

THE ARCHITECTURAL REVIEW VOLUME CXXX NUMBER 773 JULY 1961 FIVE SHILLINGS

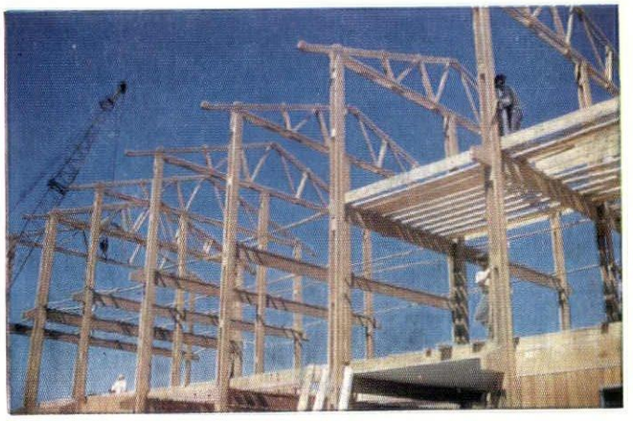


Blocks of twelve self-contained flats for married Services families in Aden. Thirty blocks, each with a floor area of 14,100 sq. ft., providing a total of 366 dwellings, were manufactured, shipped, erected and handed over within a period of eleven months.

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WORLD

UIA LONDRES 1961

architecture is indivisible. . .

At this time when some two thousand architects from all parts of the world—forty-odd nations will be represented—are gathered in London for the sixth congress of the International Union of Architects, THE ARCHITECTURAL REVIEW re-affirms its international character by offering an enlarged and extended edition of its regular monthly feature WORLD. In addition to its normal service of illustrations and commentary on outstanding new buildings and events, WORLD takes the opportunity this month to explore in greater breadth certain trends and developments in thought and construction, either because they show varying responses in different nations to international problems, or because they embody tendencies which, though specific to a single nation, may yet be expected to exercise international influence in the near future. To accommodate this extended coverage, the pages normally devoted to Views and Reviews have been omitted in this issue.

The internationalism of architecture today is a fact—the world-wide community of techniques, in which the so-called underdeveloped countries are rapidly drawing level with their former teachers, and the increasing availability of even the most advanced materials in all parts of the world, form the basis of a common language of practice and procedure. Treasured national differences of style or emphasis, based upon local needs, patriotism, or the influence of revered teachers, are more clearly defined against this common background, and gain interest thereby in the eyes of other nations. The national magazines of architecture are the servants of this growing international interest, and WORLD takes this opportunity to thank and salute the global network of architectural periodicals that help to keep information moving.

1

THE MYTH OF TECHNICISM

The Sixth Congress of the IUA meets in London to celebrate—one might almost say *consecrate*—the impact of the newer technologies on architecture. The mood is not that of the nineteen-twenties, when new technologies were held to be not only all-powerful, but all-responsible as well, the creators of a new architecture, and the Machine Aesthetic was the only acceptable style of building among those who held these convictions. Nevertheless, the tone of the Congress is clearly *pro*, and this might therefore be a fit time to remind ourselves that the opposite attitude, or at least a questioning one, is not now restricted to the old and mentally dead.

It is in Italy, in particular, that a group of younger architectural thinkers are expressing grave doubts about any profession of faith in *the machine*, as witness their hostile reaction to the writings of Reyner Banham. Many of these doubts, though gravely expressed, are in fact frivolous, and are simply the 'intellectual' top dressing on Neo-Historicism, but some must command respect and attention. Thus, in *Zodiac 7*, Paolo Portoghesi—who first made his impact on world opinion as a *studioso* of the Baroque, and later as the man who introduced that loaded word *Neoliberty* to the professional press—contributes a long and thoughtful article under the title *Architettura e Ambiente Tecnico*. The title itself may strike non-Italian readers as significant, since it seems to imply architecture *surrounded* by technology, rather than architecture *as part of* technology.

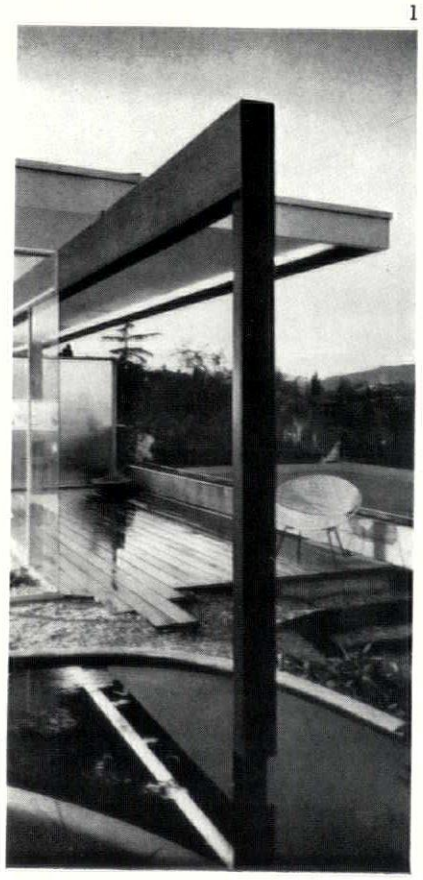
'It is especially important,' he writes, 'to clear up the misunderstandings that have grown up around the notions of technology and progress, for the attempts to establish objective bases for the construction and verification of architectonic language threaten to lead us back, as a reaction against certain aspects of a dominant empiricism, to the old attitude of optimistic confidence in the positive value of any kind of technical progress, and in the possibilities, latent in the adoption of new techniques, for freeing architecture from the quicksand of formalism. . . ' Anglo-Saxon critics of what they take to be Italian withdrawals from modern architecture may be surprised to see that this is how their opinions appear to some articulate Italians, and this, for a start, should serve as a warning against facile optimism in the value of international debate.

Portoghesi's method of 'clearing up' is, justifiably enough, to broaden the ground, and to include within the argument not only technology as such, but a lengthy discussion of 'the problem of human labour' and to draw some parallels between the theories of Rationalist (scil., Functionalist) architecture and those of the rationalizers of labour in the first quarter of this century. (One

[*continued on page 9*

DOMESTIC FRAMES

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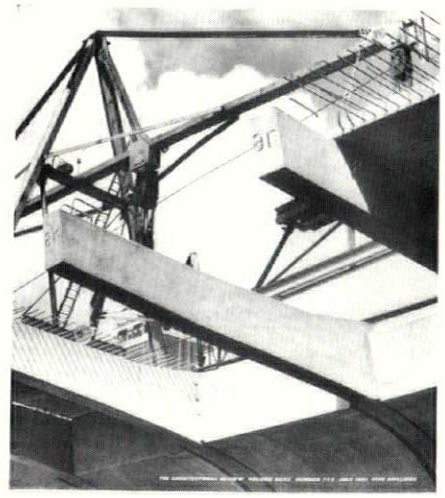
It is noticeable that among German language periodicals, and those under spasmodic German influence, one of the most discussed buildings in the world in the last three or four months has been Richard Neutra's Adler house, and others like it that make great play with space-invading frame structures. *Architektur und Wohnform* picked on another, at Eagle Rock, where the long-stepping frame has its foot, almost inevitably, 1, in a free-form pool, and there is a general feeling of a growing preoccupation with framed houses, at least among the magazine editors, wherever German is spoken. Usually, however, the frame is more regular and stays nearer home—the house on the Starnberger See, 2, by Buddenberg and von Busse, from the same issue of *A & W* is more typical of this German preference, with

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ACKNOWLEDGMENTS

COVER: Eric de Maré. WORLD, pages 1–9: 1, 2, *Arkitektur und Wohnform*; 3, 4, 7, 8, *Bauen+Wohnen*; 5, Gomez; 10–14, *Techniques & Architecture*; 16–20, *Arhitektura*; 21, 22, Ezra Stoller Associates; 23, 24, Cement and Concrete Associates; 25, *Progressive Architecture*; 28, 29, 31, Louis Checkman; 33–35, Hugo Priivits; 36, Tore Johnson; 41–43, LCC; 44–47, Dariush Borbor; 48, *Werk*; 50, *Apxitektonikh*; 51–53, *l'architecture d'aujourd'hui;* 54, 55, *Bauwelt*; 56–60, Inge Goertz-Bauer. FRONTISPIECE, page 10: Eric de Maré. THE IRON PIONEERS, pages 14–19: 1, 19, 23, 24, 26, 27, 29–34, Eric de Maré; 2, 5, 11, 13, National Buildings Record; 3, Norman Gold; 4, Helmut Gernsheim; 7, 15, David Wrightson; 10, A. F. Kersting; 12, Toomey Arphot; 14, J. Quentin Hughes; 16, 20, British Railways; 25, Herbert Felton; 28, R. J. M. Sutherland; 35, J. Scheerboom. FLATS IN ST. JAMES'S PLACE, LONDON, pages 20–28: Behr Photography. EXPLORING EYE, pages 36–42: Eric de Maré. CURRENT ARCHITECTURE, pages 52–57: 1–5, Henk Snoek; 6, 7, Logan; 8–10, Toomey Arphot; 11, 13, Mann Bros. MISCELLANY, pages 58–62: Exhibitions, 1, H.M. The Queen; 2, Stearn & Sons; 3, Marlborough Fine Art; 4, Cauvin; 5, 6, New London Gallery; History, 2, National Portrait Gallery. SKILL, pages 63–66: 1, 9, 21, Cement and Concrete Association; 2, J. R. Pantlin; 6, Holland & Hannen and Cubitts; 8, Elsam, Mann & Cooper; 10, John Laing & Son; 13, John Maltby; 14, Saga Services; 18, Woodside Studio; 19, British Transport Commission; 22, Colin Westwood. THE INDUSTRY, pages 68–72: 1, John Maltby; 3, Rylee.



The Cover *shows the projecting beams of precast bridge units, placed by the travelling crane above, on the new Hammersmith flyover. The appearance of the* REVIEW'S *initials on the beam-ends is not an attempt to claim credit and rob the contractors and designers of their due, but re-affirms the* REVIEW'S *belief that new materials and new techniques of this kind are the health and strength of modern architecture, as well as the theme of the Sixth IUA congress which meets in London this month.*

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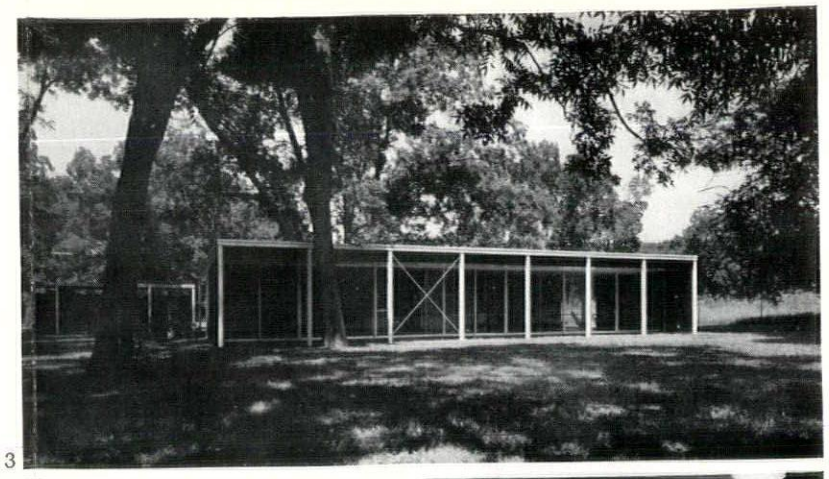
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3



Frames

the verticals of its welded-up double-portals (supporting floor and roof) standing just clear of the vertically boarded sidings of the exterior.

But the most extensive anthology of framed-house preferences was in *Bauen und Wohnen*, 1/1960. These included such familiar examples of the genre as the Newberrys' 'Mies-box' in Surrey, but also less familiar examples such as Murray, Jones and Murray's orchard-

4



house, 3, in Tulsa, Oklahoma, with its extremely precise detailing, Friedrich Kramer's rather more involved Sandforth House, 4, in Brunswick; an old friend that has rarely been well illustrated before, Antonio Bonet's open-frame house in Buenos Aires, 5, with its superb patio, 6; Walter

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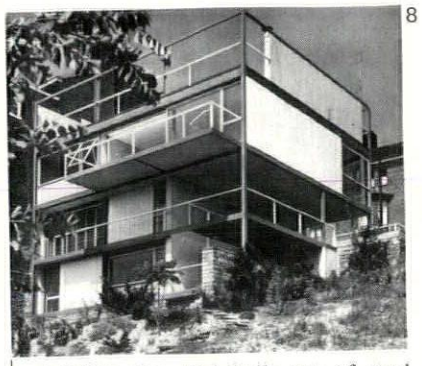
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Brune's hillside house at Wissembourg, 7; and yet another hillside sample, 8, this time in Liége, designed by Jules Mozin.

Quite apart from editorial preferences, one quite interesting persistent theme appears in all this work—the division of steel-framed houses, other than Neutra's, into two distinct types to which nearly all approximate. One is the tight, compact, and regular box standing on a fairly flat site, seemingly an obeisance to the classicist authority of a Miesian ideal; the other is an openwork affair, though usually contained in a frame of regular outline, like Mozin's or Bonet's, with hit-and-miss flooring and walling at different levels, built on a sloping or

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shelving site, and built out of steel simply because it is the best structure on a site where secure footings are difficult to find on a sloping surface.

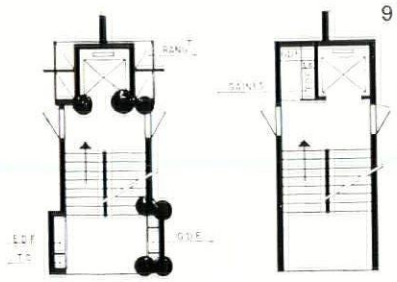
OTH/BET

research and development in France

The world is becoming aware that behind the façade of politicians, generals and mandarins of the intellect, France has been engineering a major and spectacular industrial renaissance that may yet overshadow the achievements of the *Wunderkinder* beyond the Rhine. An enquiring observer might well ask if something similar was happening behind the scenes of French architecture, since it is clear that while few major talents have emerged to hog the limelight, a great deal of immensely competent architecture is being carried out, with the aid of a building industry that has taken giant strides towards full mechanization and industrialization.

Techniques et Architecture has now afforded its readers a revealing and impressive view of these backstage activities, by way of a special number on OTH, a Bureau d'Etudes Techniques calling itself Omnium Technique d'Habitation and has uncovered in the process a type of Boffinry that Anglo-Saxon countries commonly assume to be specially their own. Effectively, a BET is a permanent association of specialists in various fields of (in this case) building technology who can take over all the preliminary consultant work on a project in one package deal. Having all consultants under one roof in this way not only simplifies the architect's work in assembling his consultants, but also means that the maximum co-ordination exists between the different branches, eliminating overlaps and, frequently, picking up unexpected economies where two or three specialities collide—the *before* and *after* study from the OTH/BET files seen in 9 will make this clear even without defining the contents of the ducts in detail.

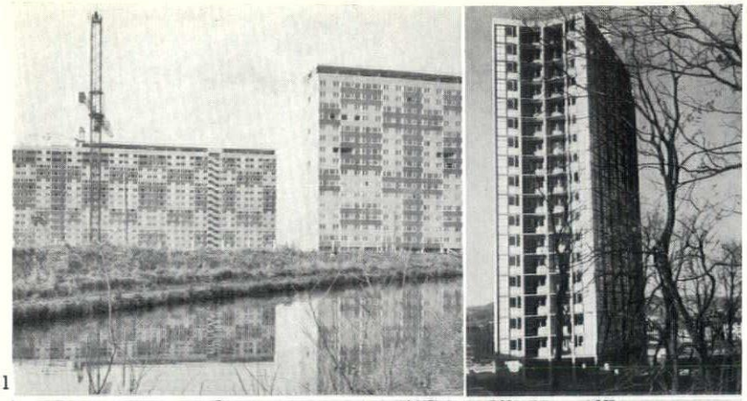
9



...améliorer la structure sans modifier sensiblement la distribution...

However, the work of the Bureau extends into the field of consultancy in the widest sense, and has made important contributions to constructional techniques such as prefabrication in large elements, rivalling Russian work in this branch, the use of pre-cut stone masonry in standard modular sizes, lightweight frame structures, mixed steel and concrete frames, lightweight cladding, as well as the rationalization of ducts, services and lifts, the building of roads, reservoirs and other outdoor works. As the terms of reference of OTH, like other French organizations, include large areas of north Africa and the Sahara, the work undertaken resembles that of the British BRS Tropical Division in some respects.

But it is in metropolitan France that the full impact and responsibility of the Bureau is most strikingly seen, since it is (or has been) heavily engaged with some of the largest and most notable developments put up in the last few years: Ginsberg's scheme for Meaux, 10, Andre Sive's Firminy-Vert, 11, all but Ionel Schein's tower-block (World, January, 1961) at

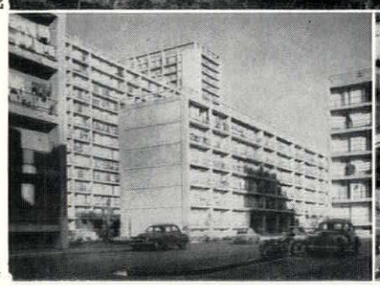


10, 11





12





13,14

OTH/BET

Angers Belle-Beille, 12, Egger and Fiedler's scheme for Parc Bellevue at Marseilles, 13, the snake-plan development *Les Courtilieres* at Pantin, 14, and the much-noted star and cylinder blocks at Bobigny by Aillaud and Vedrés, 15.

These are not all, and there are other Bureaux of similar types in the field—the total achievement is impressive by any standards. The obvious question, 'where is all this ingenuity leading?' has already been asked, by Silvano Tentori in *Casabella* (248, 1961) where he justly observes that the almost unplanned application of this facility in prefabrication is destroying French urban life (sparing the whip only from Perret's Le Havre, where a totally integrated design governed by a single modular grid, does at least bring a comprehensible order). The solution does not look as if it will be found simply by adding a few more specialists to the staff of the Bureau—unless they should be politicians.

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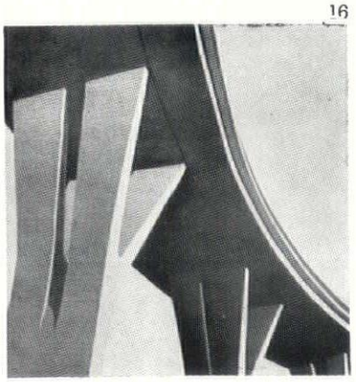


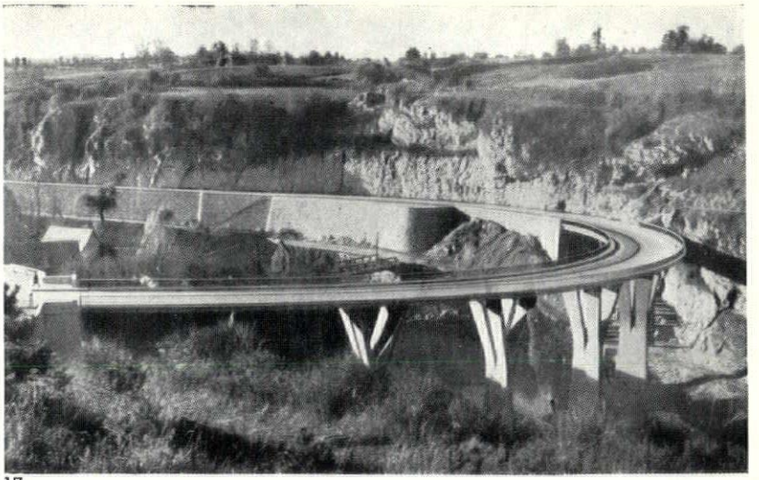
NATELS

tourist building in Yugoslavia

Apart from her own intrinsic attractions for tourists, Yugoslavia's position astride one of the great *routes touristiques* of Volkswagen-Europa (Trieste-Athens) places her in the unusual position of a lightly motorized nation with massive motor-traffic problems in some areas. So acute has the need for effective tourist provision become, that *Architektura* devoted the whole of an issue (4-6, 1960) to these needs. Work is proceeding rapidly on some striking motorway developments, such as the engineer Krunoslav Tonkovic's bridge over the Korana at Slunj, notable not only for its sub-

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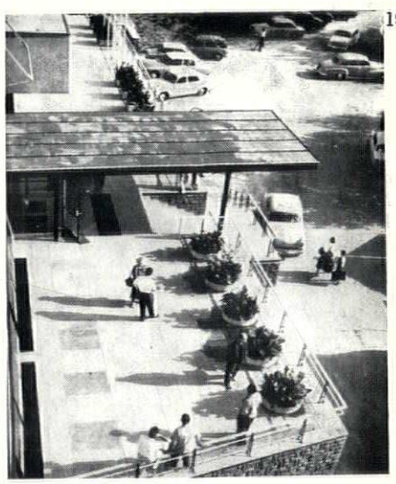
structure, 16, but also for the almost Roman quality and scale of its approach-works, 17, and their relationship to the landscape.

The landscape problem is as strongly felt in Yugoslavia as it ought to be at Bolsena (AR, April, 1961) and after a strong introduction by Venceslav Richter on the way in which ill-considered tourist facilities can destroy the tourist attractions they are meant to serve, *Architektura* examines a number of specific cases, including that of Lake Borachko, which is directly compatible to the situation at Bolsena. Ivan Taubman proposes zoned use to separate chara-parties from long stay visitors, and avoids suggesting a continuous waterside motorway in favour of a solution that takes traffic well away from the lake.

Nevertheless, tourists will, in general, be encouraged. A remarkable number of new and projected restaurants and hotels are illustrated, some of which make it abundantly clear what sort of tourists will receive this encouragement. The Hotel International, 18, in Zagreb, conforms closely to *Fabulous* norms, although its bedrooms are not big, and its front terrace, 19, follows more closely on Adriatic models than to sweeping motor-approaches of the Air-Conditioned Set. At the other extreme—motorized informality short of camping—are proposed *natels*, a kind of long-stay motel whose creation has been made necessary by (to quote a phrase that needs no translation) 'nove ideje, nove principe i novi tip turisti.' The solution proposed by Branko Petrovic and Branko Vasiljevic is an informal chalet-settlement with separate parking (instead of adjoining parking on the motel pattern) as exemplified in the plan of their

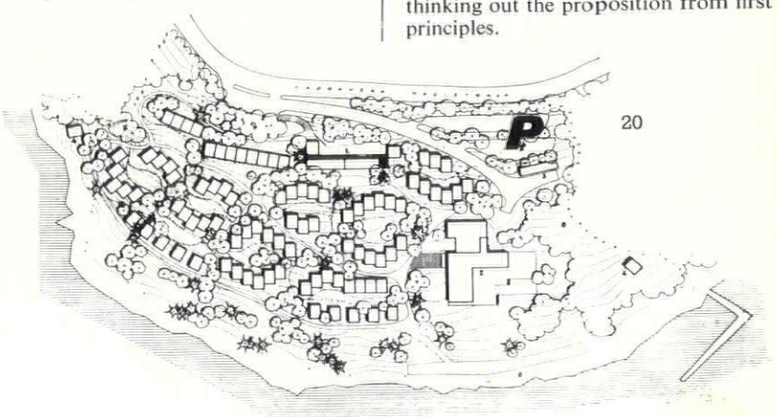


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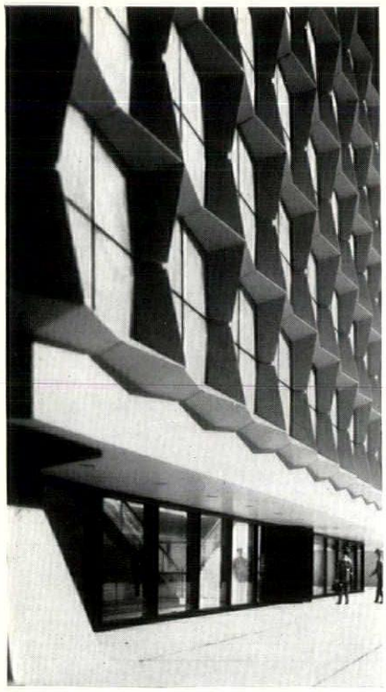


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project for a natel at Karlobag, 20, where **P** indicates the parking area. Empirical practice has worked out somewhat similar solutions in other tourist areas, but the Yugoslavs have done us all a service in thinking out the proposition from first principles.



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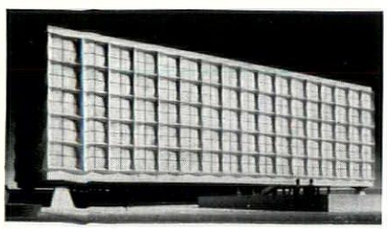


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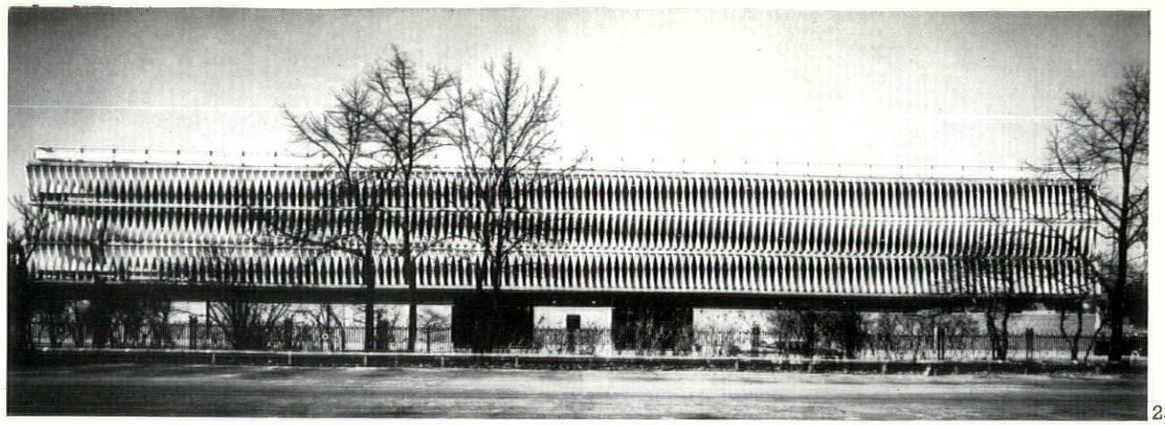
MORE PLASTIC IMAGE

While William Jordy's two articles, on the Formal Image (March, 1960, AR) and on Kahn's Philadelphia Laboratories (February, 1961), each established a *locus classicus* in the criticism of current US architecture, there remains a middle ground of formal structuralism that, though often difficult to evaluate, still needs to be kept in view. Most of the labels that English critics have tried to pin to these trends—e.g. The Ballet School—contain too much implied moral indignation to be much help, and Philip Johnson appears to suspect that even the word 'affluent' as applied to US architecture by Britons contains more disapprobation than description (and he is right, surely). Nevertheless, the middle style exists, and is almost the mainstream of serious US architecture at the moment.

In its simplest form, it is a modification, and little more, of the norms of framed construction, and this, not surprisingly, is how it manifests itself in the work of Skidmore Owings and Merrill. The proposed Rare Books Library for Yale University, 22, is a classic Bunshaft block, but enlivened by exterior structural units that stand proud of the grey onyx 'glazing,' 21, in such a way as to produce sculptural effects close to textural at a distance. Something similar clearly applies also to Albert Kahn and Associates' parking garage, 23, for the Henry Ford Hospital in Detroit, where the warped concrete sun-shade elements become a texture within the total block, but have a strong sculptural quality of their own at close range, 24.



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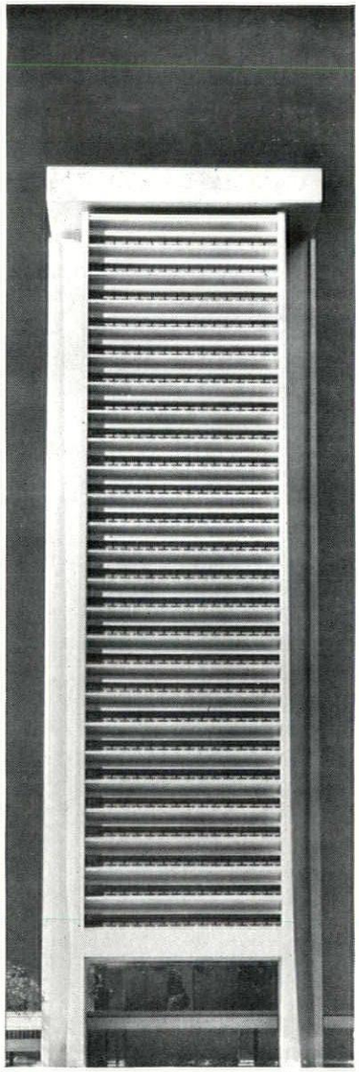


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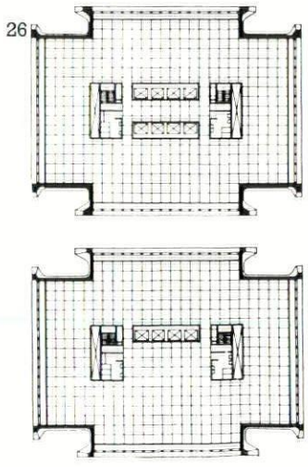
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After this, the going becomes more difficult: I. M. Pei's recent work affords examples. His concrete housing blocks (following on, in a sense, from the Denver Hilton, AR Oct., 1960) at Hyde Park, Chicago, and Kips Bay, New York continue the texture/structure approach, but his project for the MetropolitanTower, 25, in Honolulu, is a different proposition. Here the structure proper, the huge, re-entrant corner stanchions (see plans, 26) make a strongly sculptural statement, but the modelling of the balcony/edge-beams at each floor level is so powerful and so large, 27, that these units can hardly be considered as visually subordinate, even though they are a secondary structural system.

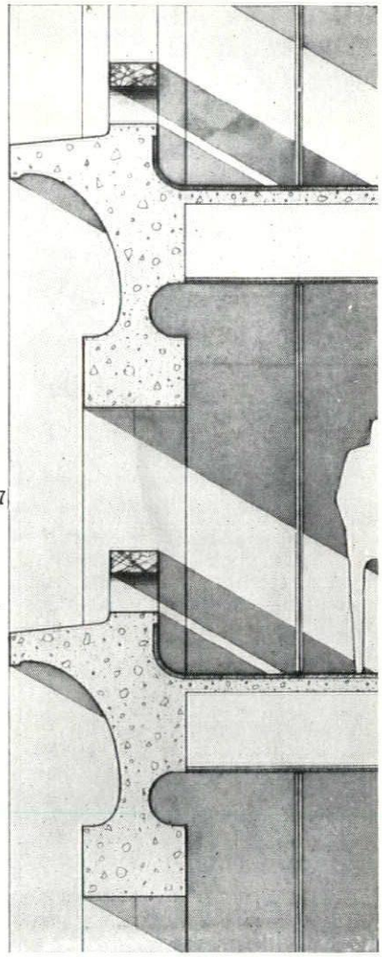


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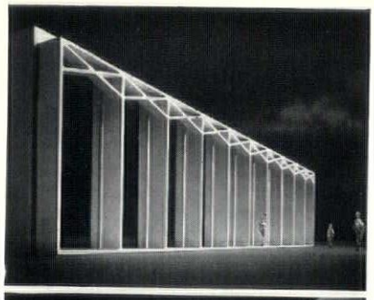
This may be regarded as an intermediate stage towards the total sculptural structure, most directly exemplified in recent projects by Philip Johnson. The precise architectonic meaning of some of these structures, however, seems ambiguous. The portico of the Brown University Computing Centre seems to be just that, 28, a *portico*, uninvolved with the struc-



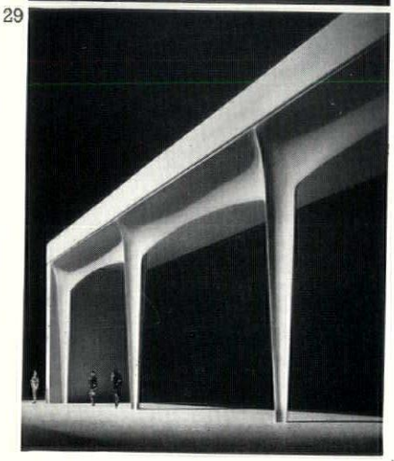
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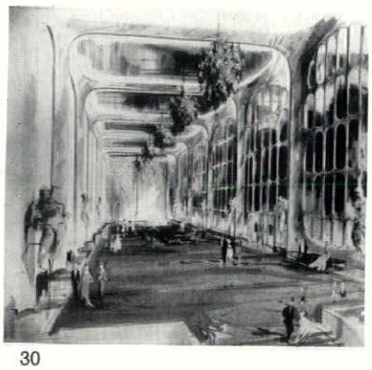
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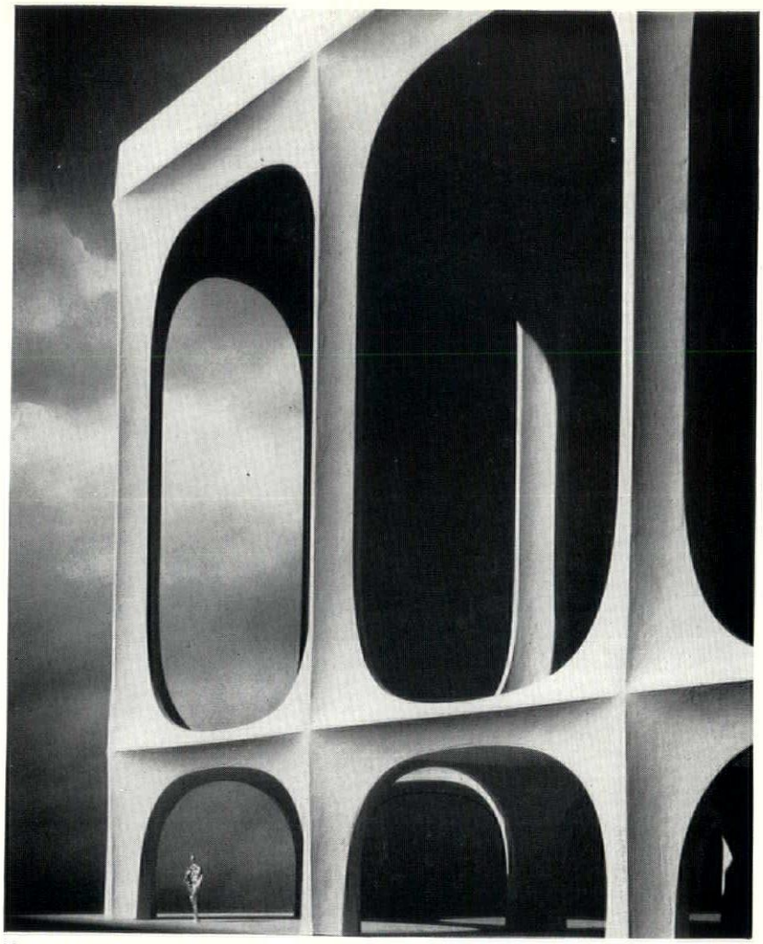
US plastic

ture behind; the 'stoa' (the term seems proper) of his Amon Carter Museum at Fort Worth, 29, has retired under the main roof of the building, and is thus more involved with the general structure, but complete integration of the sculptural forms with the main structure only really begins with the exterior and foyers, 30 and 31, of his Lincoln Centre Dance Theatre. Whether or not the sculpture-structure extends into the theatre proper or not (this yet remains to be seen) it definitely includes the entire foyer space, as 30 shows, and thus becomes a full and respectable architectural system.



30

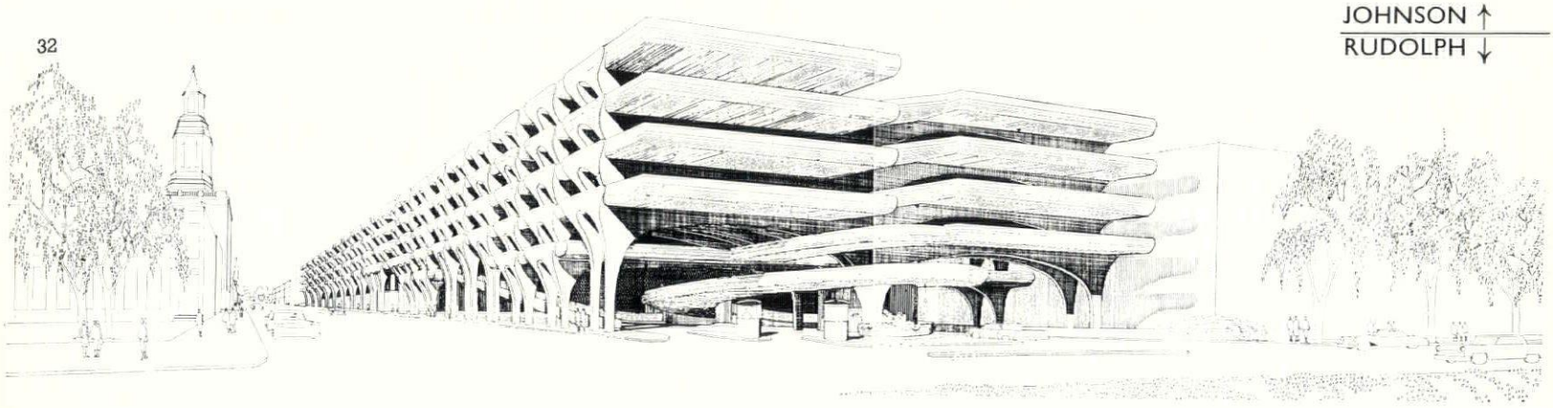
Beyond this? Perhaps Paul Rudolph's gigantic parking garage now under construction in New Haven, 32, does represent another step, since the structural system implicit in the storey-high sculptured forms of the exterior genuinely extends right through the whole building and comes out the other side. Internally the system will need some modifications—this is obvious—and it will be interesting to see if these will effectively negate, or confirm, the visual continuity of the system, but this is something that only direct physical experience of the completed work will tell.

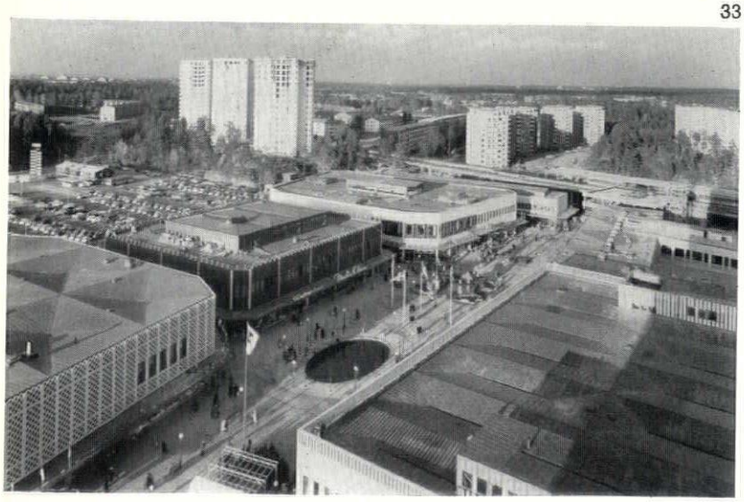


31

JOHNSON ↑
RUDOLPH ↓

32





33

Farsta

Swedish New Town Programme

After Vällingby, Farsta; after Farsta, Täby—Stockholm will soon have as many residential satellites as Old Earth has Sputniks and Explorers. Täby is still a project, but scheduled for completion as early as 1968, at an expenditure of 300 million Kröner, its main centre to be dominated by a 22-storey slab block curved round in a semi-circle. Whether this drastic formal element has long been in mind is not clear; one wonders if it might be a reaction against Farsta centre now that it can be seen, for Farsta, 33, takes even further the Vällingby concept of the centre as an aggregation of large, low blocks, and the result has been criticized. But is the criticism well placed? May not the trouble, the cause of the disappointment over Farsta, be the way in which the constituent blocks of the centre have been prettied-up, 34, with dimpled panels, Ed Stone screens

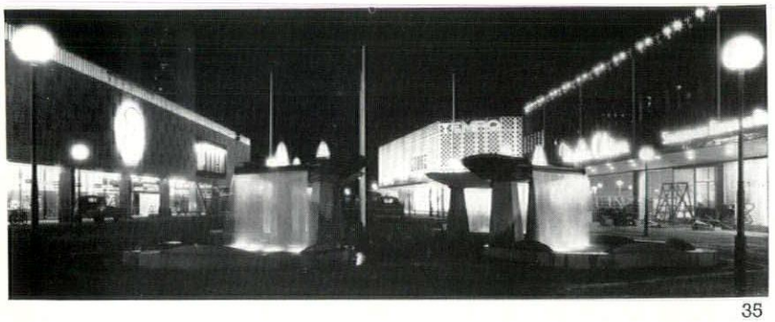
34



Sweden

and dagged parapets. The enclosed space is, detailing aside, better than at Vällingby Centre simply because it is more effectively enclosed, a fact which appears more clearly in night shots, when the decorative surfaces are played down, and the remarkable fountains, 35, are played up. All the same, one cannot help feeling that this shopping centre might have profited by something like Stockholm's new PUB store, 36. in which the architects Erik and Tore Ahlsen have produced—with complete and singular success—a reversion to a glass-box dream that has almost been forgotten in recent department-store design.

Criticisms aside, however, the mere existence of Farsta so soon after Vällingby, and the accumulated body of experience-in-progress that this must represent, promises well for Täby, and adds up to a dynamic town-building tradition unique in the Western World. Visionaries may descry, and statisticians may count, but Swedish architects will soon be able to present themselves to the practical men and politicians of the world as *those who know*.



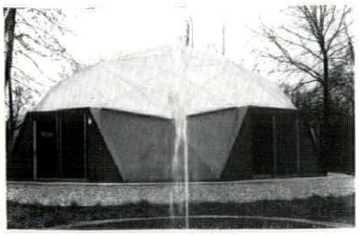
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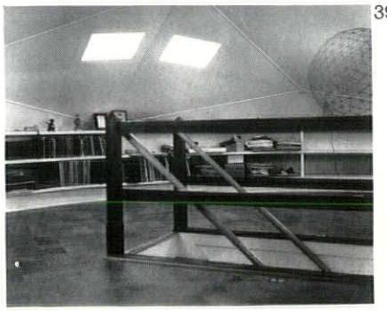
36

HOME DOME

An architect who lives in his own designs is as rare as a prophet with honour in his own country: Buckminster Fuller is now both. His acceptance as a major sage is well known, his house is not. As a residence for his periods as research professor at Southern Illinois University, Carbondale, Ill., he has built himself an example of the first type of dome, 37,



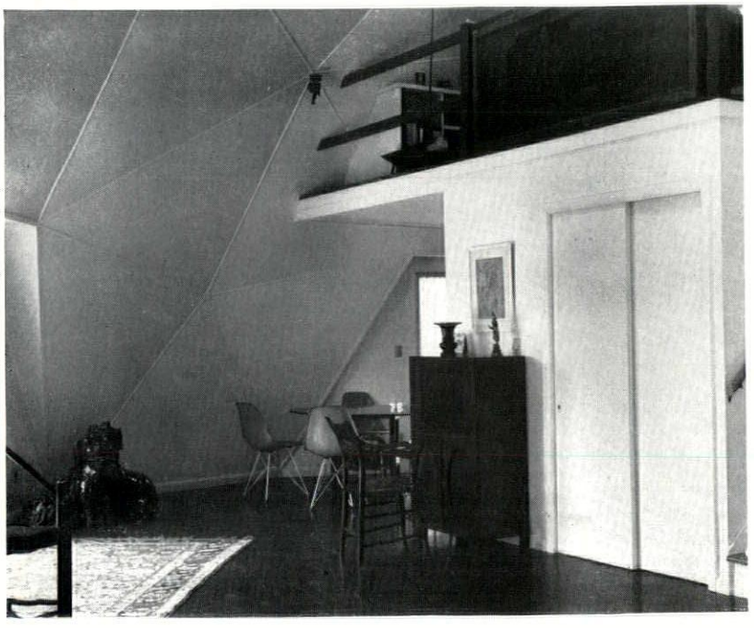
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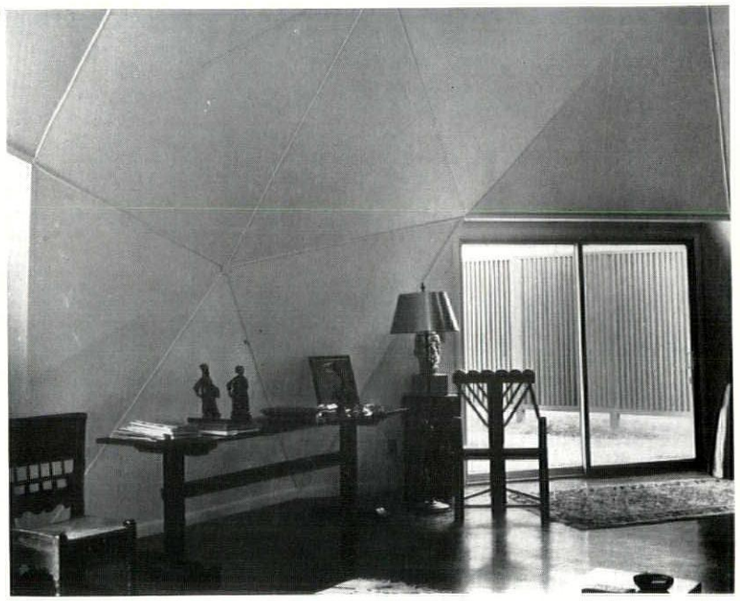
39

to actually reach the market as a small home, in which geodesic geometry is realized in the plywood and battens of simple, largely nailed-up structure, marketed (and largely equipped) by the Pease Company, who also manufacture old-fashioned 'square' prefabricated houses.

Internally, this faceted near-hemisphere is half-floored, 38, with the bedrooms under the deck, and a kind of library-loft on top of it, the rest



38



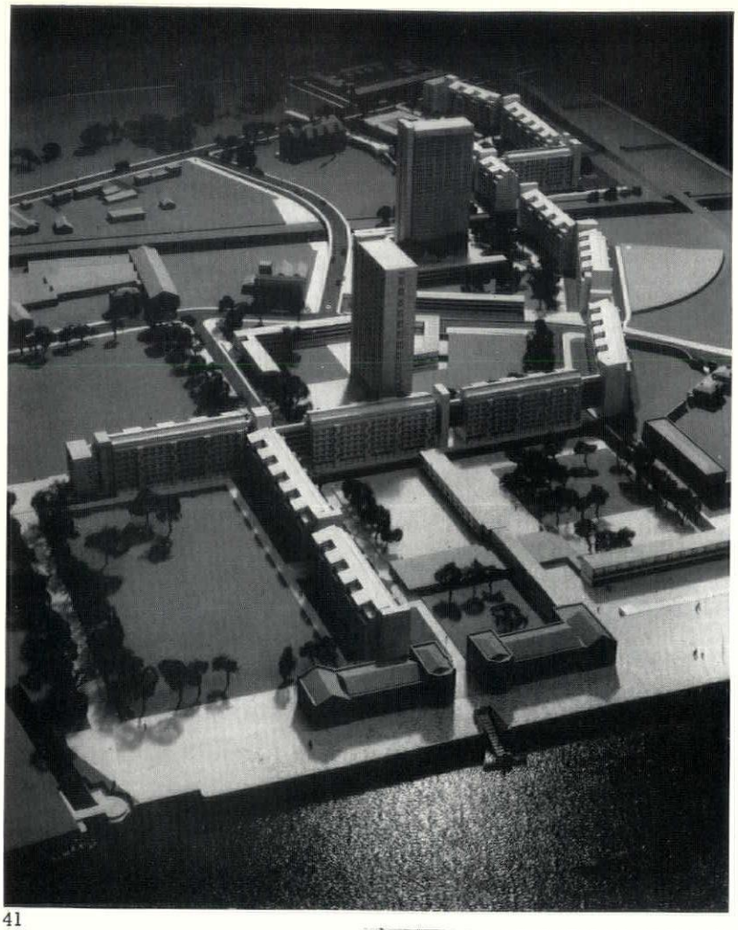
40

of the ground floor then becomes a double-height living-room occupying more than one third of the thirty-five foot diameter circle. As befits an elementary nailed wooden structure the detailing has a direct functional-tradition simplicity (as in the hand-rail and posts in 39) and it must, presumably, be this directness of approach that accounts for the complete congruity with which the Fuller collection of early New England furniture and Oriental antiquities, 40, settles into an interior that is, in some ways, rather too modern for the Eames chairs round the dining table.

LCC MOVES IN

approach to central area redevelopment

The London County Council's impressive international reputation for well-designed housing has depended so far on developments—such as the Alton Estates at Roehampton—on the periphery of the metropolitan area. But attention has now perforce to turn inwards, to what are, in effect, urban renewal projects on sites that offer few of the natural landscape advantages of the suburbs, and may contain land or buildings of historic interest. The most consequential of these internal developments to be undertaken so far is the Deptford scheme, 41, announced in April,

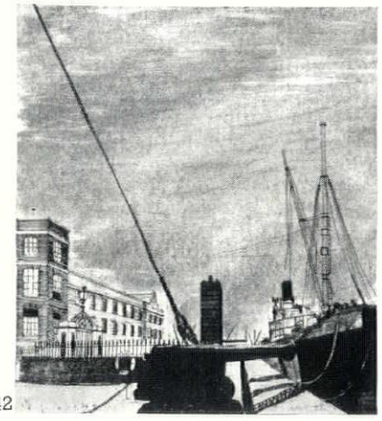


41

Deptford

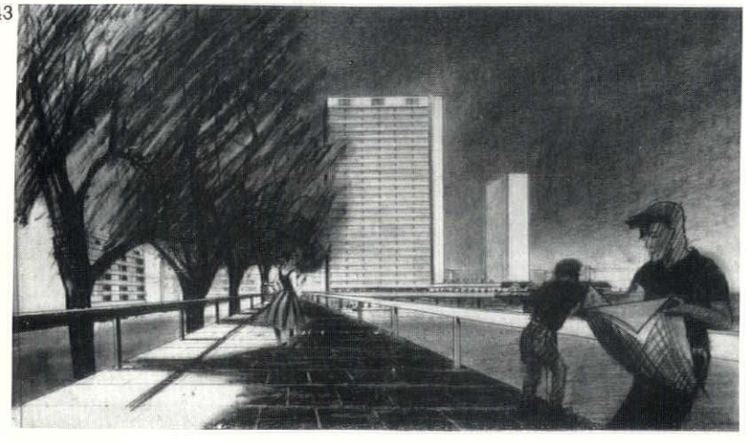
which involves the site and remaining buildings of the Royal Victoria Dockyard, associated with the British Navy as long as such a service has effectively existed. Former naval warehouses are seen on the riverside in 41, and it is intended to retain and enhance the naval character of the quayside, 42, which will now, however, become a public open space, thus giving the inhabitants of the district access to the river for the first time for over a century.

Behind this, a long line of split level apartment blocks will run back inland as far as an existing open space, Deptford Park, providing the continuous architectonic link required to hold the diverse elements of the design (tower-blocks, terraces, etc.) in a comprehensible composition. Even so, the unity of the scheme clearly needs further definition, particularly in terms of circulation (since it is broken across by roads and a canal) and this should be materially assisted by the raised walkways which will connect the various parts of the site, 43, and provide, so to speak, a continuous viewing platform from which its serial continuity may be appreciated.



42

43

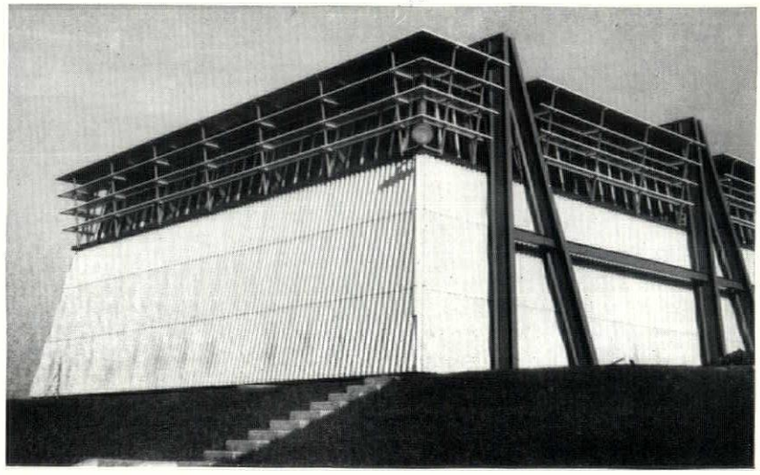


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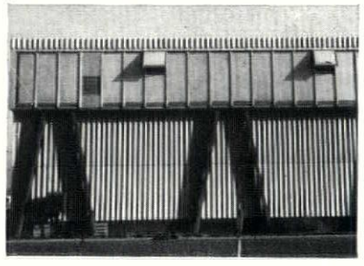
European atomic research centre

As international a piece of architecture as one could want, heavily involved with the most forward of contemporary technologies, is the research centre for CERN in Geneva. The research wing of Euratom (in effect, if not in strict legal terms) the Commission Européenne pour la Recherche Nucléaire commands extensive plant designed by Rudolf and Peter Stieger (engineers, Fietz and Hauri) over the last seven years. The work is inevitably various in function and form, including a power-station, 44, with a type of external steel structure that re-appears on other buildings, such as the Synchro-Cyclotron, and separate linear-accelerator building, 45; a neat office block which does not really reveal its polygonal deviations from planning norms until its end elevation, 46, is seen, and a small auditorium, 47, which is part of the same building-complex and follows the same 20/70° deviations which here make more obvious sense in view of the advantages of a polygonal plan for a lecture hall.

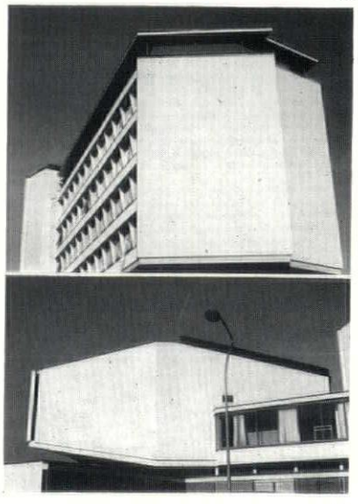
44



45



46



One may be permitted to wonder at this angular irregularity: it does little to enhance freedom or adaptability of planning since it is linked to an axial, symmetrical concept that has already had to be overridden in places out of sheer necessity. One almost suspects that the angles express frustration that the really important installation, the enormous ring of the proton-synchroton accelerator, cannot be expressed architecturally since it is almost entirely buried in the earth (for obvious reasons) and only surfaces in one small, though striking, monitor-roofed building, 48. Be all this as it may, CERN remains one of the few significant international organizations of the post-war epoch whose buildings raise no major disquiets as to either the way they serve their functions or the attitudes they appear to express.



