by 13½ in.	—	40°	natural a.-c. grey in form appearance like a traditional English pantile	7 7 6	10 3 0	34 5 6	no interlock; 4 in. head lap, 2 in. side lap double nailed (galvanized) at head of each tile. Closed end eaves tiles; and double roll available
TURNERS ASBESTOS CEMENT CO. LTD., Trafford Park, Manchester, 17								
'Poilite' a.-c. slates	'Duchess' 24 in. by 12 in., 4 in. lap recommended	approximately 4 cwt.	30°	stored surface finish in russet, blue-grey and natural a.-c. grey	7 10 0 approximately for russet and blue (in 2 ton load min.)	9 18 0	34 1 0	fixed on the straight cover system by 2 copper nails (at centre) and one copper disc rivet at tail of each slate; which gives good resistance to wind lifting
SHINGLES								
W. H. COLT LTD., Surbiton, Surrey								
edgegrain Canadian western red cedar shingles	16 in. long by 4 in. to 12 in. wide (random)	1⅔ cwt. (at 5 in. gauge)	30° normal with 6 in. lap and 5 in. gauge can be reduced to 20° with 8½ in. lap and 3¾ in. gauge	after a few months exposure weathers to a permanent silver-grey	7 4 0	11 10 0	32 8 0	sarking and boarding are unnecessary; shingles are twice nailed (at centre) to battens. Provide a very weather tight roof and have a good insulation value when laid, approximate 'u' value .3
CONCRETE TILES								
THE MARLEY TILE CO. LTD., London Road, Riverhead, Sevenoaks, Kent								
plain: 1 flat, 2 cross-cambered 3 Westwold	10½ in. by 6½ in.	14¼ cwt. (at 3 in. lap)	40°	fired granule finish in following colours: light, multi and dark reds, antique, marigold, brick red, dapple green, Cotswold and slate greys, blended dark red, full, dark, russet and golden greens	4 11 0	8 6 6	36 5 6	fixing 2 nails per tile every fifth course. manufactured to B.S.S. 473/1956. all types of tile guaranteed against lamination and decay for 50 years
'Ludlow' interlocking (sides only)	15 in. by 9 in.	8 cwt. (at 3 in. lap)	30°	as above except for multi-red	3 8 0	5 17 0	31 15 0	fixing 1 nail per tile every course. manufactured to B.S.S. 555/1956
'Yeoman' interlocking double Roman	16¼ in. by 13 in.	9 cwt. (at 3 in. lap)	30°	as above	3 8 0	6 5 0	32 3 0	as above
'Anglia' pantiles	15 in. by 9 in.	8 cwt. (at 3 in. lap)	30°	as above	3 13 0	6 12 0	32 10 0	as above

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
THE PRENTON BRICK & TILE CO. LTD., Prenton Dell Road, Birkenhead								
Broseley plain tiles	10½ in. by 6½ in.	12 cwt.	35°	integral colour smooth finish; colours: antique gold, gold, red, grey	3 13 9	7 9 0	35 8 0	
single interlocking	15 in. by 9 in.	9 cwt.	30°	as above	2 14 6	4 18 0	32 17 0	
REDLAND TILES LTD., Castle Gate, Reigate, Surrey								
Redland '49' interlocking (single lap)	15 in. by 9 in.	8 cwt.	30° (with 4 in. lap)	Fired granule finish in colours: green, brown, antique, red, straw, slate grey, silver grey, special Cotswold	2 9 0	3 19 0	31 10 0	fixing, each tile in every alternate course to be nailed (one). all types of tile are guaranteed for 50 years against lamination and decay
Redland '50' Roman interlocking (single lap)	16½ in. by 13 in.	8 cwt.	35°	as above	2 10 6	4 1 0	31 11 6	fixing, each tile twice nailed every third course. Perspex rooflight '50' available to lay with and match '50' Roman tiles
Redland '51' interlocking (single lap)	15 in. by 9 in.	8 cwt.	33⅓°	as above	2 9 0	3 19 0	31 10 0	fixing, as above
Redland '52'	16½ in. by 11 in.	8⅓ cwt.	30°	as above	2 19 6	4 11 0	32 10 6	manufactured to B.S.S. 550/1956. fixing, each tile in every alternate tile once nailed
ESSEX TILE & CONCRETE CO. LTD., Selinds Lane, Whalebone Lane South, Dagenham, Essex								
plain tile (cross cambered)	10½ in. by 6½ in.	—	40°	Essex '54' finish smooth, integral colours: tile red, marigold, black, brown, buff	4 10 0	8 5 0	36 4 0	also available in sand-faced finish only, at slightly less cost; also sand-faced Essex finish in three colours of greens at 12% to 25% more cost. Guaranteed for 50 years against lamination and decay, and against colour fading (except greens)
				sandfaced on Essex '54' finish base, same colours	5 3 0	8 19 0	36 18 0	
double interlocking (sides only)	15 in. by 9 in.	—	35°	Essex '54' finish	2 15 0	4 17 0	32 16 0	as above.
				sandfaced on Essex '54' finish	3 1 0	5 15 0	33 14 0	
English pantiles	15 in. by 9 in.	—	35°	Essex '54' finish only, in the above colours	3 15 0	6 18 0	34 7 0	
LEIGHTON BUZZARD TILES LTD., 158-160, City Road, London, E.C.1								
Bedfordshire plain	10½ in. by 6½ in.	13½ cwt. (with 3 in. lap)	40°	fired granule finish in colours: red, dark red, dark brown, dun, rustic, Cotswold stone, Cotswold 'B' and 'C.' grey-green and marigold	3 11 0	7 6 0	35 0 0	fixing 2 nails per tile every fifth course, on steeper pitches than 40° nailed every third course. manufactured to B.S.S. 473/1056. all types guaranteed for 50 years against lamination and decay
'Leighton' interlocking (sides only)	15 in. by 9 in.	7¼ cwt. (with 3 in. lap)	33°	as above	2 5 0	4 2 0	32 1 0	manufactured to B.S.S. 550/1956. fixing, 1 nail per tile each alternate course
'Grovebury' interlocking double pantile	16½ in. by 13 in.	7¼ cwt. (with 3 in. lap)	30°	as above	2 14 6	4 16 0	32 15 0	manufactured to B.S.S. 550/1956. fixing, 2 nails per tile every second or third course according to conditions

[continued on page 366



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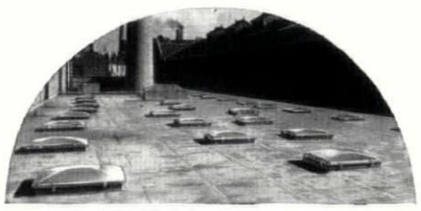

TRANSPORT DEPOT
Wigan Corporation



FIRE STATION
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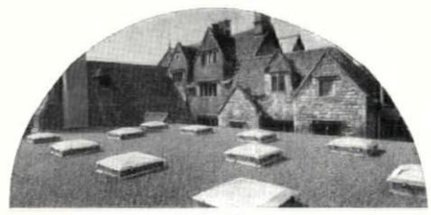

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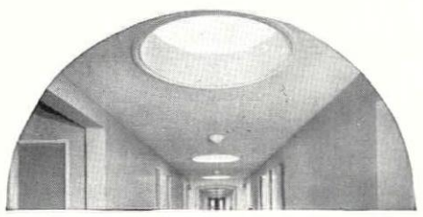
LIGHTING...



FACTORY
Twist Drill Co., Ltd., Sheffield



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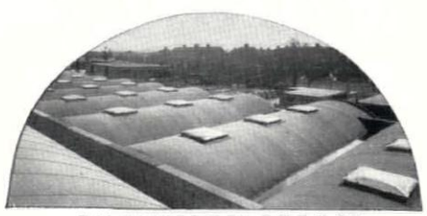

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GLASS BENDERS FOR OVER A CENTURY

 continued from page 364]

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
CRENDON CONCRETE CO. LTD., Thame Road, Long Crendon, Aylesbury, Bucks.								
					£ s. d.	£ s. d.	£ s. d.	
plain Broseley (cross cambered)	10½ in. by 6½ in.	15 cwt. approximately (with 3½ in. lap)	35°	Fired granule finish in colours: red, autumn, plum, nigger, Cotswold grey, Cotswold yellow, green	4 7 0	8 2 0	36 1 0	manufactured to B.S.S. 473/1956 Guaranteed for 50 years against lamination and decay
pantiles	15 in. by 9 in.	8 cwt.	30°	as above	3 8 0	6 10 0	32 8 0	manufactured to B.S.S. 550/1956
ANCHOR BUILDING PRODUCTS LTD., Broomhills Road, Leighton Buzzard, Bedfordshire								
'Ancona' single Roman (hand made)	17 in. by 11¾ in.	10½ cwt.	30°	fired granule finish to concrete in light and dark red, dark brown, Cotswold grey	4 0 0	7 4 0	35 3 0	guaranteed for 50 years against lamination and decay
'Rotunda' double Roman (hand made)	17¼ in. by 14 in.	11 cwt.	30°	—	2 15 0	4 13 0	32 11 0	as above



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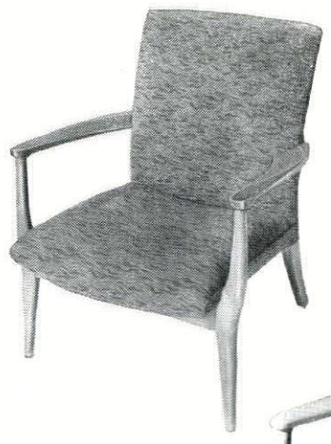

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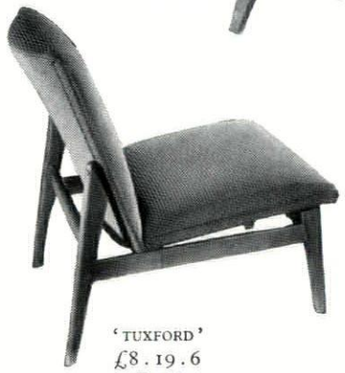

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CVS-361

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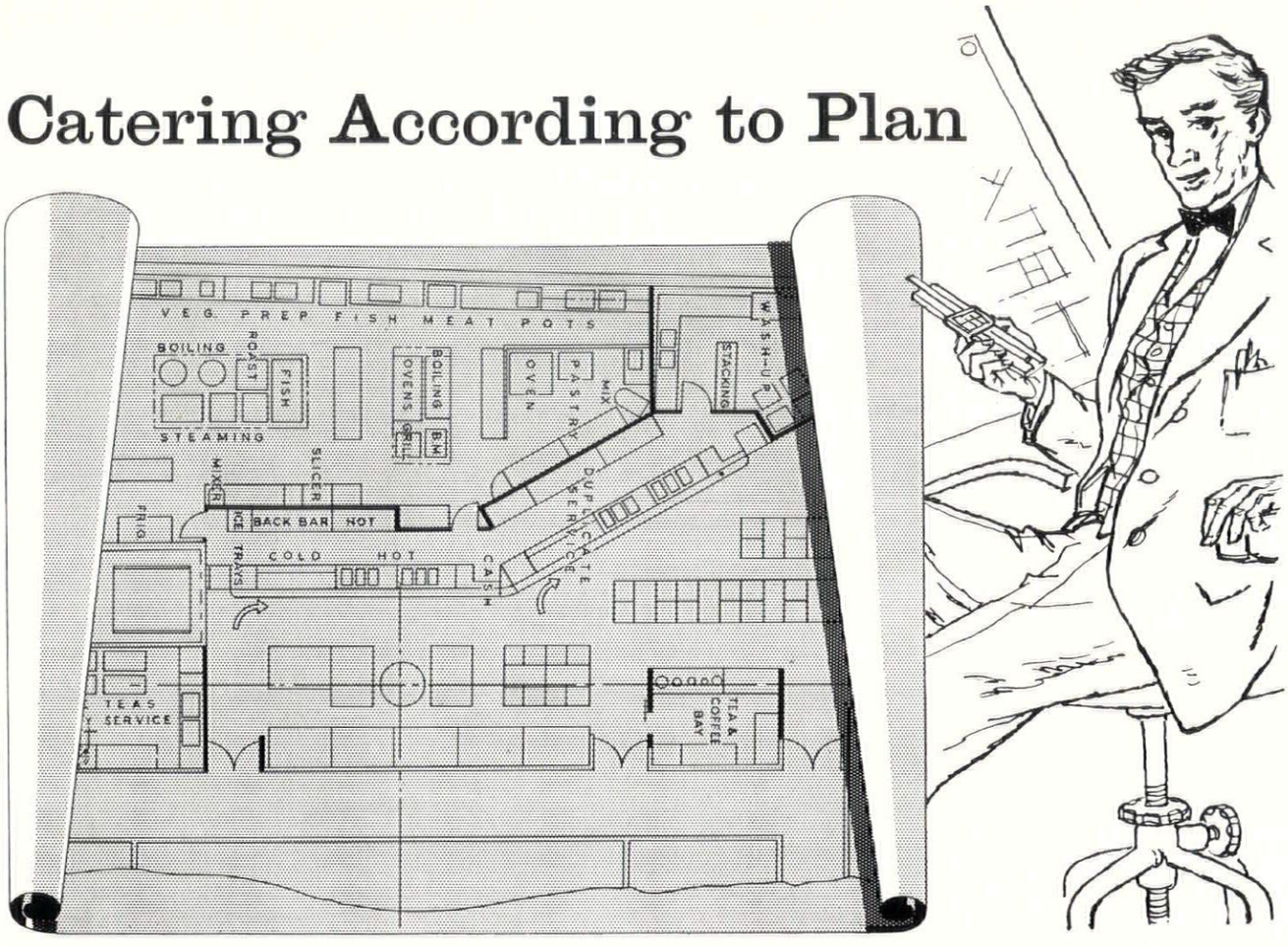

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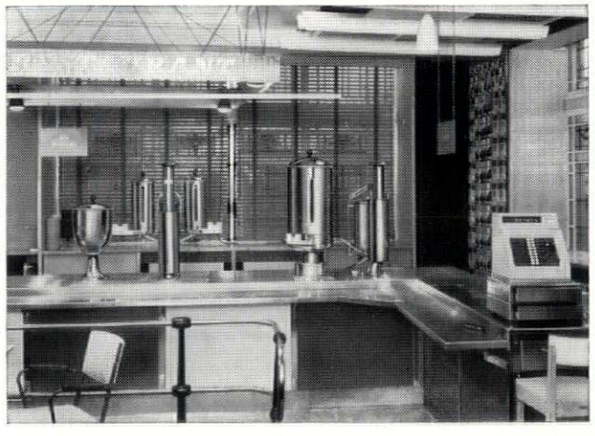

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Before the war one could get ¼ in. thick Scandinavian hardboard, but they have not been generally available since. Now the Bowater organization is to produce this thickness in both standard and tempered grades. The advantages of such a board is, of course, that fixings can be at wider spacings; indeed it can be used without support at all for some purposes. For example, sliding cupboard doors of normal height, where a shaped batten down one edge can serve as both stiffener and door pull. The makers suggest studding at 24-in. centres when used as cladding and they also make the board in 2 ft. and 2 ft. 6 in. widths for ease of hoisting through roof traps to make attic flooring. Other sizes are: 8 ft. by 5 ft., 6 ft. by 4 ft. and 9 ft. by 4 ft. Price: per ft. sup. 8½d. for the standard and 11d. for the tempered grades (approximately).
Bowaters Ltd., Knightsbridge.

Another School System

With the false dawn of 1940's style prefabrication over we are now well into the morning of the technically sound 'kit of parts' concept of architecture—for schools. Herts began (with Hills), the MOE continued (with Hills, Brockhouse and Intergrid), and now the industry is beginning to work under its own steam (fired by official ideas). John Laing and Son have produced a brochure for their system 'Laingspan' — a prestressed system of small columns and deep open web beams, similar to other proprietary systems and developed 'in association with the MOE with A. J. Harris as engineer.' Columns are all 6 in. by 6 in., beams 20 in. deep and up to 33 ft. 4 in. span. The system will go up to four storeys and is, of course, based on the 40-in. module.

The brochure gives fairly full technical information, although some of the drawings need to be puzzled over. Diagrams suggesting ways in which the system can deal with school planning problems, staircase positions and so on would have been useful, likewise some indication of cost.
John Laing and Son Ltd., London, N.W.7.

CONTRACTORS etc

Kingsdale School, Dulwich. Designed by the Chief Architect's Department of the LCC. *General contractors:* Lavender McMillan (Contractors) Ltd. *Sub-contractors: Roofing and asphalt:* Pilkingtons Asphalte Ltd. *Concrete blocks (cellular):* Broad & Co. *Artificial stone:* Qualcrete Ltd. *Structural steel and glazed cladding:* Hills (West Bromwich) Ltd. *Glazed cladding (ground floor, teaching block):* Williams & Williams Ltd. *Plywood infills, panels:* Venesta Ltd. *Wood wool slabs:* Thermacoust Ltd. *Tiles:* Carter & Co. (London) Ltd. *Plaster partitions:* Unit Construction Co. *Glass:* Pilkington Bros. Ltd. *Woodblock flooring:* Vigers Bros. Ltd. *Central heating and ventilating:* Ellis (Kensington) Ltd. *Boilers:* Ideal Boilers & Radiators Ltd. *Electric wiring:* Holliday Hall Son & Stinson Ltd. *Light fittings:* Hume Atkins & Co.; Merchant Adventurers Ltd.; Frederick Thomas & Son; Troughton & Young (Lighting) Ltd. *Plumbing:* Building Engineering Constructors Ltd. *Sanitary fittings:* T. A. Harris Ltd. *Stairtreads:* Modular Concrete Co. *Door furniture:* H. & C. Davis Ltd. *Metal windows:* Hills (West Bromwich); Williams & Williams. *Bells:* Holliday & Son (Electrical) Ltd. *Solid doors:* Manor Joinery Works Ltd. *Joinery:* Humphreys Ltd. *Folding doors:* Esavian Ltd. *Sunblinds:* S. C. Williams & Co. *Stage curtains:* Gerald Holtom. *Plastering:* Alan Milne Ltd. *Plaster ceiling panels:* Claridge's (Putney) Ltd. *Metalwork:* East Sussex Engineering Co. *Locker units:* Custom Built Ltd. *Cork floors:* Marley Tile Co. *Wallpapers:* Arthur Sanderson & Sons Ltd.; Kerridge (Cambridge) Ltd. *Cloakroom fittings:* Childs Constantine Co. *Clocks:* Gent & Co. *Lettering:* Drakard & Humble Ltd.

Garratt Green School, Wandsworth. Designed by the Architect's Department of the LCC. *General contractors:* Messrs. Tersons Ltd. *Sub-contractors: Pile foundations:* Soil Mechanics Ltd. *Plastic letters and numerals:* Drakard & Humble Ltd. *Exposed aggregate shuttering:* Tercrete Ltd. *Laminated timber beams:* Rainham Timber Engineering Co. *Cork tile flooring:* H. E. Richards (Flooring) Ltd. *Wood block and strip flooring:* Vigers Bros. Ltd. *Suspended ceilings:* Sundeala Board Co. *Goods hoist:* James Ritchie & Sons Ltd. *Heating, gas, water and ventilation services:* Norris Warming Co. *Electrical installation:* Thorpe & Thorpe Ltd. *Ironmongery:* Childs Constantine & Co. *Swimming bath filtration and chlorination plant:* Bell Bros. (Manchester 1927) Ltd. *Stone paving:* Liverpool Artificial Stone Co. *Granolithic paving, precast concrete fountain head:* Kendells Flooring Ltd. *Hardwood handrail, treads and risers and sliding folding screens to assembly hall:* Samuel Elliott & Sons Ltd. *Structural steelwork and balustrade and gates:* R. Smith (Horley) Ltd. *Terrazzo work:* Mosaic & Terrazzo Precast (Staines) Ltd. *Aerial mast:* St. Peters Metal Works Ltd. *Dais and display case in assembly hall:* Cookes (Finsbury) Ltd. *Frostproof tiling:* A. H. Herbert & Co. *Diving boards:* Gilliam & Co. *Patent glazing and roof lights:* Faulkner Greene & Co. *Sanitary fittings:* Adamsez Ltd. *Timber windows and doors:* Rippers Ltd. *Metal opening sashes:* Crittalls Manufacturing Co. *Exposed aggregate slabbing:* Stent Precast Concrete Ltd. *Bricks:* Sussex & Dorking Brick Co. *Structural steel:* Rom River Co. *Glass:* Aygee Ltd. *Waterproofing materials:* Tretol Ltd. *Boilers:* Ideal Boilers & Radiators Ltd. *Light fittings:* Hume Atkins & Co.; Frederick Thomas & Co.; General Electric Co. *Casements:* A. Beanes & Co. *Plastering:* Whetstone Ltd. *Tiling:* Payne & Baker Ltd. *Wallpapers:* Wallpaper Manufacturers Ltd.; John Line & Sons Ltd. *Clocks:* Gent & Co. *Sliding door gear:* P. C. Henderson Ltd.

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[continued on page 370

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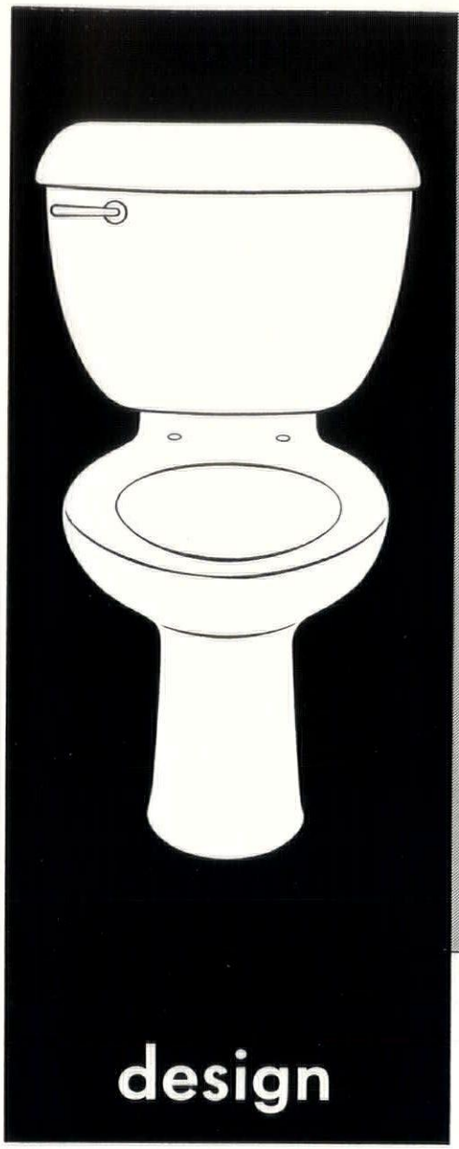

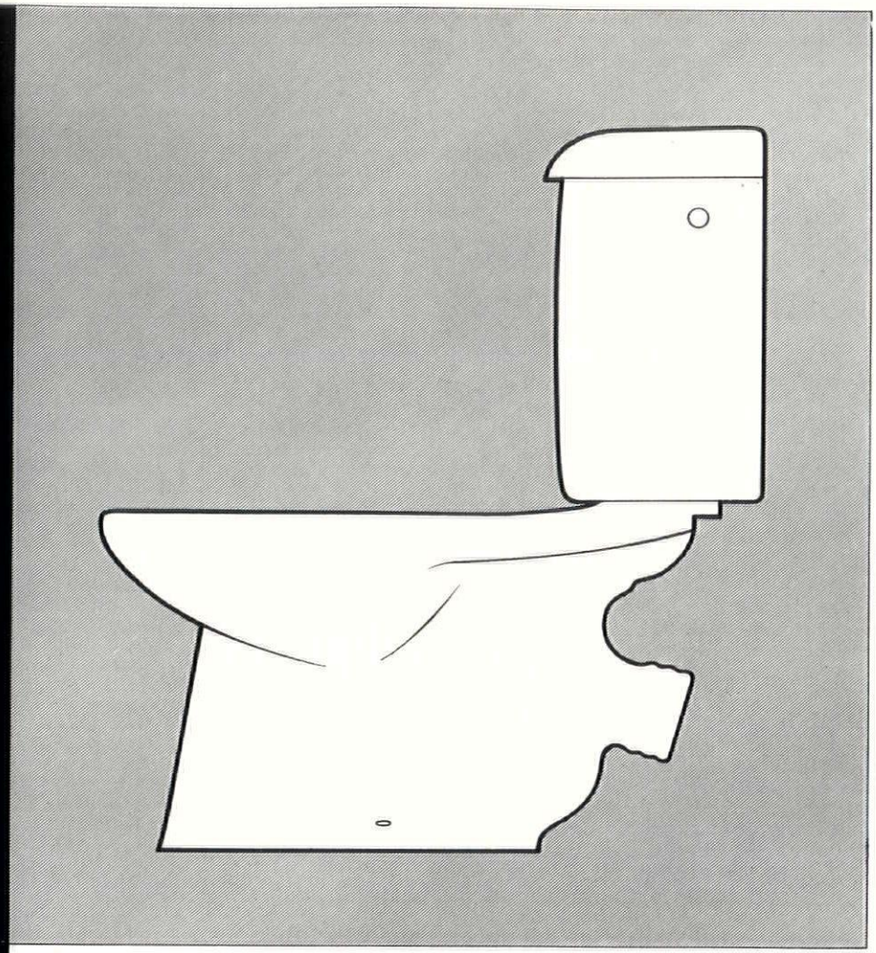

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continued from page 368]

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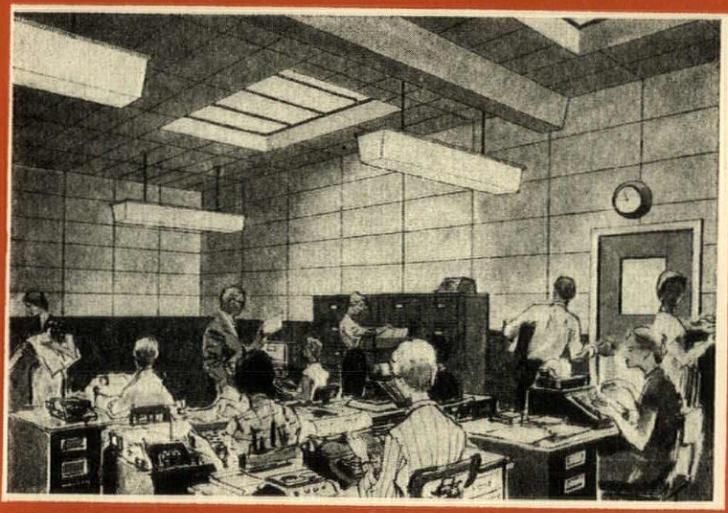



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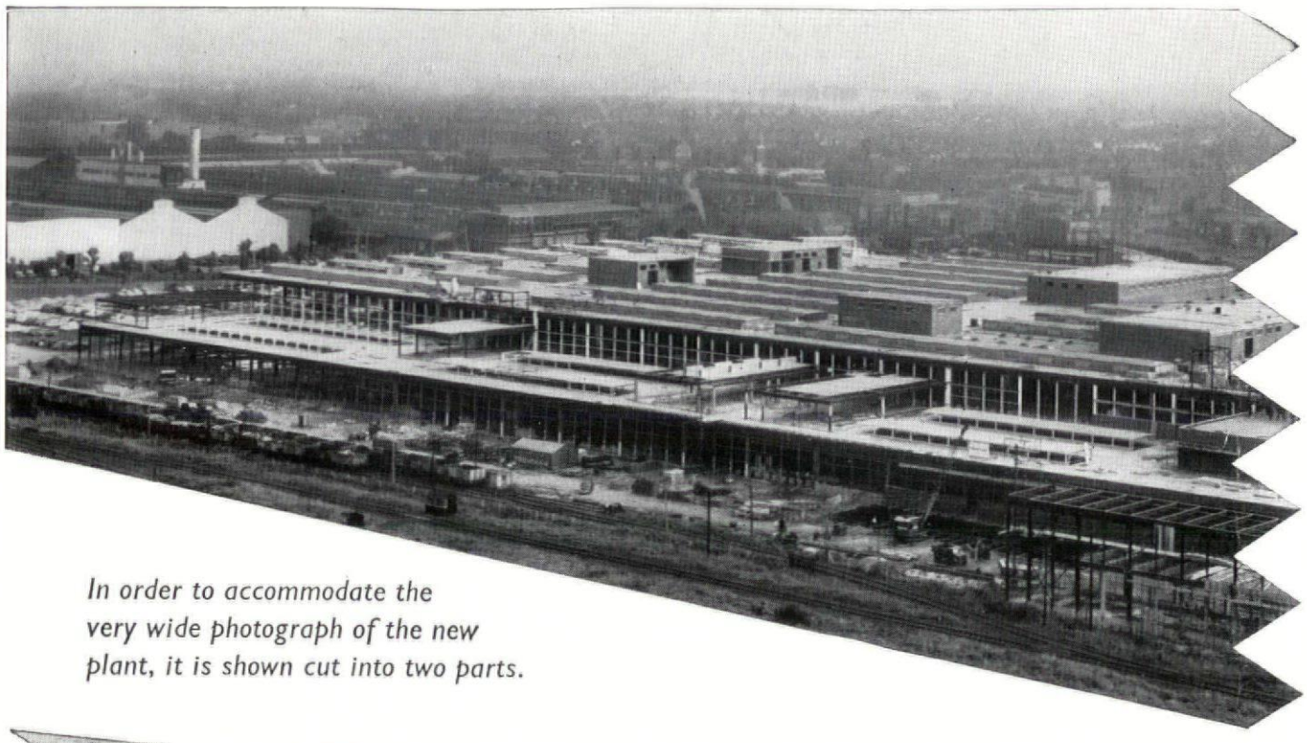

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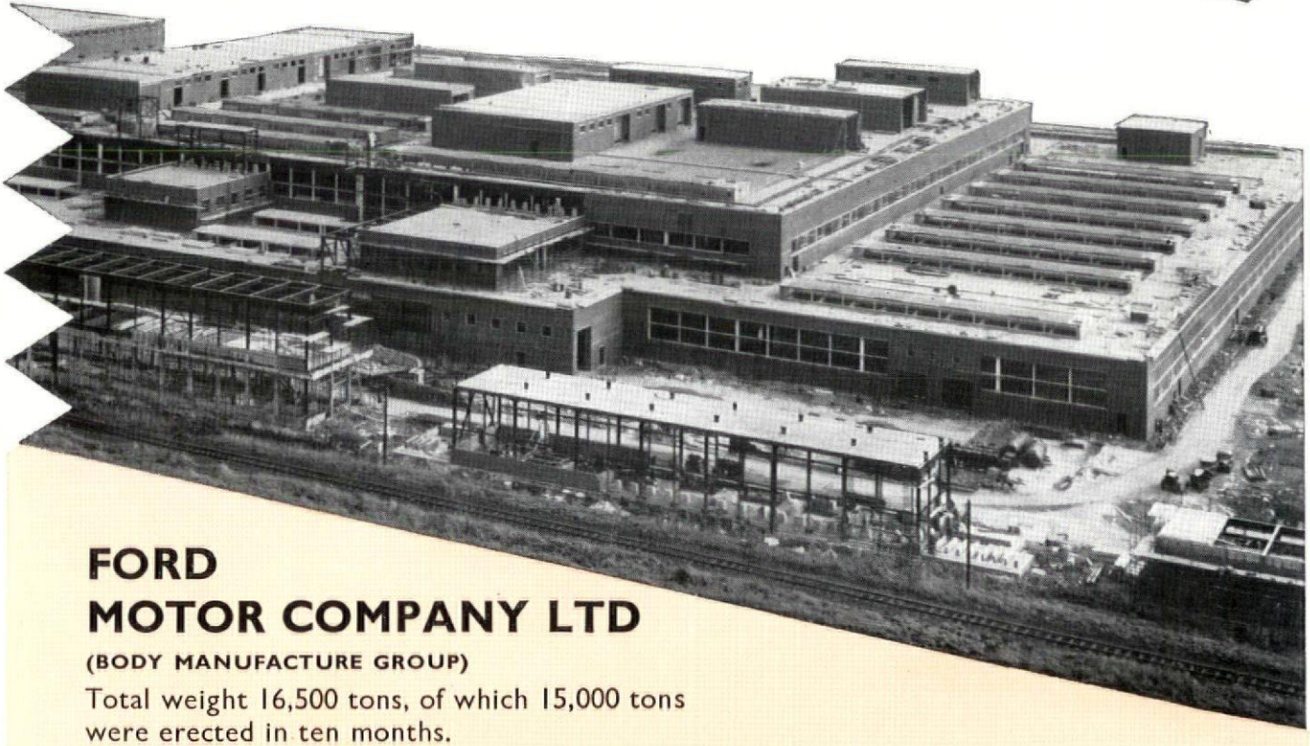

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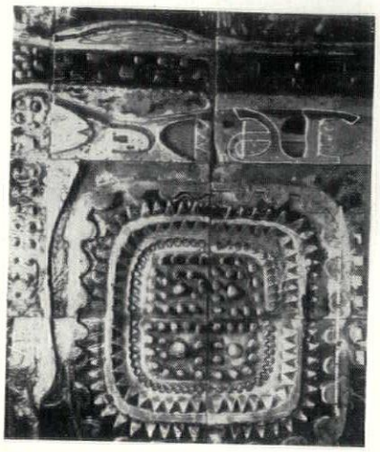
Volume 125 Number 749 June 1959



The Cover shows one of the dominant corner-repeats from a pattern of prototype concrete cladding-panels devised for an LCC development in Wilson Grove, Bermondsey, by the artists Anthony Hollaway and William Mitchell. Not only does this raise architect-artist collaboration to a new key (for England at least) but it also extends the widening exploration of the aesthetics of concrete surfaces. In this case the material is plastic-skinned over most of the pattern, but exposed, untreated concrete surfaces will be found discussed on pages 386-397 of this issue in an article by John Eastwick-Field and John Stillman.

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CORRESPONDENCE

Skirting Heating

To the Editors.

Sirs,—Mr. John Voelcker's article in your February issue (Skill—Whole House Heating) is most interesting and the opening paragraphs in particular very informative.

Under the heading 'Skirting Heating' though, he seems misleading and his advice is not confirmed by the writers' extensive experience of this system. Although skirting heaters have greater outputs per foot when their output is either wholly or partly convected warm air, there is always the problem of wall marking, as with any type of heater emitting warm air. For this reason, at least one manufacturer says that his radiant-convector skirting heaters should only be installed under the cills of low windows if the general wall finish is such as is likely to mark.

The pundits agree that radiant heat achieves comfortable conditions with a lower air temperature, so Mr. John Voelcker's contention that radiant heat is not best emitted at skirting level seems doubtful. The old adage 'warm feet—cool head' is well served by this type of heating when radiant skirtings are used on outside walls of an average room—usually all that is needed. Another advantage of the wholly radiant panels is that they produce a more comfortable effect than the convective type.

In his concluding remarks, Mr. Voelcker correctly points out the advantage of glass letting the sun in '. . . at the right time of day . . . ' But he does not remind his readers that during the evening hours, when a house most needs heat, extensive glass areas, single or double, lower the room temperature considerably.

Yours, etc.,

GILBERT R. JACKSON & PARTNERS
Tunbridge Wells,
Kent.

John Voelcker replies:

I am grateful to Gilbert R. Jackson & Partners for their observations particularly since I have little experience of baseboard heating.

My remarks were based on the assumption that ideally convected heat should be introduced at low level and that radiant heat should be emitted from large low temperature surfaces. The observations made show how this sort of assumption must be modified in practice.

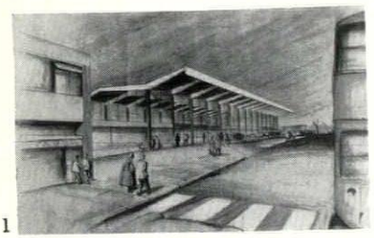
Regarding the use of sunlight I believe that in my original draft for the article I added that curtains are normally drawn over windows in the evening and that these to some extent increase the thermal resistance of the panels when heat loss is greatest.

MARGINALIA

Barking Concourse

Work should begin this year on new buildings to accommodate passenger facilities at Barking Station.

most notable among them being the concourse, 1, a reinforced concrete structure built entirely over the tracks. Comparisons will certainly be drawn between this structure and that of the front concourse of the *Termini* Station, Rome, but this one, not being backed up on to a large and almost windowless block behind



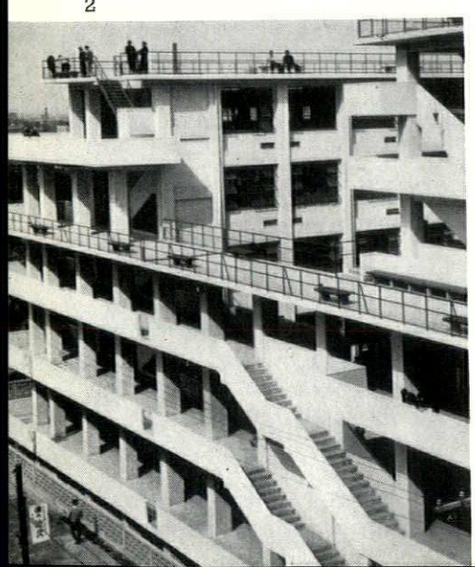
1

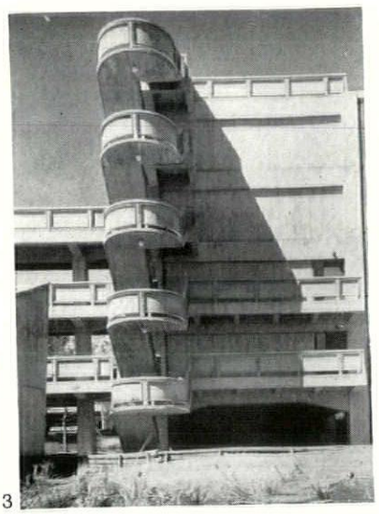
will, in practice, create an entirely different effect, effectively transparent in all directions, and not only along its longitudinal axis. However, irrespective of any resemblances to other stations, this new block, like the prototype waiting room furniture designed by Robin Day (AR Nov., 1956) is an earnest of the attempt being made by Eastern Region of British Railways, under its architect H. H. Powell, to raise its general standard of design.

A University is Circulation

The idea of presenting the visual image of university buildings as a system of spaces and circulation ways, is known in the West through very little beside the Smithsons' Sheffield University project, but it seems to be the coming thing in Japan, and a series of recent University buildings there have flourished their circulations on the exterior of the block, rather than concealing it within. Whatever local pressures there may be (such as a largely pedestrian student body) producing this trend, the result suggests that Japanese architects are keen to get full value out of it. The extreme case, which has forced the trend on public attention is afforded by blocks Six and Seven at Meiji University, linked by a multi-storey screen of stairs and balconies, 2. More distinguished architecturally, if less immediately exciting, than this work of Sutemi Horiguchi, are two other new academic buildings in the Tokyo area; a block of lecture rooms, etc., for Siejo University by Makuto Masuzawa, 3, and another vast scheme, this time for Hosei University by Hiroshi Oye, with a dramatic system of ramps on its south façade, 4. Yet in spite of the obviously greater finesse of these two projects, Horiguchi's work at Meiji, where he is a teacher, ultimately commands more attention simply by virtue of its extremism, the uninhibited manner in which it exploits the possibilities of creating a new kind of university image, a new kind of collegiate space consisting

2





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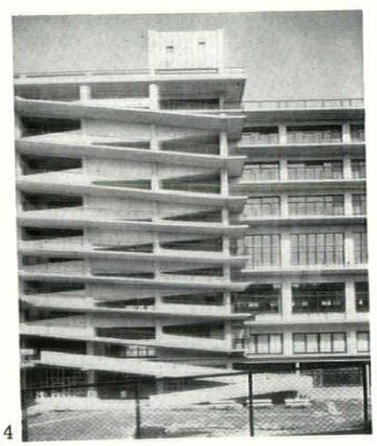

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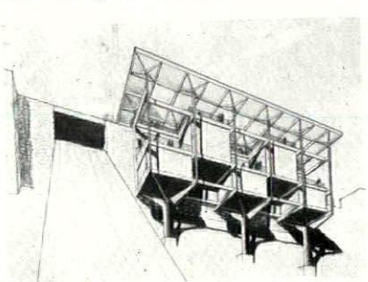
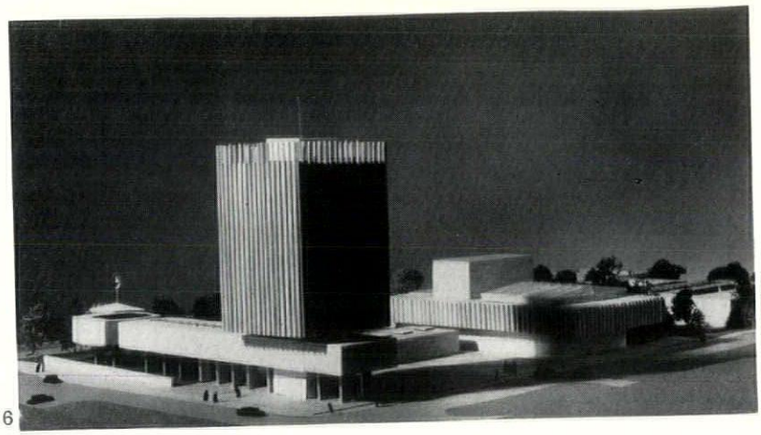
of superimposed decks and concourses. The west elevation of this schemes, shows that there is still a good deal of university below ground level, and suggests that with subterranean car-parking, this kind of planning (or should one say sectioning?) might be a workable solution to university buildings on urban sites in the west as well.

Aluminium Tree-House

Progressive Architecture's annual design-awards and citations tend—and they are probably right—to go to projects whose merits are solid, rather than spectacular. Among the 1959 awards, however, there is at least one design that is conspicuously both—the Tree-house Restaurant, 5, devised by the architects Steinhardt



5 *Progressive Architecture*



6

and Thompson to satisfy the needs of clients rejoicing in the name of the Duquesne Inclined Plane Company, operators of a fine old funicular railway overlooking the Allegheny river at Pittsburgh. The restaurant will create a new and additional *raison-d'ê.re* for this ancient mechanical tourist attraction, whose highly decorative Victorian winding gear will be seen in a well in the centre of the restaurant. The out-branching structure, in aluminium, can be brought down on to only three footings on the front, because of difficult soil for piling, but still contrives to bring the viewing-terraces well forward of the edge of the bluff.

Hampstead Civic Centre

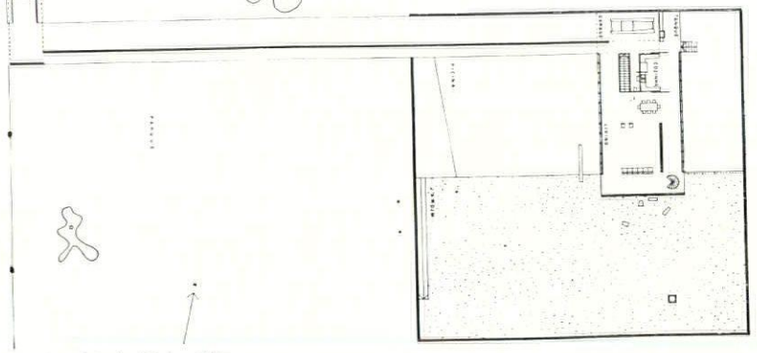
The appointment of Basil Spence as architect for the new civic centre in Hampstead was a salutary demonstration of what can be achieved by local architectural 'ginger groups'—in this case the Hampstead Society formed, in the first place, specifically to combat the risk of a safe, neo-Georgian town hall. That they have achieved their aim is amply shown by the preliminary model of Basil Spence's scheme, 6, with its office tower standing up above the present entrance to Swiss Cottage underground station at the corner of Avenue Road. The Mayor's suite is seen running off to the left, with the council chamber at its end. The assembly rooms are in the block on the right, with the swimming pools further down the slope, and the new library is, in this view, invisible behind the office tower. Underground car-parking will also be invisibly located (in all views) behind the tower block, provided the LCC's final solution to the Swiss Cottage traffic problem makes this feasible.

Two-way Split on Roman Themes

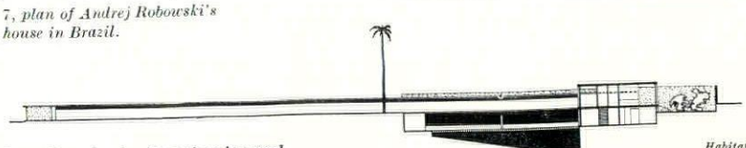
As it has entered the common mind of modern architecture, Hadrian's Villa at Tivoli is chiefly a great wall, slashing across the countryside in a grand, if meaningless, architectural gesture, but it had originally a portico running its full length on either side, and provided a split-plan access corridor, with gentry on one side and slaves on the other. A neat machine-age version of this theme has recently been projected for a week-end house in Brazil by Andrej Robowski, who uses just such a wall to divide pedestrian and vehicle access from road to house, 7. However, having split things one way, he splits them again the other way, and the forecourt of the house drops down a floor, before reaching swimming-pool level, 8, with a private cinema under the car-port. Such semi-subterranean planning was also, of course, a device of Roman domestic work, but more in the Mannerist phase, as in the nymphaeum of the Villa Giulia, which is also a swimming pool one storey below datum.

Site for a Monument

Photomontages which were shown at the Brussels *Expo* 58, but have not otherwise been seen by the British public, enable us to form some idea of the way Reg Butler's celebrated *Monument to the Unknown Political*



7, plan of Andrej Robowski's house in Brazil.



8, section, showing the swimming pool.

Shower Song

Bending and turning and gaily carolling
Loving the feel of the tropical rain
Leaving to Leonard the job of controlling
Once she gets in she just wants to remain.

Gone are the quirks of the old fashioned mixer
Everything else but never just warm,
Thermostat Leonard is fitted to fix her
And keep the temp. fast at divinity's norm.

"Keeping the temp. fast" is just what Leonard control by thermostat does. It turns stone-cold and stinging-hot into steady warm — immovable until the bather moves it. It makes the shower, the Leonard shower, the best bath in the world. That's why the Leonard valve has come to be specified by architects everywhere not just for showers in hospitals and schools, but also in factories and mines and ships.

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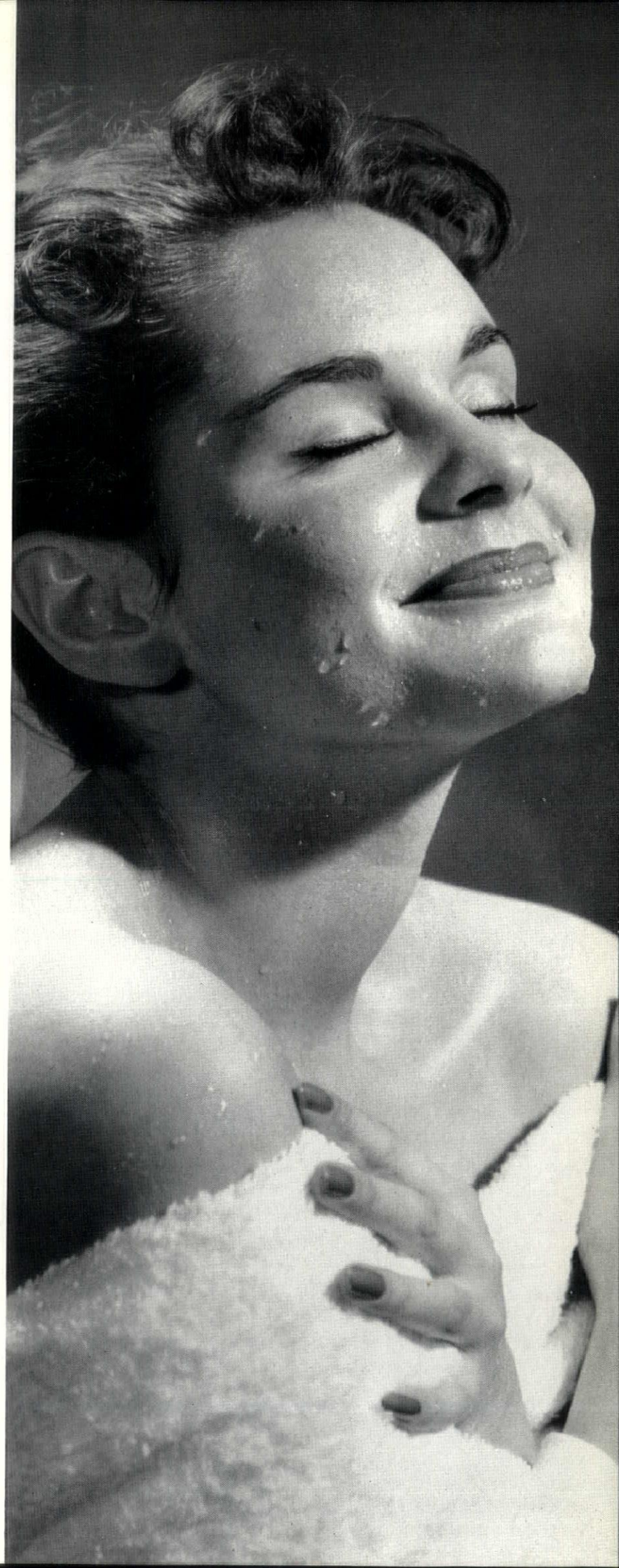
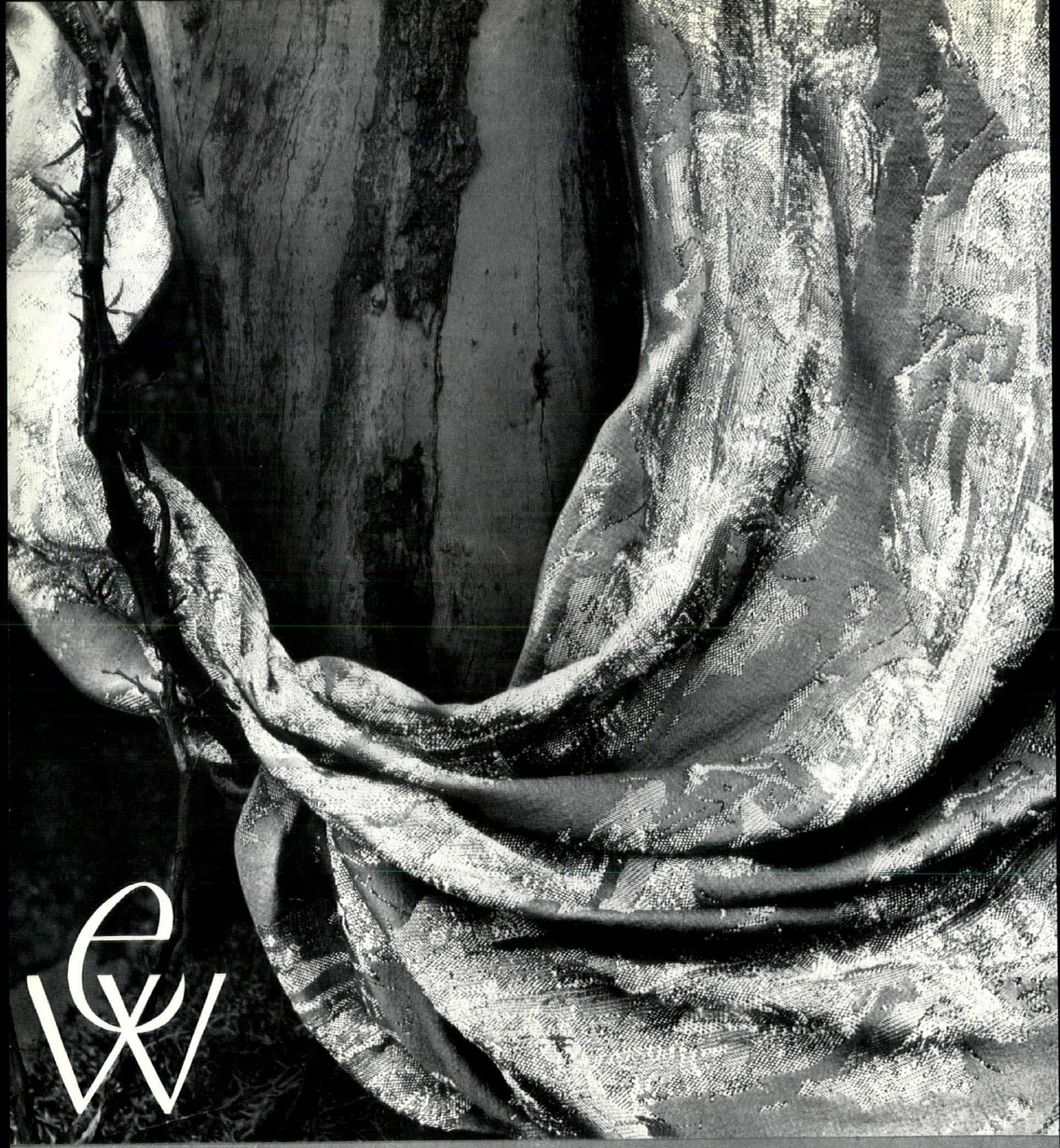




≪ INGLEWOOD ≫ DESIGN CENTRE AWARD 1959 · A TAPESTRY WEAVE BY

EDINBURGH WEAVERS

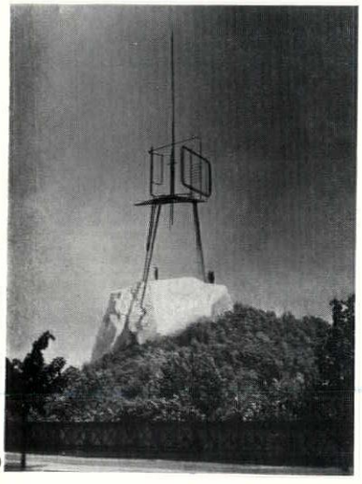
103 MOUNT ST · LONDON W1

Prisoner will look on its site, now settled, in West Berlin. The actual setting will be the Humboldt-Hohe, a natural hill, 9, in the district of



9

Wedding, north-east of the Tiergarten, and close to the border of the eastern zone. Site-work has yet to begin, but should do so shortly, and will involve the removal of two concrete bunkers that still survive on top of the Humboldt-Hohe. The fabrication of the steel-work will be done in Germany, and the bronze figures on the 'plinth' will be begun in England, but cast in a foundry in Berlin.



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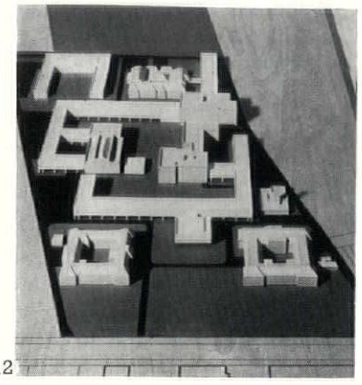
One of the most valuable aspects of these photomontages is that, properly interpreted, they give a better idea than has been available before, of the actual scale of the Monument, by showing it in an urban setting. When it is realized that the fence in the foreground of 10 is head-high to a pedestrian on the pavement, both the height of the Humboldt-Hohe, and the extent to which it slopes back to the base of the monument, can be understood and, with that, the size of the structure itself.

Anti-Axial

In the study of English University planning that appeared in AR, October, 1957, the University of Hull was noted as an example of the way in which a purely axial plan hampers organic growth, and results in ridiculous lopsided forms during the process of delayed completion of its parts. The site, in particular, does not lend itself to an axial scheme at right angles to the road frontage, and when Sir Leslie Martin and Colin St. John Wilson were invited recently to consider the future development of the University, they produced a plan, 12, in which the fragments of



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unfinished axiality are subsumed in a new concept of ribbons of buildings creating an asymmetrical grouping of collegiate courtyards. Besides affording a better setting for university life and a comprehensible plan on the site, the new scheme also offers a greater potential floorspace, and a means of dealing with the specialized buildings needed for specialized teaching functions.

OBITUARY

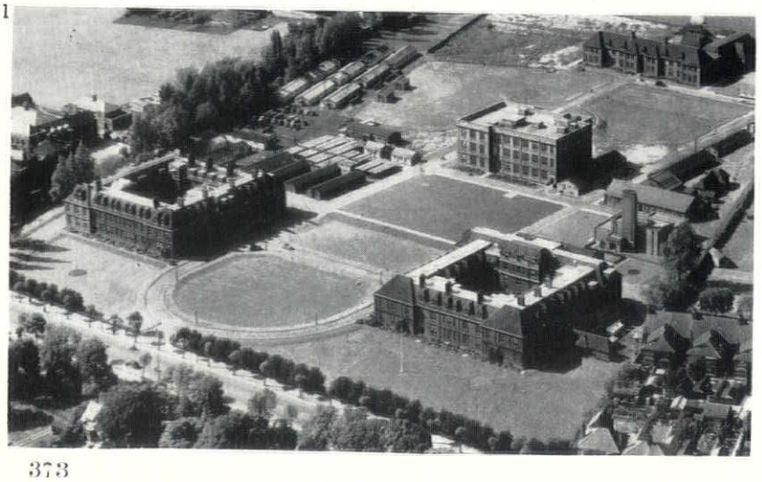
George Pepler—1882-1959

Sir George Pepler, who died in Dorset on April 13, was in at the birth of statutory town planning in Britain during the enthusiastic years preceding the First World War. Eighteen years old when the century began, George Pepler left school at Cambridge to be articled to a surveyor, setting up his own plate when he became 21. He absorbed experience quickly and conceived a passion for the English countryside, which Rupert Brooke was expressing in poetry, and he in every kind of practical prose from technical reports, to memoranda on preservation, or appeals for the purchase of playing fields. Ten years later he was one of the group of architects, engineers and lawyers who founded the Town Planning Institute and set the tone of future legislation to control the use of land, which has remained with us ever since.

It combines idealism with a spirit of reasonable compromise; the acceptance of control and regulation provided that the individual can back his fancy; a preference for landscape over cityscape; a respect for the family and also for local government; a real love of justice and fair play.

Pepler was himself the ideal referee. As a civil servant, as an inspector, as an adviser, and as an examiner. His obvious integrity made him just as popular abroad; and he came to preside at conferences in New York, Mexico City, Vienna, and The Hague. He was not a linguist, nor could he communicate easily in the language of design. Nevertheless, he exported everywhere the British way of planning—a concept of freedom within authority. On the technical side his contribution began in the field of cottage and garden city layout and ended with something far more advanced, namely, the machinery and methods of regional planning. Architecturally, George Pepler was conservative, although never obscurantist (he was elected an Honorary Associate of the RIBA in 1937); but in any matter concerned with the size of towns, the movement of population and industry, the use of green belts, parks, commons and playing fields and, above all, *the opportunities that could be made* for good housing, or for architectural and landscape design, he had a rare combination of vision and administrative sense.

W. G. Holford



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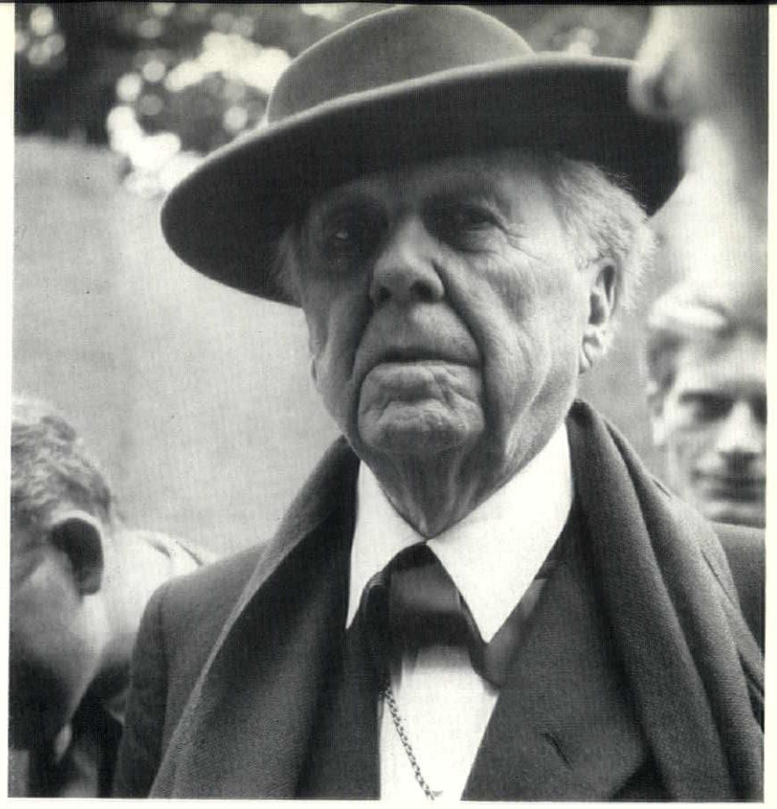


Frank Lloyd Wright died on April 9, almost in sight of his ninetieth birthday—the unpublished photograph, above, shows how he looked when visiting a building site with young English architects on his last visit to England in 1956. His unique career, both as a pioneer of modern architecture, and as a master of its maturity, will be the subject of a critical appreciation in a forthcoming issue of the AR. His influence in every part of the world is well known, but even readers of the AR may not know that he used the phrase 'Outrage in the name of public authority' in a telegram of support for the Review's Wirescape *feature (December 1951) and thus gave us the title of our first special issue against Subtopia* (Outrage, *June 1955). Frank Lloyd Wright's last book, 'A Testament' was published by the Architectural Press in May.*

INTELLIGENCE

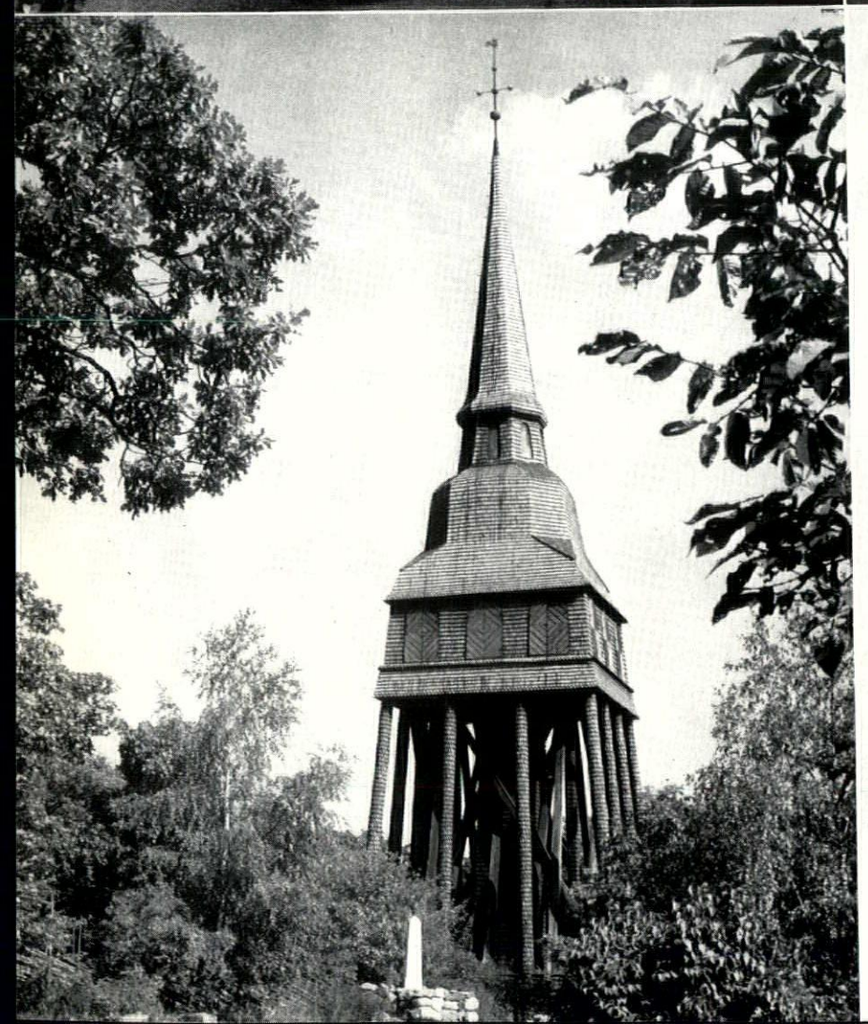
The Imperial College of Science and Technology has announced the appointment of Miss Sylvia Crowe as landscape consultant for the development of their central site in South Kensington.

ACKNOWLEDGMENTS

MARGINALIA, pages 371–373: 1, British Railways Eastern Region; 9, 10, Reg Butler; 13, John Donat. FRONTISPIECE, page 374: Eric de Maré. LODGING HOUSES AT CAMBRIDGE, pages 378–385: Magdalene 1, 3, 9, Galwey, Arphot; 4, 6–8, 10–11, Edward Leigh. Clare 12, Edward Leigh; 13–22, Galwey, Arphot. OUT OF THE FORM, pages 386–397: Frontis, 47, Carl Nesjar; 1, 28–36, Galwey, Arphot; 4, 13–20, 22–25, 37, 38, Stillman and Eastwick-Field; 5, Commercial Studios; 40, Shell Photographic Unit; 41, John Maltby; 46, K. Teigen Fot. PICCADILLY CIRCUS, pages 398–401: Browne, Arphot. PAPER MILL AT NORTHFLEET, pages 402–406: Galwey, Arphot. PEACOCK ROOM, pages 407–414: Frontis, 1, 8, Freer Gallery of Art, Washington; 3, National Buildings Record. VALLEY OF TOWERS, pages 415–417: David Bowes Lyon. INTERIORS, pages 418–421: 4–7, Alfred Cracknell. DESIGN REVIEW, pages 422–423: Kold Christensen. CURRENT ARCHITECTURE, pages 424–426: 1, John Pantlin; 3, Colin Westwood; 4–6, Felix Fonteyn. MISCELLANY, pages 427–432: Exhibitions, 1, Stearn & Sons (Cambridge); 2, Fitzwilliam Museum, Cambridge; 3, 4, Marc Vaux; 7, Oscar Savio; 8, Sam Lambert. Bell Towers in Europe, 3, 7, 11–13, Eric de Maré; 2, 4–6, 9, Antikvarisk-Topografiska Arkivet. Counter Attack, Nairn, Arphot.

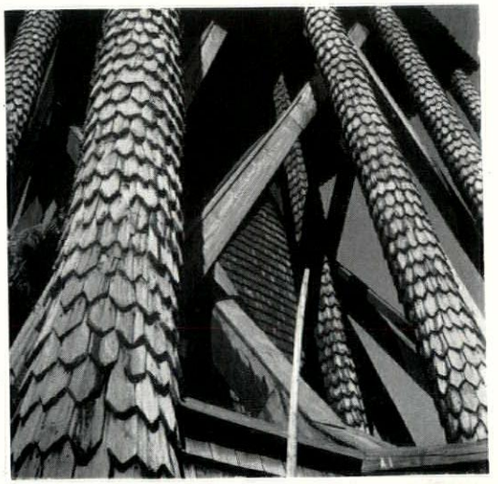






TIMBER TOWERS

As unique a regional architecture as the *trulli* of Southern Italy or the round towers of Ireland, the timber belfries of Sweden are among the glories of European peasant art. Two basic types dominate, the tower form, as in 1, from just north of Stockholm, and the open trestle, of which 2, at Söderkoping, is the oldest known example, dating from 1582. Whether simple, or sophisticated, as in Nils Urberg's twelve-pillared baroque masterpiece form Hällestad, 3, the trestle type always has its main structural timbers protected by the distinctive tarred oak shingles seen in 4, a detail of the Hällestad bell-tower, as Eric de Maré points out in his note on p. 429.



Geoffrey Grigson

. . . . GROOVES OF CHANGE

The Modern Movement in architecture is generally taken to stem from an acceptance of 'the Machine'—a view now disputed. In the article below, Geoffrey Grigson reflects on an earlier approach to machinery on the part of poets, contemporary with the high peak of the Functional Tradition in industrial buildings, and the way in which poetry succeeded in acclimatizing some of the elements of the industrial environment.

Who exactly is the Industrial Muse? At the moment she is, no doubt, the nymph or goddess Turn-over. Her special shrines are in the offices of advertising agents; her special devotees, her acolytes (her temple prostitutes?) are slick draughtsmen for whom the art schools have been created, and the slick copywriters for whom the dons created long ago the schools of English language and literature in the crumbling stone universities; and their bosses.

At first, if we can trust to the principle of selection Mr. Warburg has followed in his recent anthology,* Power appears to have been the Industrial Muse, or at any rate the aboriginal element of modern industry to attract poets and excite the popular admiration. Goddesses appear, of course, in different disguises; and it is at times impolitic—even dangerous—to mention their real name. Turn-over—or Dividend, or Profit—is now a nefandous name. Power, though, was innocent enough in the eighteenth century and early nineteenth century, whether for poet or industrialist, since it glorified man and promised increased benefits to mankind. And Power might at times be worshipped as Steam, Steel, Engine; might be addressed as Watt, or Fly Wheel, or Cyclops, as Railway, Iron Horse, or Delirious Motion.

The Beam-Engine sitting in the mines—in the coal mines. Savery before Watt or Trevithick or Stevenson:

> *Sagacious* Savery! Taught by thee
> Discordant elements agree,
> Fire, water, air, heat, cold unite,
> And listed in one service fight,
> Pure streams to thirsty cities send
> Or deepest mines from floods defend.

These lines are by the Rev. John Dalton (1709–1763), poet, sermon-writer, sometime fellow of the Queen's College, Oxford, a civilized cleric describing the mines near Whitehaven in Cumberland.

> High on huge axis heav'd, above,
> See ballanc'd beams unweary'd move!
> While pent within the iron womb
> Of boiling caldrons pants for room
> Expanded Steam, and shrinks, or swells,
> As cold restrains, or heat impells.

Steam is Virtue; Steam drained the coal mines of

* *The Industrial Muse. The Industrial Revolution in English Poetry. An Anthology compiled by Jeremy Warburg* (Oxford University Press, 15s.).

Cumberland or Durham, the copper or tin mines of Cornwall. Steam also manufactures, Steam gives employment, and gives dignity:

> And must we say 'that soul is wanting here?'
> No; there he moves, the thoughtful engineer,
> The soul of all this motion; rule in hand,
> And coarsely apron'd—simple, plain, sincere—
> An honest man; self-taught to understand
> The useful wonders which he built and plann'd.

—which is Ebenezer Elliott, from 'Steam at Sheffield,' which he wrote in the eighteen-thirties.

Steam also is more frankly romanticized. If Steam Power is at first (and simultaneously continues to be) Virtuous Power in human service, Virtue sloughs off, when the Power walks out of the mine precincts and out of the factory, and begins to locomote; when it comes home to the wonder of the ordinary man in his railway and his steam ferry. Steam Power, in wonderful and more than natural Locomotion, now joins the romantic energy troupe—joins Thunder, Lightning, Fire, Earthquake, Volcano, Avalanche, Tempest, and Human Will.

Poetry in this department is a little thin. One recalls Thackeray's Irishman in the Crystal Palace in 1851 looking at

> —staym Ingynes
> That stands in lines
> Enormous and amazing
> That squeal and snort
> Like whales in sport
> Or elephants a-grazing—

and crying for celebration by the poets:

> O would before
> That Thomas Moore,
> Likewoise the late Lord Boyron,
> Thim aigles sthrong
> Of godlike song,
> Cast oi on that cast oiron!

Mr. Warburg hasn't any poet quite to compare with J. M. W. Turner (but then painters are more simple-minded) in celebrating this romantic energy or triumph of Machine Power. Painter at once of light, nature, self, energy, and the first decades of Engine Movement, Turner celebrated iron, steam, steamer, locomotive, in the late 'thirties and 'forties. In the *Fighting Téméraire* of 1838, the Steam Tug is so much more important than the old sailing ship (though Turner's intention is always misinterpreted). In *Rain, Steam and Speed* of 1843, the new Locomotive sweeps along the new Viaduct, overhauling—Turner's mind has its lapses into the corny—the natural speed of the hare.

Still, there was Wordsworth, lamenting critically on the one hand, exulting upon the other—

> Yet do I exult,
> Casting reserve away, exult to see
> An intellectual mastery exercised
> O'er the blind elements; a purpose given,
> A perseverance fed; almost a soul
> Imparted—to brute matter. I rejoice,
> Measuring the force of those gigantic powers
> That, by the thinking mind, have been compelled
> To serve the will of feeble-bodied Man.
> (*The Excursion*, 1814)

There was Tennyson, more observant of flower than metal, a poet actually squashed in his optimism on to the very first train from Liverpool to Manchester in 1830, thinking that the wheels (which he couldn't see) ran in grooves, and not on rails, and writing—

> Not in vain the distance beacons. Forward, forward
> let us range,
> Let the great world spin for ever down the ringing
> grooves of change.
> Thro' the shadow of the globe we sweep into the
> younger day:
> Better fifty years of Europe than a cycle of Cathay. . .

He liked his 'grooves' so much that he never changed them.

What Mr. Warburg's selections make remarkably clear is that the Industrial Muse came home to poets (and people) above all in the Railway—that is to say, in what is not really her greatest, her potentially most virtuous, or her potentially most malignant manifestation, but only the one which is ubiquitous, obvious and domestic.

The threshing-machine invaded the farms. *The fly-wheel with a mellow murmur turn'd*, and induced a few neo-Virgilian reveries. The Machine was otherwise shut away behind the factory wall or concealed up in the Midlands and the North. It was the railway, Tennyson's symbol of the whole affair, which really invaded and possessed the mind; and which isn't dispossessed even now.

Railway poems persist—Wordsworth (1833), Tennyson (1842), Charles Mackay (1846)—

> —'No poetry in Railways!' foolish thought
> Of a dull brain, to no fine music wrought—

Landor (1849), D. G. Rossetti (1849), W. C. Monkhouse (1865), W. E. Henley (1876), R. L. Stevenson (1885), Kipling (1894)—

> —And all unseen
> Romance brought up the nine-fifteen—

Rupert Brooke (1913), D. H. Lawrence about the same time, Stephen Spender (1933), and W. H. Auden's train of the 'thirties, the Night Mail which passes *cotton grass and moorland boulder, Shovelling white steam over her shoulder*—

> In the farm she passes no one wakes
> But a jug in a bedroom gently shakes.

Last of all, now the railways are contracting, now their familiarity in our lives is less at a peak, John Betjeman (1954) exudes a nostalgia for the Metropolitan, and its early electrification in 1905—

> Early Electric! Sit you down and see,
> 'Mid this fine woodwork and a smell of dinner,
> A stained-glass windmill and a pot of tea,
> And sepia views of leafy lanes in PINNER,—
> Then visualize, far down the shining lines,
> Your parents' homestead set in murmuring pines.

Mr. Warburg's aim in *The Industrial Muse* isn't so very searching. It is rather a 'lit.' affair—which is a pity—than one which involves as well either a deeper imagination or sociology. He asks a question rather too simply affined to the too simple pylon aesthetic of Mr. Cecil Day Lewis—how long does an art take to accept and absorb new elements of environment into itself?

If Mr. Warburg's question isn't profound, it is

partly the fault of the poets; whose answer still remains illuminating, if dismal.

Acceptance (or acknowledgment) is slow, except by a few livelier minds. Approbation is soon mixed with dislike of the unfamiliar. Optimism is followed by critical pessimism; but there is a gradual settlement, a gradual change from predominant images (as of Power, Wonder, Speed), from such strong images which now and again recur, to images of the environmental element's now domestic normality. Observe that Auden's Night Mail is *she*; or that a local train becomes peace in time of disturbance:

> 'There's peacetime in that train.' One hears it disappear
> With needless warning whistle and rail-resounding wheels.
> 'That train's quite like an old familiar friend,' one feels.
> Siegfried Sassoon, in 1939.

The change, in other words, is gradual from the open eye to the eye which doesn't see, or doesn't bother, or bothers only for its own purpose.

Indeed, the rare thing in Mr. Warburg's survey of Industry and the Muse is critical imagination about the accompaniments or consequences of Industry, or of the Machine—such critical imagination as appears, in different strength, in Blake, Wordsworth, Clough, Hopkins, Auden (*New Year Letter* and *The Age of Anxiety*). In small part the poets' musing is sociologically moral and aesthetically critical; in most it is trivial. Early and late it is true that the poets' industrial musing concerns itself with Town (=Machine) versus Country (=Innocence, or Nature), or with industrial mess eating the country, or with bad conditions; but this is not a great deal else than bringing up to date an old feeling explicit long before the rise of an industrial society.

It is something to keep alive the moral recognition of an antimony, of course; and *per se* the arts are certainly in favour of the agreeable against the disagreeable. Yet mightn't one fairly conclude from Mr. Warburg's survey that these arts, whether poetry, painting, music, sculpture (or even architecture, building by individual building) have their own fish to fry? Mightn't one conclude that these arts are extremely poor allies for any special discipline which affects society, any specific, *ad hoc* cause such as the attack upon environmental beastliness or the promotion of environmental seemliness?

If I had to clear a country overrun with stinking ogres I should not ask the help of poets, who have as much interest in ogres as in nymphs, in evil as in good, in ugliness as in seemliness; who are concerned, in brief, to maintain contrary states. If I wished to re-house and re-plan and purge and beautify industrial or bourgeois suburbs the last person I should call upon is not only Mr. Betjeman, but any poet.

If, indeed, you could get at the Muse of the poets—or artists in general—and could thoroughly cross-examine her, she would petulantly ask you how white can be understood without black, how Venice can be appreciated without Glasgow; and she would point (unless she was in one of her arty-sentimental-do-gooding phases) to the dependence of the good building on the bad—until you, as an architect, might as well turn for support to William McGonagall, the Scottish Homer, whom Mr. Warburg includes most properly:

> O beautiful city of Glasgow, which stands on the river Clyde,
> How happy should the people be which in ye reside:
> Because it is the most enterprising city of the present day
> Whatever anybody else may say.

Out of the whole revolution in the means of production, in attendant, and in consequent living, only the Steam Engine (most of all the Steam Engine upon wheels) sharply and lastingly drove itself into the Common Mind.

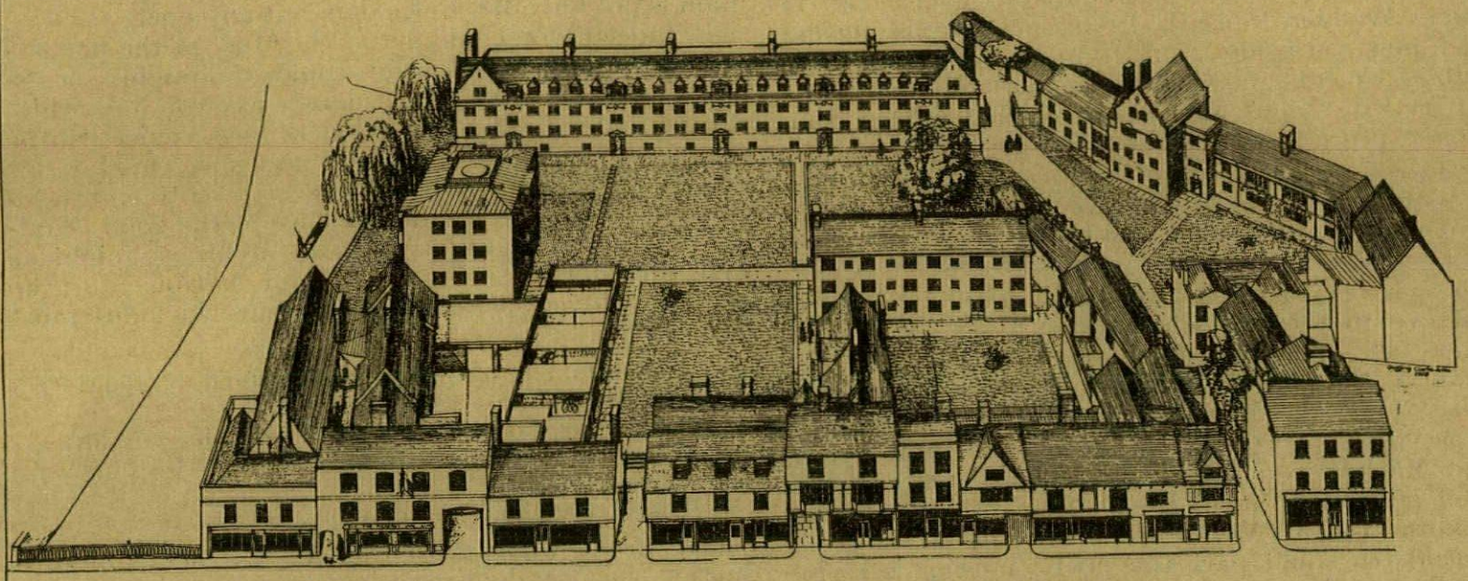
That appears the showing of Mr. Warburg's book.

Everything else—electric power, electric illumination of old darkness, motor-cars, aeroplanes, sanitation, urbanism or the industrial mess which has now to be cleared—has been accepted without surprise as an outcome more or less 'natural.'

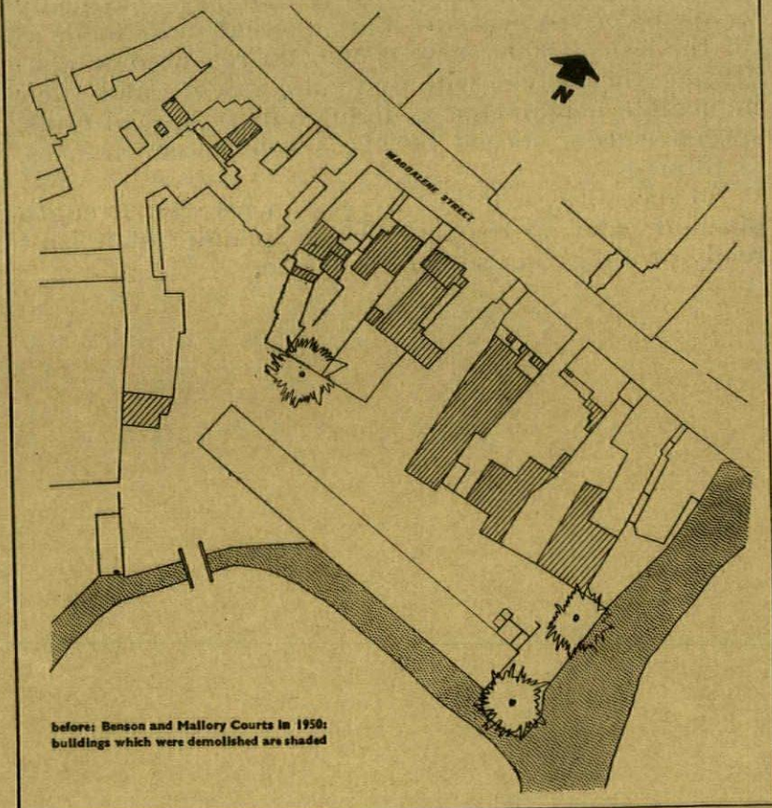
If the Common Mind has shuddered a little at nuclear power, it has done so only because that power can so hugely kill. The truth is that psychologically we do revert to cycles of Cathay; that most men, as for the last 50,000 years, or 500,000 years, go on concerning themselves with individual living and their immediate neighbours, as indifferent to special tools, special causes, special beliefs, special circumstances, as to mess.

No specialist, who has to rely on his own strength of mind—and no Utopian—will applaud; but it isn't really or altogether so bad an estate.

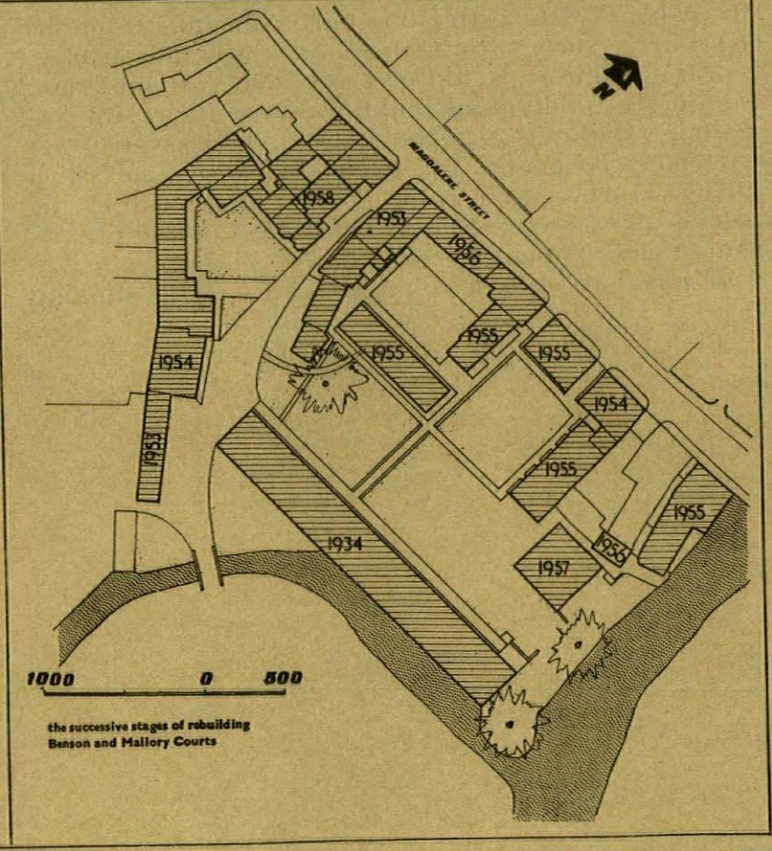
Mallory Court & Benson Court
MAGDALENE COLLEGE



In an attempt to provide more accommodation for undergraduates in the centre of Cambridge, two colleges, Magdalene and Clare (pages 382-385) have financed the building of lodging houses which they lease to landladies who run them independently. The Magdalene scheme is a development of the pre-war plan. In 1934 Sir Edwin Lutyens built Benson Court on the west side of the site and it was then intended to complete the court with three similar buildings. The present scheme has retained and restored many of the old cottages and the shops in Magdalene Street which are among the few remaining domestic buildings of old Cambridge, and has linked them with lawns and pedestrian walks, and with two new buildings, to form a series of intimate courts and precincts. The entire scheme, except for the River Building, was agreed with the College authorities before any work was started. The drawing above, prepared in the architect's office, shows the new buildings and conversions, illustrated in detail on the following pages, in the style of old engravings of the College.



before: Benson and Mallory Courts in 1950: buildings which were demolished are shaded



the successive stages of rebuilding Benson and Mallory Courts

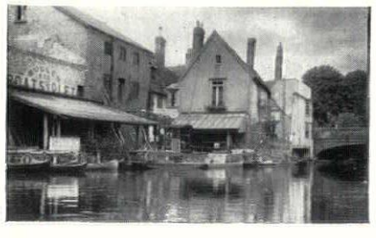
LODGING HOUSES FOR MAGDALENE COLLEGE, CAMBRIDGE

ARCHITECT	**DAVID ROBERTS**
associate architects	**Christopher Grillet and Geoffrey Clarke**



1

1, the River Building from the bank of the Cam, with the converted boathouse beyond. The River Building is faced with buff bricks and the projecting bays are of white-painted weatherboarding.
2, the same view as above before reconstruction.



2

The old buildings have white painted walls and grey woodwork. The New Building on the east side of Benson Court, and the River Building are of load bearing brick cross-wall construction with buff facing bricks and white painted woodwork. This construction, together with very thick concrete floors, provides the quiet necessary for study. Each set of rooms has double doors, the outer in pirana pine. The top lit circular staircase in the River Building is of Hornton stone. Each student, whether in the new or converted buildings, has a bedroom and sitting room, and shares bathroom and small kitchen.



3

3, Mallory Cottages, on the south-east side of Mallory Court, converted in 1953.
4, before conversion the buildings were derelict garages and cycle sheds.



after

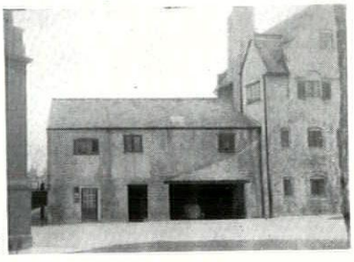
before

4

5, the vinegar factory (on the right) was converted into students' sets by Butterfield's pupil, Redfern.
6, opposite, the garage adjoining the vinegar factory has now also been converted. The new building on the right was completed in 1955.

before

after



5

7, old shops fronting Magdalene Street, before conversion.
8, looking from the Lutyens building to the back of the Magdalene Street shops.
9, Benson Court, looking across the lawns to the New Building and the converted shops, which now have students' sets on the upper floors.



7

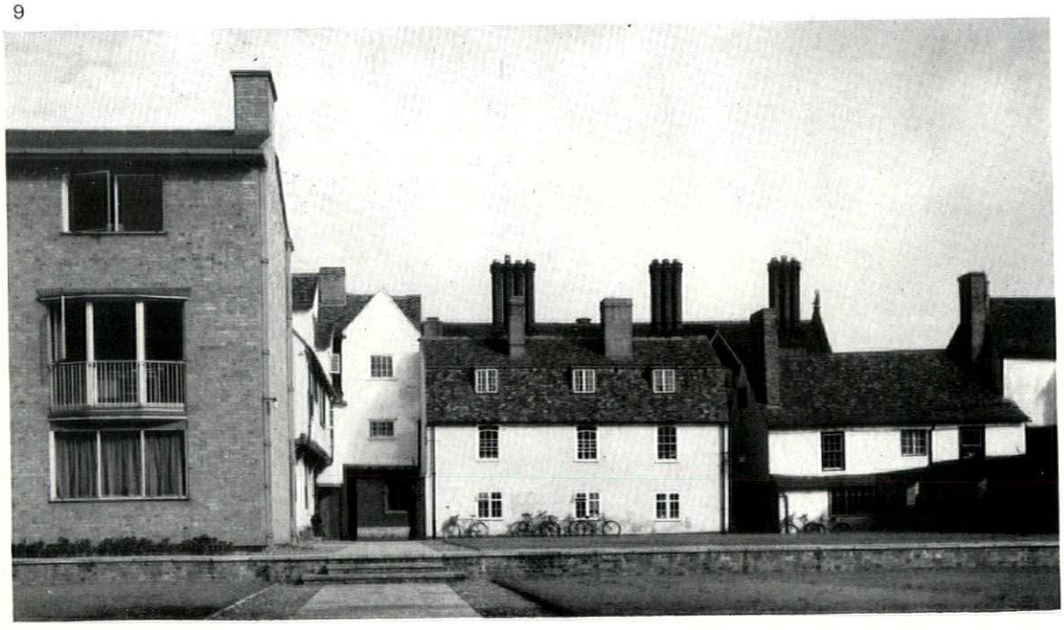


8

before

after

9





10

before

after

10, looking south down Benson Court before conversion, with the Lutyens building on the right.
11, opposite, Benson Court today, with the River Building in the background and the tower of St. John's College chapel beyond.



6



11

LODGING HOUSES FOR

CLARE COLLEGE, CAMBRIDGE

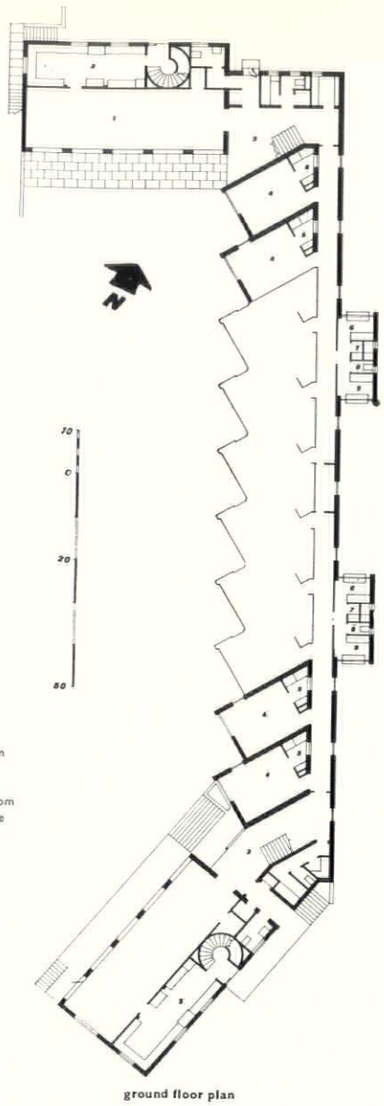
ARCHITECT	DAVID ROBERTS
associate architects	Christopher Grillet and Geoffrey Clarke



12, the lodging houses from the south, with one of the breakfast rooms and housekeepers' flats on the right.

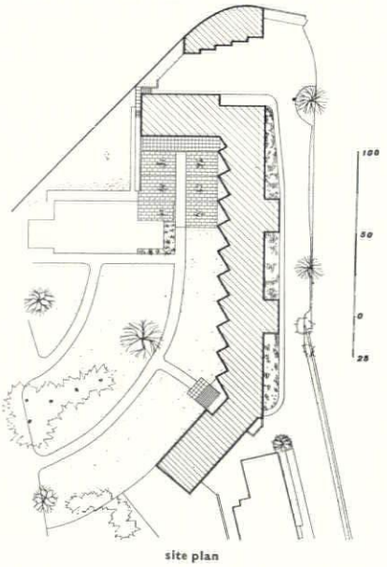
Although this appears to be one building, to avoid long corridors and an institutional atmosphere, it is in fact divided into two lodging houses by a party wall. Each house has its own breakfast room with a housekeeper's flat above.

The site, which slopes steeply to the south, is set back from the road, and contains several old houses which



Key
1, breakfast room
2, kitchen
3, entrance hall
4, bed-sitting room
5, washing alcove
6, bathroom
7, showers
8, w.c.
9, kitchenette

ground floor plan



site plan



13

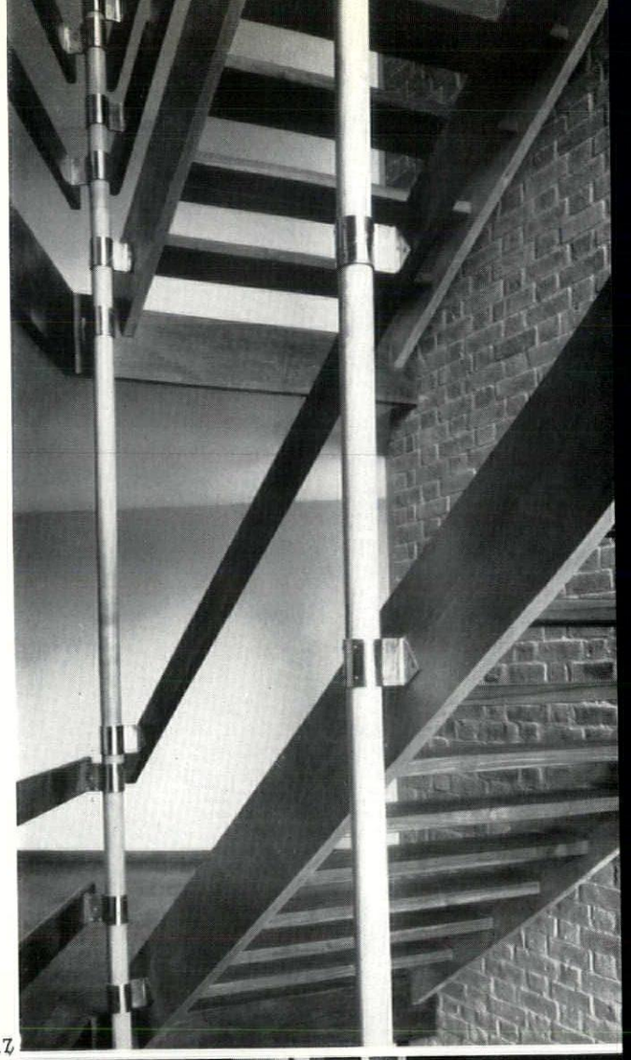


14

13, the north breakfast room with housekeeper's flat above.
14, the main building from the north, with projecting towers housing bathrooms and showers. The facing bricks are light yellow.

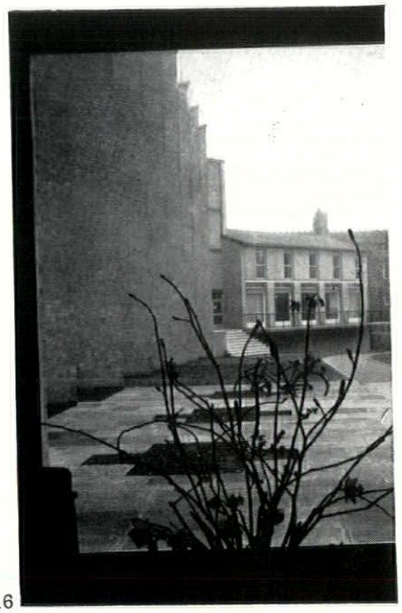


15, the bed-sitting room block from the top of the Castle Mound. The serrated façade gives each room a view to the colleges across the river.