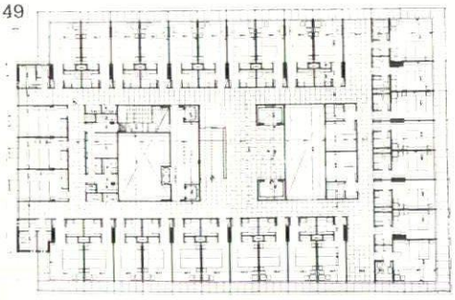
48

HOTEL IN OMONIA SQUARE

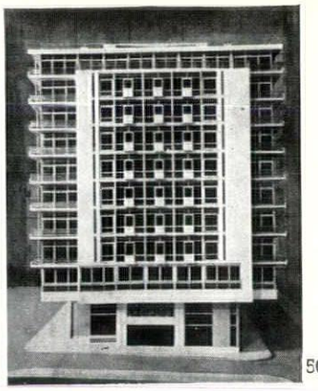
Most international of building types, carrying almost universal standards of accommodation to all parts of the world including some of the Socialist Republics, the modern hotel is an epitome of the (affluent) human condition in the age of new materials and new techniques. There is an almost unbeatable formula for economical hotel-planning, which was set out by Stephen Garrett in the AR's special issue on hotels (October, 1960), where

Hotel

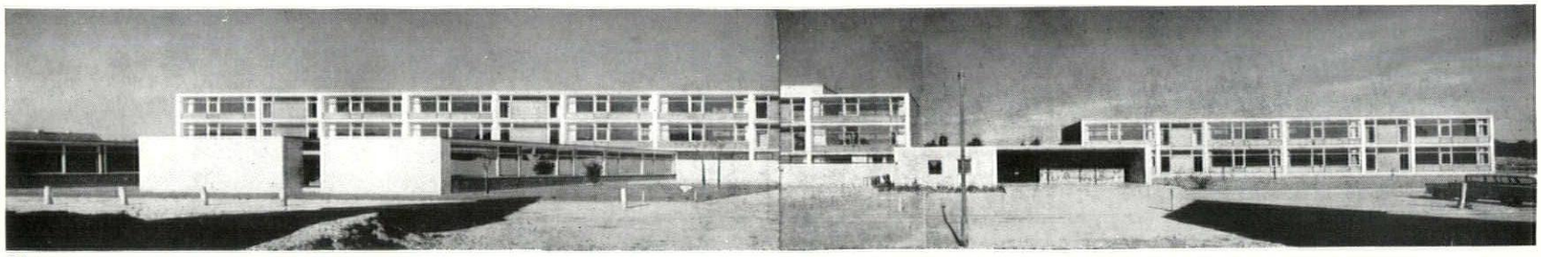
49



he also considered the structural implications of the bedroom/bathroom /duct configuration. A text-book solution is seen in the standard floor-plan, 49, of Anthony Kitsikis's project for an hotel on Omonia Square, Athens. Since this is a class III hotel, rather than an Hotel Fabulous, the planning is compressed, which gives even greater saliency to the economy of the standard floor-plan. In accordance with the other economic laws affecting hotels, there is a cinema in the basement, with one-and-a-half floors of shops around the public areas, but where the pressure of economics brings about a transformation of routine solutions is in the relationship of the lettable room-space to the rented ground-space—the hotel covers not only its own site, but the surrounding pavements as well. The plan should have prepared one for this, but the elevation as it appears in *Architectoniks* (1/25, 1961), still comes as a shock, 50, when it is seen that *all* the bedroom space, with very minor reservations, is cantilevered beyond the limits of the site. The mind boggles at town-planning regulations that can permit such overbuilding, but one must also admire an architect who so ingeniously proposes to take advantage of them.



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51

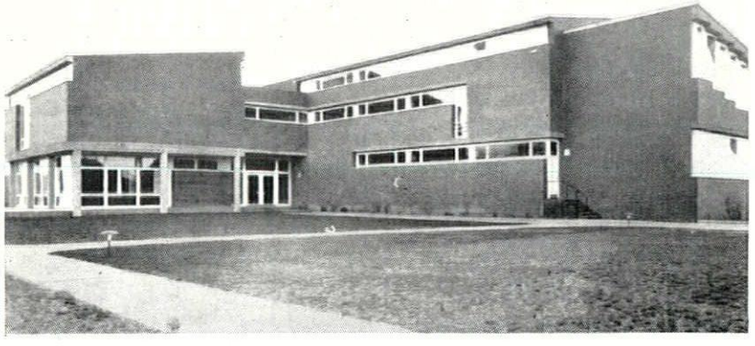
NEW GERMAN SCHOOLS

Understandably, interest in German school-building has been somewhat monopolized by the work-in-progress of Hans Scharoun (*World*, December, 1960) and misgivings about imported prefabricated systems—misgivings reinforced by the appearance of a Dutch wood-framed system which is already in use under licence. But there is much more to the situation than this, obviously, and German school design should command wider international attention from both pedagogues and architects.

In fact, such interest is becoming apparent, at least among architects, for *Architecture d'Aujourd'hui* has recently (94, 1961) published a group that includes not only Scharoun's work, but also Dieter Oesterlen's community school in Hanover, 51, pure diagrammatic International Style, but uncommonly fresh and relaxed for an idiom that tends to look tired or overwrought today. *AA* also illustrated a large teaching institute in Oberhausen, whose Dudok-style exteriors unmistakably reveal the hand of Oswald Mathias Ungers, 52, but suspicions of period-revivalism should not be allowed to divert attention from the ingenious cluster-planning of the teaching areas where Ungers's highly characteristic style of design achieves a comfortable middle pitch and domestic scale. Ironically, another of *AA's* selected examples, the Eberhard Ludwig school in Stuttgart by Bregler, Bregler and Huber, is perhaps the best known modern school in Germany for entirely non-architectural reasons—readers may recognize its main elevation, 53, from its frequent appearances in the film *So Lange das Hertz schlägt* which has been widely shown outside Germany.

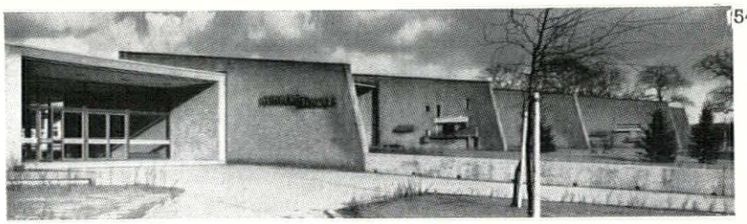
German magazines, obviously, have carried plenty of information on school architecture, but some of the most informative—such as *Bauwelt*—are not as widely read outside the country as they deserve. In February (7, 1961) *Bauwelt* had almost a special number on schools, including (inevitably) one Scharoun, and two others that illustrate two current extremes in German architecture. One, at Oberaden in Westphalia, by Ludwig Behrens and P. G. Wieschemann, had the leaning elevations, 54, the mildly anti-formal plan and the lavish use of integrated art-work that all belong to the more romantic strain. The other, at Grosskrotzenburg, adheres so squarely to more-or-less Max Bill

52





53



54

version of the International Style, 55, that one is astonished to find that its architects, Novotny and Mahner, designed it as recently as 1959.



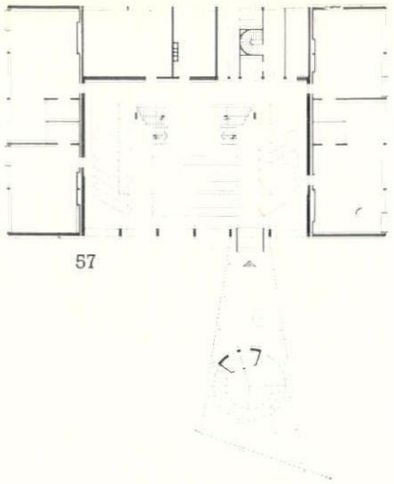
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At least one uncommonly interesting school in Germany seems to have escaped the notice of the magazines so far—possibly because its most interesting aspects are not immediately apparent to exterior view, 56. This is a compact primary school in Ober-



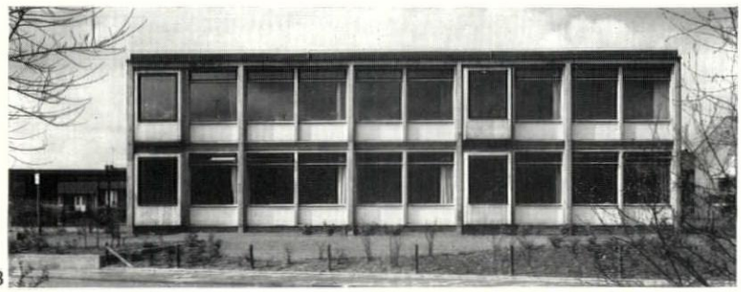
56

hausen, designed by the Duisburg architect Lothar Kallmeyer, for an area liable to mining subsidence. The local solution to differential settlement is not, as in England to use a flexible frame (e.g. CLASP construction), but to break the structure into independent units each with its own foundations—the plan, 57, clearly shows how the two flanking class-room blocks stand clear of the central block containing the hall, and the completely separate cloak-room building (such fastidious banishment of sanitary areas is a German practice —the lavatory-in-class-room planning of recent English schools has raised many German eyebrows).



57

The necessary separation of parts justifies some differentiation of structure, and the outside walls of the class-room blocks, 58, are built of precast *Schockbeton* units (in the absence, again, of a native lightweight prefabrication system). However, it will be seen in 56 that the return walls of these blocks have an elaborately treated brickwork pattern on them, and this is, in fact, part of a continuous brick-sculpture wall,



58



59

devised by Werner Habig, which unites the diverse elements of the structure by covering the end-walls of the class-rooms, and then, turning inside the main hall, 59, wraps round the interior space as well, 60. One other point to note about this brick sculpture—since the actual making of it counts as bricklayers' time, the entire percentage of the budget allocated to 'art' can be turned over to the artist's fee, one of the most compelling arguments for the integration of the arts yet discovered.

60



Technicism

continued from page 1

wonders why he does not draw attention to Le Corbusier's frequent use of *Taylorisation* in that period as a term of praise) From this, however, we proceed naturally enough to a condemnation of the Masters of the Twenties (in all the arts) for failing to establish contact with the working classes even while idealizing the concept of the working class; and from this again we proceed naturally to the 'alienation' of biological man from the industrialized man of increasingly rationalized production processes (covering ground which will not be altogether unfamiliar to readers of the arguments of American critics like Paul Goodman).

Beyond this we come, inevitably again, to the crisis of leisure and redundancy anticipated with the onset of full automation, and the sinister possibilities of 'programming' human beings to work even more efficiently and undemandingly than machines. But here, in spite of warnings against optimism, a note of hope enters the argument — automation, properly handled and properly planned, could free men for more creative activities than the routine of production, could even *demand* such creative work from them. The function of architecture will be to give order, the function of the arts generally will be to 'offer the man of our time (whom—to quote Gropius —the great avalanche of progress and science has left uncivilized and restless, incapable of adaptation and often pitifully lacking in moral initiative) an image of himself striving to recover the sense of being rooted in his society and environment.'

There then follows a concise and minatory history of fifteen years of confusion in Italy, faced with this situation since the war, and sharp criticism of those of his fellow countrymen who treated attacks from abroad not as occasions for serious self-appraisal but for factional recriminations and the search for scape-goats and 'In this climate of opinion the myth of technicism has again risen as an escape into objectivity.' This phrase, which seems so extraordinary to non-Italians, of the *escape into objectivity* (rifugio nel oggettivita) touches an idea which, while it appears at first sight fairly ridiculous, has some currency in Italian architectural thinking of this persuasion (Tentori has cited Italo Calvino on the dangers of 'drowning in a sea of objectivity,' see *World*, June 1961) but deserves sympathy because it stands for a concept which is, in the last analysis, dear to the hearts of all architects—the supremacy of concept over fact, the ordering power of the mind.

But is the *myth of technicism* really open to such an interpretation—at one extreme it is a far from objective concept, involved with dreams that have nourished the imaginations of generations of the greatest creative minds the West has produced, and at the other extreme, the most optimistic of the technological optimists would probably agree with Portoghesi wholeheartedly. Buckminster Fuller, by whose standards the buildings of the Milanese Neo-neoists are irrelevant to the human situation, has always insisted that the mental process is primary, that thought is comprehensive to the universe of facts. The real conflict of opinion, one suspects, lies with Portoghesi's concept of 'being rooted in his society and environment.' Fuller's man 'in principle mobile, born with legs not roots,' is self-sufficient with his own resources, and reliant on his own ingenious capacity to dominate his environment.

Such an attitude, Portoghesi would probably (and many of his Italian contemporaries would certainly) dismiss as old-fashioned, counter-insisting that 'we should not idolize novelty, nor forget that it is the principle of rest that gives values and sense to movement. . . . Italian architectonic culture must not evade its responsibilities, which consist not only in renewing and purifying itself, but also in its historical heritage,' and he concludes with a moving passage from Simone Weill, on the value of that heritage. 'Of all the needs of the human spirit, nothing is more vital than the past.'



On page 36 of this issue Eric de Maré, who took the photograph opposite, discusses the aesthetic qualities of modern industrial structures of this kind by way of introduction to some more examples of what he calls the modern version of the Functional Tradition in the oil and steel industries. His pictures may also be regarded as illustrating one aspect of the theme of the current IUA congress—the impact on architecture of new techniques and materials—to which several articles in this issue relate. The subject of the example opposite is a solvents distillation unit (with an ethone ethylene unit in the background) at Stanlow. The photograph is reproduced by permission of the Shell Chemical Company.

C. H. Waddington

TOWARDS A SCIENTIFIC WORLD

This essay has been written, for the occasion of the sixth congress of the International Union of Architects, which takes place this month in London, by Professor C. H. Waddington, F.R.S., *of the University of Edinburgh, biologist, head of the Institute of Animal Genetics and author, among other things, of a famous Pelican,* The Scientific Attitude. *Since the theme of the congress is new materials and techniques, the whole relationship between the world of architecture and the world of science will in effect be under discussion. Whether acknowledged or not, the aim of the congress must be to bring one step nearer that truly scientific civilization to which this essay looks forward.*

We are often said to live nowadays in a world of science, but it isn't really true. Of course the material background against which we play out our lives has been profoundly influenced by an industrial technology founded on science, but there are two reasons why this in itself is not sufficient to allow us to feel that our world is a scientific one. In the first place, the purposes for which the technology is used have not been decided by men with a scientific outlook, but by industrialists and statesmen whose personality has been, in the main, formed in the mould of a pre-scientific culture. The use of atomic energy mainly for the development of weapons is only the most recent and glaring example of the way in which this has led to the diversion of scientific methods to the service of objectives which do not fit into the scientific world picture.

The second, and perhaps more profound, reason why we cannot claim that our world is a scientific one is perhaps to a greater extent the fault—or at least the inadequacy—of science itself. We have not had, and indeed are only just beginning to come in sight of, a scientific conception of man himself. In most past ages of civilization the stage on which man passed his life was designed for him by people who had a rather definite conception—perhaps often an unconscious one—of the kind of being who would inhabit the houses, streets and cities which were being built. Gothic architecture was created for man as he was seen by St. Augustine and the Medieval Church;

Renaissance Italy for Benvenuto Cellini and the de Medicis; Venice for those who have been portrayed for us by Titian and Tintoretto; Versailles for the nymphs and gallants of Boucher; the urban landscapes of Holland for the men and women of Rembrandt and Franz Hals. But what manner of man is envisaged as living in the buildings of Mies van der Rohe or Le Corbusier? We cannot have a scientific world, in the sense that there was once a Gothic or a Renaissance world, until we have formed the concept of a 'scientific man.' And, granted the character of science, this conception will almost certainly have to be much more consciously and definitely formulated than were the images of man which provided the focus for past phases of civilization.

Where is such an image to be found for the present day? Science developed in the first place by attention to the relatively easy material offered for its inspection by the non-living world; and physics and chemistry are still the basis of the most important technological changes which have been made in the circumstances of man's life. Biology, with the development of the revolutionary advances in medicine and agriculture of this century, is at last beginning to play an equally important role. But man himself is incomparably the most complicated subject matter for science, and it is only very gradually that the human sciences—such as Psychology, Sociology, Anthropology, etc.—are beginning to form a picture of his nature which is anything more complete and inclusive than a set of isolated penetrating glimpses.

To see man as a whole we can scarcely yet do more than go back to the pre-scientific images presented to us by writers such as Jane Austen, Stendhal and Dostoievsky. The basic reason for the famous gap between the 'Two Cultures,' to which Sir Charles Snow drew attention, is that the scientific culture itself is incomplete, and incomplete in the most damaging possible way—in lacking a focus, a concept of the essential nature of man as a complete being. Perhaps the elements in terms which such a conception will eventually be framed have already appeared, or are beginning to appear, with the development of the human sciences, but they are still hidden within the professional literature, and have as yet had little effect on the work of the artists and architects who create the world we live in.

Science in general has, of course, had a profound effect on the development of art during the last century. This was perhaps first strongly noticeable in the somewhat superficial influence of a scientific technique—photography, and particularly snapshot photography—on the composition, and to some extent the subject matter, of a painter such as Degas. And scientific theories of light and colour played an obvious and acknowledged part in the work of the Impressionists and Pointillists. It was, however, not till the beginning of the Heroic Age of modern art—the two decades from 1910 to 1930—that one can see in the work of artists a real engagement with the spirit rather than with the externals of science. The main roots of Cubism—the first major modern movement—should perhaps be looked for not within science but in the recognition of the numinous quality of non-representational works, as seen for instance in Negro sculpture. But the forms it adopted, mainly of intersecting plane surfaces, can scarcely be considered as other than a reflection of the scientific world of crystals and geometry; while the simultaneous presentation of a form as seen from different viewpoints in space or time (Picasso, Duchamp, the Futurists) must certainly have some connection—if only through the tenuous agency of a Zeitgeist—with the contemporary development of the theory of relativity. In the development of Analytical Cubism to Synthetic Cubism, and then to Constructivism, it was the strand of interest based on the aesthetic quality of abstract forms—at first mostly of a geometrical (i.e. scientific) character—that was carried forward; the aspects of the scientific world picture related to the theory of relativity dropped into the background.

The next major scientific influence on the visual arts came from right the other end of the scientific spectrum. The artistic beginning of this movement, Dada, again arose not from science but from the world of life in general, as a movement of Nihilism and despair following the 1914–18 War. But again, it could not have taken the form it did in Surrealism were it not for a movement of thought which one is, I think, justified in calling scientific, namely Psycho-analysis. And, again it is remarkable how often it made us of specifically scientific subject matter, for instance in the nonsense machines of Duchamp and Picabia.

The outcome of this classical period of modernism, can, I like to think, be symbolized by two figures whom I call the two Swiss Maxs—Max Ernst with his Surrealist 'Paramyths' made of collages cut from scientific textbooks, and Max Bill with his subtle abstract shapes that have the purity and some of the underlying algebra of projective geometry. But in between the paranoia and the mathematics the common or garden person has been left out of the picture.

In the more recent developments of painting some portions of him are perhaps creeping back. Action Painting from Pollock to Matthieu, with its emphasis on the gesture, reminds us that man is a biological creature with a musculature controlled by nerves. Abstract Expressionists, such as Wols and Guston, show how even the deepest levels of feeling are not entirely composed of the anthropomorphized concepts of Freud. But these are still scratchings at the two extreme ends of man's nature. The Social Realists who attempt to present him to us as an active being on the world stage, such as Guttuso or Lèger, show him either as a mere survival from the pre-scientific world or as a rather barren symbol—in neither case as a being with a rich intellectual and social life, and with a specifically scientific flavour.

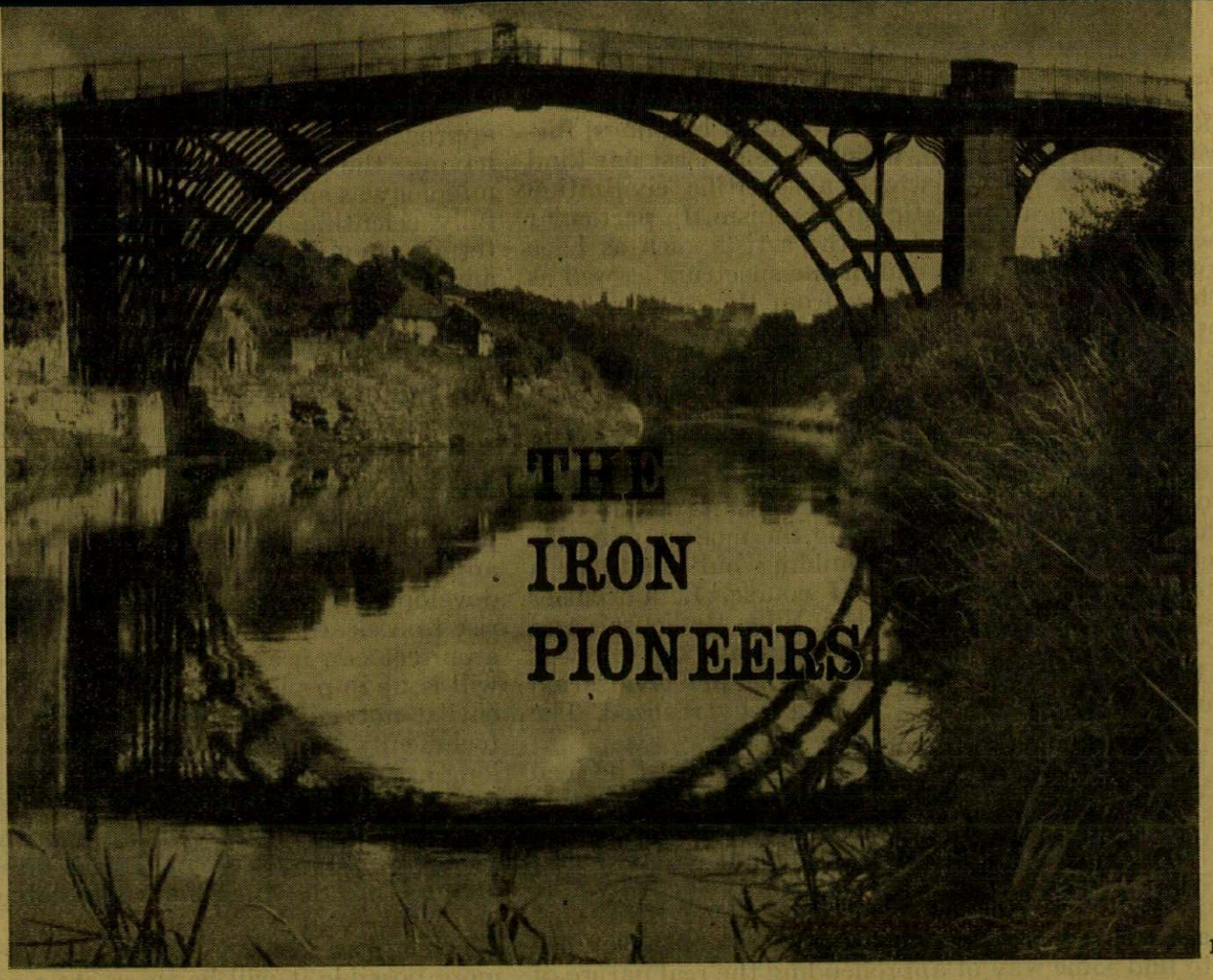
The search for the modern image of man has been recorded throughout the last fifty years by Picasso in an unbroken series of drawings and etchings of the painter and his model. They continue to the present day. In how few ages of the past did this problem press on a major artist as an unsolved problem throughout his whole life?

For a short period in the Heroic Age there was, perhaps, a glimmer of hope that the architects would do better than the artists in bringing into being the visual setting for a scientific world. In the early heyday of Gropius and Le Corbusier we saw the appear-

ance of a whole series of new forms of buildings, furnishings and decoration, which were at least one kind of framework within which a scientific civilization need not seem a futuristic anachronism. In particular the Bauhaus, influenced by the artists such as Klee from the psychological end of the spectrum as well as others such as Moholy-Nagy from the constructivist end, held out the hope that a real synthesis might be in the offing. Unfortunately it did not quite materialize. Indeed at that time it could not, both because the political situation was too completely unresolved in the world at large, and for two more fundamental reasons. Firstly, because the enormous power of modern technology has as its result that what has to be created to bring the modern scientific world into being is not a building but a city or a landscape—a point which, of course, Le Corbusier realized in his dreams of the Ville Radieuse. And secondly, because even at the Bauhaus the concept of the nature of man as a person living in a civilization founded on science could not be fully realized. The time was not yet ripe.

The persons of a scientific civilization must be seen as entities which can be approached in all their aspects along avenues of scientific thought, just as the persons of religious civilizations were thought of as beings whose essential nature could be grasped by the religious apprehension. I do not mean by this any sort of a 'nothing but' approach. The first task of any science is to find some way of apprehending the real nature of the subject matter with which it is dealing. The religious approach to man does not deny that he is a physiological being needing food; the scientific approach should not have to deny that he is a being having the qualities referred to in religious terminology as spiritual. But we cannot be said to have a fully scientific picture of man until we have some terminology in which these qualities can be discussed and thought about, and which is at least as well assimilated to the general structure of science as medieval economics was to medieval theology.

It is perhaps not too optimistic to think that we are beginning to approach this stage in the development of the human sciences. The advances of individual and social psychology and social anthropology already make it possible for us to bring into the scientific world picture many aspects of human personality which, until recently, we have only been able to apprehend by unconceptualized feeling. The further development of these sciences will not of course give rise to a clear-cut series of forms which the artist and architect can use. One can hope, however, that they will issue in a picture of the human personality as an entity not entirely incongruous with the world of technical means by which he carries out his life. So long as we have to use, for instance, in designing the transport facilities of a city, a scientific outlook which can picture man as no more than a lump of transportable matter, we can hardly hope to produce an architecture in which his whole being is fulfilled. The more we become able to formulate all his needs as definitely as we can his physical requirements, the more possible it will be to create a setting for him as appropriate as the Gothic or Georgian architects did for the men of their time. It is only as we do that that a truly scientific civilization will be born.



THE IRON PIONEERS

First of the pioneers, the iron bridge over the Severn at Coalbrookdale, between Shrewsbury and Bridgnorth. Built in 1778 to the designs of Abraham Darby, a local iron-master, with John Wilkinson, another iron-master, and T. F. Pritchard, architect, of Shrewsbury. 1

At the congress of the International Union of Architects, which takes place in London this month, the theme—the impact on architecture of new materials and techniques—is being discussed historically as well as practically. Since Britain is one of the places where the early impact of new techniques—especially of the use of iron and steel—can most effectively be studied in the field, the pages that follow are devoted to a reminder, in pictures and notes, of the important surviving examples of British pioneering in these and other materials, mostly dating from the industrial age which was itself pioneered by Britain nearly two hundred years ago.

In the architecture of the industrial age, Britain can rarely claim, as a matter of fact, to have been the undisputed first with any development—even the celebrated Iron Bridge at Coalbrookdale, above, one of the historic sites of industrial architecture, has rivals whose claims have been pressed by some scholars. But unlike the other claimants to primacy, Coalbrookdale has descendants—it may not be the absolutely first iron bridge, but neither was it an isolated stroke of genius: it was the father of the iron bridge-manufacturing business. This is typical of Britain's true contribution to early industrial architecture—the manufacturing capacity to generalize an invention into an off-the-peg structure, to turn a set of components into a nation-wide vernacular. It is not only the early dates of Strutt's or Bage's metal-framed mills that are important, but also the fact that they were part of a wave of mill-building in various materials, in which constant technical improvements were financed and underwritten by the sheer quantity of building being put up.

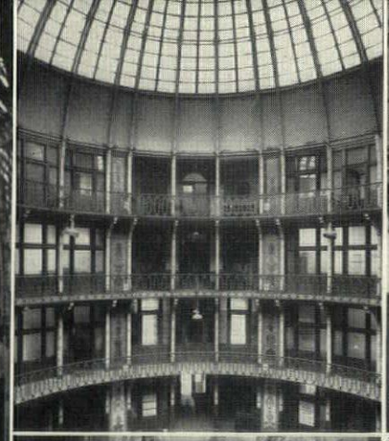
Again, the Crystal Palace was not only remarkable as a structural and spatial conception on a revolutionary scale, but also as proof that there existed the skill, experience and productive capacity to make it possible, not yet fifty years after the earliest tentative ferro-vitreous experiments in the glazed cove to the picture gallery at Attingham Park. The Crystal Palace also typifies the early maturity that came from the sheer volume of work in hand, a maturity that is also attested by the great train-sheds at main line terminals that followed soon after the Crystal Palace—King's Cross with its elegant double vault, St. Pancras with its great clear span, Paddington with its transepts and sophisticated decoration produced by the earliest known example of deliberate architect-engineer collaboration, that between Brunel and Digby-Wyatt.

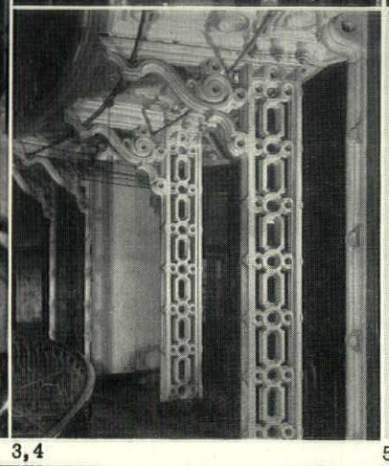
It was the same capacity to produce that also made Britain one of the first large-scale exporters of prefabricated buildings to all parts of the world, and there is little doubt that it was this capacity to turn one day's inventive miracle into the next day's industrial commonplace that helped to produce the reaction against metal structure and industrial techniques after 1860. But the industrial tradition was not broken, and in civil engineering it went from strength to strength, the century concluding with one of the few structures that can compare with Gustave Eiffel's tower in Paris—the great cantilever railway bridge over the Firth of Forth.

But, in the first half of the century there was little elsewhere with which the achievements of British industrial architecture could be compared and it is mostly works of that heroic epoch that are included on the following pages: a brief gazetteer of the surviving records of the first mass impact of new materials and techniques.

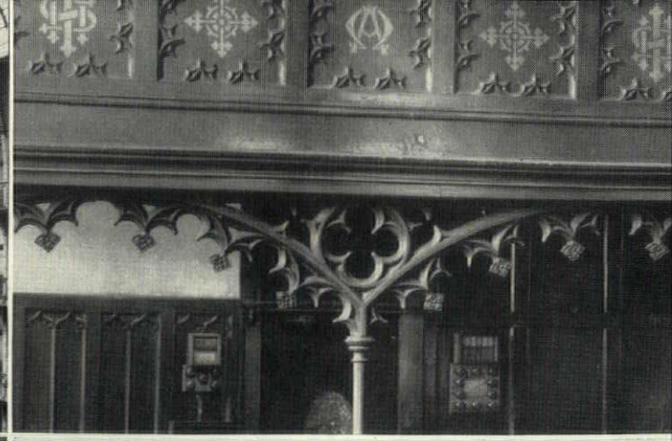


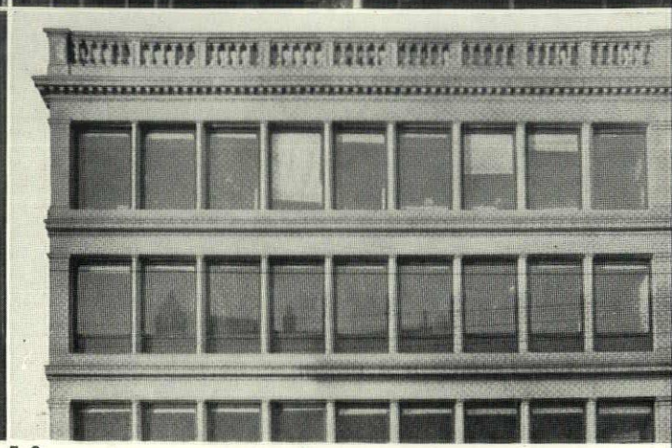
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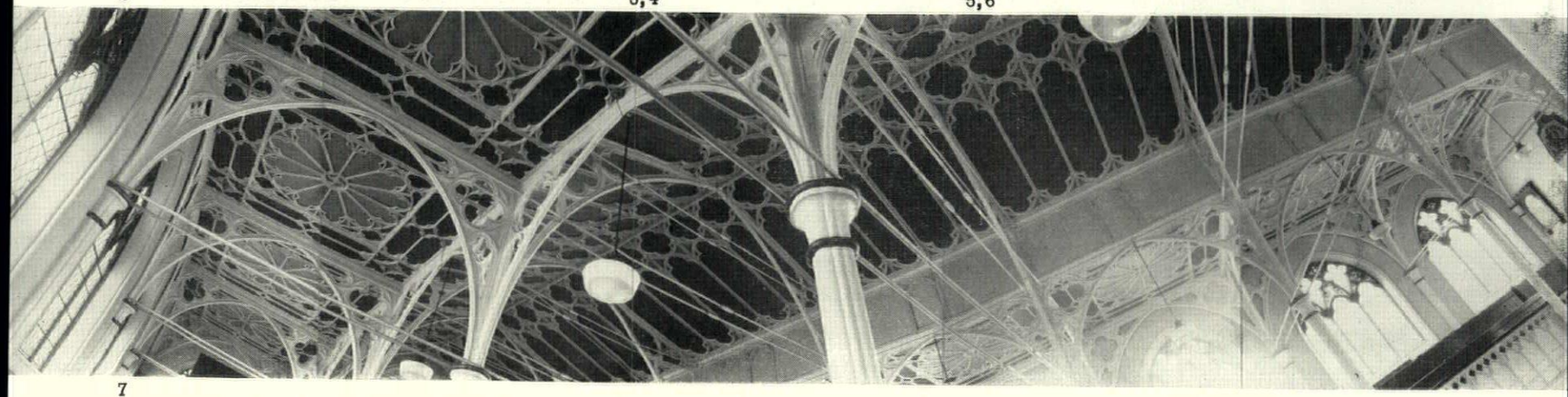


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7

The Primitives

2, the main hall of the University Museum, Oxford, designed in 1855-59 by Thomas Deane and Benjamin Woodward. The first permanent glass-roofed display space of its kind, a surprising intrusion of traceried iron-work into a building otherwise executed with stern Neo-Gothic propriety under the eye of John Ruskin himself.

3, 4, interior view and a detail from the circular hall of the Coal Exchange, London, built in 1847-49 to the designs of J. B. Bunning. Though earlier than the Crystal Palace, it is a large permanent structure (the hall is some sixty feet in diameter) with extremely sophisticated cast and painted decoration illustrating the history and extraction of coal. Still standing in Lower Thames Street, but threatened by road improvements.

5, St. George's church, Birmingham; cast iron gallery-front, arch and pillar, 1822 by Thomas Rickman, best remembered as the classifier of the styles of English Gothic. Here seen at his more archaeologically correct, but for the carefree splendour of early Rickman, see 7.

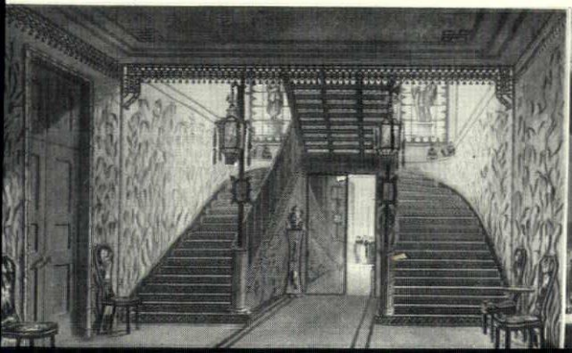
6, upper part of the facade of Messrs. Paisley's shop in Jamaica Street, Glasgow. Designer unknown, date presumed to be about 1858, the purest of the Early Glasgow iron-framed warehouses (lacking the arched window-heads of the better-known warehouse on the corner of Argyll Street) it must yet be numbered among the primitives because of its stone cornice.

7, columns, arches and roof of St. George's church, Everton, Liverpool. Thomas Rickman's first church, completed in 1813, the elaborate ironwork cast and fabricated by John Cragg, iron-master and churchman, at his Mersey Foundry. Although some components for two other Liverpool churches were cast from the patterns, neither equalled the airy grace of St. George's galleried interior.

8, 9, the staircase and kitchen of the Royal Pavilion, Brighton, by John Nash. The columns of the staircase, completed in 1815, are in cast iron imitating the form of bamboos, those of the kitchen, 1820, also cast iron, are in imitation of palm-tree trunks. The Pavilion also sports domes in the Indian manner with iron frames.

10, glass-and-iron cove lighting the picture gallery at Attingham Park, near Shrewsbury. John Nash's alterations to Attingham in 1807 involve his first use of iron in a domestic interior, possibly the first in any domestic work. Cast at Coalbrookdale, less than ten miles away, this cove is the ancestor of all iron plant-houses and thus of the Crystal Palace itself.

8

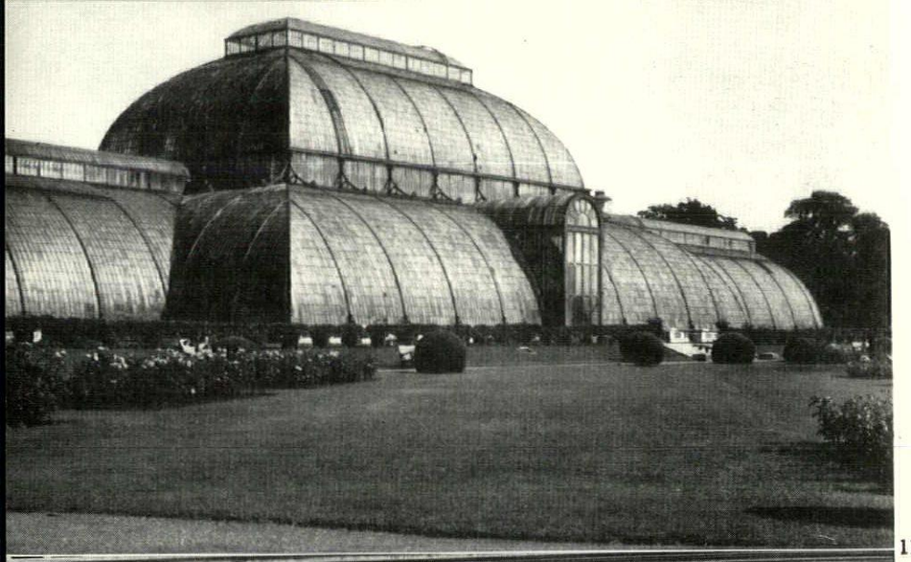


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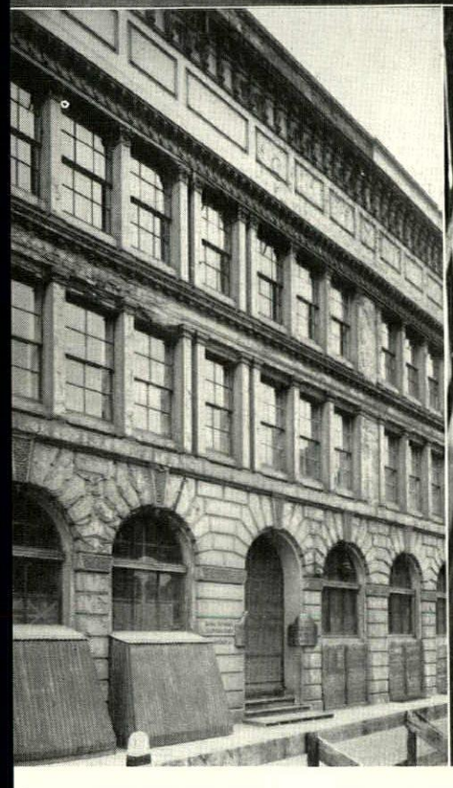


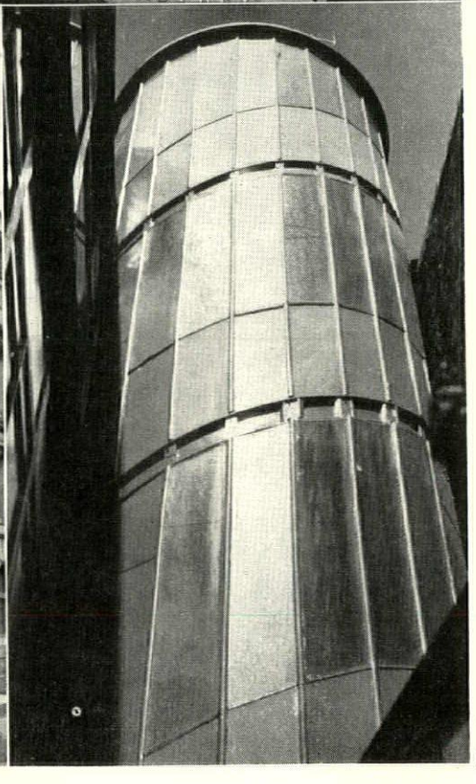


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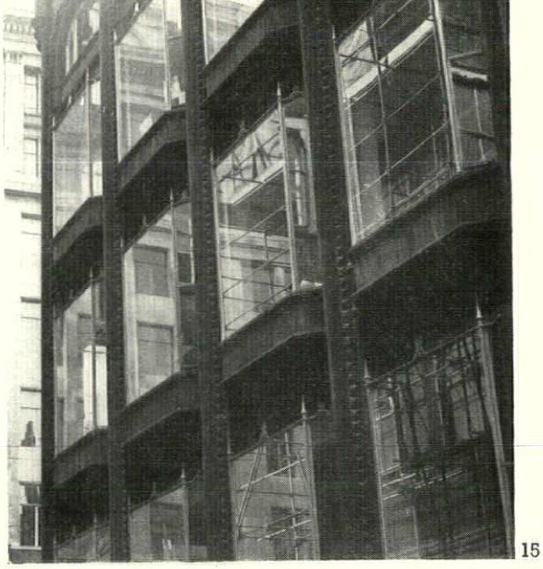


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15

The Glass Wall

11, the Palm Stove, Kew Gardens, built 1845-47 to the designs of Richard Turner, engineer, of Dublin, and Decimus Burton, architect. One of the chief ornaments of the Royal Botanical Gardens, the Palm Stove is another predecessor of the Crystal Palace, one of the great green-houses in which the techniques of glass and iron were developed.

12, Asprey's shop front, New Bond Street, London. Presumably erected about 1865-66. Benson's, a little farther along the street, may be a year or two older, but cannot compare in the size of its sheets of plate glass with Asprey's still-spectacular double-storey windows.

13, offices at 4-6 Aldermanbury, just south of the area now cleared around Route 11, in the city of London. Built before 1845, stylistically unremarkable, but the windows of the upper storeys give almost continuous glazing right across the facade. Now abandoned and forsaken, the future of this pioneer is uncertain.

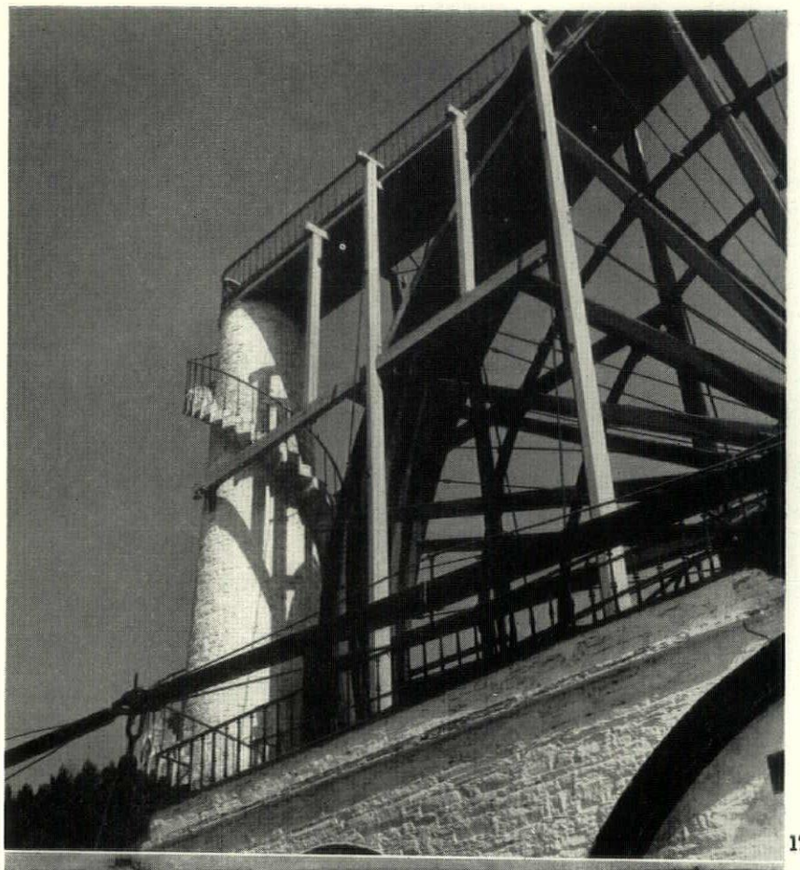
14, rear facade and glazed stair-tower of 16 Cook Street, Liverpool, designed by Peter Ellis, 1866. A few months later than his justly-celebrated Oriel Chambers (see 15) but even bolder in its use of an all-glass skin on the spiral staircase.

15, Oriel Chambers, Water Street, Liverpool. Built by Peter Ellis, whose architectural practice was established in the building from the time of its completion in 1865 until his death nineteen years later. Ellis's masterpiece, it has a permanent place in the history of nineteenth-century architecture as the first attempt to deduce an idiom, a style, from the facts of frame construction and overall glazing, instead of imposing a style derived from masonry upon them.

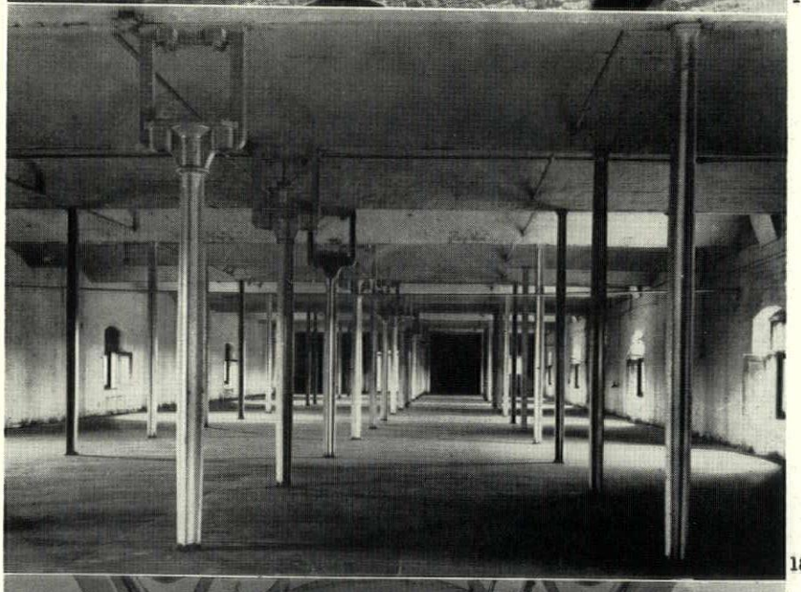


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16, the Midland Station, Park End Road, Oxford. Built in 1851-52 by the engineers Fox and Thomas, it employs structural and glazing units from Fox and Thomas's greatest masterpiece, the Crystal Palace, on which they were Sir Joseph Paxton's engineers. Crystal Palace roofing was fairly extensively used for railway stations in the 1850's, but this is one of the few surviving examples still in use.



17



18



19

Sheds and Mills

17, the Great Wheel, Laxey, Isle of Man. A carefully preserved masterpiece of pre-machine technology realized in terms of the techniques of the age of steam and iron. Completed in 1854 by the engineer Robert Casement, its mill-wheel is one of the largest ever built—over seventy-two feet in diameter—its construction in wood and iron is one of the most sophisticated ever conceived, and its attendant works, transmitting its power by iron walking-beams to a distant pump, are among the most extensive to be driven by water-power.

18, spinning mill, Spring Gardens, Shrewsbury. Built in 1796 by Charles Bage this is, quite simply, the first metal-framed multi-storey building in the world. Although the brick exterior walls belong to an earlier technology, the cruciform double-taper iron stanchions are as ahead of their time as is the frame-structure conception. The building is still standing.

19, Stanley Mill, Stonehouse, near Stroud, 1813. Most handsome and sophisticated of the many early mills picturesquely sited in the Stroud valley in Gloucestershire.

Railways

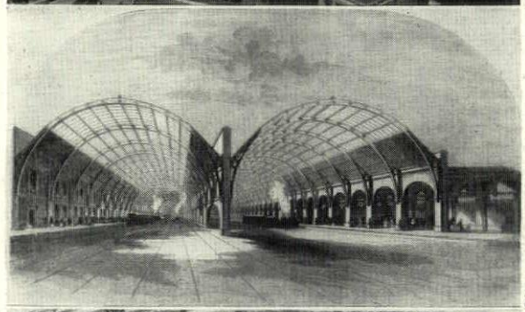
20, 21, exterior and section of King's Cross Station, London. Lewis Cubitt's design, completed in October, 1852, has a Roman grandeur and simplicity, with the double vault of the interior expressed by a double arch on the facade, that even a clutter of later additions cannot spoil.

22, the train shed of St. Pancras Station, London, completed 1868. Behind Gilbert Scott's Flemish-Town-Hall facade, the engineer William Barlow erected a glass and iron vault with a span of 243 ft., which remains one of the most masterly conceptions of the age of great London terminals.

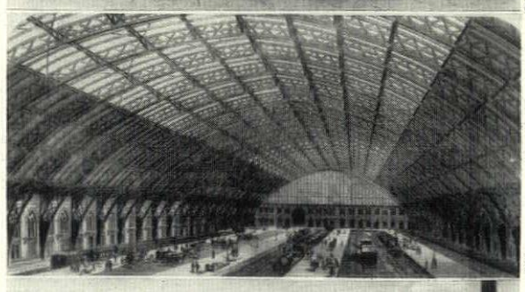
23, Engine Shed, Camden Town, London. The inexpressive stock brick exterior of this 160-foot diameter round-house of 1847 conceals a fine interior with the roof carried on an inner ring of forty cast-iron columns. Designed by Robert B. Dockray, engineer to the London and North Western Railway.



20



21



22



23



24

Docks

24, Albert Dock, Liverpool, built by Jesse Hartley and finished 1845. Though the order of the cast-iron columns is Doric, the intercolumniation is irregular to accommodate functional needs such as access to the brick-built warehouses, which enclose one of the noblest dock basins in Britain.
25, St. Katherine Dock, London. The farthest upstream of the London docks, lying just below Tower Bridge, designed by Thomas Telford and opened in 1828. Grave and simple brick warehouses again stand on cast-iron Doric columns, and in this, as well as the general conception, St. Katherine's was the model for other later docks besides those at Liverpool.
26, boat store, Admiralty Yards, Sheerness; designed 1858 by Colonel G. T. Greene. The date is important—while the rest of Victorian England is in retreat from glass and iron, Col. Greene makes a great step forward from the Crystal Palace, built only seven years earlier. Frame-and-fill aesthetic, exactly expressing the structural grid—using the earliest surviving exposed I-beams—of the interior.



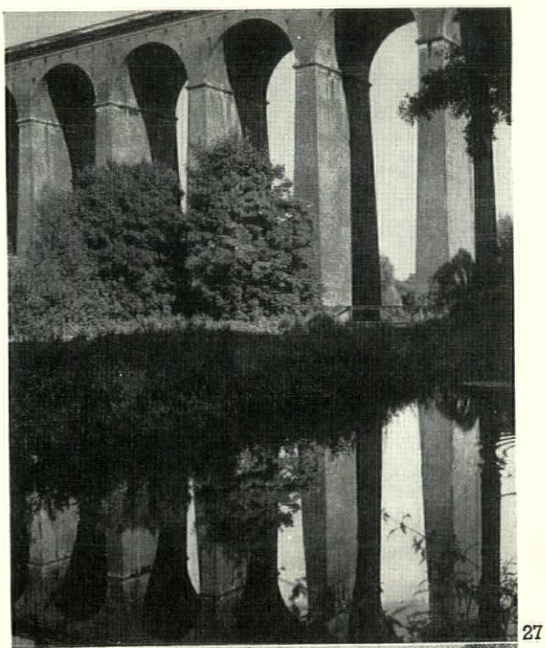
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Bridges

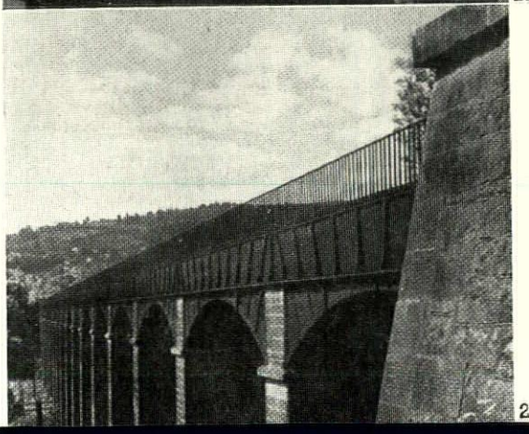
27, Digswell Viaduct, near Welwyn, Hertfordshire. Designed by Lewis Cubitt in 1850, and fully consonant in its Roman scale and simplicity with his King's Cross Station (20, 21, above)—the viaducts of the early railway age were like nothing that had been built since the aqueducts of the Roman Empire.
28, Pont-y-Cysyllte Aqueduct, carrying the Shropshire Union canal over the river Dee near Llangollen. Completed in 1803 to the designs of Thomas Telford, whose masterpiece it is, eighteen slender brick piers carrying 40-foot cast-iron spans, 120 feet above the river.



26

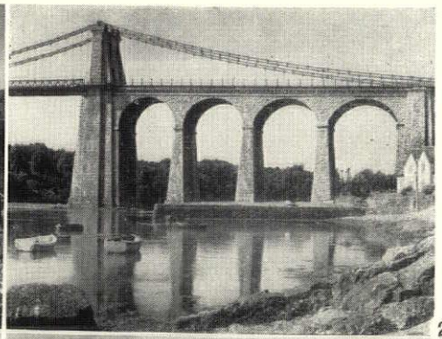


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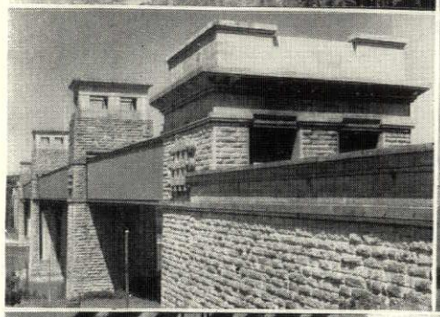


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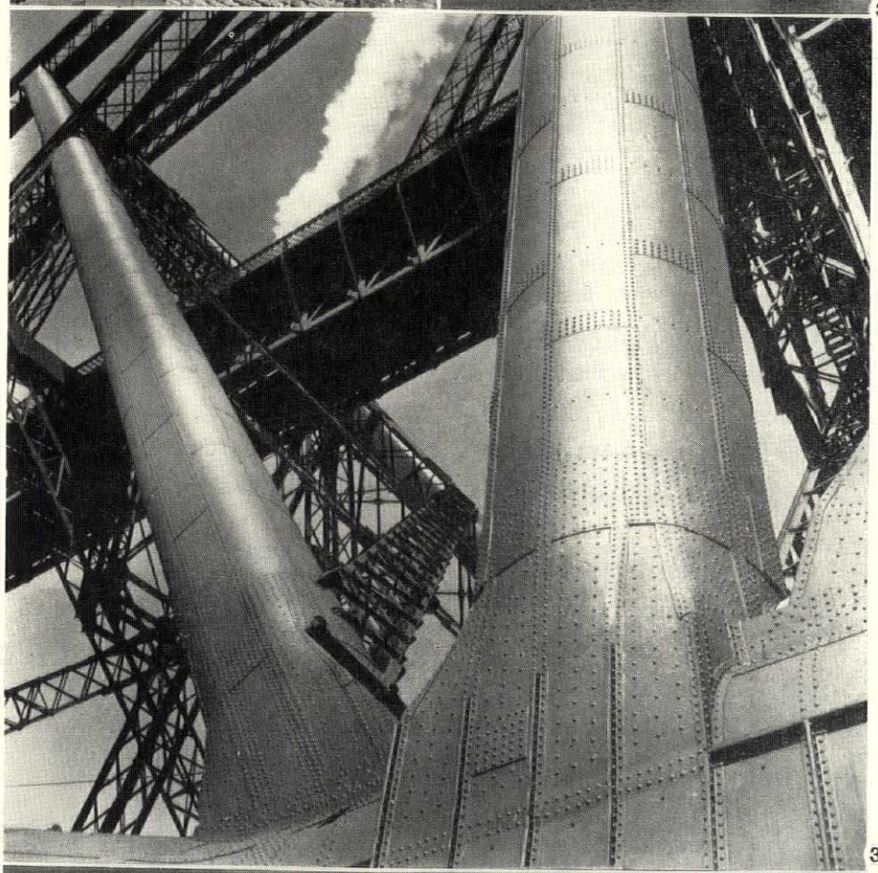


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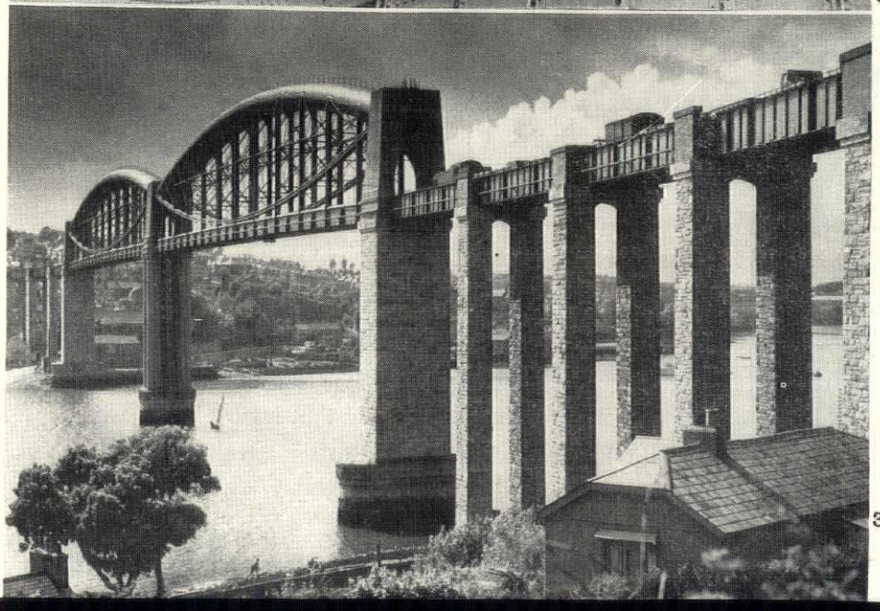




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34

Bridges: continued

29, Clifton Suspension Bridge, Bristol. Designed by Isambard Kingdom Brunel, but completed after his death by William Barlow, 1863. Apart from its interest as a work of a great engineer, its site on the narrow Avon Gorge is the most romantic of any in Britain.

30, Menai Bridge, Anglesey. Telford's bold gesture of building a 550-foot span in 1826 was almost too bold, and the bridge has needed several minor reconstructions, concluding with a major re-build in 1938-40.

31, Britannia Bridge, Menai Straits. A mile from Telford's bridge and built twenty years later by Robert Stephenson, jr., engineer, and Francis Thompson, architect. Consists of two hollow box beams, each containing one track of the railway. The intended auxiliary suspension cables were abandoned after the structure had been calculated in detail by William Fairbairn and Professor Hodgkinson.

32, 33, Forth Bridge, Firth of Forth (between North and South Queensferry). Benjamin Baker and John Fowler's design of 1881 was a double first: the first cantilever bridge on this giant scale—the two main openings each span 1,170 feet—and the first long-span railway bridge in steel. The mixture of tubular and lattice members gives a structural aesthetic as individually characteristic as that of its only contemporary rival, the Eiffel Tower.

34, Saltash Bridge, near Plymouth. Designed by Brunel and opened in the year of his death, 1859. Its thoroughbred elegance suggests a perfected structural system, but its wrought iron compression tube and compensating suspension chains are the first groping steps towards the modern truss.

Aluminium Precursor

35, Eros (monument to Lord Shaftesbury), Piccadilly Circus, London. Erected in 1892 to the designs of the sculptor Alfred Gilbert, this well-loved extravaganza of Art Nouveau Classicism is the first permanent public structure in aluminium.



35

FLATS IN ST. JAMES'S PLACE, LONDON

ARCHITECTS | **DENYS LASDUN AND PARTNERS**

It is a truism that good buildings of any period are good neighbours irrespective of differences of style, but it is a truism whose truth is rarely seen because of the rarity of buildings that are good enough to make it come true. To see Denys Lasdun's new block of flats overlooking Green Park may be to receive—at first—a shock of incongruity, but an incongruity that fades as soon as the building begins to be appreciated for its true virtues.

1, the flats from Green Park, showing the new building taking its place alongside Spencer House and Bridgewater House. 2 (facing page), close-up of the Green Park elevation.

1



It fits the scene, not because of any external styling—there is none—but because what is seen on the outside is an expression of the virtues within, and of nothing else. Basic decisions about the two-over-three section give the comparatively small rhythm of storey-heights on the St. James's side, where the neighbours are small houses in narrow streets. On the park side, the one-and-a-half storey living rooms immediately introduce a scale comparable to that of the Victoriana to the north, while the resolution of this double rhythm into two giant, three-storey bays by the one solitary floor-slab that traverses the park facade from side to side, brings in a monumental scale that echoes the heroic proportions of Bridgewater House to the south. The delicate Palladianism of Spencer House is enhanced, not vitiated, by the larger scale of its neighbours, both of them its juniors by one century, or two.

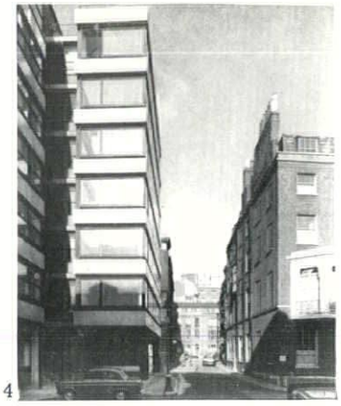
This happy result derives directly from the undisguised expression of the section, but the means of expression are either purely structural (giving value to the architect's conviction that the required luxury is a function of space) or concerned with environment control (windows, ducts, validating a belief that luxury is a function of service) and meticulous care over finish (validating a belief that luxury is a function of quality). There is nothing else to see, except that this is, quite simply, good architecture.

2→

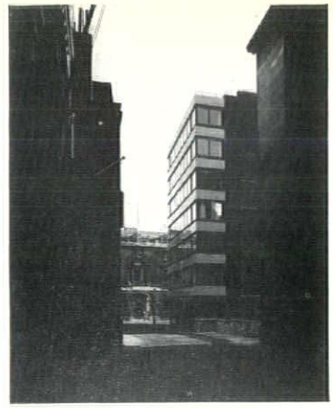




3



4



5

FLATS IN ST. JAMES'S PLACE, LONDON

Left and above, three street views from St. James's Place: 3, looking down the street; 4, looking north across the end of the street to the entrance of the flats; 5, looking in the reverse direction. The gap on the right of the flats is to be filled by another building. 6 (below), from the garden of Spencer House, showing the Green Park front of both buildings.

6



A block containing five large and three smaller luxury flats on a site overlooking the Green Park. The site was previously occupied by a pair of Georgian houses which were destroyed during the war, and is at the end of a row of such houses (many now replaced by flats) running southwards from the Ritz Hotel at the corner of Piccadilly. Separated from the new block by a small gap is Spencer House, a pedimented 18th-century Palladian mansion designed by Vardy.

The flats have a basement garage, with space for 12 cars, and an entrance-hall, a caretaker's flat and one small flat (with garden) on the ground floor. The main accommodation consists of four large and two smaller flats on the first to sixth floors, and a penthouse flat above with its own roof-garden. The four large flats have 13ft.-high living-rooms, made possible by the planning of the whole block on split levels (see drawings on right) with the smaller flats set in on one level only. The flats are designed with the object of providing spatially well proportioned living accommodation with maximum flexibility in the arrangement of rooms, at the same time making the most of the views over Green Park. Each floor is organized technically (i.e. in its distribution of heating, lighting and service ducts) so that future change will not be inhibited, the only fixed elements being the bathrooms, kitchens, service ducts and vertical circulation.

The fabric has been designed to give a high standard of finish with good sound and thermal insulation; also with the minimum in the way of future maintenance. Overall stability is provided by a reinforced concrete core containing lifts and staircases. Otherwise the structure consists of reinforced concrete columns with 7½in. thick *in situ* floor-slabs and wide shallow edge-beams supporting 7ft. cantilevered balconies. In the penthouse structure the parapets are beams rooted in the main tank- and plant-room. They cantilever 25ft. in one elevation and 14ft. on the return, to allow an unobstructed aperture. Here the concrete is exposed, with a white finish.

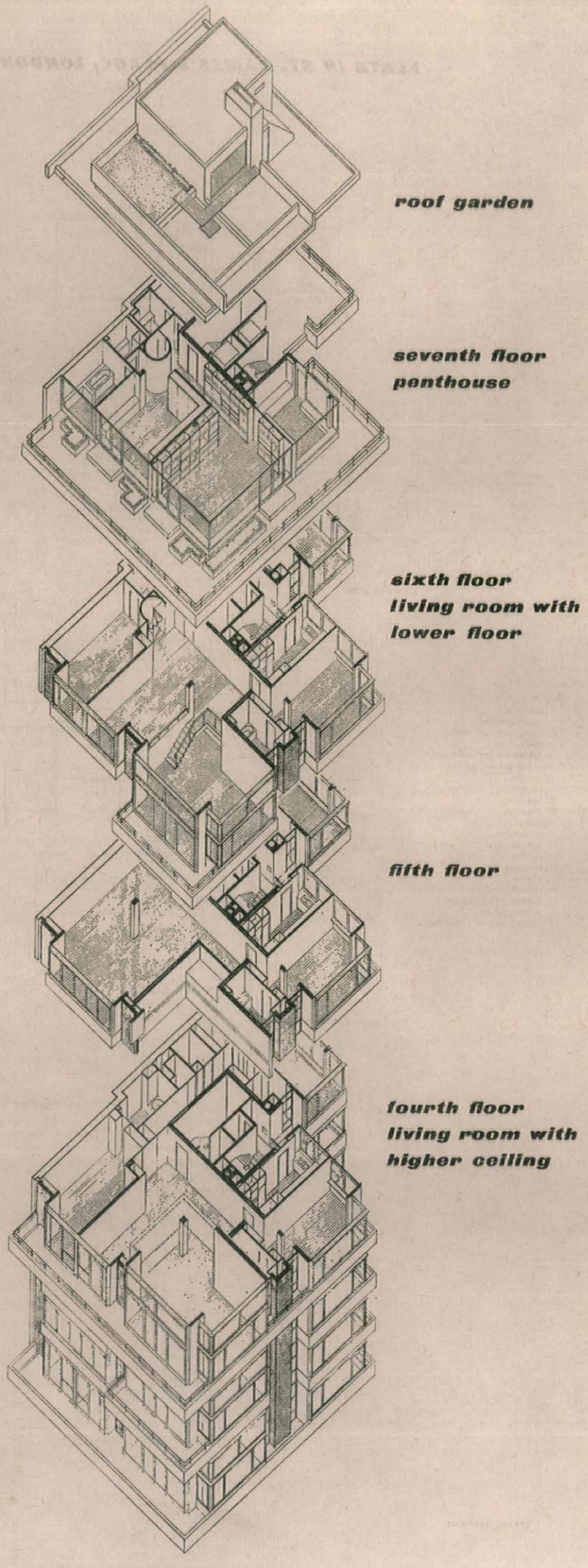
Elsewhere the *in situ* concrete structure is clad with 1½in. thick Baveno grey granite with white vitreous mosaic on the soffits. There are concealed built-in gutters on all floors over the entrance-hall to deal with watershed. Window sub-frames are of pressed grain-blasted bronze sections. External ducts (and the blank north wall, which will later be hidden by an adjoining building) are faced with blue engineering bricks. The roof parapet has a track for a travelling cleaning-cradle.

For sound insulation, all windows are double-glazed and floors are floated on battens fixed to insulated clips set in concrete, with fibre-glass quilting laid between the battens. Bathrooms that adjoin living-rooms are structurally isolated, and cavity walls separate the bedrooms. Mechanical equipment is mounted on anti-vibration bases, and noise-transmission through ducts is prevented by labyrinthine acoustic baffles. Ducts are also lined with acoustic felt.

For thermal insulation, all concrete walls are lined with cork and window-frames are packed with expanded polystyrene. The deep overhang of the balconies will cut off the high sun in summer.

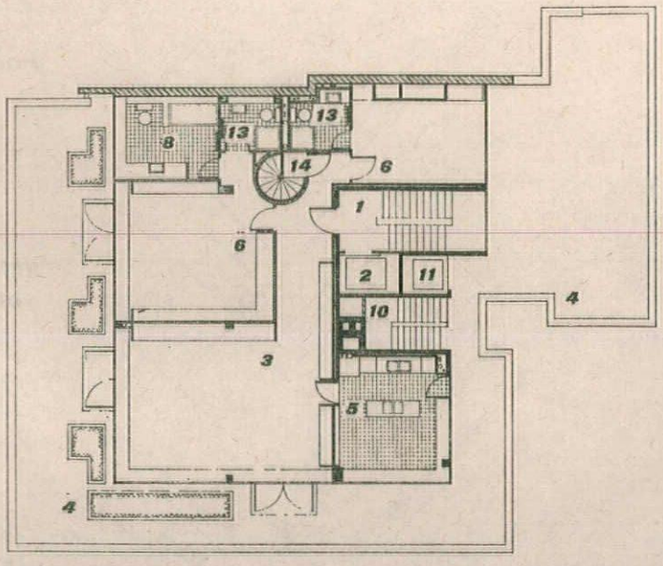
The heating of the flats is by convectors designed as part of the window layout and served with low-pressure hot water. The temperature in each room can be separately controlled by thermostat.

Partner in charge, Alexander Redhouse. Executive architect, Lyall Addleson. Assistant architect, Graham Lane. Consulting engineers, Ove Arup and Partners.

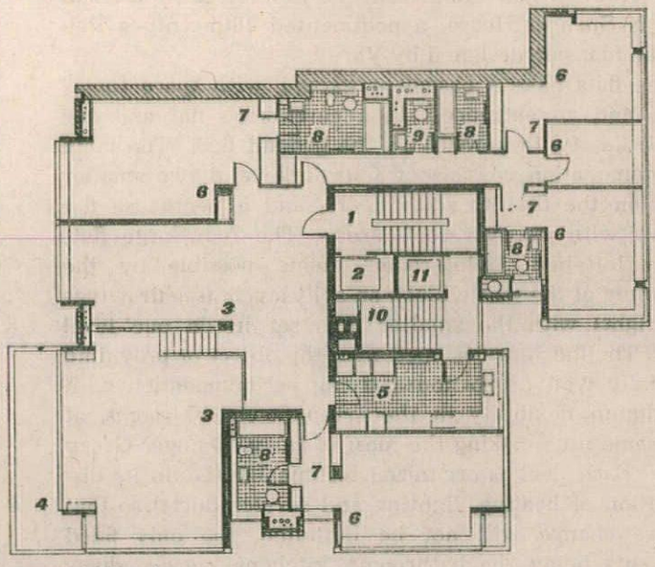


axonometric view, with floor-levels separated to show the internal spatial arrangement

7 (facing page), close-up of the south-east corner of the building —from first floor upwards—with the trees of Green Park beyond. The bedrooms on the right are at the ordinary floor levels. The double-height living-rooms, left, are achieved by the split-level planning shown in the plans below and the axonometric drawing on the preceding page.

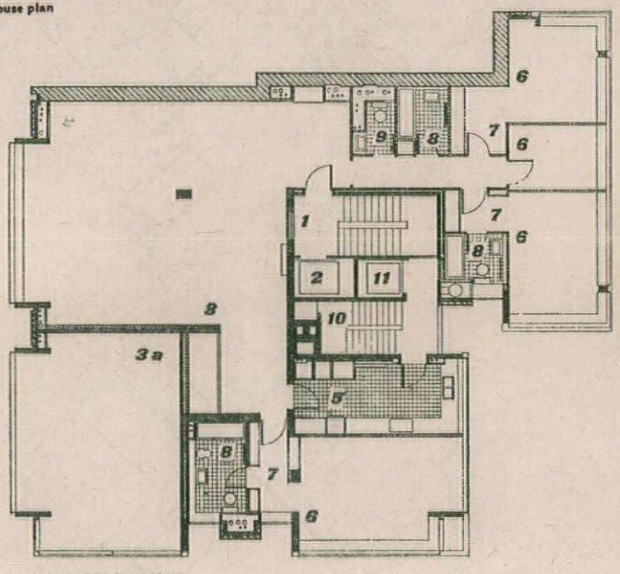


penthouse plan

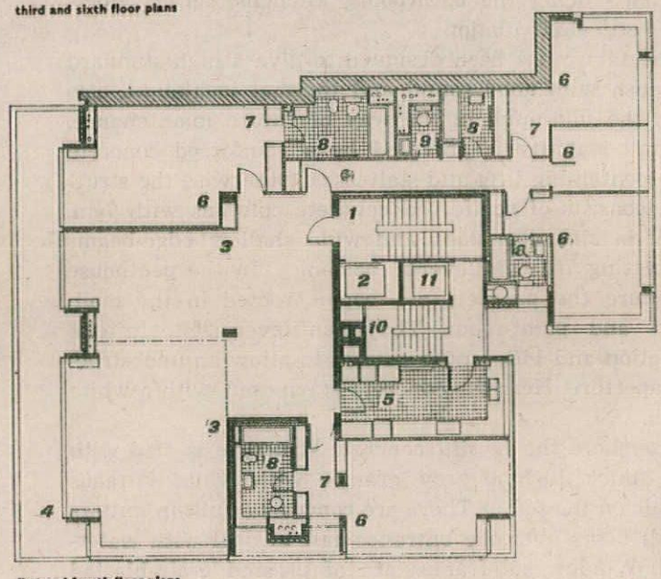


third and sixth floor plans

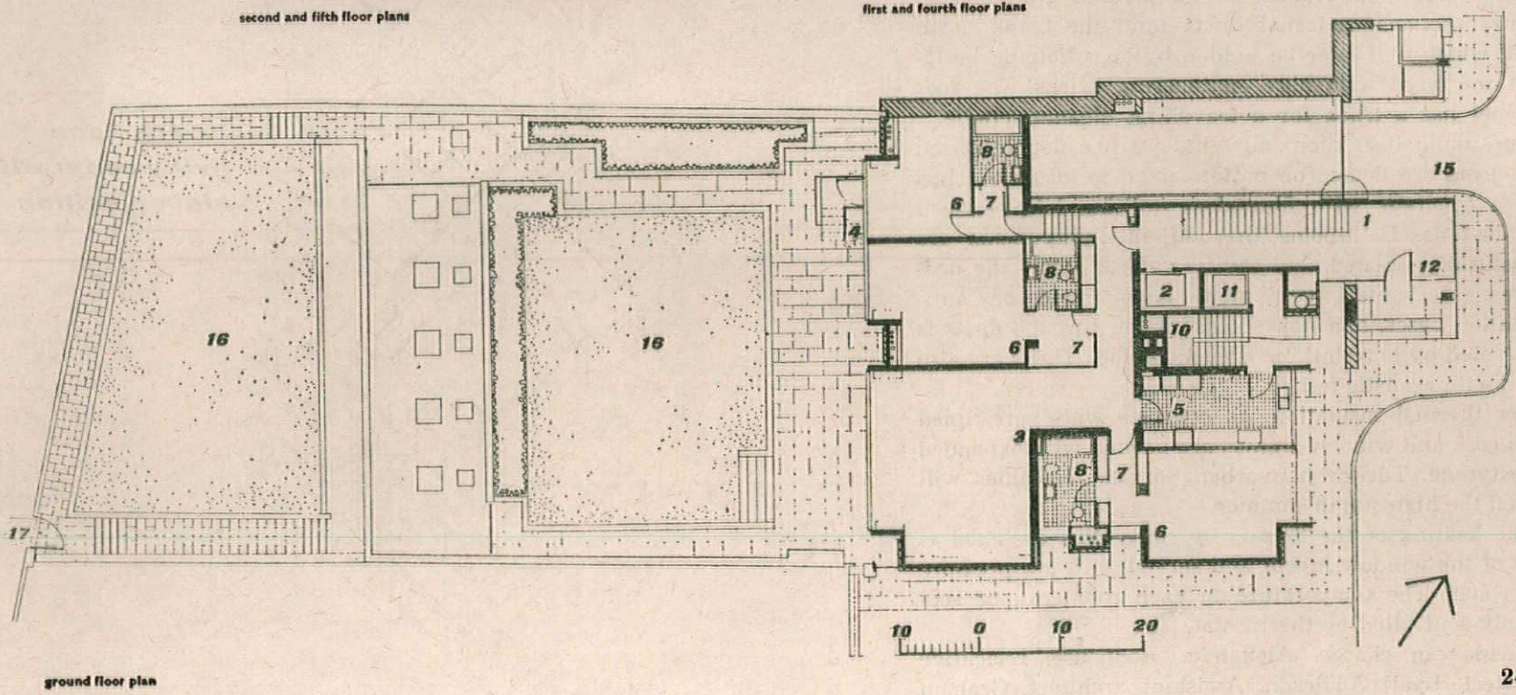
key
1, main stair.
2, passenger lift.
3, living room and dining space.
3a, upper part of living room of flat below.
4, terrace.
5, kitchen.
6, bedroom.
7, dressing.
8, bathroom.
9, cloakroom.
10, service stair.
11, service lift.
12, entrance hall.
13, shower.
14, stair from sixth floor flat.
15, car ramp to basement.
16, private garden.
17, private gate to Green Park.



second and fifth floor plans



first and fourth floor plans



ground floor plan

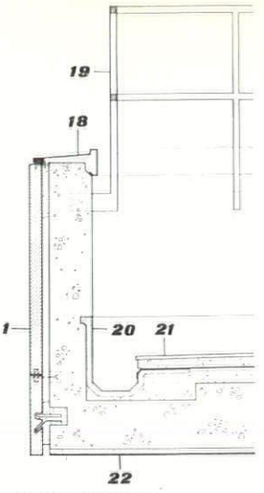


key to details

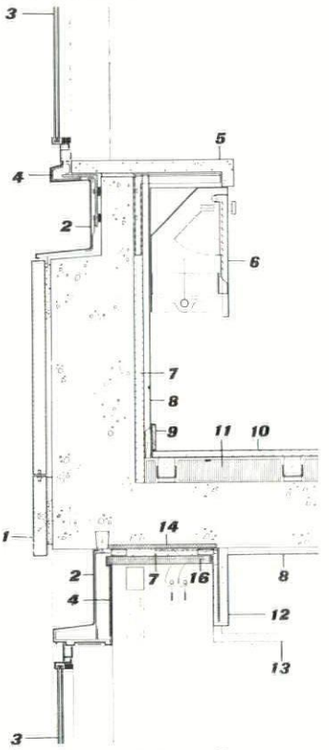
1. Baveno grey granite.
2. pressed bronze with grain blasted matt finish.
3. double glazing panel.
4. ¼ in. thick expanded polystyrene fixed to inner surface.
5. terrazzo cill supported on angle brackets.
6. casing to convector heater with adjustable damper control.
7. cork insulation to reinforced concrete.
8. plaster.
9. hardwood skirting.
10. hardwood strip flooring laid on wood battens in patent insulated floor clips.
11. uncompressed fibre glass quilt laid between floor battens.
12. reinforced fibrous plaster board.
13. suspended ceiling to living rooms.
14. expanded polystyrene cast into reinforced concrete slab.
15. window ventilators operated by remote control.
16. 1 in. blockboard for fixing curtains and blinds.
17. porcelain enamelled gutter.
18. pressed bronze cill.
19. mild steel handrail.
20. asphalte gutter.
21. vitreous tiles to terrace.
22. white vitreous mosaic.

8, close-up of part of the eastern corner, looking north, showing the materials used (polished granite, blue engineering bricks and bronze window-frames) and illustrating the detailed sections through windows and walling on the right.

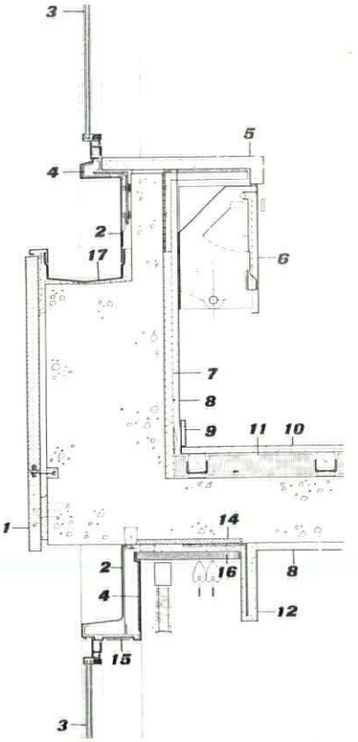




section through balcony

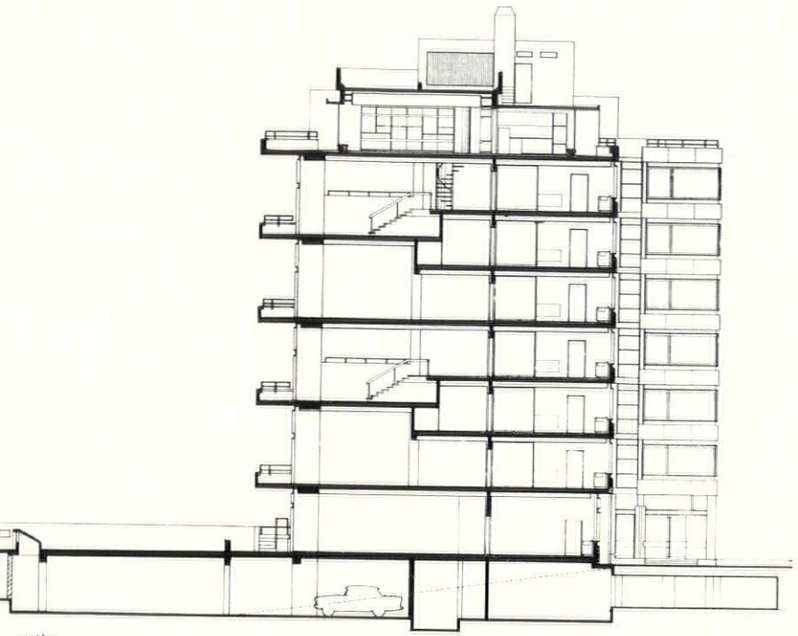


section through typical window wall

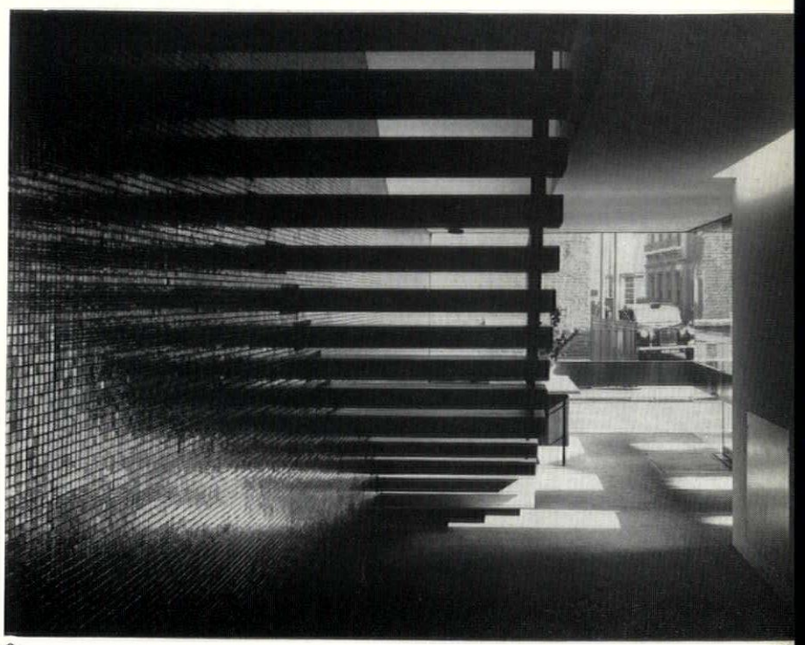


section through window wall over entrance, showing concealed gutter

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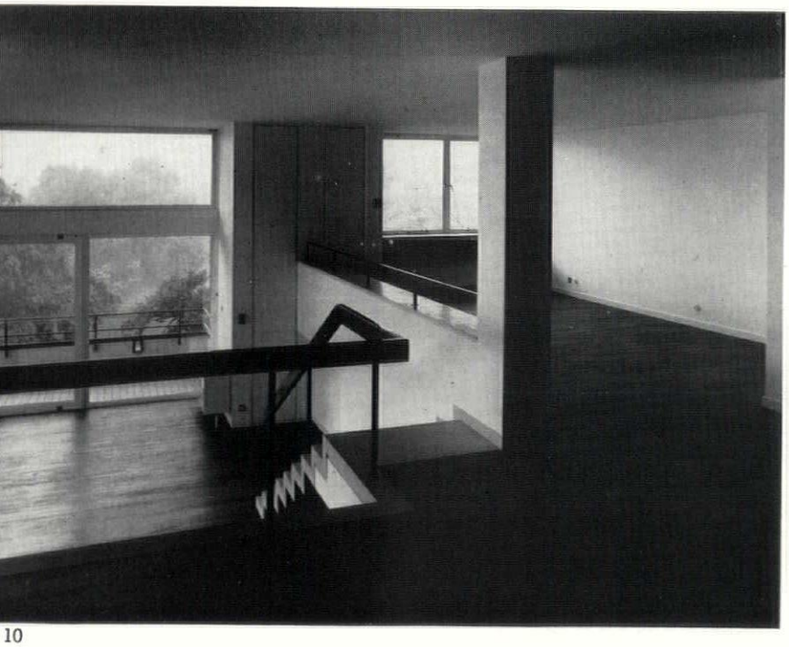


section

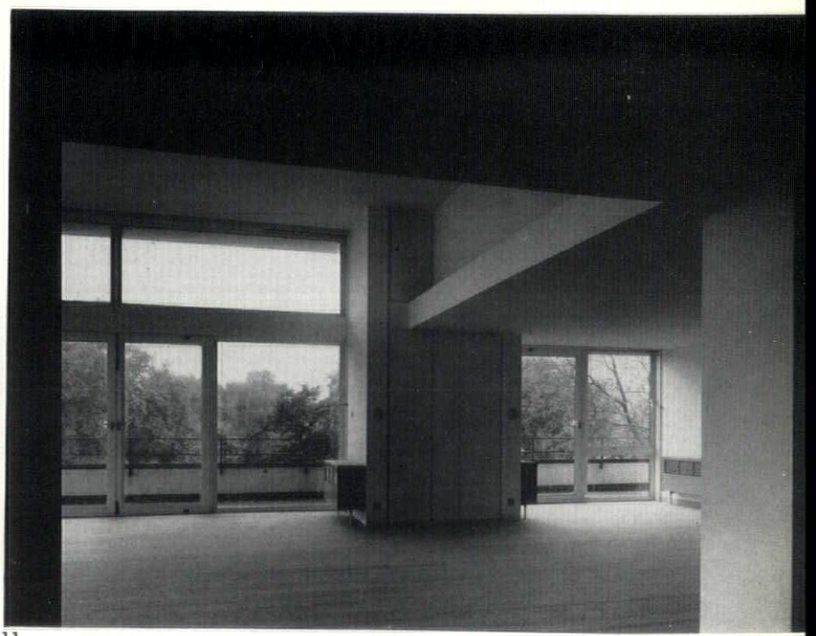


9

9, the entrance hall, looking from in front of the lift towards St. James's Place. The entrance doors are in the glazed wall on the right. The walls are lined with gold mosaic. Below, two views of living-rooms before furnishing: 10, looking down into a two-level living-room with dining-gallery on right; 11, living room with high ceiling over main area. Both photographs show the wide balconies with view over Green Park.



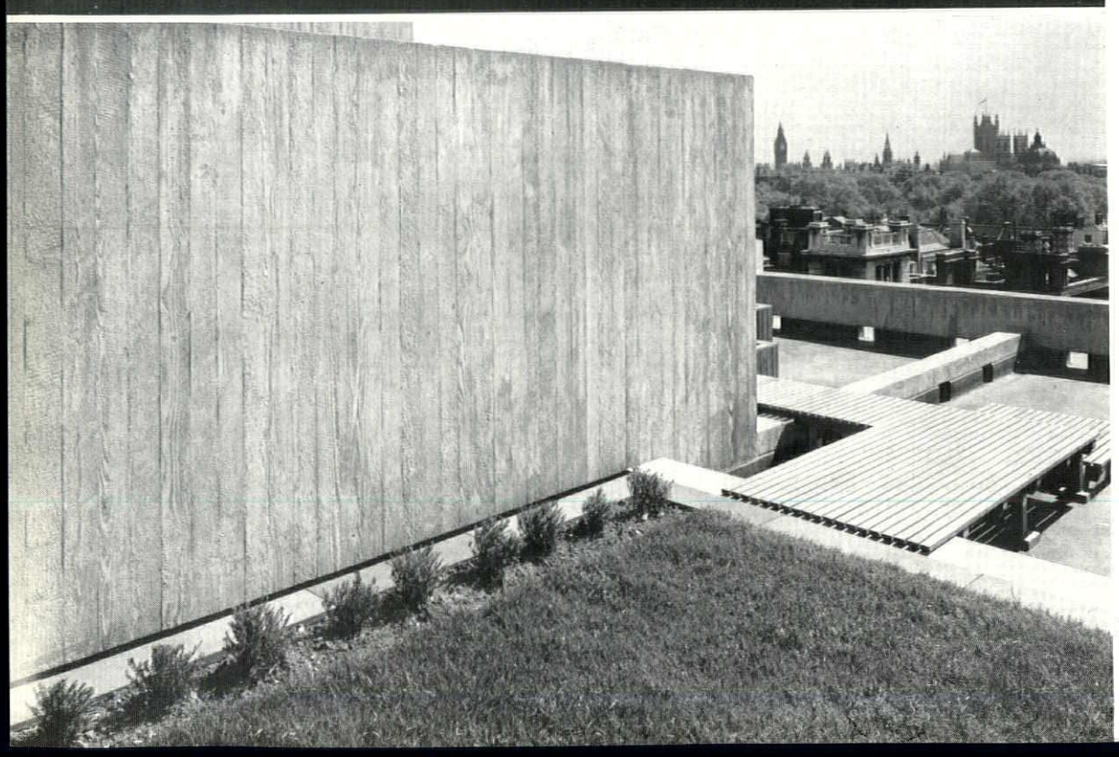
10



11



12

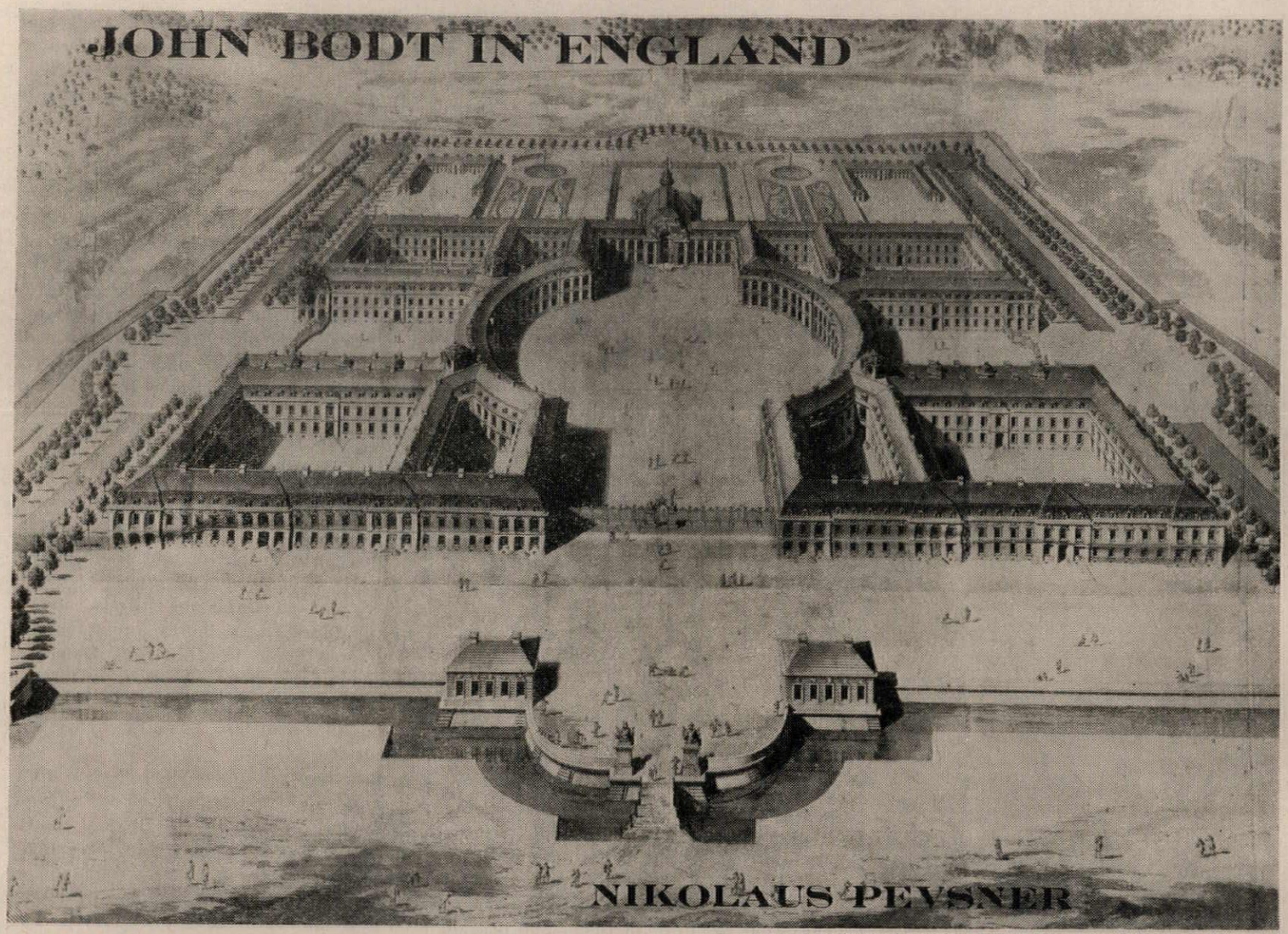


13

12, the approach to the penthouse roof-garden. 13, part of the planted area of the roof-garden. Both photographs show the unusually high quality of concrete finish achieved in the building.

photographs by Behr

JOHN BODT IN ENGLAND



1, *design by John Bodt for Hospital for William III, presumed to be sited at Greenwich.*

NIKOLAUS PEVSNER

The two articles that follow discuss a seventeenth-century architect whose work is little known and whose international activities are of particular interest at this time when, because of the IUA congress, the international ramifications of architecture are in many people's minds. Bodt was born in France and worked in Holland, Germany and England. It is his English activities that are discussed by Dr. Pevsner and Mr. Harris, based however on German researches by Professor Heinz Ladendorf.

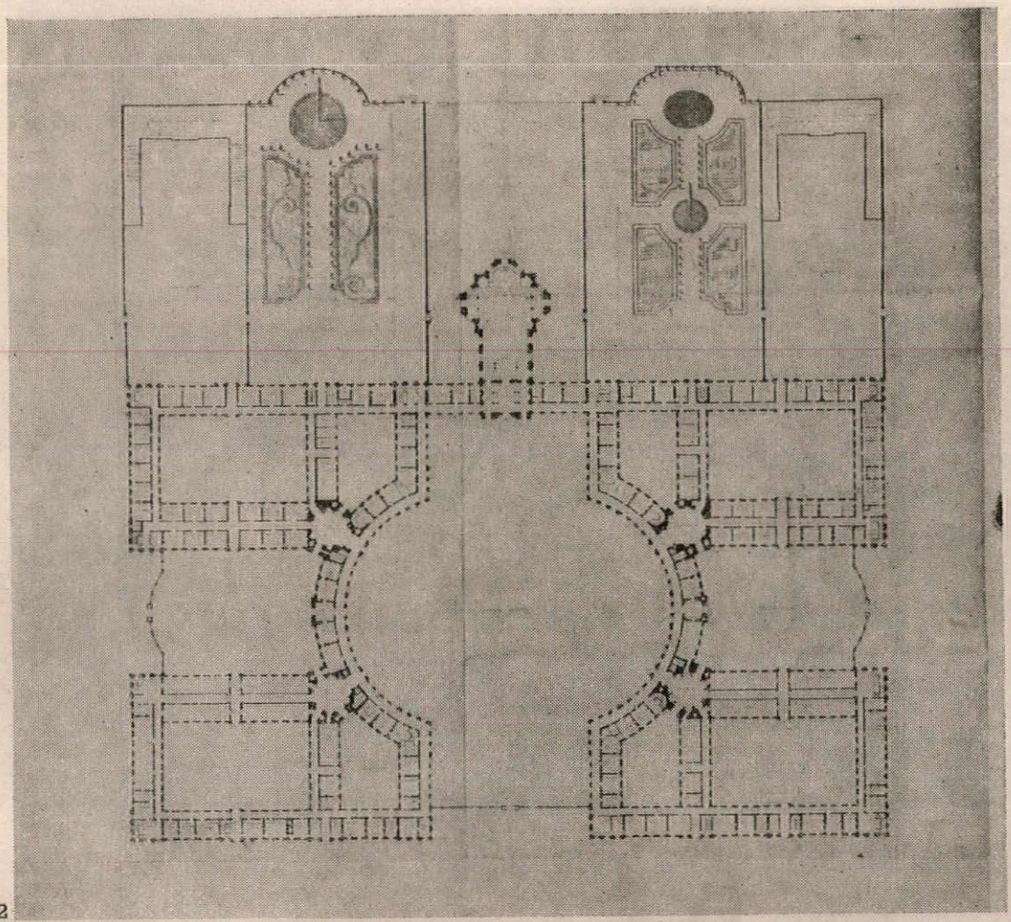
'Bodt or Bott (Johann or Jean de) was born in Paris in 1670. Being compelled in 1685 or 1686, as a Protestant, to quit France, he went to Holland, and accompanied the expedition of the Prince of Orange to England in 1688, as a military engineer. According to *Berlin and its Treasures*, 8vo, London, 1855, he took an active part in the erection of the new buildings, after the fire of 1691, at Whitehall in London. In 1700 he was named by the elector of Brandenburg, as successor of Gruneberg, chief architect at Berlin, where he continued the building of the arsenal, with many alterations made by Gruneberg and himself from Nehring's design; and in 1701 he completed the *Schloss*, and built the *Schloss-thor* with the *Kuppel* in the market place at Potsdam etc.'

So much can be read on Jean de Bodt in the Architectural Publications Society's *Dictionary of Architecture*,[1] Thieme-Becker's celebrated *Künstlerlexikon* has even less, though it does add that Bodt exchanged Dresden for Berlin in 1728, was made Quartermaster General in 1741 and died in 1745 at Dresden. Mr. Colvin does not mention him at all, though he does mention, e.g. Pierre Pouget, another Frenchman working for a short while in England.[2] Nor is he mentioned in Sir John Summerson's volume of the Pelican History of Art or in Dr. Whinney and Mr. Millar's volume of the Oxford History of English Art. The fact that he designed Wentworth Castle in the West Riding of Yorkshire for Lord Raby about 1710 has no better authority than a letter written in 1756 by Horace Walpole, but is borne out by style as well as by Lord Raby's presence in Berlin as British ambassador from 1703 to 1711. There is no reason to assume that Bodt travelled to England for Wentworth Castle. He may just as well have supplied the design from Berlin.

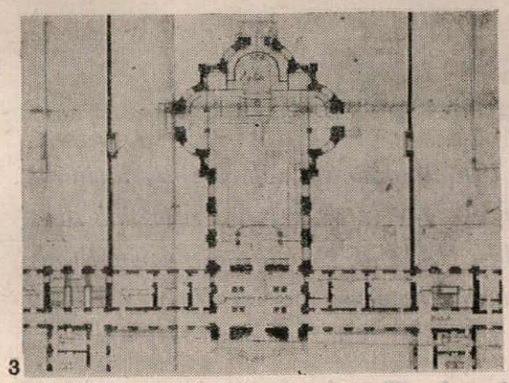
Of his recorded sojourn in England nothing had as yet been found out when Professor Heinz Ladendorf, then of Leipzig in East Germany and now of Cologne in West, started research as an undergraduate in 1932. While writing his book on Schlüter he also worked on a biography of Bodt, assembled a great deal of material and then gave up his project, partly because the most valuable documents he had by then read and extracted

[1] Vol. I., p. 99, no date.

[2] But Daniel Marot again is not mentioned who was also French and also served King William as an architect in England. He spent the years 1695-98 in this country, *see* M. D. Ozinga: *Daniel Marot*, Amsterdam, 1938, p. 89, etc.



2



3

2, *Bodt's plan for Greenwich Hospital.* 3, *detail: the chapel.*

were burnt in the air attack on Dresden of February, 1945, or disappeared after it, and partly in connection with his flight through the iron curtain. He very kindly deposited all his material with me, giving me permission to edit for THE ARCHITECTURAL REVIEW what might be of special interest to this country. His findings concern both Bodt's life and work.

As for his life, Professor Ladendorf got hold of a more detailed story sent by Bodt's son-in-law, M. de Wangelin on July 24, 1781, probably to Erman & Reclam who published it in *Mémoires pour servir à l'histoire des réfugiés français*, vol. VII, 1790, p. 244, etc. According to this Bodt's family had been 'distinguée et opulente.' His father died when he was only two years old. His mother remarried, and her husband, M. d'Usez, was a Catholic. In spite of this he was brought up a Protestant. He was interested in mathematics and architecture, and 'M. Blondel le prit en affection.' He got a prize at the Royal Academy of Architecture at the age of fourteen, but went to Holland the next year—that would be in 1685—and became Captain of Artillery in England in 1690. Apart from his salary he received a pension of 100 guineas for services in Ireland. He served at the Boyne, at Antrim, Steenkerque and Nerwinde and was Chef de Brigade at Namur. In 1699 he joined the service of King Frederick I of Prussia and was made Brigadier and Premier Ingénieur in 1704.

This record is not perfectly accurate, as we shall see. The published records of the Académie Royale d'Architecture have nothing about a prize given to Bodt in or about 1684. Concerning his later career in Germany, he was made Colonel in 1706, Brigadier in 1712[3], Lieutenant General in Dresden in 1728 and General in 1741. The combination of civil architecture with a military career was nothing unusual in Baroque Europe and especially Germany. Balthasar Neumann came from the artillery and became Colonel, Welsch was general, so was Lucas von Hildebrandt.

Professor Ladendorf, in the course of his work, succeeded in supplementing Erman's printed life from an unprinted one written by Bodt's great-granddaughter Adolfine von dem Knesebeck, née von Klitzing, and communicated to Professor Ladendorf by Regierungsbaumeister Neumann of Neuruppin. According to this, Bodt's ancestors lived in Mecklenburg. His father travelled in Italy and France, met Mlle Rose Louvent de Veral of the house of Rieux in 1645, sold his property in Mecklenburg and settled down in France. They were married in 1669. The son, born in 1670, went to Holland in January, 1685. At the Hague he managed at once to be introduced to William of Orange and became Comptrolleur Général and Conducteur of dams. Later he was engineer of the Tower. When he returned from Ireland and Flanders he made plans for Whitehall Palace, and these were seen by Frederick I who thereupon obtained permission from William III to have Bodt in Berlin. He married in Berlin a young woman called Jeanne de Persode. Their daughter married Freiherr von Wangelin and their granddaughter General von Klitzing.

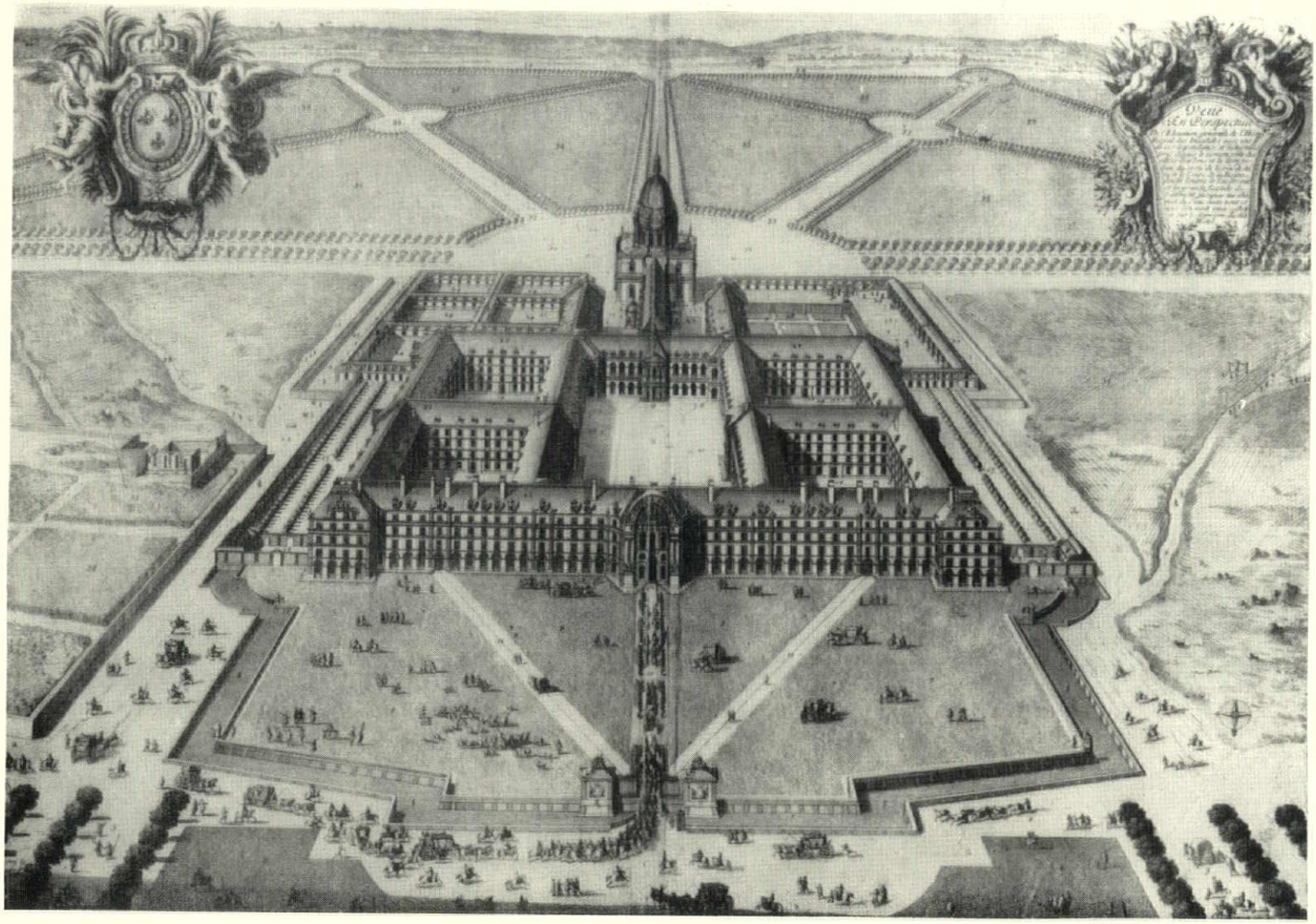
This story, again, is not entirely correct. For instance, it is highly unlikely that Bodt was made Controller of Dams in Holland at the age of sixteen or seventeen. As for the facts referring to his English phase, they will now have to engage our attention.

Some research undertaken at the Public Record Office to augment what Professor Ladendorf had found resulted in much detail on Bodt's military, but, alas, none on his architectural, career. William had landed in November, 1688. James II fought on in Ireland. The battle of the Boyne was on July 1, 1690. The war was at an end in October, 1691. In 1690 the French fleet had burned Teignmouth. In Spring, 1691, William crossed to Flanders. The French defeat of La Hogue was in 1692, the capture of Namur in 1695, the peace of Ryswyck in 1697. John Bodt—for thus his name always appears even in his own signatures, the 'de' being perhaps a later self-bestowed eponym—appears in 1690–1 in the Artillery Train in Ireland as an engineer at 7s. 6d. a day.[4] On April 1, 1692, he was appointed an engineer to the Artillery Train for Flanders at 10s. a day.[5] On February 23, 1694, a warrant was issued on his behalf to pay him an allowance 'to enable him to perfect himself in the art of engineering.'[6] This allowance was £100 a year payable in debentures.[7] On September 1, 1694, he was commissioned as Brevet-Captain.[8] This allowance continued independent of the fact that late in 1695 and in 1696 and 1697 all officers of the artillery

[*continued on page 33*

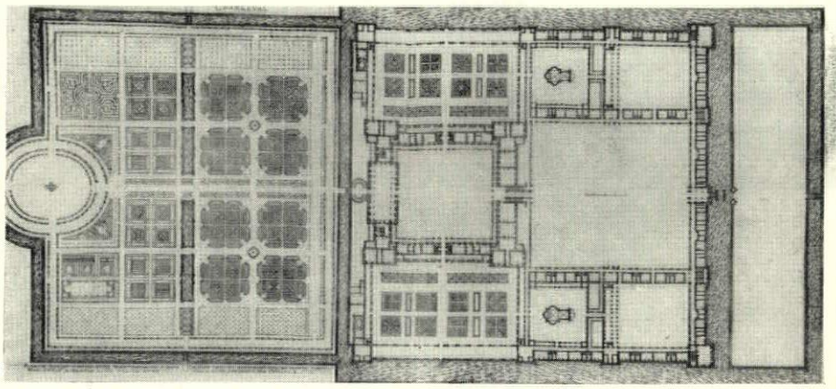
[3] Archiv des Geheimen Kriegsrats, Berlin. The documents were seen by Professor Ladendorf.