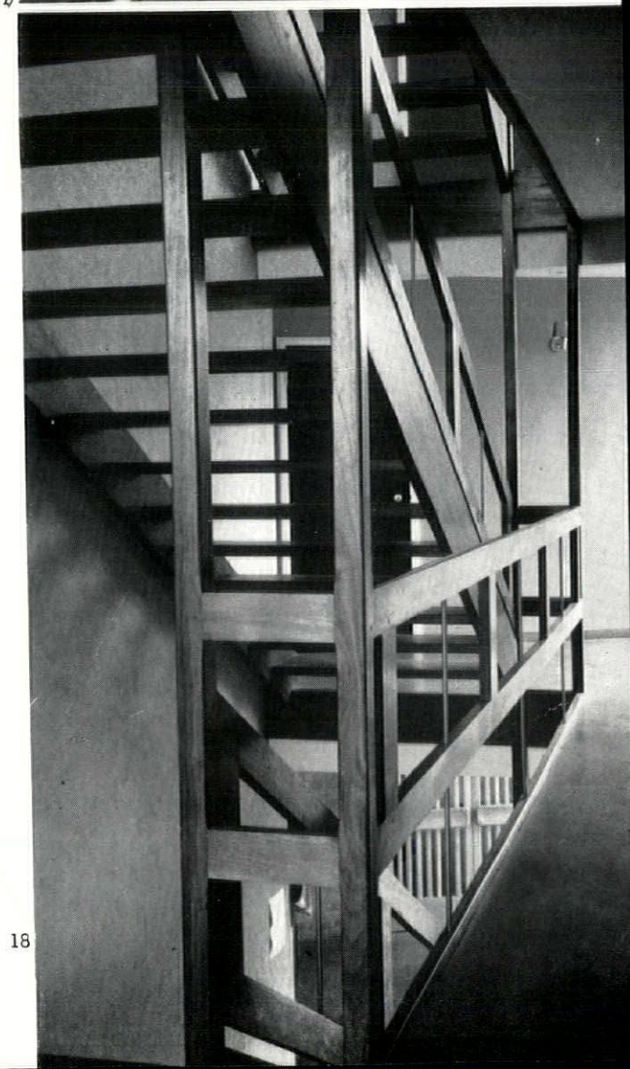
17

have also been converted into sets. The building runs across the north east of the site and the serrated south east wall gives each bed-sitting room a view across Magdalene College to the river and St. John's and King's Colleges beyond. Access corridors are on the north, with bathrooms and kitchens in projecting towers. A new road will later run along this side of the building. The construction is of load bearing brickwork with concrete floors covered with cork tiles. Each bed-sitting room has an alcove for storing



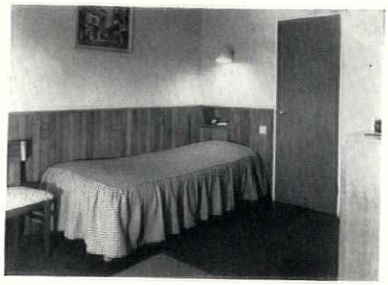
16

16, the return walls of the bed-sitting rooms are of unrelieved brickwork.
17, the staircase in the north block has treads and handrails of American walnut. The poles are of elm, held by brass clips.
18, the south staircase. Landing and corridor floors are of cork tiles.



18

clothes, and every five rooms share a bathroom, showers, w.c.'s and a small kitchen. The breakfast rooms are also used for meetings and dances and have polished wood block floors. The housekeepers' flats communicate directly with the first floor of the main buildings.



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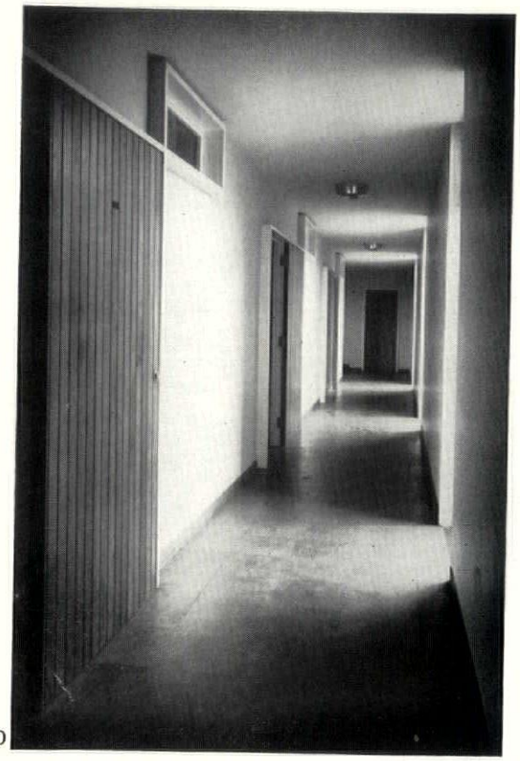


20

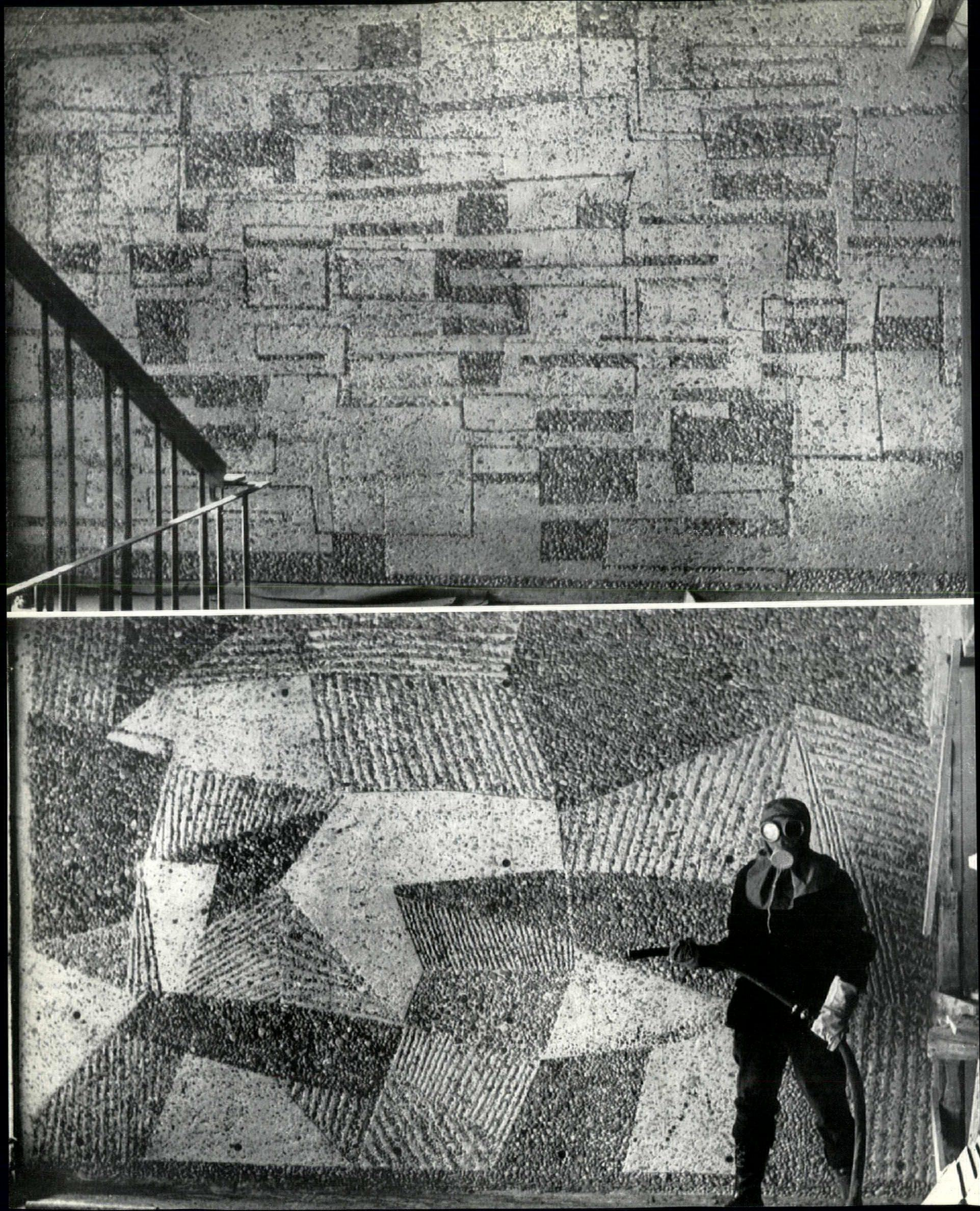


21

19, a typical bed-sitting room. The door leads into an alcove with basin, wardrobe and trunk rack.
20, upper floor corridor. The rooms have two doors with a small lobby between, to give quiet. The small window lights the washing alcove.
21, interior of the south breakfast room.
22, the north breakfast room.



22



The legend of concrete as the smooth white material of the Machine Aesthetic is dead, and architects are facing up to its true nature as an agglomerate. In the article below, the variety of possible surfaces for exposed concrete is considered and illustrated, from the roughness of beton brut *to the sophistication of sand-blasted* Naturbetong, *seen opposite in two decorative panels executed by Carl Nesjar in a recent office block in Oslo; the upper panel designed by Odd Tandberg, the lower by Nesjar himself.*

John Eastwick-Field and John Stillman

OUT OF THE FORM

To leave concrete unfinished is the latest vogue. It is not a new artifice—Corbusier, amongst others, has frequently shown that exposed concrete surfaces can have useful aesthetic qualities; qualities alien to, but not less valid than, those which derive from the refinement which generations of architects have sought. It is a matter for conjecture whether the current fashion results from Corbusier's exploitation of the visual qualities of concrete or from an appreciation of the less self-conscious character which it has when used in large engineering projects, where for purely practical reasons it is left exposed. It is questionable too whether when taken out of the context of Mexico and Marseilles, and used somewhat haphazardly in less exuberant buildings (and in a dirty climate) untreated concrete will maintain the intellectual appeal it has at present.

Those, however, who see in exposed concrete an opportunity to express in one material the formal and the tactile characteristics of their buildings (as in the Conference Hall at Unesco in Paris) will not be so concerned if the weathered concrete is not itself of particular beauty; directness of expression means more than any satisfaction which may be derived from clothing the structure in superficially pleasing materials. It has become important to be aware of the form of the building and the material of which it is made as much from the inside as from the outside; so that it becomes possible to recognize simultaneously the nature of the material, the shape of the building and the means by which the shape is achieved.

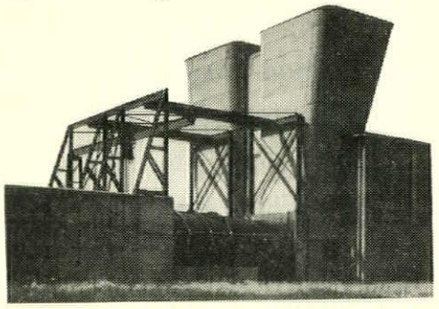
Throughout history one can find examples of rough 'external' materials, such as brick and stone used internally. Japanese houses, which are a current source of inspiration, are themselves a good example of the continuity of materials and ordered patterns from the interior to the exterior. Broadly speaking, however, external materials used in

this way have been frowned upon; and even in modern buildings internally exposed brickwork has been considered rude and uncompromising, whilst concrete has been thought positively shocking.

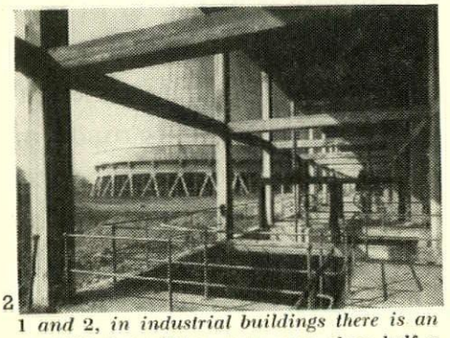
Perhaps there is something about concrete which sets it apart from other materials. It may, of course, have many kinds of surface, but whatever they may be the lay mind thinks of concrete as a rough blotchy material of dreary colour which is best kept out of sight. It happens, however, that just because of the difficulty of producing a satisfactory smooth concrete, architects have exploited and accentuated the very characteristics which constitute part of the common dislike of it: that is, they have exaggerated what would normally be considered defects, or poor workmanship, such as the rough imprint of the wood, irregular edges, ridges from the joints, blow holes, and what the site knows as 'gravy' spreading from one lift to the next: or less drastically they have made use of shutter boards merely to produce a marked pattern of lines.

To invoke such eccentricities is a revolt against the characterlessness of so much plain smooth concrete, and an attempt to make a virtue of imperfections; but it is also a romantic use of concrete, one that appeals because of the associations it has with a recognizable material and a familiar scale—the wooden board—but which ignores the aspirations of most engineers and of technologists who aim to produce concrete as smooth as possible.

There are, in fact, examples of concrete made with an exceptional degree of smoothness which by eliminating complications of surface texture give added meaning to the forms they create. The pilotis in Niemeyer's Hansa flats, 22, would not make the same impact unless they possessed this pebble-smooth quality. Such a finish can, however, only be achieved by taking very special care, and in ordinary circumstances large areas specified 'fair face' would be marred by the defects which we have referred to: by unevenness between lifts and the variations in density which cause ugly weathering. If, however, smooth regular concrete could be made economically without limitations of size, there might be less argument for the current aesthetic idea of the concrete wall 'as found'—which implies the reproduction of rough board shuttering. There would at any rate be new aesthetic possibilities to investigate. By way of an example of smooth concrete there are the precise facing panels by Aalto in his Hansa flats. The surface of the panels, which are about 3 ft. by 2 ft. in size, is without blemish except for some slight crazing, and was attained by casting on glass. The colour of the panels is a uniform pale brown, and the joints between the panels, which read as black lines, together with the smooth face of the slabs, combine to make an impression not usually associated with concrete. Admittedly, the effect relies very much on the existence of the joints, but the surface of the actual concrete should be compared with the in situ concrete in

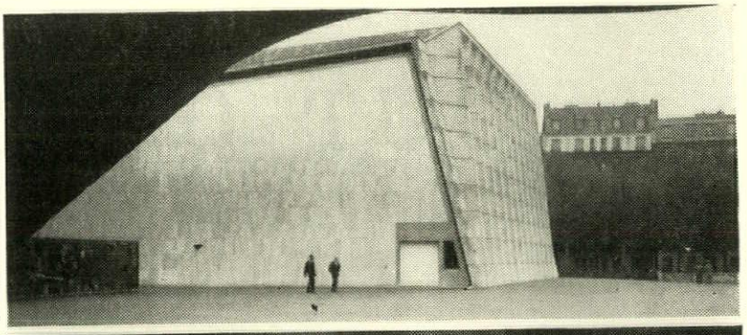


1



2

1 and 2, in industrial buildings there is an established tradition, now more than half a century old, of leaving concrete strictly as found when the shuttering is removed. 1, *Rothes Colliery* (1952) *by Egon Riss;* 2, *Croydon B power-station.*



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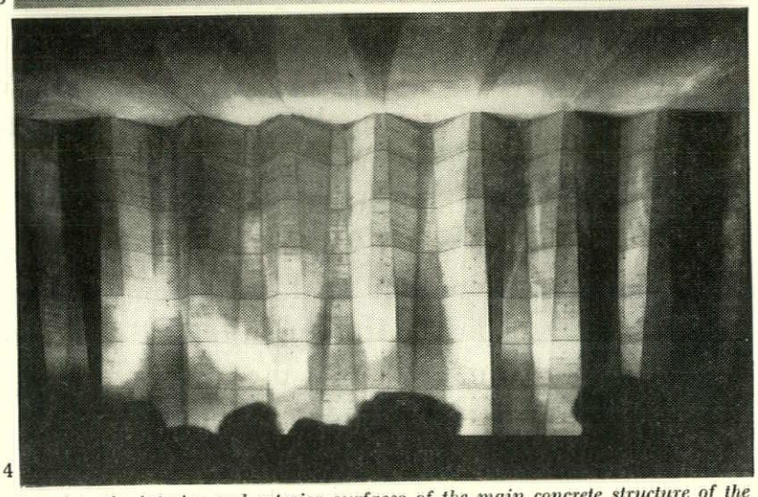


4

3 and 4, the interior and exterior surfaces of the main concrete structure of the Congress Hall of the Unesco Building in Paris (Breuer, Nervi and Zehrfuss) are identical; though not attractive in itself, this mildly-imperfect surface of exposed concrete goes well with the hall's structural feeling.

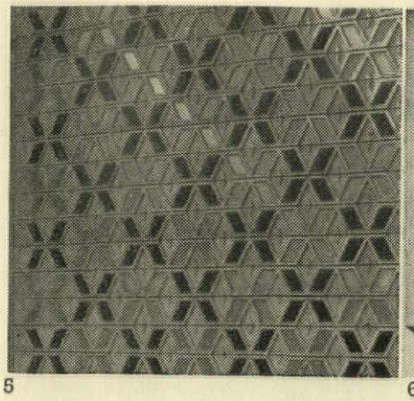
Otto Senn's block, 16, 17, on the same site, where an attempt has been made to produce a smooth concrete by ordinary techniques. Fair face concrete of this kind has neither the subtlety of Aalto's slabs nor the ruggedness of, for instance, some of the detailing at Ronchamp, 27.

So far, indeed, we do not appear to have been able to produce smooth in situ walls which do not in the course of time acquire a look of dereliction, which only painting seems to overcome, 23. Generally, too, the fear of staining and crazing still exists and the recollection of the starved effect that erosion gives to poor quality concrete—exemplified in those weary yellowing fence posts with their rusty reinforcement with which we are all familiar.

It is because they have been aware of the drabness which they might create that architects have tried to give life and colour to a material they knew would inevitably become part of the vocabulary of building. The least complicated departure from so-called 'fair face' concrete is the conscious choosing and disposing of the formwork to which we have already referred. This produces a pattern, whose size the architect may determine, for whatever sense of scale he wishes to create, but the colour and the texture of the surface, except for such texture as is given by unwrot boards, remains unaltered. Corbusier's design for flats in Berlin has two examples of this disciplining of the shuttering, each with its own emotional stimulus; the one human in scale, personal; the other remote but subordinated to and in relation with the total mass of the structure, 24.

The next step is to give the shuttering a function beyond the primary one of containing the wet mixed concrete, however consciously the natural pattern which is produced by the shuttering may be ordered, and to construct it so as to create an artificial design: that is one made by adding fillets to give recesses or by using a material which is itself patterned, such as reeded hardboard, corrugated asbestos, embossed sheets of plastic or rubber; or, at the last, by sculpting shapes to form a mould from which the concrete emerges as if carved in bas-relief. Incidental accents, whether they be representations, or abstractions, 31, can be cast in situ, but repeating patterns that rely on deep cut moulded shapes are by nature more easily made in precast panels than in situ, and probably because such precast panels are well suited to modern construction they are exciting architects' interest, 5-8.

One of the characteristics of deeply moulded slabs with repeating patterns, 9, is the facility they give to disguise the joints between them and in so doing to reduce the scale, an effect which some designers purposely strive for, but which others consider to be a lost opportunity of expressing the nature of the construction (that is, the employment of large prefabricated panels). Slabs designed with broad patterns, such as those in the Rhein-Main Hall at Wiesbaden, 6, are an altogether bolder experiment, but they are spoiled if they are contained within a framework of beam and columns, especially if the bays and the pattern compete for attention. A simple repeating design can create a lively texture over the whole wall of a building, but complicated designs in which one pattern appears to overlay another cause distraction



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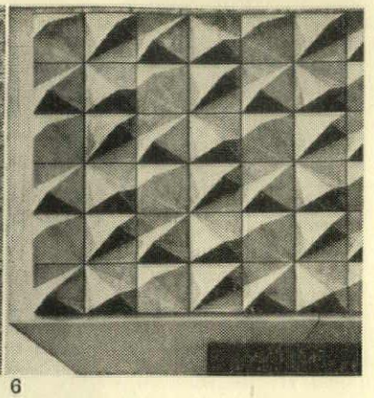

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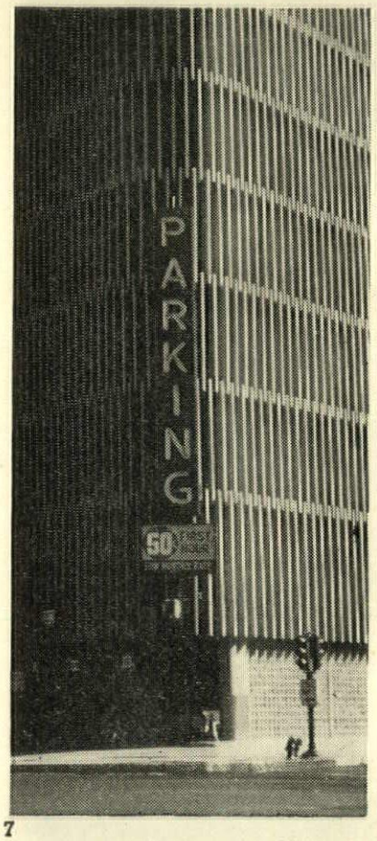
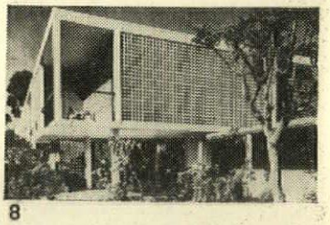


7

Profiled, pre-cast slabs or grilles of concrete enjoy the advantages of controlled, factory finishes, while the patterns of repeats are usually strong enough to absorb weathering effects. Their use is world-wide, and the examples here are from: 5 and 9, schools in Essex by Johns, Slater and Haward; 6, the Rhein-Main Hall, Wiesbaden; 7, parking garage in America, walled in pre-cast slats. 8, Oswaldo Bratke's house, Sao Paolo, with grilles of pre-cast units.



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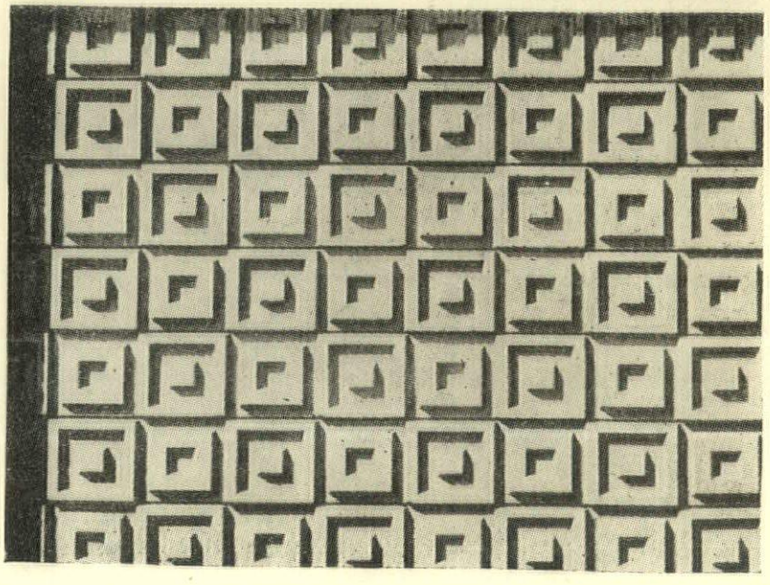

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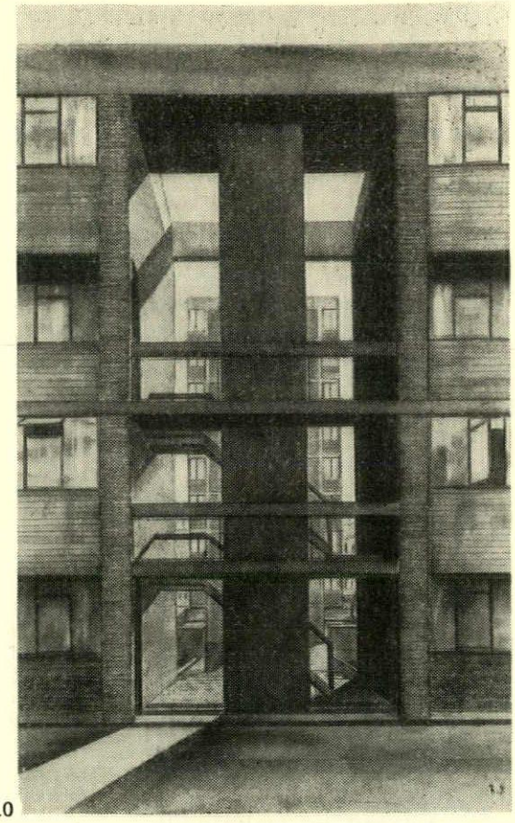
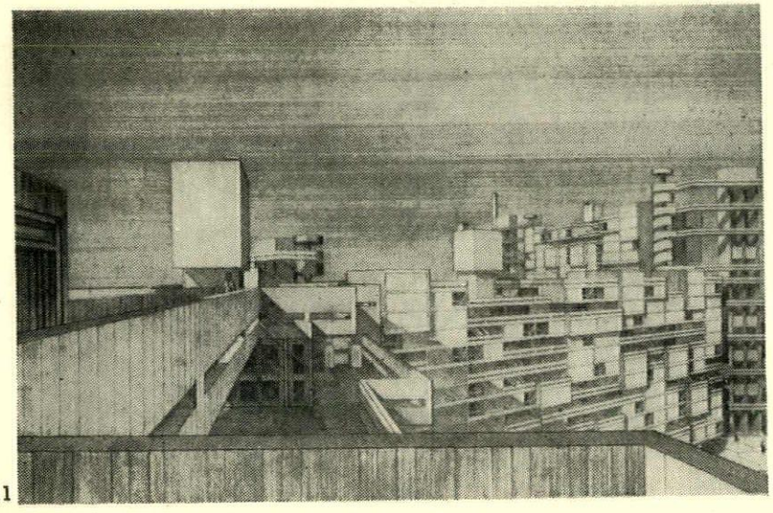


10

10 and 11, the abandonment of the idea of concrete as a smooth material, and an appreciation of its brut *qualities can be seen even in architects' rendered perspectives. Here,* 10, *is a drawing made in the authors' office by R. Smorczewski, and* 11 *is a fourth-year student project from the Architectural Association (Dalton, Eardley, Fraser and Knott).*



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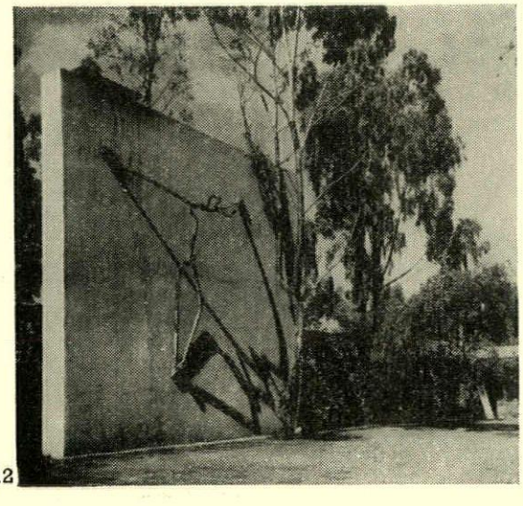


12

12, while weather-stained raw concrete may be unattractive in itself, it can form a sympathetic background to the sculptural forms of trees, or even sculpture, as in this detail from a garden by Juan Sordo Madaleno.

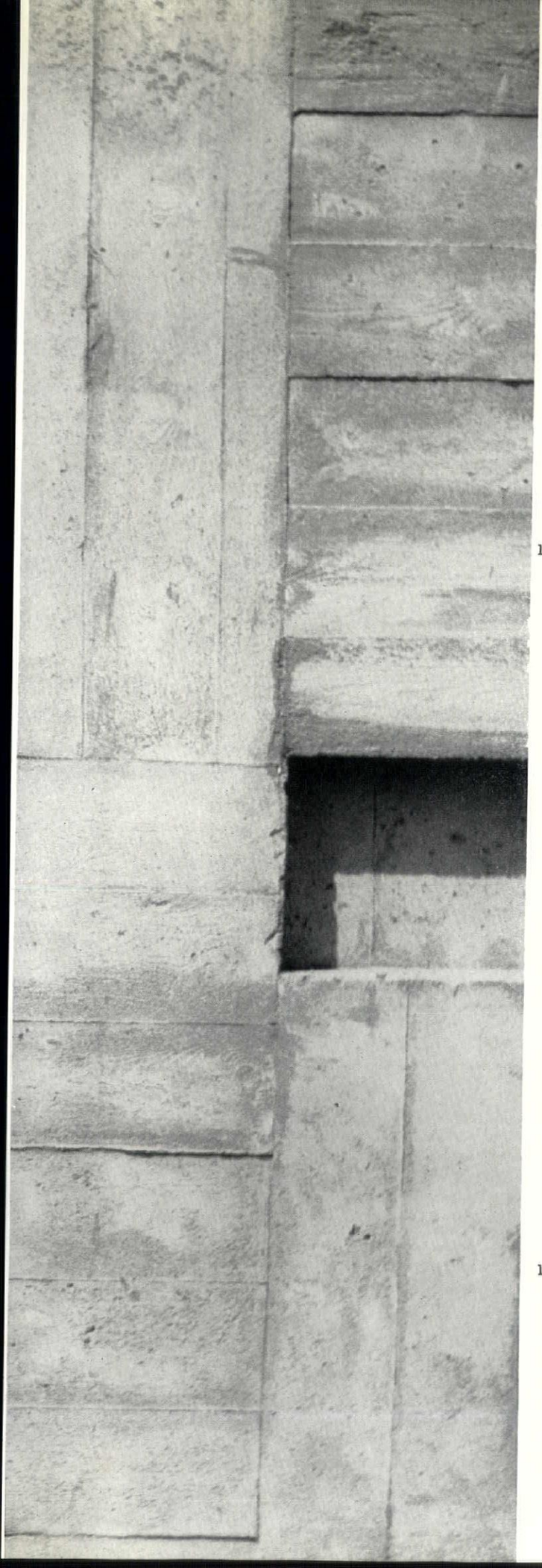
and inhibit recognition of the form of the building of which they are part.

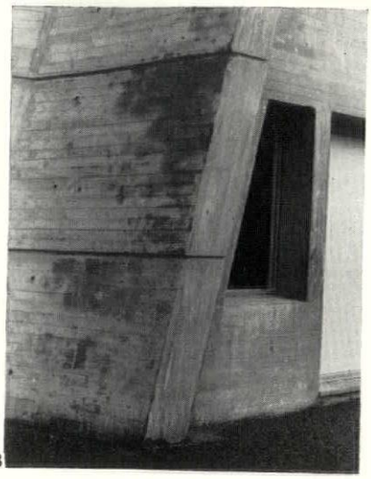
Whatever the merit of expressing particular arrangements of shuttering or of constructing it to form patterns in relief—and there are those who argue that only these techniques result in the true expression of the nature of concrete—there are, of course, a number of other means of mitigating what have to date been considered the objectionable characteristics of plain concrete and most of them are of older origin than the techniques we have been discussing. If one excludes painting, each relies on changing the nature of the surface of the concrete by removing in one way or another the cement matrix which is ordinarily what one sees, and which conceals the stones of which the concrete is made. If it is necessary to have an ethical justification for everything that one does, it can be said that in fact *these* techniques represent concrete in its true state, since by using them the aggregate which forms the bulk of the material is revealed. No one seems to argue that timber is any less natural when the bark is removed ! Processes for revealing the aggregates in concrete are, however, laborious and expensive, and this probably colours one's evaluation of the results.

The most familiar technique (although one that is not much used) is 'bush hammering': a process of breaking away the surface to a greater or lesser extent with a mechanical hammer. The scale of the indentations can be varied by the shape and size of the head; and a further variation (tooling) can be obtained by using a pointed rather than a blunt head. The texture and particularly the colour of the surfaces will further depend on the kind of stone and cement of which the concrete is made. More often than not the most economic aggregates are natural sands and gravels, and these produce a rather dreary brown effect. There may be other aggregates in certain areas which are no more expensive, which could be chosen so as to obtain more interesting colours. The likelihood is, however, that special coloured aggregates will be considerably more expensive, and in order to minimize the cost of the concrete work as a whole, methods of using sliding shutters have been devised to limit the special aggregates to an outside layer only. This produces a veneer, subject to the abuse of using exotically coloured cements and aggregates which bear no relation to the character of the original concrete, though masquerading as part of it: a procedure which seems less acceptable in relation to concrete having an obvious structural function, than in relation to precast slabs used as cladding.

One difficulty with bush hammering is that the corners must either be left with a margin of unhammered concrete or must be accepted with ill-defined edges. Both these characteristics take away from all but massive piers and other large areas of concrete the sense of strength which one expects from structural members. The Congress Hall in Berlin contains examples of several different concrete finishes, and amongst them, bush hammering. The massive buttresses are smooth, though patterned by the shutter boards, but in contrast the internal columns are textured by hammering: irregularities are eliminated and the scale of the finish is reduced. Because the columns are circular and so avoid the

[*continued on page 397*



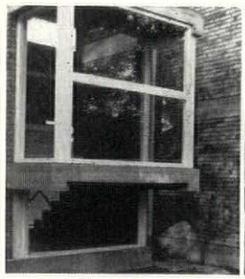


13

13, *apart from permanent weather-staining, discoloration due to damp in rainy weather is another deleterious visual effect, as this wet-day detail from the Unesco building shows.*

14, *but permanent or temporary, staining seems best combated by a pronounced texture on the right scale, and this is one of the basic justifications of board-shuttered* beton brut, *exemplified here by a detail from a work of the master of such surfaces, Le Corbusier himself.*

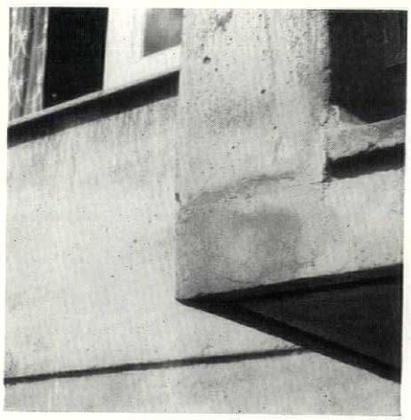
14





15, 16

15, 16, 17 *and* 18, *comparisons of the use of fair-face and* beton brut *surfaces under conditions of normal craftsmanship can be made between Stirling and Gowan's Ham Common Flats,* 15, *and Otto Senn's block at Berlin, Hansa,* 18. *Although Ham Common is not all concrete-faced, as is Senn's block, the amounts of concrete exposed there are still visually significant. But as the details show, the degree of imperfection that mars the intended effect of Senn's fair-face work,* 17, *is easily absorbed by the rough shuttered texture,* 18, *favoured by Stirling and Gowan.*



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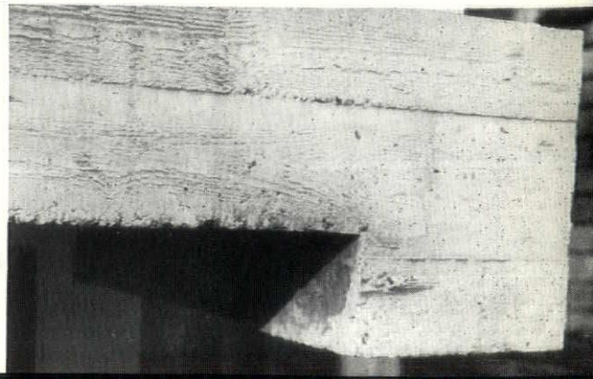
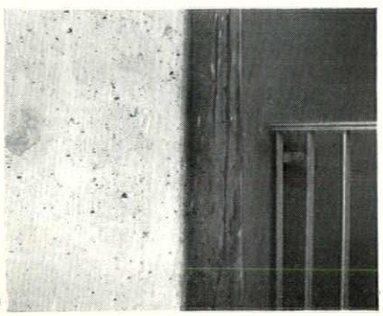


18



20

19 *and* 20, *the minor imperfections of smooth-shuttered concrete—patchiness and honeycombing—may be tolerable in themselves, as in the close up in* 19, *but the effect of the class of workmanship, materials and techniques that produces them, when spread over a whole structure, as in Hans Schwippert's tower block at Berlin's Hansa quarter,* 20, *can create an untidiness of surface that argues with the architect's intentions in calling for smooth fair-facing, even where he has hedged his bet by providing a pattern of storey-high panel repeats.*



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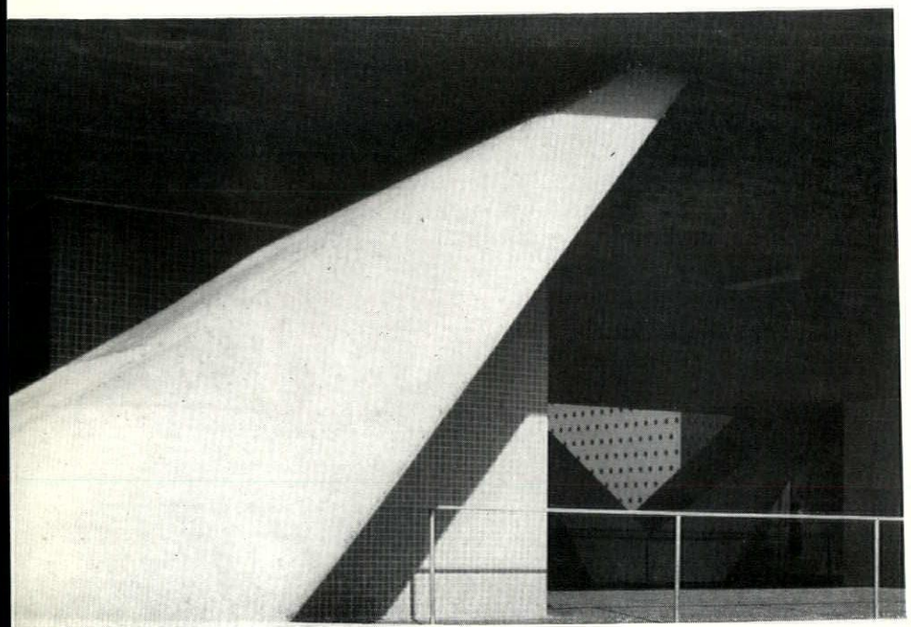
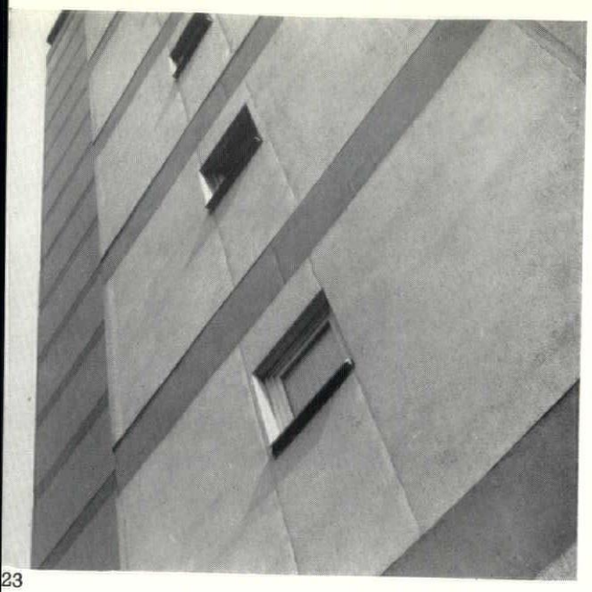
21

OUT OF THE FORM



22

21 *and* 22, *the antidotes to this situation seem to be two—to make the apparent panels into real panels, as in Aalto's Hansa flats,* 21, *where the surfaces are smooth, and any irregularities are localized in one panel at a time. The other solution, epitomized in the superb finish of the pilotis to Oscar Niemeyer's flats at Hansa,* 22, *is to take great and uneconomic care over workmanship, choice of cement samples, even choice of cement colour.*

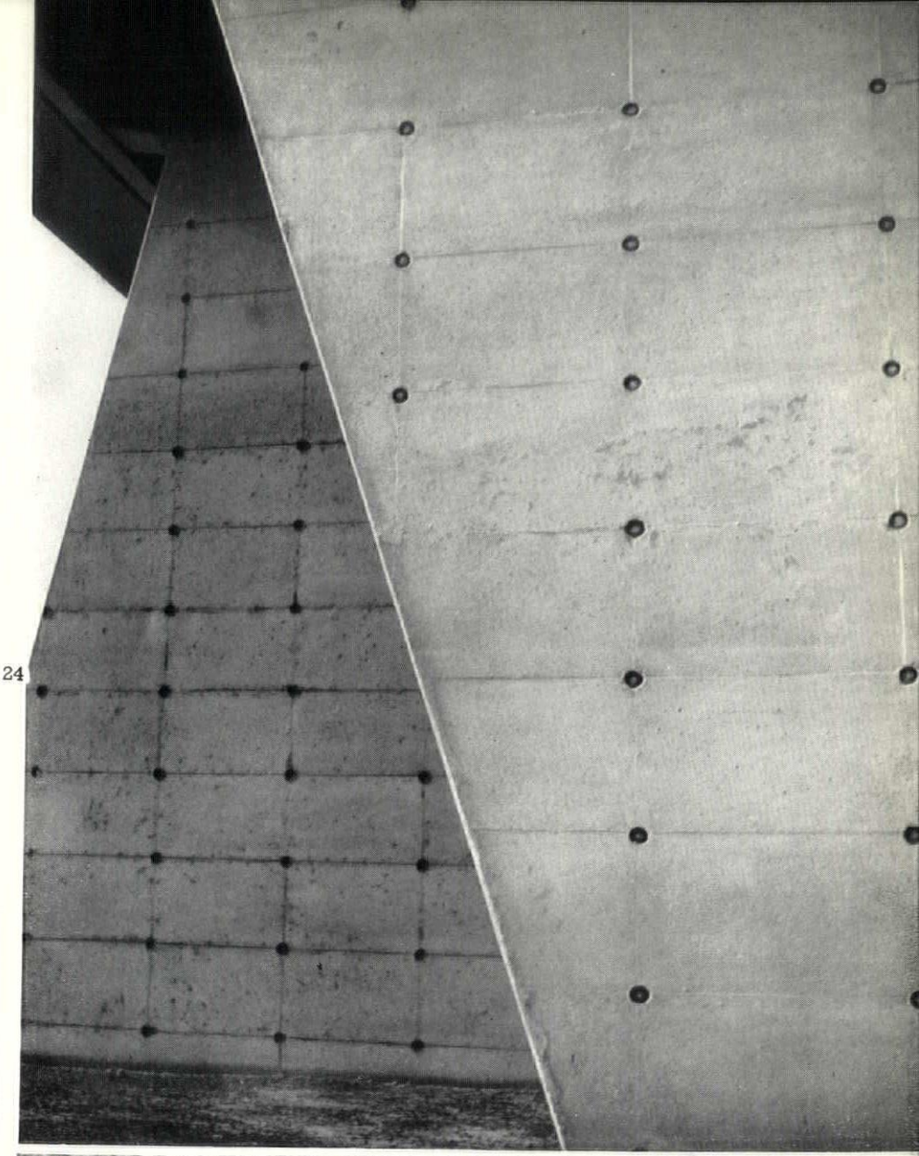


23

23, *painting may help to conceal irregularities of fairface concrete, but only vagaries of discoloration. As this raking view up the wall of the Seegmann and Muller-Reem block at Hansa shows, vagaries of form still register.*

24 *and* 25. *Since it is almost impossible to get perfectly smooth concrete direct from the shuttering, it may be better to let the shuttering impose a pattern on the concrete surface:* 24 *shows a metal-shuttered pattern from Le Corbusier's* Unité Type Berlin, 25, *a plank shuttered pattern used by Hugh Stubbins on his Berlin Congress Hall, as both interior and exterior surfaces.*

26 *and* 27, *The variety of surface obtainable even from the same basic shuttering technique is notable. On the surface of the pilotis of Unesco it does little more,* 26, *than acknowledge that wood was used, but round the pool at Ronchamp,* 27, *it boasts the fact so aggressively that it almost looks like a plank fence.*



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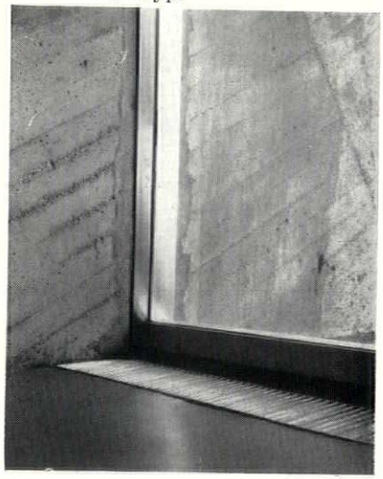

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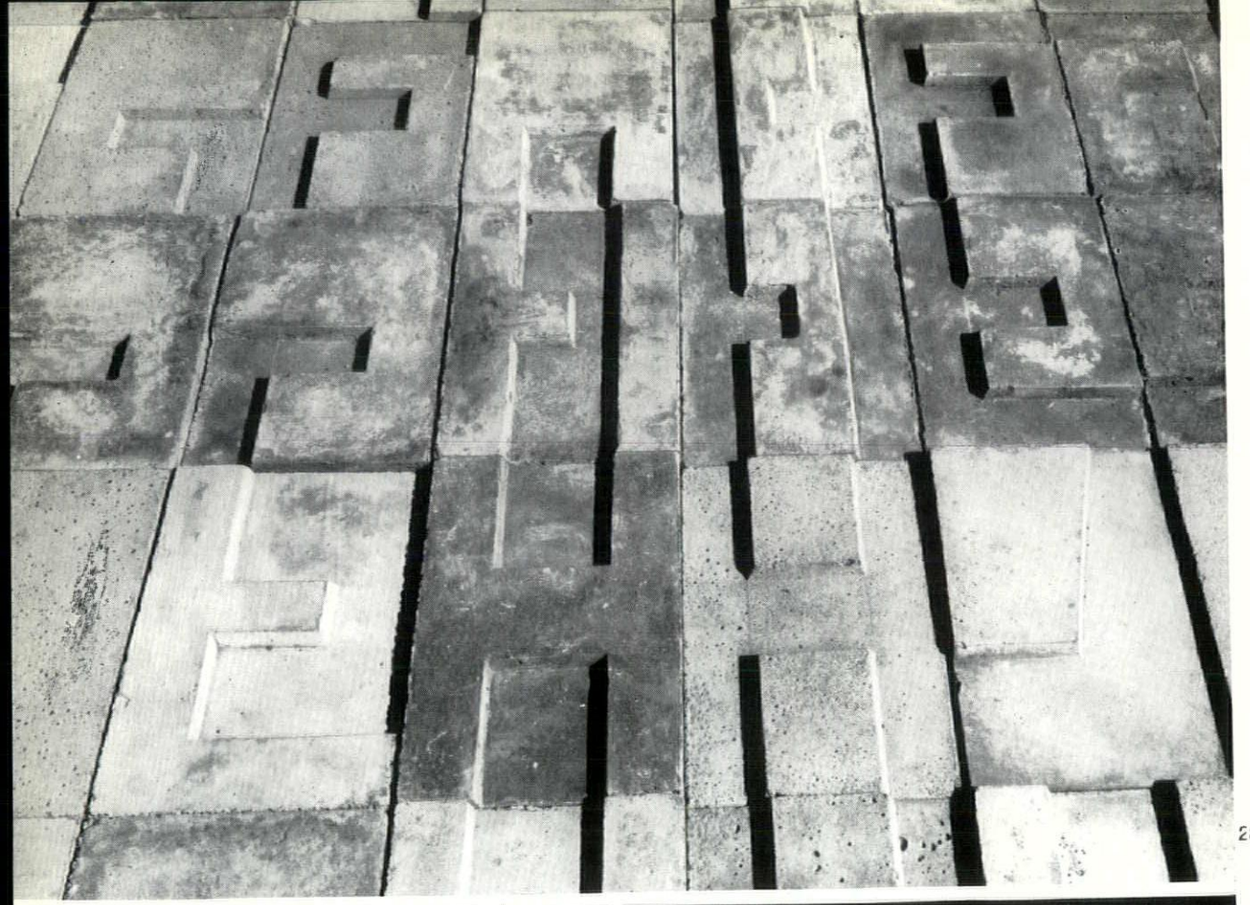
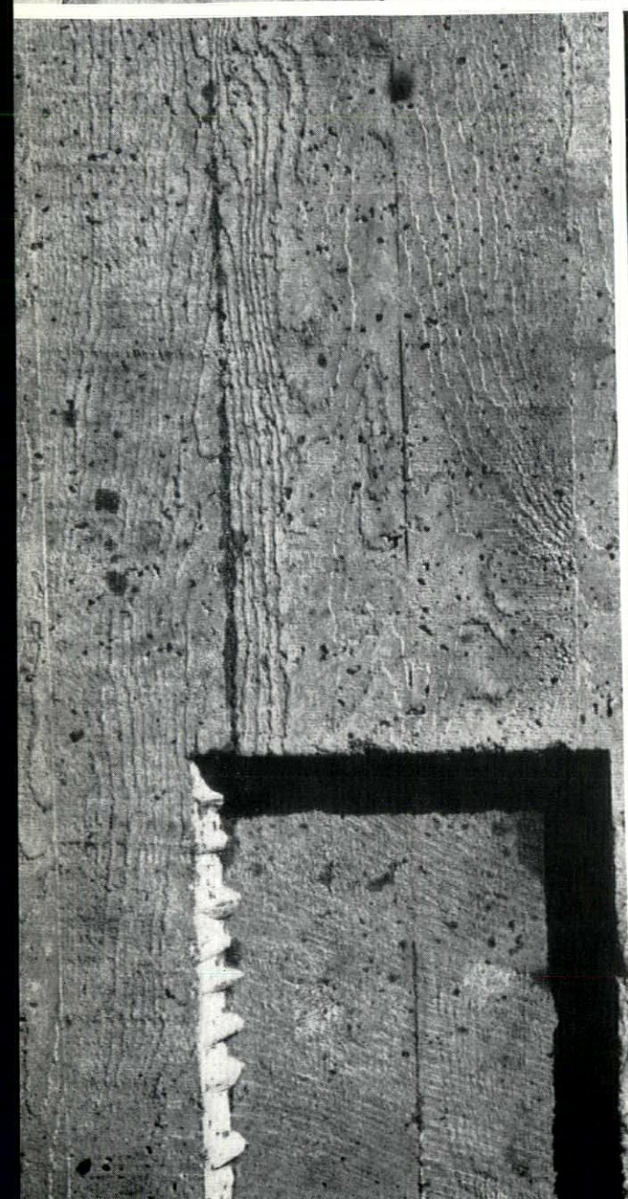


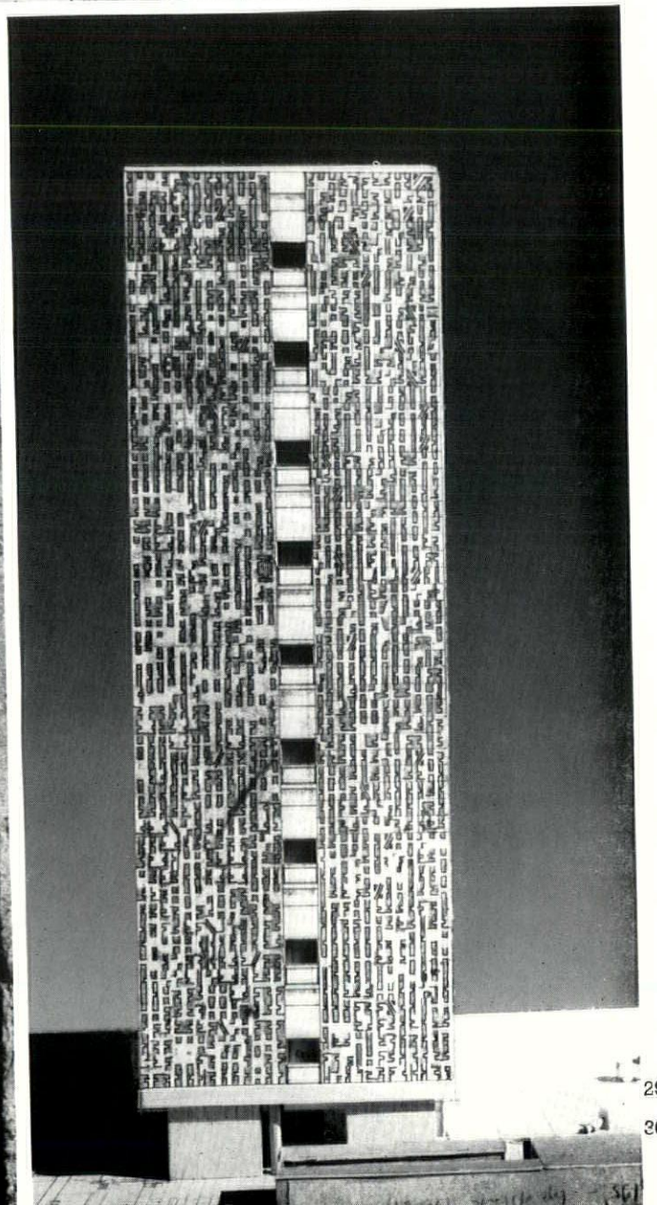
28



31

28, 29 *and* 30. *Once a consciously modulated surface is accepted, then there is scope for creative talents outside the architectural profession to come to the aid of concrete.* 28 *shows prototype cladding panels designed for the LCC's Tidey Street Scheme by Mitchell and Hollaway (see also cover to this issue),* 29 *shows the type of surface it is proposed to use in practice, and* 30 *the effect of the panels when applied to the end wall of a* 19*-storey block.*





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30



32

31 *and* 32, *other experimental moulded surfaces created by Anthony Hollaway and William Mitchell.*



33



34



35



36

33 to 36, varieties of finish obtained by the use of exposed aggregates selected for their characteristic textures. 33, Norwegian quartz, white and translucent, in white cement; 34, the same in grey cement; 35, Cornish Delank; 36, green Westmorland Slate; all at about half natural size.