[4] Chas. Dalton: *English Army Lists*, London, 1896, vol. III, p. 184.
[5] P.R.O., W.O. 55/482, p. 19.
[6] Cat. of State Papers Domestic.
[7] P.R.O. Rolls of the Paymasters of the Ordnance, also W.O., 53, 1-9.
[8] Dalton, *l.c.*

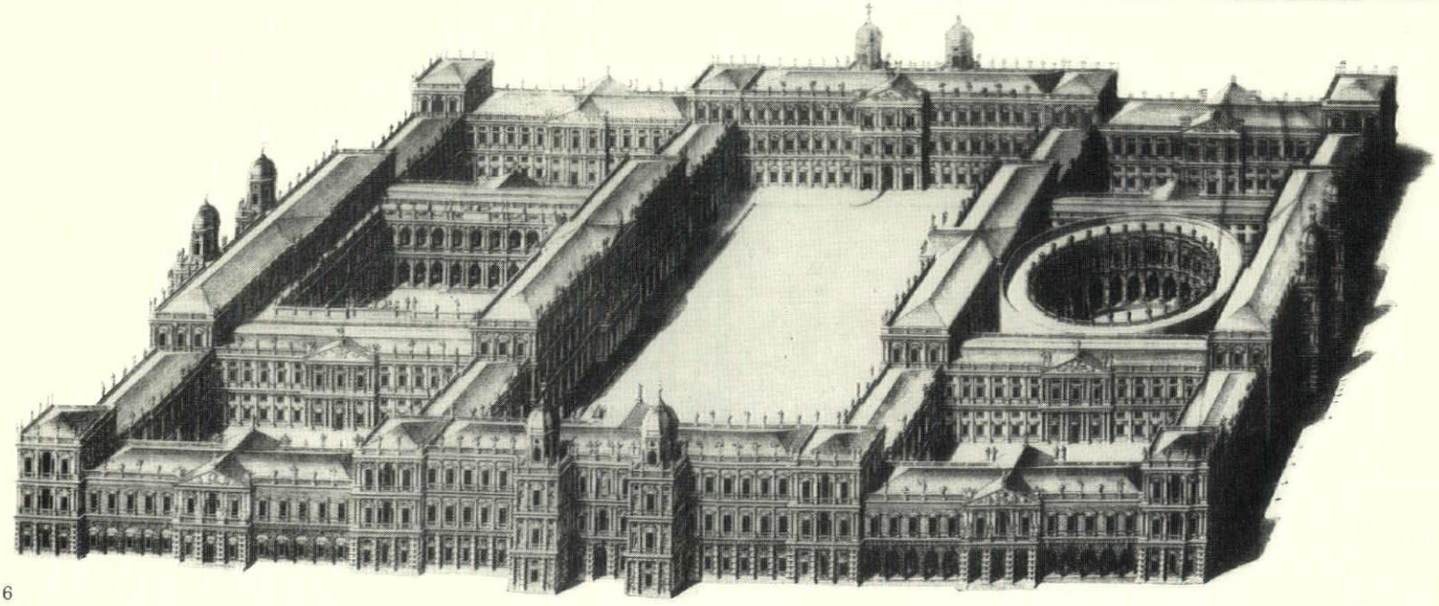


4

Three designs which influenced John Bodt's drawings of Greenwich Hospital: 4, *Libéral Bruant's Maison des Invalides in Paris.* 5, *Inigo Jones's and John Webb's plan for Whitehall Palace.* 6, *Ducerceaux's proposed palace for Charles IX at Charleval.*

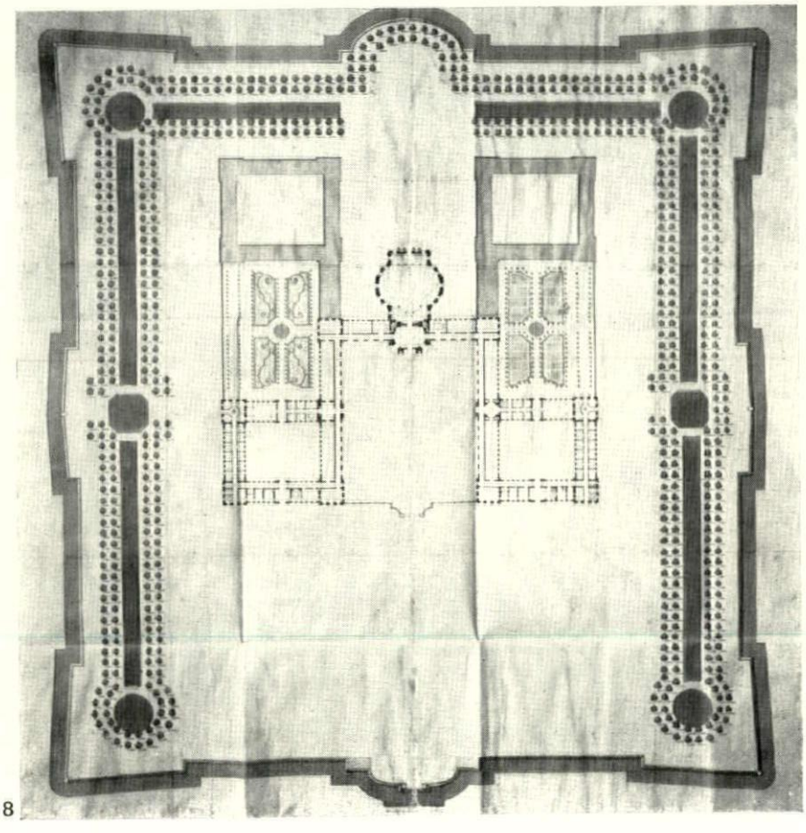


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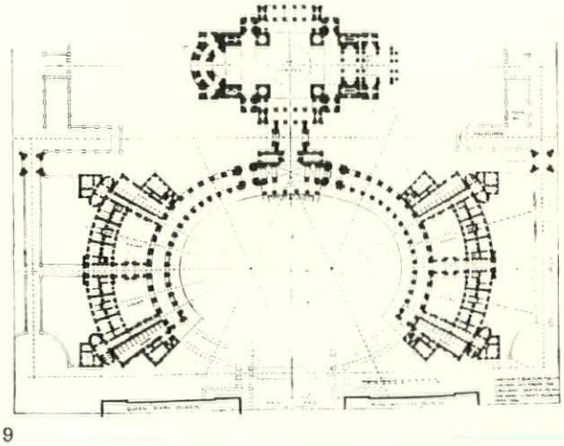
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7



8

7 and 8, perspective and plan by John Bodt for Hospital for Frederick I (1702). 9, proposed plan for Greenwich Hospital, attributed to Hawksmoor.



9

continued from page 30]

in Flanders were on three-quarters pay, probably because the fighting was over. For his services at Namur he received a 'gratuity' of £50,[9] but it is not quite certain what that really represented to him; for his pay was in arrears by—it says in a memorandum of June 14, 1697—'several years'.[10] The same memorandum mentions that he was doing work 'at several places on the canal' which involved travelling expenses.

In October, 1697, the Artillery Train apparently returned to England. Bodt's wages had always been paid in gulders, but on December 22, 1697, they were paid in £ s. d. On the same day an order was issued to pay Bodt and many others their full arrears. The money finally reached him in March, 1698.[11] The Flanders Train, however, was not disbanded and Bodt's services were retained.[12] His payments go on in the rolls of the Paymasters of the Ordnance. They came to an end on September 30, 1699. So by then he will have left London and gone to Berlin.

His financial position was not the best; for there is a letter of August 8 to the Board of Ordnance[13] referring to 'the disorder his affairs are in, occasioned by his wife.' We know nothing about this first wife, except—and here we are returning to Professor Ladendorf's research—by a letter from the King of Prussia to Spanheim, the Prussian Ambassador in London, of May 18, 1704, which mentions her name, Elizabeth Temerly, and discloses the fact that Cap. de Bodt is petitioning *in puncto divortii*. The King says that he cannot release Bodt to go to London and plead his own case. Would Spanheim see to it that nothing is decided in London. The case ought to come up in Berlin. Another letter, of March 29, 1704, mentions the fact that she asks for money for their child, to which he answers that for years he had wanted separation, that he does not recognize the child as his, that she has, ever since their wedding, 'entretenue un infame commerce de paillardiste avec des particuliers,' and that she leads a 'vie libertine et débauchée.[14] Bodt must have succeeded in getting rid of this undesirable companion of his twenties; for we have seen that he married again in Germany.

The only connection of Bodt with English architecture which has so far come out of all this is the reference to designs for Whitehall which the *Dictionary of Architecture* makes and which is borne out, e.g. by Heinecken's *Nachrichten von Künstlern*, Leipzig 1768, where it is said that he brought these designs (or no doubt copies of them) to Dresden. There were indeed in the Sächsische Landesbibliothek at Dresden seven volumes of drawings which had been in the possession of Bodt. One portfolio dealt with designs for the cathedral of Berlin, one with the Schloss of Potsdam, one with barracks, one with churches, two with houses, one with triumphal arches and two with war machinery. That leaves yet one more, and to this I shall have to revert a little later. The present whereabouts of all these drawings cannot be ascertained, but fortunately Professor Ladendorf had studied them all and had also had many of them photographed. Bodt must have valued the Whitehall drawings specially highly; for in a note on his former belongings at Dresden[15] it says that he gave their value as 200 pistols. Unfortunately, however, Professor Ladendorf could not discover any of them, though there were a number of plans and elevations for unnamed palaces. Bodt probably did his designs not after the fire of 1691, as the *Dictionary of Architecture* says, but after the more damaging one of 1698. The latter date is more likely, as Bodt was in London and free from military duties in that year and the early part of the next, whereas in 1691 he was in Ireland and in 1692 in Flanders—aged then only twenty-one and twenty-two. So these unknown drawings of Bodt's were done in competition with Wren's grand and Baroque ones, and one would like to know under what terms of reference. Wren was Surveyor General, Bodt was just a Captain of Artillery. Perhaps one can assume that King William really knew and liked him and so had made it possible for him at least to put forward his ideas.

If only we knew them. However, we know of ideas of his for another, *the* other, major royal building of these years; for among the Dresden drawings there were three[16] called 'Plan d'une maison des Invalides pour le Roy Guillaume,' 'Elévation de la même Maison' and 'Perspective de la même.' These are reproduced as illustrations 1–3. They cannot refer to Chelsea which was complete by 1691, but they can—only just—refer to Greenwich. It is true that Wren had been asked in May, 1695, by the Grand Committee to design the new buildings, and that building started in 1696 and went forward briskly.

As for Bodt's designs, there are only three possibilities. They were made for another Maison des Invalides projected by William, which is not likely. Or they were made for Greenwich by one who did not know how much of the final designing had already been done when building started, which is also unlikely, or they were done for the King about 1694–5 while Bodt was in Flanders. This last suggestion is perhaps the most probable, as the drawings do not take the site at Greenwich into consideration. In the portfolio where they were kept in Dresden they were followed immediately by the plans 'pour une Maison des Invalides pour M. le Roy de Prusse.' This proximity may explain how the Greenwich drawings were preserved in the first place. However, Bodt's plans for this Chelsea for Berlin were indeed done, 'pour le roi de Prusse,' i.e. remained unexecuted. The Prussian Maison des Invalides or Invalidenhaus was built only in 1748.

The Greenwich drawings are entirely French in their sources. There is nothing English or Dutch about them. Their immediate pattern is the engraving (illustration 4) of Libéral Bruant's Maison des Invalides in Paris, begun in 1671 and completed in 1676 except for Hardouin-Mansart's church of St. Louis des Invalides begun in 1679 and not completed until 1691. Bruant has not only the arrangement of a large centre forecourt with symmetrically arranged side courtyards, but also the church projecting beyond the rectangle of the rest and even the very unusual semicircle instead of a pediment in the frontispiece—in Bruant's case of the gatehouse, in Bodt's of the church. The courtyard with the curved side is an addition of Bodt's, inspired perhaps by the circular courtyard in such Whitehall drawings of Inigo Jones and John Webb as 5, or by Vignola's circular courtyard at Caprarola or indeed the Piazza of St. Peter's in Rome. The trefoil at the chancel end of an aisleless chapel on the other hand is again a direct borrowing from France. Ducerceau had planned two such chapels in side courts of Charleval, 6, the majestic palace projected for Charles IX.

The Hospital for Frederick I, dated 1702, 7 and 8, was a little smaller in size, but equally French in its motifs such as the upper giant pilasters, the trophies and the mansard roofs, and there was in the same portfolio at Dresden a variant design, much smaller but with the plan of the church on the pattern of the Greenwich plan, and yet another, apparently without plans, where the semicircle of the church entrance at Greenwich is taken over and combined with a French pavilion roof. All these belong rather to Bodt's Prussian than to his English phase and do not further concern us here, especially as they show little similarity with Wentworth Castle. The Zeughaus or Arsenal in Berlin, Bodt's principal job there, offers more

[9] W.O. 51/55.

[10] W.O. 53/1-9.

[11] W.O. 53/1-9.

[12] W.O. 46, 4, pp. 20-24.

[13] W.O. 46, 4, p. 55.

[14] Preuss. Geh. Staatsarchiv, Rep. 47, 9, MA 112; Ehescheidungs-Dispensionen, 1697-1713.

[15] *Catalogue des Livres d'Architecture etc.* XVIII. Jh., c 68.

[16] Staatsbibliothek, Archit. 271. Professor Ladendorf mentioned their existence in his *Andreas Schlüter*, Berlin, 1935, p. 55 and Dr. E. Sekler, *Wren and his place in European Architecture*, London, 1956, p. 191, referred to them as extant, but, of course, could know nothing about them. He pleaded, however, for an influence of Wren on a church design by Bodt dateable to after 1713 and illustrated it on pl. 79.

welcome comparisons, but on Wentworth Castle and its position and history a separate note is needed, and this has been written by Mr. John Harris and is appended here. What, however, ought to be mentioned at least for a moment before the Greenwich designs are taken leave of, is the curious similarity between Bodt's centre courtyard, with its curved sides and the chapel at the far end, and the designs for Greenwich, 9, first illustrated in volume VI of the Wren Society and attributed to Vanbrugh and the year 1702 and recently discussed again by Mr. Downes[17] with an attribution to Hawksmoor and a suggested date of 1711 or a little later. Must one assume that Hawksmoor had access to Bodt's scheme, or can the recurrence of the motif be accidental?

[17] K. Downes: *Hawksmoor*, London, 1959, p. 91, etc.

JOHN HARRIS

BODT AND STAINBOROUGH

The seventeenth-century house at Stainborough (now Wentworth Castle) had been a moderate stone-quoined brick affair built about 1670 around an earlier core.[1] Henry Cutler sold this estate in 1708 to Thomas Wentworth, Lord Raby, for £14,000; the reasons for Raby's purchase being twofold: the need for a large estate to support his aspirations for a peerage; and a desire to be in show-off proximity to Wentworth Castle (now Wentworth Woodhouse), the seat of his nephew Thomas Watson-Wentworth who had been bequeathed the house by the 2nd Earl of Strafford in preference to Raby, though Raby was really the head of the family.

Raby must have begun his new wing, 10, as soon as purchase was complete; for in a letter of March 15, 1709, Peter Wentworth says, 'A visit to Lady Bathurst, where I mett my mother and she desire I wou'd show your Plans. She stood amazed at it, and said the least such a building cou'd cost inside and out wou'd be ten thousand pounds . . . we wish you mony enough to finish such another wing, and long to enjoy it. . . .'[2] It is doubtful that more than the foundations had been laid for in February, 1710, the question of a stone or brick house had yet to be decided. Raby says, 'I am going on as hard as I can drive with my building and am at last persuaded to make it of brick and stone as Hampton Court is and wch I am assured will look better than all stone.'[3] This decision must soon have been reversed. The letter just quoted was written from Berlin where Raby was Ambassador to the Court of the King of Prussia, and it was from Jean de Bodt, the King's architect, that Raby acquired the designs for his house. Bodt's identity in this respect was first revealed by Horace Walpole in a letter to Richard Bentley of August, 1756, describing the new east wing as 'a pompous front screening an old house; it was built by the last Lord, on a design of the Prussian architect Bott . . . the only pair of stairs is engrossed entirely by a gallery of 180 feet on the plan of that of the Colonna Palace at Rome. . . .'[4]

Bodt's designs have lain for long, not unnoticed, but unidentified, in the Victoria and Albert Museum[5] and, although not signed, can be verified by comparison with Bodt's documented designs. The provenance of these drawings is somewhat complicated; for the drawing of the façade, 11, was acquired in 1890 and the two sections, 12 and 13, in 1937 as part of a volume of drawings mostly by John Talman and his Italian draughtsmen. The elevation is inscribed in Bodt's hand in French, 'Elevation de la facade du Batiment neuf' and in a different hand, 'W.T. del et inv.' The transverse section is inscribed 'One end of a Gallery' and 'J Talman' and the longitudinal section, 'Coll J. Talman.' These inscriptions have caused scholars to attribute the design to William Talman—an attribution justifiable from the evidence but not on grounds of style. The volume containing the sections came from the collection of Francis St. John of Thorpe Hall, outside Peterborough, and is inscribed by St. John, 'Bt at M Talman's Sale feb 2d 1725/26 £7 .10'.[6] St. John would in any case have been close to John Talman, as his daughter married Giacomo Grisoni, one of Talman's draughtsmen. It is surprising to find designs for Stainborough in the Talman Collection only a year or so after the house had been completed, and the only explanation seems to be that there had been an earlier Talman connection with the house. A further Talman link is the similarity of the bay plan of the elevation to an unexecuted project by William Talman for Castle Howard of c. 1698.[7] Unless this is a coincidence it suggests that Bodt had access to Talman's designs. This is, of course, quite possible, as in any case we know now that Bodt was in England in 1698 and engaged on architectural pursuits. Perhaps Talman was first commissioned for Stainborough, worked up an old plan for Castle Howard and fell out with Raby who passed his plans on to Bodt. Or perhaps, as Bodt was in Berlin in 1708, the need for an executant architect arose and Talman was chosen for this task.[8]

Whatever may have been the state of affairs in 1708, by 1709 Raby was directing his own building operations by letter from Berlin and this had repercussions among his friends. Peter Wentworth says, on the 22 May 1711, 'When I was at the Duke of Shrewsbury's my Lord Scarborough was there and he was talking of his building, and they did agree there was no building

[1] Discussed in *Country Life*, October 18, 25, 1924.

[2] Peter Wentworth, Lord Raby's brother. Cartwright, J. J. *The Wentworth Papers*, 1883, p. 79.

[3] British Museum, Strafford Papers 22229, f. 91.

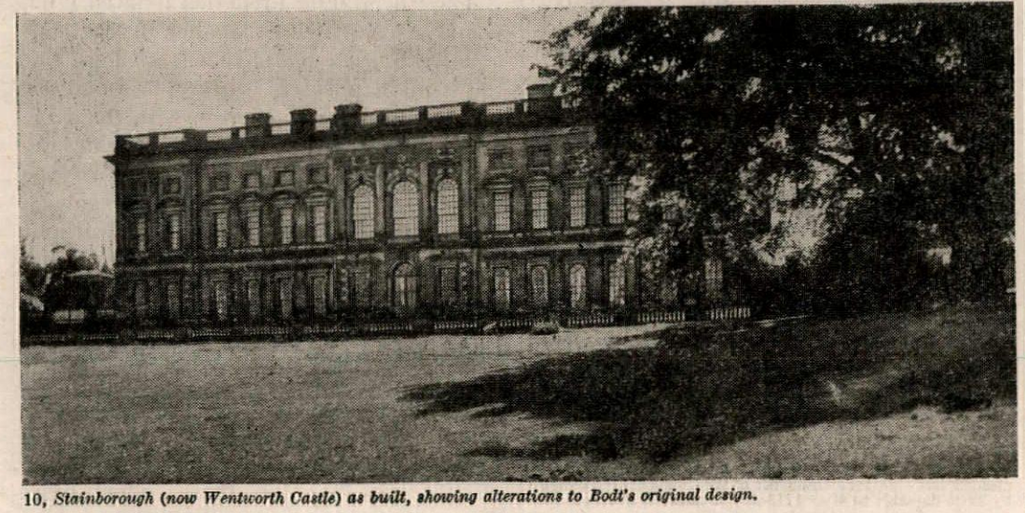
[4] Letters of Horace Walpole, ed. P. Cunningham, 1857, vol. III, p. 28.

[5] V. & A. D. 212,1890 and (Album) 92. D. 46.

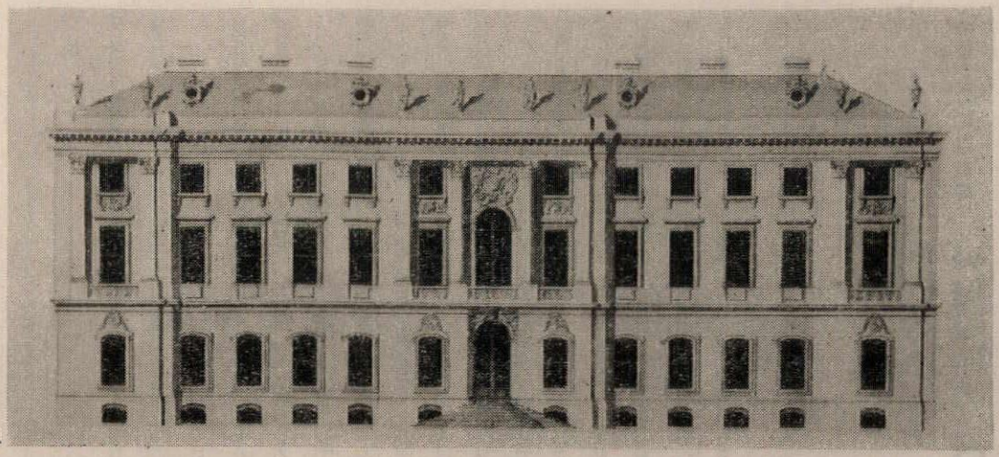
[6] An undocumented sale before John Talman's death in November, 1726.

[7] RIBA Library. cf. Whistler, L., *The Imagination of Vanbrugh And His Fellow Artists*, 1954, p. 32.

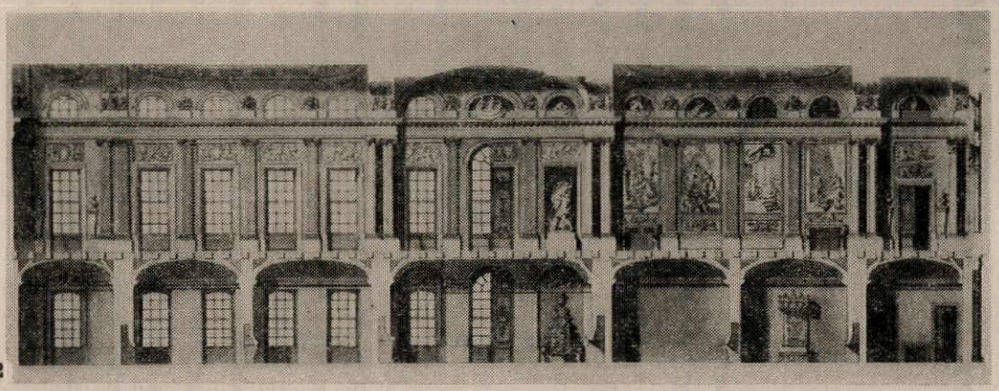
[8] Talman was possibly the most cosmopolitan minded of the later seventeenth century architects. He almost certainly knew Daniel Marot.



10, *Stainborough (now Wentworth Castle) as built, showing alterations to Bodt's original design.*



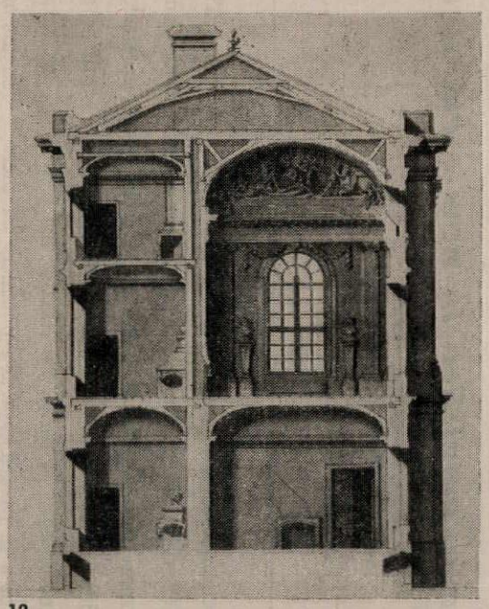
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11, *John Bodt's original elevation for Stainborough.* 12, *longitudinal section.* 13, *cross section.*

without a Surveyor, even when they agreed by the great, Wch agrees with the advice Mr Benson is always desiring to send you word, you must be at the expense wch in the main will be mony saved, for a blunder in building is not to be repaired without a great expense and loss of time and labour.'[9] The mention of Robert Benson is significant; for at this time he was building his own house at Bramham with Thomas Archer as his architect. As early as April, 1709, it had been suggested that Benson look after Raby's building. Probably Archer was indeed sent over from Bramham; for Raby wrote to him from The Hague on April 17, 1714, 'Upon what you told me at Windsor, I sent to Mr London, and had he not died as he did I had certainly got the plan of my gallery at Stainborough but not having nobody at London, that knows it unless youll be so kind one day as you go to the Park through Spring Gardens to call upon his widow, and look over his plans, to find that of my gallery.'[10] There is no reason to suppose that George London was an architect as well as the King's Gardener, but he was the gardener habitually employed by William Talman. Archer replied to this letter on April 20, 'As to Mr London's affairs I have promised Mr Wentworth to wait on him, if he will obtain leave from



13

Mrs London, and to view the Drafts in order to find your Lordship's own. . . .'

Progress of the work cannot have been quick; for in 1713 the roof was still to be raised, as is revealed in a letter from a builder and surveyor, Edward Reeves (August 25): 'My Lord. I have considered how many yards of wainscot there will be in all ye Hall story and in ye Gallory only at Stainborough. . . . They have got up all the great beams in Yorkshire and will soon be ready to set ye cornish and raise ye Roof. Therefore could wish I was there to see if the windows would do to stand in ye wall to Light those rooms behind ye Gallory, if not that there might be some from above before it be leaded.'[11]

Bodt's elevation conforms to the stylistic trend of early eighteenth-century Franco-Prussian architecture and of his own work. The central three bays are close to the end three bays of his unexecuted project for a palace for the Elector at Dresden[12] where the roof is suppressed behind a parapet as was eventually the case at Stainborough. Small details like the mass of relief sculpture above an arched window are favoured by Bodt; for example to the side entrances of the façade of his project for Berlin Cathedral.[13] In execution Stainborough, 10, received a more Baroque articulation and fenestration. Bodt's slight end projections were made into paired bays; the upper-floor windows were squared with lugged corners; the first floor ones were given bracketed segmental pediments; and the ground floor ones included fat waisted pilasters to the basement windows below them. It is perhaps significant that many details differ between the front as built and as shown on the earliest engraving published in 1713 and drawn by C. Holtzendorf who was secretary to the Embassy in Berlin. These final alterations could be due to Archer; for waisted pilasters in this context appear at St. Philip's, Birmingham, 1708, St. John's, Westminster, 1711, and Roehampton House, 1712.

Progress on the interior must have been slow; for on August 29, 1720, Daniel Harvey of York signed an agreement for '4 capitals after ye Corinthian order . . . to 4 marble pillars . . . in the gallery . . . of Stainborough Hall.'[14] Like Bodt, Harvey was French and perhaps also a Huguenot and is recorded as *sculptor* and *Architector peritus*.[15] None of Bodt's suggestions for the interior decoration was executed, and the interior of the gallery was considerably modified to a Palladian correctness. In 1725, Lord Bathurst comments, 'the gallery is a very magnificent room now the pillars are up.'[16]

Two other houses in Yorkshire exhibit features not alien to Stainborough: Wentworth Woodhouse, its neighbour, is said to have received its west front between 1725 and 1728 also in a Franco-German style with a centre-piece that is close in manner to Stainborough and anticipating Schlaun's and Cuvilliés's palace at Brühl (c. 1735); and Beningborough Hall dated 1716, and built for Thomas Bourchier, also Franco-German in details and with panelling identical to some at Stainborough. It is a house whose architectural history needs elucidation.

[9] Cartwright, op. cit., pp. 199-200. Heythrop was by Archer and Lord Scarborough may have been employing Gibbs.

[10] British Museum, Add. Mss. 31, 141 ff. 1550-169.

[11] British Museum, Strafford Papers, 22241, f. 5.

[12] Pierre du Colombier, *L'Architecture française en Allemagne au XVIII siècle.* I Texte, 1956, Figs. 19, 20.

[13] Colombier, op. cit., Fig. 12.

[14] B. M. Strafford Papers, 22241, f. II.

[15] His tombstone. Drake, *Eboracum*, 1736, p. 260.

[16] Cartwright, op. cit., pp. 455-56.



The Functional Tradition exemplified in new structures of the OIL AND STEEL *industries*

Described and photographed by Eric de Maré

Many long and esoteric works for the instruction of experts have no doubt been written about the strange technological structures of these two great industries. Here I have little to say about their technical aspects, my purpose being merely to point out, mainly by illustration, their particular visual virtues. Situated as they often are in the tufty, windy wastelands of distant coastal swamps, protected by miles of peripheral fencing and firmly guarded at their approaches by large, polite men in peaked caps, few outsiders see these structures, except such visitors as photographers on lawful commission.

The structures (buildings is hardly the right word) are highly complex in their operations and details but quite simple in their general forms and purposes. Those purposes are, in the one case, to break down crude oil into useful derivatives such as petrol or chemical fertilizer, and, in the other, to convert iron ore first into steel, and then, by rolling it, usually when hot and plastic, into sheets, joists and other solid objects. A steel works can, indeed, be regarded as a kind of huge bakery.

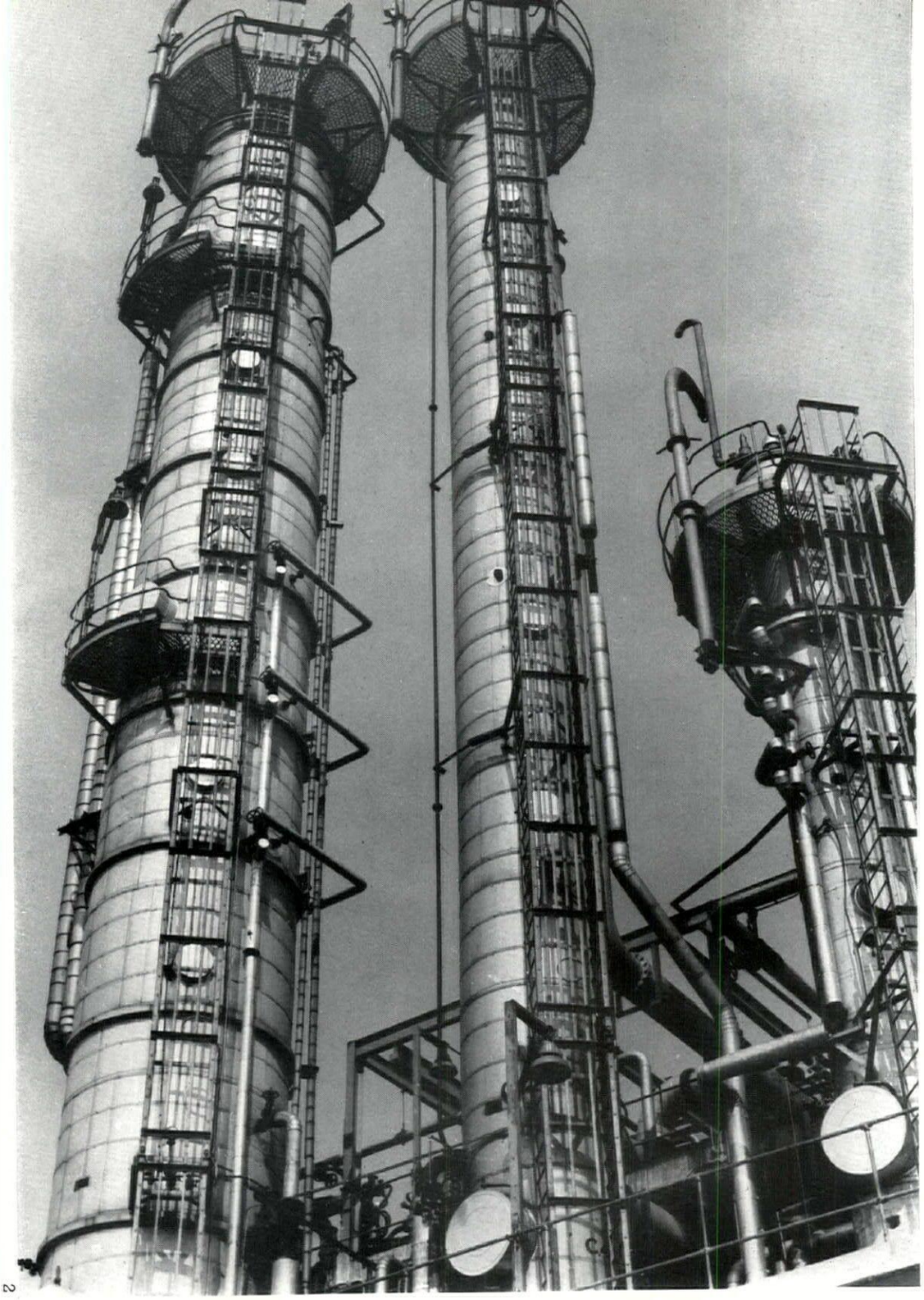
These works, built mainly of steel, aluminium alloy, concrete, brick and asbestos-cement sheet, have no conscious aesthetic pretensions or aspirations; yet they do often achieve a formal beauty, even sometimes a nobility and a grandeur, which is all their own. Perhaps one day—if any should survive the rapid advances and changes of applied science—they will be regarded as the true architectural monuments in the Machine Aesthetic of our times. They can at present be legitimately considered as examples of the continuing Functional Tradition. Even the gay paintwork of their parts, though highly decorative in effect, is purely functional in intention; for example, a pipe, among a maze of pipes, will be articulated by a specific colour to represent, beyond the possibility of confusion, the particular gas or liquid moving within it, or the brilliant zig-zag stripes on a diesel engine or swung carrier will serve as a warning to the careless eye.

With their vast, abstract compositions and silhouettes of spheres, cylinders and other forms of solid geometry, sometimes arranged in endless, dream-like perspectives and rendered bolder by contrast with their thin filigree attachments of stairs and ladders—with their glittering towers and chimneys rising up with elegant but unselfconscious and purposeful audacity from the flat and treeless landscape, and dwarfing the rare and insignificant human figure—these works, often regarded as hateful ravishers of the poet's Earth Goddess, can stir the romantic mind with visions of the wonderful and inexplicable palaces and cities of an exotic science-fiction world.

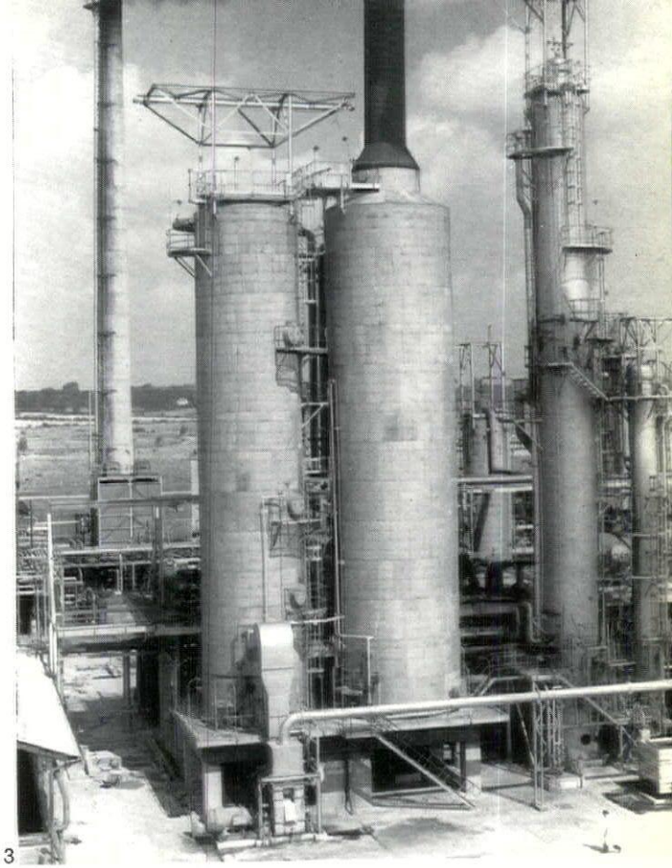
We are heirs of early industrial squalor and *ad hoc* experimental confusion, but this should no longer blind us to the clean and tidy freshness and the remarkable visual cohesion and drama of these latest artifacts of industry.

1 (*facing page*), *solvents distillation columns at the Shell Chemical Co.'s works, Stanlow.*



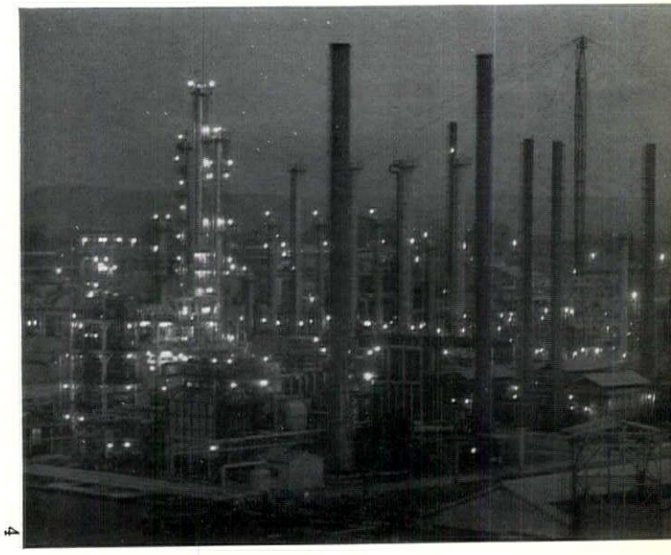


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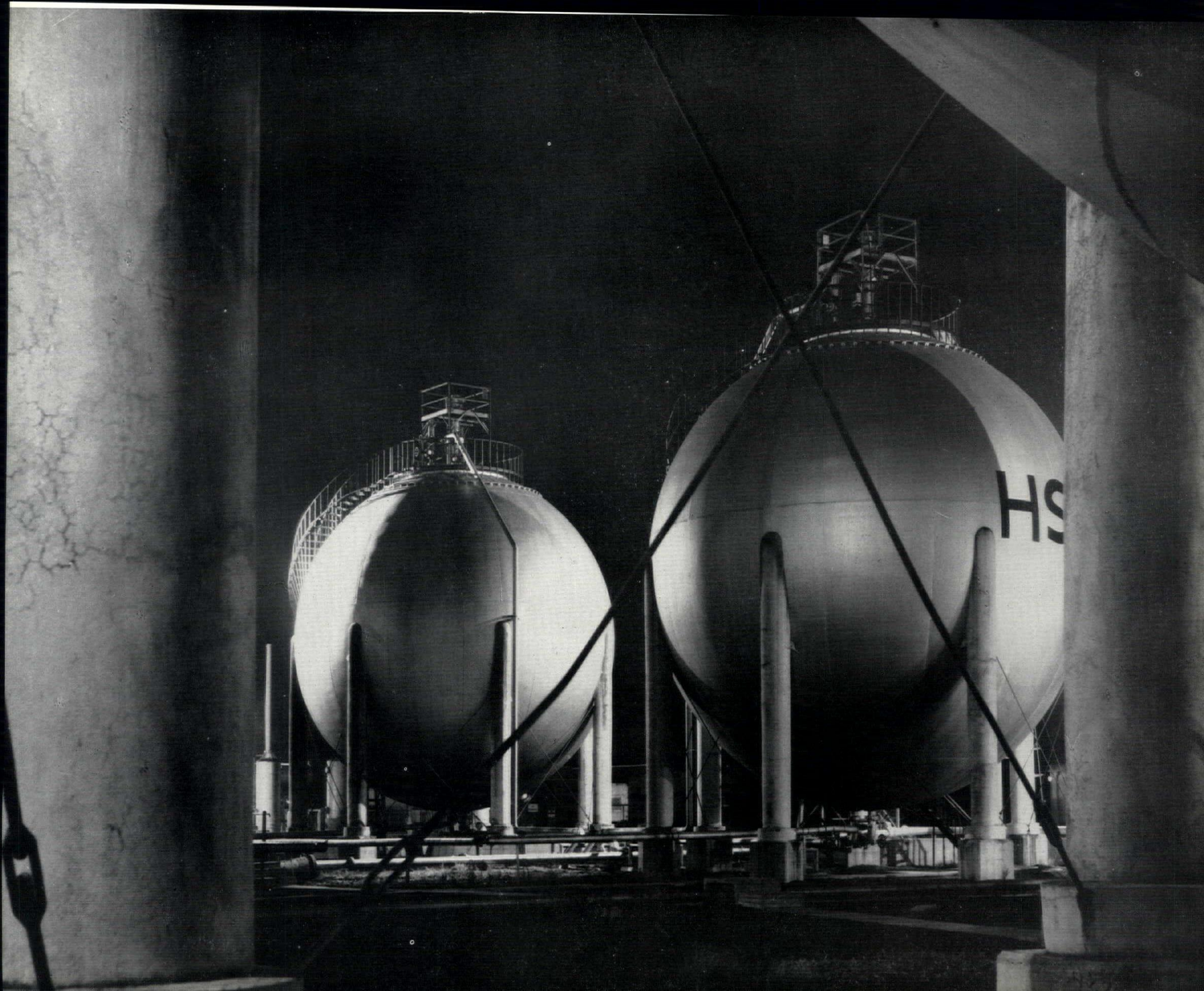


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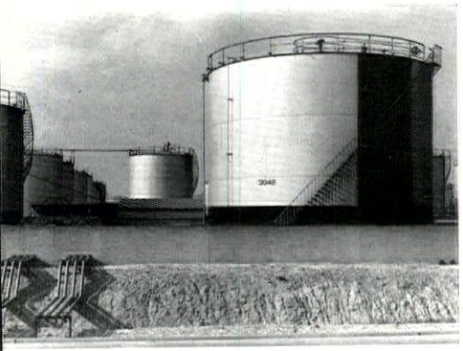
2, distillation columns of detergent alkylate plant, Shell Chemical Co., Shellhaven. 3, carbon monoxide conversion unit at the ammonia plant, Shellhaven. 4, dusk view of the propane pyrolysis furnaces and the solvents area of the Shell Chemical Co., Stanlow. 5 (facing page), Horton spheres for storage of butane gas at the British Petroleum Co.'s Kent refinery.



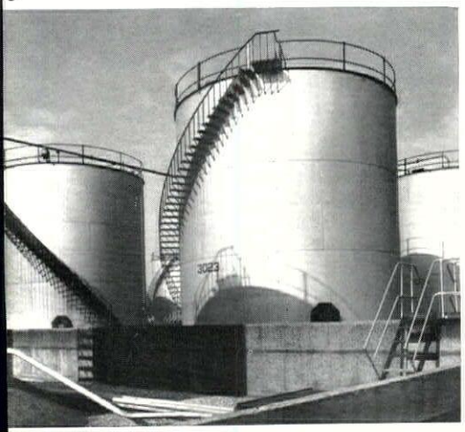
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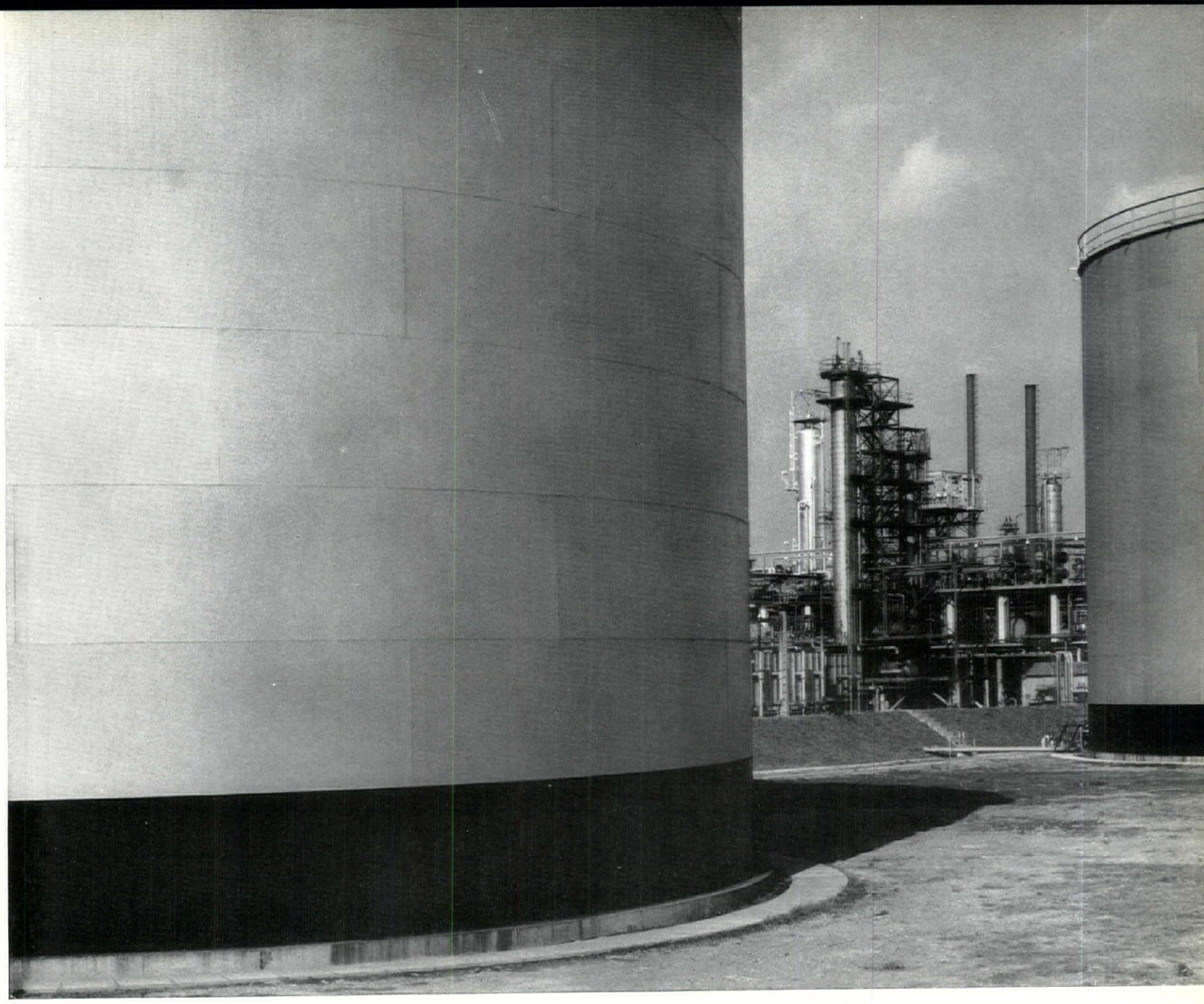
Modern Functional Tradition in the oil industry



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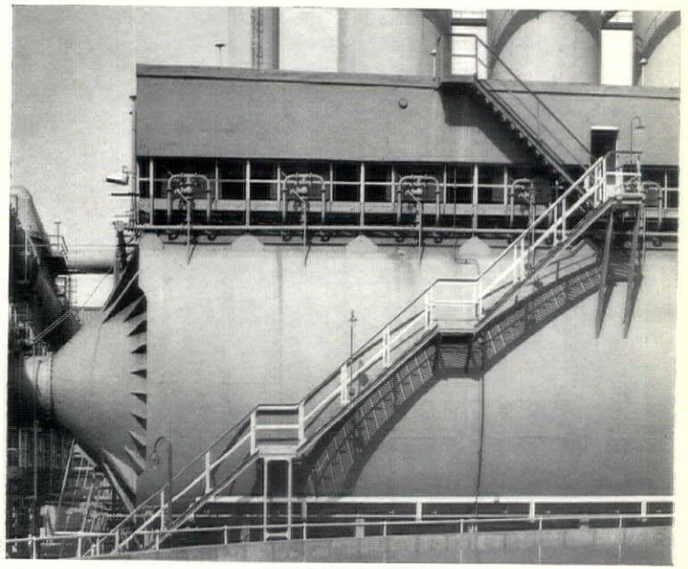
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6 and 7, solvents storage tanks at the Shell Chemical Co.'s works, Stanlow. 8, distant view of oil refinery between storage tanks at Shellhaven. (The photographs on pages 37-40 are reproduced by permission of the Shell Chemical Co., The Shell Co. and the British Petroleum Co.)

Modern Functional Tradition in the steel industry

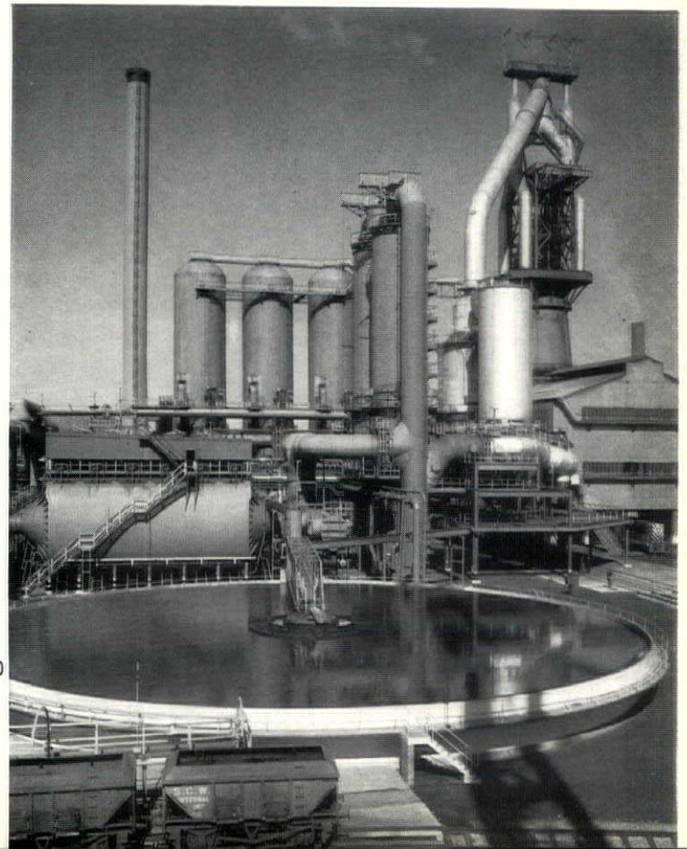


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These photographs and the one overleaf were taken at the Margam and Abbey Works of the Steel Company of Wales, which are entirely devoted to the production of sheet steel, and by whose permission they are reproduced. 8, 9 and 10, the No. 5 blast furnace, one of the highest in the world, and ancillary plant.



8



10



Modern Functional Tradition in the steel industry

11, *south end of the mill building, Abbey Works*

ID DR *stands this month for industrial, instead of interior, design—see explanation on right.*

The last extensive surveys of industrial design by the Architectural Review *were published ten years ago around the time of the Festival of Britain, including an essay enquiring into the progress of the newly-formed Council of Industrial Design by Nikolaus Pevsner, and a critique of the designs selected for the Festival, both in December* 1951. *Any reader looking back at these articles today will be struck by the apparent calm and certainty with which judgment was passed on individual products, a situation bespeaking settled and widely-held standards such as conspicuously do not exist today, when different sections of 'informed opinion' (who were allies and firm friends ten years ago) not only differ in their judgments on individual products, but differ even more fundamentally on methods of criticism. The article which follows examines the position of the architect in these changed circumstances accompanied by a marginal chronicle of the new men and new concepts that have emerged in the decade just past, the coincidence of the IUA Congress with the tenth anniversary of the Festival providing a compelling occasion for their review.*

Reyner Banham

DESIGN BY CHOICE

It is said that Industrial Design has altered out of recognition in the last ten years. Alternatively, it is said that only fashions have changed, and that Industrial Design is what it always was. It would be as well, therefore, to start by setting out what is unchanged, and what has been transformed. Firstly, the *subject matter* of Industrial Design has not changed; it is still concerned with (*a*) quality (materials and workmanship); (*b*) performance (functional and human) and (*c*) style (of appearance and use). Secondly, the *problem* of Industrial Design has not changed; it is still a problem of affluent democracy, where the purchasing power of the masses is in conflict with the preferences of the élite. In a subsistence economy there is no problem (though progressive Indians are just beginning to be aware of it) and in a controlled society there is no problem—a couple of jovial interruptions, larded with Ukrainian proverbs, at the relevant annual congress will put things right.

But, in the affluent democracies where the problem exists, the whole manner of squaring up to the subject matter of Industrial Design has changed, because the foundation stone of the previous intellectual structure of Design Theory has crumbled—there is no longer universal acceptance of Architecture as the universal analogy of design. When the Modern Movement was young, there were obvious and valid reasons for giving architects hegemony over the training of designers and the formulation of theory: architects alone of arts men had any technical training even remotely applicable to product design; alone of tech-men they had a sufficiently liberal education to be able to relate their designs to the general environment of human life; they alone had been doing anything consciously to further the practice and theory of Industrial Design.

Almost everything of interest written, said or done in this field between 1900 and 1930 is the work of an architect or someone closely connected with architecture—Voysey, Lethaby, Muthesius, Gropius, Wright, Le Corbusier, Moholy-Nagy, all heirs of the polymath attitude of the Morris/Webb circle of the previous century. In the next twenty years to 1950 the architectural claim was accepted by writers like Edgar Kaufmann and Herbert Read as the natural basis for argument—the latter announcing in his *Art and Industry* of 1934 'I have no other desire in this book than to support and propagate the ideals . . . expressed by Doctor Gropius.' The only novelty of even apparent consequence in this line of thought did not appear until 1954, when G. C. Argan, at that year's *Triennale* Congress proposed that urbanism, rather than architecture, should be at the head of the design hierarchy.

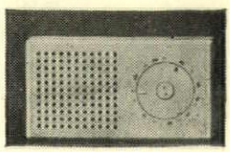
But even at that date, alternative estimates of the nature and principles of Industrial Design had begun to appear. Paradoxically, while most of these favoured the kind of design associated with the architectural dispensation—spare, neat, unadorned, etc.—they defended it by arguments that could equally well have been used to favour completely different styles of design. The classic instance is Hayakawa's essay, memorably entitled *Your Car Reveals your Sex Fears*, which assailed Detroit styling by means of semantic and ikonographic arguments that could equally well have been used to demonstrate, say, how the London taxi, acclaimed by Charles Eames as the best industrial design in the world, reveals the communal death-wish of the English ruling classes.

1951-1961

an alphabetical chronicle of landmarks and influences

Alarmist Literature: In the 1950's the shortcomings of some aspects of product design became a subject for sensational journalism which—in some cases—contained an element of serious warning. The most prolific of these professional Jeremiahs was the American writer, Vance Packard, whose book *The Hidden Persuaders* drew attention to the social consequences of motivation research (q.v.). His subsequent works *The Status Seekers* and *The Waste Makers* continued variations of the same theme of social enquiry into design, but began to suggest that he had fallen victim to the very situation against which he was protesting: his elevation to the best-seller class involved him in the dynamics of the mass market and more or less committed him to bring out a 'new model' every other year. At a less sensational level, warnings to consumers were transmitted in Great Britain by way of the Editorials in *Which?* and *Shoppers' Guide*.