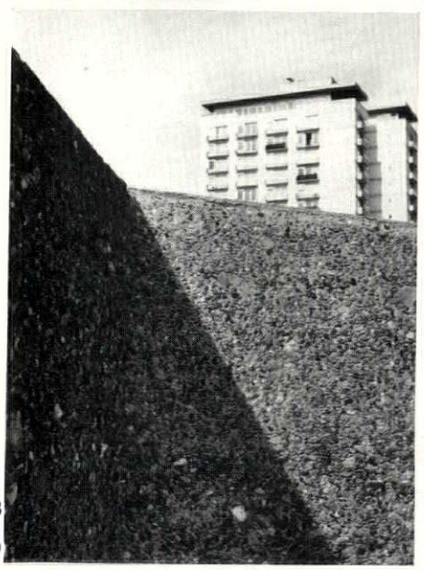
37 and 39, bush-hammered surfaces afford one of the richest-looking concrete treatments currently available, exemplified in 37 by one of the columns of Hugh Stubbins Conference Hall in Berlin. Where, however, the surface to be bush-hammered comes to a sharp arris, a margin must be left to prevent the corner spalling off, creating a characteristic effect, seen in 39, on a column from Richard Neutra's Warren Tremaine House.

38, where the resultant texture is lively enough, and the form strong enough to override the variations of degree of exposure of the aggregate, bold use can be made, as in this wall at the Interbau site, of really large areas of exposed aggregate.

40 and 41, the optimum control of exposed aggregate is obtained on precast slabs, whether they are simply cladding, as on Grenfell Baines's office block for Shell at Stanlow, 40, or structural beams, as on the authors' Camden Girls' School, 41, in north-west London.



37



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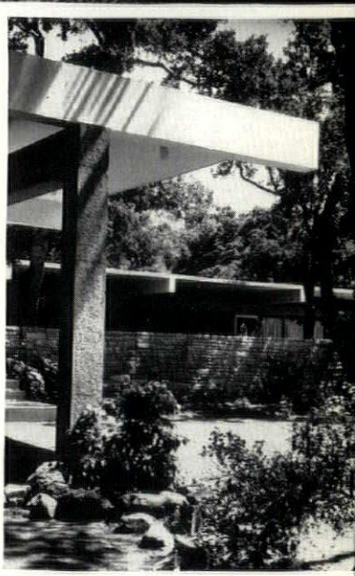

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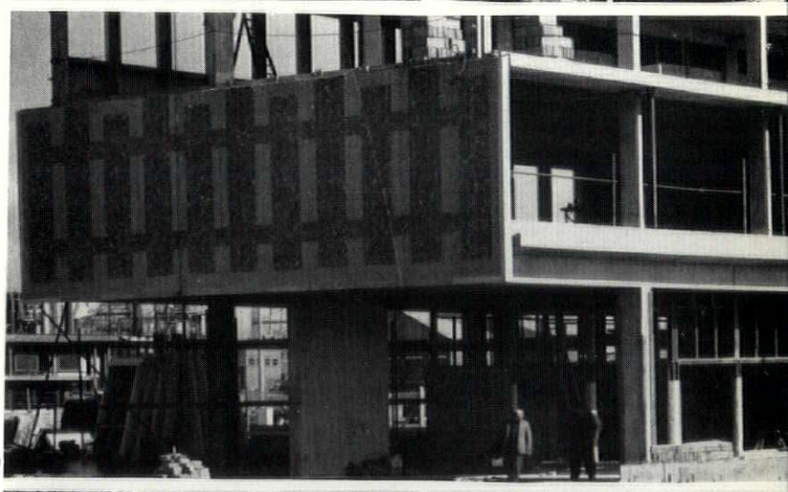

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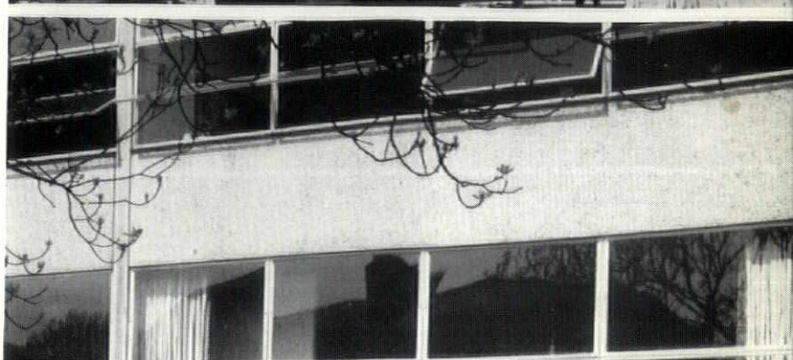

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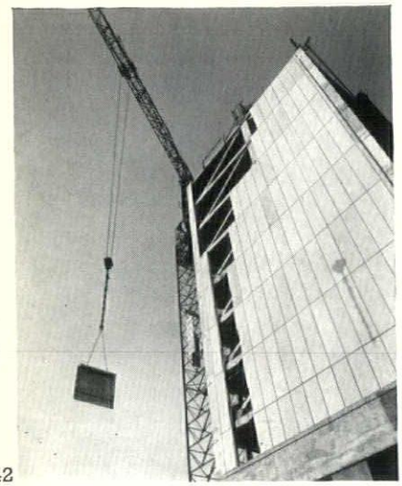

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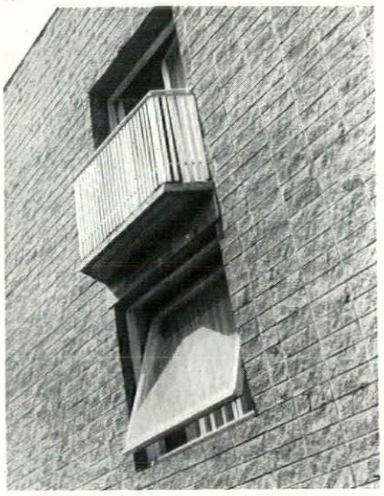
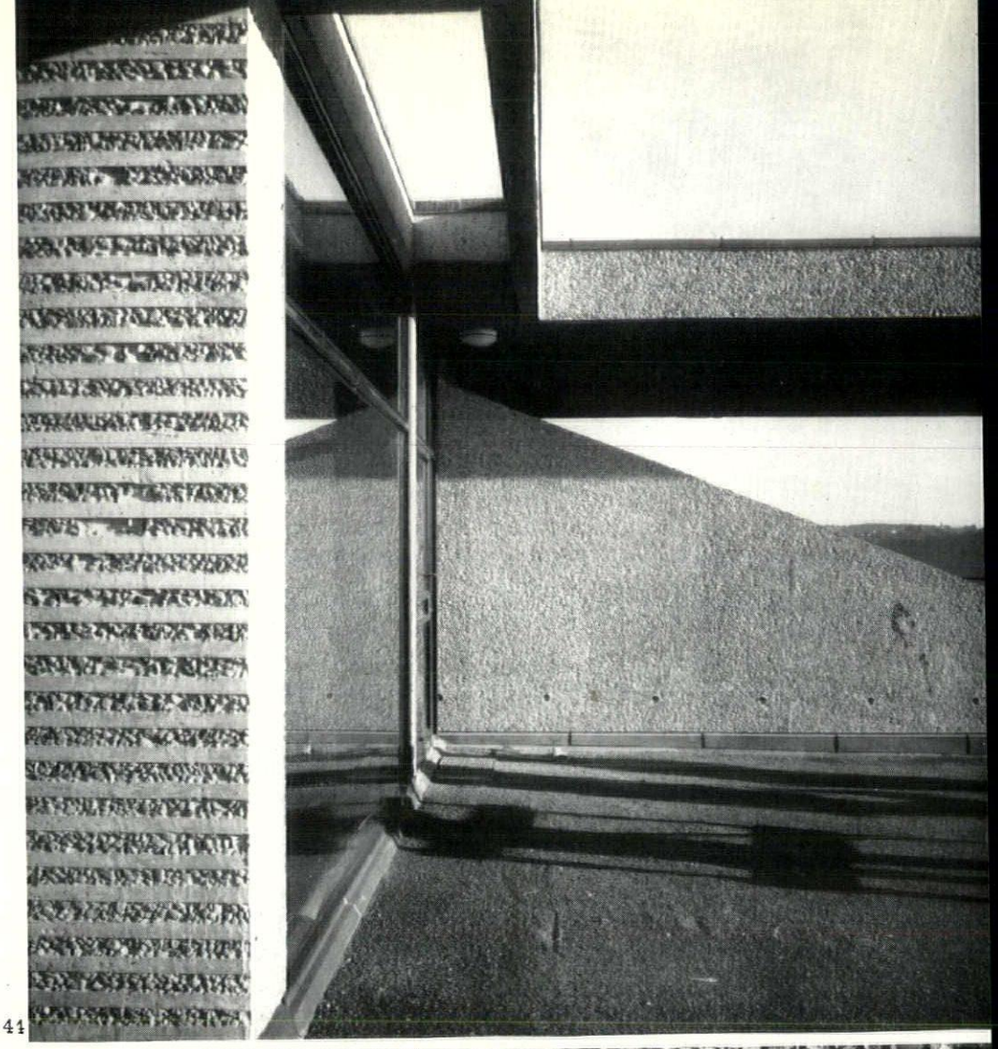


43

42 *and* 43. *Contrasts in precast wall claddings:* 42, *storey high slabs going up on FrederickGibberd's Dock Labour Board building;* 43, *riven precast slabsfrom Austria.* 44 *and* 45, *further examples of* naturbetong, *from the same building by Erving Viksjo as in the frontispiece to this article.* 45 *is a detail from a mural by Sitter.*



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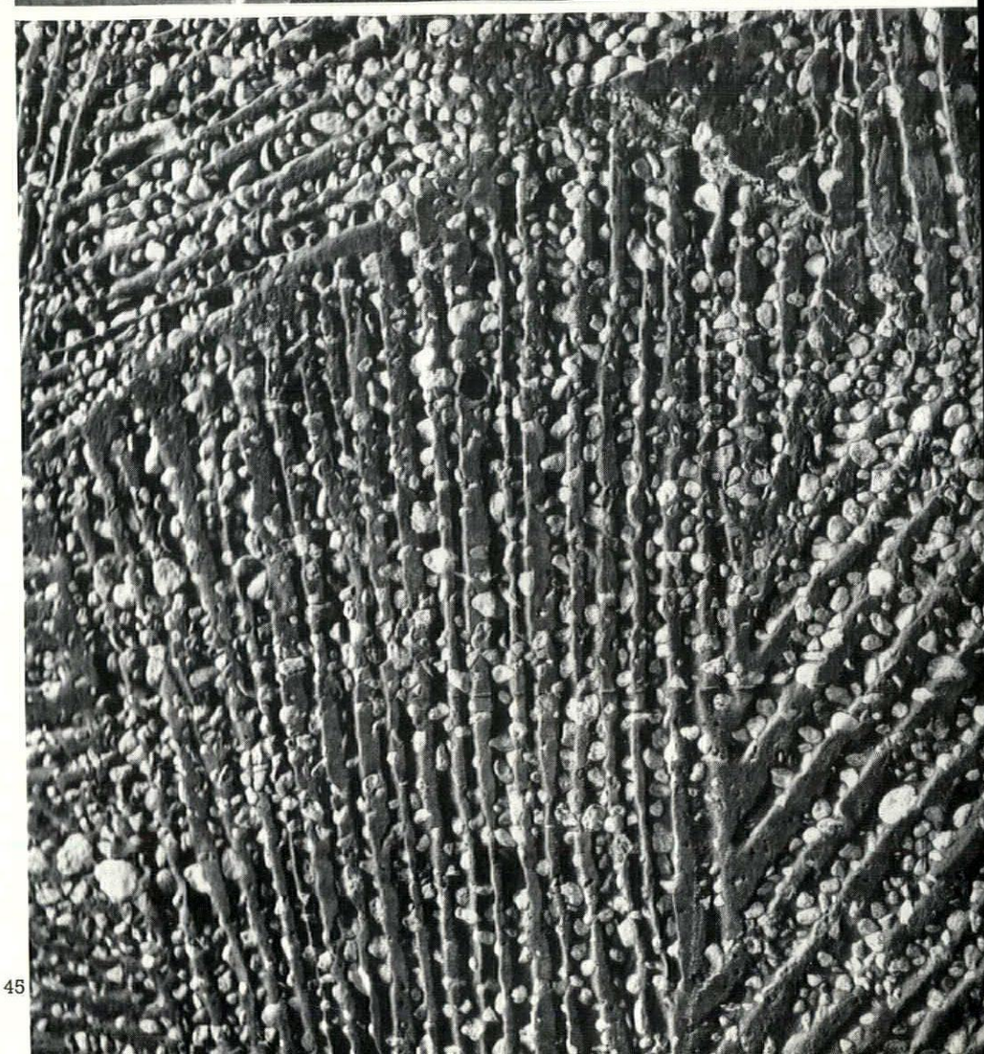

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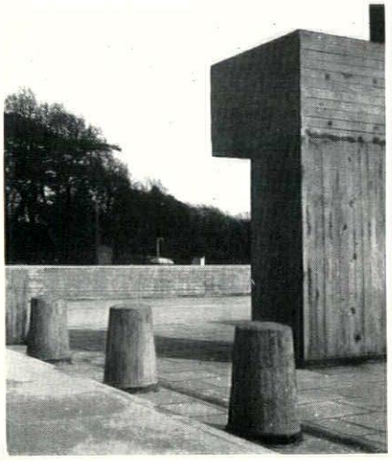
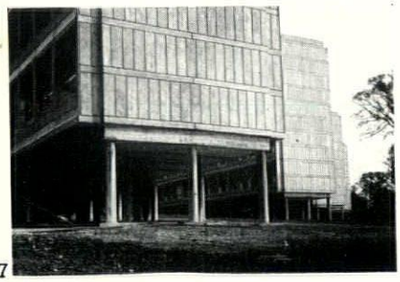


46

46 *and* 47, *the triumph of exposed concrete, epitomized in the all-concrete aesthetic of the LCC's Roehampton Estate:* 46, *detail of the boiler-house;* 47, *pilotis and slab-clad end wall of one of the 'little* Unités.'



47

continued from page 390]

'panel' effect usually associated with bush hammering, they still convey a feeling of strength and remain integrated with the structure. The texture of these columns can be seen in 37, the colour is a silver grey: neither could have been achieved without very careful workmanship and special choice of materials, but given these, the resulting finish is one which needs no apology—even from those who seek refinement or who doubt that concrete can be used internally. A quite different sensation is derived from the square post and beam in the Warren Tremaine house, California, designed by Neutra, 39. There is here no wish to give dominance to an appreciation of the structure: instead a number of differently textured elements are consciously juxtaposed to create visual excitement. The finish on the concrete post, which in point of fact is here achieved by sandblasting (a technique which also requires margins) can be admitted for its contribution to a decorative pattern of textures.

From time to time other less laborious techniques have been devised to obtain exposure of the aggregate: chemical retardants, the wire-brushing of green concrete and what is known as aggregate transfer, are amongst them. Even these are, however, difficult to execute in-situ.

For a long time designers have tried to develop walling units which would enable them to make use of the advantages of dry construction and of the handling capacity of cranes. Concrete has always been relatively cheap and is fire-resistant: and when properly made is reasonably proof against the attacks of the weather—though, as we have said, not all accept the effect it has on the visual qualities of the surface. It was, therefore, an obvious choice for experiment in new systems of prefabricated construction and especially in the development of relatively large walling panels. The fact that precast panels are conveniently made horizontally enables the top surface to be processed by spraying with water and by other means whilst it is still wet: or, alternatively, the bottom surface to be so arranged as to form an even layer of aggregate which is left exposed on removal from the mould. By these techniques the panel may receive a surface of specially mixed concrete for which the variety of aggregates, in colour, size and grading, and of cements, is wide. One has, however, only to compare the effect of the exposure of an opaque aggregate such as slate with, say, Norwegian quartz, 33, which has an icy translucence to realize that one is now less interested in the material as 'concrete' than in the veneer of broken stone which it supports. Whether you argue that this is or is not a legitimate expression of concrete, at least it does not have the objection of being an imitation of any other material, and in its favour it produces surfaces which have already shown themselves practicable, and which at the same time offer scope for aesthetic experiment.

Out of the heterogeneous clothing of framed buildings, the glass curtain wall has established itself internationally in the last decade as a significant technical and aesthetic expression. In cold and foggy Britain, however, there are arguments in favour of a different expression which is aesthetically valid but which better satisfies the practical requirements. Concrete buildings, clad in concrete, are one such alternative; and occasionally, as at Roehampton, they produce a sense of coherence and of simplicity all too rare in current English architecture.

Because they are large in scale and rough in texture, exposed aggregate panels look as heavy as in fact they probably are; but if concrete clad buildings are more stolid in appearance than glass clad buildings—if they are even ponderous by comparison—it may be that on that account they satisfy not only in fact but also in effect an innate desire for protection from the elements.

Concrete offers possibilities for great inventiveness and an escape from the limiting aesthetic of the glass box. It can provide structure, shape and finish.



1

The glittering network of neon signs, below, which for millions epitomizes Piccadilly Circus, is doomed by the intended demolition of the north side of the circus. How little the secret of their vulgar but vigorous appeal is generally understood can be judged from the pathetic design, LCC approved, on left, which shows what is to replace them. An insipid jigsaw of small signs, unhappily straitjacketed into a rectangular panel, can hardly provide the same gaiety as the full blooded, unfettered riot of signs it replaces. This problem and its architectural implications are discussed in the following pages.



2

Kenneth Browne

ADVERTISING INTO ARCHITECTURE

Piccadilly Circus

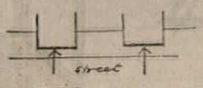
Piccadilly Circus is the symbol of London's gaiety and for millions it as surely represents this aspect of her character as does the Tower of London her history. Yet this symbol is in imminent danger of destruction.

Leases are falling in and a lot of rebuilding is in prospect. The LCC planners are trying to give the plans some coherence and at the same time improve the traffic flow. But in doing so they propose to open up the existing intimate circle into a large, bleak square with Eros, the genius loci and focal point of the present circus, lost at one end of it. Demolition of half the existing buildings surrounding the circus is entailed and with them inevitably the galaxy of neon signs which at night provide the visual magic of the place. This magic owes nothing to the architecture which dissolves in the blaze of lights and is merely the scaffolding for the signs. The buildings will not be missed; the signs will. They must be retained.

Up to a point the planners have realized this, and lip service is paid in the description of the new building* proposed for the Monico site, *1* (facing page), which is 'designed with a comprehensive elevation treatment to receive electric advertising signs.' However, comparing it with what is on the same site now, *2*, it's not hard to see where it will fail. At present you get a real smack in the eye; a sign as big as a building, a bottle as big as a bus and the tracery of lights is continuous. It's vulgar but it's exciting. The proposed scheme is just rationed fun; controlled, co-ordinated, emasculated so that it can neither shock nor thrill. It reflects a guilt complex regarding posters which is quite misplaced here where the atmosphere depends on them. Piccadilly is a special case. Another point: the present effect is achieved by competition not co-ordination—a result of trying to do something more striking than the next chap—bigger and better.

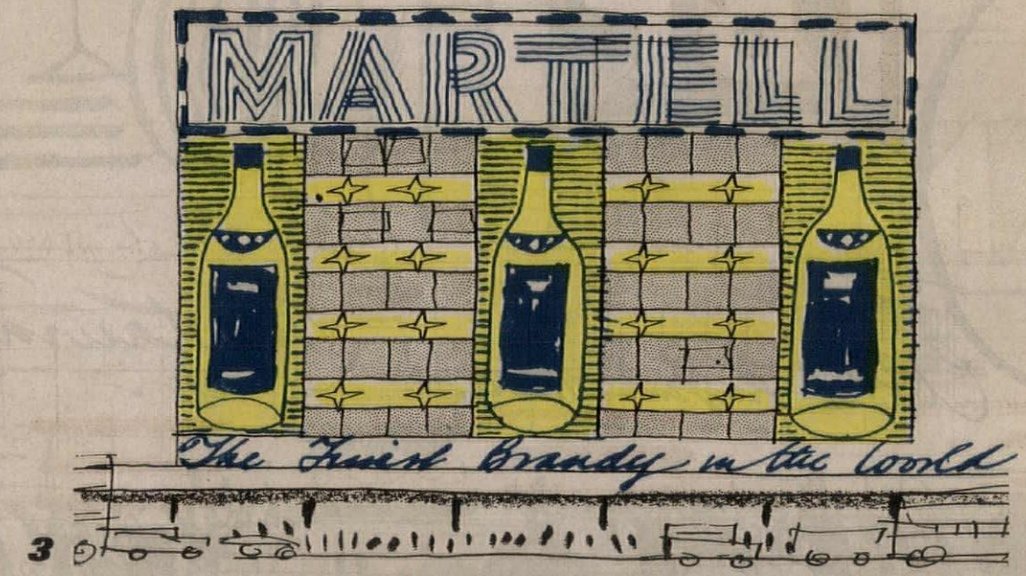
However, the planners are right in one respect; any new buildings here must be designed for advertising—the signs must not be just an afterthought as they are now (hence the daytime clutter of fixings and electrical gear). But it should be taken much further. The advertising should become the architecture and be given priority in the design. How can this be done?

First of all by using whole buildings as signboards, *3* and *4* below. Approached in this way, and without interfering unduly with the rooms inside, all kinds of ingenious designs could be evolved. This forms a challenge to the designer (unlike *1*) and gives an all-over pattern. In the case of *2*, the plan would be like this,



with signs (marked by arrows) on projecting bays.

Again, by providing blank end walls with



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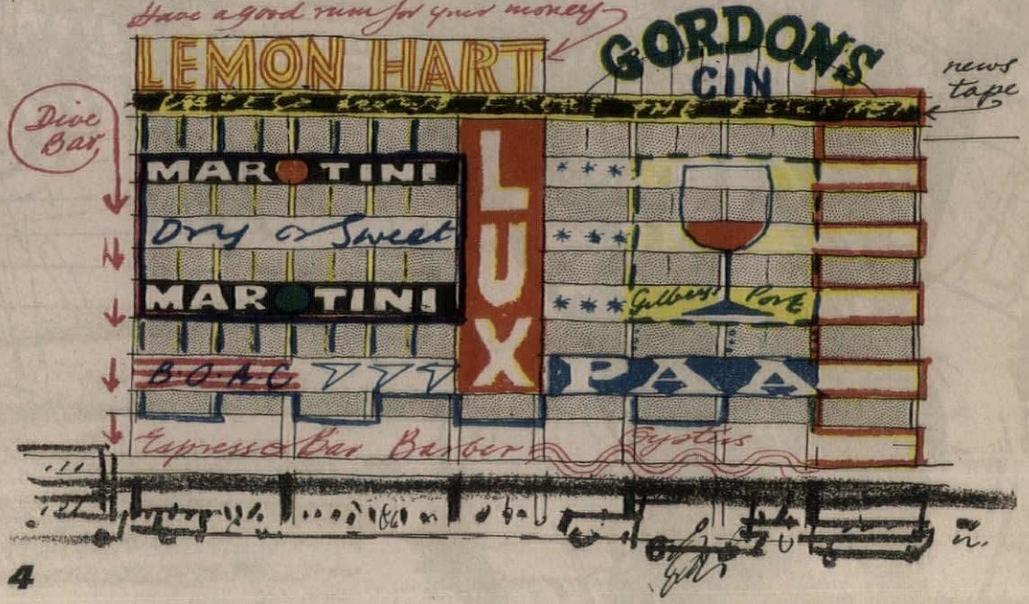
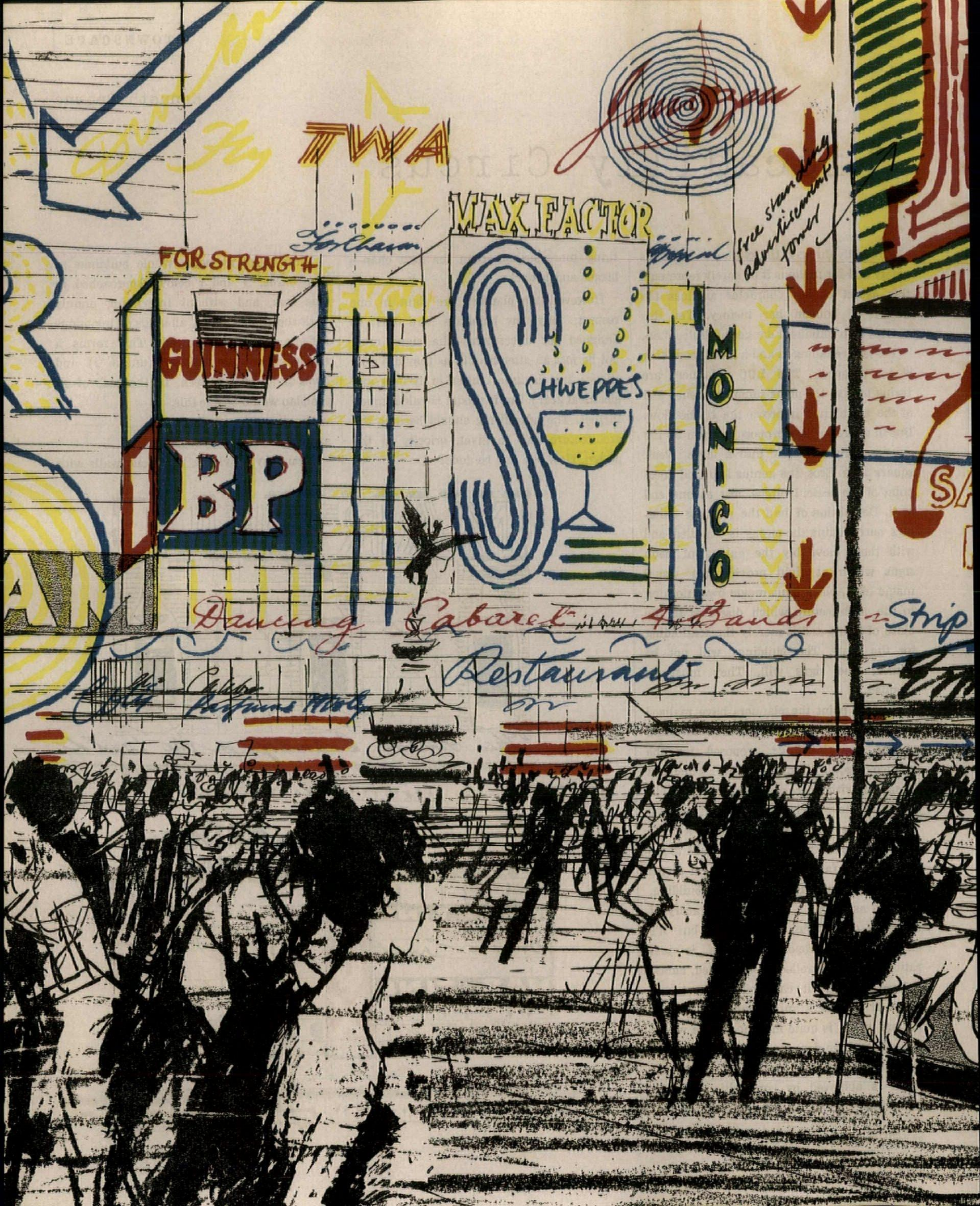
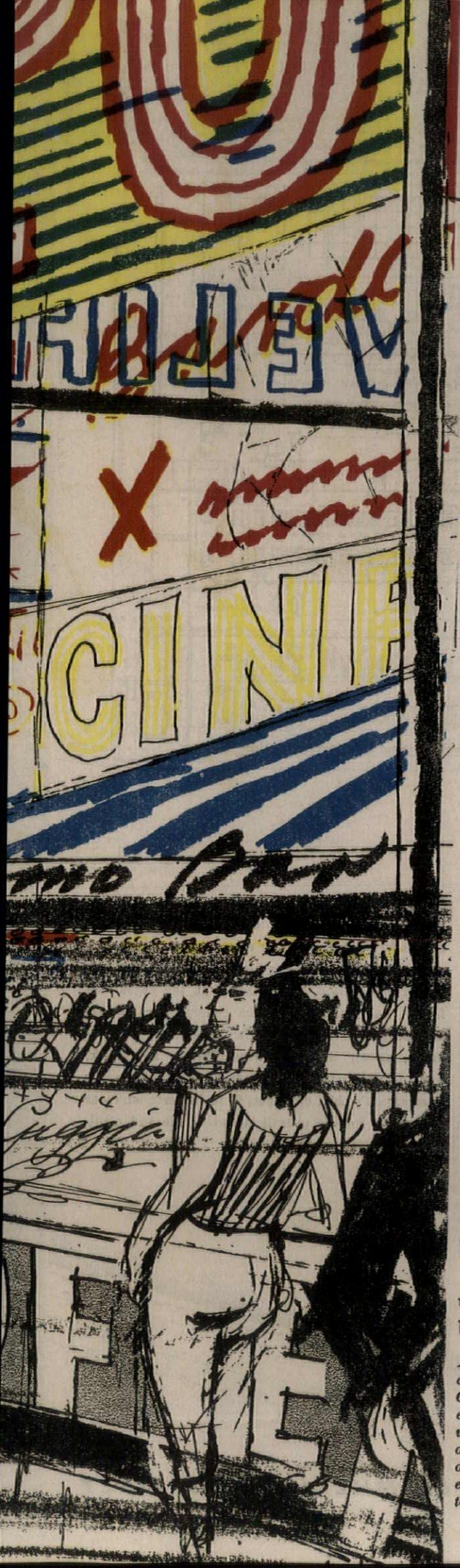


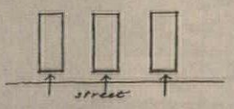
4

* Designed by Cotton, Ballard & Blow. The words quoted are from the press announcement.


TWA
MAX FACTOR
FOR STRENGTH
GUINNESS
BP
CHIWEPPES
MONICO
Dancing Cabaret 4 Bands Strip
Restaurant



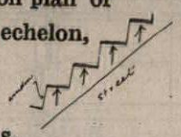
the blocks at right angles to the circus (less noisy anyway) and using them for giant signs, **5**.

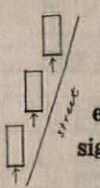




5

By staggering the facade on plan or placing the tall blocks in echelon, buildings leading away from the circus would present a tight wall of signs.





Also, the continuation of the structural frame to contain tanks etc. provides a perfect position for signs, **6**, and is the answer to one



6

of the principal daytime objections, the cleaning gantry which for signs applied as an afterthought is usually a crude construction, **7**.

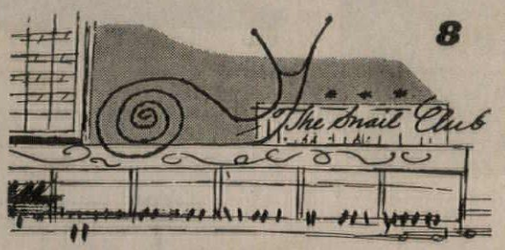


7

Transformers (arrowed), wiring and other unsightly apparatus can be housed in the building if considered in the initial design.

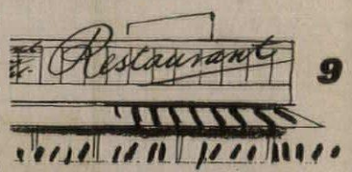
An impression of the new Piccadilly Circus as it could be, showing the Monico building on left. One huge sign occupies the whole of a blank end wall, its giant S showing the linear and best use of neon. Guinness and BP are mounted on extensions of the stuctural frame, the use of vertical letters (as 'Monico') is an important element. On left freestanding advertisement tower.

Flat roofs provide the opportunity for freely shaped designs, **8**, and in the case of restaurants, lettering across the glazing adds



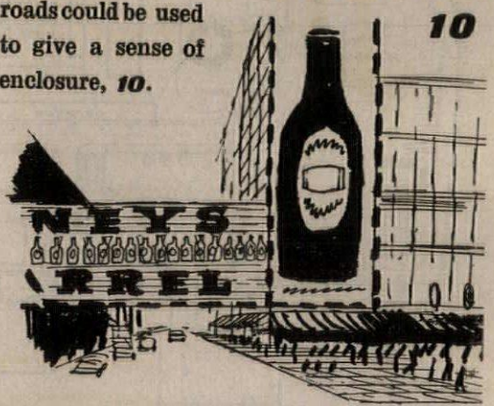
8

to the liveliness of the building, **9**.



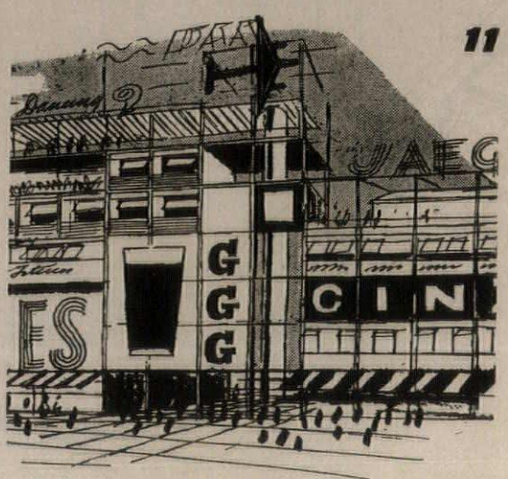
9

Skysigns, previously banned, are now rightly permitted; the 'look no hands' effect is an important element of the show at night and there is no reason why the framework should not be cleanly designed. It can be done in Holland and Scandinavia, why not here? Multi-storey garages and cinemas are a gift for the advertiser, with blank walls asking for large signs, and advertisements spanning roads could be used to give a sense of enclosure, **10**.

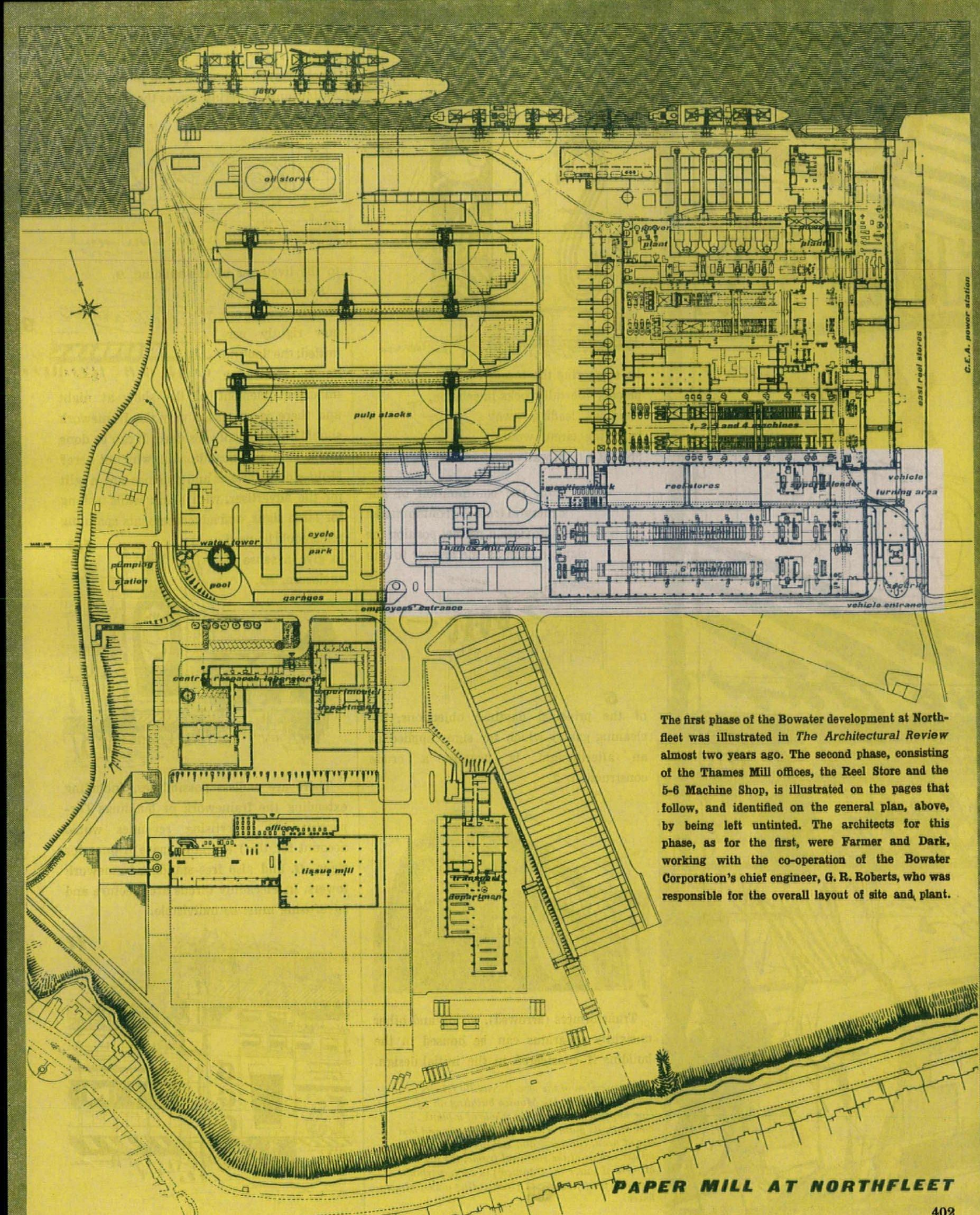


10

There are endless possibilities, including extending the framework of buildings (expensive, but advertising revenues would account for this) to make space frames for signs, **11**, and also free-standing framework towers. In Piccadilly Circus architecture and advertising must be indivisible.



11



The first phase of the Bowater development at Northfleet was illustrated in *The Architectural Review* almost two years ago. The second phase, consisting of the Thames Mill offices, the Reel Store and the 5-6 Machine Shop, is illustrated on the pages that follow, and identified on the general plan, above, by being left untinted. The architects for this phase, as for the first, were Farmer and Dark, working with the co-operation of the Bowater Corporation's chief engineer, G. R. Roberts, who was responsible for the overall layout of site and plant.

PAPER MILL AT NORTHFLEET

MACHINE HOUSE AND OFFICES

ARCHITECTS	**FARMER AND DARK**
partners-in-charge	**Frankland Dark, T. A. Eaton, J. T. Pinion**
chief civil engineer	**S. Jampell**
architects-in-charge	**A. Wightman and R. L. Brewerton**



1, the vehicle entrance with reel store over and machine house beyond. The reel store has directional lighting from the east, with the return faces of the grey-green corrugated sheeting used on the machine house. The fan rooms on the roof of the machine house are faced with aluminium louvres.



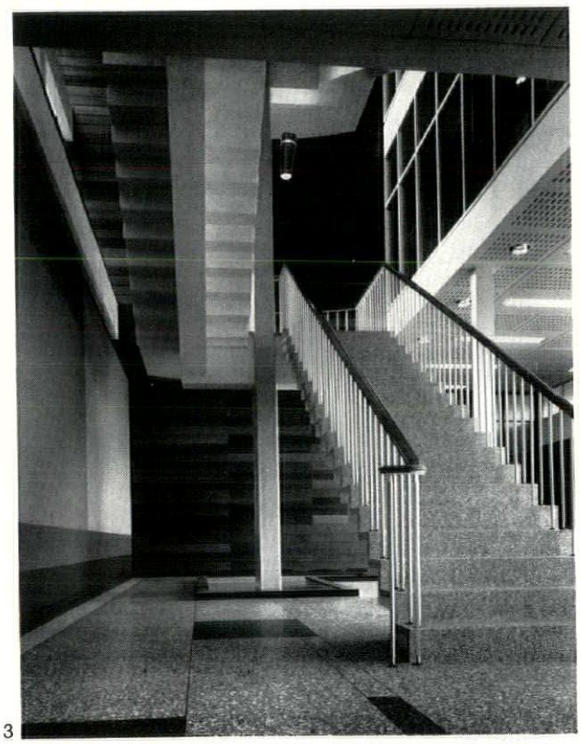
2

2, general view from the west, with the water tower in the left foreground and the Thames Division offices and machine shop beyond.
3, the main staircase in the office building. The floor and the treads and risers are of terrazzo, the underside of the stairs is of painted concrete. The balustrading is mild steel with a hardwood handrail.

PAPER MILL AT NORTHFLEET

These buildings are a further stage of the development illustrated in the A.R. November 1957. The site is in an old chalk quarry, but because much of the ground was unreliable the majority of the foundations were piled.

The machine house accommodates two paper-making machines, with storage space beneath at ground level and a reel store for the manufactured paper over the vehicle entrance at the eastern end. Apart from the vehicle entrance, which is of reinforced concrete, a steel frame of normal design was used, with lightweight cladding materials for roofs and walls—built-up bituminous roofing felt on insulating board, or cork and troughed aluminium sheeting for roofs, and grey-green corrugated synthetic resin laminated sheeting and patent glazing for walls. The walls are lined internally with perforated board backed by mineral wool, to give insulation against condensation and noise. The serrated front of the reel store incorporates vertical windows and an illuminated sign to accentuate the principal entrance for goods traffic, all of which approaches from the east.



3

5
6 | 7



4

4, general view of the entrance hall, showing the acoustic ceiling with louvred openings to the inset lighting troughs which hold two or more fluorescent tubes. There is an abstract mural, designed by the architects, on the wall behind the staircase.
5, opposite, the south elevation and main entrance to the offices. The stainless steel sheathed wall has opaque white glass panels under the windows and a white glass mosaic fascia. The columns are sheathed in stainless steel and the panel to the left of the entrance is in bright red mosaic. The concrete parking area is broken up by rows of cobbles.
6, opposite, the office building at night, with the water tower beyond.
7, opposite, the entrance at night, showing the even lighting given by the recessed fittings. The wall at the left of the entrance hall is panelled with strips of hardwood.





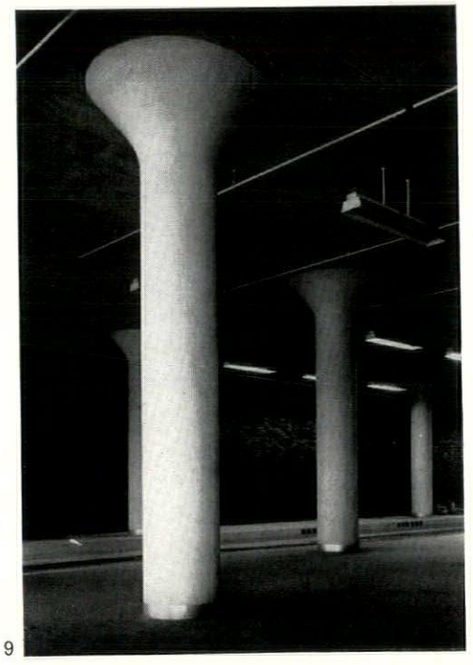




8

PAPER MILL AT NORTHFLEET

The Thames Mill offices accommodate administrative staff and welfare services. The building has a light steel framework with floors of precast units with a structural screed topping. The stainless steel curtain walling has external spandrels of cast glass fired with colour on the inside and solid precast concrete slabs faced with marble chips at ground floor level. The precast concrete fascias have a white glass mosaic facing.



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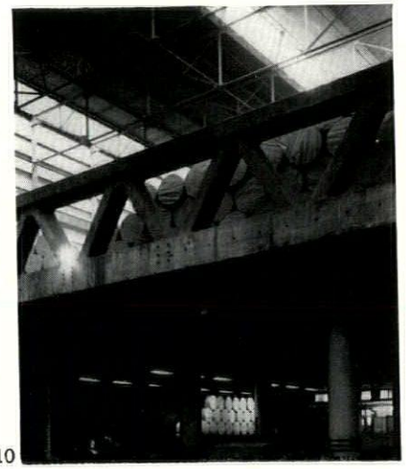


10

8, the vehicle entrance and security office, which is elevated and pushed forward from the main building to give views of all traffic, entrances and exits, and which controls all the power-operated sliding-folding doors.
9, reinforced concrete columns with mushroom capitals are used in the vehicle entrance because of the heavy load from the reel store above. The side walls are lined with a deep blue glazed brick and the ceiling with sound-absorbent material. Exhaust fumes are mechanically extracted through underfloor ducts.
10, the vehicle entrance with the reel store above, showing one of the 9 ft. deep reinforced concrete warren girders which support the edge of the 30 in. thick floor slab of the store.



PEACOCK ROOM

PETER FERRIDAY

In the gossip-history of the 'Aesthetic Movement' in England, the legend of the Peacock Room retains a special atmosphere of scandal, mystery and tragedy. How much of the scandal was contrived, how much of the mystery is merely mystification, how far the tragedy was pure coincidence—and the quality of the Peacock Room as interior decoration—may be judged from Peter Ferriday's re-ordering and re-interpretation of the established facts, below.

The Peacock Room that was once a part of 49 Princes Gate, Kensington, and is now in Washington, has been much written about during the last half-century and was intensely publicized by Whistler when he had finished his work there in 1877. Information was collected from many actively concerned by the Pennells for their life of Whistler and the house and its contents were described in detail by Theodore Child. With a considerable literature already in existence some apology is required by anybody adding to it.

The accounts of the Room have been in the main concerned with Whistler and have been based on Whistler's stories of what happened there. Fact and fancy were one with Whistler and if it is unlikely that much can be added to the Pennells' account of his work there it is at least possible to discover something of the two other participants, or victims, in the affair. They were the owner of 49 Princes Gate, F. R. Leyland and the architect, Thomas Jeckell, or Jeckyll.

That it has been possible to add anything at all to the story is due almost entirely to those whose names appear in the acknowledgments. Whistler's letters were until recently in rigorously enforced copyright, while the letters addressed to him were hidden in Miss Philip's collection. Only a small proportion of Whistler's letters has been examined and it may well be that more of his writings about the Room will be published. Few of F. R. Leyland's appear to have survived and nothing of Thomas Jeckell's effects is traceable, but there again papers may well come to light which will settle some curious features in the story. F. R. Leyland, especially, deserves a biographer. His life was a very remarkable one.

One reason for writing about the Room again is that the existing accounts are unsatisfactory in many respects. Frederick Richards Leyland appears in two often-reprinted books as Francis Leyland and Sir James Leyland, and he has recently been styled Mr. Leland. Errors of this sort are of little account except to reviewers but the 'dramatic possibilities' have encouraged a different, and less trivial, kind of inaccuracy. Jeckell's visit to Princes Gate to see what had been done to his room —there is, it may be said straight away, no evidence of such a visit— has produced this remarkable flight of fancy. 'The shock cracks his brain. He staggers home and is found a few hours later muttering to himself and trying to cover the floor of his room with gold. He dies in a madhouse.' The story originates with Murray Marks, the art dealer, but of course he did not put it out with such abandon.

Beyond the details, interesting and amusing as they are, of the Peacock Room is the backcloth of its decade, the marvellous Seventies. In this decade the taste and the ideal of the age was astonishingly altered. There are two Victorian ages, before and after the Seventies. The Law Courts, Grimes Dyke, the Peacock Room were built, Bedford Park was begun, the Grosvenor Gallery opened, *The North-West Passage* and *La Ghirlandata* painted, *Arrangement in Grey and Black: Portrait of the Artist's Mother* exhibited at the Royal Academy, Whistler v. Ruskin enacted; early in the decade *Middlemarch* was published, late in it *Daniel Deronda*. So far as any generalization will do for complex events the best of Victorian work before the Seventies was earnest, thrustful and harsh, and centred on the Religious Revival; after the Seventies the aim was style, taste, fancy and the centre was society. *Truth* and *The World* would have been disgraceful in 1860; in 1880 they were social necessities. The names of Butterfield and Street do not suggest the graces of social life, those of Norman Shaw and Lutyens do. Wit and frivolity are not suitably accommodated in a Middle Pointed house, and the arts of conversation and of dining and dining out, of social cultivation, required something less austere and less severe than a habitation reeking of the Athanasian Creed. The Victorians, the lucky ones, had begun to enjoy their money and live and feel as rich people should. To this generalization a thousand objections might be raised, but that there was a change in direction within these few years seems irrefutable. The change was drastic enough to suddenly date a generation. Only one case of an artist significantly representative of England before and after the Seventies comes to mind—the remarkable lady who created first Dorothea Brooke and then Gwendolen Harleth. That was the achievement of genius.

F. R. Leyland, Whistler and Tom Jeckell have their parts in these events.

D.G.R.

The man who drew together the diverse people who were to form the taste of the Seventies, Eighties and Nineties was Rossetti. Without him the later Victorian age would have been very different, for better or worse.

Of his very extraordinary life little can be said here, but as the friend of Leyland, Whistler and Jeckell he cannot be altogether omitted. The young, Chatham Place, Rossetti had with his charm, conversation, enthusiasm, prejudices and disinterestedness brought about the most abundantly documented 'incident' in English art, Pre-Raphaelitism. His own contribution as a painter was insignificant, the two ingenuous oils now in the Tate, but in other ways his contribution was paramount. He held together the curious circle of Millais, the boy genius, Holman Hunt, the solemn ass (but painter of *Strayed Sheep*), the irascible Madox Brown, the Popishly inclined Charles Collins, the snoozing Collinson, the emigrating Woolner, Stephens, Arthur Hughes, and invented their phraseology, 'sea of slosh,' 'avuncularism,' 'tin,' 'stunner.'

Rossetti lounged through the

Fifties—Millais and Hunt were romping away—in a seeming inability to get any work done. A few Dante water-colours and some book illustrations, enough to bring William Morris and Edward Jones to his side, were all he had to show. Between 1857 and 1859 he produced the Arthurian water-colours, some of which were perfectly formed, subtle, tender and pure. They made any further mediaevalizing, and Burne-Jones's whole career, a work of supererogation. They may not be masterpieces even in English art but minor successes are the achievement of the exceptionally able and devoted. The lounging had not been laziness.

The Tudor House Rossetti, ending in replicas, chloral, and near-madness, was the one known to Leyland and Whistler. Tudor House in the Sixties was the centre of Victorian artistic dissidence, for Rossetti's personal attractiveness was unfailing. There was in him, whatever the disfigurements, a certain largeness. Morris, Whistler, Burne-Jones, Sandys ('The Tomb of Loans'—D.G.R.), Philip Webb, Swinburne, Shields, Meredith, Madox Brown and many others formed the Set, until the chloral had done its damage to their host. The life at Tudor House in the Sixties, with the wombats, the armadillo, the white mice, peacocks, zebu, and other beasts (a lion and an elephant were seriously considered)—there has never been anything like it. To the artists, writers, Blue and White must be added the outrageous and endearing Charles Augustus Howell, dealer for Rossetti, Whistler, Sandys, Watts, former secretary of Ruskin, raconteur, liar, gossiper, generous friend, and legend. He and his wife were painted by Rossetti and Sandys, his mistress[1] was painted by Whistler, and she painted F. R. Leyland. The Rossetti Set went in for artistic inbreeding.

The corollary of the artist who never exhibited at the RA and whose productions were by the standards of the time esoteric was the patron of unusual discrimination and independence. In attracting such men and keeping them buying and paying in advance—years and years in advance—Rossetti was a master. Hounded by sleeplessness, full of chloral and nearly mad he never let a patron get away. The patrons were generous and forgiving men; 'Leyland and Graham have both turned up trumps as to tin.' With few exceptions they were business men and 'self-made'—the vulgar, ostentatious, boasting, ugly and greedy of English fiction and snobbery. James Leathart of Newcastle, George Rae of Birkenhead, F. R. Leyland of Liverpool, Frederick Craven and W. A. Turner of Manchester, William Graham, and the lawyers, Valpy (the friend of Samuel Palmer) and Anderson Rose—these men bought the bulk of later Pre-Raphaelite work, as well as some Whistler and Albert Moore. They came to buy Rossetti and he beguiled them into buying the paintings by his friends. For all the seediness and decay he was that sort of man. In his own painting he influenced, lamentably in many ways, the taste of the last quarter of the century, by his character he influenced it by finding the necessary backers. He both founded and funded the aesthetic movement as it is horribly called.

[1] This lady also painted the portrait of Pusey displayed at Pusey House, which must have amused Howell and Rossetti and which would not have amused Canon Liddon had he known.

F. R. Leyland

Frederick Richards Leyland was born in 1831, three years after Rossetti, three before Whistler. He was a Liverpool shipowner, founder of the Leyland Line, art collector and reputedly the last man in England to habitually wear frilled shirts. His portrait was painted by Whistler, Val Prinsep, his son-in-law, and Rosa Corder. His wife was painted by Rossetti, Whistler and Phil Morris.

According to Mrs. W. J. Stillman (the stunner, Marie Spartali) Leyland's mother was a poor woman who sold pies in the streets of Liverpool. One of her customers was a Bibby and he gave her son a job, to run errands and sweep out the office. The Yankee exaggeration of this suggests that the story is Whistler's. (One is reminded of Philip Heseltine who said he was born on the Embankment. He was, in the Savoy.) Leyland was educated at the Institute, Mount Street, and entered John Bibby, Sons & Co. as an apprentice—this more dignified status was insisted upon by Val Prinsep. In the following years 'his intense application, his accuracy and despatch, and his intimate knowledge of any transaction which came within his cognizance' made him indispensable to Bibby's. The field of their operations was the Mediterranean and Leyland taught himself French (his favourite reading was Balzac and Zola) and he 'spoke Italian to perfection.' The rapid increase in the importance of Bibby's was due, according to Sir William Forwood, who knew everything about the Liverpool shippers, to young Leyland. He came to run the firm while in his early thirties. At the time Bibby's had an extensive business as copper smelters, with land in Birkenhead. The Birkenhead Corporation wished to acquire this land and after a failure to agree on the price went to arbitration. Leyland conducted Bibby's case with complete success—'this may be considered the turning point of his career, for subsequently he had complete command of the business until the firm was dissolved.' He re-equipped the Bibby fleet to the extent of designing in their essentials the new steamships—his revolutionary views on ship design were later to influence the White Star liners.

As in the matter of his parentage there is more legend than fact about the dissolving of the Bibby firm. The legend is that Bibby's were presented with an ultimatum in 1872. They had the choice of selling out to their manager or their manager would set up in competition. The Bibby family decided to sell but declined to allow Leyland to use their name, known throughout the Mediterranean. As a revenge Leyland had their brass plate deposited on the doorstep of their house on the morning he put up his own brass plate. (This story is made the more unlikely by the appearance of John Bibby at Leyland's funeral twenty years later; the same Bibby bought some Rossetti works at his sale.) From January, 1873, the Leyland Line made his name pretty generally known.

Rival shipowners were reported to have made fun of Leyland for his unusual methods. On his desk he had a card file brought up to date every morning showing the position of every ship and the space he had to offer. His exact methods paid and the other shipowners were soon copying him. He had a passion for tidiness—the order of his houses was remarked on, and in his dealings with painters he could tell them how much and to a penny he had advanced them and when, and by return of post.

This career alone would qualify Leyland for a place in the history of English shipping, but there was a good deal else. The cultural traditions of the Liverpool merchants have been much written about, but, with one exception these rich traders did not buy modern paintings. John Miller, a Scot and a most shadowy figure, was the exception and under his guidance the Liverpool Academy awarded its annual prizes to Holman Hunt, Millais and Madox Brown when they were being reviled in London. Miller himself owned Millais and Rossetti paintings, was a friend of artists, particularly of W. L. Windus (*Burd Helen* and *Too Late*), and kept open and convivial house. The likelihood is that Leyland made his acquaintance with modern art and artists there. The only other Liverpool patron, a few years later than Miller, was George Rae, the banker, who commissioned *The Beloved* and bought the Arthurian water-colours from William Morris. He does not seem to have been a friend of Leyland's. By 1864 Leyland had commissioned a painting from Rossetti for 450 guineas; this was the *Lilith*, not delivered until 1869 and later ruined by repainting. From then on Leyland was, with William Graham, Rossetti's chief patron. A crayon *Venus Verticordia*, the portrait of Mrs. Leyland, *Loving Cup* were begun for him in 1867, *Veronica Veronese* in 1872, *Proserpine* and *The Blessed Damozel* in 1873, *Dis Manibus* in 1874, besides many crayons and drawings.

It has already been said that to meet Rossetti was to help in the upkeep of his friends. As early as 1864 Leyland was advancing money to Whistler. He was the second purchaser of *La Princesse du Pays de la Porcelaine*, and by 1867 had advanced £262 10s. towards a commission of £315—if this was for the portrait of Mrs. Leyland, as is likely, then Leyland was unfortunate; he still had not got it ten years later. Mrs. Leyland described the posing as 'near martyrdom.' Of the relations between Whistler and Leyland something more will be said later. As Rossetti had beguiled the shipowner into funding the American artist so he saw to it that Jones, Sandys, Simeon Solomon and Madox Brown benefited. Leyland paid 500 guineas for his replica of *Chaucer at the Court of Edward III* in 1867, 400 guineas in advance for *Don Juan*, 300 guineas for Sandys' *Valkeryie*. He paid substantially for some Albert Moore, probably on the advice of Whistler. All these painters were paid their full price, there was no haggling, no pressing for rapid delivery, and if advances were requested they were sent straight away. Leyland was the model indulgent patron.

In 1867 F. R. Leyland bought Speke Hall, which testifies to his position in Bibby's and his good taste. Artists were cordially welcome. Rossetti went once for a few days with Howell in 1868, but was totally incapacitated by chloral or drink—'I used to keep him quite out of Leyland's way' Howell reported. Rossetti's life had entered that last long dreary stretch in which he seems to have wanted nothing so much as death. In the same year Fred Walker, after visiting John Miller, went with Leyland 'partly by rail, and partly in his phaeton, to the wonderful old Hall, where I have spent a very comfortable quiet time—the vehicle and servant waiting to carry me back. . . .' Whistler was there so often—a considerable proportion of his pre-1877 correspondence was on notepaper with the embossed monogram FRL on it—that the designation 'visitor' would distort the situation.

Life at Speke was not happy for reasons that are not known. Leyland's bearded severity of appearance appears to have coincided with a manner which did not make for easy sociability. He did not attract his fellow men nor did they attract him. Val Prinsep recorded that he only remembered him praising three men, Rossetti, to whom he was devoted, Burne-Jones, to whom he taught the secret of the cheque book, and Edison, whom he respected. Rossetti, as his letters make clear, did not return the strong feelings; he was grateful to Leyland as a generous patron but no more. Mrs. Leyland was beautiful and sociable and there was friction. 'It is as you say with the master of Speke. Damn such a dog's life! He was here *all day* last Sunday and complained of it, and of his isolation! and still he goes on! . . . I will tell you all on your return.' Howell no doubt did tell Madox Brown all when they met, and add a few details from his own inexhaustible imagination. If Howell's household was at all like descriptions of it then Leyland had spent an interesting Sunday. The only detailed account of life at Speke is Whistler's, and he knew it from the resident's point of view. His arrangement in grey and black nursed the Leyland children through scarlet fever there. One word of explanation is necessary. Whistler shared with Rossetti an incomprehension of music—Leyland took Rossetti to *Fidelio* but the painter thought it ridiculous—but Leyland's greatest and life-long desire was to be a first-rate pianist. (Shipowner, landowner, art patron, linguist, musician!). Albanesi was one of his closest friends. At Speke Whistler met 'X' (the Pennells discreet symbol) the first Bohemian. 'Well, you know, there he was and that was the way he always lived—the prince of parasites! I met him first at the Leylands—an extraordinary household. Leyland was playing the Liverpool Medici—he was interested in art—he would come home from his office, go upstairs to his room without speaking to anyone, shut himself in, and play on the piano, practising and practising. Then, perhaps, he would go downstairs to the drawing-room where Mrs. Leyland was with 'X' and his two singers and other hangers-on, and he would make a scene with her—he was always making scenes with her, so that when he was away she was always having little parties or supper-parties, and he would come home and catch her in the middle of supper sometimes. 'X' was the professional hanger-on, drifting from one house to another. He was a genius, a musician; that was why Leyland kept him for so long.' 'X' subsequently lived off Whistler, or more accurately his creditors, for three years. The 'Liverpool Medici' was a characteristic piece of Whistler malice.

In 1869 Leyland bought a town house, 23 Queen's Gate. In 1872 he sold part of his collection of paintings, probably those acquired before the Rossetti influence had gripped him. When he heard of the intended sale Rossetti wrote hoping that he would get rid of the Herbert (rather harshly as he had much admired him once) and advised him: 'Why don't you give yourself the delight in life of building a fine gallery for big pictures? What a jolly thing that would be!—and you have capital space for it I should think at the back of your smoking room by some arrangement, if indeed

you feel sure of remaining at Queen's Gate. If not, then you could change your quarters with a view to such facilities. I know I'd do it if I were you, for what is life worth if one doesn't get the most of such indulgences as one most enjoys?' At this time Leyland and Rossetti were locked in an epic business struggle over what Rossetti owed Leyland in the way of paintings, over what Rossetti intended to do for him, and what Leyland's advances on the proposed commissions would be. Rossetti was trying to foist a 2,000 guinea *Hero* on him, and Leyland was trying to persuade him to paint what had already been paid for. Leyland was a worthy opponent; W. M. Rossetti said they respected each other as hard bargainers. While these negotiations were going on Rossetti was having a similar encounter with William Graham, and Howell was on his behalf waging (hardly legal) war on two other patrons, Valpy and the photographer Fry. The Lechlade years were prodigious so far as letter writing and intrigue went. There couldn't have been much time left for Mrs. Morris.

So little is on record of Leyland that one would hardly know even the sort of man he was had he not been involved in the famous quarrel with Whistler. That he loved painting there can be no doubt. That he enjoyed the excursions to Tudor House, and the riff-raff he met there, is obvious—he was a regular visitor, and stayed on friendly terms with Howell long after the others had deserted him. Yet 'he hated disorder, untidiness or unpunctuality' Val Prinsep stated. Rossetti was disorderly, untidy and unpunctual, while Sandys, Solomon and Howell added much else to the basis of these three vices. It all speaks of a remarkable forbearance. A last view, his Harrovian son's, may be allowed. 'The governor has such a devil of a temper and won't listen to reason.' So he wrote to the family friend Jimmy.

Whistler

A sensitive, learned and sympathetic Frenchman visiting England in the Fifties and Sixties found much to admire but was much shocked as well. English drunkenness, he never got as far as Glasgow, and English painting were the most shocking of all. At the 1862 Exhibition he found Holman Hunt's colours 'brutal' and 'exaggerated,' his discords 'violent' and 'gaudy.' 'As for their landscapes: blood-red poppies like holes in parrot-green lawns; flowering apple-trees in which the hard white of the petals against the blackish branches is painful to the eye: a meadow-green graveyard in full sunlight, with every blade of grass provided with a highlight and shining like a pen-knife blade. There can be no doubt that there is something peculiar in the condition of the English retina.'[2]

The condition of the English retina which so worried Hippolyte Taine naturally troubled Whistler, Paris trained in matters artistic. Neither could be expected to feel the merits of the Pre-Raphaelites—the whole literary background of which was unfamiliar to them—for they had European connexions only with Germany, and in any case it is almost certain that neither ever saw Rossetti's best work. 'Not an artist, you know, but charming and a gentleman,' Whistler said of Rossetti.

Whistler's pejorative comments on English art were assiduously collected by the Pennells—they did not collect his comments on Millais and Albert Moore, or upon American art or even on Americans. Many of the comments were much to the point and his description of the imaginary 'The Inventor' particularly delightful. His own painting is very much an implied criticism. He began his English career, in 1859, with strong antipathy to English art and had a cordial welcome from some of the English; nothing could have been more promising. He had the necessary connexions, with Seymour Haden, du Maurier, Luke Ionides, and soon afterwards with the Rossetti Set. Through Rossetti he sold his paintings; James Leathart bought one, William Graham bought one, F. R. Leyland commissioned many. John Phillip, RA, recognizing the touch of Velasquez when he saw it, bought *At The Piano* (for £30) and generally from the point of view of achievement the early years in England were satisfactory—in works completed and the backing of the judicious. Whistler was very much at home with the Tudor House dissidents; however unlike them he may have been as a painter he had points of connexion—an irregular matrimonial arrangement and an obliviousness of the necessity of religion. G. P. Boyce, the landscape painter, buyer of Rossetti and owner of a Philip Webb house, first came across him in March, 1860; 'Met a gallicized Yankee, Whistler by name, who was very amusing.' In July, 1862, he met him at Swinburne's in Newman Street, along with Rossetti, Prinsep, Sandys and Jones. Boyce was at Whistler's in the same year with Swinburne, Rossetti, Poynter and 'Joe.' In January, 1863, Boyce and Rossetti bought sets of the London etchings, and in July Boyce met at Rossetti's Swinburne, Monckton Milnes, Legros and Whistler. And so it went on, at Rossetti's, the Ionides, at Arthur Lewis's.[3]

The Whistler contributions to the Set were wit and the Japanese fancy. Jocularity and high-spirits (hide-and-seek in the Red House) they already had; at its best there was Swinburne's reply to a young man who objected that Landor and his aspirates were not wholly in accord. 'Well, and what the 'ell's that got to do with you, if 'e 'appens to 'ave that awful 'abit?' Whistler's wit, though no very exceptional talent, was crueller and more sophisticated. In some stories the individuality of the tone still comes through. Hearing that a Henry Holiday painting had been rejected by the RA Whistler remonstrated with Redgrave. 'You know they can't hang everything that comes in higgledy-piggledy,' Redgrave said. 'Why, what do you call your present exhibition? Isn't that higgledy — and *particularly* — piggledy?' Only two other voices come across the ages like that, Rossetti's in rather a different way in his limericks and, better than any, Howell in two or three pieces of reported dialogue. Howell's tone was quite unique. The taste for Japanese which Whistler brought with him is documented almost to a day. Its beginning in Paris in 1856 has been written about often enough and there is no need to say more than that by 1860 Manet, Baudelaire, Tissot, the Goncourts and others were buying Japanese prints and two years later the Rossettis were. The Blue and White craze began at the same time and the quest for it by Rossetti and Howell has often and entertainingly been described; within a few years Sir Henry Thompson, the great surgeon, amateur painter, friend of Whistler and eccentric (he fed his cobra on mice at the dinner table), Louis Huth and F. R. Leyland had considerable collections, while the young and ingenious dealer Murray Marks was doing a splendid trade in selling it (buying cheap in Holland, where there was a large eighteenth-century accumulation and selling dear in England). Marks, it may be said, seems to have been a very decent fellow, and helped Simeon Solomon when he was in the condition of an untouchable. In 1862, the year of the Exhibition, Eden Nesfield, a friend and sparring partner of Whistler's, had put, according to Eastlake, some Japanese decorative touches to Cloverley Hall, an astonishingly quick transmission. Generally, in art and architecture Japanese had very little effect until the Eighties and Nineties. In literature, of course, Edwin Arnold was very smitten. On Whistler himself the influence was immediate but complex. Briefly it might be said to have confirmed him in a natural taste for decorativeness—thoroughly antiseptic and cleansing for one surrounded by morbid - mediaeval Pre - Raphaelites and anecdotal RA's—and to have caused him to waste precious years in trying to incorporate the obvious features directly. The *Princesse* was a costume piece and the *Six Projects* were left unfinished. It almost certainly made possible the Nocturnes in which no direct use of Japanese is made and in general encouraged his naturally delicate and fastidious taste—though even without the Japanese influence it is obvious that his own intelligence and character as an artist would have led him well away from his contemporaries.

The years of fruition were those roughly between 1869 and 1873. The Mother, Carlyle, Cicely Alexander, the best of the Nocturnes and a good deal else were produced. Compared with the many Millais portraits of girls Cicely Alexander is a masterpiece. It is graceful, refined and tender. Unfortunately it is unique. What happened subsequently in Whistler's career it will be left for F. R. Leyland to bluntly say, but even at this stage the reservation that Whistler is a greatly over-rated painter may be made. But if sale room prices in his own time had been any accurate measure then Whistler would have been a very rich man.

F. R. Leyland paid about £100 for *La Princesse*, the Nocturne owned by Mrs. Leyland was a gift. Leathart paid less than £100 for the *Lange Leizen*. Alexander Ionides paid less than £50 for *Sea and Rain*. Gerald Potter bought *The Blue Wave, Little White Girl* and a Nocturne for £230 the three. Haden gave him £10 for *The Thames in Ice*. The Crépuscule of the Valparaiso trip went to Howell, presumably to cover a debt. The Hon. Percy Wyndham's Nocturne brought him 150 guineas, as did the most famous of all, William Graham's. The etchings can only have brought in modest sums; 'poésie profonde et compliquée d'une vaste capitale' but little market value. The Carlyle and Artist's Mother were unsold.

It would be surprising if Whistler earned more than £3,000 in his profession between 1859 and 1876. Seventeen years! And yet, 'I did not dine alone for years.' The background is, of course, the great art industry, the RA junketings, Agnew, Gambart, high prices from Holman Hunt's 11,000 guineas downwards, Millais' reputed £40,000 in a year, the Pender, Bolckow, Mendel, Grant collections.

This failure must have been very bitter, and the later strutting, cackling, and aggressiveness were perhaps partly a response to it. For years Whistler showed courage in adversity. Cyril Flower, J. P. Heseltine, Anderson Rose, Sir Thomas Sutherland, Alexander, and a few others were occasional buyers and hosts in the early Seventies, and there were many hosts who did not buy and only entertained him for his wit and eccentricity. F. R. Leyland was a steady buyer, or supplier of money, and a regular host. From 1864 to 1877 he must have bulked more largely, and entirely more sympathetically, in Whistler's life than any other English acquaintance. The publication of Whistler's letters will perhaps one day establish the truth of this. Considering how unlike the art of Whistler and the art of Rossetti were Leyland was a man of outstanding perspicacity.

Whistler's account of life at Speke, which dates from long after the end of the friendship, has already been quoted. At one time he was engaged to Mrs. Leyland's sister, and Mrs. Leyland told the Pennells, for what it is worth, that she would herself have married Whistler had she been free. There was a rumour that she intended to elope with him, which she described as absurd. He acted as her escort when she was alone in London. She lent him her valet for his first entertainment at Lindsay Row, and with her sister put up the curtains. At one of these entertainments Leyland was asked by Whistler to take in Grisi's daughter; as a musical amateur it was appropriate. The young lady's first remark was to ask him how he liked Ouida's novels! (The fact that this story was retailed as humorous by Whistler tells something about Leyland; Mr. Gladstone made a special visit to Marie Corelli.) The Leyland girls were the most patient of models, and to the Leyland boy Whistler was 'Jimmy.' Leyland himself was all a painter could ask for.

> Dear Leyland—I am going to ask you for more money.—This you see is the festive season at which the struggle with the enemy becomes daily more difficult. I come to you for ammunition as mine is exhausted and I am to do great decisive battle with strong forces on Thursday I fear—Will you kindly send me the balance left for your picture, which is steadily progressing.

Leyland sent 50 guineas.



1, *'La Princesse' by Whistler in the Peacock Room.*

[2] From *Taine's Notes on England*, translated by Edward Hyams, 1957, and a classic.

[3] The West End draper who married Kate Terry. The tumultuous applause from the pit was led by Lewis's young assistants with free tickets supplied by the boss, according to *Truth*.

Whistler spent Christmas of 1871 at Speke and probably that of 1873 —at least Mrs. Leyland asked him to come with the inducement 'you might have good sport on the remaining dogs' (referring to his one and only shooting expedition). The debt to Leyland was more than financial.

'I say I can't thank you too much for the name "Nocturne" as a title for my moonlights! You have no idea what an irritation it proves to the critics and consequent pleasure to me—besides it is really charming and does so poetically say all I want to say and *no more* than I wish.'

Leyland was a friend and patron in a million. While he was buying Whistler was being rejected in France and England, was showing unmistakable signs of being unable to finish his works, and was being abusively reviewed in the press, except by that staunchest of men, W. M. Rossetti. It is one thing—exceptional thing rather—to have taste, another to back it with money, and yet another to do so when all other connoisseurs regard the painter as a practical joker. Whistler, the painter of *Cicely Alexander*, Battersea Bridge and *Carlyle*, had this one steady patron. The Liverpool shipowner had a touch of genius too.

Tom Jeckell

The third figure in the Peacock Room, Tom Jeckell, is one of those people whose names crop up in places and ways that suggest that they were interesting—and when one looks further there is nothing else to be discovered.

Jeckell was born in 1827, the year before Rossetti, and was the son of a clergyman. He lived in Norwich, where most of his work was done, and Kensington. He became a Fellow of the RIBA in 1858.

The first reference traced is in the diary of the Rev. B. J. Armstrong, the vicar of East Dereham, who, on Shrove Tuesday, 1857, attended a lecture on the history of his town. 'Rather a dry affair, though Mr. Jekyl, the architect, illustrated the various styles of the church windows, etc., on a blackboard from the National School.' He restored Scarning and Halesworth churches in 1858, Old Catton, Eaton, Haddiscoe and Hautbois in 1861, Teverham in 1863. The record of his subsequent work is short. Horningsea was restored in 1867 and the nave of Loddon in 1871. His only new churches seem to be Thorpe, 1866, Stapleford Abbots, 1862, and Lilley, 1870–1, and nobody has ever suggested that they were remarkable works. Gothic was not his style.

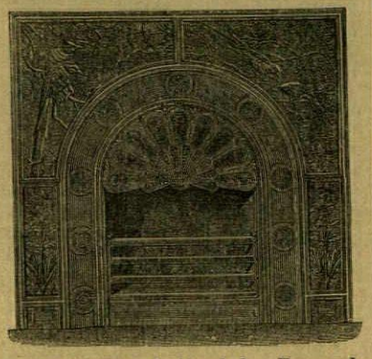
Jeckell knew George du Maurier before his Paris Trilby days and when du Maurier returned to London the acquaintance was renewed. The letters of the cartoonist provide the only information about the architect at this time, and the portrait is unflattering and amusing.

> I am writing to you from Jeckell's apartment in Pall Mall—1st floor, immense drawing room regardless of expense, open windows on balcony. (1861.)
> Tom J. in Jersey nursing the High Sheriff. Tom J. is rather a little tuft hunter, and will probably cut me for marrying a linen-draper's daughter, unless I make a great name like Leech, in which case il me léchera les pieds. (1861.)
> Tom Jeckell has just arrived; what a little lying snob he is! As soon as I can pay him I shall see much less of him. (1861.) His [Whistler's] adventures as described to a lot of fellows at T. Jeckell's in the evening were as amusing as usual. (1862.)
> Tom Jeckell's 'Norwich Gates' for a park are one of the finest things in the International Exhibition and he is making lots of money. Getting very unpopular for he tells such colossal lies & talks so beastly big about his friends Wales and St. Albans. (1862.)

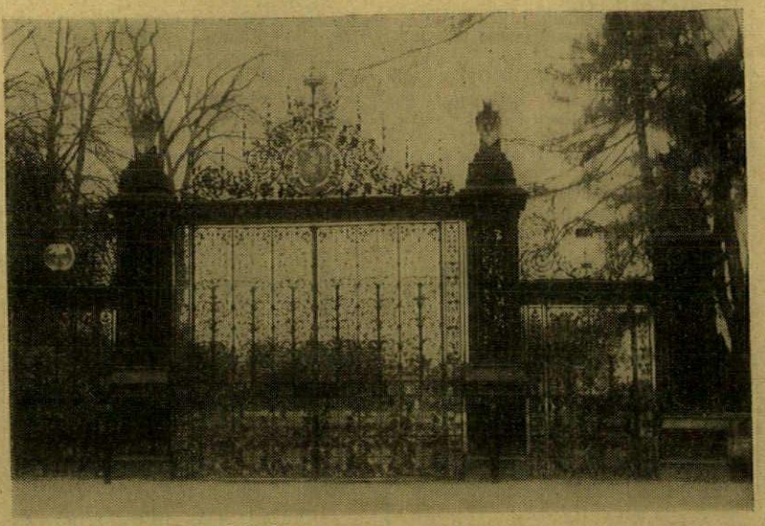
In January, 1863, Jeckell and Poynter were at du Maurier's wedding 'joyously bedecked' and there the letters cease.

Charles Barnard was one of that considerable Victorian breed, the Inventor. He set up business in Norwich Market in 1826 as an Ironmonger, Oil and Colourman. He invented the domestic mangle in 1836, a noiseless [sic] lawnmower, a geared lawnmower, and, by far the most important, the wire netting loom in 1844. The original loom is in the Bridewell Museum. To the present day the name of Barnard has signified wire netting. In a town whose textile trade was on the decline Charles Barnard did his home some service—by the end of the century wire netting, shoes, chocolates, printing, and mustard were to have replaced the trade of centuries in the capital of East Anglia. The first 'art' work of Barnard's was a Gothic hinge for the 1851 Exhibition, but soon afterwards they were making grates, stoves and gates—along with stable fittings, garden furniture, pig and poultry troughs. From 1859 the firm was known as Barnard, Bishop and Barnards. The circumstances of Jeckell's connexion, and unfortunately all record of it, with Barnard's is lost. The association lasted for fifteen years and began with a thumping success, the Norwich or Norfolk Gates mentioned by du Maurier.

These gates made the name of Barnards when shown at the 1862 Exhibition and one can well understand why. They were neither Gothic nor Classic, being composed entirely of leaves with side panels of flowers. The workmanship was splendid, the design delightful and unaffected, and they looked well close to and from a distance. The only fault was in the spindly sprays along the top, but otherwise they were very evidently the work of a natural designer, a spontaneous and joyful creation. Compared with the other exhibits, Skidmore's Hereford screen was there, they were in a class of their own, and were recognized to be so at the time; *The Times* gave its official approval. It might be recalled that it was at this Exhibition that Morris, Marshall & Faulkner, the Ecclesiological Society, J. P. Seddon, and R. Norman Shaw made their debuts as furniture designers. The furniture was brutish and nasty and it is really a sad thing that Morris did not make use of Jeckell's talents which were so obviously superior in this sort of work to those whom he did employ. The Gates were purchased by the Gentlemen of Norwich and Norfolk and presented to the Prince of Wales as a wedding present in 1863. In 1908 they were moved to their present position in Dersingham Avenue and a splendid sight they still are.



2, *iron grate designed by Barnard, Bishop and Barnards.*

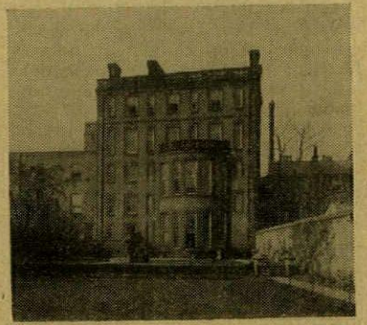


3, *Norfolk Gates at Sandringham.*

For some years Jeckell, or Jeckyll as he was generally called, was associated with this first triumph. He belonged in the mid-Sixties to a London dining set whose members were Swinburne (poetry), B. T. Williams (law), B. W. Richardson (medicine), Dominick Murray (stage), R. E. Francillon[4] (fiction), Tom Purnell (journalism), Joseph Knight (criticism), and Whistler (himself). '"Jeckyll of the Gates" was his regular designation on account of a work that had won special attention,' Francillon recalled. During the Sixties Jeckell was, with his fellow Norwicher Sandys (and at least one Norwich patron, Clabburn, the textile manufacturer whose wife gave Rossetti his dowdy and rowdy peacocks) in the Rossetti-Whistler Set, though never an important member. Only two references can be found to this association but they suggest that he was a regular. Boyce noted in his diary for 1866: 'Dined at D.G.R.'s. Fred Burton, Sandys, Jeckyll, Howell, Gagley, Jimmy Whistler and brother, Swinburne and Ormesby. Left with the two last. O. and I saw S. who was rather drunk, safely into a cab at Pimlico Station.' W. M. Rossetti in his diary for 1867 noted: 'A dinner at Whistler's (his brother, Tebbs, and Jeckyll, with myself), and grand discussion as to the campaign of to-morrow, when the motion for his expulsion from the Burlington is to come off.' The motion was carried—after all you cannot push a fellow member through a window even if he is your brother-in-law! The mention of H. Virtue Tebbs provides an admirable illustration of the close-knittedness of the Set. He was a lawyer, a patron in a modest way and the brother-in-law of John Seddon; he was with Howell responsible for the exhumation of Mrs. Rossetti. Cases abound. P. P. Marshall, of the Morris firm, was the son-in-law of John Miller, of Liverpool; W. M. Rossetti married a daughter of Madox Brown; Whistler's brother married an Ionides; Sydney Morse, the collector and owner of Whistler's famous Oriental cabinet, was Harry Wilson's brother-in-law; Whistler himself, of course, married E. W. Godwin's relict; and so forth. The inbreeding was prodigious.

At perhaps a slightly later date, about 1870, Jeckell became the friend of Cyril Flower, a London rentier—hence his later title Lord Battersea—who bought some Rossetti, Burne-Jones (now in the Tate), and Whistler. Flower had the dubious honour of being the model for *Eric, or Little by Little*. In his bachelor days his rooms were leather lined, which suggests Jeckell as his architect; after his marriage to a Rothschild and his being kicked upstairs he had Overstrand built. A Whistler letter suggests that Jeckell was a regular companion. Writing, inevitably, from Speke he asked Flower to go and see his latest Nocturne for which he wanted 300 guineas; he ended, 'By the way get Tommy Jeckyll to go with you, for I want him to see my pet Nocturne.' The only other Jeckell connexion of note was the Cozens Hardy family. For them he designed a chapel at Holt amongst other things. A description of him at this time gives him as 'a pale little man with a bald head and a dark beard.' Mr. Edward Boardman's father recalled: 'I believe he wore knee-breeches and buckle-shoes, and was looked upon as peculiar.'

The Barnards-Jeckell Gates were followed by the design of a series of very popular grates, which show a pronounced Japanese influence. The ingredients of the designs were few; a reeded background, with four or five roundels, some cut off casually at the edges. The roundels contained a flower—sometimes still, sometimes



4, *house at Cambridge designed by Jeckell.*

[4] Francillon was an acquaintance of Howell's, Knight the biographer of Rossetti and Richardson later on a teetotal advocate. Another teetotaller, Sir W. Trevelyan, of Wallingford, left him his famous cellar much to the delight of the press. The corks had gone so Richardson had no difficulty in resisting the temptation.

spinning—bees (the Barnard rebus), or birds. In every case the detailing was exquisite and for cast-iron astonishing. The placing of the roundels and the handling of the asymmetrical design was delicate and assured—Jeckell had a designer's touch. The grates were pleasing, ingenious and refined, and they sold by the thousand. The Cause of Art and Industry had had one of its few successes.

The Seventies saw Jeckell's best works and his most notorious and the end of his professional career. The showrooms of Barnards, now Hope's the tailors, in Norwich Market Place must belong to about 1870. It is a commodious red brick building rather crude in detail and generally ponderous. Between 1870 and 1872 Jeckell designed his only considerable house, 62 St. Andrew's Street, Cambridge. The client was the solicitor Henry Rance, twice mayor Cambridge. The house was five storeys, brick and very Queen Anne, with a striking pattern of alternate wide and narrow windows. The only buildings at all similar of the date were Eden Nesfield's; it preceeded Shaw's exercises in the manner by a number of years. Inside the notable feature was the dining room with its 'mathematical ceiling' which was a pattern of eccentric circles studded with the roundels familiar from the grates. This remarkable house was provided with a lift (the first in an English house?) and had unusually generous sanitary arrangements. After Rance's death it was used as the University Offices and demolished in 1957.

At about the same time, 1872, Jeckell designed a room at the Holland Park house of Alexander Ionides. The Ionides family occupied a special place in the affections of the better artists of the 1860s and 1870s; theirs was one of the few houses where they were always welcome, could enjoy themselves and could be sure to find beautiful women. That Mr. Ionides bought their paintings was an additional attraction. The Holland Park house was adapted for its new owner by Philip Webb and over the next twenty years various artists, Walter Crane most of all, made it a miniature and very lush palace of art—not a square inch was left untouched by art. The most relaxing room was designed by Jeckell and devoted to the pastime of billiards. It was a simple and refined arrangement of panels divided by oak framing; the small panels were filled by Japanese prints, the larger ones by Japanese paintings on silk. The overall pattern was oak and red lacquer. The ceiling too was a simple panel pattern. It must have been refreshing to enter the billiard room after the tiles, grilles, gesso work, wall paper, Webb, Morris, Kate Faulkner, Crane oppressiveness of the rest of the house. Jeckell had a sense of moderation.

For Barnards Jeckell secured a prize medal in 1873 at the Vienna Exhibition for some ingenious and fanciful gates, and in 1876 designed for them what used to be called in the sale rooms a chef d'oeuvre. This was the ornamental pavilion, 35 feet long by 18 feet wide by 35 feet high, which was sent to the Philadelphia Exhibition of 1876. The purpose was to display Barnards' skill in wrought and cast-iron work, the designer's job therefore to give full scope to his employers. This Jeckell did. The pavilion was two storeys high, the upper one being supported on twenty-eight square columns. These columns were patterned and from cast-iron brackets supported a verandah. In the brackets were bas-reliefs as delicate as paintings; 'Apple blossom, with flying birds,' 'Whitethorn with pheasants,' 'Scotch fir with jays,' 'Sunflower,' 'Chrysanthemum, narcissus, daisy and grass, with a crane and rising lark ' and so forth. These reliefs made some of the better-known wallpaper designs look heavy handed. Fans along the first-floor verandah roof were patterned with rose, honeysuckle, hydrangea, etc. There were also some characteristic roundels—butterflies, bees, birds, fish—set in a key pattern, and very beautiful. The upper floor had a wrought-iron railing of a pronounced Japanese flavour. Along the roof ridge was an elaborate cresting. The base of the building was surrounded by a railing of wrought-iron sunflowers four feet six high. One of these splendid sunflowers was exhibited a few years back at the Victoria and Albert Museum along with some of the fabric used for interior decoration.

Written descriptions can do no sort of justice to the Pavilion. It was admirably conceived to give Barnards' men an opportunity to produce highly-skilled and varied work, but it was more than this. In detail it was beautifully designed and the various elements were well worked together, although the upper railing and cresting were notably exotic. All in all it was the product of great skill, much experience and outstanding talent. As an exhibition piece intended to be striking it can hardly have failed to be a splendid advertisement for Barnards. The Pavilion was on display at the Paris Exhibition of 1878, receiving a laudatory review from Lewis Day on this occasion, and then bought by the Norwich Corporation who erected it in Chapel Fields. There it stayed exposed to the inclement East Anglian climate for seventy years. The detailing could hardly stand up to that. It was destroyed a few years ago by the Corporation. A similar fate befell one of Jeckell's last works, the cover of the Boileau fountain in Norwich. The cover was removed on the grounds that the Boehm sculpture could be more easily seen.

With that one comes to Jeckell's last and most famous work—49 Princes Gate.

* * *

When F. R. Leyland at last secured a London house in which to display his treasures he bought an undistinguished building of the 1850s and then rebuilt it internally. Sir Thomas Sutherland said that the reason for this curious procedure was that Leyland did not like the ostentation of a great new mansion, and that is probably the truth. The staying in Kensington was natural enough as it was the artistic centre of London. Millais and Leighton had their palaces there, and the art collectors Thomas Fairbairn, Bolckow, Mappin and Heseltine lived in Princes or Queen's Gate. The social 'tone' was, one supposes, satisfactory, and presumably a cut above the Cadogans. Henry James, who was pathologically interested in such matters, mentions in one of his contes two ladies, one having 'rather a dull house in Portman Square' the other living 'with a brighter modern economy' in Queen's Gate. There is no mistaking the snub there. A less exact observer, Anthony Hope, charted social London as 'from Putney to Maida Vale, from Maida Vale to Paddington, from Paddington to Kensington Palace Gardens,' so Leyland had not chosen too badly.

Of London 'art houses' there had been only one of importance in recent years and that a conspicuous one, the mansion for the richest commoner in England in Park Lane. More modest, both in size and architectural value, art houses of the Sixties and Seventies were Alma Tadema's, Leighton's (Aitchison), Millais's (Hardwick), Alfred Morrison's in Carlton House Terrace (Owen Jones—'it makes the chief palaces of Northern Europe vulgar'), Frederick Lehmann's in Berkeley Square (Aitchison, with decorations by Albert Moore), George Howard's in Palace Gardens (Webb, the Morris company, Burne Jones, Crane), and the slightly later Makins house in Queen's Gate (Shaw, with the Morris company). There were of course Shaw's houses for the RAs and Whistler's various interior decorations, but on the whole nothing outstanding. 49 Princes Gate was the most remarkable.

Norman Shaw was the architect for the reconstruction. Murray Marks's biographer claimed that the dealer was responsible for the choice—Shaw had designed his Oxford Street shop. The great feature was that the three living rooms were interconnecting, being divided by screens reminiscent of that of a church at Bois-le-Duc; when opened out the room was ninety-four feet long. From the recently demolished Northumberland House came the late eighteenth-century staircase; no grander first feature could have been chosen. 49 Princes Gate would have been a fine house and a credit to its owner's good taste even without the famous dining room. A Shaw interior was not thrilling or delicate, but solidly worthy and skilfully planned.

Among Leyland's most treasured possessions was his porcelain, his pots. Their accommodation was put into the hands of Thomas Jeckell—whether on the advice of Shaw, Marks or Whistler there is no knowing. It may be that Leyland had been in the Ionides house and chosen for himself.



6, one of Jeckell's original drawings of details of the Pavilion.

Jeckell had three compulsory ingredients in designing the dining room, where the porcelain was to be; leather hangings for the walls, Whistler's *Princesse*, the only painting in the room, and the pots. The leather has been variously described as Cordovan and Norwich; it was apparently Cordovan leather which had in some mysterious way reached Norwich and been sold from there in London. Its immediate provenance may have been Old Catton, for an account of the village published in 1878 describes some leather embossed with flowers painted gold and silver in a house adjoining Catton Old Hall, and a later book states that the leather, by then sold in London for £253, had come from a ship wrecked in the Armada and reached Norwich after being in a house in Wells. This is a pretty story but it would be a coincidence if it were not the leather of the Peacock Room.

The arrangement adopted by Jeckell for the room was incised shelving, very graceful and appropriately reminiscent of Japan, for the pots, a Jacobean pendant ceiling ('stalactitic droppers' *The Times* called the pendants), the *Princesse* above the fireplace, the Spanish leather round the walls. This assembly—it could hardly be called a combination—of features was not satisfactory, and perhaps in the nature of things could not be so; such diverse materials were irreconcilable. The choice of the Jacobean ceiling was likely to have been dictated by the rest of the house—it matched the Shaw interior. The pendants themselves served as gas fittings, an example of live antiquarianism! In the hearth the fireirons were two of



5, mathematical ceiling in the Cambridge house.

the Pavilion sunflowers. E. W. Godwin, who was most sympathetic towards Jeckell and by this time an eclectic or dabbler himself, wrote: 'To speak most tenderly, it was at the best a trifle mixed.' In fact it must have been a complete failure and Jeckell's worst work. It was certainly an undertaking that could not have been envisaged before the Seventies. There was an eclectic superabundance of tastes about it. But historical significance is no substitute for artistic success.

At an early stage in the work Whistler was interested. Mrs. Leyland wrote to him in April, 1876: 'Jeckell writes to know what colour to do the doors and windows in the dining room. . . . I wish you would give him your ideas.' With his considerable experience in the decoration of his own house—one of his unqualified successes[5] and as influential as anything he did—it was natural that the Leylands should consult him. Whistler painted some of the panels of the staircase with discreet Japanese motifs, and at that stage the house must have been attractive enough. Shaw's sombre decor with Rossetti, Madox Brown, Crivelli, Botticelli, tapestries, Indian, Tyrolese and Italian cabinets—a general air of wealth and connoisseurship.

The troubles began, in the dining room, with the colours of the carpet and the colouring of the flowers on the leather. These, Whistler claimed, spoilt the effect of the *Princesse*. The carpet was altered and Whistler given permission in mid-1876 to touch up the leather. Leyland was not in London at all because his time in 1876 was devoted to organizing the entry of the Leyland Line into the Atlantic trade, a formidable undertaking. He left Whistler in charge, and with, according to Whistler, a gentleman's agreement as to his remuneration. The sum of £500 has been quoted but the exact details of this agreement, even of the time of it, will only be known with the publication of Whistler's letters. From the summer of 1876 until February, 1877, Whistler worked, transforming the dining room into the Peacock Room.

The first notice of the decoration appeared in the *Academy* for September, 1876, and at this time it is clear that the peacock pattern had not been evolved though there had been a liberal use of gold paint on the leather. The pattern of the leather had been 'modified and enriched by the introduction of a fair primrose tint into the flowers patterned upon the deep ground of gold.' Sending this review to Leyland Whistler wrote:

> 'Mon cher Baron—Je suis content de moi! The dining room is really alive with beauty—brilliant and gorgeous while at the same time delicate and refined to the last degree—
>
> 'I have enfin managed to carry out thoroughly the plan of decoration I had formed—and I assure you, you can have no more idea of the ensemble in its perfection, gathered from what you last saw on the walls, than you could have of a complete opera judging from a third finger exercise!—Voilà—But don't come up yet—I have not yet quite done—and you mustn't see it till the last touch is on—
>
> 'I have nearly worked myself to death and if you like I propose to come down to Speke for a couple of days' rest when I have quite finished . . . a sort of farewell visit before I get off for Venice—and then perhaps you would come up with me and we could enjoy the success of this great work together. . . .
>
> 'There is no room in London like it mon cher—and Mrs. Eustace Smith is wiped out utterly!—What do you think of the article in the *Academy*? There will be a little letter of mine in next week that Tommy may have his full share of the praise as is right.'

Mrs. Eustace Smith, a neighbour in Princes Gate, had recently employed Tom Armstrong and Aitchison to decorate and Walter Crane to paint a frieze of white cockatoos in her boudoir. The letter in the *Academy* pointed out that the shelving was by Jeckyll 'the distinguished architect, to whose exquisite sense of beauty and great knowledge we owe the well-remembered "Norwich Gates," and whose delicate subtlety of feeling we see in perfection in the fairy-like railing of Holland Park. If there be any quality whatever in my decoration, it is doubtless due to the inspiration I may have received from the graceful proportions and lovely lines about me.'