Appliance: The increasing mechanization of households in the Western world, and the beginning of mechanization of households in other continents, gave a special status to electrical and other power-operated tools in the eyes of manufacturers, designers and consumers. The rise of 'do-it-yourself' acquainted many householders with small power tools for the first time, but also introduced a degree of mechanization into the creative work of painters, sculptors and designers, thus giving them an increased first-hand knowledge and sympathy for the world of appliance design—the whole output of Charles Eames (q.v.) can be related in one way or another to the mechanization of the designers' workshop, but appliances also claimed a widely recognized function as indicators of the social status of their owners. The diversification of different types of refrigerators and washing-machines, not to mention the almost annual increase in the screen size of television sets, became a recognized method of indicating or claiming improved social and financial status, and was duly damned by puritanical critics and sociologists. At the same time, however, certain less grandiose appliances became the accepted symbols of intellectual status—the possession of an Olivetti typewriter (q.v.) or a Braun gramophone or radio became one of the standard ploys in the world of intellectual snobbery.



Braun radio

Eames must be saluted at this point as the last figure from the architectural side to make a significant contribution—with his Ahmedabad Report—to design thinking. Otherwise, architects have relinquished control of the mind of design to theorists and critics from practically any other field under the sun. The new men in the USA, for instance, are, typically, liberal sociologists like David Reisman or Eric Larrabee; in Germany, the new men at Ulm are mathematicians, like Horst Rittel, or experimental psychologists like Mervyn Perrine; in Britain they tend to come from an industrial background, like Peter Sharp, John Chris Jones or Bruce Archer, or from the pop-art polemics at the ICA like Richard Hamilton. In most Western Countries, the appearance of consumer-defence organizations has added yet another voice, another viewpoint, though no very positive philosophy.

In these circumstances, where no single viewpoint is sufficiently widely held to make effective communication possible, arguments tend to be conducted in an eclectic framework of postulates gathered from a variety of disciplines; the basis of selection may be unscrupulously slanted to justify some point of view to which the speaker is committed (this is true of most arguments on aesthetics or styling) or, more honestly, to give directions through a field that needs to be explored—hence the pre-occupation with information theory at Ulm, where it is felt that many pieces of equipment are insufficiently explicit about their functions and mode of use. Lash-up formulations of this sort are, of course, only *ad hoc* intellectual structures and should be neatly put away when they have done the job for which they were assembled. Thus, a narrowly Stalinist frame of reference, rigidly maintained beyond its last point of utility, has resulted in the sterility and subsequent disappearance of radical left-wing design criticism in Western democracies, and leaves intelligent socialists, like Richard Hoggart, apparently sharing the opinions of an 'Establishment' that they otherwise despise.

For those who are not too rigid, however, the situation is, as the saying goes, manipulative—it is possible to discuss anything, even the validity of the architectural claim. Not on the basis of right or wrong—Industrial Design can use a short rest from exclusive moralities—but on the basis of what contribution architects could reasonably be expected to make, and the needs they might reasonably hope to see satisfied.

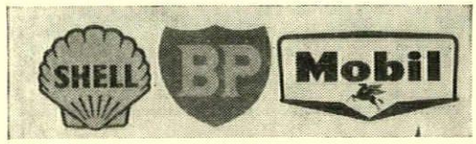
Looking back, one sees that in truth large parts of the architectural claim have never been seriously pressed—aircraft design, for instance, has cheerfully been left to aerodynamicists, architects retaining only the right to criticize the results. There are other areas where architects have persistently intervened—pleasure boats are an example—without contributing anything very interesting to their design; clearly, architects have extra-curricular activities where they put their professional skills on one side. But, where, then, is the architect's real area of painful or profitable involvement with industrial design? It is easiest to define convincingly by considering questions of scale and propinquity—how big things are, and how near to buildings. A survey of architectural communications such as conversations, letters to editors, and other daily small-talk will show that architects are hypersensitive to the design of objects roughly comparable in scale to building components. Some of this sensitivity is simply an atavistic relic from the days when the architectural claim was universal in its coverage, but if it is trimmed down to include only objects in or near buildings, then it makes operational sense. Architects are clearly right to be concerned over the design of things like automobiles, lamp-posts, refrigerators and crockery, since these are classes of objects that commonly inhabit the same view, occupy the same space, supplement the functions of their buildings and no one in his right mind will deny their right to be heard on such subjects.

To say this is not to revive inflationary or imperialistic claims that architects are 'total designers' or 'responsible for the whole human environment,' but simply to say that even if the practice of architecture is viewed in quite a narrow and conventional professional sense, there is a wide variety of equipment which is not structurally part of their buildings nor mentioned in the specification, but is, nevertheless, their concern and ought to be much more their concern than it is at present. Even if we no longer regard the architect as the universal analogy for the designer, a large area of the architectural claim is rightly his. But if this is an area where he has rights, then he also has responsibilities. If he is to be heard, then his utterance must carry weight—howls of 'I won't have that ugly trash in my building' will no longer serve, reasons must be given, improvements suggested.

But how? If architects have lost their original dominance over the field—a dominance

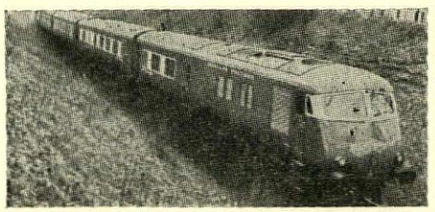
Aspen Congress: One of the major international centres of discussion of industrial design was established at the mountain resort of Aspen, Colorado, which had been built up by the late Walter Paepke, President of Container Corporation of America, as a species of secular retreat for meditation and discussion among business executives. The Annual Design Congress there, of which there have been now twelve, confronted the leading opinion-makers of the American business world with designers, manufacturers, critics and theorists from Europe, South America and Japan. While the findings of these congresses don't constitute a body of literature comparable with that of CIAM, the reports made annually by speakers returning to their native countries and customary business, have provided a running survey of the preoccupations and troubles of thinking designers all over the world. Aspen has, to some extent, replaced the Triennale (q.v.) as a world centre of opinion and debate.

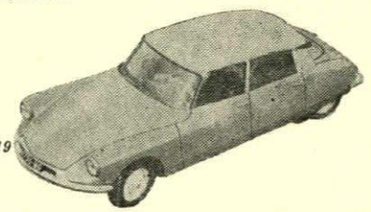
Brand Image (or House Style): During the 1950's it became the practice in all large industrial concerns to inculcate into the minds of the public a recognizable style to identify their products or services. In many cases this was a process of necessary rationalization where a large firm found itself with a number of different styles and a number of different designers. Where unification of style was undertaken as a form of rationalization and in good taste, this process was known as 'creating a house style,' but where it was undertaken as part of an advertising campaign it was called 'fixing the brand image.' Examples of both processes can be seen in the stabilization of the design of filling-stations and filling-station equipment by such companies as Shell/BP or Esso, both of whom developed international styles in the period; in the restyling programmes undertaken by brewery companies like Courage in the earlier 1950's, and Watney towards the end of the decade; and in the restyling of chain stores.



brand images

British Railways: Though it is the largest industrial concern in Britain, and probably in Europe, British Railways did not set the universally high standards of design that were hoped for at the time of nationalization. Nevertheless, valiant efforts were made, in spite of the progressive dismemberment of British Railways into independent regions, and as nationalized concerns go, it has probably done as much as any, except the Post Office, to promote a lively attitude to design. The change-over to diesel traction has had industrial designers built into the contract as consultants almost from the beginning, and although there have been technical difficulties, the influence of Design Research Unit and of Jack Howe has been noticeably beneficial. Other British Railways adventures in design include experimental carriage interiors designed by various architects; the setting up of a Design Advisory Panel in an attempt to improve the style of station equipment; and the activities of Eastern Region's development group in improved ticket-office design; and in commissioning waiting-room furniture by Robin Day which should become standard for all regions.


midland pullman


D.S.19

Citroen: Like the Volkswagen (q.v.) the Citroen was one of the two fixed points in a world of rapidly changing car design—until 1957 when the familiar *Traction-avant* of 1934 vintage was dramatically replaced by the DS 19. Although few found it possible to admire the DS's apparent mixture of different automotive styles, brand-loyalty coupled with something like awe at its technical specification served to establish the DS, almost at once, in the same position of esteem as was enjoyed by the preceding model, and by the end of the decade its radical appearance no longer excited the same alarm as before.

always more *de jure* than *de facto*—what is their standing now? It is precisely at the level of objects comparable in scale to building components that the average architect's capacity as a designer begins to taper off, and this diminished capacity is due far less to technical ignorance of, say, electronics or gas technology, than to the training, experience and habits of mind that fit a man to be an architect. This combination of intellectual factors tends to make an architect not only unfit to design free-standing appliances, but even the interiors of his own buildings—as the ARCHITECTURAL REVIEW pointed out in justification of its *Interior Design* features in April 1958.

As was also pointed out then, the fundamental difficulty is incompatible rates of obsolescence; architects, for entirely valid reasons, are habituated to think in terms of a time scale whose basic unit is about half a century. Industrial design works on a variety of time-scales, roughly proportional to the bulk of the objects being designed, and none of them phased in units one fifth the size of the architect's. This situation is not the product of an evil economic situation, as professional alarmists like Vance Packard maintain (though there is a constant pressure towards hastened obsolescence in capitalist countries) but exists because industrial designers are creating objects in which the opposing forces of stabilized investment and technical improvement are in a different equilibrium to that governing the design of a building. A building-structure will not be disastrously out of date for some centuries in many cases, and there are lifts at work in London that saw the century in, but are still mechanically sound and have not been rendered noticeably obsolete by sixty years of technical improvement.

But a sixty year old car, even if in perfect mechanical condition, would nowadays cause traffic jams and invite accidents if it were let loose among the nimbler products of more recent decades—as witness the elaborate policing and marshalling required to isolate the carefully maintained veterans on the Brighton Run from real traffic. This is an extreme case of rapid mechanical obsolescence, no doubt (only by an architect's standards, by those of aeronautics or electronics, automotive technology has been sluggish) but it can easily be paralleled inside buildings—consider the history of electric lighting from carbon filament to colour corrected cathode, from the concentrated light source of a bare bulb in an exposed socket, that even Brutalists tolerate only as a gesture, to the even glow from a lumenated ceiling that psychologists and physiologists are already beginning to question for going too far the other way.

The design of light fittings is very much a case in point. On the basis of scale and propinquity, they lie firmly within the architectural area of concern. Over the years, a number of leading modern architects, from Rietveld to Utzon, have made forays into the field of lighting design, and—the product being mechanically simple—they have been able to produce equipment that was workable as well as handsome. But, reviewing the period covered by this development, one cannot help feeling that an excess of aesthetic and emotional capital has been squandered on ephemera. There is hardly any important modern-movement interior that is still lit as the architect originally designed it—not only the equipment but the whole installation has been rendered obsolete by later events.

In other fields, where their technical inadequacies are more obtrusive, architects can only do what they affect to despise in other designers—style up the outside of machinery that has been designed by somebody else. The polite name for this, of course, is 'built-in equipment' in which everything the architect is incapable of designing is bundled into cupboards that he *can* design. But this solution, too, is subject to the effects of technical obsolescence, as cookers, radios, and so forth, change their bulk, performance, power needs and relationship to the surrounding space, and entirely new equipment such as TV enters the domestic scene. Built-in equipment is little more than an attempt to impose a veneer of totalitarian order in a situation where something like democratic give and take may have been more to the point.

This, again, is not to ask the architect to abandon responsibility for the equipment in the buildings he is called upon to design, for it is possible to abandon the position of autocratic dominance implicit in Bauhaus theory without losing control of the over-all design. Very small powers of accommodation enable an architect to do what Le Corbusier anticipated as long ago as 1925, that is, to exercise creative choice. His *Pavillon de l'Esprit Nouveau* was entirely furnished and equipped from manufacturers' catalogues, without the architect himself having to design a thing.* Although the convincing unity

Consumer Research: The formal recognition of a specific consumer viewpoint in relation to industrial design is one of the more important new factors that has emerged in the 1950's. Viewed broadly, it covers market research into consumer preferences and human engineering or ergonomics (q.v.) as well as what is more specifically regarded as the defence of consumers' interests. Organizations for this latter purpose have emerged both at an official and unofficial level; thus most of the nationalized industries have some form of Consumers' Consultative Committee built into their administrative structure, and the British Standards Institute sponsors a Consumers' Advisory Council which publishes a periodical—*Shoppers' Guide*. However, there are also Consumer organizations whose attitude embodies an element of social protest, viz.: The Consumers' Councils in the USA and the Consumers' Association in England, which publishes a periodical called *Which?*, and whose leading figure, Michael Young, has even proposed the formation of a Consumers political party (see his pamphlet *The Chipped White Cups of Dover*).

Design Centre: The foundation of the Design Centre in the Haymarket, London, gave the Council of Industrial Design an opportunity to give tangible form to its views on design by placing on show a constantly changing selection of products, chosen by Committees appointed by the Council. Although the selections have constantly been a subject of dispute throughout the subsequent five years of the Centre's existence, they have undoubtedly performed an important function, if only in putting before the public alternatives to the normal commercial selections undertaken by buyers for even the most progressive shops. It was only towards the end of this five-year period that doubts began to be expressed that the Centre might be driving the Council of Industrial Design into something like a commercial position itself, when it was observed that the rents recovered from exhibitors at the Centre amounted to a sizeable proportion of the Council's income.

Detroit: If the most suspect aspects of commercial design were symbolized by any one object or class of objects in the 1950's it was by the American automobile and by Detroit, the centre of the United States automobile industry—the phrase 'Detroit-Macchiavellismus' was coined in Germany to describe everything that was felt to be hateful about US design. At the same time, there was a visible tendency to admire Detroit products for their unconventionality and boldness, and even in some circles serious attempts to discuss objectively their social and moral implications. In many ways Detroit was a symbol also for the War of the Generations, and the language of American automobile advertising became the language of revolt among the young. The hard core of any admiration for Detroit, however, was the belief that here was a language of visual design, no longer based on subjective standards like 'good taste,' but on objective research into consumers' preference and motivations. The phrase 'an objective aesthetic' could be taken to refer either to the absolute logic of pure form or to absolute subjection to market research statistics.



Ford Comet

Eames, Charles: Although a number of substantial figures in the world of design emerged in or around the decade following the Festival of Britain, none has made so great an impact on the world, both by his products and his personality, as Charles Eames. By 1951 his first chairs in moulded plywood on steel frames, were becoming known outside the United States of America, and were the inspiration of innumerable copies all over Europe, and in most other continents. It was generally recognized that the Eames Chair constituted the first major development in chair design since the Breuer chairs of 1928. After this there followed, in a bewildering succession, toys, films, scientific researches, lecture tours, special exhibits, three further generations of chairs, the celebrated Ahmedabad report on design in development countries, and a great number of awards and citations, culminating in the Kaufmann award to himself and his wife Ray in recognition of their work together for the progress of industrial design.

* There was one exception only to this programme, the free-standing cupboard unit, which Le Corbusier had, in fact, designed as a prototype for manufacture by Thonet.

of the total effect was doubtless helped by the fact that the rooms themselves had been designed in what he conceived to be the style of the objects that were to furnish them (and in this there is a lesson to be pondered), the whole operation was a triumph of disciplined and adventurous selection from what was at hand.

This, in practice, is how most architects and interior designers work anyhow. In the 1960's an architect knows he will be able to equip his interiors with Eames chairs, Noguchi lamps, Braun radios, Saarinen tables and so forth from stock, and the knowledge of their availability probably colours his designing, unconsciously, from the very beginning. Coloured, but not inhibited—the catalogues also offer him Bertoia chairs, Jacobsen chairs, Robin Day chairs; Utzon lamps, Rotaflex lamps, Atlas lamps. . . . The range of choice is so broad that the equipment of the building by objects that were not designed by the architect may not diminish the value of the finished work by one material or aesthetic particular. Indeed, the prestige inherent in knowing that the chairs are by one of the world's greatest industrial designers and the radios by another adds a peculiar lustre to the whole operation.

However, the very breadth of choice increases the architect's responsibility—he must resist the temptation to hand over the interior to Jacobsen, Noguchi, Bertoia and Co. His choice must be disciplined by a clear idea of what the building has to do, and if there is nothing just right in the catalogues at hand, then he must go to other catalogues, his choice must be adventurous—*none* of the furniture in the Pavillon de l'Esprit Nouveau came from the catalogues of 'domestic' furniture manufacturers, it was all office and factory equipment.

Here, indeed, is one of the points where the architectural profession has a job to do in industrial design. By way of contract furnishing, architects are among the most articulate and most powerful sections of consumers, in some fields the most powerful absolutely. They have power economically in the market, they also have experience that far outstrips that of any domestic consumer who perhaps buys a dozen chairs in a lifetime, they are trained to study functional problems and human requirements. Simply by the exercise of their market influence, architects may find that they are in a position to kill a poor design, encourage a good one, and embolden a manufacturer to tool up for a new product. Further, by their experience and training they should be in a position to advise and assist manufacturers and designers to produce better goods, even where mechanical complexity puts them (as in the case of communications, ventilating systems, etc.) right outside their technical competence as architects.

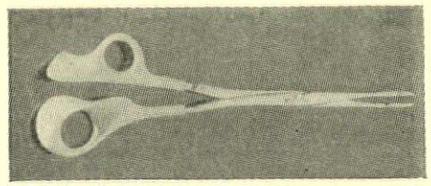
This proposition may not be news, but it is worth saying again because it still needs to be acted upon; it is a field where positive action can be taken. However, there will be large fields of activity where the architect's careful design will be filled with equipment not chosen by an architect or a sympathetic interior designer, but by an ordinary domestic occupier. Here is a classic instance of a conflict between mass taste and the preferences of an elite—or, in the form of words used to describe the situation when the *Unité* at Marseilles was ready for occupation, 'What will happen when the bourgeoisie move in with their inherited prejudices and imitation Louis Quinze wardrobes?' Le Corbusier's solution, to build in so much built-in furniture that there was no room for wardrobes and barely room to voice a prejudice, was, in fact, the result of unforeseeable circumstances,* and not even he would normally advocate so undemocratic a procedure.

For the architect simply to 'retire hurt' when faced with this situation, is no solution, and the idea of designing 'background architecture' of studied neutrality is an unconvincing attempt to make a thin virtue from a pressing necessity—there is no way of disposing a door and a window in a rectangular space without setting up a relationship that can be wrecked by an ill-placed TV set. The need is some sort of reasonably permissive architecture with built-in directions about where to put things. The so-called Appliance-House solution to this problem has tended, so far, either to take too much for granted, or to make heavy weather of the directions. Either it assumes too readily a community of taste between architect and occupier (Kikutake's 'Sky House' is occupied by Kikutake himself, so the problem disappears, but what happens when someone else moves in) or else—as in most of the Smithson projects in this genre—the whole house tends to degenerate into a series of display niches for ever-changing relays of hire-purchased status-symbols.

But there is no need for such elaborate controls, nor for hidden persuaders hopefully

* The *Unité* was originally designed to house the unfurnished proletariat.

Ergonomics: The most important branch of design science by the end of the 1950's was undoubtedly Ergonomics, which seemed likely to push matters of taste and aesthetics well into the background. As the derivation of the word suggests, the earliest studies to receive the name were concerned with economy of human effort in the operation of mechanical equipment, notably complicated electronic and aeronautical equipment developed towards the end of the War, some of which taxed the mental and physical capacity of its operators beyond the limits of efficiency. By the end of the decade, however, the term had been expanded by thinkers and readers in many parts of the world to cover all forms of relationships between man and equipment, including purely physical studies of human engineering and the communicative studies of control systems and others, in which matters of mental capacity and perception of vision were involved. Unlike most words or phrases, which are promoted to the level of slogans or catchwords, Ergonomics has generated little facile optimism, except for a faith that by patient and painstaking research the relationship between men and their tools can be improved. At one level this has meant quite simply the reshaping of the handles of traditional tools, but at other levels it has meant exercises as abstract as the devising of new sets of symbols for the keys on the control panels of computers.

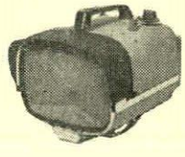


Hlavka handles

Festival of Britain: Great hopes were entertained for the influence that the Festival of Britain would have on the arts of design, and the level of public taste. At first sight, the whole exercise was a failure in these terms: its influence, as Sir Gerald Barry (its Director) more or less admitted in a 10th Anniversary lecture, has been practically negligible in the field of design—the 'Festival Style' has practically disappeared from the face of the land and left only a few travesties behind. But it is clear that for reasons that are not altogether coincidental, the Festival marks a turning point in the history of public taste in Britain. Public taste may not have improved, but it has become infinitely more sophisticated in the ten years since the Festival. This development must be attributed to the influence of the mass media such as television and illustrated magazines, but the Festival played a vital part in setting before the public an image of a brighter, smarter and more colourful world of design. This may not have been what the originators of the Festival set out to do, but in this they undoubtedly secured a lasting success.

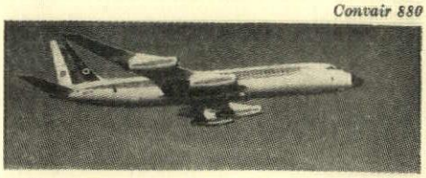
Italian Craze: One of the most remarkable developments of the 1950's was the craze for Italian design which galvanized the smarter elements of all classes of British Society. The Scooter, the Olivetti typewriter, furniture by Gio Ponti, hairstyling by Richard Henry, Espresso coffee and its attendant machinery, certain tricks of shape, design and display, and even certain type faces from the Nebiolo foundry, helped to stamp the image of Italy as the home of good design at all levels of consumption. The reasons for this development have baffled critics and sociologists from the time of its first appearance in 1953 to its waning around 1960. The Triennale (q.v.) was a major contributing influence at the level of conscious design. The cinema and motor-racing also played their part, but explanations based simply on good taste and engineering cannot explain the whole Italian mania. Espresso machines, as several critics pointed out, usually had a strong flavour of Detroit or 'Paris 1925.' There is little doubt that the rise of teenage affluence and the improved quality of inexpensive, fashionable clothes, had also a large part in the phenomenon.

Japan: In 1960 it was discovered that Italian manufacturers were plagiarizing Japanese designs for transistor radios—a situation that symbolized, as well as anything could, the change of exotic influences on Western design. Everything in the way of studied elegance and rare qualities in the handling of materials that had been true of Italian design, was found to be yet more true of Japanese, with the added incentives of the abstract power of Japanese calligraphy, the philosophical prestige of Zen Buddhism, and the technical aptitude of the Japanese for Miniaturization (q.v.). At the architectural level these developments were supported by the growing reputation of men like Kenzo Tange and Maekawa, and the final seal of Western acceptance of Japanese dominance was set by the enthusiasm with which Western designers, critics and theorists participated in the World Design Congress in Tokyo in 1960.



Sony transistor TV

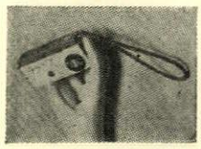
Convair 880



Jet Liners: The successful establishment of the Jet Passenger Liner in air transportation marked the first major break-through in air-line operation since the introduction of the first Boeings and Douglases early in the 1930's. They also marked a phase of increasing sophistication in air travel, and nearly all had their interiors designed by well-known industrial design offices, rather than by the aircraft designers. Whether French, American or British, all tended towards a grey and tan international style with aluminium trim, except for the Russians who resolutely maintained their traditional Victorian Rococo with cut-glass and flowers even on the TU104.

Magazines: Late in the 1950's one of the pioneer industrial design magazines passed away in one of those fits of financial cannibalism which currently overtake the British Press. However, *Art and Industry* had been displaced long before its death by the CoID magazine *Design* which—though born before the beginning of the decade under review—had gone from strength to strength in circulation, in breadth of vision (under the editorship of Michael Farr) and in international prestige. It was in particular one of the organs that made known the science of ergonomics (q.v.) to working designers all over the world. Its most distinguished foreign contemporaries by the end of the decade, though of varying influence in Britain, were *Industrial Design* (New York), the most professional of design magazines under the editorship of Jane Fiske McCullough who finally retired from the paper in 1960, and the other was *Stile Industria*, an offshoot of the Domus publishing house, under the editorship of Alberto Rosselli, which consistently maintained the Italian viewpoint, both on matters of practice and theoretical approach.

Medals and Awards: It was justifiably observed by an Italian critic that the ever-increasing supply of medals, certificates, prizes and other awards for designers, were signs of an inflationary epoch in design. As far as Britain is concerned the most important awards were those given by the CoID under a variety of names, finally stabilized as the 'Design Centre Awards.' These were supplemented in 1959 by the 'Duke of Edinburgh's Award for Elegant Design,' a clear indication of the vastly increased prestige of industrial design in the eyes of British governing classes. Perhaps the most hotly discussed of all awards in the 1950's was the 'Compasso d'Oro,' sponsored by the Rinascente store in Milan as a kind of annual supplement to the Triennale. Awarded on an international basis by an international jury, the Compasso d'Oro reflected a growing crisis on design criticism by being awarded in 1960 and 1961 to the CoID, and to MIT, thus showing a clear lack of any confidence in the jury's ability to select an individual design or individual designer for a premiation; in contrast, the jury of the Kaufmann award (founded in 1960) clearly had no difficulty in awarding their substantial money prize to Charles and Ray Eames.



Yashika camera

Miniaturization: The transistor radio has become the most obvious symbol of miniaturization in practice, and is the culminating development of a train of thinking in electronics which has been proceeding since the first airborne radar during the second World War. However, it is not the only trend in electronics, as witness the growing size of television screens, and it is not restricted to the electronic field. There has been a conspicuous and growing development of miniaturization in the world of personal transport, made possible by accumulated mechanical improvements over the previous 20 years. Italian motor-scooters at the beginning of the 1950's were succeeded by German bubble-cars in the middle of the decade, and by the BMC Ado 150 (Mini-Minor or Austin 7) at the end of the decade. At the same time, Detroit reversed its own committed policy and introduced a flock of compact cars which, like the European miniatures, were distinguished by radical technical improvements as well as their diminished size.

contrived out of plays of colour and lighting—though these have never yet proven sufficiently reliable to direct a Louis Quinze Wardrobe or seven cubic foot refrigerator to the point where the architect hopes to find it. On the contrary, the traditional location of a fifteen-amp plug next to the traditional British fireplace has done much to keep the TV set within the traditional area of focused attention in the traditional British sitting room. With this approach, the architect no longer attempts to impersonate all the characters in the drama of design, as in the days of the universal analogy, but becomes the producer of the play, handling a mixed cast of metropolitan professionals and local talent.

This is a workable situation, provided the producer knows his players well enough to gauge the effect of ad-libbing and playing off the cuff—what happens in the architectural dialogue between dressing-table and light source, how far the eternal triangle of the three-piece suite can be expected to share the stage with a picture window opposite the fireplace. To handle these problems effectively—so effectively that he need not regret that the objects involved are not designed as he would have designed them—an architect needs to know just how, and how strongly, some desirable and visually fascinating piece of equipment like a tape recorder or a coffee-percolator focuses attention and thence organizes the visual and functional space around it. This must be known and thoroughly understood, if only at the intuitive level of knowing instinctively that a poster will always have a more galvanic effect than an abstract painting, that the real landmark in the length of the Grande Galérie of the Louvre is not the Mona Lisa but the view out of the window into the traffic of the Place du Carrousel.

It might appear, on the strength of a broad survey of present purely technical trends in design, that this problem is about to disappear. A really desirable and sophisticated (in the engineer's sense of the term) central heating system deals with the problem of the well-designed radiator by abolishing radiators and disappearing into the floor-slab or under the carpet. A man who looked at a TV set of *Britain Can Make It* vintage saw a lot of cabinet work as well as a small screen, but a head-on view of a modern twenty-one-incher is apt to consist simply of the screen itself. Nothing has shrunk faster than stereophonic gramophones, except sound radio, where transistors have produced such rapid miniaturization that there is a sort of regretful vacuum round the source of sound. And just when architects were despairing of ever making much visual and spatial sense of domestic exteriors lumbered with *two* status-boasting, jet-styled Detroitniks, suddenly there were compacts and Mini-minors.

Miniaturization appears to be a consistent tendency at present, that must be agreed, but the chances are that the objects concerned will become more concentratedly desirable as they become smaller, or more functionally important as the systems they control vanish from sight. When the heat-source is invisible, its controls must be more visible than in the days when the tap accompanied a large, conspicuous radiator; when the radio becomes no bigger than an ashtray, then there is clearly a chance that it will become the equivalent of art-pottery—on a table in the office of the US Ambassador to London there was recently a transistor radio in an elaborately hand-chased brass box, like an eighteenth-century clock mechanism.

The chances are, then, that the miniaturized product is going to demand attention with a hard, gem-like insistence, and focus attention as surely as the red button on which our atomic fate depends. And if it works by batteries, it may not be possible to fix its place on the domestic scene by a crafty location of power outlets. But the world of the miniaturized product is also the world of the visually sophisticated consumer, who may be susceptible to other forms of persuasion, may even, before long, be in a mental condition to seek architectural advice.

To sum up, the passing of the architect's claim to be the absolute master of the visual environment has not greatly reduced the area of his real responsibility at both the visual and functional levels. In fact, his responsibilities have increased—the stakes mark out a smaller claim, but he now has to dig all of it. The manner of implementing these responsibilities is not simply to assume control of the schools and expect everyone to accept architectural standards as the norm of judgment, as the theorists of the Thirties supposed, but to exercise choice and background control over the choice of others, to advise, suggest and demand on the basis of knowledge and understanding. Conceivably there may be less glory involved than in being able to sign one's name to everything as 'designer' but there may be more useful work done and better service rendered to the public. If that is so, then ten years of uncertainty and dispute will not have been in vain.

1951-1961

Motivation Research: The branch of advertising regarded with the gravest suspicion in alarmist literature (q.v.) was Motivation Research, which formed the theme of Packard's first book *The Hidden Persuaders*. The object of this rather dubious science was to establish the 'real' or subconscious reasons for buying one product or another. It is thus, in a sense, a sub-branch of ergonomics since it deals with a particular, though short-lived, relationship between man and equipment, and was cautiously welcomed by broad-minded ergonomists as an extension of our precise knowledge of man. Conversely, the manipulative intentions of its practitioners were clearly liable to anti-social perversion, but any mass take-over of consumers' minds seems to have been prevented by the imprecision of MR techniques of investigation. From the designer's point of view, MR was most suspect as yet another restriction on his freedom to design and his freedom to serve the public as he felt best. Yet it should be noted that one of the major triumphs of MR's High-Priest, Dr. Ernest Dichter, was to make a suggestion that any competent designer should have been able to make before he appeared on the scene, that is, the fitting of rear-view mirrors to farm tractors so that those who set their hands to the plough need not look back.

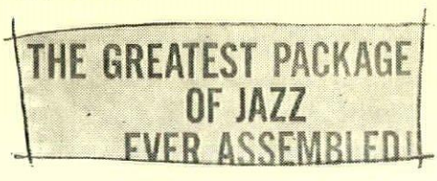


Olivetti diaspron

Olivetti: The place of the Olivetti typewriter, both in the Italian craze and in the wider design sense, was best illustrated by the violent reaction to its threatened demise in 1960. The original design for the small portable (which has always been the hinge of the argument) was the work of Marcello Nizzoli, who is, of course, still the designer responsible for all Olivetti products. The neat, squarish case he devised was constantly being held up as an example of pure straightforward design in contrast to American 'styling,' but was in fact itself a styling job, since Nizzoli was in no way responsible for the machinery inside. This point was avoided in discussion until Diaspron, a larger typewriter, appeared in late 1959. This had faceted side and front panels, no doubt for quite sound constructional reasons, but immediately brought down the wrath of the critics on Nizzoli's head, because it was (apparently) 'irresponsible styling.' The reasons for the change of style, apart from any technical considerations, were clearly commercial, but Olivetti, probably because of his enlightened social policy, has always been treated as if he were nothing to do with commerce. What will happen under the new style and the new management, which has succeeded since Adriano Olivetti's early death, remains to be seen.

Organizations: The profession of designer became more heavily organized as well as more heavily bemedalled as the idea of design as an independent profession took hold and established itself. No longer content to proceed under the aegis of other professional bodies, such as those devoted to architecture, designers established or took control of new organizations in order to speak with their own voice. In Britain a major attempt was made to give the SIA (Society of Industrial Artists) a status and function equivalent almost to that of the RIBA, and, at a wider level, ICSID (International Council of Societies for Industrial Design) founded in 1957, began to assume functions broadly analagous to those of the IUA, though it has, so far, met more frequently. One of the major professional problems of both bodies has been the stabilization or establishment of effective copyright in design—a matter in which they are professionally ahead of architects.

Packaging: New ways of selling, summed up in the ambiguous phrase 'merchandising' centred attention on the way in which goods were presented at the point of sale, but they also brought new classes of goods within the field covered by the package-designer's art. If frozen foods were the classic example of the new merchandising and the new packaging techniques, it should also be observed that long-playing gramophone records in their smartly designed sleeves, and reprints of best-sellers in exclamatory paper-back bindings, brought music and literature into the realm of general merchandising, both being sold through general stores, tobacconists and other non-specialist outlets. The actual design of such packages became one of the most flourishing departments of the graphic arts during this decade and like TV (q.v.) brought the latest and most sophisticated types of design into domestic environments which had hitherto been immune to them.

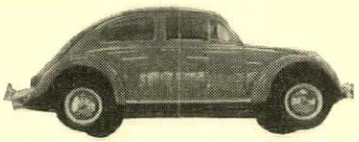


'Pop' Art: Alongside ergonomics (q.v.) one of the emergent concepts, though a bitterly disputed one, of the 1950's, was that of 'pop' art. This was distinguished from earlier vernacular arts by the professionalism and expertise of its practitioners (i.e. Rock 'n' Roll singers, TV stars, etc.). The concept was widely discussed in Europe and the United States, and impinges on industrial design at two points—two points which are not altogether independent of one another. Firstly, its visual manifestations, as in advertising or Detroit car-styling, were often endowed with a vitality (not always bogus) that seemed absent from the fine arts and from 'good' design. Secondly, the protagonists of 'pop' art at an intellectual level, i.e. those who insisted that it should be taken seriously and discussed rationally, maintained that there was no such thing as good and bad taste, but that each identifiable group or stratum of Society had it own characteristic taste and style of design—a proposition which clearly undermines the argument on which nearly all previous writing about taste in design had been based. This position was not adopted by any established authority in design, but was given serious discussion at some schools and was certainly accepted by a large part of the student body in *most* schools.

Television: The great increase in popular sophistication about all visual matters, including design, in the 1950's must be largely attributed to Television, even more than to magazines or educational bodies. For the first time, almost, in the history of man, a great part of the population was introduced to a constant stream of smart visual images, was shown new products and Old Masters, either in their own right or as the backgrounds to drama and discussion. In so far as well-designed products are smart in appearance, they have undoubtedly benefited from this trend whose influence had hardly been anticipated at the beginning of the 1950's. Television companies themselves seemed only half aware of the genie they had conjured out of the electronic lamp, but programmes dealing specifically with design and visual arts, became a little more common as the 1960's began, on both the BBC and commercial networks.

Triennale: Four *Triennali di Milano* fall within the scope of this survey and of these, only the 11th in 1957 can be dismissed as trivial, partly because of the poor quality of the exhibits, and partly because of its failure to pull in an influental audience—neither the trend-setters, nor their followers took much notice of it. The 9th and 10th (1951 and 1954), however, probably did more to establish the image of Italian design in the public mind than any other equivalent manifestation, and the 10th was followed by a Congress on industrial design that marks the beginning of a new self-consciousness among Italian designers, and sense of international solidarity amongst designers at large. The disappointing results of the 11th were to some extent a consequence of Italian self-satisfaction with the preceding two, and a degree of international boredom with Italian design that was already becoming apparent among the leaders of taste, if not among the mass followers. The 12th in 1960 was at cross-purposes with its audience. Intended as a serious revival of the best standards of the Triennale, it was unfortunately attended largely by those who had only now caught up with Italian design at a purely fashionable level, and its exhibits did not really receive the discussion that was their due. Among those exhibits was, of course, the complete Nottingham school which marks probably Britain's greatest impact on the international world of design.

Ulm: The Hochschule für Gestaltung at Ulm was certainly among the most important design organizations to emerge in the last ten years. Originally founded in memorial piety as a successor to the Bauhaus at the time that most of the American descendants of the Bauhaus were going into decline, it had a functional plan in its buildings (designed by Max Bill) and a teaching programme (also directed by Max Bill) that both strongly recalled the original Bauhaus. In 1956 and 1957, however, there was something of a 'Palace Revolution' and a new order effectively headed by Tomas Maldonado took over the running of the school. An innovation of considerable importance made on this point was the disappearance of the Fine Art or Graphics department such as one normally finds in a school of this sort and their replacement by a division of verbal and visual communication. Ulm was thus the first school to withdraw completely and programmatically from the earlier dispensation dominated by architecture (here replaced by industrialized building) and by the Fine Arts. Although small, the school proved extremely influential in the world of design, at least at the level of ideas. Its manner of designing is best known through the cabinet work of Braun electrical appliances, but it has so far produced no characteristic style of design. Rather it has become a cool training ground for a technocratic élite.



V.W.

Volkswagen: Since the end of the second World War, the design of motor-cars has been in constant revolution, but the standard against which most cars have been judged and found wanting (not always justifiably) has been the Volkswagen. Clearly it is a car that has meant different things to different men, but the points on which its reputation is based, are primarily these: That it had, until recently and with very few exceptions, a more advanced technical specification than any other vehicle produced in quantity, and that spares and after-sales service set a standard of practical involvement with users, and their problems, that few other manufacturers could equal. But the overwhelming virtue in the eyes of men of liberal conscience was that in a world of automotive flux its appearance remained constant and that in a period when cars grew larger year by year, it remained the same size. In other words, it was a symbol of protest against standards of Detroit, the mass media and the 'pop' arts.

GROPIUS AT TWENTY-SIX

The memorandum which follows was written by Walter Gropius when he was but twenty-six years old. It has never been printed before. It was first mentioned in a footnote to Professor Pevsner's Pioneers of the Modern Movement (1936, *p.* 215) *and then in about fifteen lines in Professor Giedion's* Walter Gropius, Work and Teamwork (1954, *p.* 74). *It is memorable not only as by far the earliest of Gropius's writings, but also as a remarkably early plea for prefabrication of parts and assembly on the site. It was presented in March,* 1910, *to the AEG, the electricity company for which Gropius's master Peter Behrens was just then designing factories as well as products, and shops as well as stationery. Gropius left Behrens in* 1910, *and so this memorandum must be one of his first attempts at creating work for himself. The second was the offer of* 1911 *to design the Fagus factory which was accepted and started Gropius in independent practice. He had, however, when still a student, designed some farm labourers' cottages in Pomerania* (*see page* 50). *The memorandum is youthful and repetitive. It never reaches a convincing decision between suggesting a new organization of building and the much simpler but vaguer job of putting to the test the principles of the* Werkbund (*founded in* 1907) *and pleading for factory-made furniture, china, cutlery, etc. It even falters between presenting itself as a proposal for a company and a prospectus of a company. But it contains many interesting points, such as the references to England and the two brief hints at the provision of centralized services. And it is proof of how clearly Gropius, already in* 1910 *and* 1911, *saw what was going to be his endeavour from the Bauhaus years to the present day.*

Programme for the Establishment of a Company for the Provision of Housing on Aesthetically Consistent Principles

Underlying idea

The company which is to be established regards the industrialization of housing as its aim, in order to provide for the building of houses the incontestable advantages of industrial production, i.e. best materials and workmanship and a cheap price.

It is the fault of speculative builders and entrepreneurs that housing has deteriorated so much in the last decade both as regards taste and durability. The public consciously or unconsciously is affected by this state of affairs. Everybody with an inborn or acquired sense of quality must find the bragging, purely superficial, sham comfort unbearable which entrepreneurs, in the houses they build, try to produce for the sake of advertising, but at the expense of good material, solid workmanship, distinction and simplicity. It can be said that pomposity and a false romanticism instead of good proportions and serviceable simplicity have become the trend of our time.

The reason for this malaise is the fact that the public is always at a disadvantage, whether it builds with an entrepreneur or with an architect. The entrepreneur is justly avoided by many, because he unscrupulously hurries projects through in order to save costs, and because he does damage to his client by saving materials and wages in order to increase his own profit. The architect on the other hand who provides designs only is interested in raising the cost of a job, since final cost determines his fee. In both cases the client is the sufferer. His ideal is the artist architect who sacrifices all to aesthetic aims and thereby does economic damage to himself.

These points demonstrate patently the unhealthy situation in to-day's building trades. Enterprises based on craftsmanship still exist in the building trade, but can no longer resist the competition of industry. For in the case of quantity production overheads spent on creation and design while developing a type which could in the end be established as an ideal, are negligible in proportion to turnover, whereas they cannot be afforded in production by ones.

The fundamental principle of industry is subdivision of labour. The creator concentrates all his energies on making his idea, his creation come to life, the manufacturer concentrates his on durable and cheap production, the merchant on well organized distribution of the product. This use of specialists is the only way by which essential, i.e. spiritual, creation can be made to work economically and the public can be supplied with products of



1, *Walter Gropius photographed when he was still at the Bauhaus.*

aesthetically and technically good quality.

It is true also of the building of houses. To a certain extent industrial production has already entered this field, but the types introduced by entrepreneurs for the sake of making profits are immature and technically as well as aesthetically bad and therefore inferior in quality to houses whose parts are still produced by hand. However, the craftsman's work is probably too costly, and entrepreneurs have for the sake of cheapness tried from the start to eliminate it as far as possible.

The new Company is to draw the consequences from this situation and combine by means of industrialization the aesthetic activity of the architect and the economic activity of the entrepreneur. This would result in healthier conditions and patent aesthetic advantages. For whereas up to now the busy architect had to rely more or less on trained assistants and was unable to attend personally to all the details of his designs, money can be spent profitably by the Company on the slow and most careful working through of all details by the architect himself, before they go into production. Thus a happy union would be established between art and technics and a large public enabled to possess mature works of architecture and reliable and durable products.

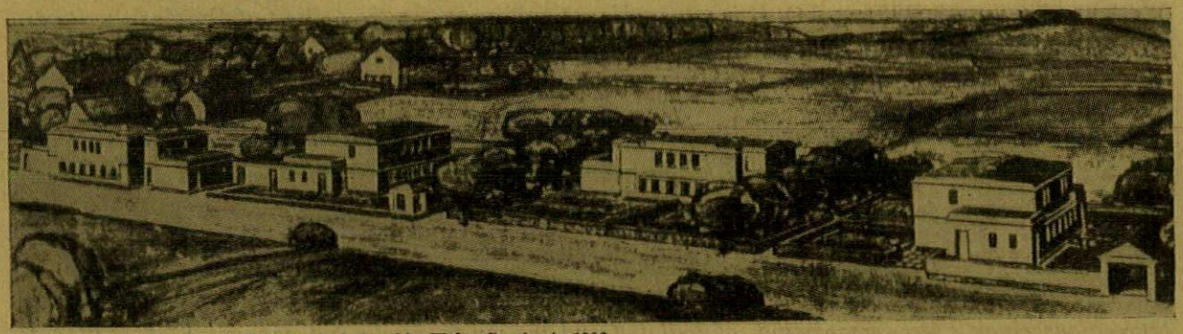
The reason why careful detailing in all respects can, even where a simple house is concerned, be of such high cultural significance lies much deeper. It lies in the concept of a *Zeitstil*.

The way private houses are built to-day, the tendency deliberately to stress uniqueness, i.e. the opposite of the principles of modern industry, cannot possibly create a type of housing characteristic of our age. Methods based on craftsmanship are antiquated and must be replaced by the acceptance of a modern concept of industry. The search for the odd, the wish to be different from one's neighbour makes unity of style impossible. It is a search for what is novel, not for the perfect type. The example of all styles of the past shows that they all worked to established formal principles with variations only to fit special cases.

Conventions in the good sense of the word cannot be hoped for by emphasizing individuality. They depend on the contrary on unification, the rhythm of repetition, i.e. the consistency of forms, recurrent because recognized as good. Our age, after a sad *interregnum*, is approaching a *Zeitstil* which will honour traditions but fight false romanticism. Objectivity and reliability are once more gaining ground.

The necessity of conventions can also be demonstrated from their practical advantages. The more an individual groundplan differs from what is based on the needs of an age and has been worked out by generations, the more will its own qualities suffer. What is true of the plan, is true of the whole house. Past periods respected traditions. The Dutch brick house, the French block of flats of the eighteenth century, the *Biedermeier* house of about 1800 were all repeated in series. In England this desire for conventional identity, based on a firm power to organize, led to terrace housing of exact identity continued without any break through whole districts. The result was great economies and at the same time, and admittedly unintentional, aesthetic consistency. However, because the English builders did not intend to produce works of art, their single-minded pursuit of economic advantages produced in the elevations a drab uniformity.

The new Company intends to offer its clients not only inexpensive, well-built and practical houses and in addition a guarantee of good taste, but also take into consideration individual wishes without sacrificing to them the principle of industrial consistency.



2, farm labourers' cottages in Pomerania, designed by Walter Gropius in 1906.

The realization of the idea

I. Use of the same parts and materials for all houses

The idea of industrialization in housing can be translated into reality by repeating individual parts in all the designs promoted by the Company. This makes mass production possible and promotes low costs and high rentability. Only by mass-producing can really good products be provided. With the present methods of building houses it is a matter of luck whether one finds efficient and reliable craftsmen. Mass-production in a factory guarantees identity of products.

Nearly all parts of a house can be produced in factories, such as

Building	*Decorating and furnishing*
Staircases	Furniture
Railings	Panelling
Windows	Ceiling panels
Doors	Floors
Cornices	Wallpapers
Doorways	Door furniture, handles,
Balconies	key-holes, etc.
Bay windows	Linoleum
Verandas	Lincrusta
Dormer windows	Light fittings
Grilles*	Textiles
	Ceramics
	Cutlery

Given the trend of our age to eliminate the craftsman more and more, yet greater savings by means of industrialization can be foretold, though in our country they may for the time being still appear utopian. In America, Edison pours in variable iron forms whole houses with walls, ceilings, staircases, plumbing, etc., and can thereby dispense even with the bricklayer and joiner.†

For all essential parts the best dimensions have to be decided first of all. These standard dimensions form the basis for the designs and are to be kept in future designs. Only by this means can mass sales be guaranteed and special making in the case of replacements and repairs be avoided.

Of each item there are available a number of designs of different execution and price, but the same size.

All questions of form, colour, material and internal equipment are put down and catalogued as variants. All parts fit exactly, as they are made by machine to the same standard dimensions. For the same reasons they are all interchangeable.

Internal features such as ceiling panels, stone floors or wooden floors, panelling, wall coverings in pressed materials are designed for all parts of the home so that they can be supplied at once.

Furnishings promise to be an important field. Experience shows that turnover is quick and sales easy. Furniture, light fittings, rugs, textiles of all kinds, linen, ceramics, cutlery, etc., are to be made to a variety of tested designs and can be supplied quickly and inexpensively.

In the same way all technical and sanitary installation, i.e. hot and cold water, bathroom equipment, electrically operated ventilation, electric lighting and cooking apparatus will be ready-made and offered according to what arrangement and price are suitable.

Colours and combinations of materials are set down in tables.

The client can compose his house from all these materials and forms according to his personal taste. He first chooses from among available types of house. However, even the type is variable as will be demonstrated later. The same plan can be had with a proper upper storey or an attic storey, with larger or smaller kitchen, and with a wide variety of details. The choice of materials also is the client's. He can specify rendering, brick, or stone, a slate or a tile roof.

It is by the provision of interchangeable parts that the Company can meet the public's desire for individuality and offer the client the pleasure of personal choice and initiative without jettisoning aesthetic unity. Each house is in the end its own self by means of form, material and colour.

Contracts with suitable specialist manufacturers secure that all objects and parts satisfy the standards laid down by the Company and are, if possible, permanently in stock. As soon as an order comes in, all parts, catalogued in some numerical arrangement, can be obtained at once and need only be assembled on the site according to plans which are equally readily obtainable.

The individual parts and especially those belonging to the furnishing of houses can also be sold to outside clients and entrepreneurs. Royaltics from their sales go to the Company, because it is the Company that provided the designs. It is quite possible that such sales will raise the turnover considerably. As soon as it has been proved that there is demand and that the Company is developing, contracts with firms can be drawn up increasingly profitably.

II. Multiple use of designs

From the rich material of years of experience and the study of traditional building methods of all civilized countries of the world, the best has been used for inspiration and tested for suitability in the historical and climatic conditions of to-day. After this study of tested traditions, old as well as current, the work of designing started. Its result after many attempts is a series of designs for houses of different categories which contain the sum total of all practical, technical and aesthetic experience. They now seem suitable to establish exemplary standards for quality production in varied forms.

The designs must be ready in every detail to be used on the site, when the Company starts operations. As in every other type of industrial standardization, large turnover will be the means of profiting from the long period of preparation of the designs and the intellectual effort contained in them and their practical and technical ideas. Moreover, they will be of value to many, not just to a few. Large sales allow for low prices of the individual products in spite of high accuracy of execution.

The guiding idea of the Company is to be that comfort is not obtained by overdone bogus-splendours, but by clear spatial arrangements, and by the conjunction and selection of tested materials and reliable techniques. It is in this field that higher excellency will be offered and confirmed by guarantees granted over several years. For it is exactly here that the Company believes to be able to establish and maintain its reputation.

All types of houses, variable in size and arrangement, and variable also, as has been described, according to the wishes of the client, are ready with all drawings, estimates and detailed specification of necessary parts. The houses as designed are independent, coherent organisms not tied to any site, devised to fit the needs of modern civilized man in any country, not even only Germany. Interchanges between civilized nations are growing with the growing facilities of traffic. The result of this is the establishment of new international needs and a unified direction in all vital questions. National costumes tend to disappear and fashion is becoming a common factor in all civilized countries. In the same way there is bound to be a common convention in housing transcending national frontiers.

All designs for houses and their parts must be registered. Even if imitations were to appear, however, they could not do damage, because of a cheapness, reliability and reputation which could not easily be emulated.

To satisfy the changing needs of the public, the Company has prepared detached houses of different types and sizes from the working-class house to the upper-class villa. They will be put into operation according to demand. The advantages of detached houses need not be reiterated. Everybody wishes to own property. The strength of this wish even among the poorer classes is demonstrated by the allotments round our cities.

Modern industry has for a long time recognized the importance of working-

* For example, one may assume that one house has twenty doors of the same dimensions. Even if the turnover were only 30 houses a year, 600 doors of the same dimensions would be used, without considering possible sales to outside builders. The Author.

† This was reported in *Building News* XCI, 1906, p. 249. *See* P. Collins: *Concrete*, 1959, p. 90. The Editors.

class housing. Indeed, by the initiative usually of private companies more and more working-class estates are appearing in Germany. Their number and development in the near future is, as far as one can foretell, going to grow enormously. Experience collected for decades in English, American and German working-class housing has been used by the Company in the preparation of its designs. With the help of the principle of industrial production it can thus offer the possibility of building working-class cottages of high aesthetic value and good workmanship at minimum cost and in the shortest time. The advantages of the principle of industrial production are particularly obvious in working-class housing; for clients who are manufacturers or owners of large agricultural estates will as a rule need not one house but larger numbers. It is evident that the largest number of houses built at the same time and with the same parts will result in the cheapest price. This even applies to the wages of foremen, etc., and other overheads, since they can be set against not one house but many erected at the same time. As cost is a primary factor in putting up working-class estates, the Company is, on that score alone, going to be superior to those erecting individual houses with the services of individual craftsmen and solely when opportunities offer themselves.

The second group of designs is larger detached houses.

For the wealthier urban population, manufacturers, professional men, merchants, etc., who want to have houses of their own and who can spend some 25,000 to 50,000 Marks on them,* there is no possibility except in England to get a house of good workmanship and with the space and comfort that can be obtained, if one is ready to live in a flat. They must put up with the hygienic and aesthetic defects of flats as speculative builders offer them, or with small, primitive detached houses which have much less space than the flats in the towns.

By means of the multiple use of the same designs and of the industrial production of parts the Company is in a position to satisfy these large groups of clients and offer them a good and aesthetically well-organized house of six to twelve or even more rooms with all the comforts of the modern metropolis for a capital corresponding to the rents they have at present to pay for flats.

There is also a public which wants houses in the suburbs, but has not as much capital as the previous groups, or can, for some reason, not settle down for a long duration. The Company caters for this public by offering designs for semi-detached houses or detached houses of several storeys for the use by two or more rent-paying families. The advantages of the detached house can be preserved, even if it is planned to consist of a small number of flats, and rent takes the place of ownership. Special care has been taken to separate tenants as completely as possible.

In these cases the Company's clients are not the tenants, but entrepreneurs who would regard such a house in a suburb close to the centre as a good investment. For, thanks to the principles of industrialized housing, these houses are so cheap that, thereby alone, they guarantee a good income from rents. quite apart from the advantages of good workmanship and comfortable fitments and furnishings.

* This, in 1910, represented £1,250 to £2,500. Voysey's *Holly Mount* at Knotty Green near Beaconsfield cost £1,429 in 1906. The Editors.

For the largest types of the houses there would be, according to location and if a need can be established, the possibility of simplifying the economic running by centralization [of services*]. Since for town-dwellers with their nostalgia for nature the idea of a garden is always tempting, the Company proposes to undertake the provision of a garden for every one of its houses. Although each garden is an individual case, if only for reasons of the contours of the site, and, therefore, repetition in quantity from one and the same design it out of the question, the provision of gardens yet appears important as a publicity asset. Moreover, certain principles and certain formal details can be laid down, according to which in each case the garden architect employed by the Company can easily work out a plan suitable for each particular house and site.

III. Architectural unity for estates

It is likely that the Society will make sufficient profit from the sale of such detached houses. However, it will also be desirable, taking into consideration the appearance of a town as a whole and also higher profits, to lay out and build coherently larger estates inside and outside a town. This could be done under contracts with entrepreneurs.

For estates outside the town, where transport conditions must be a determining factor, the multiple repetition of detached or semi-detached or terrace houses for one family or several families would be the programme, in the manner of similar English estates, but with all the advantages of good workmanship, taste and comfort which it is the programme of the Company to offer. The visual treatment, the beauty and intimacy of inner courtyards which our age has lost, though southern countries still possess it, will be emphasized especially and similarly the treatment of corners, of the middle axis of buildings and of the surrounding gardens.

The principle of creating coherent streets out of rows of identical houses can also be applied to blocks of flats in cities. Here in any case a type, though not a good one, has recently been developed, as regards the plan as well as the elevation with the never ending pairs of bay windows. Only, builders hide the identity of forms under an unjustifiable mess of stucco and bad ornament, instead of drawing the logical conclusion and aiming at complete repetition which would be of enormous economic advantage. The price of mass-produced terraces of flats must, of course, be considerably lower than that of detached houses, since to build on a large scale in one place and at one time with identical materials and parts being taken to the site must be a great saving.

In the case of the largest types of such blocks of flats one could again, where opportunity arises, think of simplifying the running by means of centralization [of services].