Exactly what occurred next is impossible to find out though it is known that Leyland was annoyed at the publicity (though perhaps not at this fairly mild form of it) and very indignant to find that a complete scheme of redecoration had been begun without reference to him—he had agreed to only minor modifications. The result in any case was farcical. Whistler postponed his Venice trip to finish off his work. Instead of finishing what was almost complete he began all over again. Leyland did not know what was going on—he knew that Whistler was still working in the house but must have assumed still at the same scheme.

At this stage something like hysteria seems to have beset the artist and one gets the impression that here at least he had found something he could do superbly well and could finish. The peacock decoration, using the eye and breast feathers was furiously begun. There was nothing strange about the choice of the beast. A year or two before Godwin's peacock wallpaper had been designed, Minton's had a life-sized peacock modelled for them in 1876, Rossetti had them in his garden, Lady Beconsfield had them strutting all over the grounds of Hugenden, and there was a Japaneses suggestion about it. In five months Whistler had completed an enormous arrangement in blue and gold.

He entertained as feverishly as he worked. He kept open house, Leyland's house. The Coles, Sir Henry and his son Allan, were regular visitors. Sir Henry recorded in his diary in December, 1876: 'To Mr. Leyland's to see Whistler room. Original—Gold & Blue with illustrations of Peacocks & their tails. . . . Alma Tadema & his wife came.' Louise Jopling, the artist and subject of an unfinished Whistler portrait and a handsome Millais one, was allowed to add some touches when she came. Sir Thomas Sutherland and the Rudolf Lehmanns came. Mitford, his Chelsea neighbour, and later Lord Redesdale, came, and recorded, 'Whistler quite mad with excitement.' Lady Ritchie came and danced across the floor with him. Princess Louise, the Marquis of Westminster, Mrs. Stillman, the Comyns Carrs, E. W. Godwin came. All these are on record as having visited but how many hundreds altogether dropped in? It was a public entertainment and the bill of fare was the eccentric Yankee artist. 'This is what they saw on entering—a very slim spare figure extended on a mattress in the middle of the floor: beside him an enormous palette, paints, half a dozen long bamboo fish-poles on a line with their butts close at hand, and a very large pair of binocular glasses. Mr. Whistler dressed wholly in black velvet, with knickerbocker pantaloons stopping just below the knees, black silk stockings, and low pointed shoes, with black silk ties more than six inches wide and diamond buckles, was flat on his back, fishing-rod in hand and an enormous eyeglass in one eye, diligently putting some finishing touches on the ceiling, his brush being on the other end of the fish-pole. Occasionally he would pick up his double glasses, like some astronomer peering at the moon, and, having gained a near and better view of the effect, he would again agitate the paint-brush at the other end of the long pole. "Now wouldn't I be a fool," said he, "to risk myself on a scaffolding and nearly twist my head off my shoulders trying to look upward, when I can overcome the difficulty and annihilate space so easily thus?" —and he gave a wave of his fish-pole.' So an American journalist described the scene. (The clothes sound, curiously, more like Jeckell's than Whistler's.) The fishing-rods are authentic and the piece of conversation thoroughly Whistlerish. Mitford found him one day at the top of a ladder:

> 'But what are you doing?'
>
> 'I am doing the loveliest thing you ever saw.'
>
> 'But what of the beautiful old Spanish leather? And Leyland? Have you consulted him?'
>
> 'Why should I? I am doing the most beautiful thing that has ever been done, you know, the most beautiful room.'

The second press notice appeared in November, 1876, in the *Morning Post* and Whistler was worried about its effect on Leyland. Leyland was called Mr. Naylor Leyland.

By February, 1877, the work was done. Whistler had, in his own eyes, produced a masterpiece. The whole room was gold and blue, there were peacocks on the shutters and two large peacocks in different postures on the wall facing the fireplace and the *Princesse*. These peacocks have often been said to represent the artist and the patron—the proud peacock, Leyland, the humiliated peacock,



7, *Peacock Room with Jeckell's shelving on the right.*

[5] Howell notably dissented with his famous remark about the yellow scheme which he described as like being on the inside of an egg.

Whistler—but since the events which give them their symbolic meaning only happened after they were painted, and in any case the symbols have been variously read, this need not be taken seriously. The Room in February cannot have been anything but astonishing. The blue and gold must have been dazzlingly splendid, the enterprise original beyond measure, and the Room a virtuoso work without parallel in London. But the leather had gone and Leyland had never wanted to dazzle society; a taste for Zola and Balzac is hardly in accord with that sort of thing. But there it was, he was landed with Whistler's greatest arrangement even if unwillingly. At that moment all would have been well, for Leyland more than any of his contemporaries prized a beautiful thing, but Whistler over-reached himself.

Not satisfied with the hundreds who had already seen the decoration Whistler wanted the world to know. It was to be a succès d'acclamation or a characteristic piece of exhibitionism. All past failure, neglect, scorn, sense of failing power was to be washed away in a torrent of printed eulogy. To begin with a pamphlet was printed and could be picked up by anybody interested in various shops, including Liberty's. This pamphlet has apparently never been seen in recent times and was thought to have totally vanished. The Pennells, who saw Lady Haden's copy, suggested that it was not written by Whistler. They must have given it a very cursory reading.

HARMONY IN BLUE AND GOLD.
THE PEACOCK ROOM.

The Peacock is taken as a means of carrying out this arrangement.

A pattern, invented from the Eye of the Peacock, is seen in the ceiling spreading from the lamps. Between them is a pattern devised from the breast-feathers.

These two patterns are repeated throughout the room.

In the cove, the Eye will be seen running along beneath the small breast-work or throat-feathers. On the lowest shelf the Eye is again seen, and on the shelf above—these patterns are combined: the Eye, the Breast-feathers, and the Throat.

Beginning again from the blue floor, on the dado is the breast-work, BLUE ON GOLD, while above, on the Blue wall, the pattern is reversed, GOLD ON BLUE.

Above the breast-work on the dado the Eye is again found, also reversed, that is GOLD ON BLUE, as hitherto BLUE ON GOLD.

The arrangement is completed by the Blue Peacock on the Gold shutters, and finally the Gold Peacocks on the Blue wall.

The newspaper men came in February and Whistler had his success. Leyland was not there and legend has it that Whistler advised him to stay at Speke—'these people are coming to see the work of the Master, and you may, naturally, feel a little out in the cold.' *The Times* gave a long account, characteristically inaccurate in nearly every detail, E. W. Godwin corrected its errors for the *Architect* and his article was reprinted in the *Daily Courier*. *Punch* was facetious and, characteristically, unfunny. The *Standard*, *Pall Mall Gazette* and *Examiner* were full of praise. *London* reported: 'a paradise of peacocks, and a blending of Occidental audacity and Oriental taste, is a solitary spectacle, and has all the beauty that *bizarrerie* can give—all that, and something more.' The *Observer* congratulated Leyland, whom *Harper's Bazaar* termed a wealthy Londoner T. J. Leyburn, for having broken through the rules of conventionality. The *Academy* went: 'He has worked with immense zeal and spirit, and has produced a salient triumph of artistic novelty—too uniformly gorgeous, it may readily be conceived, for some tastes, but singularly captivating and complete . . . to say that the room is unique were to say little: it will long remain to the eye and mind a type of what artistic enterprise and conception *sui generis* can effect, in combination with opulence.' Jeckell's name was mentioned in this account. *Fun*, *The Builder* and *Building News* printed notices, and probably many other papers did so as well. By the test of inches printed Whistler had scored a triumph.

These reviews called forth a protest from Jeckell's brother. Poor Jeckell was by now insane and his brother, a Dudley brass founder, thought that he had been slighted. Of the correspondence only a draft reply by Whistler remains, but it has one or two interesting features, not least a reference to Leyland which illuminates his character. Whistler began by regretting that the reviews had not mentioned Jeckell's name more often, and went on: 'Your brother Tom was always one of my intimate comrades and we were greatly attached and in the sorrow that has come upon him no one has been more grieved than myself.'[6] No one has more felt for you all in your distress. . . . I doubt if Tom counted among his admirers any more sincere and [rooted ?] than myself.' He promised to write to the *Architect* and *Builder* about Jeckell's share in the work, and continued: 'Whereas you may at present be suffering from a feeling of injustice done to my old friend Tom—I ought to tell you that he always cared for my judgment in his artistic work and I will send you a letter of his some day [which ?] I value, to show on what terms we were—It is therefore best that I should say clearly that the dining room at Princes Gate was when he had done with it not at all the "Peacock Room or Harmony in Blue & Gold." When it was given up to me to decorate, I worked out on my own responsibility this combination in blue and gold and took the Peacock as a means of carrying out the arrangement. Tom was absent and really never saw the room until the whole color scheme was nearly complete, and I had begun to gild on my own responsibility his lovely columns feeling sure that by this means the beautiful carving would for the first time be fully brought out—as was the case. Before in their original state of dull brown walnut it could only be made out on close inspection and across the room was quite invisible—I met with objection on the part of Mr. Leyland who really feared that your brother might be annoyed at his work being gilded without his previous consent—but I remembered that before now in the case of the Pavilion for Philadelphia he had asked me for the color, and so took the matter in my own hands feeling sure that Tom would be pleased, as he finally was. . . .'

Not a mention of the Room cracking poor Jeckell's brain! The letters Whistler promised to write have not been traced though he went so far as drafting them.

[6] But according to Menpes he said on first hearing of Jeckell's madness, 'To be sure, that is the effect I have on people.'

Of what happened after the press reception only the outlines are clear; in detail all is contradiction and confusion.

That Whistler and Leyland quarrelled is, of course, famous. According to the Pennells Mrs. Leyland came into the house one day in February and heard Whistler saying, 'Well! What can you expect from a parvenu!' She was supposed to have shown him the door. Something of the sort did happen—at least Mrs. Leyland seemed to confirm it when talking to the Pennells. And then Whistler asked, presumably after his ejection (if it ever took place), for two thousand guineas for his work—for work, that is, he had never been asked to do.

Whistler did not get his two thousand guineas, and may well never have anticipated getting them—he was cunning enough to have named this unlikely sum merely to wrongfoot Leyland. Rich man refuses to pay impoverished artist proper fee for work done. There was no contract, there was obviously a verbal agreement of some sort. Five hundred pounds has been mentioned as the agreed fee (a pretty generous one) but the further works, the whole Peacock Room in fact, had been done on the artist's responsibility.

Leyland is reported to have consulted Rossetti who advised him not to pay anything—this again cannot be proved, though as to the advice it should be remembered that Whistler already owed Leyland over a thousand pounds in advances on undelivered paintings. With really remarkable generosity Leyland paid him a thousand pounds. With really remarkable malice Whistler began abusing him for knocking off the shillings. It was, of course, customary for artists to get the shillings,[7] but all things considered the artist had been fortunate to get his pounds. The shillings question was only an excuse to declare war.

By April, 1877, hostilities had begun. Young Leyland wrote to Whistler: 'My dear Jim—Good-bye old fellow—any time you're passing call in—I leave Town this evening, & aint time to call. Hope you'll be on better terms with 49 Princes Gate when I return.' By July violent letters had been exchanged and Whistler telegrammed Leyland that he intended to publish the correspondence; why he did not do so will soon be seen. To this threat Leyland replied at length, beginning with the not insignificant fact of the payment of a thousand pounds. 'You choose to begin an elaborate scheme of decoration without any reference to me until the work had progressed so far that I had no choice but to complete it; and it is really too absurd that you should expect me to pay the exaggerated sum your vanity dictated as its value . . . . Five months ago your insolence was so intolerable that my wife ordered you out of the house—and to anyone with an ordinary sense of dignity I should have thought this was notification sufficient—The fact is your vanity has completely blinded you to all the usages of civilized life, and your swaggering self-assertion has made you an unbearable nuisance to everyone who comes in contact with you—There is one consideration, indeed, which should have led you to form a more modest estimate of yourself, and that is your total failure to produce any serious work for so many years.—At various times during the last eight or nine years you have received from me sums amounting to one thousand guineas for pictures, not one of which has ever been delivered.' Leyland ended—'at the time so many newspaper puffs of your work appeared, I felt deeply enough the humiliation of having my name so prominently connected with that of a man who had degenerated into nothing but an artistic Barnum.' Whistler knew better than to print that—no clever little riposte would turn the tables there. For a parvenu it wasn't a bad letter. Leyland was an experienced man and could deal with stronger opposition than Whistler. When Plimsoll attempted to prove that the Liverpool shippers transported cattle cruelly they chose Leyland to represent them, and he proved the cattle were more damaged on their short English rail journeys than by the whole Atlantic crossing; Plimsoll was made to look wrong-headed, ill-informed and mischievous.

The 'artistic Barnum' retaliated by saying that he would send the paintings immediately. (He sent the portrait of Mrs. Leyland but seemingly not the F. R. Leyland.) 'Mrs. Leyland never ordered me out of her house—never uttered a discourteous word to me in her life—but what am I to think of the man who shirks the real question at issue and invariably screens himself behind those exalted feelings of respect with which I at least surround his family.' The relations between the Leylands were not good, or worse than that as Whistler implied, and perhaps Mrs. Leyland never did show him out, though she may have reported to her husband that she did. Mrs. Leyland continued to see Whistler up till the time of his marriage.

Leyland dealt with this or a similar letter in August. 'Sir, I return your letter—It is an ingenious puff of the work you have done at my house and it will be useful to you to keep it with the newspaper cuttings you are in the habit of carrying about with you.—An advertizement of this kind is of such importance in the absence of (or incapacity to produce) any serious work that I feel it would be an unkindness to deprive you of the advantage of it.' That is something more trenchant than anything in *The Gentle Art*.

Two undated Whistler drafts must belong to about this time. One suggests that he should 'not have recourse to the miserable means of offending your family through me.' (Leyland had apparently instructed his family not to see Whistler, and threatened the artist, in the best traditional style, with a whipping if he went to see the Leyland ladies.) The second expressed his feelings directly: 'It is positively sickening to think that I should have laboured to build up that exquisite Peacock Room for such a man to live in. You speak of your public position before the World, and apparently forget that the World only knows you as the possessor of that work they have all admired and whose price you have refused to pay—a great deal remains to be said or perhaps written upon that subject whenever one has time or occasion. With reference to your family, as a gentleman, little as you know about it, I could not do otherwise than recognize old friends when I met the ladies, who have always treated me with kindness and courtesy—Your last incarnation with a horsewhip, I leave to you to work out—Whom the Gods intend to be ridiculous they

[7] A delightful letter of Rossetti's about this has been printed. William Graham sent his first cheque in pounds. Acknowledging it Rossetti expressed surprise, but as Graham was such a very decent fellow he wouldn't mention the subject again. The shillings came in the next letter.

furnish with a frill.' The frilled shirt was of course being referred to. Leyland might have retaliated with the white lock. Perhaps he did.

How many more such letters crossed there is no knowing—many may still exist—but it is doubtful if they would be found to add much except by way of felicitous insult. Leyland did not keep any he received.

The interchange ended in farce. B. Verity & Sons, designers and manufacturers of lamps, candelabra, etc., sent a bill to Leyland at the end of 1877 for works carried out, presumably at Whistler's instructions, at 49 Princes Gate. Leyland told Verity's to send their bill to Whistler, and this they did.

> 'Gentlemen—I have received your letter of January 3rd. Mr. Leyland's suggestion is due to his keen sense of the ridiculous—In my relations with him, in the Peacock Room, I myself have found him certainly a comic man, —but I doubt if you will be led away by your enjoyment of his joke from what I fancy is clearly your legal remedy.
>
> 'Mr. Leyland refused to pay me my price for the decorations in his house and I should have been pained had he deviated from this simple course when he found himself face to face with your account.'

To Theodore Watts Whistler wrote: 'He promised me a whipping and sends me his gas bill! Mon cher these things are not done every day!'

To settle scores Whistler painted four caricatures, the most famous of which, *The Gold Scab*, has been reproduced more than once. It was sold with his other belongings when the contents of the White House were auctioned and had a very curious career after that.

Whistler's relations with Leyland and Jeckell were almost over. Nothing went right for the artist after the Peacock Room, so he declared. The action with Ruskin, in which only Albert Moore and W. M. Rossetti stood by him, meant ruin, and in 1879 came, in D. G. Rossetti's words, the arrangement in black and white. The liabilities were £4,641 9s. 3d., the amended assets £1,924 9s. 4d. Tom Jeckell was owed a hundred pounds but he was past caring about it. The meeting of creditors took place in June, 1879, at the Inns of Court Hotel. Sir Thomas Sutherland was in the chair, and with him were Sir George Lewis, the solicitor, Chelsea tradesmen, Howell, and the chief creditor, F. R. Leyland. When Whistler arrived he was so abusive towards Leyland that he had to be pulled down by Lewis and Sutherland. A committee of examiners, Leyland, Howell and Way, the dealer and printer (it is instructive to note that Whistler quarrelled with each in turn), was appointed and Whistler allowed to escape bankruptcy. He was most generously treated. Not very long afterwards he published an entertaining and nasty pamphlet about Howell, who, during the case and after it, had done everything he could with his own slender means to help him.

The 1879 meeting was probably the last time that Leyland and Whistler ever met. The acquaintance had been of fifteen years. In the circumstances of its termination only one of them emerged with any credit, either personal or financial.

Exits

Tom Jeckell

The Pavilion went to Paris for the 1878 Exhibition, at which Whistler and E. W. Godwin were represented as decorator and designer for William Watt, and after that Jeckell's name was unmentioned until he died, still insane, in August, 1881. He was given long obituary notices by the *Building News* and *British Architect*. After that his separate identity all but disappeared. He became only Jeckyll of the Peacock Room, although in 1904 a well-informed 'H' of the *Morning Leader* mentioned his Cambridge house as one of the earliest of the Queen Anne revival—but sadly styled him Henry Jeckyll. It was not until an *Eastern Daily Press* correspondence in 1937 and *English Architecture Since The Regency* that he reappeared as an architect in his own right—but the interest aroused was insufficient to save his works.

The life's work had been, considering the gifts displayed, a disappointing one; Jeckell, one feels, might have done much more. But the luck does not seem to have been with him. What he did do was fastidious and refined and with one exception he took the opportunities that came his way. The little that remains of his work will one day give much pleasure again.

Barnard, Bishop and Barnards have to all intents and purposes gone as well.

F. R. Leyland

Rossetti's life dragged miserably on until 1882 and Leyland, with William Graham, remained his chief patron, receiving some appalling works. When he was dying at Birchington Leyland called regularly. He attended the funeral bringing 'a lovely white cross' and he bought the famous Watts portrait. At Leighton's request he lent his Rossetti for the RAs commemorative exhibition. In Rossetti's will he was one of the few friends to receive a small present as a memento.

The picture buying was not over —Leyland built up a considerable collection of Italian paintings and continued to buy Burne-Jones. Of the entertaining done at Princes Gate there is little on record, though Walter Crane remembered a dinner at which the guests included Burne-Jones, Prinsep, G. H. Boughton, Tom Armstrong, Spencer Stanhope, Comyns Carr and Poynter, and 'another occasion [when] he and his daughters gave a fancy dress ball, which was largely attended by artists and their wives and daughters.' When William Rothenstein and Arthur Studd went to see the paintings at Princes Gate the bell was answered 'by a major-domo, with powdered hair, yellow livery with heavy knots across the shoulders and noble silk-clad calves.' Studd was so impressed he instinctively took off his hat.

While continuing to control the Leyland Line he extended his interests in the 1880s. He seems to have had something like a corner in the telephone and electric light industries.

Soon after the Peacock Room affair Leyland left Speke Hall and bought Woolton Hall—his taste in architecture was clearly a good one—and not long afterwards a third house, 'Villette' at Broadstairs (and the circumstances of its use suggest that the relations between he and his wife had further deteriorated). He did not die peacefully in any of them but unexpectedly and unceremoniously in an underground train between Blackfriars and the Mansion House on January 4, 1892.

He left over £700,000. The art collection was sold in May, 1892. *La Princesse* fetched 420 guineas (Freer paid £5,000 a few years later). Of the twelve large Rossettis *Veronica Veronese* fetched 1,000 guineas, *The Blessed Damozel* 980 guineas, *The Loving Cup* 820 guineas. The Burne-Jones prices were magnificent. Over £30,000 was taken, and some paintings were held back and there was a separate sale of the miscellaneous, and very valuable, objects of art. It was a remarkable collection.

49 Princes Gate was offered for sale in June, 1892. Bidding was opened at £15,000 and closed at £20,100 when it was withdrawn. The sale catalogue was largely a reprint of Theodore Child's *Harper's* article and full justice was done to Whistler's work. Mrs. Watney, the relict of the beer and a friend of Millias, bought the house in 1897 and intended to destroy the Peacock Room, a course from which she was dissuaded by, amongst others, Graham Robertson. She lived there until 1903.

An unworthy posthumous notice for Leyland was his brief appearance in one of the silliest novels ever written, Watts-Dunton's *Aylwin*. For a man who exerted himself so successfully in such a variety of ways it is astonishing how little has been recorded of his life.

Whistler

The last twenty-five years of Whistler's life are documented to the last detail—his every remark seems to have been written down. In only one respect is the biographical material inadequate (and the Pennells ingeniously hid this)—and that is in relation to his professional work. What, in short, did Whistler paint during the quarter century?

The later Whistler was nearly enough a parody of his earlier self. Whimsy-ironic letters to *The World* and *Truth*, a bathetic lecture, provoked quarrels, sartorial display, the effort of a man of sixty to play the juvenile lead, the assumption of Mastership, malice, arrogance—these and not much else were the later Whistler. He could and did descend to extraordinary pettiness and spite; his dealings with Sheridan Ford, Howell and Menpes are cases in point. Even Rossetti's declining years have some dignity compared with this. The Pennells printed a revealing story of the Master's last years. At an inn in Poole the landlord realized from his manner and appearance that he was a 'somebody' but did not recognize him. 'And who do you suppose I am?' Whistler asked. 'I can't say, exactly, sir, but I should fancy you was from the 'Alls.' He was not far out. Whistler and Wilde, society entertainers. Seeing him in his finery Degas called out, 'Whistler, you have forgotten your muff.'

After the Goupil exhibition of 1892 Whistler was intensely sought after. Freer's purchase of the *Princesse* has already been mentioned, the *Blue Wave* was sold for £1,000, Graham's Nocturne (Battersea Bridge) which went for £63 at the 1886 sale jumped to 2,000 guineas. Graham Robertson bought *Rosa Corder* for £241 10s. at the Howell sale, and sold it to Canfield for £2,000. In ten years Whistler had become the 'American artist.'

But Whistler was Whistler. When he was dying he said: 'Lowered in tone—the doctor says I am—well, you know, the result, no doubt, of living so long in the midst of English pictures.' The want of an appreciative and critical public had played its part in the debacle. It would have taken an altogether robuster and more powerful talent to have come through.

The Peacock Room

In 1904 the Room was sold to Freer, exhibited and shipped to the United States. There were protests that it was being snatched away by an 'American mushroom millionaire' as there always are when an intelligent and liberal American buys what English millionaires, mushroom or otherwise, refuse. The *Somerset County Gazette* and the *Yorkshire Observer* were particularly bitter. *Truth* recalled the whole story. 'At the Clubs men talked about the money—A cool thousand, by Gad, sir!—which was paid for the brown Cordovan leather alone. . . . In art circles men talked with bated breath of the wonderful effects the artist was evolving.' Twentieth-century journalism had arrived.

And now 49 Princes Gate is only an ordinary flatted house, with perhaps more beauty on one floor than on the others, but of F. R. Leyland's occupancy there is no sign.

By the time the Peacock Room went the art cycle which it helped to inaugurate had been completed. The exotic, miscellaneous, large flower on slender stalk (like Mrs. Morris's head above that neck) manner in which every delightful fixture jarred with the one next to it had gone. The English architects had returned to their native and ignoble cottage shrines, seeking purification from low windows, oak beams, plastered walls and crooked tiles. They had become 'honest' and did not at all mind looking quaint and awkward. Insidious foreign ways were exchanged for the purer habits of the rough old English craftsman. No more peacocks, lilies, witticisms, Wildes; particularly Wildes.

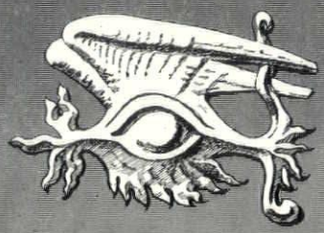
Acknowledgments

For permission to quote from letters written by F. R. Leyland, J. M. Whistler and George du Maurier I am grateful to the late Lt.-Col. F. B. Leyland, D.S.O., M.V.O., The University of Glasgow, and Miss Daphne du Maurier.

To Mr. A. J. Notley for much information and drawings about Tom Jeckell. To Mr. Andrew McLaren Young, Mr. Geoffrey Leyland, Mr. John Hales-Tooke, Mrs. Iva Gregory, Mrs. Rossetti Angell, Mr. J. Farrell, Mr. Thouless, the Secretary of Barnards Ltd., Mr. P. Hepworth, the Librarian of Norwich Public Libraries, Mr. H. S. Goodhart-Rendel, and Mr. A. G. Wenley, Director of the Freer Gallery of Art I offer my thanks for assistance and in some cases hospitality.



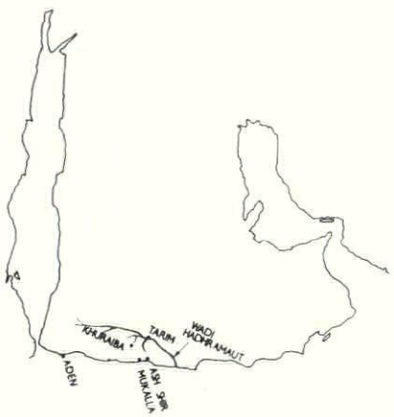
8, *'The Gold Scab' by Whistler: caricature of Leyland.*



the exploring eye

The idea of an Arab skyscraper is not quite unknown to the well-read magazine-traveller, though the mental image that the words will conjure is almost certain to be one of those multi-unit agglomerations of tubular Berber dwellings on the fringes of the Sahara.

But something more like skyscraper form, something more like the silhouette of a 'down-town business area' can be found in Muslim territory much further east, in Wadi Duan, a remote branch of the equally remote Wadi Hadramaut in the little-known area of southern Arabia to the East of Aden. There, in Wadi Leiman and Wadi Leisa, which combine to form Wadi Duan, a native architecture, developed for stone-built villages on restricted sites, has created a square-towered system of building profiles which—as Simon Bowes-Lyon's photographs inside this fold-out will demonstrate—makes uncommonly American skylines, even when those skylines are, in fact, silhouetted against the face of a sheer cliff behind.



Map of the south coast of Arabia, showing the Hadramaut. The Wadi Duan branches off from the Wadi Hadramaut at Tarim, and leads to the Wadi Leisa and Wadi Leiman; at the top of the latter stands the village of Khoreiba (Khuraiba) which is among those illustrated inside this gatefold.

The contrasts and resemblances to American skyscrapers go some way beyond mere coincidences of appearance. The scale, of course, is minute by comparison, and the numbers of storeys are not even to be counted in fives. The congestion arose, in the first place, from the need to pack close for defence, and secondly, from the desire not to encroach on the exiguous tracts of fertile land on the Wadi floor. Houses, extensible vertically as the family prospered, were built on the lower, but often steep, sides of the cliffs—ranked in ever higher terraces, those at the back looking many storeys higher than those in front that hide their ground floors.

Yet, startlingly enough, these towerlets of blazing orange-brown sandstone answer fully to the Corbusian, or Mumfordian, image of clustered skyscrapers as symbols of long-range economic domination. Such wealth as these valleys can boast—and it is considerable in some families—comes from far away. The Seyid families who settled the wadis from the Yemen up to 600 years ago have kept their contacts with their old homes, and made contacts even further afield. The Aden coast is the traditional centre of ship-borne trading operations that have scattered Muslim communities right across the Indian Ocean. The wealth of the Seyids of Wadi Leiman came from trade and building operations that used to extend as far as Jakarta and Singapore—indeed, the cash with which the traditional feuds of Wadi Hadramaut were settled, came from the coffers of an Hadrami who had traded in Singapore.

Nowadays, currency restrictions have clipped the wings of Seyid enterprise, but they still trade as far afield as Jeddah, as Ethiopia and even Dar-es-Salaam.

2

eiba at the head of Wadi
prosperous and well-kept
ne four-thousand inhabit-
es back up a spur of the
in a romantic cluster of
rraces and domes. But
of these towns begins to
lecay, as in **4**, with its
walls and incomplete
eys, it begins to take on a
l theatrical aspect, like a
ion vision of New York
ltimate atomic conflict.

5, inside a town like Khoreiba, the streetscape fulfills the promise of exterior views, with steep, narrow streets, restricted to donkey traffic since they would be impassable to camels, constantly bridging and tunnelling to serve different levels of the town. Their narrowness and depth between the buildings keep them in deep shadow for most of the day, an important planning consideration in a climate that can beat 130°F. in the summer.

5



1

1 and ***2,*** at first sight, these towers among palm trees could almost be one of the resort-cities of Latin America, until one looks closer at the details of the architecture, the spacing of the windows, the crestings of the parapets—all unmistakably Muslim, and all unfamiliar since these villages of the Wadi Duan (this one is Gweira) and its tributaries have not been photographed for Western journals before. The truth of the matter appears most strikingly in ***2,*** a view up the tributary Wadi Leisa over the village of Talilah, which shows with almost diagrammatic clarity the relationship between the village, pushed back up the side of the cliffs, and the fields and palm-groves in the Wadi bottom.

3 and ***4,*** although most of these villages conform to the same pattern of densely developed sloping sites, none shows it to more dramatic effect—in photographs at least—

than Khor
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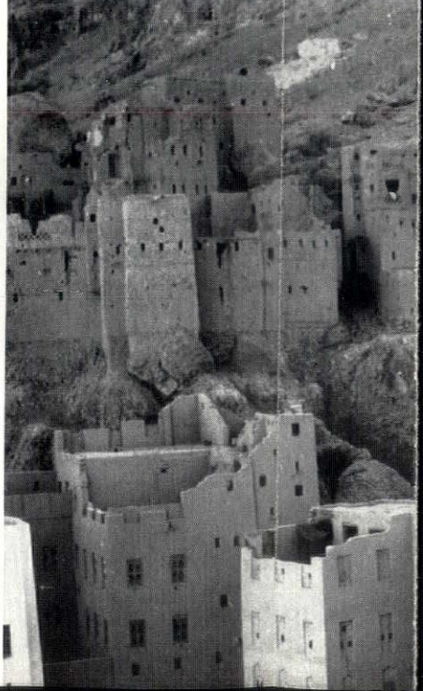
3



4



ID

a monthly review of interior design

Showrooms at Ipswich

architects : Michell and Adams





2

SHOWROOMS AT IPSWICH

Intended to provide display and conference space for a progressive printer in a provincial town, this scheme has a first-floor reception area and conference/exhibition room, with ground floor entrance and staircase leading up to the higher level, where there is also a new office for the managing director of the firm.

1, opposite, a corner of the conference/exhibition room; the walls are panelled out in olive walnut. The display-fitting on the far wall has a steel frame supporting the shelf and drawer unit; the deep drawer-chest at the right stands directly on the floor, and provides storage for print specimens. Drawer fronts and cupboard doors on both types of unit are in Brazilian Freijo.

2, view down the side of the conference/exhibition room, showing the three display units, and the reception area in the distance. This side of the room is treated as a long, continuous vista, whose perspective is enhanced by the lower, boarded ceiling.

3, the reception area; the desk is in mahogany, with a grass-paper backed display unit behind it, in Bombay Rosewood and Brazilian Freijo. A glass screen, with glass door, closes off the entrance to the conference/exhibition room.

3



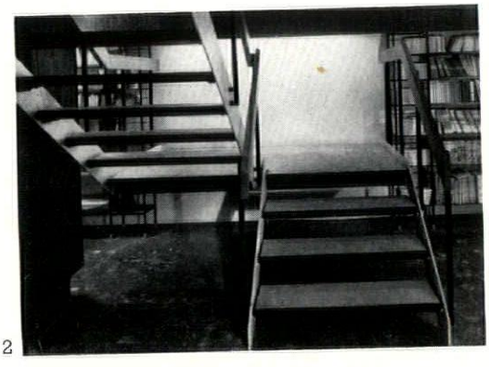
BUMPUS



1

Bookshop in Baker Street, London

architect : David Rock



2

New accommodation for London's oldest-established bookshop has been fitted into two bays of Berk House, a characteristic concrete-framed office block by Cecil Elsom in Baker Street. The bay-division is effected by a structural column flush with the face of the building and cannot be disguised. It has been exploited, however, by recessing the front in one bay, and taking the entrance through the side of the recess.

1, the recessed entrance bay, with doors, of bright steel and plate glass strips, at left. The main window is a single plate of glass, with the Royal Arms sandblasted on a separate sheet carried on two steel uprights just behind the window. The main artificial illumination comes from above the visible ceiling of copperised vertical steel slats, which also conceal pipe-runs, structural beams, etc.

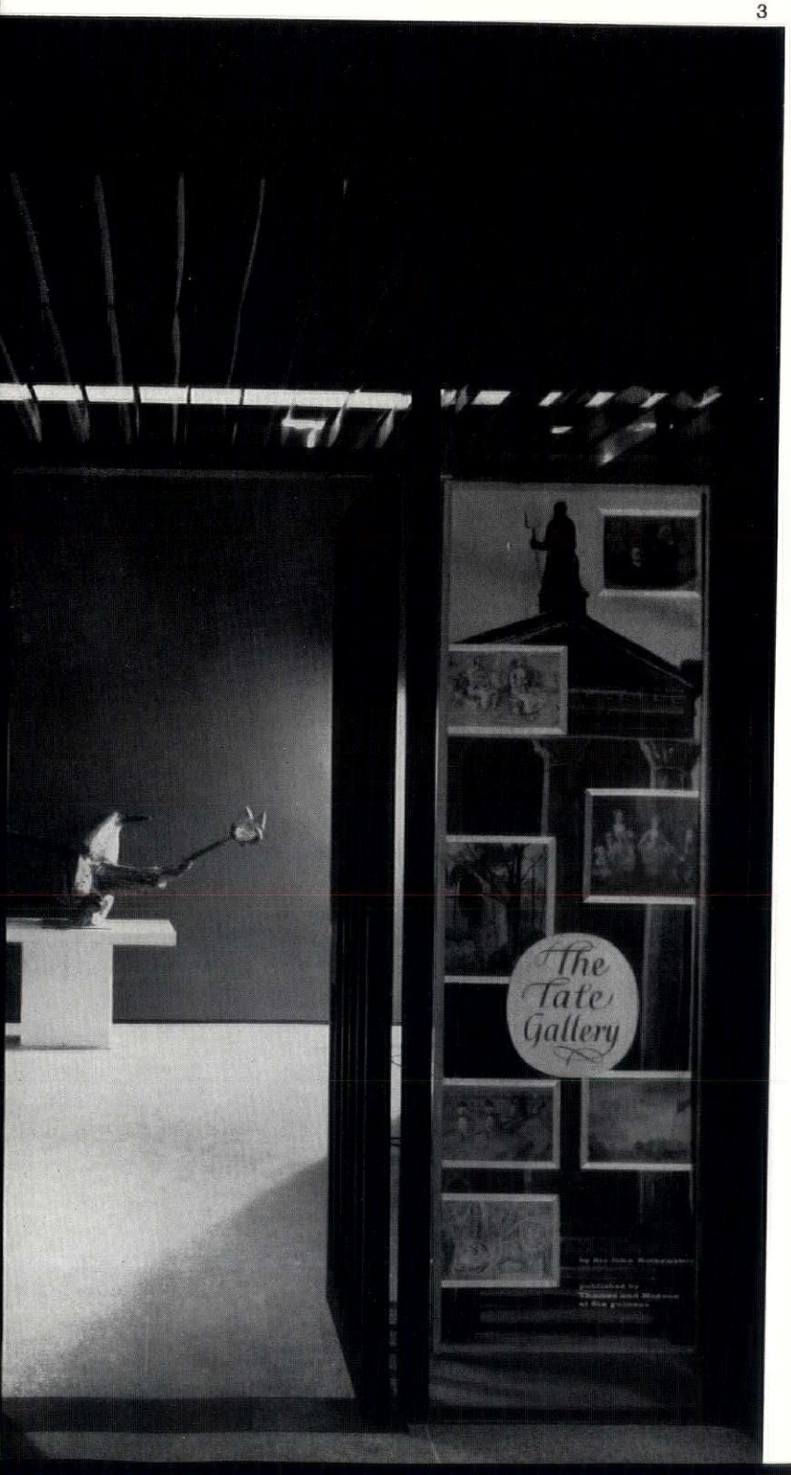
2, the public staircase down to the basement sales-area, built of mild steel, with African walnut handrails and treads of terrazzo carried in two-inch deep mild steel trays. Flooring throughout the sales-area is of black veined thermoplastic tiles.

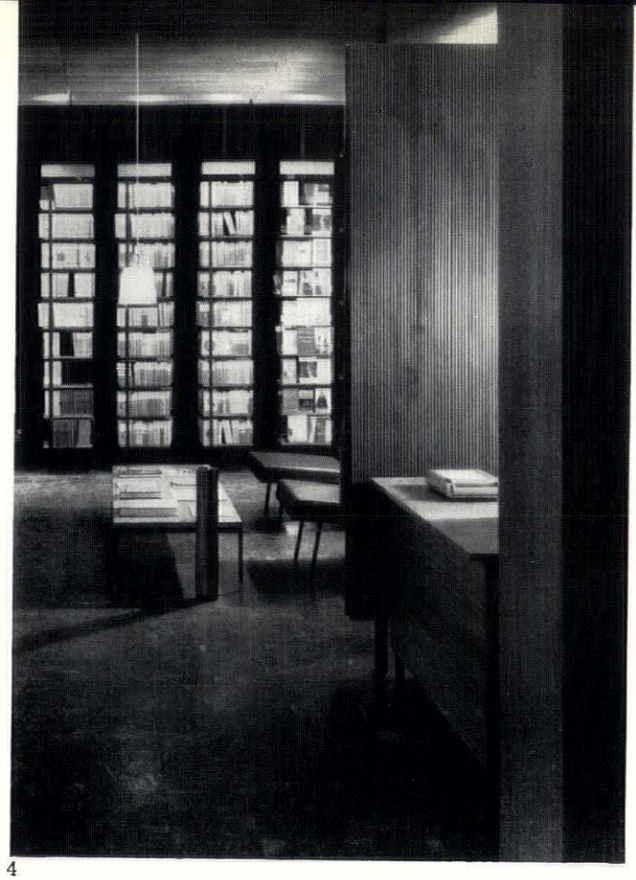
3, opposite, a view parallel with the street from the recess, through the entrance into the smoke-lobby separating the ground-floor sales area from

the basement—the doors to the ground floor are on the right immediately beyond the display case, the stairs down to the basement are against the far wall. The ceiling-slats are here seen edge-on ; the sculpture, *Fallen Bird* is by Bernard Meadows. Another piece of sculpture, *Homer*, by F. E. McWilliam, faces the visitor from the depths of the shop when he enters the ground floor sales-area.

4, a partial view of the back part of the ground floor. The ribbed panelling is in grey-stained Abura, the chairs in black leather with matt-black steel frames (by Conran), the low table top in polished Derbydene marble, and the bookcases against the end wall revolve to give maximum display-shelf space in a restricted volume.

3





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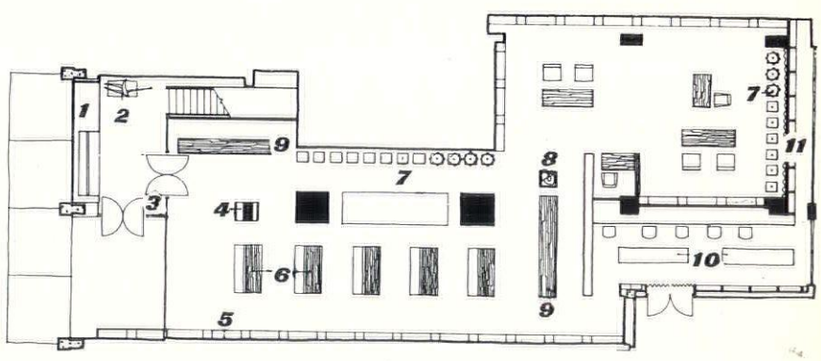
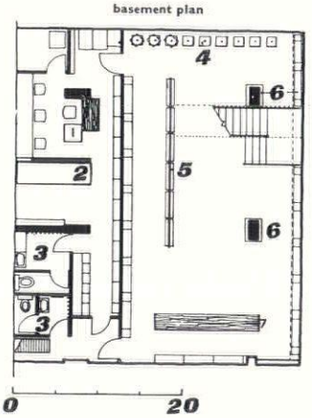


ground floor plan

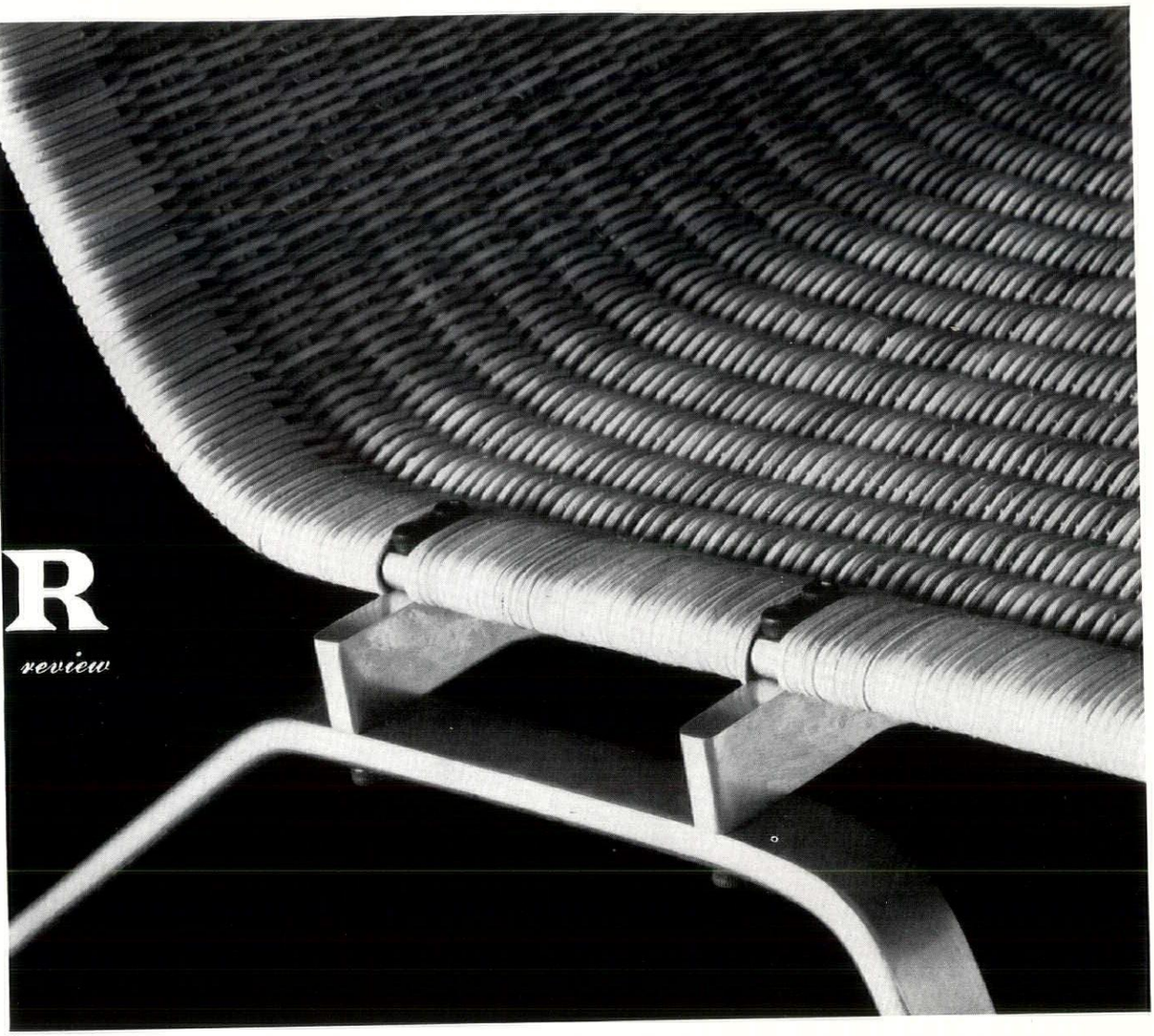
basement plan



Key to basement plan
1, telephone exchange
2, packing table
3, w.c.s
4, revolving stacks
5, greeting card fitment
6, shelving
7, counter

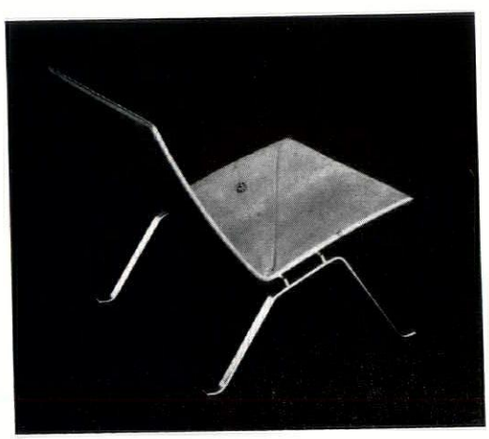
Key to ground floor plan
1, window display
2, sculpture by Bernard Meadows
3, movable display board
4, exhibition case
5, shelving
6, display and couch
7, revolving stacks
8, sculpture by F. E. McWilliam
9, counter
10, packing benches
11, storage corridor

DR
design review



2

3 → 4



1

Kjaerholm Range

Poul Kjaerholm was awarded the Grand Prix at the Triennale Milan 1957 for his leather chair and he was joint winner with Signe Persson-Melin of the Lunning Prize 1958. He left the School of Industrial Art, Copenhagen, in 1952, and has since become acknowledged as one of Denmark's leading furniture designers. He is admired for his ruthless insistence on perfect detail and workmanship and the clear sighted logic of his functional approach to furniture. He uses steel for rectangular section frames combined with natural materials: leather, wood, slate, cane and rope.

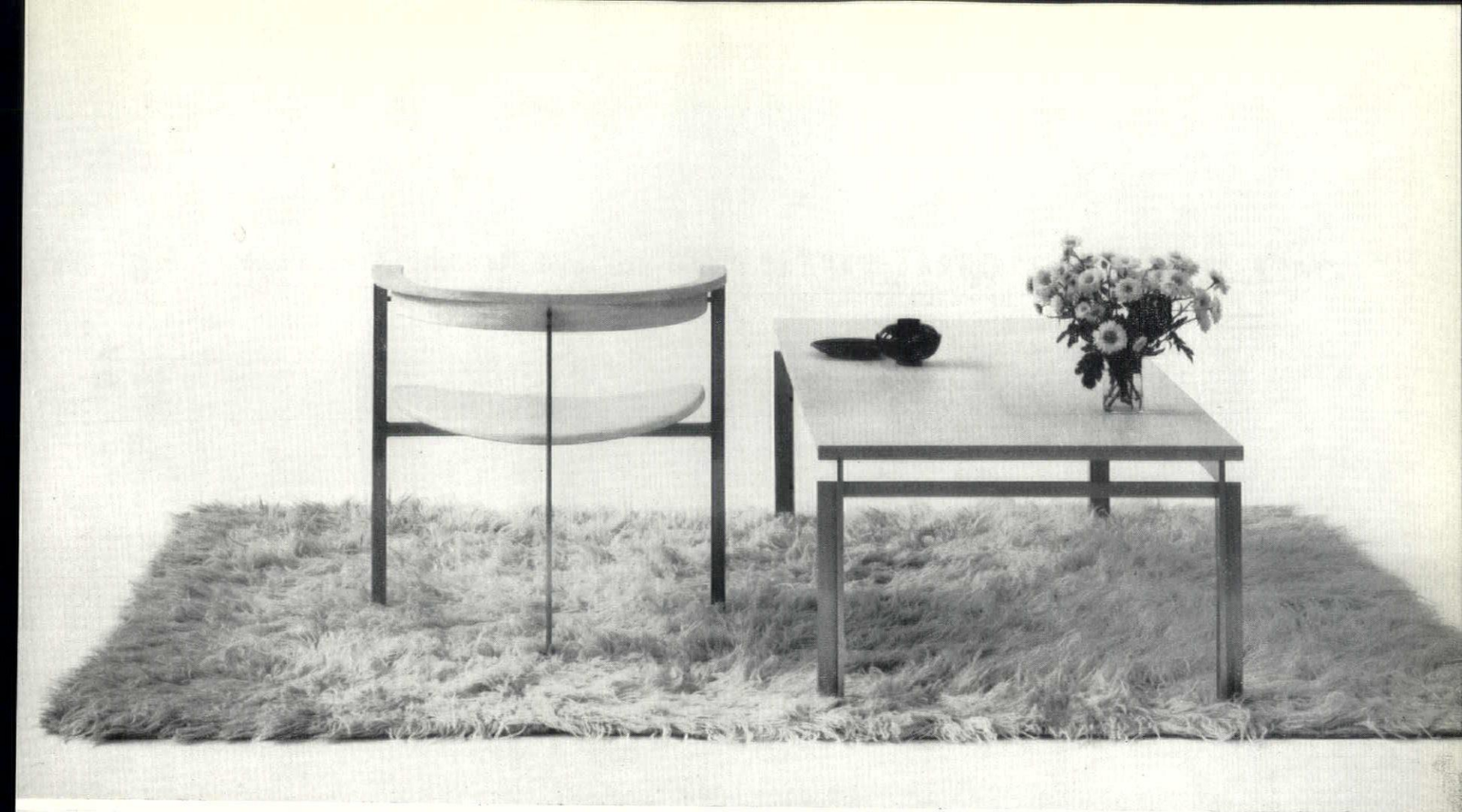
His furniture is immensely assured. It is uncompromising and therefore makes stringent demands on the rooms in which it is used, but it has a sculptural appeal capable of adding distinction far beyond the purely functional. It is made by Kold Christensen of Copenhagen and much of it can be bought at Woollands.