The building of large estates could be done on behalf of other companies and big financiers. According to available capital either a large number of houses could be built as a speculation and then sold to a bidder (which would result undeniably in the quickest service to the public and the lowest prices), or the site could be laid out and divided up into plots according to the plan of the Company and the plots then sold individually as demand arises.

Whenever an adjoining block is tackled afresh, new building types will be used, both for aesthetic and practical reasons. However, quite apart from that, each plan type allows for innumerable combinations of the parts so that there is none of the danger of that uniformity which is so typical of English suburbs.

* Editors' addition.

The sites are to be prepared even before the houses are built. Gardens also and walls and fences are to be provided in advance. By means of an early planting of trees and by their grouping each garden is to appear completely separate from its neighbours. Thus the public will be at once attracted by the beauty of the gardens and the unity of the whole estate and its rentability will increase accordingly.

The organization of sales

I. Commercial principles

So far the products have been explained. Selling them is proposed to be handled in the following way. To protect an enterprise against competition, it is important to establish sound commercial principles for the selling of the products, principles surpassing those of competitive enterprises. Several significant advantages result *per se* from the idea of the present enterprise.

By mass production in factories and mass consumption of its goods the Company is in the advantageous position to offer its goods, in spite of their best workmanship and excellent materials, so cheaply that the goods of competitors made singly and by hand cannot keep pace with them either in quality or in price.

Moreover, it has so far been the worst evil for the client that it was impossible to fix in advance exactly what a building will cost. It is well enough known that a client from the beginning calculates with costs exceeding the estimate by 20 per cent and that even this tacitly accepted figure is often exceeded. This alone prevents innumerable people from having houses built for themselves. The Company is capable of fixing in advance and with absolute certainty the total cost for each of their houses, since experience gained in previously executed projects is a guarantee of no detail being forgotten in the estimate, of all parts being purchasable from factory stock at fixed prices, and of all types of parts chosen by the client being entered with their prices at once in the printed estimate for each project. The varying costs of transport from the factories, of wages and materials are written into specially provided columns of the estimate according to current prices in the relevant part of the country. The Company gives a guarantee that the estimate will be kept.

Similarly, the Company will be immune against another evil in the building of houses, the loss of time and especially of interest on capital caused by the time taken over drawings, sub-contracts, etc. All designs are ready, all bye-law permissions granted, all parts ready to be delivered. Thus the Company can execute orders with little manpower and at a speed inaccessible to competitors and thereby prevent losses of time and especially of interest on capital.

II. Organization

These are the commercial principles of the enterprise. Its internal organization is planned to be as follows:

The whole organization will be conducted by a board of directors responsible for artistic, commercial and technical departments.

The function of the art department is to design types and parts, site plans and layouts for gardens and to specify materials and methods of construction.

The techno-commercial department is responsible for the running of the business. It deals with advertising, with the client whose individual wishes must be matched against the variable items of plans and parts, with the sale of houses or perhaps sites and, when an order has been placed, with the ordering of materials and parts. Nearly the whole correspondence can be reduced to printed forms, and the filling in of numbers from catalogues and of quantities. Dealings with suppliers, the making out of contracts and necessary journeys also belong to the responsibilities of the commercial department.

The art department has at its disposal a design office which is entirely separate from the commercial offices. Here the products are developed according to basic ideas and types, i.e. new types of houses are created and parts improved in accordance with technical progress. Gardens are also designed in the design office and sites are planned. The art department in developing designs consults the commercial department and takes advantage of its experience gained in dealing with the public.

Once a design is ready it is handed on to the central commercial office which looks after sales. This central office undertakes all correspondence, all accounting work and all advertising.

As a help to the central office branch offices will be established, when the growth of the Company justifies them. The head of each of these branches is a man of commercial experience. He is to get orders and to represent in his own region the commercial directors, all the while keeping in close touch with them. If necessary he can have by his side a manager of the building enterprises in hand. The number of such branch offices will grow as the Company grows. As soon as possible there should also be foreign branches. Designs, however, are issued only from the centre.

In all offices, apart from ample catalogues and illustrations, there are to be samples of materials and parts.

The internal organization of the business is supported by equally well thought-out advertising. On this, especially at the beginning, depends the number of orders necessary for financial success. The aesthetic intentions of the Company must be expressed powerfully in its advertising.

Well-designed leaflets illustrating and describing the various types of houses and pointing out their advantages for the purchaser are to be printed in large editions.

In order to make the public aware of the idea of the Company, shorter leaflets or articles in important journals will be issued. They should be written by well-known economists or journalists.

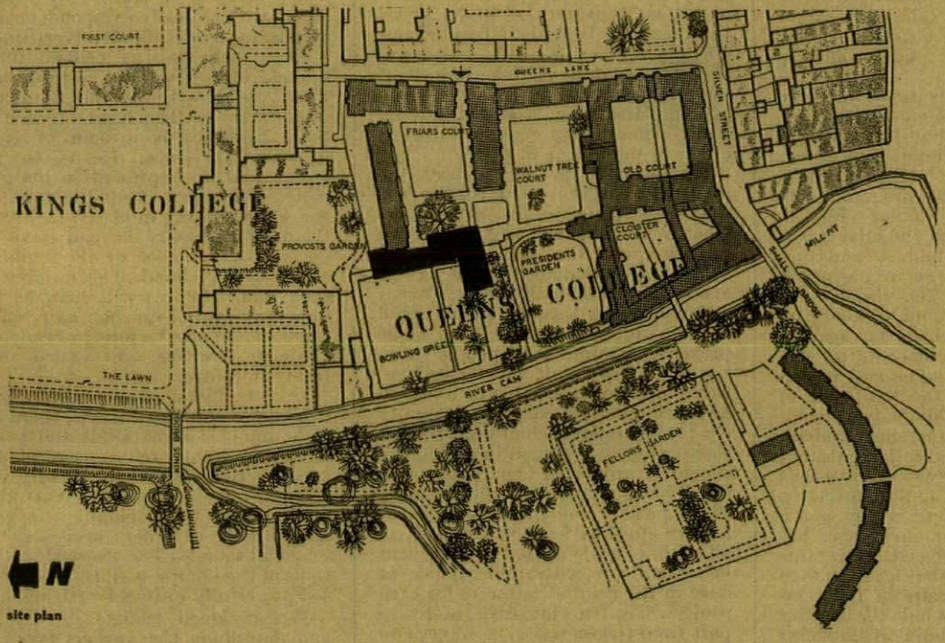
Public lectures with lantern-slides should also be held. The achievements of the Company are to be shown by travelling exhibitions in museums or other premises suitable for exhibitions. The types of houses should appear in models and plans. In addition, samples of parts and furnishings are to be on view so that the practical advantages, the high quality of materials and workmanship and the consistency of the style throughout can be demonstrated.

Posters announcing exhibitions are also to be produced by the design office. They are to be of high artistic distinction in order to convey at once the character of the enterprise.

The best handling of publicity is, as has been said before, of the greatest importance to the enterprise. For in contrast to other building enterprises overheads hardly change when turnover increases, and so every order taken after overheads have been paid for can be regarded almost entirely as profit.

1 (*facing page*), *the building from the south-west.*

current architecture



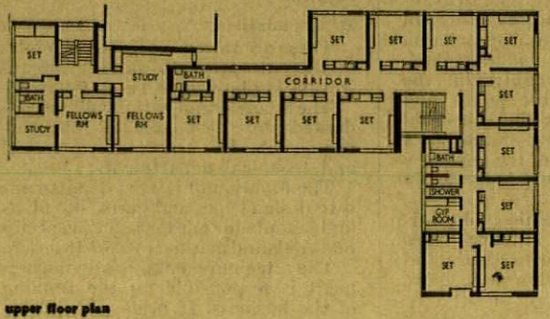
site plan

UNDERGRADUATE ROOMS: QUEENS' COLLEGE, CAMBRIDGE

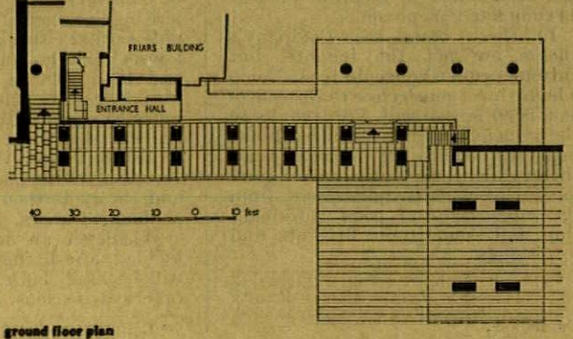
ARCHITECTS: BASIL SPENCE AND PARTNERS

This addition to the existing college buildings is on a very restricted site between the Victorian Friars Court and the fifteenth-century Fellows' bowling-green. It contains 43 undergraduate rooms and rooms for two Fellows. The accommodation is on three floors, raised on columns and brick arched piers with a flat roof-terrace. Access is by two staircases, one rising direct from the open undercroft and the other from an enclosed entrance-hall. The building is designed to enclose and complete the south-west side of Friar's Court, while preserving the open view through the brick arched piers and across the bowling-green to the river Cam. The south-west wing projects to enclose the bowling-green, and provides shelter for the York stone-paved terrace at a lower level, which is designed for use during May balls and other college occasions.

Construction consists of a reinforced concrete cantilevered slab at first floor level supported on brick arched piers and bush-hammered reinforced concrete columns and, on the upper floors, of reinforced concrete slabs supported on 9 in. brick cross-walls between each room. The lower brickwork is faced with red-blue bricks. The cavity external walls to the upper floors are faced with yellow-brown Stamford stone facing bricks. Windows to the study-bedrooms are of anodized aluminium, sliding horizontally. Heating is by small-bore hot water radiant panels and convectors in each room, supplemented by electric fires.



upper floor plan



ground floor plan





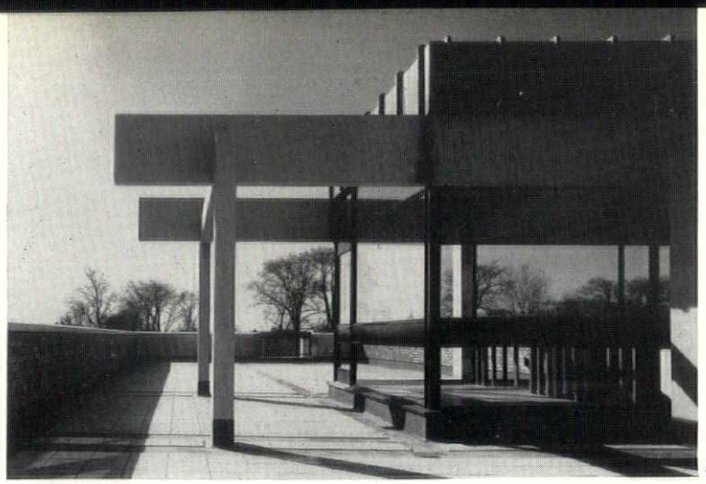
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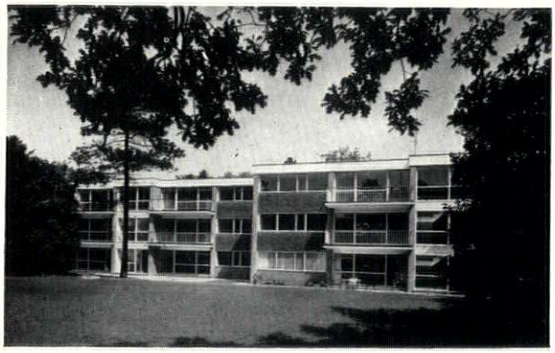
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Facing page: 2, from the river-bank, looking east; 3, inside the open ground-floor area, looking towards the Friar's Building. 4, the south end. 5, the roof-terrace.

Undergraduate Rooms, Queens' College, Cambridge



6

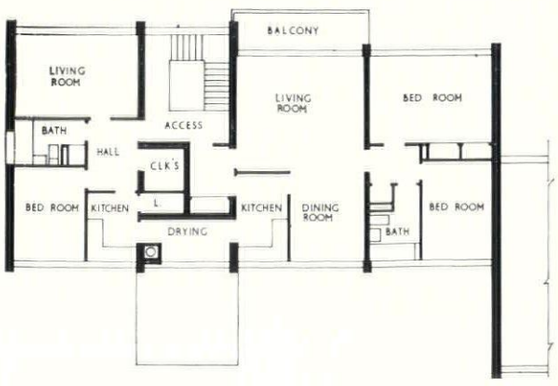
6, distant view of the balcony elevation; 7, close-up view.

FLATS AT EDGBASTON, BIRMINGHAM

ARCHITECT: JOHN H. D. MADIN

Privately financed flats on part of the Calthorpe Estate, in well planted gardens at the junction of Norfolk Road and Augustus Road. The scheme consists of two three-storey blocks of 12 and 18 flats respectively. The flats vary in size from one- to three-bedroom.

They are of cross-wall construction, with concrete floors and insulated timber roofs. Panel walls are faced with brick on the ground floor and tile-hanging above. Windows are timber framed with metal opening lights. The flats have electric under-floor heating.



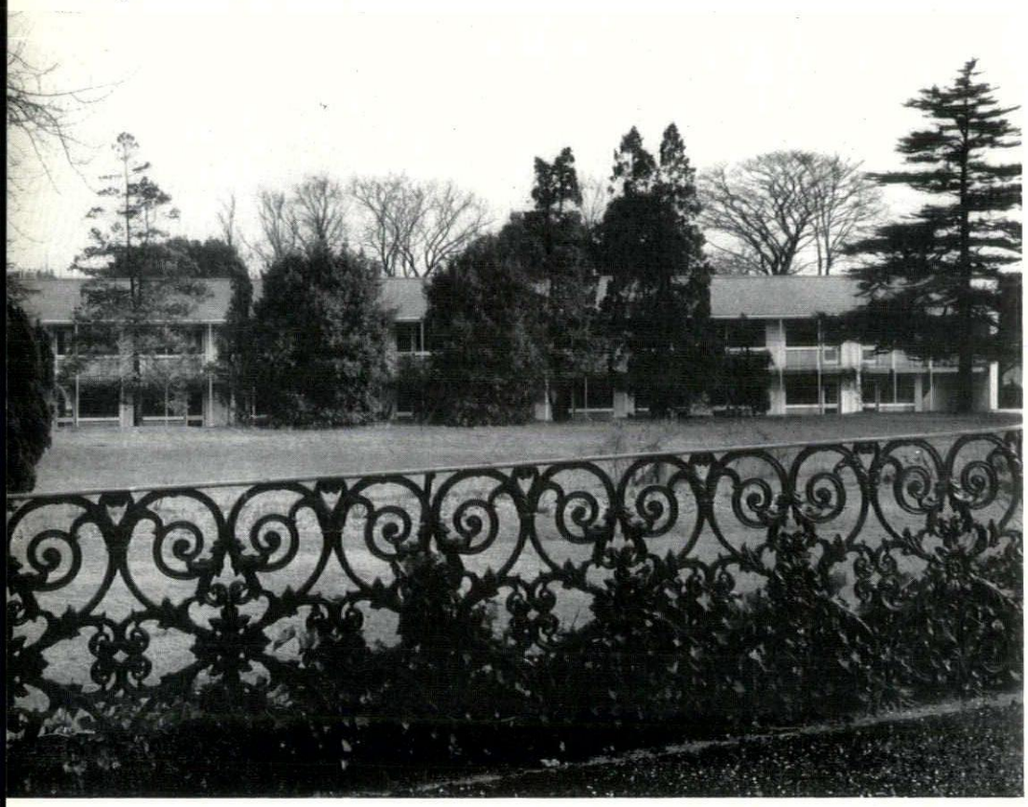
part first floor plan





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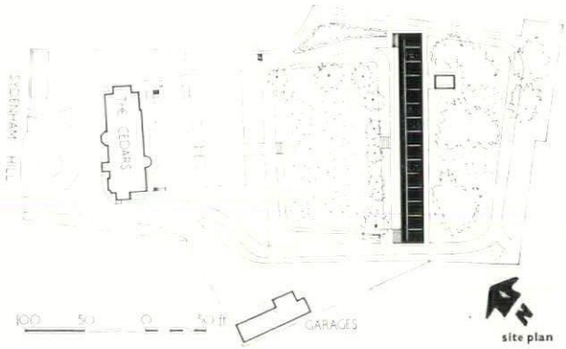




9

TWO BUILDINGS FOR THE SALVATION ARMY

ARCHITECTS: C. WYCLIFFE NOBLE AND PARTNERS



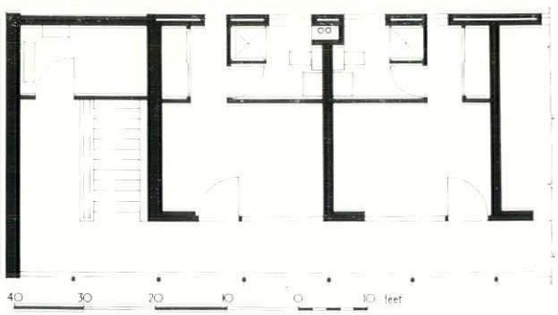
site plan

1. Annexe to Officers' College, Sydenham

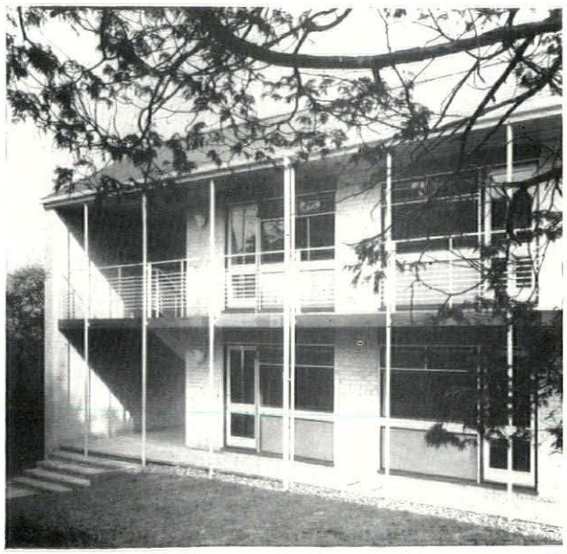
An annexe to a large Victorian house on Sydenham Hill, built at the end of its garden. There are fine trees on the lower part of the site. It is divided into 26 'cells,' each comprising bed-sitting-room, dressing area, shower and lavatory. Each ground-floor cell is reached direct; first-floor cells are reached from an access balcony. The existing house contains the rest of the college accommodation: lecture-hall, library, lounge, offices, dining-hall, etc.

Construction of the annexe is brick cross-walls, with continuous reinforced concrete floors and beams. Finish materials are similar to those of the existing house: pale yellow gault bricks and Welsh slates, together with oiled teak and white-painted metalwork. Soffits to eaves are of V-jointed polished pine boarding.

The annexe has been designed in association with Col. W. H. Charles.



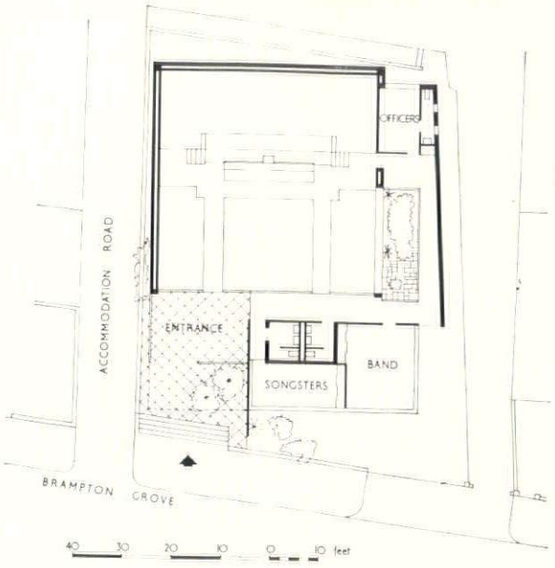
part first floor plan



10

8, from the old house, showing the annexe set in Victorian planting. 9, close-up of the north elevation; the concrete balcony has an oiled teak fascia, with V-jointed polished pine soffits to eaves and a horizontal square bar guard rail. 10, the north staircase end.

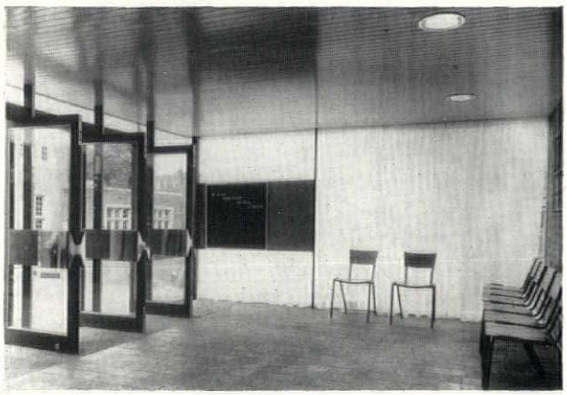
Two Buildings for the Salvation Army



ground floor plan



11



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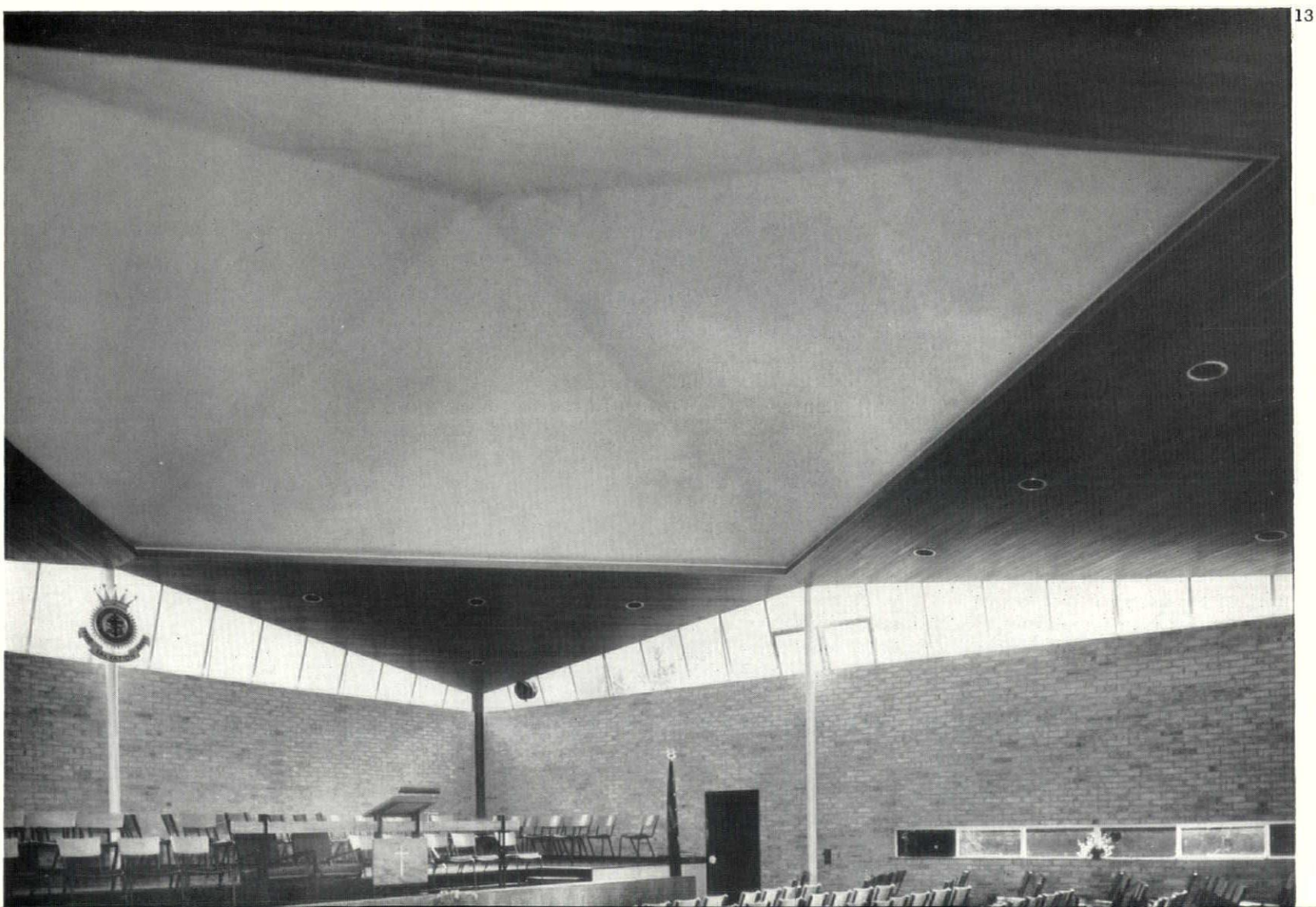
11, *the exterior from Brampton Grove.*
12, *the entrance hall.*
13, *the Hall of Worship; the walls are of yellow brick and the roof is unstained Makore and Missanda with a natural acoustic plaster dome.*

2. Citadel at Hendon

The building consists principally of a Hall of Worship, designed to answer Salvation Army requirements: namely that it should be a simple meeting-room, where the pattern of worship does not demand visual concentration on any focal object, nor are there religious rites performed before the congregation, the service consisting of extemporary prayer and singing and teaching from the scriptures.

The hall is square on plan, with a raised platform for the band and choir. Between the platform and the congregation is a Mercy Seat, where penitents kneel, of solid elm. The hall is enclosed by four panels of yellow brick and covered by a steel-framed roof supported at the four corners of the building by 10 in. square flanged steel columns. There are secondary circular posts at the apexes of the roof panels, which are lined with unstained makore wood.

The centre dome is carried up from these panels and is lined with acoustic plaster.



13

EXHIBITIONS

PAINTING

If a stag could have been looking through the window of the hardgloss set-piece called 'Windsor Castle in Modern Times,' 1, in which Queen Victoria, the Prince Consort and the little Princess Royal share the Green Drawing Room with Eos, the greyhound, Dandie, Islay and Carnach, the Skye terriers, and several items of dead game, the picture would have been a catalogue of Landseer's main interests both as man and artist. He was a very talented animal painter, but his talent did not serve a compulsive vision, and I feel sure that he felt no prick of artistic conscience when he began to specialize in painting the animals, alive and dead, hunted and petted, which were the chief preoccupations of High Society. Successful Royal Academicians are born, not made, and Landseer was one of the most successful of all because he was able to reflect the instincts and values of his noble patrons whilst preserving a solemn sense of his own importance. As he himself wrote in a letter to the Earl of Ellesmere, 'Who does not glory in the death of a fine stag?' And to explain his own delight in the killings he added: 'with all my respect for the animal's inoffensive character—my love of him *as a subject for the pencil* gets the better of such tenderness—a creature always picturesque and *never* ungraceful is too great a property to sacrifice to common feelings of humanity —How much I wish I could have been with you during your stalking days.'



1

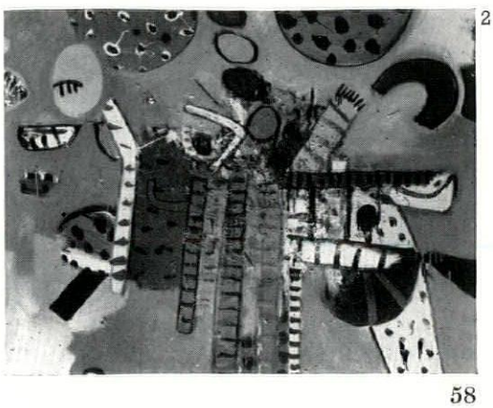
His art was first and foremost a remarkable social phenomenon, and he deserved to have a less squeamish exhibition dedicated to his memory than the one that was recently put on in the Diploma Gallery at Burlington House. The Royal Academy must be losing its grip, for its handling of this show practically amounted to an apology for its Victorian heyday. It's true that 'The Monarch of the Glen' was there, and 'Dignity and Impudence' and the one in which human beings are replaced by dogs in a monstrously ingenious trial by jury, but the exhibition should have been dominated by such things. If we had been *surrounded* by the noble portraits of stags, potent emblems of male domination, and the paintings of domestic pets, dedicated to the pathetic fallacy, which used to bring rich and poor alike to a state of deliquescence, the exhibition would at least have ministered to what Wordsworth called our 'degrading thirst after outrageous stimulation.'

As it was, the organizers managed to reduce the impact of the big machines by flooding the show with preliminary studies, oil sketches and unfinished works. It was a calculated attempt to invent a new and very sensitive Landseer whose genius was side-tracked by the demand of his misguided patrons for 'high finish.' But even the assistance of a small landscape which turned out to be a Constable couldn't alter the impression that Landseer had a neutral talent that never broke out of given pictorial formulae. The sketches were bound to look a bit fresher and more spontaneous than the set pieces, but he was incapable of inventing a pictorial truth, and it is only in the parts where he mingled observation with melodrama and whimsy that his work remains conspicuous.

The Landseer exhibition was almost a farcical demonstration of the present faith in anything that looks spontaneous. Professor Wind contends that this faith not only encourages a sophistry of production, peculiar to our time, 'by which each work, no matter how laboured, hopes to give the impression of being freely improvised,' but, more seriously, tends to prevent the artistic experience from running its full course.

There is something in what he says, but the instances he gives of our dislike of highly finished works of the past do not throw much light on our present conception of improvisation. He is quite right when he implies that most of us prefer the full-size oil sketch of Constable's 'Leaping Horse' to the two 'finished' versions. We prefer it because, like the work of the moderns, it is made of undisguised paint marks. But Constable's 'finishing' process involved a reference back to the scene from which the sketch was derived, and the substitution of more descriptive textures for the naked paint marks: in the case of a typical contemporary improvisation however there is no model which can be referred to for further information. One could only 'make-up' the kind of finish Professor Wind has in mind.

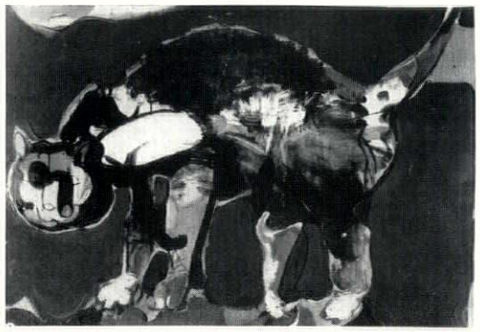
Alan Davie's recent exhibition at Gimpel Fils was a brilliant demonstration of the improvising faculty at work. Some of the new paintings are rather different from earlier work in that the point of departure is not an automatic sweep of the brush, but a simple pictograph of an object—it might be a chair, a building or a hobby-horse—which functions as a kind of target. The hobby-horse, for



2

instance, 2, is attacked in the most 'vulnerable' part of its anatomy, as if it were a bull-ring horse, and the artist a bull. The area in which the attack is concentrated becomes a rich, thick complication of marks which disclose a curious iconography of aggression and contrition. The stomach is opened up and the entrails pour out to provide the horse with a protective covering of gay trappings, and the forms which surround the hobby-horse appear to be floating back after being hurled out of the picture by the fury of the assault.

This insouciant marksmanship is a reminder of his avowed interest in Zen archery, and it might not be altogether

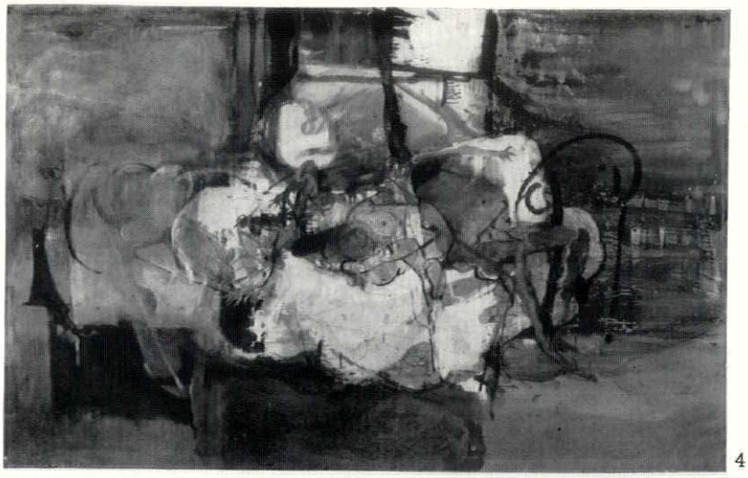


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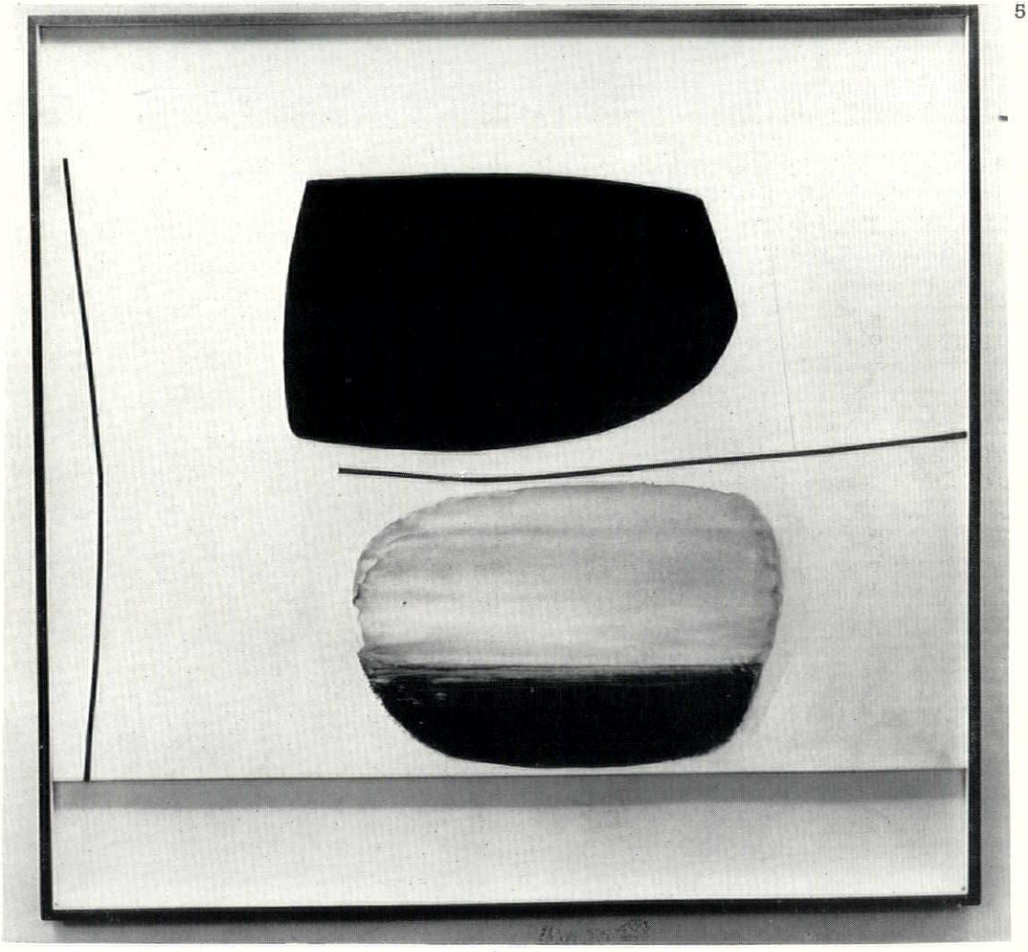
fanciful to perceive in this attitude to painting an unavowed emulation of the quick-drawing gunman of the Westerns. All the arts are now on the side of Condorcet, who said, in reaction against Pascal's introspection, 'Man is born for action, as fire tends upwards and a stone downwards.'

Reyberolle, who has just been holding a one-man show at the Marlborough Fine Art Gallery, is no less talented than Davie, but although he makes improvisatory gestures they don't turn into creative acts. As in the case of the recent work by Davie, he starts with an image—a drawing of an animal, or the head of a pipe-smoker, or a couple of nudes—but he puts a good deal more work into its preparation, and the paint textures never succeed in breaking it down. His pictures are essentially neat works which have been roughed up to give an impression of being freely improvised. His handsome school-of-Picasso cat, 3, is very much what he started out with. The intervening sessions with the brush have failed to dissolve the cliché. In the case of the lovers on the bed, 4, the paint has much the same effect as a thin partition between two hotel bedrooms, with the lovers rustling in one of them and everyone else being quiet in the other. It blurs the document without transforming it. I feel sure he intends his 'wild' use of paint to lift the picture out of mundanity and transmit a sense of the sublime, but it achieves only a prettification of frowsiness.

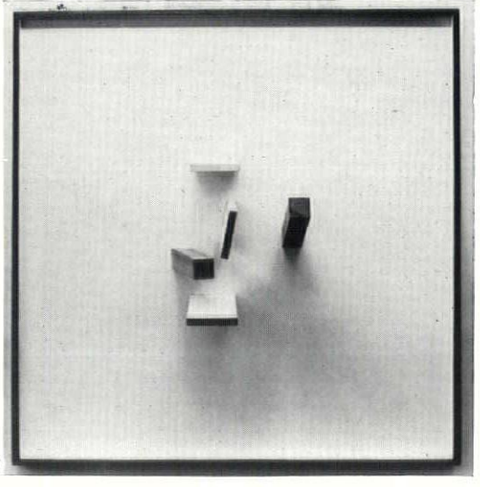
Victor Pasmore's improvisations are little sins against pure geometry, minute



4



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quirks which create an effect of elegant and refined aestheticism. They occur on such large, sanctimonious stretches of whiteness that, according to the temperament of the spectator, they either assume an air of immense daring or operate as blessed signs of frailty in a man whose uprightness might otherwise be intolerable.

In his recent, highly successful show at the New London Gallery I discovered two delicious works in which the quirks were somewhat larger than usual. In one of them a watery area of colour deliberately contrasted with the opacity of the rest of it actually provided me with the illusion of a seascape, 5, and in a construction, 6, one arbitrarily and absurdly cocked-up wooden

projection brought vividly to mind the pink tilted noses that were so charming a feature of his early nudes.

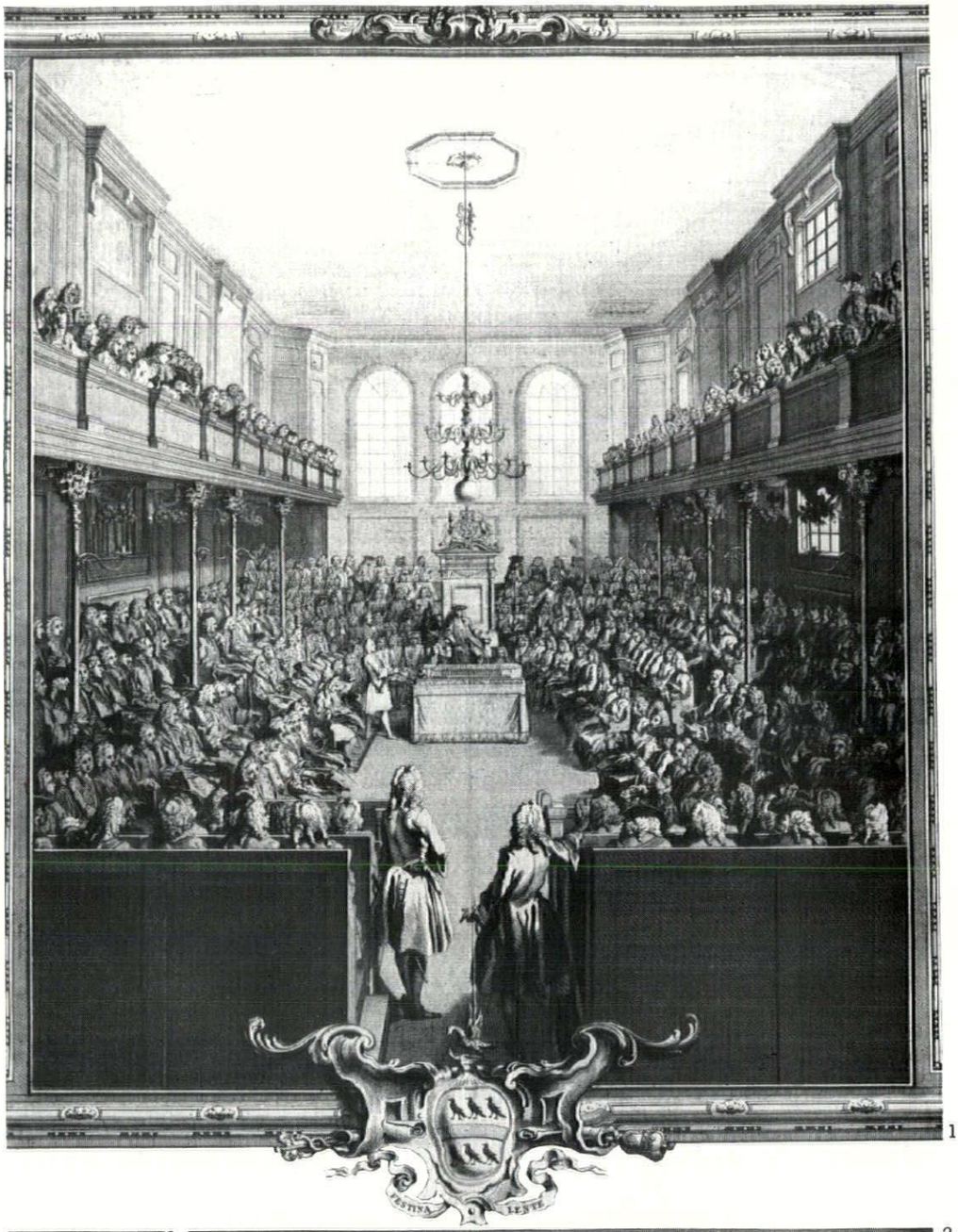
Robert Melville

HISTORY

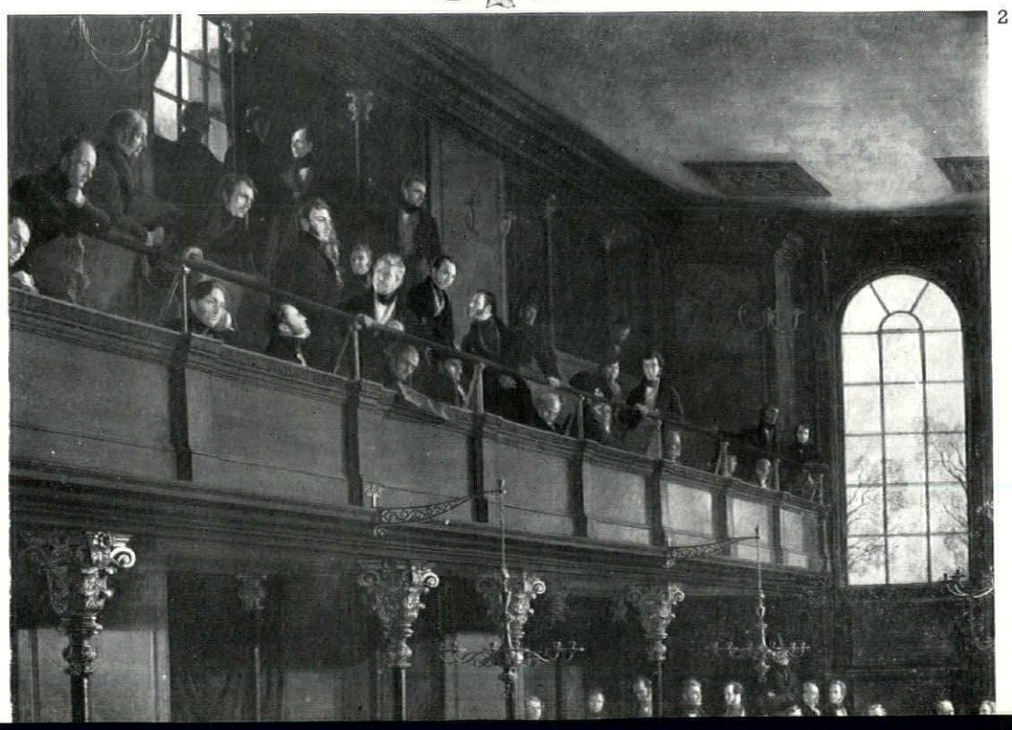
CAST IRON COLUMNS 1706[1]

In **1706** *the influx of new Scottish members to the House of Commons demanded extra accommodation. The ensuing alterations, designed by Wren,* included the erection of galleries on three sides of the Hall. Wren's preliminary design[2] shows these galleries supported at one end only by orthodox Corinthian columns, and on the sides by under-brackets. That this is a preliminary design is confirmed by the Office of Works' Accounts, detailing the provision of eight Corinthian capitals to be supplied by Grinling Gibbons[3]. The earliest document showing the completed interior is J. Pyne's engraving of 1749[4]. The gallery is supported all the way round not by ordinary columns, but by thin, extremely attenuated ones with bunchy Corinthian capitals. 1. Karl Anton Hickel's painting of 1793[5] provides a more detailed view of these columns; and more detailed still is the painting by Sir George Hayter of 1833[6], 2. This shows the further alterations of 1800, when the thick medieval walls, both below and above the gallery, were cut away to provide accommodation for the new Irish members. The lintels across each newly formed opening were supported by thin columns. James Wyatt, the architect for this phase of alteration, can be assumed to have used cast iron for his columns[7]. This prompts the question, were Wren's columns also of this material, thus providing the earliest example of the use of cast iron as a structural member in architecture?

An examination of Hayter's painstakingly accurate painting shows the Wren columns of not more than six inches diameter. In purely structural terms a wood column of this thickness would seem to be insufficient support for galleries containing at least two tiers of seating. Whoever conceived the order



1



2

[1] This enquiry was prompted by a conversation with Henry Russell Hitchcock.

[2] Wren Society, xii, pl. xxii (with wrong captions).

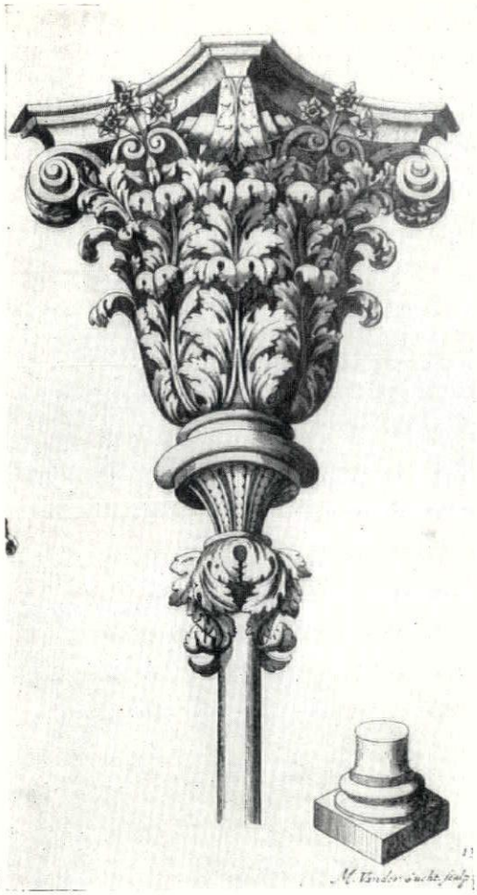
[3] E.351/3312. 1706. 'Grinlin Gibbons carver for 8 capitals by him made and put up at the House of Commons 32 £' 'Thomas Highmore Sergeant Painter for Gilding 8 Capitals and Painting the pillars.'

[4] Repd. M. Hastings, *Parliament House*, 1950, 132.

[5] Hastings, 134-135.

[6] National Portrait Gallery. Hastings, 136-137.

[7] Wyatt had used cast iron for floors, windows, and other structural purposes in Kew Palace (1802).



3

designed capitals in proportion to the lower cornice of the gallery, combining them with grossly thin columns. In fact, proportions which are gothic rather than renaissance. This suggests the use of a material which is not only economical in terms of thickness, but which also provides a safe and functional support. Iron would fulfil these conditions.

One has not far to go for a precedent, if only in design. Jean Tijou, the great blacksmith, published *A Newe Booke of Drawing* in 1693. On plate thirteen he gives the very first depiction of an iron capital with column and base, 3. This is of such startling similarity to those executed by Wren that a direct relationship would seem probable. Tijou was one of Wren's craftsmen at Hampton Court and St. Paul's Cathedral and did not leave England until 1712. As his direct participation in this project is, however, excluded by the Works' Account, Gibbons may have borrowed this design from Tijou (who was one of his colleagues). That the capitals were carved in wood is not only supported by Gibbons's reputation in this medium, but also by the horizontal joining line to be seen in the nearest capital in the picture. This separateness of capital and column suggests that the latter may have been of a different material. Wren may well have conceived of this unusual combination in an effort to preserve the important space which would have been consumed by columns of normal dimensions. Thus, his empirical mind saw the value of Tijou's drawing.

The earliest use of cast iron employed in this way was presumed to have been in 1752 at Alcobaça in Portugal, where columns were used to support a chimney[8]. From the 1770s onwards it appears in various structural contexts. There is no practical reason why columns approximately twelve feet in length could not have been cast in 1706. Not only are the cast iron railings both at St. Paul's Cathedral (1710) and the Senate House, Cambridge (1720s), quite high, but the casting of guns of great length was common practice before the eighteenth century[9].

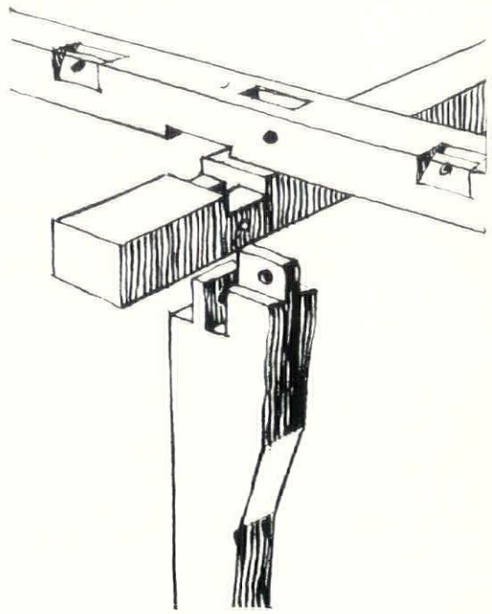
Any evidence of Wren's remarkable innovation was destroyed in the fire of 1834. But does one recognize, in Mackenzie's painting of the destroyed House made immediately after the conflagration[10], the 'wilted' iron columns of 1706 or 1800?

John Harris

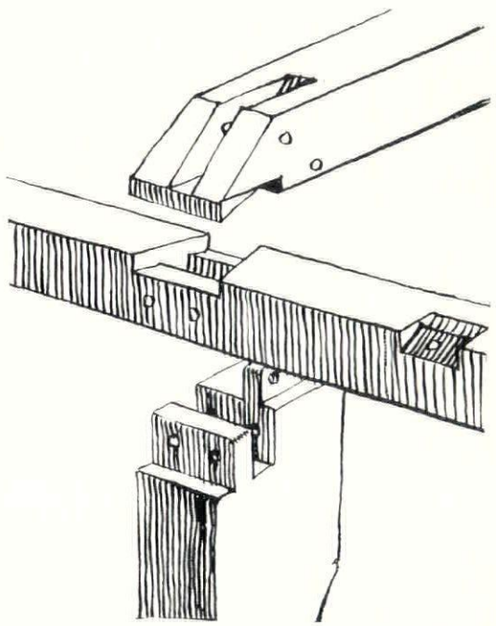
THE DOVETAIL JOINT

In seeking evidence over some sixteen years for the assumption of an inaugural date for the dovetail joint, I have been engaged upon a survey of Essex farm-buildings. My hope was to elicit a dating system based upon joinery method, and recently a salutory example has come to light. Whilst I am anxious to observe the necessary degree of caution, it appears to indicate the period in which the dovetail-joint was adopted by structural carpenters. And it does, with tolerable certainty, demonstrate the constructional practice of carpenters before they did use the dovetail in roof-framing. Such a 'watershed' in structural history would be of enormous value to archæology, and to the study of the various vernacular architectures; since those ancient buildings which are most numerous in survival are usually the humblest in origin, and therefore most sparing in ornament—for long acknowledged to be the best yard-stick for dating masonry. I now believe it to be equally clear that the totality of joint-forms employed during the length of time which surviving examples of English timber-building will cover (an as yet unknown quantity) would provide an accurate yard-stick with which to date our secular timber-framed architecture; which has, for too long been quite inscrutable.

There are in Essex two early medieval barns, one at Prior's Hall, Widdington, and the other at The Hall, Upminster. Some four years ago a striking reversal of assembly-order became apparent to me whilst surveying these two for scale-drawing. Both barns are of the aisled type; that is, have outshuts either side of the main structure, which enormously increases the volume of space covered by their timber roofs. At the eaves-level, which is the top-plate of the external walls, the order of assembly of the timbers is literally reversed. The tie-beam is first jointed to the wall-post of the transverse frame, and is then trenched, the top-plate is laid into this trench, and over a tenon on the standing jowl of the wall-post (see 1). This ingenious procedure dispenses with the lap-dovetail normally found at this point, the anomaly in both barns being that the normal order of assembly is observed at the tie-beams of the main-span



1, *joinery involved and order of assembly in pre-dovetail method; the jowl of the post is in line with the top-plate.*



2, *joinery involved in normal dovetail assembly (late medieval); the jowl of the post is here in line with the tie beam.*

[8] N. Pevsner, *Pioneers of Modern Design*, 1960, 118.

[9] I am indebted to Mr. Raymond Lister for his opinion as to the practical application of cast iron columns and guns.

[10] Hastings, 138-139.

of the roof. At this point the tie-beams lie on top of the top-plates, but the joinery is unusual.

To see the joint involved it is necessary to inspect the granary of Prior's Hall, wherein a strange movement of the building has exposed one example—*a bare-faced lap-dovetail*—which it will be realized is a half-dovetail, and can only offer half the resistance to withdrawal of the true joint. At Widdington, therefore, we have a complete range of timber-buildings, including the house now dated at *circa* AD 1270 (after examination it would be unreasonable to assume that they were not co-eval) which exhibit two conceptions of roof-framing, with no indication of preference for the individual merits of either.

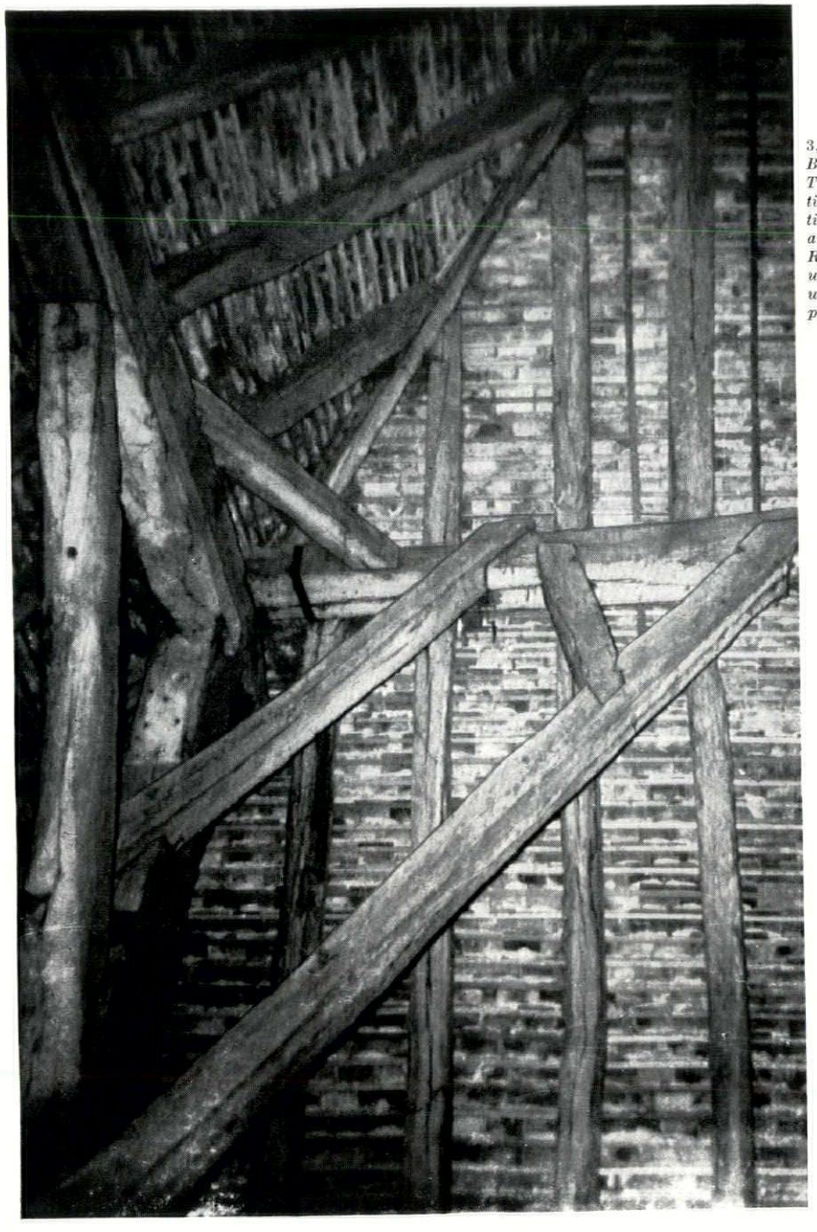
I feel that the only reasonable inference so far as the bare-faced lap-dovetail of the tie-beams is concerned, is this: that no carpenter, least of all a medieval one, would use the bare-faced form were he conversant with the logical form. Nor is it likely that, having done so, he would proceed to frame the outshut roofs with mere cross-halving, had he, in the first instance, any faith in his joinery-method. The obvious objection to the halved method at the height of the main-span tie-beams is that the outside cheek of the joint must be of adequate length to resist splitting off; which postulates that it must protrude through the roof-cladding into the weather. This was always done with the top-plates ends, and with the tie-beams mentioned, but in both cases they are out of the weather, owing to the verge-boards and eaves, respectively.

Since observing these examples I have examined two more barns which do embody the logical conclusion of this framing-method, and seem to indicate that the reversed assembly at the eaves was a last surviving feature of pre-dovetail structural tradition. These barns stand at the Hall, Belchamp St. Paul's, which implies some tenuous connection with the celebrated St. Paul's Domesday of the twelfth century. Both these barns (they have each been extensively rebuilt) still contain transverse frames which are quite innocent of the dovetail; or even anything resembling it. Two of them are half-hip end-frames, but the others are free-standing bay demarcations, and the tie-beams in these latter instances are first 'down,' and carry the top-plates in a trench; the objection which I had always foreseen to such a logical conclusion being quite circumvented, because the rafters of both flights only contact the upper, external arris, of the top-plate. In the case of the end-frames the tie-beams are doubled, one over and the other under the top-plates, which are thus clasped. This instance, if acceptable, would not only shed light upon the probable time of initial advocation of the dovetail tie-beam method; but would also indicate the commencement of the period of popularity enjoyed by the ubiquitous East-Anglian collar-purlin roof, since these dovetailless tie-beams show no king-post matrixes, nor any evidence of relationship to their original rafters.

It may thus be reasonable to assume that the bare-faced form of the dovetail was being tentatively used by roof-carpenters in the last quarter of the thirteenth century, and that the two entirely cross-halved barns last mentioned must pre-date this exploratory form by at least half a century; which makes them, provisionally, twelfth-century barns. And this, incidentally, is rather confirmed by comparing the scarf-joints of their plates with those of clearly later medieval barns.

Finally, some further evidence for there having been an exploratory period (in relation to the dovetail's advent) exists, in a striking manner, in the great Barley-barn at Cressing-Temple, Essex, which past authorities have agreed cannot be later than AD 1480—a very conservative limit! The braces between the tie-beams and their posts are straight and are tied at the points of their upper and lower thirds, to the tie-beams and top-plates respectively; this evinces a conviction on the part of the designer that they would tend to flex into an arc, under pressure. This was entirely reasonable and in view of the designer's awareness of this tendency he used upon the ends of these ties those joints which he believed would most efficiently resist longitudinal withdrawal—*notched squint-laps!* This seems to indicate a period, probably prior to AD 1300, during which carpenters still believed some of the joint-forms peculiar to the eleventh, twelfth and early thirteenth-centuries to possess advantages over the then known dovetail-form, when employed upon acute angles.

Cecil A. Hewett



3, an end-post of the Barley-barn, Cressing-Temple, showing the tie-pieces applied to the tie-beam brace. These are notched laps—a Renaissance carpenter would probably have used dovetails at these points.

SKILL

STRUCTURAL DEVELOPMENTS IN BRITAIN TODAY

On the occasion of the congress in London of the International Union of Architects, the theme of which is the impact on architecture of new materials and techniques, Alan Harris, B.Sc.(Eng.), M.I.C.E, M.I.Struct.E., reviews on the following pages the recent history of structural engineering in Britain. He considers that the achievement of British structural engineers lies less in large scale tours de force *than in adapting the techniques employed for these to the mass production of components needed for schools, factories and, indeed, the ordinary run of civil building. This is a tradition going back well into last century—see the introduction to the retrospective feature on pioneer structures—also related to the IUA congress—on pages* 14-19.

If Civil Engineering may rightly be regarded as a French invention of the seventeenth and eighteenth centuries, it received an independent birth in England at the end of the eighteenth century under totally different conditions. One was launched by the servants of the King, the other by ambitious craftsmen; one had every sign of Royal favour, the other bore the stigma of common men on the make; one was supported by generations of brilliant mathematicians, the other relied on direct intuition and the craftsman's feel. These were the two great sources of modern civil engineering. The streams have often mingled and separated again and their identity can still be traced. They draw together when each is at its best; at their worst one is an abstraction devoid of reality, the other is that form of blinkered complacency which goes with men whose pride it is to be 'practical.'

The general picture

Many of the pioneering works of nineteenth-century British engineering in cast iron, wrought iron and steel are with us still and are referred to on pages 14-19. Among them were a number of perfectly sound structures built of reinforced concrete in the sixties and seventies in accordance with Wilkinson's patents, though it was not until the French invasion at the turn of the century that the use of this new material became widespread.

The twentieth century has not seen advances in structural engineering in any way comparable to those in other fields of engineering; it has been marked in Britain rather by the steady popularization of construction and design so that structural forms which were once reserved for the major building and entrusted to the hands of only a master of the art, are now legislated for in building regulations and can be effectively employed by the junior engineer.

Indeed, few new structural forms have been developed anywhere; progress has been rather in the improvement of materials and means of erection, in refinements of analysis and in a perpetual renewal and adaptation of classic forms to meet the needs of changing economic and functional requirements. The one novelty by way of structural form is, of course, the stressed skin or 'shell' structure. This form was not only new to structural engineering but indeed to engineering; even ships' hulls were previously conceived of as beam and slab structures. What is odd is that this form was first constructed in concrete, the most unlikely of sheet materials; the suspended or tensioned shell of timber or steel came much later. In these developments, British structural engineers have played their part; the local variations on the theme of Western engineering are examined below.

The professional background

The critical issue in Great Britain at the moment is the architect-engineer relation. During the nineteenth century, as we are well aware, the two diverged and lost touch—perhaps merely by force of defining themselves. The architects, appalled perhaps by the uglier aspects of the Industrial Revolution, withdrew into style and pastiche, left the drawing office for the studio and severed themselves from technical progress. The engineers, bewildered by modish aesthetic theory, lost all faith in the appearance of their works and thought it proper to hang them with imitations of the architectural style in vogue; perhaps they thought it was time they became gentlemen.

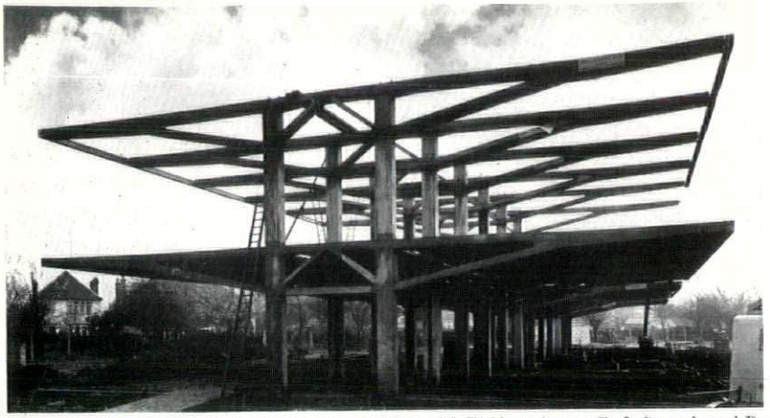
The gap was probably at its deepest in the first thirty years of this century. First steel and then reinforced concrete extended the size of building which could easily and cheaply be built, and for many years such buildings were either engineering structures with nostalgic decorative detail or were conceived in complete independence of structure and were passed out to engineers to prop up. The engineer and the architect thus became fixed in attitudes of hostility like a pair of china dogs.

This predicament is tragic. Since it is rare enough for the two even to meet, it is not surprising that the jargon of each has so diverged that communication is difficult. On one side of the gulf, the engineer finds himself confined in a journeyman world of costs and service accommodation; his triumph is to disappear from sight leaving the man on the other side of the gulf to deal with an internal and an external decoration almost entirely relieved of structural function.

This gap between purveyors of strength and purveyors of beauty has been bridged, albeit insecurely. In the 'thirties, the 'modern' movement (or whatever it should now be called) provoked the appearance

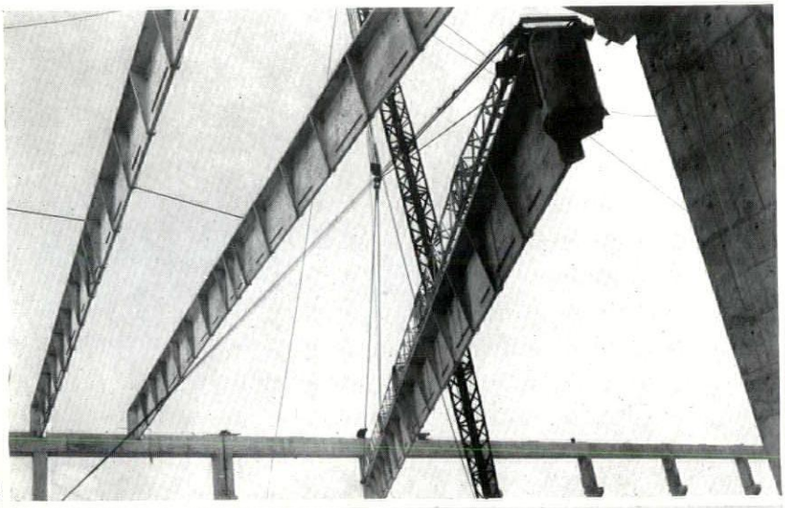


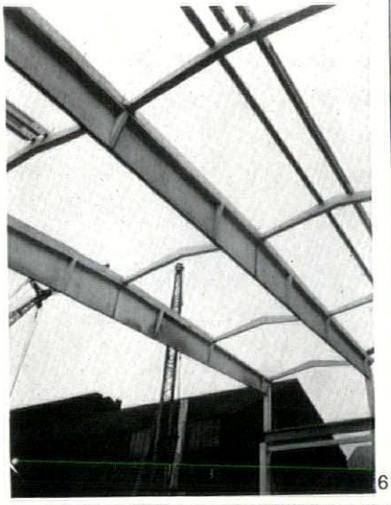
1, *factory at Bryn Mawr. Architects: Architects' Co-Partnership; engineer: Ove Arup. The high tide of the movement for the integration of architecture and engineering.*

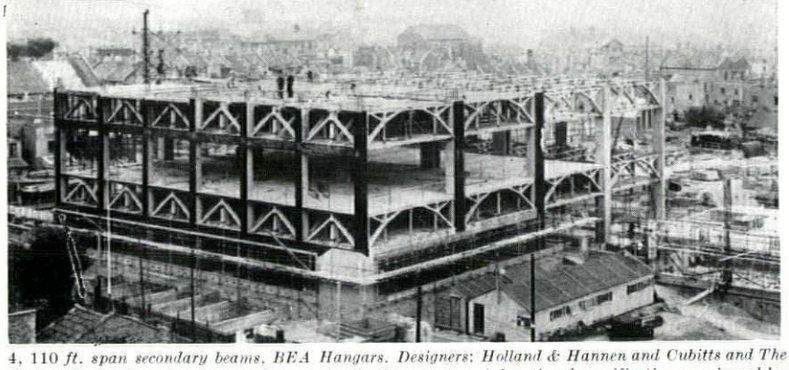


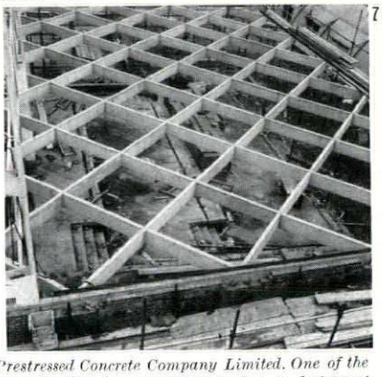


2, Camden High School. Architects: Stillman and Eastwick-Field; engineers: F. J. Samuely and Partners. A school designed around a structural idea, the structure consisting of substantial identical concrete elements designed to be cast and prestressed off site. 3, workshop roofs, Harris Institute, Preston. Architects: Ministry of Education; engineers: A. J. and J. D. Harris. An example on a small scale of the integration of structure with functional needs: 3 in. thick prestressed concrete slabs on edge support roof and glazing to which latter they act as dazzle cut-offs.

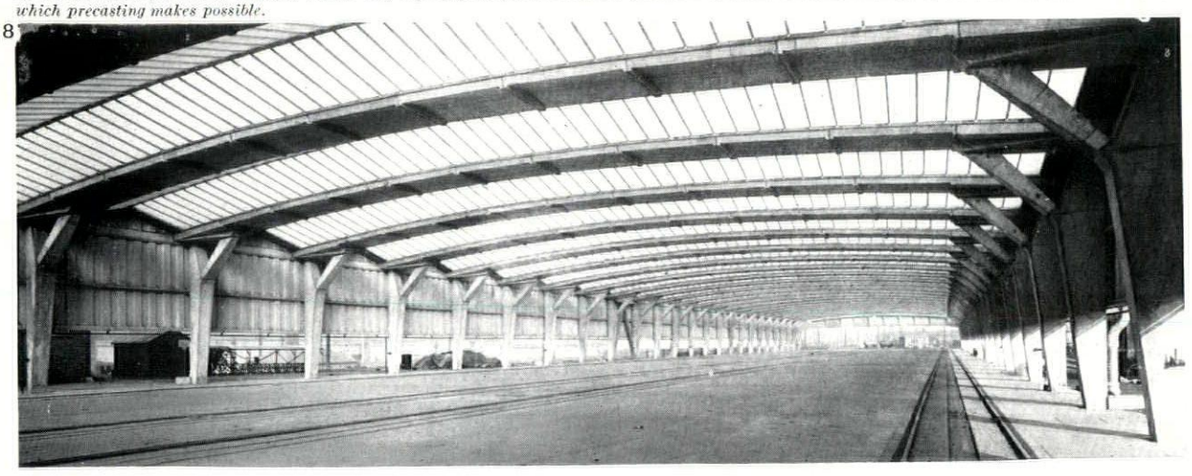








4, 110 ft. span secondary beams, BEA Hangars. Designers: Holland & Hannen and Cubitts and The Prestressed Concrete Company Limited. One of the first major works using segmental precasting in this country. A functional specification was issued by the authorities for competitive tenders. 5, factory at Malago, Bristol. Architect: E. F. Peat; engineers: F. J. Samuely and Partners. Very heavily loaded floors and very complex services; deep precast triangular prestressed concrete beams gave great strength and ample room for fitting and maintaining services in their depth. 6, Pilkington's factory, St. Helens. Architects: Fry, Drew, Drake and Lasdun; engineers: A. J. and J. D. Harris. A utilitarian prestressed concrete beam structure, precast off site. 7, Fairway Restaurant, Festival of Britain. Architects: Architects' Co-Partnership; engineers: Ove Arup and Partners. A prestressed concrete diagonal grid roof made of elements varying only in the location of the tendon duct. 8, Goods Depot, Liverpool. Architects: British Railways (Midland Region); engineers: A. J. and J. D. Harris. A functional structure erected very rapidly from precast elements assembled by prestressing. An example of the diversity of structural form which precasting makes possible.



of virtually a new sort of engineer in response to architects' new interest in, and demands of, structural engineering. The virtual creation of two men, Ove Arup and the late Felix Samuely, this new engineer made it his business to understand architectural problems and respond with sympathy to the architectural mind. The climate of this movement was clearly favourable to such rapprochement; if those who advanced under the banner of Functionalism sometimes confused the function of the building with function of the structure, the confusion usually emphasized the importance of structure.

Functionalism is seldom invoked nowadays; was it tried and found wanting or tried and found difficult? If Functionalism was not enough, was it even necessary? Can we forget its stimulus and, echoing another *ancien régime*, leave building to our servants?

The industrialization of building, proceeding apace, makes these very questions a trifle out of date.

The industrial background

Labour is short in Britain; it is difficult to get men to work on a scaffold exposed to the caprice of the climate when well paid jobs are available under cover in factories. But factory prefabrication gives better opportunities for controlling cost and quality: operations inconceivable on a site may be simple in a factory, and when the building programme is large, as it has been since the war, there are not enough traditional building craftsmen and labourers and prefabrication becomes a necessity.

At first grudgingly accepted and thus used in a manner which reeked of the 'lash-up,' prefabrication was later enthusiastically embraced by a few who saw that it was probably here to stay anyhow and that once its own discipline was accepted, it had great potentialities. The sort of prefabrication most practised is that referred to in some countries as 'light' prefabrication, whereby small elements are assembled on the site into larger ones, a process which preserves a great deal of flexibility. 'Massive' prefabrication is not much practised, since the capital investment requires a market which no one is prepared to guarantee; it is also very inflexible.

The step towards wholly integrated prefabrication has now been taken, notably by the Ministry of Education. An ambitious functional programme having been drawn up and a detailed and taxing price target set, architect, engineer and contractor together tackle the job. In many cases they have achieved a combination of flexibility in planning, functional adequacy, speed of erection and low cost which constitutes something of a triumph. Beauty, save for a minimum of attention to decorum, looks after herself; some say she seems not to suffer.

Structural design is carried out by consulting engineers and by the design staff of Government departments, municipalities and large corporations; it is carried out by suppliers of steelwork, reinforcing rods, concrete beams and timber structures; it is carried out by large building contractors; some architects have their own structural engineers. Now all these have different approaches and different interests; a design which suits a contractor because of some special plant which he has available will not suit a consulting engineer if obliged to take account of conditions of open tender.

[continued on page 65

continued from page 64]

A design which is preferred by a firm which covers its design costs in the price of steel supplied may well differ from that of another which is paid on the basis of a percentage of the value of the work. The approach of a contractor putting in a competitive package deal will be different again.

This diversity has many attractions. As one result, British structural engineering is keenly cost-conscious; whilst wastefully expensive structures do get built, their expense rarely escapes remark. As another, it is permeable to new ideas; whilst a novelty may be repugnant to most it is usually attractive to some.

This permeability has been helped by the open nature of British structural engineering as a profession. Foreign engineers have always been able to make a living in Britain, and in this century there have been at least three mass invasions—by French concrete engineers at the beginning of the century, by Danish concrete engineers soon after and by German and Central European engineers in the thirties. Each of these brought a substantial contribution, which was accepted. Ove Arup and Felix Samuely were mentioned above—one came from Denmark and the other was born in Austria and trained in Germany.

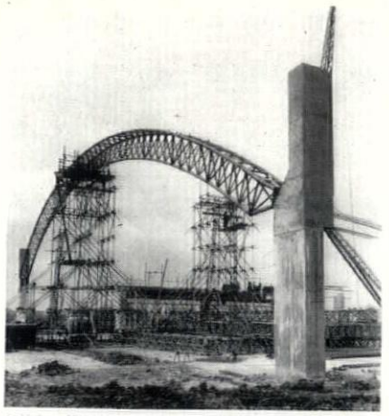
Such diversity also has its disadvantages and perhaps one of the gravest is the impulse it has given to that fury of regulation which has seized the modern technical world. When engineering design was an hermetic mystery practised only by the initiate, regulations were unnecessary or self-imposed. Now that simple engineering knowledge is made accessible to all, the case for drafting elementary regulations to cover the elementary structural forms which constitute the vast bulk of architectural work becomes strong. A case can be made, for instance, for legislation defining design loads in common buildings, though in fact no decision is more delicate and more critical than that as to the load for which to design, a matter on which, when engaged on a major structure, an engineer will require to satisfy himself independently of official documents. But when legislation passes from the definition of loads to the regulation of design processes in detail, there is a danger that the popularization of design has been bought at the cost of development. Steel construction has been a special sufferer from regulation of this sort.

This popularization corresponds nevertheless to an ever-increasing use of new materials outside the competence of the traditional craftsman. The replacement of the timber beam first by the rolled steel joist, then by the reinforced concrete beam and later by prestressed concrete in all those branches of building corresponding to massive social needs—housing, schools, factories—has required a widespread knowledge of the new materials and an ability to design structures using them. The satisfaction of these social needs is the major function of the British structural engineer at present.

Now, in satisfying the social needs of a modern nation, the State will inevitably play a large role and will indeed be the client for a very substantial volume of work. It is necessary to say, therefore, that there is in Britain no body of official engineers, specially trained for State service and generally accorded authority on technical matters. The State and its various Ministries recruit their technical staff in the same market as any other employer,



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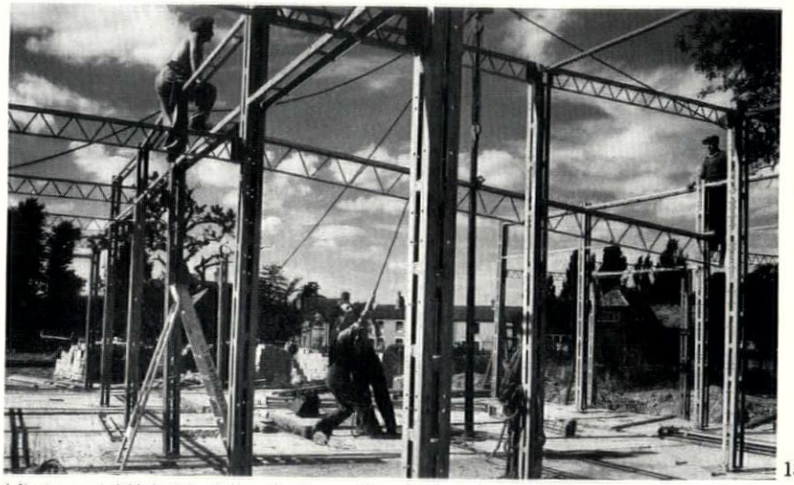


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9, hangars at Gatwick. Architects: Clive Pascall and Peter Watson; engineers: London Ferroconcrete and A. J. and J. D. Harris. A structure in prestressed concrete made possible by segmental precasting and the use of small prestressing tendons. It illustrates the new liberty of form towards which structural concrete is moving. 10, hangars at Gaydon. Designers: John Laing and Son Limited and Ove Arup and Partners. A classic arch formed of welded steel tube. 11, Silentbloc Factory. Designers: F. J. Samuely and Partners. The use of light tubular steel supporting lightweight insulating material to do the same job as is done by a monolithic concrete shell.

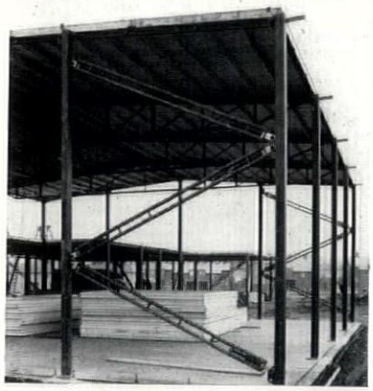


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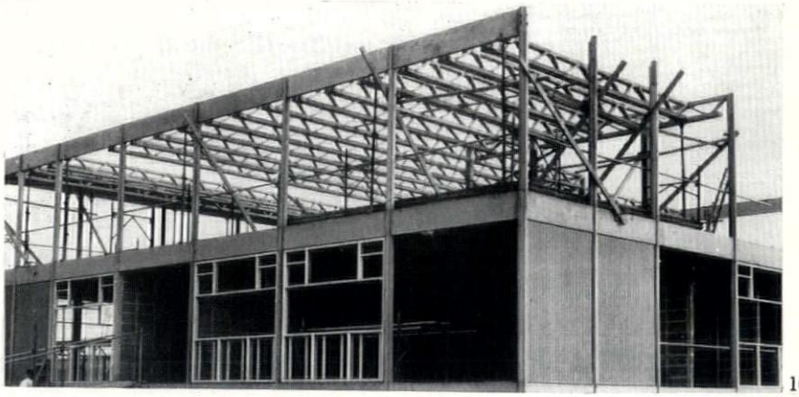


13

12, workshop, Wigan. Designers: F. J. Samuely and Partners. A folded plate shell made of assemblies of tube and rod welded together, showing the simplicity and lightness thus obtained. 13, Leavesden Green School. Architect: County Architect, Hertfordshire; engineers: Hills (West Bromwich). A standardized structural frame using hot-rolled steel sections, showing the replacement of single rollings by built up components. 14, CLASP System. A standardized structural frame making extensive use of cold rolled steel sections. The bracing permits of settlement due to mining subsidence. 15, Intergrid. Designers: Gilbert Ash and The Prestressed Concrete Company Limited. The first prestressed concrete modular precast system for school construction. The beams shown were complemented by transverse segments lying between them and stressed to form a monolithic grillage. 16, Laingspan. Designers: John Laing and Son Limited and A. J. and J. D. Harris. A further MOE sponsored school system in prestressed concrete. Beams are simply supported and independent; wind loads are supported on braced columns. The structure has enough resilient flexibility to follow distortions due to mining subsidence. The external cladding follows the structural module but is otherwise free of major structural function. 17, garage at Lincoln. Designer: Hajnal Konyi. An exceedingly economic structure admirably suited to its function. The paraboloid shells were cast in-situ in reinforced concrete. The inexactitudes of simple paraboloid shell theory were revealed by model tests, which justified the detailing proposed by the designer.

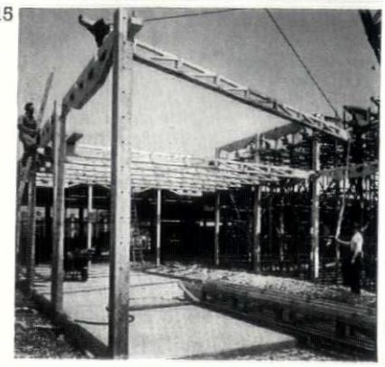


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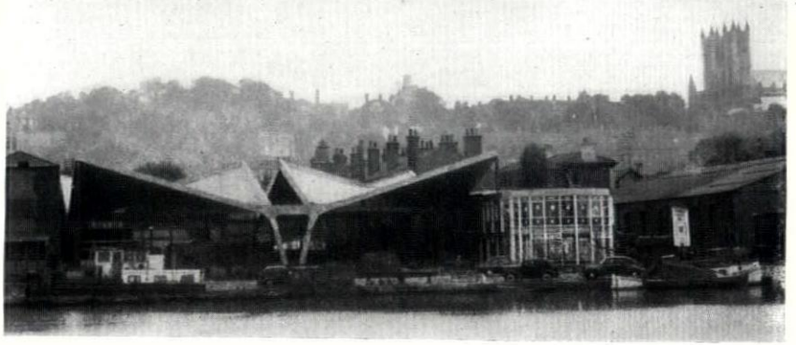


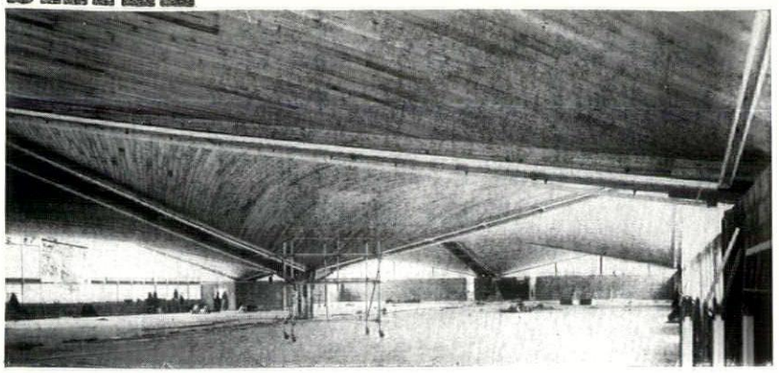
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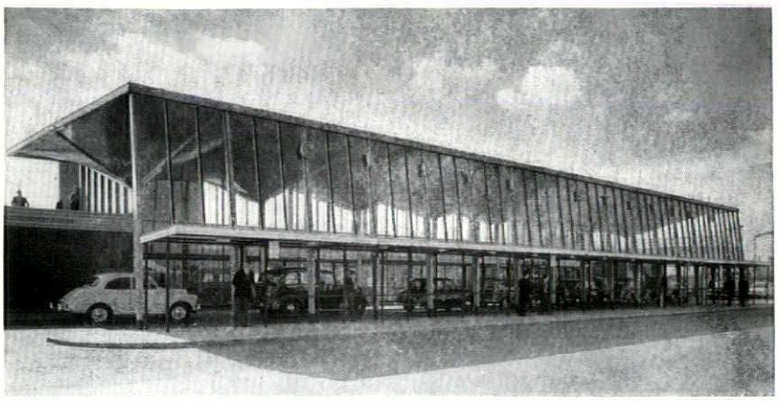


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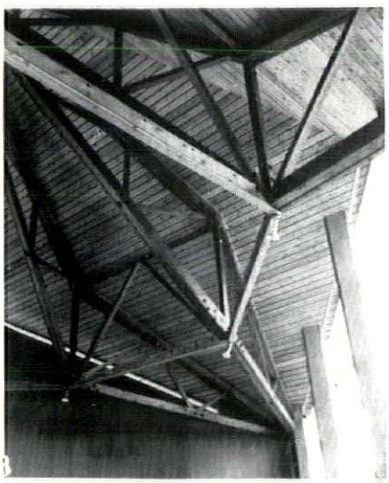


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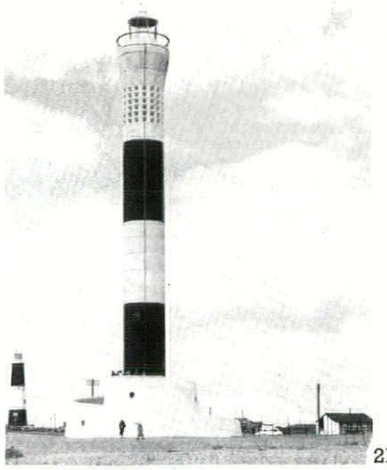


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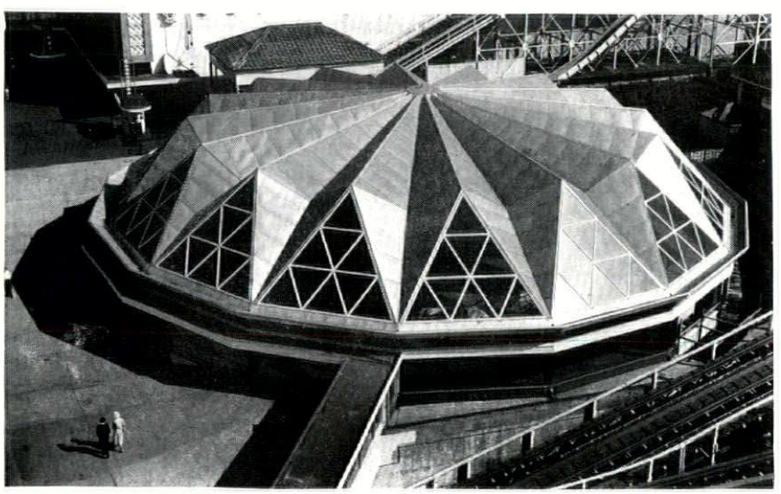
18, *factory at Market Drayton. Architects: Robert Townsend; engineers: Hume and Tottenham. A paraboloid shell made of timber.* 19, *booking hall, Crewe Station. Architects: British Railways (Midland Region); engineers: A. J. and J. D. Harris. A timber folded plate shell braced by a timber triangulated framework.* 20, *assembly hall roof, Perse School. Architects: Robert Matthew and Johnson Marshall; engineers: A. J. and J. D. Harris. A timber folded plate shell braced by a timber triangulated framework.* 21, *Dungeness lighthouse. Architect: Ronald Ward. A precast prestressed concrete structure. The holes in the wall surround the foghorn.* 22, *Derby Racer, Blackpool. Architects: Howard V. Lobb and Partners; engineers: F. J. Samuely and Partners. A folded plate shell made of multiple layers of timber planks.*



20



21



22

and State employment is in no way necessarily the mark of an élite. It is also a peculiarity of British public service that technical men are subordinate to administrators. Now in dealing with so large a volume of building it is clear that the administrators had an opportunity of deliberately stimulating design; where this opportunity has been taken, the results have been impressive.

British use of materials

Certain structural materials may be dismissed. Structural plastics, long heralded, are still on the verge of entering building from those specialized engineering uses for which they were developed. Aluminium played a notable role immediately after the war, when aircraft factories were set to work turning out large numbers of standard houses and schools at a very high rate—and cost. Since then the material seems not to have found any particular application where its advantages of freedom from corrosion and lightness outweigh its high initial cost.

To dismiss structural steel is obviously frivolous. It has been the basic material in Britain for the best part of a century—during most of which time it has been reliable, cheap and abundant. Until the last twenty years, the British structural engineer thought first in terms of steel; why is it, then, that there is so little originality in steel construction, so little striking design? Novelties there are of course; Prof. Baker and the Cambridge school launched the plastic theory of design in the thirties; cold-rolled sections, castellated beams, structural tubes both round and rectangular, broad-flange beams (the latter a British invention taken overseas by the inventor) have extended the scope of the designer. But all told, there seems to be no urge towards refinement of design or further development in structural steel. Perhaps we must blame the design regulations which were pitched, as we have seen, at a remarkably low level, doubtless as a result of aiming deliberately (and successfully) at a mass market too early. Steel continues to do a dull job in a dull manner, save only where a new impulse is applied, as in the mass-produced ultra-lightweight beams, seen at their best in the school systems.

The materials whose development is the most lively just now are concrete and timber, the former stimulated by the idea of prestressing, the latter by use of the new synthetic glues.

Prestressed concrete has had a huge success in Britain; some 40,000 tons of prestressing steel were used in 1960. Prestressed concrete arrived in England just before the war to find a country with an already extensive and highly developed precast concrete industry, and it has been very largely associated with precasting since, either in the form of complete elements, usually pretensioned, or of segments for posttensioning on site. This latter form has opened unsuspected new horizons. A major attraction of reinforced concrete in its early days was its freedom of shape; as time went by, in Britain at any rate, it was found that complicated formwork was expensive, and concrete structures became depressingly rectangular and rectilinear in consequence. It is now seen that segmental precasting offers a flexibility in structural form which, while quite different in nature, is probably potentially far greater than that available to even the most expensive in situ construction.

In the early days of prestressed concrete, it was most used for substantial civil engineering works; the difficulty found in this country immediately after the war, with little civil engineering being undertaken, was to reduce the scale and to show an advantage in the use of prestressing in building works. Success rewarded this effort, and several stressing systems for single wires and strands were developed in this country. Here again, the Ministry of Education stimulated some notable structural designs, both in their 'systems' and in works carried out in more traditional ways.

One result of the spread of prestressing is that a building with vast surfaces of load-bearing concrete begins to look a little old-fashioned. Prestressed concrete is of high strength and is not cheap on a bulk basis; the tendency is thus towards slender load-bearing members with infillings either of other materials or of concrete facing panels with carefully prepared surfaces. The in situ concrete shell is becoming more infrequent, largely because other materials (notably steel and timber) in various combinations are found to be as good and rather cheaper—odd that the discovery took about 50 years to make. Very large span roofs, such as may justify concrete shell construction, are rare in this country.

Much research has been carried out in Britain this last ten years and is still going on apace; extensive fire tests have been made. The Cement and Concrete Association laboratories have played a leading part and are pioneering the use of scale models subject to loading and strain measurement as a design tool for the mathematically more intractable structures.

Concrete engineering has reacted to an idea; timber engineering has virtually been reborn by new means of assembly, notably synthetic resins. Timber in its classic form has always suffered from the uncertainty and clumsiness of tension joints; this difficulty no longer exists, and new forms of beams and trusses and arch ribs, laminated and built up, are being erected. Most notable of all, however, are the timber shells, variously cylindrical, conoid and paraboloid, which have been developed with the help of the Timber Development Association; they are built in a manner reminiscent of the wartime Mosquito air-frame. A great deal of work has to be done and prejudice overcome before timber is used widely in any but a minor structural role; the supply of stress-graded timber would help a lot. The low value of Young's modulus may well set an upper limit to the size of timber structures, but in the meantime timber is being used in a most lively fashion.

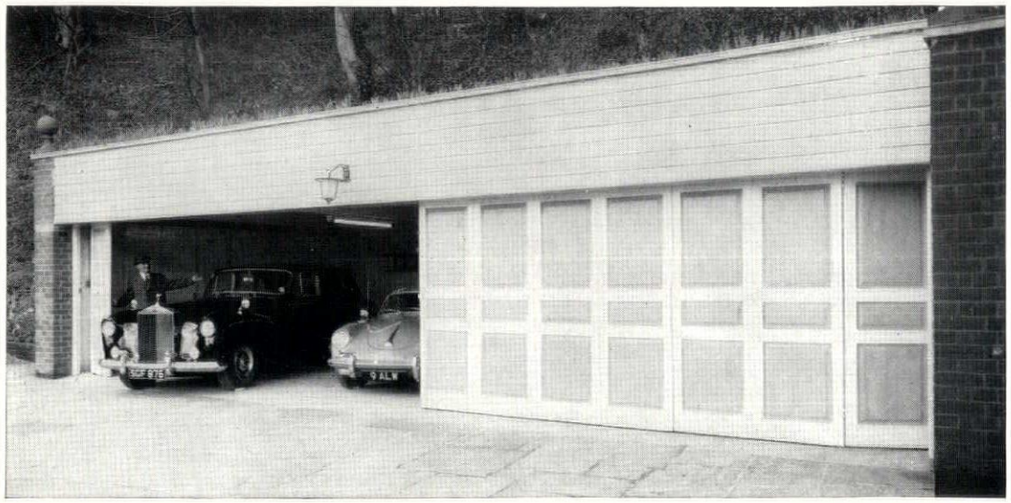
Conclusion

Structural engineering in Britain is a public necessity; its main function is to satisfy public needs at a minimum expenditure of human effort; put more bluntly, at minimum cost.

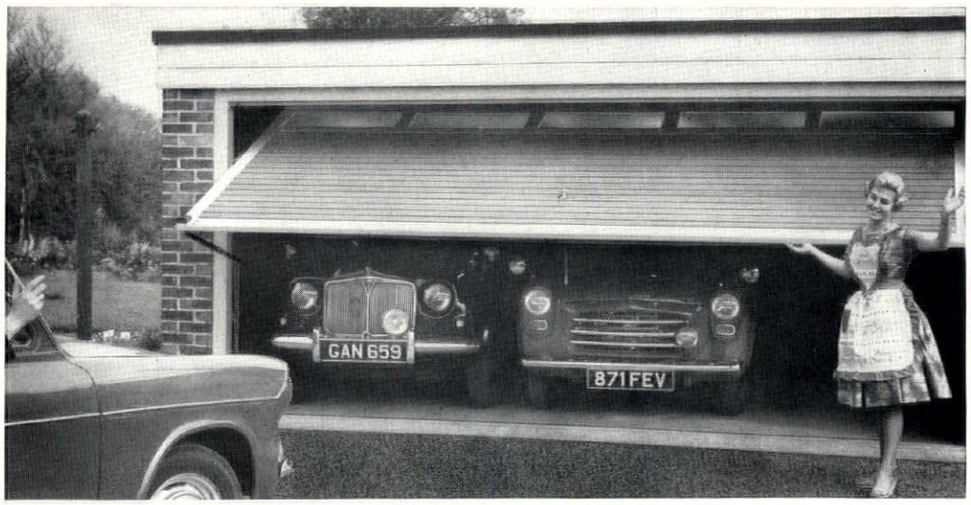
The effort to define these needs, and to satisfy them, and that at least cost, has a curious characteristic of exciting enthusiasm; structural engineering has its own share of that obscure but powerful creative force directed to bettering the material conditions of life, on which force the whole of our civilization relies. In acquitting themselves of their task, British structural engineers can adopt the austere boast with which Freyssinet summarized a lifetime of innovation: 'I have reduced the cost of certain forms of construction.'

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THE INDUSTRY

Double glazing

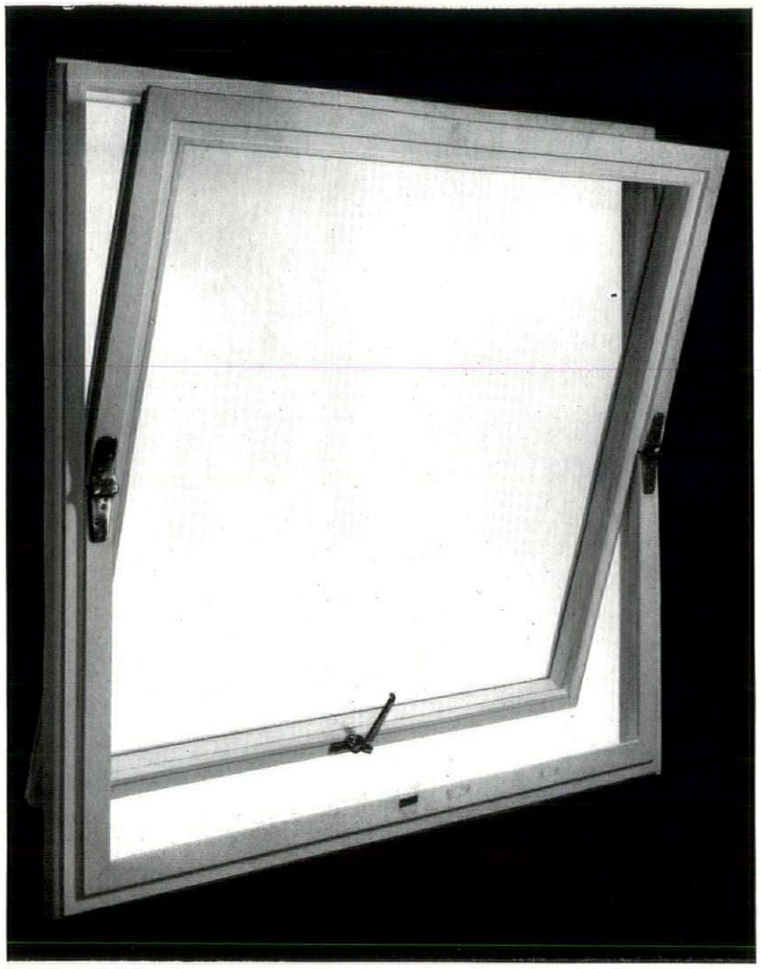
There is some evidence that the layman in this country is coming to accept the idea that double glazing, if not essential, is at least highly desirable. To date he has tended to weigh comfort against cost and to find presumably that the one is not worth the other. Some time ago the Swedish Carda double glazed window was introduced to the market. The manufacturers believe that if a simpler, cheaper version were available there would be a considerable demand for it in the domestic field. Accordingly, they have produced the Cardette, 1, made in Swedish softwood with a space of $1\frac{3}{8}$ in. between the two sheets of glass. Any tendency for condensation to form in the air space is counteracted by the provision of a desiccant capsule in the space, inserted at the factory. Replacements for the capsule may be obtained from the manufacturers at a nominal charge. The window is made in six types and supplied from the factory fully glazed (timber beads), primed and complete with furniture. Details are as follows:
type P4040 (pivoted) 4 ft. $0\frac{1}{4}$ in. by 4 ft. $0\frac{1}{4}$ in. overall, £10 3s. 0d.
type P2140 (pivoted) 4 ft. $0\frac{1}{4}$ in. high by 2 ft. $1\frac{1}{4}$ in. wide, £7 14s. 0d.
type S.2140 (side hung) 4 ft. $0\frac{1}{4}$ in. high by 2 ft. $1\frac{1}{4}$ in. wide, £7 9s. 0d.
type P4036 (pivoted) 3 ft. $6\frac{1}{4}$ in. high by 4 ft. $0\frac{1}{4}$ in. wide, £9 10s. 0d.
type P2136 (pivoted) 3 ft. $6\frac{1}{4}$ in. high by 2 ft. $1\frac{1}{4}$ in. wide, £7 5s. 0d.
type S2136 (side hung) 3 ft. $6\frac{1}{4}$ in. high by 2 ft. $1\frac{1}{4}$ in. wide, £6 19s. 0d. *Holcon Ltd.*, 21 *Mackenzie Street, Slough, Bucks.*

Suspended ceilings

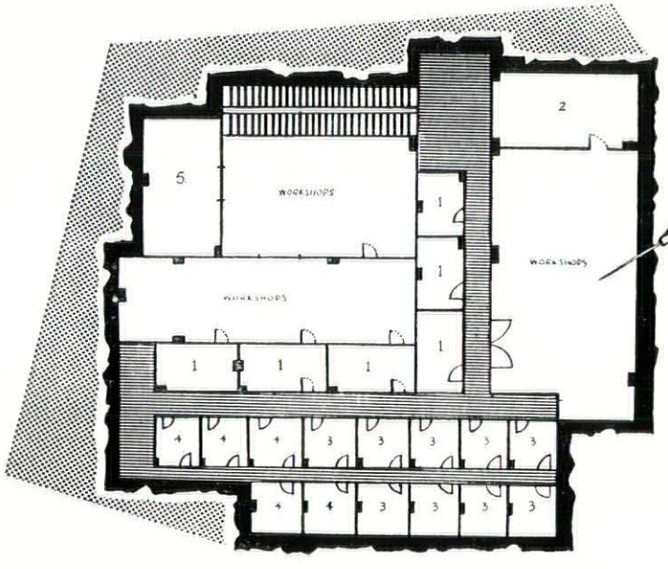
Bowaters have taken the design of suspended ceiling systems a step further with their new system called 'Versa-Tile.' The idea is so simple that it is surprising that it has not found more widespread acceptance. The principal component of the system is a frame, 2, consisting of a 'Z' section of pressed steel with the corners of the upper flange omitted to leave a square hole for fixing. It is this frame which is attached to the suspension system by means of four little cross-shaped plates at the corners. There are three alternative ways of fixing: (1) to channels fixed direct to the ceiling; (2) to a rigid suspended grid; and (3) to timber battens. The frame is stove-enamelled (white is the standard colour, but others may be supplied by special arrangement). The panels themselves, which drop into this frame, are of three kinds.

The first, described as thermal-acoustic, consists of 1 in. of mineral wool filling behind a facing panel of either perforated sheet metal or perforated or slotted hardboard (plain or leather grain; undecorated, decorated or p.v.c. finish). The second kind of panel is described as thermal only and has the 1 in. mineral wool filling behind a plain or leather grain hardboard panel (finished as

[continued on page 70



1. *the Cardette double glazed window.*



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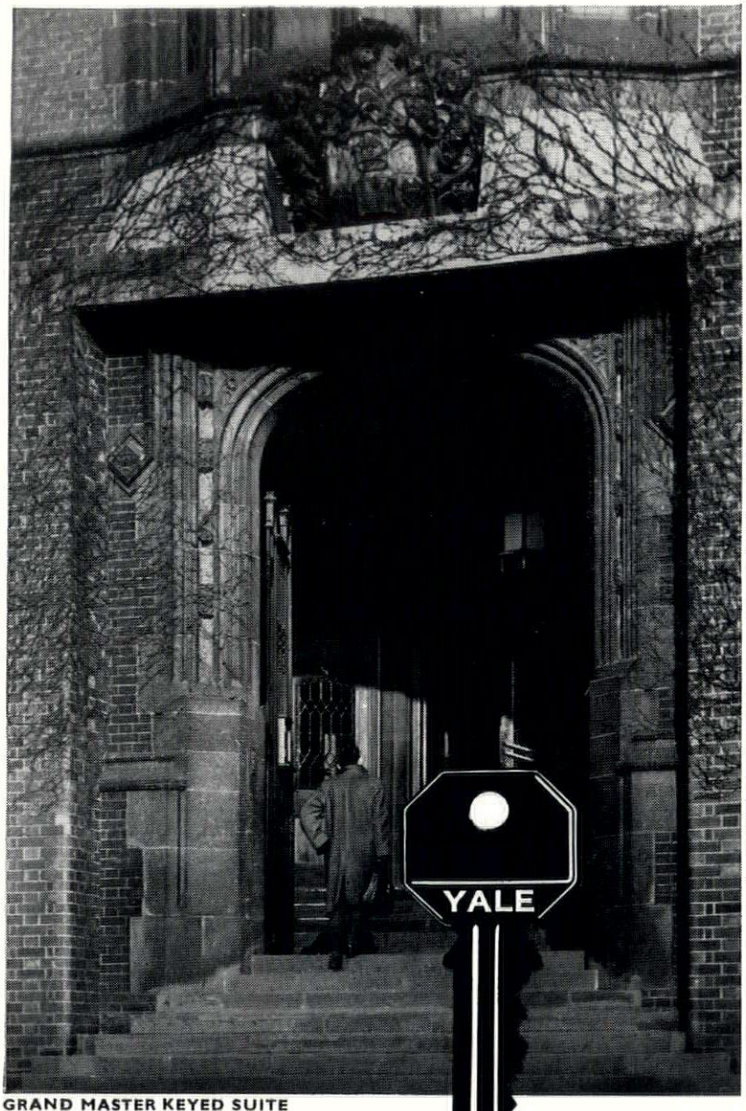
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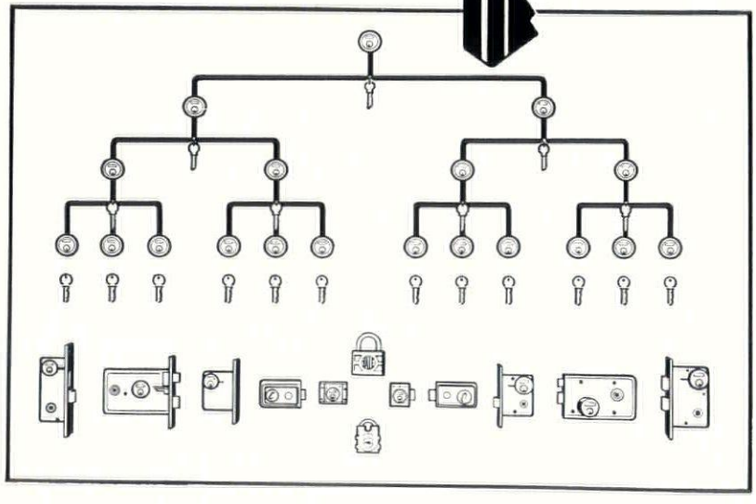
Master Keyed Suites. Different locks each operated by its own key but with a Master Key to open all locks. The Master Key can open up to 12,200 different locks.

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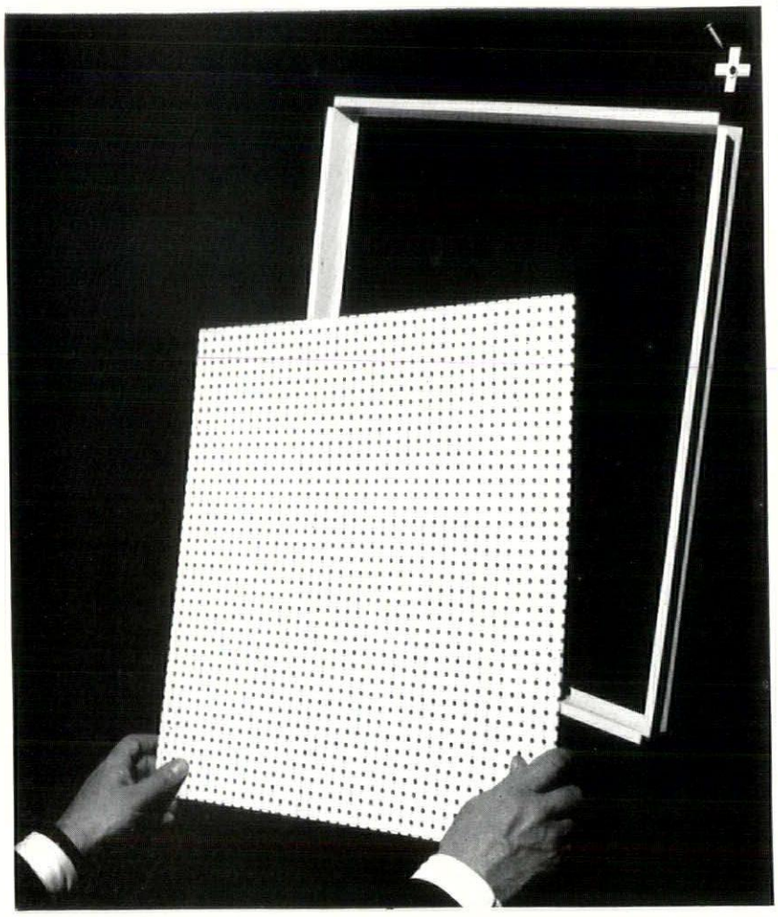
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2, *the Bowater Versa-Tile ceiling panel.*

continued from page 68]

above). The third kind is merely for decorative use and is the same as the thermal variety except that there is no mineral wool filling. The frames are available in two sizes and in assessing the number of panels required the modular sizes should be used. (A rather neat point of detail is the $\frac{3}{8}$ in. overlap of frame flanges which leaves a pronounced gap $\frac{3}{4}$ in. wide and 1 in. deep between panels.)

1. Modular size 20 in. by 20 in., overall size $20\frac{3}{8}$ in. by $20\frac{3}{8}$ in. by 1 in. and 2. modular size 24 in. by 24 in. overall size $24\frac{3}{8}$ in. by $24\frac{3}{8}$ in. by 1 in.

A well-designed brochure (in line with Bowater standards) has been produced to describe the system and is illustrated with drawings and diagrams by Peter Matthews.