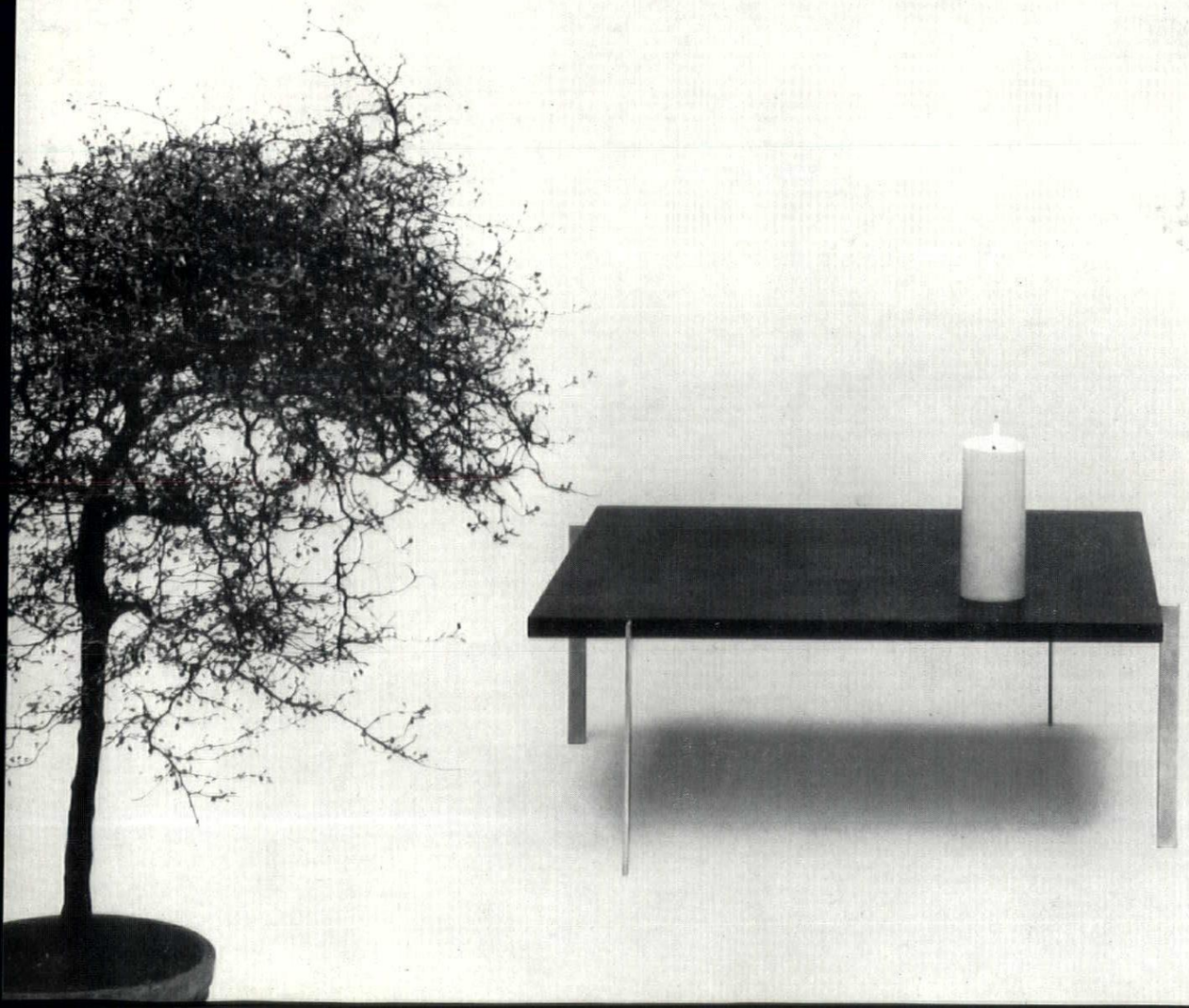
***1,** the prize-winning leather chair shows a marked resemblance to Mies van der Rohe's Barcelona chair. The leather cover is fixed to the webbing seat by neat turn-buttons which allow it to be removed for packing and cleaning. It is diagonally stitched and the leather can be black, tan, red or parchment colour. It costs approximately £36.*

***2,** a cane version is also made, and a detail of the frame is shown. The legs can be unscrewed from the seat supports for packing.*

***3,** the low table, opposite, has an ash top with steel legs. The chair has an ash backrest and leather covered seat.*

***4,** opposite, a low coffee table has a slate top approximately 31 in. square placed loosely on a steel frame of four rectangular sections screwed together. It costs about £20 and is also made with a glass top.*





1, *the hangar roof structure, of interconnected triangular precast and prestressed space frames.*

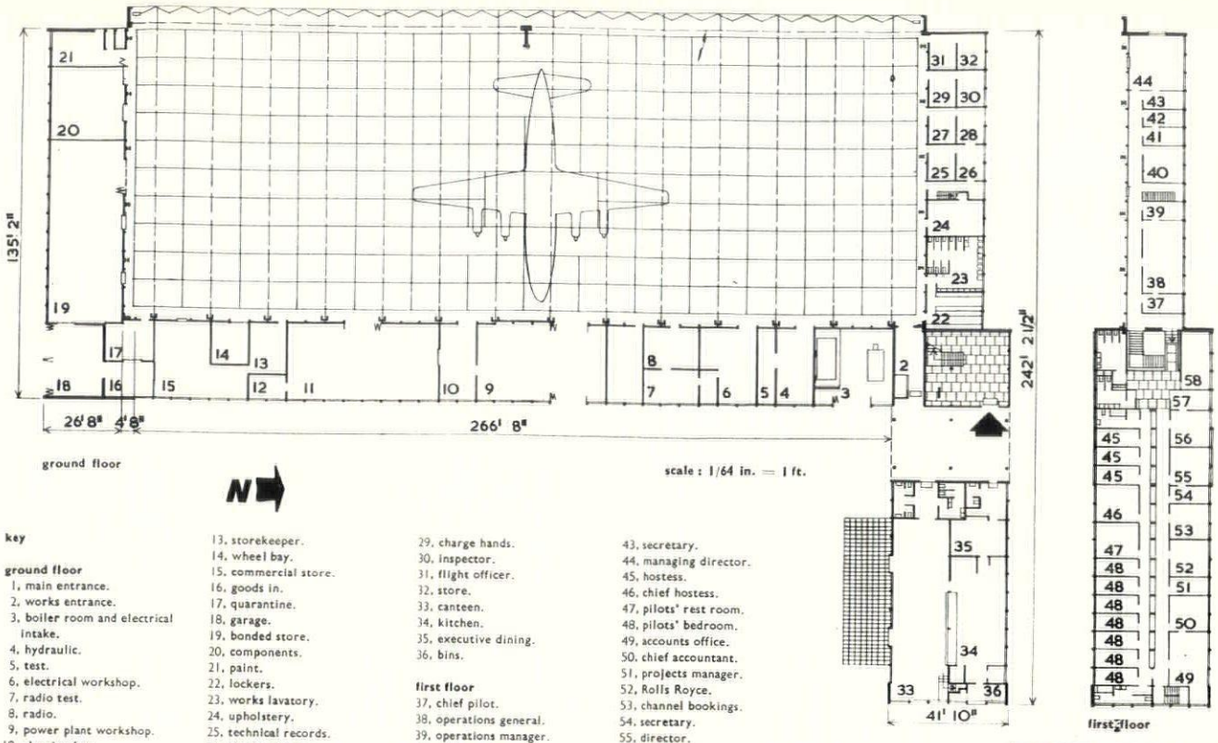


HANGAR, OFFICES AND WORKSHOPS AT GATWICK AIRPORT

ARCHITECTS: CLIVE PASCALL AND PETER WATSON

These buildings provide an operational base for an independent airline at Gatwick Airport in Sussex, and consist of a 282-ft. long hangar surrounded on three sides by annexes containing workshops, stores and offices, with a prestressed concrete apron in front. The roof of the hangar has interconnected 112-ft. triangular precast and prestressed space frames spanning the width of the building, with 8 ft. 8 in. deep triangular secondary beams. One wall of the hangar is entirely filled by the power-operated sliding folding door and a high standard of daylighting is ensured by continuous patent glazing on three sides above the roof level of the adjoining buildings. The hangar is used primarily as a workshop and takes five planes.

The construction of the ancillary buildings is completely independent of the hangar and consists of precast r. c. frames expressed externally, and with infill panels consisting of aluminium windows and glazed between the windows to match the patent glazing of the hangar.



key

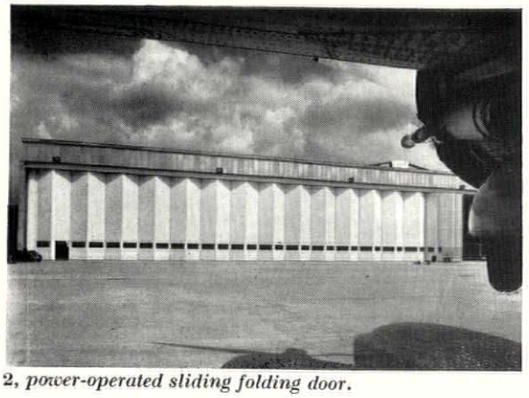
ground floor

1, main entrance.
2, works entrance.
3, boiler room and electrical intake.
4, hydraulic.
5, test.
6, electrical workshop.
7, radio test.
8, radio.
9, power plant workshop.
10, cleaning bay.
11, detail workshop.
12, view room.
13, storekeeper.
14, wheel bay.
15, commercial store.
16, goods in.
17, quarantine.
18, garage.
19, bonded store.
20, components.
21, paint.
22, lockers.
23, works lavatory.
24, upholstery.
25, technical records.
26, chief inspector.
27, hangar foreman
28, chief engineer.
29, charge hands.
30, inspector.
31, flight officer.
32, store.
33, canteen.
34, kitchen.
35, executive dining.
36, bins.

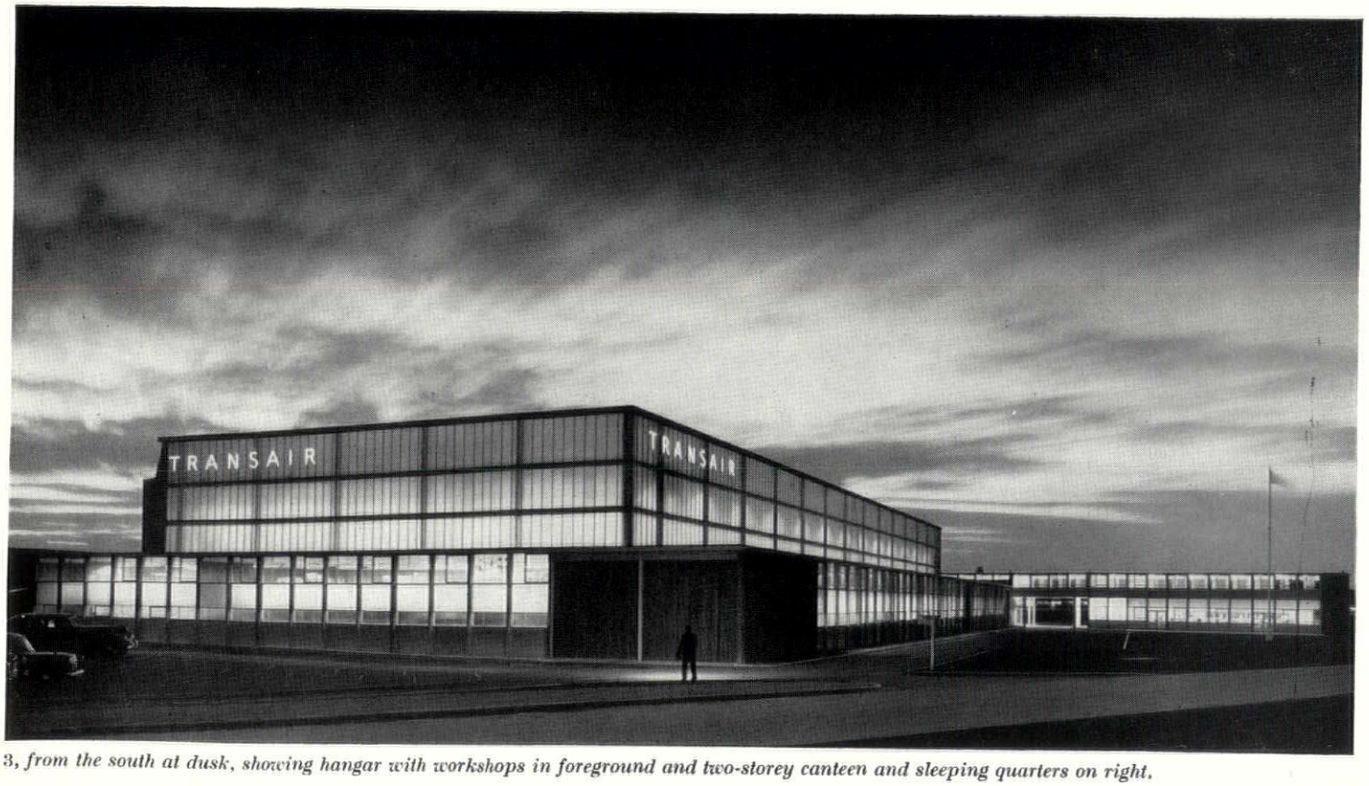
first floor

37, chief pilot.
38, operations general.
39, operations manager.
40, public relations.
41, air trooping.
42, waiting.
43, secretary.
44, managing director.
45, hostess.
46, chief hostess.
47, pilots' rest room.
48, pilots' bedroom.
49, accounts office.
50, chief accountant.
51, projects manager.
52, Rolls Royce.
53, channel bookings.
54, secretary.
55, director.
56, commercial manager.
57, secretary.
58, telephones.

Hangar, Offices and Workshops at Gatwick Airport



2, power-operated sliding folding door.



3, from the south at dusk, showing hangar with workshops in foreground and two-storey canteen and sleeping quarters on right.



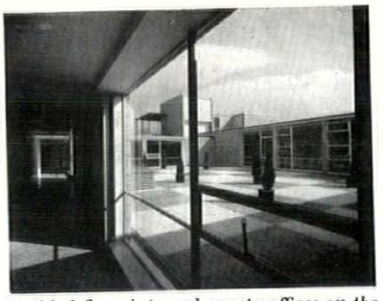
4, *main elevation of building facing the town square.*

STORE AT CRAWLEY

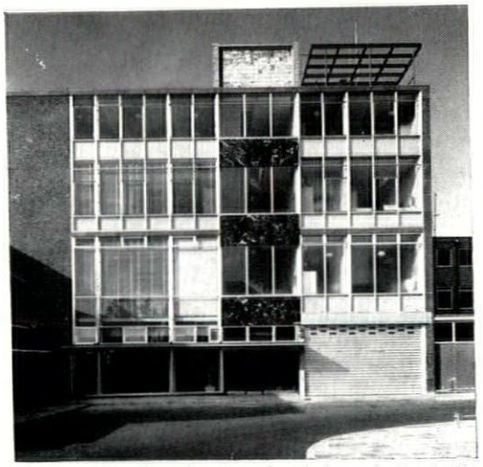
DESIGNERS: GABY SCHREIBER AND ASSOCIATES

ASSOCIATE ARCHITECT IN CHARGE: R. G. THOMSON

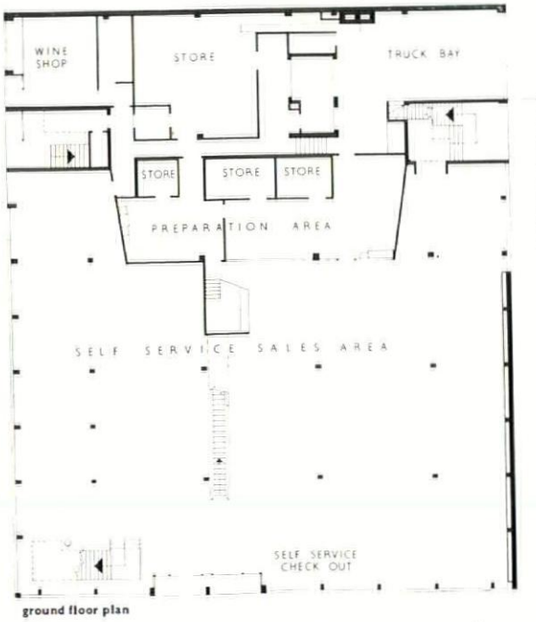
Situated at the head of Queen's Square, the principal shopping precinct of Crawley New Town, this four-storey building contains both a self-service food market and a department store. The store is steel framed, with the spacing of bays determined by the position of the two escape staircases and arranged to keep the sales area as free from columns as possible. All vertical steelwork is encased in concrete and floors and roof are of hollow-tile reinforced concrete slab construction. The external glass walling has polished anodized aluminium frames and the roof is finished with built-up felt laid on ½ in. insulation board and covered with white spar chippings. A system of plenum heating combined with unit heaters allows the circulation of cold air in the summer. Lines of fluorescent fittings are augmented by tungsten lights over sales fitments and chandeliers over the mezzanine floor.



5, *third floor internal court; offices on the left, canteen and cloakrooms on the right.*



6, *south elevation showing aluminium shutter to the truck bay.*



ground floor plan

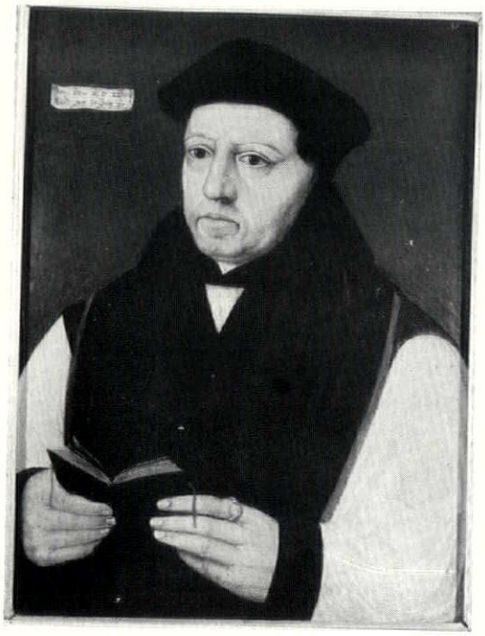
EXHIBITIONS

PLATE AND PAINTINGS

There was a moment when the impassive face of Ian Fleming's latest villain showed a flicker of animation. 'Mr. Bond,' he said, 'all my life I have been in love with gold. I love its colour, its brilliance, its divine heaviness.' Thus far I am with Mr. Goldfinger. But his ambition to turn all the gold of the world into ingots is decidedly villainous. Already far too much of it is turned into ingots and hidden away in strongrooms. I dream of a return to barbaric display at Government level, following the conversion of our entire gold reserves into 'all manner of wonderful objects,' like those seen by Albrecht Durer in a great pile of gold looted from Mexico a year before Cortez conquered the Aztecs, and of which he so surprisingly wrote in his diary: 'All the days of my life I have seen nothing that has gladdened my heart so much as these things.'

Pre-Columbian objects have a way of looking as if they were made to please the sun which is not shared by the cups, tankards, candlesticks and ewers included in the Cambridge treasures recently lent to the Worshipful Company of Goldsmiths by the Colleges and University and the Fitzwilliam Museum, and very nicely displayed at Goldsmiths' Hall. These were all examples of secular plate and lacked the symbolism that equates gold with the sense of glory; nevertheless, the fine spread of golden objects in the main room had something of the tranquil authority of a sleeping lion. In other rooms there were glints here and there of the symbolical evaluation of the king of metals; in some of the illuminated manuscripts, in the gold leaf backgrounds of three panels of saints from a Sienese polyptych, and above all in Samuel Palmer's successful experiment with alchemy in the Fitzwilliam watercolour called 'The Magic Apple Tree,' where a rounded hill of ripe corn assumes a mystical golden splendour and approaches the sacred sensuality of the Song of Songs.

One more word about gold and I'll have done. None of the ecclesiastical plate of medieval Cambridge has survived. The work of confiscation and destruction started by the Commissioners of Edward VI was completed by Matthew Parker when he became Archbishop of Canterbury on the accession of Queen Elizabeth. But his efficiency in this respect does not seem to have sprung from iconoclastic zeal, for he not only identified himself with the party that sought to establish a *via media* between Romanism and Puritanism, but was a generous donor of secular plate to three of the Cambridge colleges. Rather a decent type, I should say. He was included in the selection of portrait paintings, 1,



1

which ranged from Cranmer, who licensed Parker to preach, to one of the Mistresses of Girton College, painted by Stanley Spencer.

Most of the portraits of historical personages were conventional enough, and their interest was in strict ratio to the fame



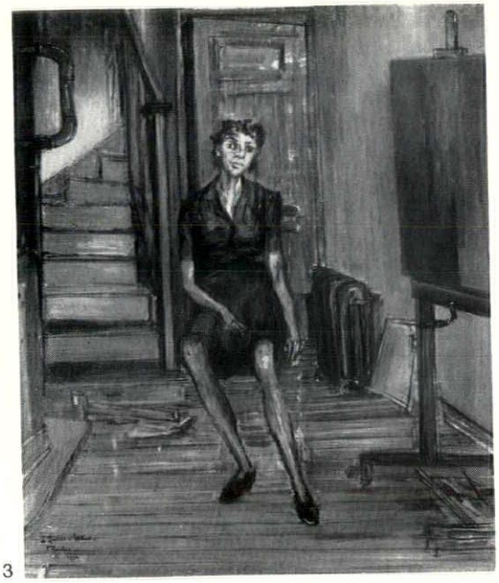
2

of the sitters, but there were one or two exceptions, and the liveliest of them was a portrait of Sterne by Thomas Patch. It depicts Sterne bowing mockingly to a skeleton with a scythe, and I think he would have enjoyed the sequel if he had been given the opportunity of doing so, for his own skeleton was preserved at Cambridge for many years. Someone ought to have done a painting of Death presenting a scythe to Sterne's bones.

There were many fine things among the old master drawings and paintings. The drawing by Rubens of the naked back of a male nude, 2, is a superb rendering of flesh, and if I found it vaguely distasteful it is probably because I read D. H. Lawrence too religiously when I was young, for although it brought to mind Lawrence's descriptions of miners having their backs washed by discontented wives, the flesh is too soft and plump to represent Lawrence's conception of maleness.

Rubens would probably have shuddered at the sight of Gruber's skinny female figures and no doubt Lawrence would have seen them as a horrible symbol of the destructive element in woman.

The odd canvas or two which appeared from time to time in a dealer's gallery or a travelling exhibition did not prepare us for the Francis Gruber retrospective which was brought to the Tate Gallery by the Arts Council. Many of us had taken it rather too much for granted that his paintings of lean neurotic-looking women were obsessional and that he was still ringing the changes on this image of misery and disillusion up to the time of his death in 1948 at the age of thirty-six. The symbolical paintings with their surrealist overtones came as a complete surprise and showed that he was much more involved in some of the philosophical aspects of the modern movement than we had supposed. Then, again, although the women in his post-war paintings remain on the lean side and look as if they haven't bothered much with their figures, the opportunity of comparing them with earlier paintings afforded by the Tate show makes it evident that they are not intended as images of wretchedness and that their impact arises from the intransigence with which Gruber has depicted their nakedness. His 'Portrait of a Woman,' 3, painted in 1939, is the last word in disconsolation, but the study of a different model in precisely the same setting, 4, painted in 1944, creates quite a different atmosphere. It's not the last word in gaiety, but it's painted with a warm appraisal of the undistinguished figure, and



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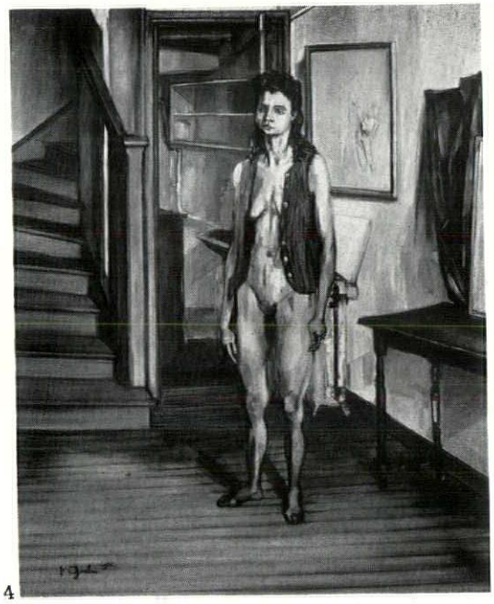
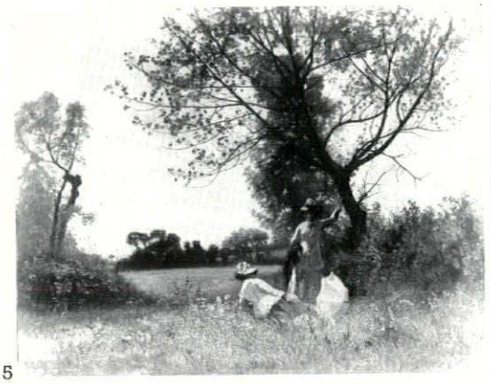


4

the setting is no longer a substitute for the abyss.

One critic who seems to have been thoroughly upset by Gruber's connections with surrealism, as if he thought that they in some way reduced his sincerity, contemptuously dismissed the series of feminine figures as a strip-tease because he noticed that the earliest on view is fully clothed and the last one naked in the back garden with flowers in her hair, and that, in between, some of them are in nothing but an open red cardigan. I think that this critic drew monstrously spiteful and disagreeable conclusions from observations which were not in themselves incorrect. Gruber's work was steadily becoming more and more sensuous and refined, and at the last he was arriving at a profound acceptance of the human condition: the critic who can relate Gruber's vision to popular pornography is on the way to jeering at Rembrandt's studies of Hendrickje Stoffels.

The gallery of H. Terry-Engell, in Bury Street, St. James's, recently held a soberly pleasant exhibition of nineteenth-century French landscapes which took its bearings from the Barbizon school and included many works of a later date painted in the same manner by artists whose names, I must confess, were previously unknown to me. It was open-air painting without impressionist colour, and after a while the sobriety and 'timelessness' gave me an odd feeling of loneliness. Apart from a rare glimpse of a peasant, these landscapes were deserted, and when at last I came upon a landscape by a painter named Laurens, 5, my relief and pleasure were unbounded, for it contained two young women who had obviously come from town. My response was ridiculously out of proportion to the occasion, since the picture, which put up a



5

very good show of having been painted outdoors, was all too evidently based on a photograph; but the women gave it time and circumstance and I shall always recall it with delight.

The paintings which Bryan Wynter has just been showing at the Waddington Galleries constitute his most important exhibition to date. He has very properly abandoned the attempt to adapt his sign language to illustration. His signs hang in long narrow clusters from the top of the picture, like strings of onions, and they seem to be the issue of a delicately promiscuous association between Chinese script, magnified bacteria and small machine-parts on the one side, and analytical cubism and some aspects of the art of Matta on the other, 6. The effect is extremely decorative, and although the expressiveness of this language is limited, Wynter varies the predominant coloration in a way which produces a charming air of poetic moodiness.



6

Anna Salvatore, the Roman-born neo-realist, whose latest show at the O'Hana Gallery has the distinction of being introduced by Alberto Moravia (I seem to recall that her show at the Trafford Gallery had the same distinction) takes a robust if faintly operatic interest in the pleasures of teen-agers, 7, and she cleverly catches the gawky resilience of rock-'n'-rollers.



7



8

But her paint has an unpleasant quality of fluffy uncouthness, and her drawings remain the most presentable aspect of her work.

Nicola Simbari, another painter from Rome, recently shown at the Arthur Jeffress Gallery, has a much more subtle feeling for paint, and although he is at present slightly intoxicated by the speed and fluency with which a few turns of his brush can give an abstract a figurative content, his work has the kind of elegance that sometimes enchantingly renews the charm of a faded theme, 8.

Robert Melville

WORLD

BELL TOWERS IN EUROPE

The campanili of Italy are, of course, famous, especially those of the north of the country, but many examples still exist of a type of bell tower which is comparatively unknown—that is the detached timber bell tower of Sweden, which, being the work of local peasant craftsmen, was a special kind of folk art.

It is said that Paulinus, Bishop of Nola in Campania, may have been the first man to apply large bells to churches round about A.D. 400. At any rate, for about a thousand years up to the time when the Renaissance dome began to supersede the Mediaeval tower, the effect of bells on architecture was immense. There was power in the bells and so they were often the jealously guarded property of the burghers and the citizens rather than of the priesthood and the chapter. Therein may lie one reason why bell towers were so often built detached from churches.

In most parts of Europe, but especially in the North, bells were believed to possess mystical powers as well as practical ones. They could be used to drive away evil spirits and they formed a protection against trolls, fire and lightning. Witches knew well the value of the grease that could be scraped from the bell axles.

In the seventeenth century nearly every church in Sweden had its separate bell tower and in spite of the depredations of time and of the Russian invaders, no fewer than 450 of these towers still stand. The typical selection illustrated here reveals the charm and variety of their forms.

Detached timber bell towers exist in other countries and it can be said that a Timber Tower Belt stretches from the Carpathians right across Hungary, Eastern Germany, Poland, Russia, Denmark, Finland, Norway and Sweden. In the Carpathians stone structure seems to have been the prototype and there the Renaissance was the best period. But in the Baltic countries the timber tradition goes back to pagan times, although the Baroque period produced in the end the best and most varied expression. The finest flowering of the craft occurred in Sweden—if we exclude the southern plain of Skania where the towers, as in Norway, tend to be small, unvaried and rather dull, perhaps because Skania did not form part of Sweden until the Peace of Roskilde established the country's natural boundaries in 1658.

Why were these towers built detached from their attendant churches—sometimes even when the church itself already possessed a tower? One possible reason has already been given. Another reason may have been that the great weight and movement of the bells required a stable, well-founded structure which the church itself could not provide. Or perhaps—since the bells were valuable both in money and in their mystical associations—it was wise to guard them against fire in a land of timber building where fires were frequent and disastrous; the church itself might burn, but the bells and the bell tower might survive. Perhaps in the end the separate tower became mainly an exuberant aesthetic expression of proud and specialized craftsmen.

Some of these Swedish towers were built to a great height so that their bells could ring out across the lakes and forests to the widely scattered populations. They tend to show regional distinctions in design, but two general types are evident—the Open Trestle or 'Bock' type, 1, and the Enclosed Tower or 'Torn' type (which may have had a precedent in the seige tower of elm), 2, 3. Both types seem to have been built since early times and often the two are combined in one structure, 4. The earlier examples are all protected by steeply sloping roofs of shingles with gable ends, while the later ones often have very tall spires shaped with ogee curves and onion domes.

The trestle type is most common in

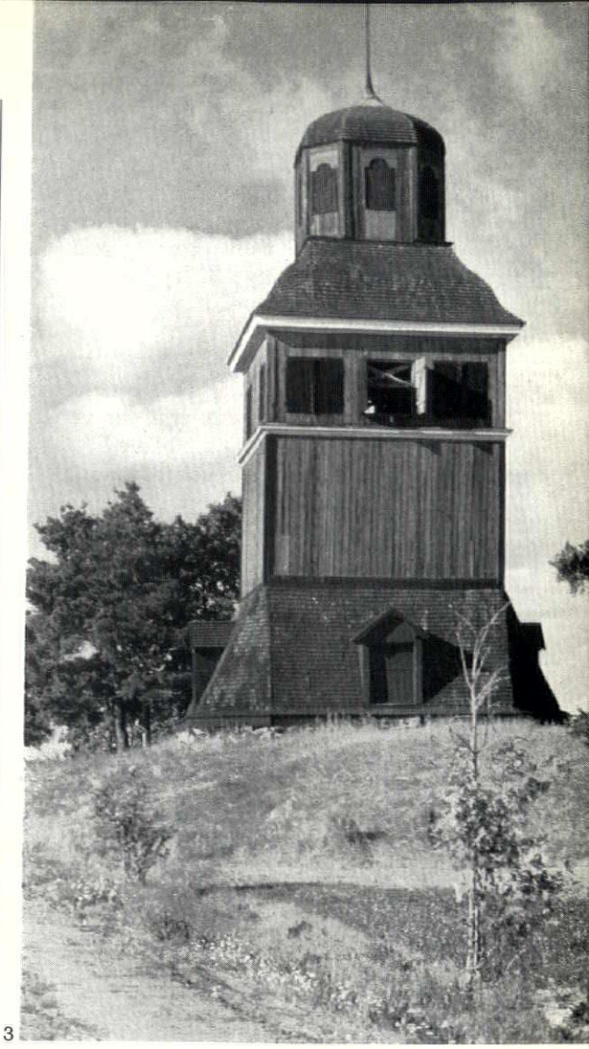


1



2

1, *open tower at Skagershult.*
2, 3, *enclosed or Torn towers.*
4, *combined trestle and enclosed tower at Visingso.*

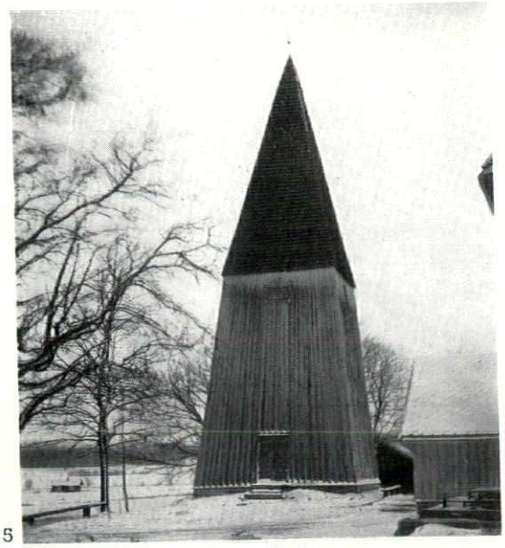


3



4

central Sweden, but the tower type is also found there. In Östergötland the towers are mostly square in plan. Västergötland has a speciality in the seventeenth-century pyramidal form, all enclosed with boards, 5. Jämtland was keen on an octagonal plan during the latter half of the eighteenth century. The Dalecarlian examples are mainly a combination of the trestle and tower types. The pure and open trestle type is found mostly in central and southern Sweden—Småland, Västergötland and Bohuslän up to Västmanland and Uppland. Farther north, no doubt for protection against the more severe climate, most of the towers are enclosed and of the pure tower type. Uppland and Västergötland



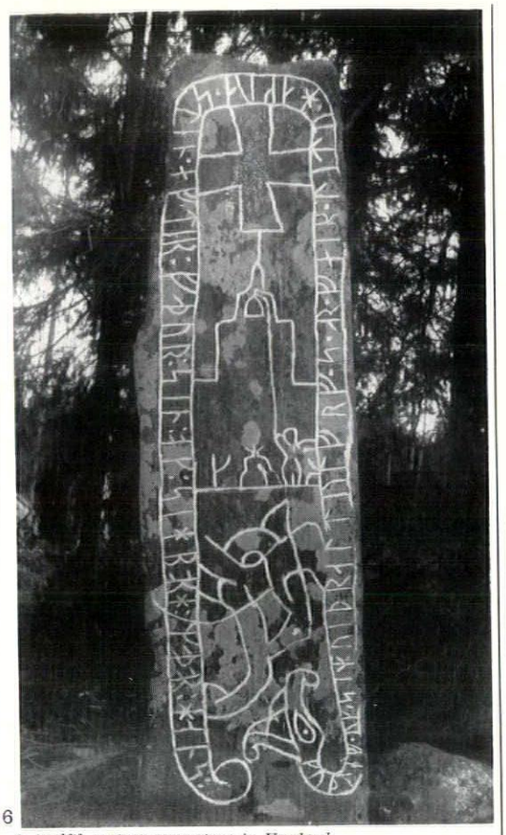
5, *pyramid tower at Vastergotland.*

possess the largest number of surviving towers.

The oldest surviving example of a timber bell tower in Sweden, and a fine one of the pure trestle type and typical in having its pine posts protected by tarred shingles of oak, is that at Söderköping, the old port and spa town in Östergötland. The work of one Anders Staplamakare, it was built in 1582, but is undoubtedly mediaeval in character.

How old is the tradition? A rune stone at Harg in Uppland erected in the first half of the twelfth century depicts a bell tower and a man below pulling the bell rope, probably as a death toll, 6, and this suggests that Paulinus, Bishop of Nola, was not the first man to apply large bells to churches. Another record of a bell tower is found on a twelfth-century tapestry from Skog in Hälsingland which depicts a square bell tower in a formalized manner. Interesting features of this depiction are the two carved dragons' heads projecting from the gable corners which reveal a link with the Norwegian stave churches, 7.

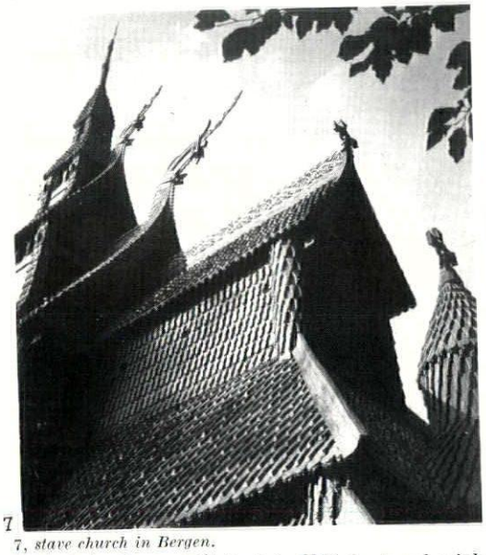
These stave churches are directly descended from the timber temples of the heathens, like that famous one which is known to have stood at the heathen centre



6, *twelfth century rune stone in Uppland.*

of Uppsala. In his reconstruction of this Uppsala temple, Sune Lindqvist has in fact relied on the bell tower at Häverö in Uppland as a structural descendant, 8. Among the oldest to survive and one of the most remarkable in the country, it has a grid plan of sixteen round posts sloping slightly inwards; the lower parts of the posts are joined by a double row of horizontal axed timbers, slotted at the junctions as in log-cabin construction, the spaces between being filled with stones to give stability to the tower.

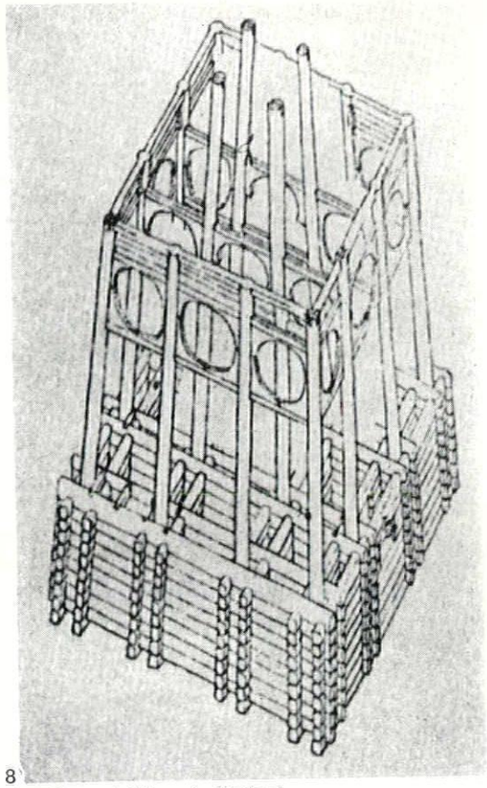
Another example which strongly suggests the ancient timber tradition of the



7, *stave church in Bergen.*

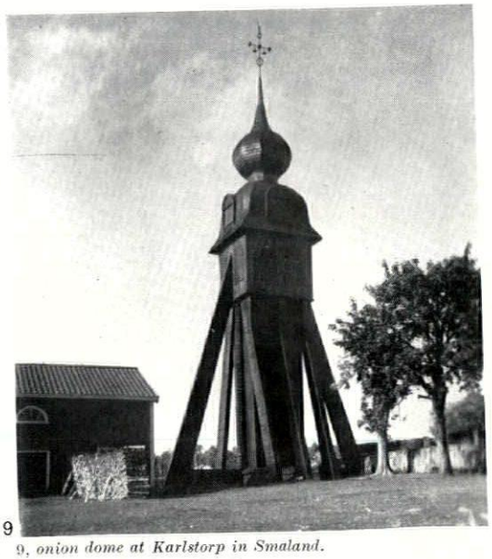
North is that at Trönö in Hälsingland with its solid, shingled posts, its steep shingled roofs and its decorated barge-boards and hips, 10, page 431. This example, which combines the tower type with internal trestle, stands over an enclosed hut, an arrangement which is fairly common in Hälsingland. These huts were sometimes used as armouries.

The best surviving towers belong to the seventeenth century and to the first half of the eighteenth century. In them the baroque influence is evident in the vigorous ogee curves of the tall steeples. These ogee curves were borrowed from the more monumental and sophisticated buildings of the towns, but the onion domes are probably an import from Russia. It is significant

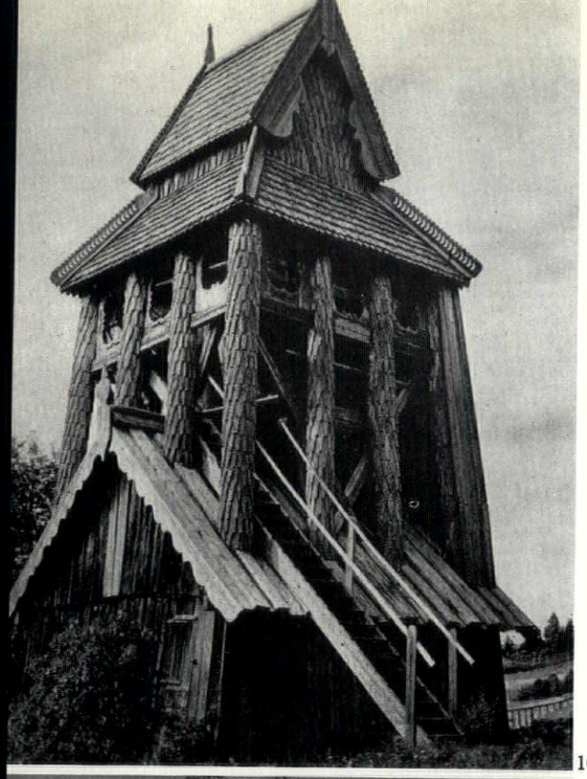


8, *Havero bell tower in Uppland.*

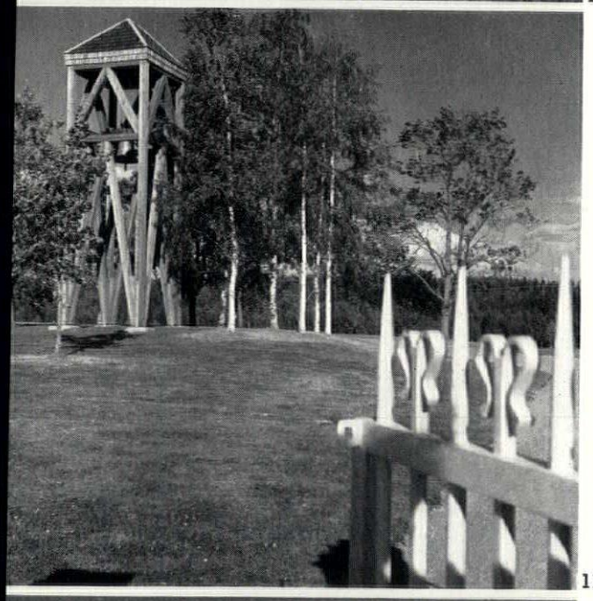
that Jämtland, a northern province, specialized in these oriental domes, though a delightful example can be seen as far



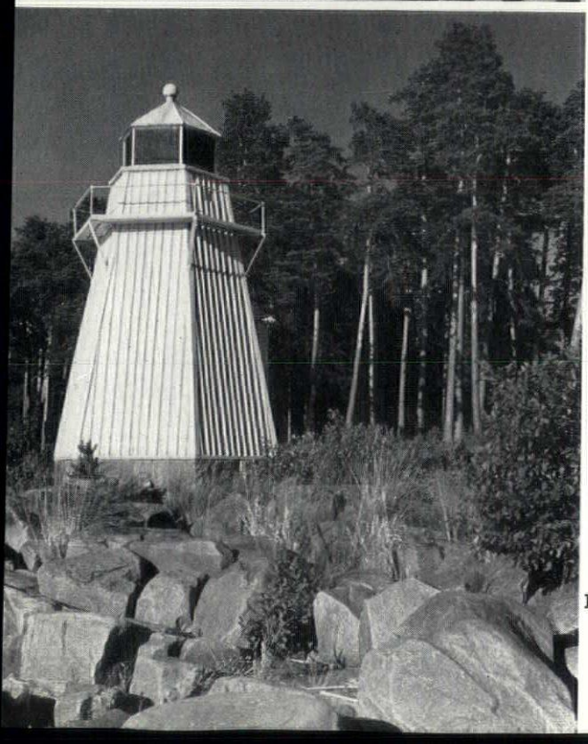
9, *onion dome at Karlstorp in Smaland.*



10



11



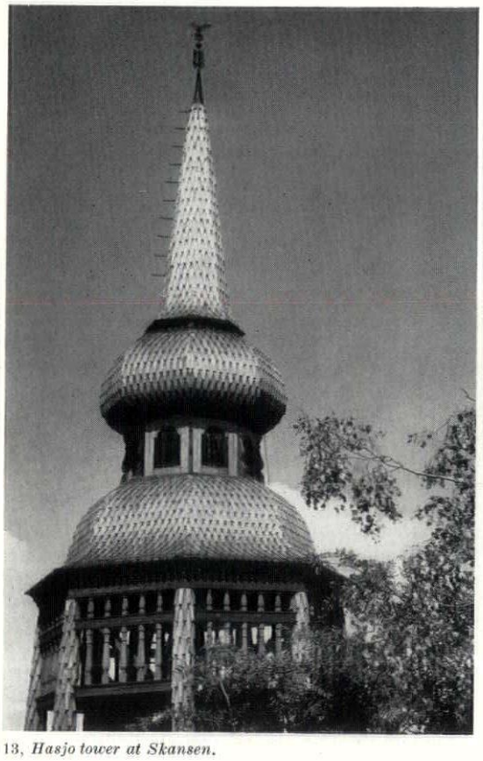
12

10, *Trono tower in Halsingland.*
11, *new tower at Karlskoga-Bofors.*
12, *lake-side lighthouse.*

south as Karlstorp in Småland which was built in 1744, a year after the war with Russia ended, 9.

The craftsmanship of these eighteenth century towers is superb. Local schools of bell-tower builders were founded whose members, recruited from the local peasantry, developed a great pride in their skill. Even today the names of many of these craftsmen are remembered. Among the most famous was Per Persson i Stugun (1732–1815), a peasant who is known to have built one stone church, seven timber churches and six separate timber bell towers. A copy of one of his towers—that at Håsjö in Jämtland built in 1770 and standing 69 feet high—can be seen at Skansen, the open-air museum at Stockholm, 13. It has an octagonal plan and a typical baroque spire with ogee and onion; most of it is covered with oak shingles protected with a mixture of tar and the unique Falu red paint of Sweden.

Another famous tower builder was Nils Uhrberg who was responsible for the tallest tower in Sweden at 138 feet—the one built at Hällestad, Östergötland, in 1732. It was presented to the Nordiska Museum by the Hällestad community in 1894 when their church burned down and it now stands at Skansen. This is a masterly work consisting of twelve pine pillars on a square plan supporting an enclosed bell chamber above which rises the baroque spire converted by broaches into octagonal forms. The whole is covered with the typical oak shingles, tarred for protection,



13, *Hasjo tower at Skansen.*

which give so many of these structures their textural character, distinctive and bizarre. Within the main pillars are cross timbers surrounding an enclosed staircase, forming the combination of the common tower and trestle types.

Bells have lost their ancient power to the banshee sirens and separate timber bell towers are now rarely built in Sweden except as revivals of a tradition which almost died out towards the end of the eighteenth century. Nevertheless, the tradition lives on in atavistic forms. You can see it, for instance, in such simple little structures as the bell tower in the grounds of the new crematorium outside Karlskoga-Bofors, 11, and, if we permit the replacing of the bells with lamps, in those delightful little white-painted lighthouses which lie along the shores of the great Swedish lakes, 12.

Eric de Maré

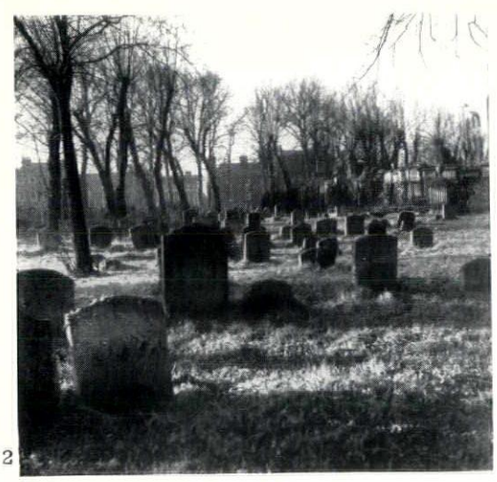
COUNTER-ATTACK

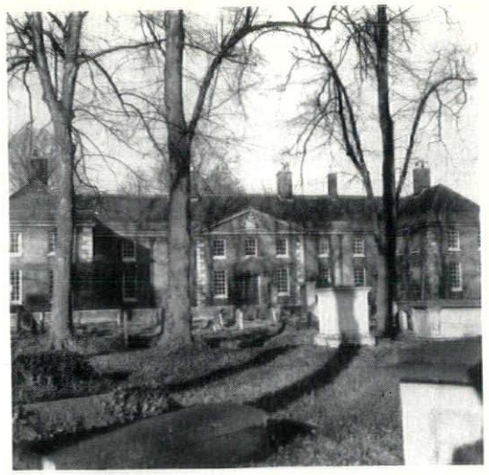
MATTERS OF TASTE

This month Bury St. Edmunds is holding a big historical pageant connected with the oath sworn by the barons in 1214 at the high altar of the Abbey to compel King John to ratify Magna Carta. It will be held in the Abbey Gardens, and will be the natural occasion for the expression of corporate pride—justifiable pride, for Bury is one of the handsomest and most balanced country towns in England. With corporate pride comes the thought of Improvements, and ironically enough three changes are proposed in Abbey Grounds, all praiseworthy in intention, which I feel will take away most of its character—a character emphatically worth preserving.

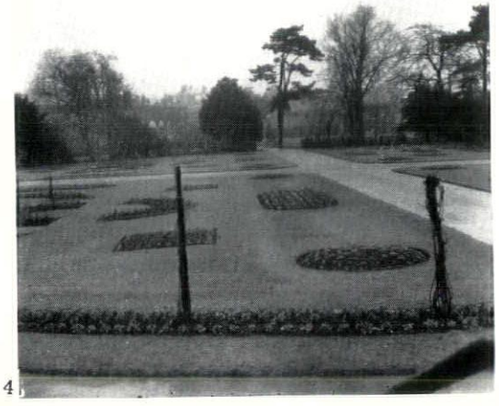
Bury was monastery first and town second. It was laid out as a new town in the late eleventh century to a checkerboard plan (which, unlike Salisbury, it has managed to overcome very successfully). The abbey was demolished at the Dissolution, leaving two big Perpendicular parish churches, one of them now the cathedral, and the abbey grounds settled down to mature, in a very English way: people built houses among the ruins when they were alive and got buried there when they were dead. By the nineteenth century the grounds had mellowed, just as though they were cellars of vintage port, into a perfect amalgam of past and present: and, surprisingly, the nineteenth century left well alone. The result is a leafy, serene, gently melancholy place, 1 and 2, that, due to tidying up everywhere else, can hardly be matched in the whole country.

It is unique; it is also out of fashion, at least in Bury, which can only see it as overgrown and untidy. The northern end of the grounds has already been tidied up, and called Abbey Gardens: what is proposed at the south end is a cleaning up and lawnifying, removing most of the gravestones and straightening out the informality. Abbey Gardens, 3, formal and rosebushy, shows the way the improvers are likely to be thinking if not the actual treatment proposed. Now, I dislike the style of the Abbey Gardens as much as I admire the other end of the precinct, and there are over the years more and more people who do the same. To put it at its lowest, the fashion in Improvements is changing. There is, of course, no question of absolute right or wrong about this: it is just a straightforward difference in taste and tempera-





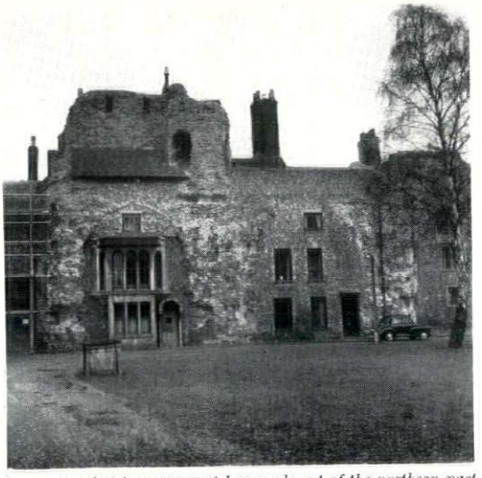
1, 2





3, 4





5, 6

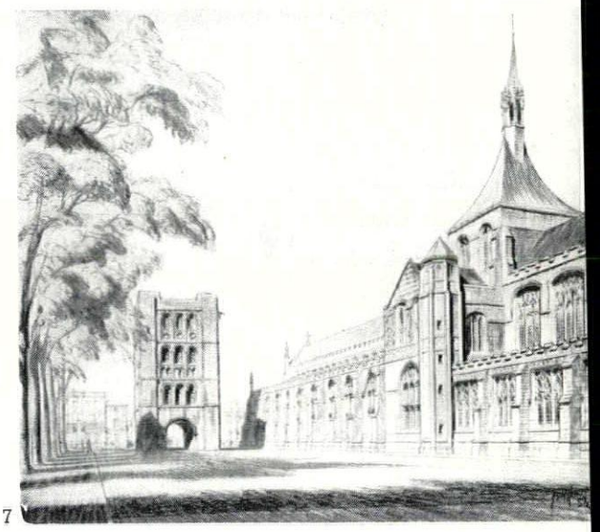
1 *and* 2, *the south end of the abbey grounds at Bury St. Edmunds.* 3, *what improvement has made out of the northern part.* 4, *the abbey ruins as excavated.* 5, *the ruins of the crossing tower, now being excavated, showing an abundance of flint rubble and a complete absence of architectural detail.* 6, *the house wedged in between the remains of the original west front.*

ment, and will always exist, just as it existed in the eighteenth century between the le Nôtres and the Kents. Why not, therefore, keep both alternatives? —let the Abbey Gardens be as floral and formal as they like, and keep the southern end of the grounds in their present informality.

Exactly the same point of view can be applied to the second of the proposed improvements, the excavation and laying out of the Abbey ruins in customary Ministry of Works style. The northern end has already been treated in this way, 4; the results make me shudder, but that again is a matter of taste. The crossing of the church itself is now being excavated, having been stripped of its ivy and frilly bushes, and presents an eerie lunar appearance, 5. But the west front has a house planted firmly between what is left of the main piers, 6, with people still living in it. This, surely is of far greater historical interest than one more lump of exposed flint rubble core—there is not a single bit of dressed or ornamental stone left on the whole site. All that can ever be recovered is a ground plan, so why bother? Again, why not attempt to cater for both sides: uncover the east end if there is any archæological profit to be got from it, and let the west end be—and not as a museum but as an inhabited house.

The third alteration is much more tangible, in the form of a Neo-Gothic crossing and quire for the cathedral, 7 and 8, and contingent openings-out for the sake of 'dignity' around the west end. The cathedral is a design of c. 1500 by John Wastell, which is an exact and rather depressing cut-rate edition of St. Mary's Church a hundred yards away. In every respect—piers, arcades, clerestory framing, windows, spatial tension—it is the style of St. Mary without the quality: fifteenth century imitation gothic, if you like. So, as well as all the other arguments against building in a fake style there is the fact that it would be compounding a felony, as it were, because the original building is itself neither original nor particularly good. This is doubly sad because all the other good buildings in Bury have not tried to imitate anything else: the Norman bell-tower, the Decorated abbey gateway, Adam's Town Hall and the Georgian building sitting so happily in the background of illustration 2, are all as dissimilar in style as could be.

This proposed mass of flushwork and Perpendicular tracery is really a kind of easy way out; the real task would be to find, in modern terms, a space that would improve on and augment the existing building just as the Ely octagon augmented the Ely nave. It can be done—the Germans are doing it on a smaller scale in dozens of churches and American architects like Yamasaki and Rudolph are producing gothic spaces anyway (gothic space is not really an appendage of a style but an expression of a perennial part of human behaviour). In England we are still so obsessed with the Gothic Revival that we are incapable of creating gothic spaces without imagining stylistic trappings around them: then, inevitably, because



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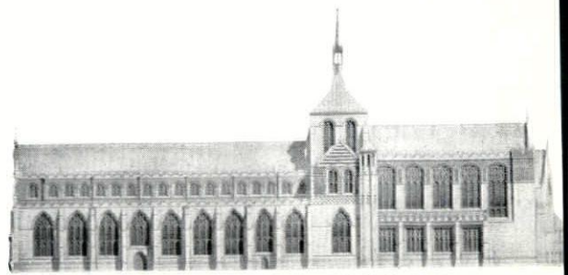

8

Additions to Bury St. Edmunds Cathedral by S. E. Dykes Bower. 7, *the architect's impression of the cathedral from the south east.* 8, *south elevation, with the existing sixteenth-century nave on the left and the proposed new east end on the right.*

they are applied and not felt, the trappings kill the spatial idea stone dead.

So there it all is: not, I hope, a discordant note in the pæan of pageantry, but a bit of honest disagreement very much in the Magna Carta tradition. English compromise is a bad thing if it means dilution all round; but applied in its original radical sense, as a harmonization of mutually existing differences, it is a vital town planning method, possibly the only sound method there is. It could well be applied here to satisfying all of the people some of the time. **Ian Nairn**

SKILL

PITCHED ROOF COVERINGS

by Peter Whiteley

3, unit coverings—*concluded*

Continuing the first of Peter Whiteley's reviews on pitched roof coverings, we published last month comparative cost tables relating to slates, shingles and concrete tiles. This month we finish the first part of the series by publishing similar tables dealing with clay tiles, thereby completing a cost survey of the chief pitched roof unit coverings available in this country.

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
CLAY TILES (all tiles are calculated at 3 in. lap unless otherwise stated)								
JOHN BOARD & CO. LTD., Bristol Road, Bridgwater, Somerset								
					£ s. d.	£ s. d.	£ s. d.	
plain tiles (hand made)	10½ in. by 6½ in.	11 cwt.	40°	available in natural sandfaced and red sandfaced, dun sandfaced brown sandfaced, antique sandfaced and dun, silver-grey and brown	£7 17s. 6d. for natural and red £9 15s. 0d. the rest	13 3 0 15 6 0	41 2 0 43 5 0	plain tiles also available as machine made in plain red, dun, silver-grey and brown
'Granada' bold roll tiles (hand made)	16¾ in. by 14 in.	6½ cwt.	35°	colours available: natural sandfaced red sandfaced, dun, silver-grey, brown, dun sandfaced, other colours as above silver-grey sandfaced, brown sandfaced	4 16 0 prices for other colours slightly higher	8 8 0	36 7 0	
interlocking double Roman (breakjoint, hand made)	16¾ in. by 13¾ in.	6 cwt.	35°	plain red, natural sandfaced, red sandfaced other colours as above	4 14 0 prices for other colours slightly higher	8 5 0	36 4 0	also available as a straight joint tile at slightly less cost
single Roman (hand made)	13½ in. by 10½ in.	5¾ cwt.	35°	plain red also in dun, silver-grey and brown	6 17 0 price slightly higher	9 18 0	37 17 0	also available as 15 in. by 10 in. tile
Old English pantiles (hand made)	14 in. by 10 in.	6½ cwt.	35°	natural sandfaced and red sandfaced also in dun, silver-grey and brown, dun sandfaced, brown sandfaced and antique sandfaced	6 4 0 price slightly higher	9 6 0	37 5 0	also made by this company: Minorca bold roll, Pooles (large and small), triple angular, treble tiles and a full range of special tiles to go with all the above ranges
extruded clay pantiles (machine made)	15 in. by 10 in.	6 cwt.	35°	plain red also in dun, silver-grey and brown	3 18 0 price slightly higher	7 2 0	34 18 0	
G. TUCKER & SON LTD., Loughborough, Leicestershire								
plain tiles (hand made)	11 in. by 7 in.	11¾ cwt.	40°	all sandfaced: red, purple, brown thatch dun	7 0 0 7 5 0	10 4 0 10 9 0	38 3 0 38 8 0	full range of plain tile fittings available

[continued on page 434

 continued from page 433]

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
JOHN BROWNE & CO. LTD., Old Taunton Road, Bridgwater, Somerset								
plain tiles (hand made) No. 3	10½ in. by 6½ in.	10 cwt.	40°	available in the following colours: red sandfaced, antique, dun, brown and Purple sandfaced	£ s. d. 9 18 0 red sandfaced slightly less	£ s. d. 13 18 0	£ s. d. 41 12 0	also available in red plain faced, dun, brown and purple as a machine made tile
rainbar double Roman tiles No. 5	16½ in. by 13 in.	6½ cwt.	30°	red (plain), dun, brown and Purple (plain) natural sandfaced, red sandfaced, antique, dun, brown and purple sandfaced	4 6 0 4 8 0	7 8 0 7 10 0	35 7 0 35 9 0	the head of this tile incorporates raised weather bars and protected nail holes
rectory tiles No. 6	12¾ in. by 11½ in.	7½ cwt.	30°	red (plain), natural sandfaced, red sandfaced, dun, brown and purple (plain), antique, dun, brown or purple sandfaced	4 10 0 for natural sandfaced and red sandfaced	8 3 0	36 2 0	laid to a break joint and with double weather checks at head and protected nail holes
west country pantile No. 7 (hand made)	13½ in. by 9½ in.	6½ cwt.	30°	red (plain), natural sandfaced, red sandfaced, dun, brown or purple (plain), antique sandfaced, dun sandfaced, brown sandfaced, purple, green or blue glazed sandfaced	6 0 0 for red (plain) and natural sandfaced price slightly higher	9 13 0	37 12 0	every tile in alternate courses once nailed. manufactured to B.S.S. 1424
pantiles (machine made) No. 7A	15½ in. by 10 in.	7¼ cwt.	35°	red (plain) dun, brown and purple (plain)	3 18 3 4 3 9	7 3 0 7 11 0	34 19 0 35 5 0	
'County' fully interlocking pantile No. 14	16 in. by 10 in.	7 cwt. (at 2⅞ in. head lap)	22½°–25° according to exposure conditions	red (plain), dun, brown and purple (plain) natural sandfaced, red sandfaced, antique sandfaced, dun sandfaced, brown sandfaced, purple sandfaced	5 11 9 5 14 6	9 4 0 9 6 6	37 3 0 37 5 6	every tile in alternate courses once nailed
'Somerset' interlocking tile No. 13 (side lock only, head lap variable)	15½ in. by 8 in.	6 cwt.	35°	red (plain), red sandfaced, dun, brown and purple, plain and sandfaced	3 16 0	6 8 0	34 6 0	manufactured to B.S.S. 1424. also made by this company; 'Homestead' tiles, double roll l.h.v. tiles, 'Monastery,' double Roman, Marseilles pattern, Broomhall (Taylors patent) and Abbey (Spanish pattern); and full range of special tiles to go with all the above ranges
HINTON, PERRY & DAVENHILL LTD., Pensnett, Brierley Hill, Staffordshire								
'Dreadnought' plain tiles (hand made)	11 in. by 7 in.	12 cwt.	40°	red sandfaced smokey black sandfaced, grey sandfaced	7 5 0 price slightly higher	10 10 0	38 9 0	
plain tiles (machine made)	10½ in. by 6½ in.	11¾ cwt.	40°	smooth red red and brown sandfaced dun sandfaced	6 2 0 best quality 6 7 6 6 13 6	9 4 8 9 9 0 9 15 0	37 3 0 37 8 0 37 14 0	

[continued on page 435

continued from page 434]

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
HENRY HAWKINS LTD., Longhouse Tileries, Cannock, Staffordshire								
plain tiles (machine made)	10½ in. by 6½ in.	13 cwt.	40°	smoothfaced and in deep medium red sandfaced in moss tone and and brown heather	£ s. d. 5 15 0 best quality also available in commercials and seconds	£ s. d. 8 18 0	£ s. d. 36 17 0	
COLTHURST SYMONS & CO. LTD., Bridgwater, Somerset								
plain tiles (hand made) No. 2	10½ in. by 6½ in.	10 cwt.	40°	available in colours and finish: red sandfaced brindle, antique and multi-coloured sandfaced	8 13 0 9 15 0	12 4 0 14 19 0	40 3 0 42 18 0	also made as a machine made tile in red and dun (smooth) at a lower price
pantiles (hand made) No. 6	13½ in. by 9¾ in.	6¼ cwt.	35°	red (smooth), dun (smooth), red sandfaced brindle, antique and multi sandfaced	6 10 0 for red sandfaced higher price	8 15 0	36 14 0	also obtainable in various glazes
double Roman (hand made) No. 7	16½ in. by 14 in.	6 cwt.	35°	red (smooth), red sandfaced, dun (smooth), brindled, antique and multi sandfaced	4 10 0 for red sandfaced only	6 17 6	34 16 6	also obtainable in various glazes. may be fixed by the contractor's patent 'secure' clip system
interlocking double Roman (hand made) No. 11 break-joint tiles	16½ in. by 13½ in.	6 cwt.	30°	as above	5 9 9 for red sandfaced only	7 19 6	35 18 5	also available in a smaller size No. 11A 15½ in. by 11 in. also obtainable in various glazes
'Italian' over and under (hand made) No. 13B interlocking	15½ in. long tray and roll together covering 11¾ in.	10 cwt.	35°	available in red sandfaced, brindle sandfaced, antique sandfaced and multi sandfaced	8 10 6 for red sandfaced only	10 16 0	38 15 0	these tiles are normally fixed direct to boards and felt, with vertical battens to take roll tiles only
'Bambino' interlocking (hand made) sidelock only	13½ in. by 10½ in.	7½ cwt.	35°	red sandfaced, brindle sandfaced, antique sandfaced and multi sandfaced	7 0 9 for red sandfaced only	9 9 0	37 8 0	also available in various glazes. also made by this company: single Roman, secure system (s/s), triple tile (various), Pooles tiles, 'Spanish' (over and under), 'Lido.' 'Reynardo,' and full range of special tiles to suit all the above ranges
G. H. DOWNING & CO. LTD., Brampton Hill, Newcastle, Staffordshire								
'Acme' plain tiles	10½ in. by 6½ in.	11½ cwt.	40°	red (smooth-faced), best quality, commercials, seconds	4 12 6 for 'bests'	7 17 0	35 16 0	manufactured to B.S.S. 402/1945
'Acme'/sandstorm plain tiles	10½ in. by 6½ in.	11½ cwt.	40°	sandfaced in the following colours: red, purple, Tudor, heather, farmhouse, brown, crystal grey, Cotswold grey, in three qualities	5 12 9	8 16 0	36 15 0	A full range of specials is available to match this range
'Acme' interlocking tiles	11½ in. by 8½ in.	7¾ cwt.	35°	best red, red multi sandfaced best red brindled (smooth), best red (smooth)	5 13 0 slightly lower price	7 19 0	35 18 0	

[continued on page 436

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
THE HUMBER BRICK & TILE CO., Barrow Haven, Lincolnshire								
					£ s. d.	£ s. d.	£ s. d.	
'Humbrian' pantile	13½ in. by 9½ in.	6¾ cwt.	35°–40°	natural red antique sand-faced, red and brown sandfaced	3 3 9 3 19 0	5 16 0 6 12 0	33 15 0 34 11 0	
French tile	13½ in. by 9½ in.	6¾ cwt.	35°–40°	natural red antique, red brown sandfaced	3 7 9 4 3 6	6 0 0 6 17 0	33 19 0 34 16 0	
corrugated tile	13½ in. by 9½ in.	6¾ cwt.	35°–40°	as above	3 7 9	6 0 0	33 19 0	
LANGLEY LONDON LTD., 163-7, Borough High Street, S.E.1 (agents (and importers) for a wide range of tiles)								
'Cloister' single Roman (hand made)	16¾ in. by 13¾ in.	7¾ cwt. (at 3¼ in. head lap)	35°	natural red prices London area red, brown and dun sandfaced	delivered to site 9 8 2 9 17 7	12 5 0 12 16 0	40 4 0 40 15 0	Every tile to be twice nailed
'Langhome' standard English pantile	13½ in. by 9½ in.	7¼ cwt.	35°	natural red autumn red and dun sandfaced	5 14 1 6 16 11	8 4 0 9 18 0	36 3 0 37 17 0	fixing: every tile to be once nailed
fully interlocking improved pantiles	13⅞ in. by 10 in.	7⅓ cwt.	30°	natural red antique sand-faced multi-coloured purple, chestnut and black glazed (semi-matt)	6 10 0 6 15 6 7 13 0 9 17 6	9 11 0 9 18 6 10 17 0 13 6 0	37 10 0 37 17 6 38 16 0 41 5 0	every tile to be once nailed
'Priory' bold roll variegated tiles, 10	13⅞ in. by 10⅛ in.	7½ cwt.	35°	variegated smooth finish	8 5 0	11 7 0	39 6 0	as above this tile is a boldly profiled pantile
C.D.N. (Belgian) fully interlocking tiles, 11	11½ in. by 8½ in.	7 cwt.	30°	natural red brown, antique and dark red matt green black, deep brown, teapot brown glazed	6 10 8 7 1 10 9 0 6 13 0 0	9 12 0 10 3 6 12 5 0 16 11 0	37 11 0 38 2 6 40 4 0 44 10 0	these fully interlocking tiles have additional weather protection in the form of weather stops and a raised collar round the nail hole additional green and blue glazes available at a higher price
'Sterreberg' fully interlocking pantile	14 in. by 9½ in.	8 cwt.	30°	natural red brown, antique, dark red matt green black, deep brown, teapot brown glazed	7 11 0 8 0 8 9 11 0 13 17 5	10 9 0 11 2 0 12 16 0 17 4 0	38 8 0 39 1 0 40 15 0 45 3 0	every tile to be once nailed additional green and blue glazes available a full range of 'specials' is available for all the above tiles, including glass tiles for loft lighting
MAIDENHEAD BRICK & TILE CO. LTD., 'Inholmes,' Burgess Hill, Sussex								
plain tiles (hand made) also machine made	11 in. by 7 in. 10½ in. by 6½ in.	11 cwt.	40°	hand made natural	7 6 9	10 10 0	48 9 0	
THE METALLIC TILE CO. LTD., P.O. Box 4, Chesterton, Newcastle, Staffordshire								
'Metal' plain tiles (machine made)	10½ in. by 6½ in.	11 cwt.	40°	red (smooth) pressed red and purple sandfaced brown, russet and grey	5 8 0 (best) 5 12 0 (best) 5 16 6 (best) prices of commercials about 10% less	8 14 0 8 19 0 9 5 6	36 13 0 36 18 0 37 4 6	full range of fittings and specials to match plain tiles
SWALLOW TILES LTD., Bookhurst Brick and Tile Works, Cranleigh, Surrey								
plain tiles (hand made)	10½ in. by 6½ in.	11 cwt.	40°	dark and medium antique sandfaced	6 5 0	9 9 0	37 8 0	

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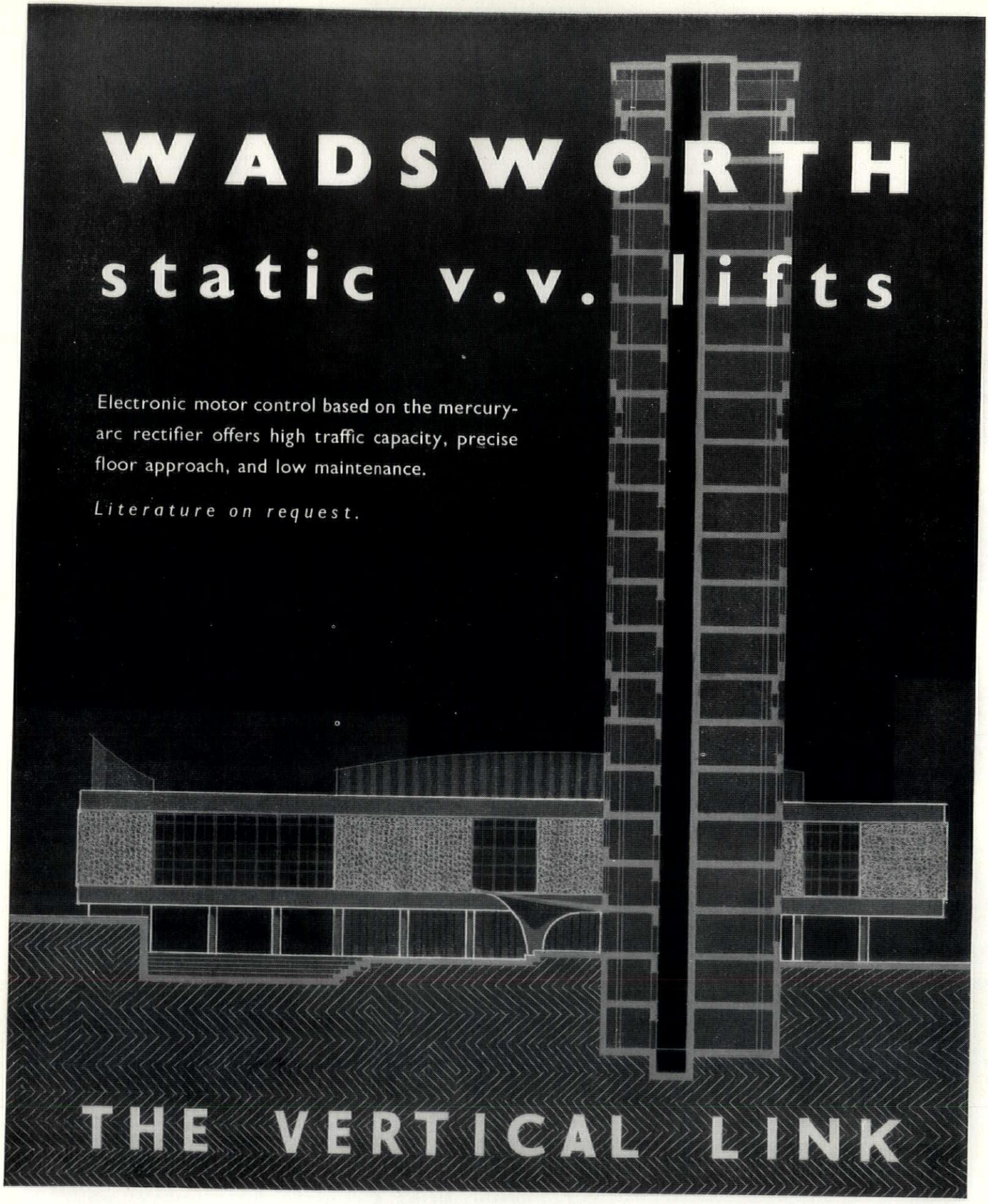

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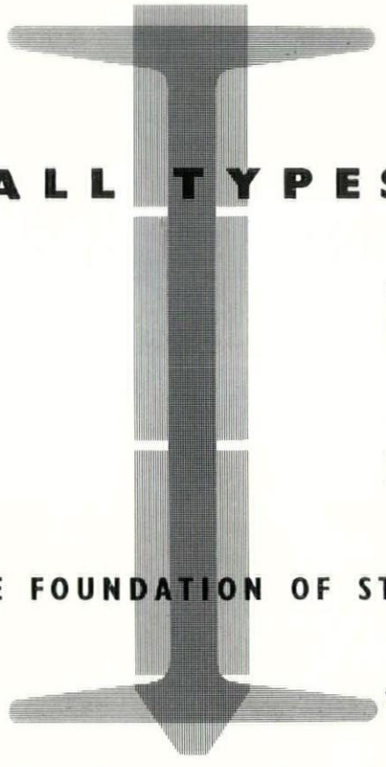
(Wadsworth Passenger and Goods-Passenger Lifts installed at Bowaters, Northfleet, see editorial pages 402 to 406)

 continued from page 436]

proprietary name and description	size	weight per square laid, in cwts.	recommended minimum pitch of roof (effective)	colour and finish	(a) cost material ex works per square	(b) cost laid per square (material only)	(c) cost per square on plan of total structure including ceiling and insulation	remarks
T. E. WALLEY LTD., Rosemary Hill Tileries, Silverdale, Newcastle, Staffordshire								
plain tiles (hand made)	10½ in. by 6½ in.	11½ cwt.	40°	grey, antique for 'bests'	£ s. d. 8 1 0	£ s. d. 11 7 6	£ s. d. 38 6 6	full range of plain tile fittings available
				dark red, red brindle, purple for 'bests'	7 13 0	10 19 0	38 18 0	
plain tiles (machine made)	10½ in. by 6½ in.	11½ cwt.	40°	sandfaced, all colours as above	5 16 0	9 0 6	36 19 6	
				plain smooth-faced in light and dark red and brindled	5 7 0	8 9 0	36 8 0	
WHEATLOY & CO. LTD., Springfield Tileries, Trent Vale, Stoke-on-Trent								
'Triton' pantiles (hand made)	13½ in. by 9½ in.	9 cwt.	35°	red, light brindled and light multi-coloured	6 18 6	10 5 6	38 4 6	each tile in every alternate course
				medium brindled	7 13 0	11 1 0	39 0 0	
				stained, green and variegated lichen	9 4 9	12 16 6	40 15 6	
'Romulus' tiles, Roman tiles (hand made)	13¾ in. by 11¼ in. including roll widening from 3½ in. at head to 4½ in. at tail	10¾ cwt.	35°	red, light brindled and light multi-coloured	8 3 6	11 12 6	39 11 6	also manufactured by this firm: Milan tiles, Seville (Spanish) tiles
				medium brindled	9 1 6	12 13 0	40 12 0	
				stained lichen	10 17 6	14 8 0	42 7 0	
HENRY WILLIAMSON & CO. LTD., North Bridge, Hull, Yorkshire								
'Newport' pantile (machine made)	13½ in. by 9½ in.	7¼ cwt.	35°	natural red	3 3 6	5 17 6	33 16 6	also manufactured by this firm: natural red French tile



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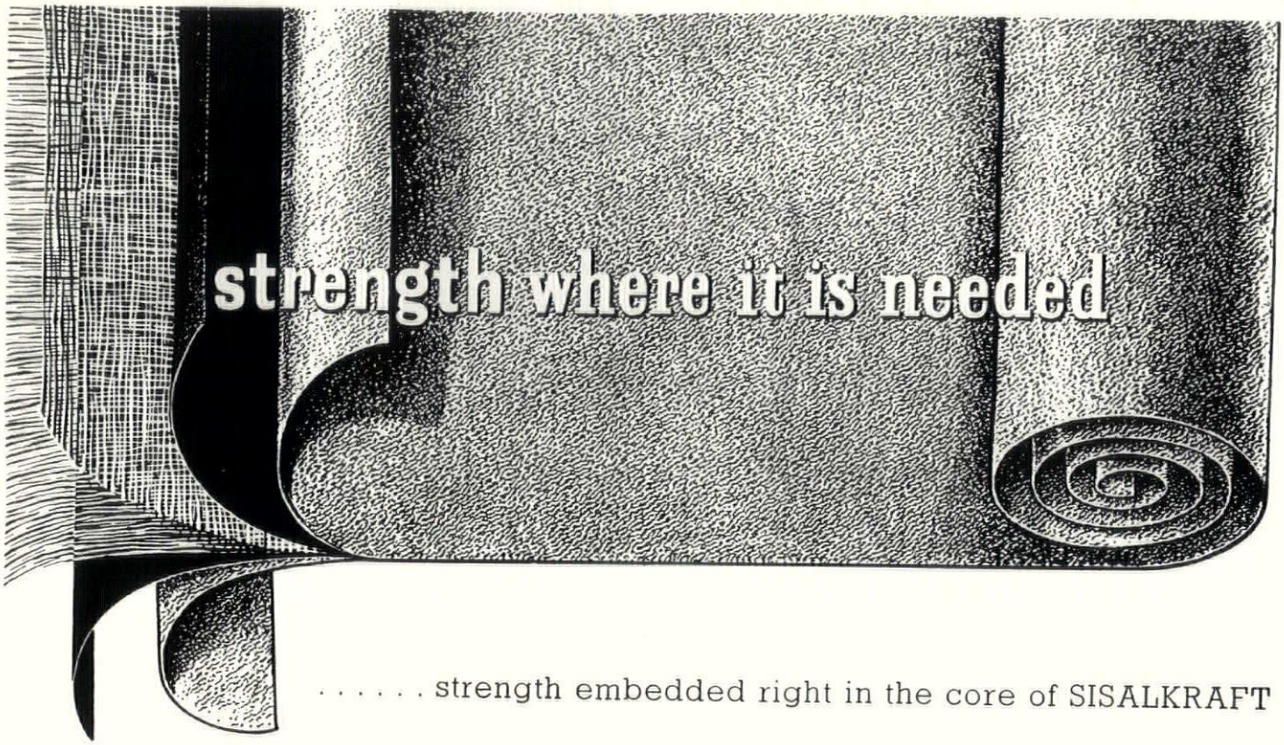

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THE INDUSTRY

Asphalte Pocket book

The NAMMC have issued a booklet (which incidentally is made to the A6 size now incorporated into B.S. 1311—15 cm. by 10.5 cm.) for clerks of works. It explains in detail how asphalte should be applied and protected for basement, roof and floor work, deals with problems of storage, remelting, underlays, trapped moisture, indeed with all the problems of this technique. The idea is that clerks of works who study this book will be better equipped thereby to supervise and check mistakes or bad workmanship. One slightly alarming suggestion for the release of trapped moisture in roofs is to build 12 in. high by 27 in. long brick ventilators —one to every 60 yards super of roof, to be either left there or taken away when the moisture has gone. The architect cannot help wondering if there is not a less cumbrous method.

The booklet ends with tables of covering capacities and lists of British Standard specifications for sphalte work. Clarity of presentation would have been improved by less text and more drawings.
Natural Asphalte Mineowners and Manufacturers Council, 94 Petty France, S.W.1.

Pre-cast floors

One useful feature of a new pre-cast floor catalogue is a very extensive table of weights of various materials. The rest of it is devoted to details of the firm's methods for floor bearings, eaves treatments, etc., illustrated by rough sketches.
Girlings Ferro Concrete Co. Ltd.

Demountable partitions

The three-quarter height partition seemed at one time the sort of thing that office managers would ask jobbing carpenters to run up for them, but with increasing knowledge of acoustic control, it may come back at a higher level. Luxfer Ltd. produce what they call Techniplan units in four different heights from 3 ft. 6 in. to 7 ft. and as many as seven different widths. Units fit into posts, finish clear of the floor like lavatory partitions, can be had with glass, metal or acoustic board tops, can accommodate electric wiring and are not apparently fixed to the floor, except where doors occur. The catalogue contains one puzzle: doors are advertised as being packed with 'sound proof material' which would seem wasteful where air paths are not stopped. Unfortunately, no prices are given.
Luxfer Ltd., Waxlow Road, Harlesden, N.W.10.

Fibrous Plaster

This material, formerly the preserve of the neo classicist, has been coming into its own again. At the same time a growing scarcity of plasterers for work on the site has been nearly matched by an increasing number of shop plasterers, many of them from the film industry so I am told.

One such specialist firm, Jonathan James Ltd., now advertises a range of panels under the name 'Plasrib': 2 ft. square, 1⅛ in. thick reinforced with aluminium rods and nylon fibre, in various patterns of ribs and low relief motifs. Some of these are sound absorbing—the catalogue is a little ambiguous about this—and obtainable with thermal insulating backing. The panels for ceilings are fixed to a suspended timber or metal framework on hangers and are removable for access to concealed services. The hanging device is ingenious yet simple to install and has been developed in conjunction with Campbell Denis Ltd.
Jonathan James Ltd., 55-57 Lacey Road, Putney, S.W.15.

Roof Decking

Another proprietary roofing system on the market. It is called Pyrodek and consists of bulb angles, about 2¼ in. deep at 32 in. c.c. tack welded to the structural purlins or beams. Between these are laid 'formboards' of some unspecified non-impermeable material and over these again, square mesh galvanized reinforcement. Then the concrete pump is set going to deliver gypsum concrete through a pipe to fill up to at least a 2 in. thickness. Within 24 hours this is ready for the three-layer felt and granite topping. Roofs may be flat or pitched, and the company has worked out a number of eaves and edge treatments which their catalogue shows. One slight drawback is that the soffite must be left unpainted for a year to allow the moisture to dry out of the gypsum, another that the U value is 0.38 although fibreglass 'formboards' bring it down to 0.16. One wonders whether it would be worth while to try the possibilities of making this form of construction into decking units in the workshop to avoid site welding and the drying out problem.
D. Anderson & Son Ltd., Old Ford, Trafford, Manchester.

Slate

Three RIBA award winning leaflets giving technical information on cills, copings, and claddings have been issued by a slate firm. They are to A4 size, give their information economically and dispense with 'advertising'—which is very refreshing. It is a pity that cost information was not included.
Limestone and Green Slate Slab Co. (Westmorland) Ltd.

CONTRACTORS etc

Lodging Houses for Magdalene College, Cambridge. *Architect:* David Roberts. *General contractor:* Kidman & Sons. *Sub-contractors: Demolition:* A.J.Nunn & Son Ltd. *Excavation:* The Franki Compressed Pile Co. *Slate window surrounds:* The Bow Slate & Enamel Co. *Copper special roofings:* T. R. Freeman. *Roof lights:* Lenscrete Ltd. *Linoleum:* Eaden Lilley & Co. *Sanitary fittings:* Pratt (Watford) Ltd. *Casements:* The Crittall Manufacturing Co. *Tiling and plastering:* G. Cooke & Sons Ltd. *Marble:* Fenning & Co. *Stairtreads:* Hornton Quarries Ltd.

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[continued on page 442



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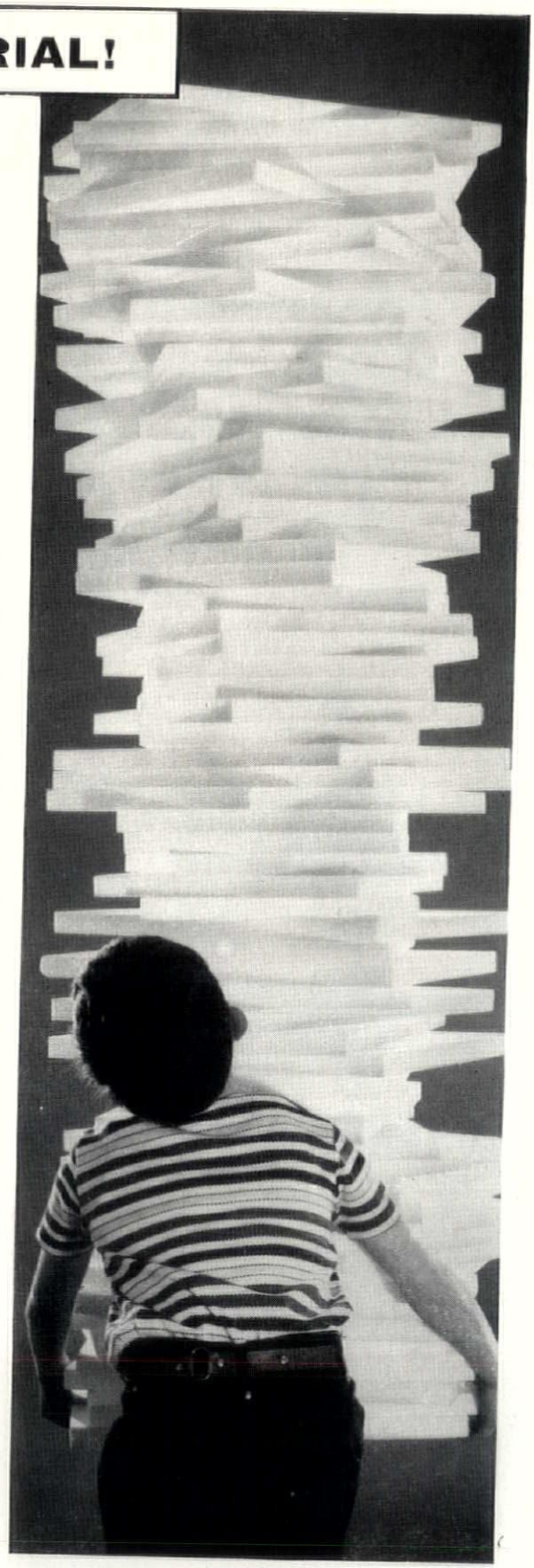

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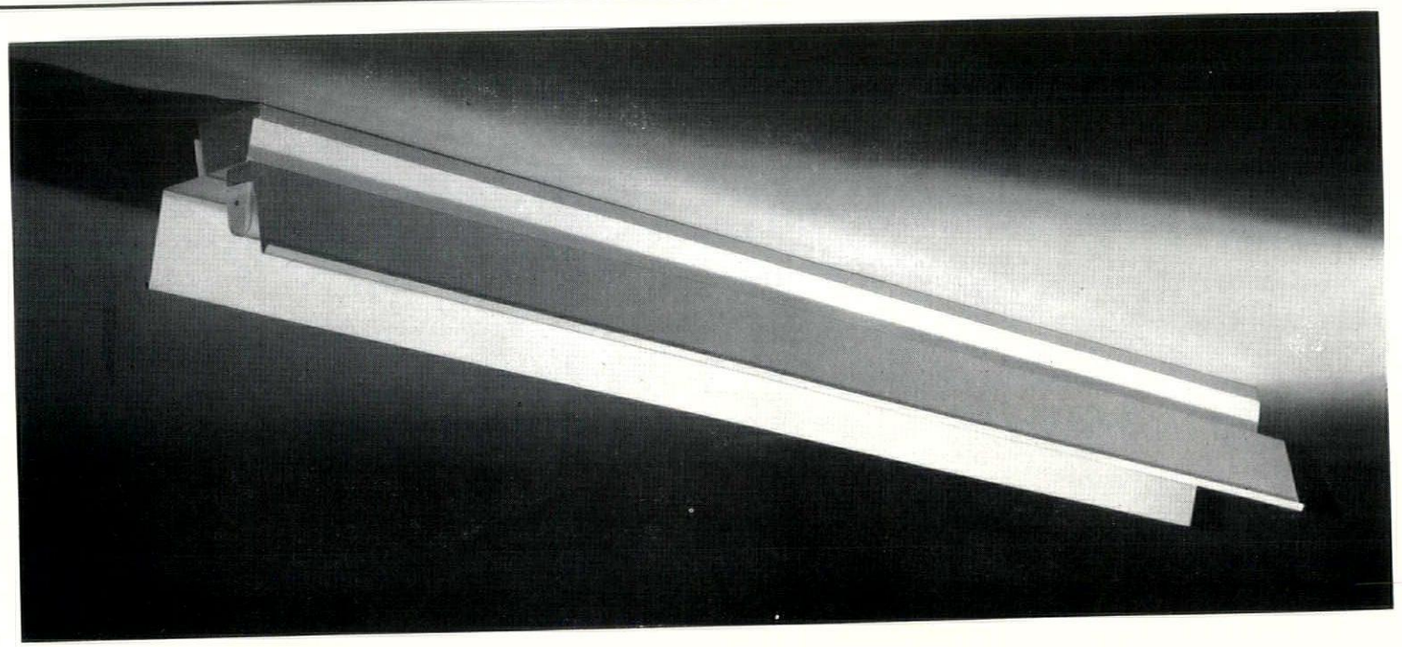

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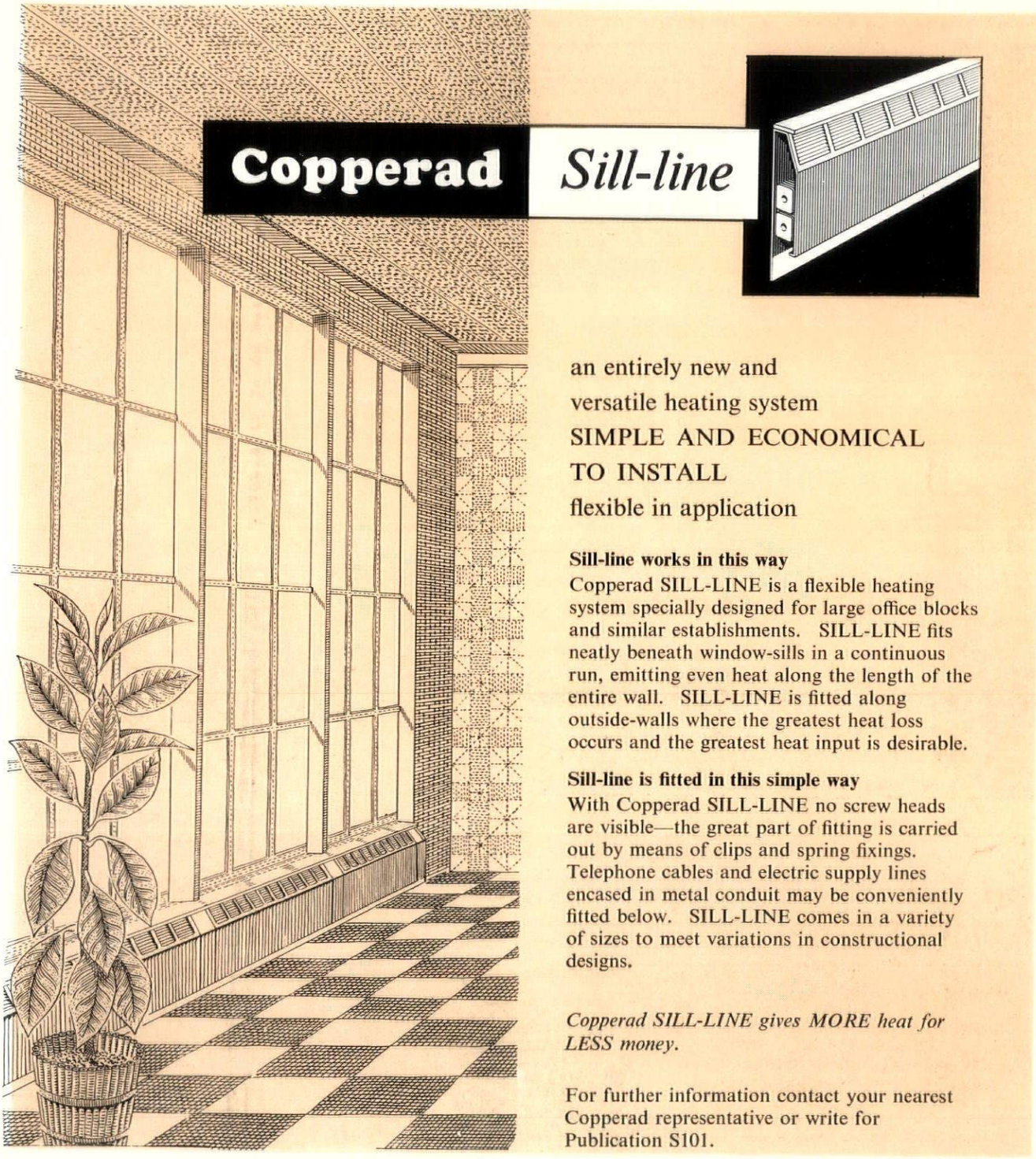

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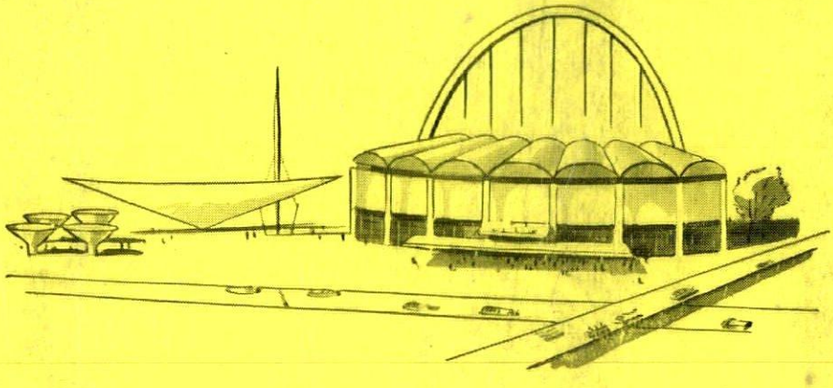



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