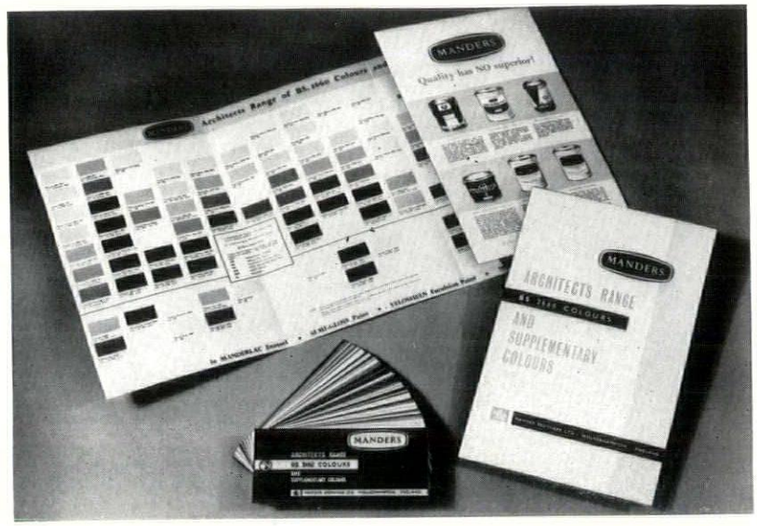
Building Products Division, Bowater Sales Co., Ltd., Bowater House, Knightsbridge, London, S.W.1.

Colour cards

Manders have announced a completely revised colour range co-ordinated with six of their major finishes (i.e. Manderlac enamel, Semi-gloss paint, Velosheen emulsion paint, New Aqualine water paint, Matt finish and eggshell). The range comprises the B.S.S. 2660 range plus 28 supplementary colours for which presumably they have found sufficient demand to add to the standard

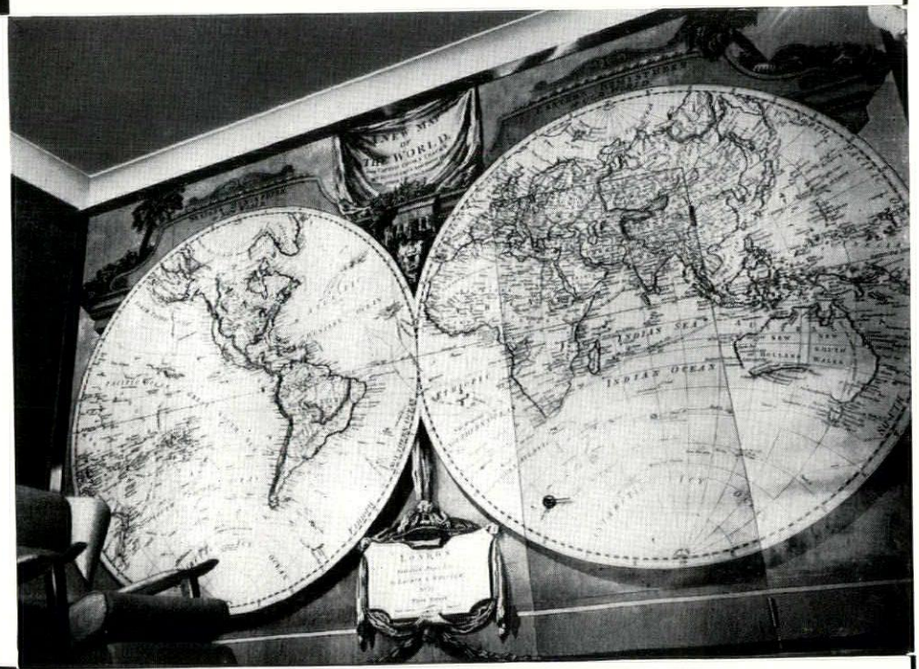
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3, *Manders new colour card and range of colour samples.*



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continued from page 70]

colours. A neat colour card, 3, has been designed and its only failing (although an important one) is that the colour slips are too small. It seems that the manufacturers have taken the decision to have the whole range of colours visible at once (when the colour card is fully opened out) and to do this it has been necessary to sacrifice size or accept, as the only other alternative, a colour card the size of a drawing board. Admittedly a set of colour samples is also available (see photograph) but manufacturers should realize that, even if most architects were well organized, they are at least as prone to lose things as the next person and one large, complete brochure is better than two or three small ones.
Mander Bros. Ltd., 2-4 Noel Street, Oxford Street, London, W.1.

CONTRACTORS etc

Flats in St. James's Place, London. *Architects:* Denys Lasdun & Partners. *General contractor:* J. Jarvis & Sons Ltd. *Sub-contractors: Piling:* Pressure Piling Co. (Parent). *Plumbing and heating:* G. N. Haden & Sons. *Electrical:* Drake & Gorham (Contractors) Ltd. *Granite:* Art Marble Stone & Mosaic Co. *Lightning conductor:* R. C. Cutting & Co. *Bronze and metal windows:* The Morris Singer Co. *Lifts:* Otis Elevator Co. *Roof lights:* Lenscrete Ltd. *Terrazzo:* Arcanum Terrazzo Co. *Cradles:* Cradle Runways. *Refuse hoist:* Hoisting Appliance Co. *Balustrades:* Clark Hunt & Co. *External mosaic:* W. B. Simpson & Sons. *Internal mosaic:* Zanelli (London) Ltd. *Portcullis grille:* Haskins Rolling Shutter. *Mineralite:* W. Miller (London) Ltd. *Hardwood strip flooring:* Hollis Bros. & Co. *Tiling:* Osgood & Co. *Blinds:* Tidmarsh & Sons. *Duct waterproofing:* Mann-Reddington Ltd. *Acoustic ceiling:* Armstrong Cork Co. *Curtain tracks:* Cope & Timmins (London) Ltd. *Carpet:* Catesby's Contracts Ltd. *Garden works:* William Wood & Son. *Lift motor screens:* Evans Turner & Co. (Engineering) Ltd. *Cork flooring:* N.W. (London) Flooring Co. *Convectors:* F. H. Biddle & Co. *Venetian blinds:* Venetian Blinds Ltd. *False ceiling:* Campbell Denis Ltd. *Glazing:* James Clark & Eaton Ltd. *Cork insulation:* Cork Insulation & Asbestos Co. *Ironmongery:* James Gibbons Ltd. *Sanitary fittings:* Alfred Goslett & Co. *Vents:* Greenwood Air-Vac Conduits Ltd. *Cellar flaps:* Haywards Ltd. *Domelights:* T. & W. Ide Ltd.

Undergraduate Rooms, Queens' College, Cambridge. *Architects:* Basil Spence & Partners. *General contractor:* William Sindall Ltd. *Sub-contractors: Asphalte and tile roofing:* Cambridge Asphalte Co. *Roof screeding:* Isocrete Co. *York stone paving:* William Knight & Co. *Natural guiting stone facework:* South Western Stone Co. *Aluminium and steel windows and doors:* The Crittall Manufacturing Co. *Wardrobe fittings:* George M. Hammer Ltd. *Lightning conductors:* W. J. Furse Ltd. *Heating installation and hot water:* Wontner-Smith Gray & Co. *'Daempa' suspended ceilings:* Acoustics & Engineering Ltd. *Artificial stone convector surrounds:* Naybro Stone Co. *Ironmongery:* N. F. Ramsay Ltd. *Curtain track:* Silent Gliss Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Fire hose reels:* John Taylor Dunford Ltd. *Metal handrails:* C. W. Goulding Ltd. *Hardwood:* W. W. Howard Bros. *Fibreglass basins:* Sarena Sinks Ltd. *Beds:* Sadgrove & Co. *Desks and tables:* George M. Hammer Ltd. *Stacking chairs:* Finmar Ltd. *Carpets, curtains, bedcovers:* George Milligan Ltd. *Light fittings:* Troughton & Young (Lighting) Ltd., Frederick Thomas Ltd., British Electrical Co., General Electric Co. (Lighting Division), Atlas Lighting Ltd., Loblite Ltd.

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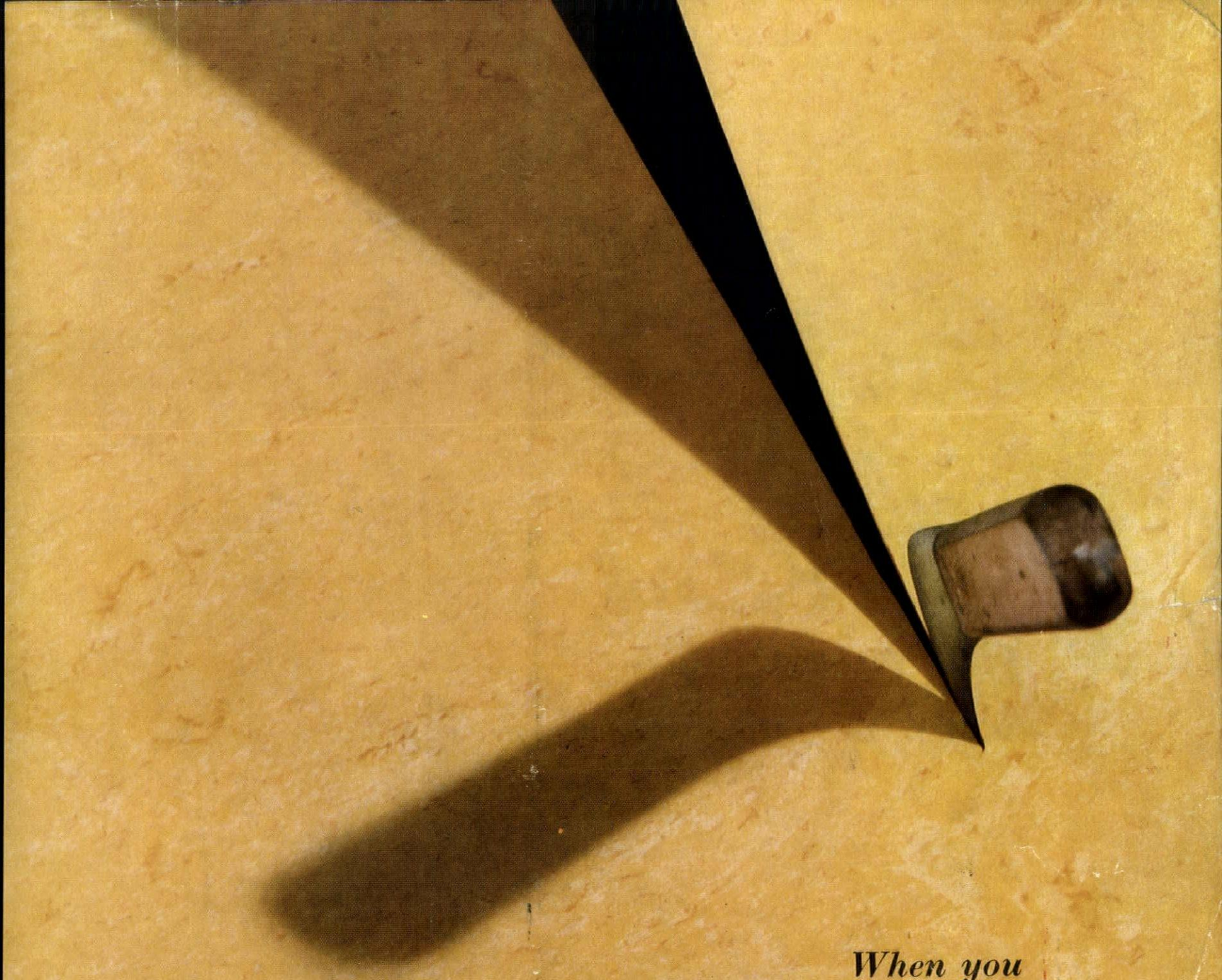
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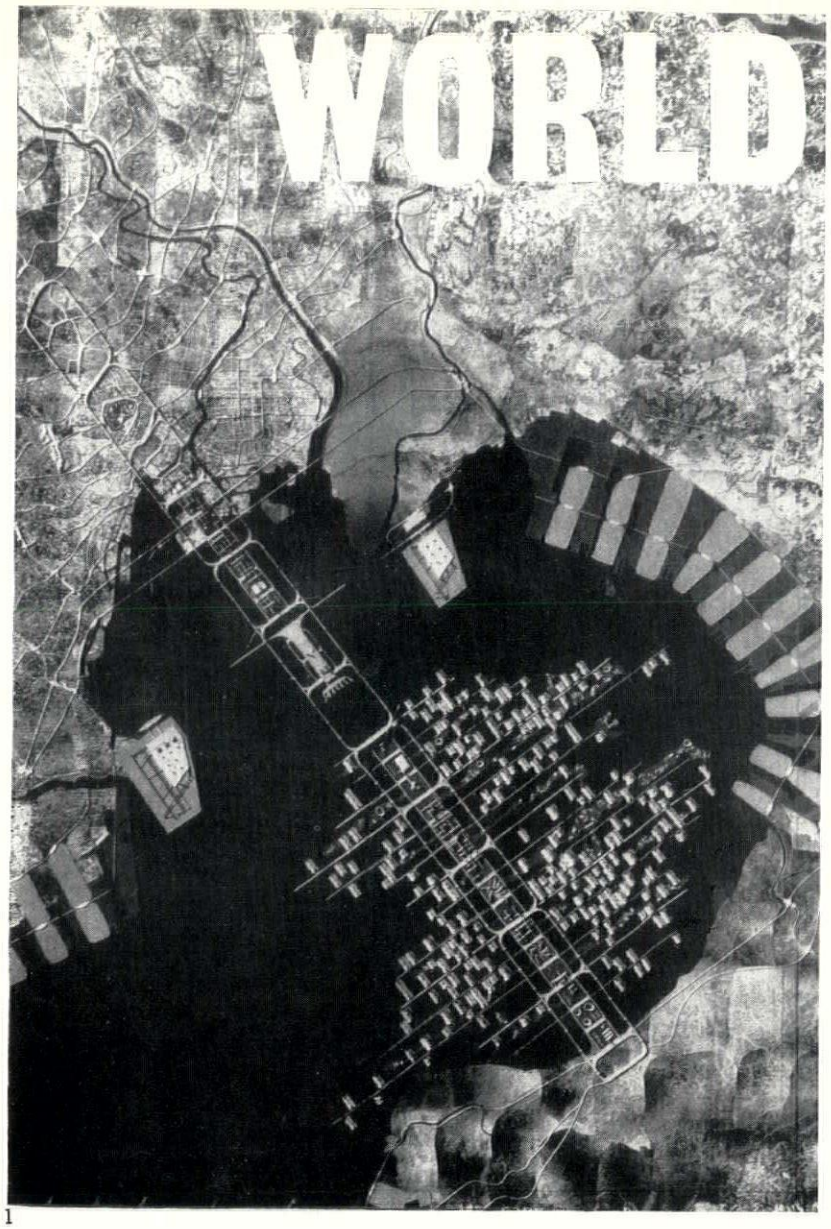
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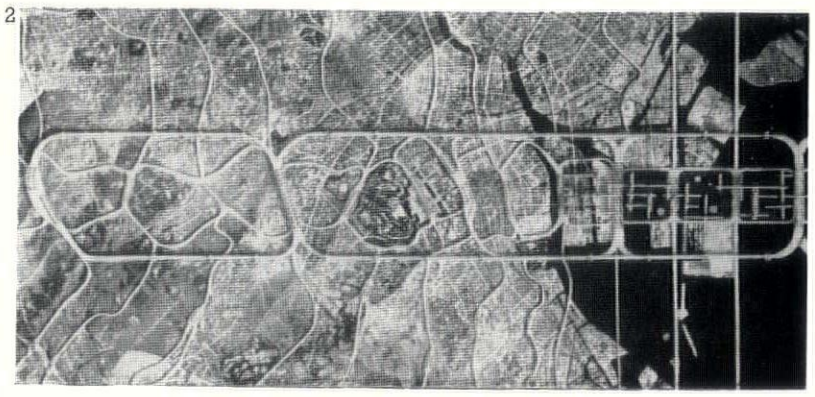
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GREATER TOKYO

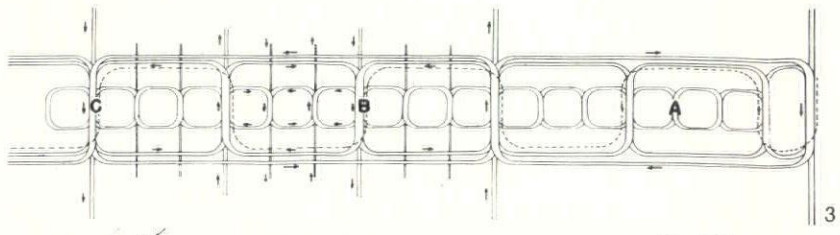
Those who have watched, over the last five years, the growing preoccupation of Japanese architects with hyper-utopian neo-futurist urban projects, and—at the same time—the simultaneous growth of authority and modishness in the trabeated concrete architecture of men like Tange and Maekawa, must have wondered with a degree of apprehension what would happen when the two trends collided.

Now that it has happened, in the Tange Research Group's 1960 plan for Tokyo, 1, it has the added terror, for conventional town-planners, of being a scheme for an existing town, as was Le Corbusier's *Plan Voisin de Paris.*

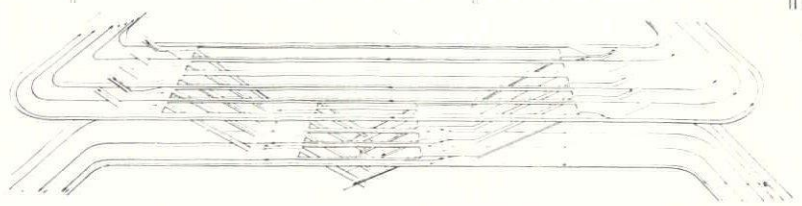
On the other hand, they will probably be relieved to see that the Group have achieved a blend of the traditional and the visionary as delicate as any middle-of-the-road planner could have wished—except that no middle-roader could have done it. The scheme starts by assuming that some sort of civic axis is the prerequisite of metropolitan order (as Costa did at Brasilia) but the axis here starts within the present area of the city, 2, and is realized as a linked chain



2



3

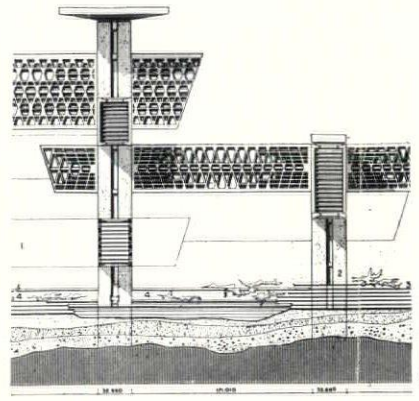


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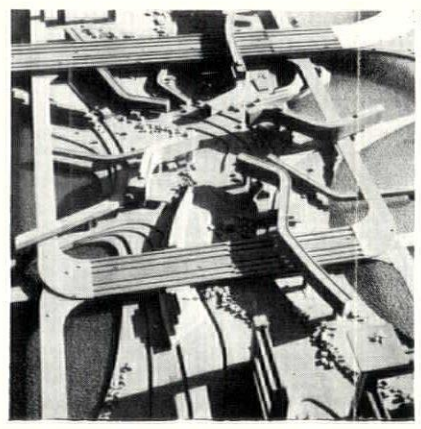
of loops of road. These links represent one of the neatest technical innovations in the scheme, since on each loop traffic circulates in only one direction, 3, with access to the next loop achieved by changing levels, 4, at the points of overlap.

Each main link of the chain is to enclose about one square kilometre of land, except that loop 3 and onwards will be out in Tokyo Bay, with the outward and return sections of the road carried on suspension bridges. This will doubtless be decried as ridiculous economically, but its social superiority to the sampanization of the Bay, Hong Kong style, should be clear enough, as should the psychological advantages of giving the city contact with its sea, from which it is at present largely isolated by shoreline factories.

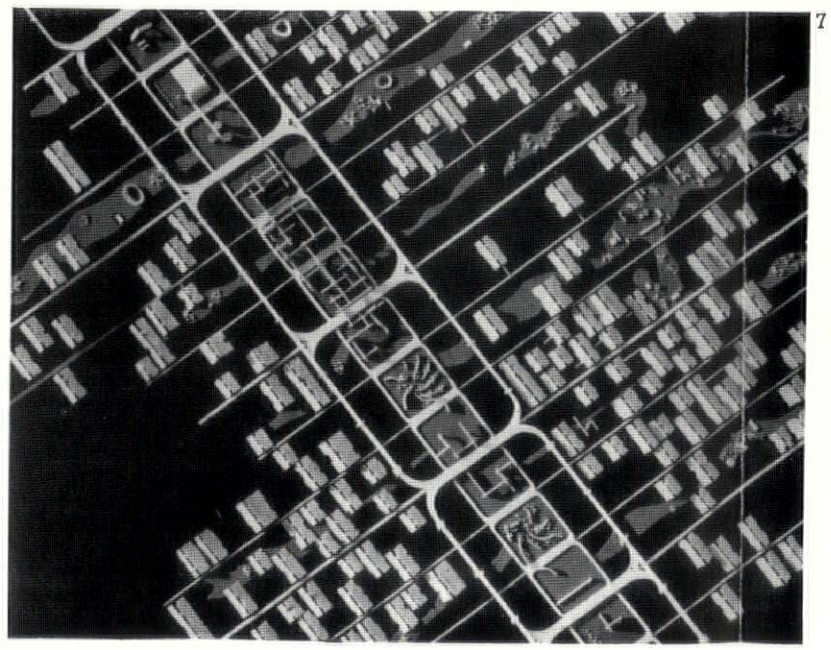
The contents of the links are social and commercial functions, including a new central station in the third loop, and a new liner-harbour in the fourth. Elsewhere along the chain, the accommodation for offices, etc., is either in what appears to be a revived form of Lissitsky's *Wolken-bugel*, 5, with post-Kahn structure, or in free-form snake-blocks, 6, that bridge over roads with positively Brazilian insouciance. Once fairly launched out into the Bay, this vertebral core of transport and administration begins to send out side-shoots from which grow, in a manner that brings out everything that is fashionable in the term 'random distribution,' 7, a proliferation of residential blocks whose apparently traditional form is heavily qualified when their immense scale is appreciated; they may apparently be as much as twenty storeys high, with the added excitement that these storeys may be no more than concrete decks on which individuals may build individual houses to their own taste. On this scale, such



5



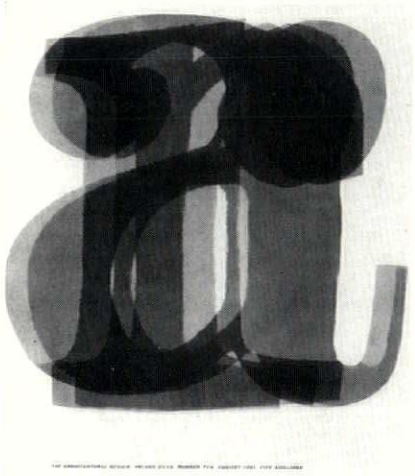
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This Month's Cover—*another variation on the AR initials—is from a photogram by Geoffrey Gale.*

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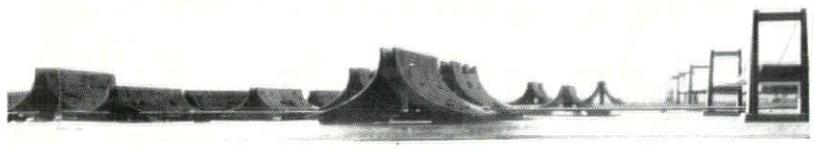
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Tokyo

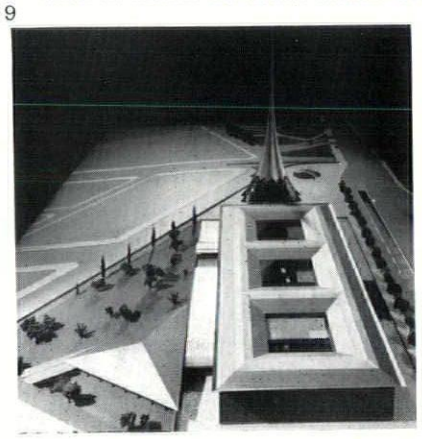
minor works will hardly register, and will be powerless to spoil the science-fictional townscape created by these gigantic tent-forms squatting low over the water, 9.

The whole project represents the most formidable assault made since the war on the technical and formal problems of a utopian city (for all that its projectors insist on the need to build it *now*, as was the case with the *Plan Voisin* also), being more radical in both its overall forms and in its handling of the traffic problem than either Brasilia on the one hand, or the Metrolinear project of Professor Malcolmson on the other. But what may either damn the scheme in spite of its technical and social virtues, or recommend it in spite of its economic improbabilities, is the incredibly fashionable nature of the forms in which (for doubtless impeccable functional reasons) it has been realized. Here is a scheme which should bewitch the eyes of a generation—who may count themselves fortunate that the very full presentation of it in *Japan Architect* (April, 1961) is supported by an equally full and fascinating text, admirably translated by C. S. Terry.

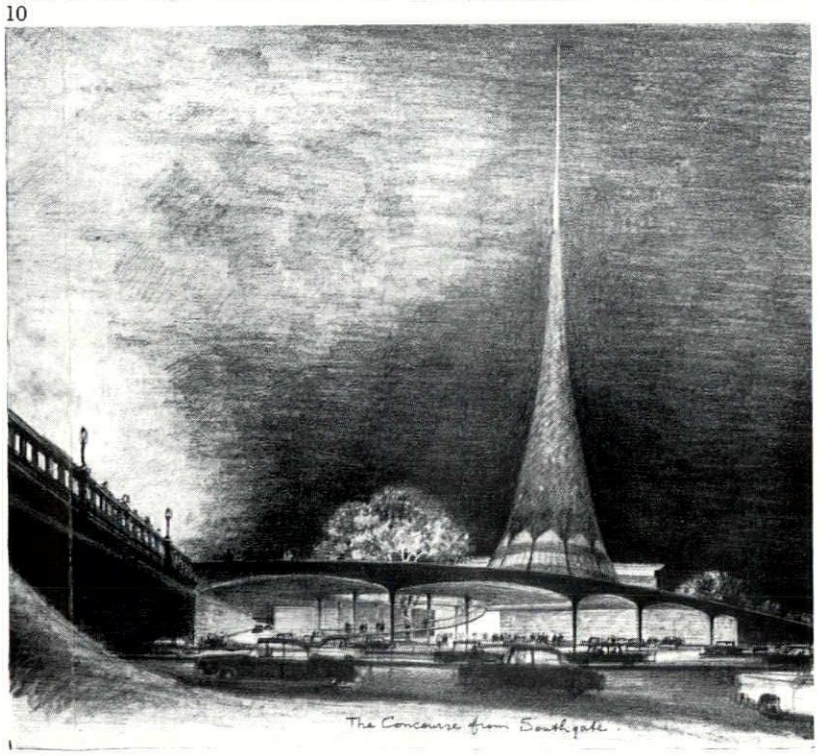
MELBOURNE ARTS

However its exact local nomenclature may vary, the Arts Centre is clearly a constituent building type of the era after World War II. It may be a house of Soviet Culture, or a museum of modern art, or a National Gallery and Cultural Centre—as in Roy Grounds's new project for Melbourne, 9—but the architectural problem remains one of reconciling art galleries with office-space and auditoria-theatres, with or without a garnish of teaching activities to encumber the architect's concept. The Grounds solution, evolved after a prolonged study-tour of analogous and related institutions all over the world, consists of a gallery block, with three internal courts, and flanked by a triangular art-school building, two auditoria and an experimental theatre below podium level, the head of the larger auditorium rising through the podium, capped by office-floors and a 415-foot spire, seen rising above the theatre concourse in 10, while 11 shows the entire scheme in

9



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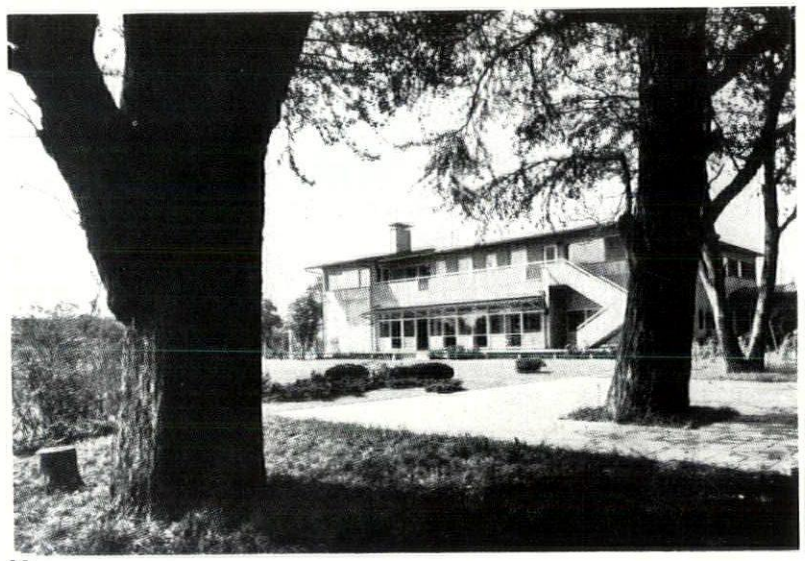




11

relation to the surrounding Melbourne townscape.

More advanced drawings of the scheme will be awaited and studied with considerable interest, not only to see how the footings of the spire are threaded through the doubtless complex planning below, but also because of the proposed section of the galleries. It is intended to hang the pictures on the inner face of the blank outer walls, which are to be flooded with light from top to bottom, but uninterrupted by floors in spite of their four-storey height. Instead, the pictures are to be viewed from 'floating' platforms suspended clear of the walls from a central core-structure.

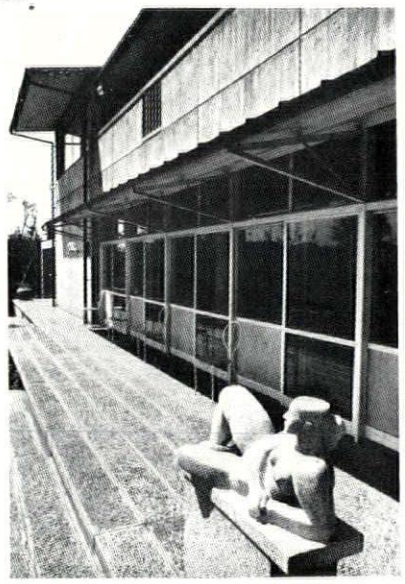


12

BUILDING DIPLOMATICALLY

recent embassy buildings in Asia

13

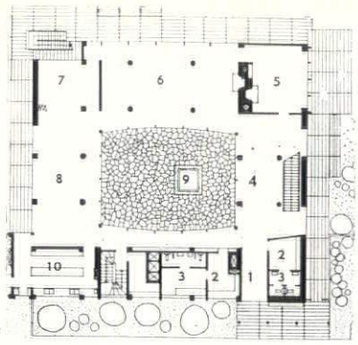


Controversies greet new US Embassies; other nations build theirs and escape undiscussed. This imbalance doubtless reflects a political situation, but it causes some remarkable architecture to go unnoticed, for overseas building operations are becoming an ever more important diplomatic activity for a number of nations, and their manner of presenting themselves to other countries reveals aspects both of diplomacy and architecture that might otherwise pass without comment.

The Swedes, it appears, like to fit in. Their new embassy in Tokyo, 12, designed by Nils Ahrbom and Kunio Maekawa, with Carl-Axel Acking assisting on the interiors, conducts itself in an Eastern-Western manner that does not differ at first sight from much other architecture being built in Japan at present—13 would be very difficult to place, even with the sculp-

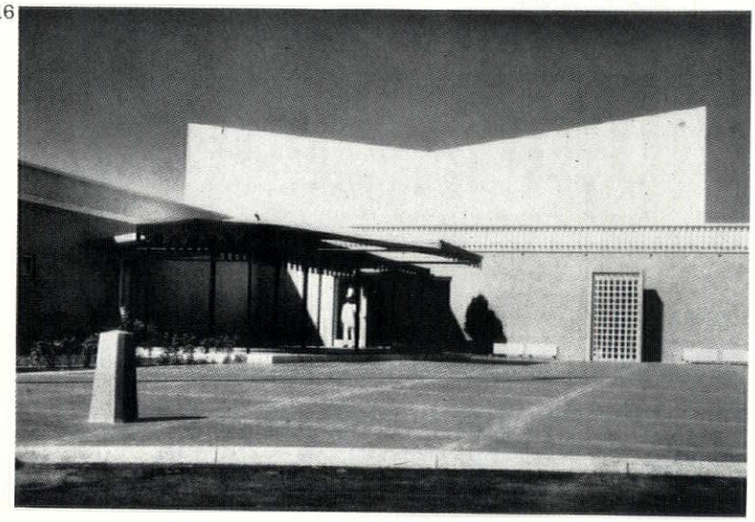
ture by Erik Grate in the foreground. However, the courtyard plan, 14, and more particularly the plan of the courtyard, reveal a fundamentally Western and Formal attitude, which the interiors, 15, confirm.

But at New Delhi, there was nothing much to fit into—and *Arkitektur* (1, 1961) found this a remarkable enough situation to deserve comment. 'Round about lie embassy buildings from the whole world of the most varying type and appearance. There was therefore no particular environment or atmosphere to consider. Instead, the architectonic composition has . . . been based on climate, building technique and function. . . .' From these considerations, Joran Curman and Sune Lindstrom have made a mildly ceremonial, but mostly understated group of buildings, 16, based more or less on a 'compound' plan, 17, and an interesting section, based on the use of baffled and reflected



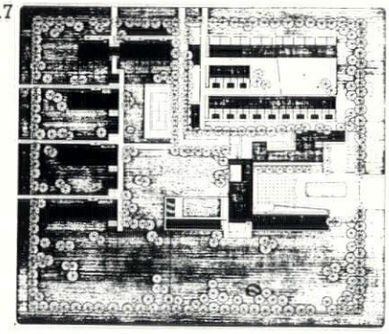
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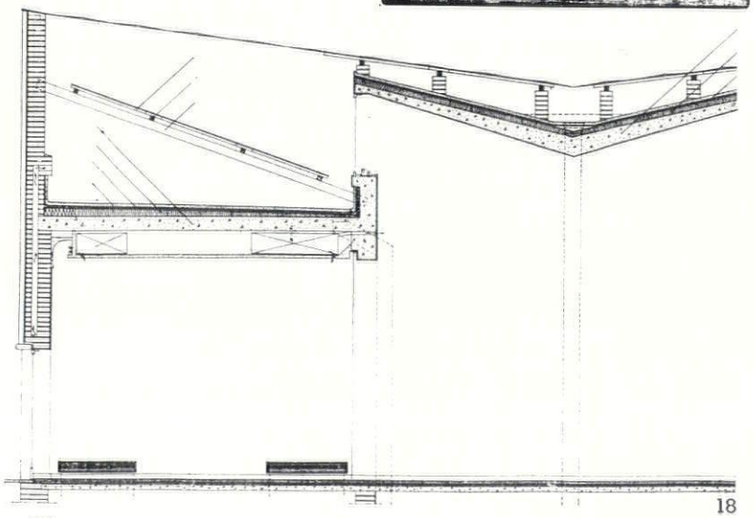

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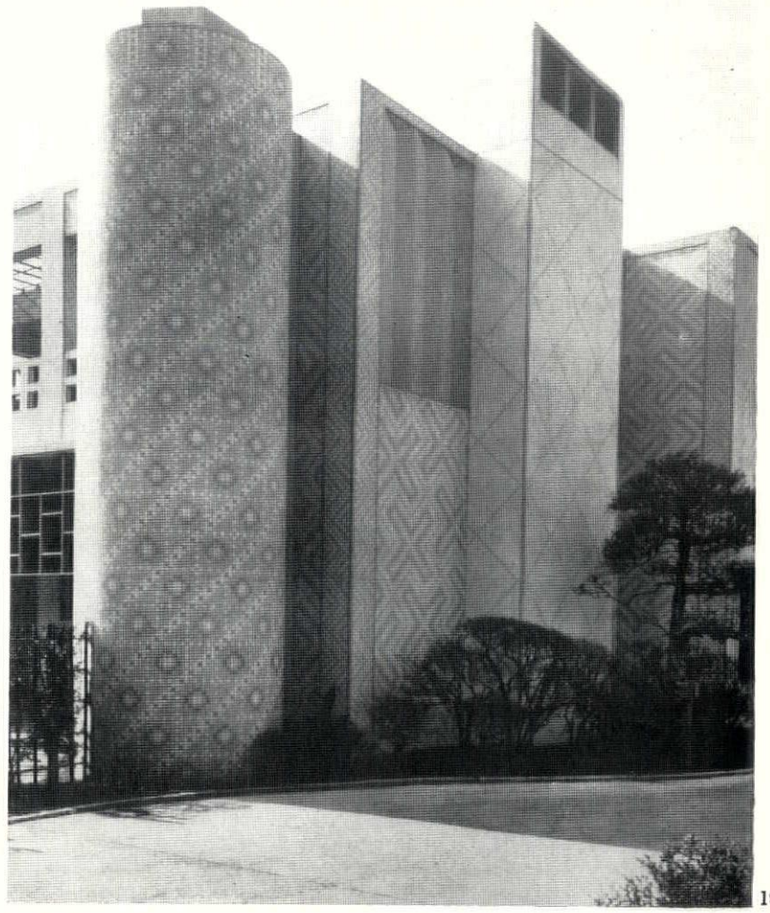

16

light, 18, for the roof of the main ceremonial rooms (banqueting, reception, dining, from left to right)—this, of course, is the roof that upstands behind the entrance in 16.

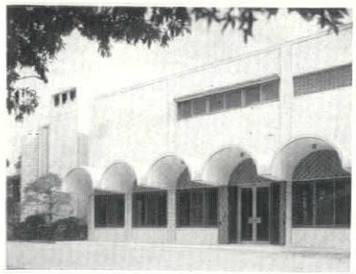
It would be difficult to find a more complete contrast to this Swedish approach than another Tokyo embassy, the Iranian, designed by Raymond and Rado, with Noemi Raymond for the interiors. Here, 19, monumental form is presented with elaborately patterned tile facings (as it might be Louis Kahn in gift-

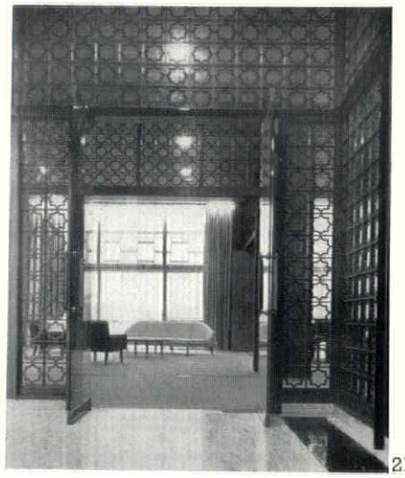

17


18


19

wrapping), the garden façade makes a strong pattern of balconies and sunscreens, and the interiors employ grille-work to aggressively oriental effect, 21. Yuichiro Kojiro, writing in *Japan Architect* (January, 1961), sees this building as a general extension of


20


21

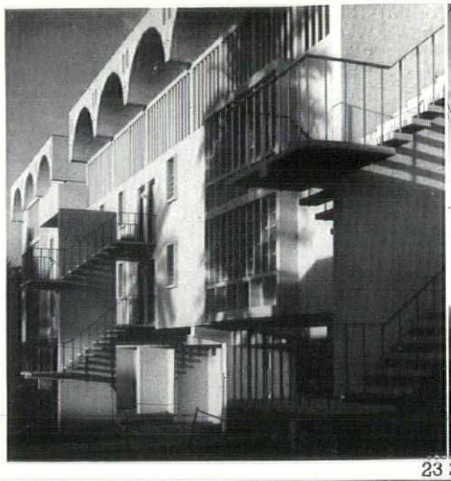
Raymond's earlier diplomatic architecture in Japan, but notes that the tiling and the shell vaults of the entrance side, 20, are new, denies that either is really as predominant as seems at first sight, feeling that both help to diminish the apparent scale of the building, while the tiling follows a basic decision to leave no concrete-work exposed—a bold move in Japan at the present juncture.

In striking contrast to all these works, J. L. Sert's recently-completed US Embassy buildings in Baghdad, such as the Residency, 22, make a very strong effect with their vaultwork.


22

embassies

In spite of rumours of change, the executed work follows closely the original project (AR, *Marginalia*, May, 1958), but has turned out more 'Musulman' than might have been expected, as in the busy and elaborate rear-façade of the staff apartments, 23, crowned with rather ponderous-seeming tunnel vaults (which, in fact, make interesting small rooms at the highest floor-level). The generally elaborate and insubstantial screenwork covers all main exteriors, including those of the Chancery, with its corrugated roof slab, 24, and are probably best seen—as might be expected—by night, when light filters out in a great variety of patterns.





23 24



25

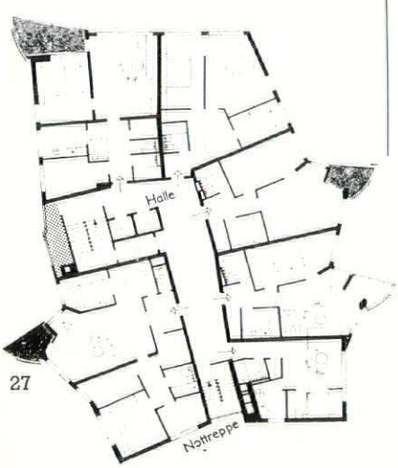
ROMEO UND JULIA

The harvest of the autumn years of Hans Scharoun's life looks like being more copious, as well as more rich in quality, than even his most fervent admirers have dared to hope. To his work in school architecture—fruit of the seed planted so long ago at the Darmstadt Congress—can be added the stunning *wohnpaar* that rejoice in the names of Romeo and Julia, 25, outside Stuttgart. Standing practically on the rim of what *Bauwelt* (21, 1961) inflating a favourite town-planners' cliché, calls the 'boiling pot' of the *schwabische Metropole*, the two blocks differ radically in form, 26, as the air-view shows, without ceasing to be Scharoun at his most typical. Romeo, for all his irregularities, is snug and compact in plan, 27, while Julia, opening in a generous curve, must be one of the most extravert, 28, feminine buildings ever erected.

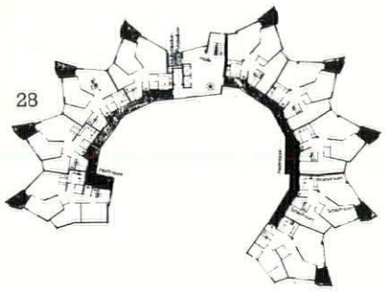
Both blocks individually, and the scheme *in toto*, abound in felicities. In 26, for instance, it will be seen how Romeo, in spite of the suburban location of the site, stands hard up against the pavement, thus making an unmistakable landmark on *Bundesstrasse 27* and creating that emphatic sense of place that has been the aim of so many architects since they (if not Scharoun) first read Kevin Lynch on 'cluster' and urban 'grain.' Again, both blocks offer studio accommodation, 29, to lucky tenants amid a roofscape of views and sheltered terraces, 30, that would justly be termed fabulous and call down sensational rentals were it on top of an hotel. The usual worries will doubtless be expressed about the difficulty of furnishing these 'irrational' plans, but the informality of the shapes only becomes extreme in the balconies, and most of the interiors, 31, do not go far beyond current German norms—except in being spatially far more interesting.



26



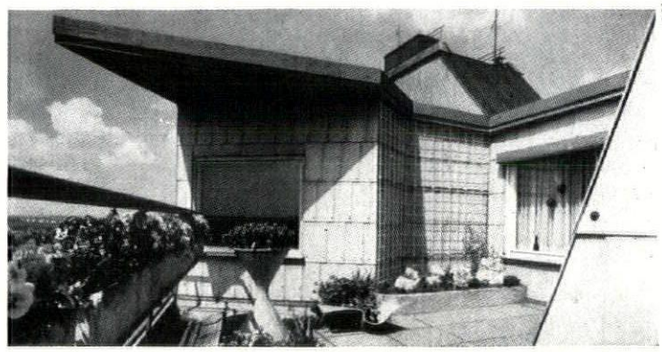
27



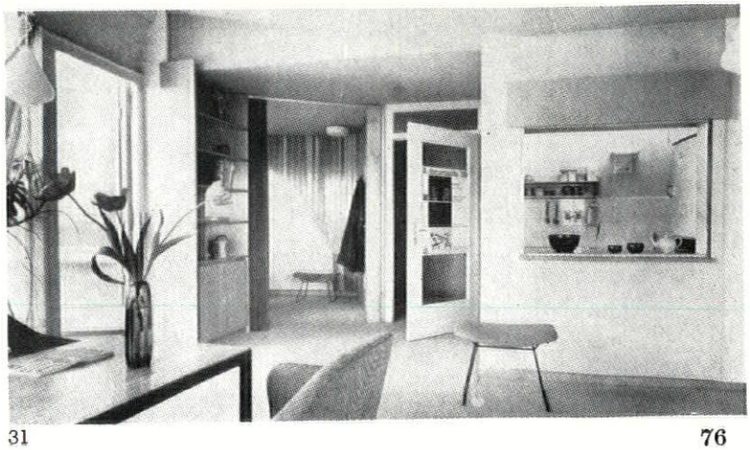
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31

views and reviews

MARGINALIA

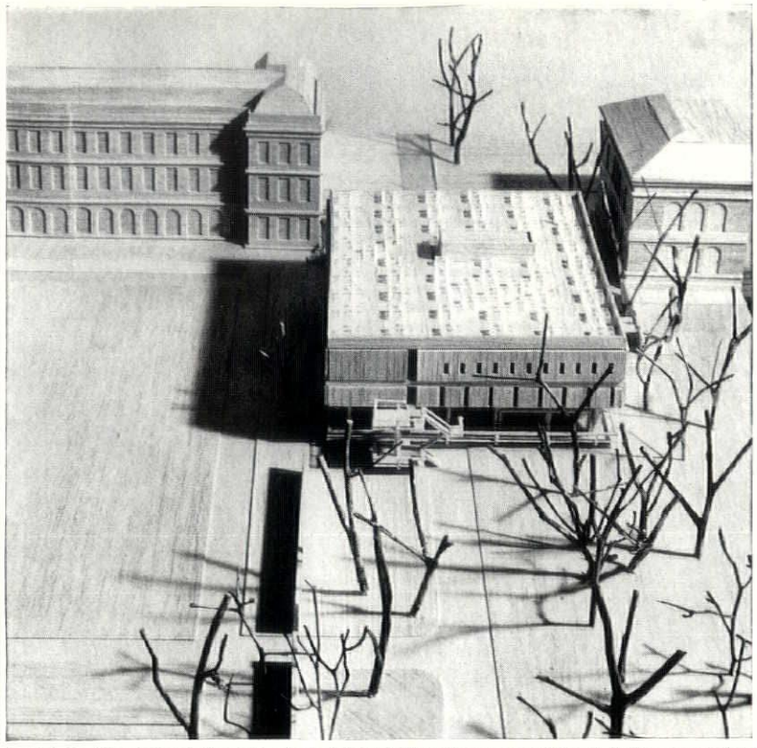
TRINITY COLLEGE LIBRARY COMPETITION

The outcome of the competition for the design of a library extension at Trinity College, Dublin, has been received with justifiable satisfaction. The entry was truly international—*global* might be a better word—the awards proved to have been equally international in distribution, and the winner, Paul Koralek (a British architect—product of the AA—of Austrian origin) is exactly the kind of person everybody likes to see as the winner of such a competition, a young architect just embarking on independent practice. The second prize went to Israel, the third to the USA; Highly Commendeds to Britain and the USA; commendations to entries from Britain, Portugal and Turkey.

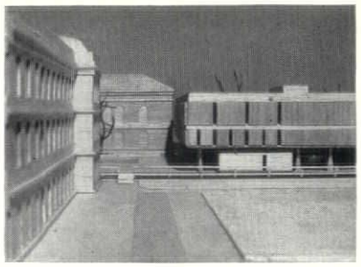
Koralek's design, 1, is (as the Jury point out in a commendably full report) 'consciously modern in style and construction,' but, to quote the jury once more 'The architectural relationship with the older buildings is good. Main cornice and string-course levels have been well considered. The facade exhibits a sensitive progress of windows which is carefully proportioned, and both less affected and more logical than might appear at first sight.' The jury's doubts about the closeness of the new block to the old work seem justified, though 2 tends to exaggerate it. Nevertheless, it shows that the architect is prepared to stake a great deal on a close confrontation of new and old, and it is therefore a significant sign of the times that, on an occasion when it is—at last—considered proper to make such a confrontation in a British University, the Italian member of the jury, Franco Albini, should dissent, and in a minority report, state that the architecture, 'though of a high standard, does not seem to me to harmonize with the surroundings in which the new building is to be situated.' Further remarks make it clear that he does not mean simple stylistic keeping in keeping, but his expressed preference for one of the Highly Commendeds, 3, by H. J. Nicolais, which appears directly hostile to the *ambiente preesistente*, makes one wonder just *what* he means.

YORK COURSES

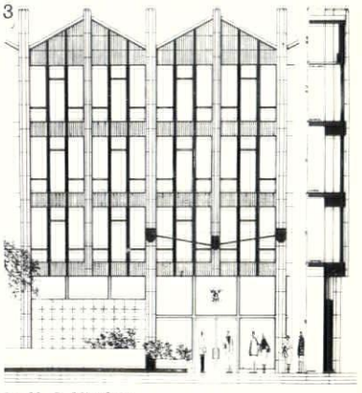
More detailed prospectuses have now been issued of early autumn short courses at the Institute of Advanced Architectural Studies, York, dealing with factory-design, new timber techniques and waterside buildings. The last, which touches a subject that has long occupied the attention of the AR, promises to be a useful and necessary innovation, and while its lecturers include a proportion of engineers, the architectural and landscape side is strongly represented by such names as Sylvia Crowe, Peter Shepheard, J. A. Wells-Thorpe, William Allen and G. A. Jellicoe. We wish the Institute particular success with this venture, which opens up a field where serious research and teaching are needed—as witness such waterway restoration projects as that for the Stratford-on-Avon canal mentioned below. Enrolment for this course is open until September 8, and all details may be had from the Secretary of the Institute, Micklegate, York.



1



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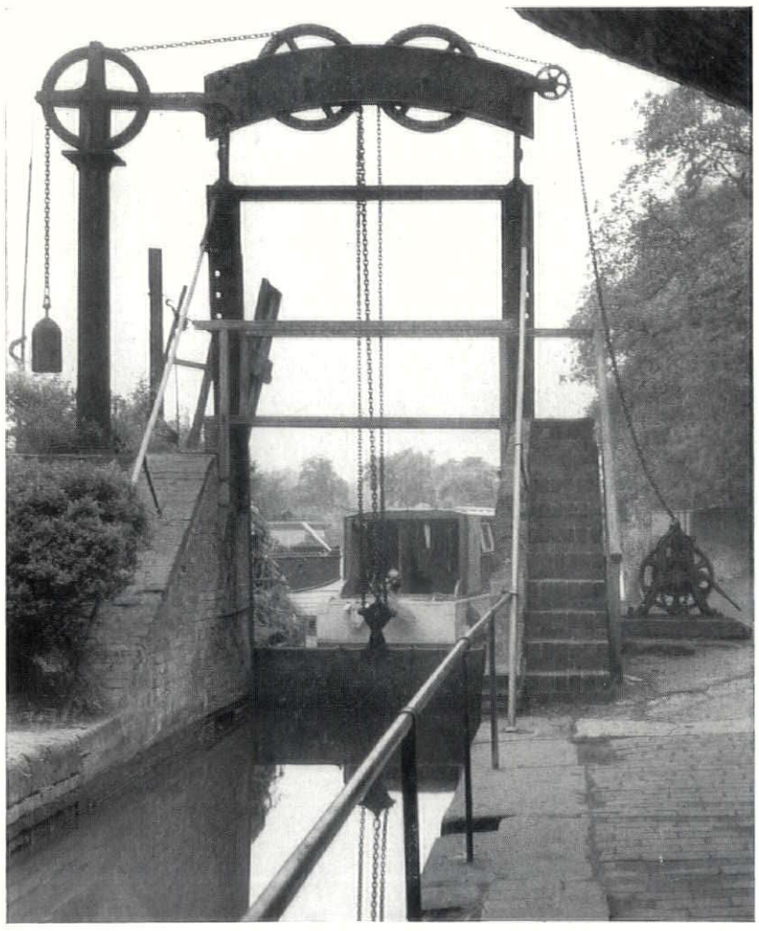


3

1 and 2, Paul Koralek's winning design in the Trinity College library competition. 3, highly commended design by H. J. Nicolais.

THE STRATFORD CANAL

The story of the Stratford Canal has at last reached the first stage towards a happy ending. The canal, begun in 1793 and completed 23 years later, runs for 12 miles from its junction with the Worcester and Birmingham Canal at King's Norton to Kingswood Junction, where it is linked with the old Warwick and Birmingham Canal, now part of the Grand Union. From there it runs for 13 miles to Stratford where, forming a landscape feature in the public green in front of the Shakespeare Memorial Theatre, it joins the River Avon. This latter half, meandering through the remote and lovely Arden countryside, carried 100,000 tons a year in the flourishing heydays of the Canal Era, but for the past 15 years it has lain derelict and impassable, its towpath blocked with a riot of weeds—thanks to the progressive sabotage of many decades by the railers who came to own it, and of the more recent apathy of bureaucracy.



4, the rare type of guillotine lock at King's Norton at the northern end of the Stratford Canal where it forms the Worcester and Birmingham—a fine piece of decorative, mobile sculpture in cast iron.

A great opportunity to revive the canal together with the whole waterway network of the country came with the nationalization of transport in 1947, but nothing much happened then and not enough has happened since. Indeed, an application for the legal abandonment of the Stratford was made in 1958. This caused a loud and unexpected public outcry. 6,000 individual objections were received by the authorities within a few weeks and the Inland Waterways Association held a crowded protest meeting at the Stratford Town Hall. There the proposal was made that, if it did not want the canal, the British Transport Commission should hand it over for safe-keeping to the National Trust.

Unexpectedly, by means of a Private Act of Parliament, that happened. Moreover, as the *IWA Bulletin* puts it, through 'a considerable feat—and one which has, in fact, exacted much skill, diplomacy, effort and persistence,' the Ministry of Transport was finally persuaded to contribute up to £20,000 towards reconstructing the canal, its condition being that at least the additional minimum of £22,000 needed

should be raised from other sources. That was less magnanimous than it sounds because official abandonment would have cost the country £120,000 according to the Transport Commission's own estimate.

A miracle occurred. The IWA obtained promises of £8,000 at dinners held in London and Chester, the Pilgrim Trust gave £10,000 and another £1,000 or so has since been raised in smaller gifts, with the result that the Minister of Transport has now made a definite promise that the Government subsidy will be paid. For the next five years the canal will be leased to the National Trust and if, during that time, it can be restored to full working order the Trust will have an option of acquiring the freehold for nothing. Stratford will have re-established its old water-link with London and indeed—since the canal lies at the hub of the waterway system of the country—with many other towns, especially in the Black Country. Revenue will be raised from tolls on pleasure and tourist boats navigating the waterway and from rents of moorings for houseboats.

In its recent News-Letter, the National Trust pointed out that it has here embarked on an important new venture because, for the first time, 'we are not merely preserving, we are actively creating a new source of pleasure and tranquillity.' The canal, it says, offers the chance 'for ordinary people to take an active part in a great work and to leave their own mark on the map of England; a chance to give pleasure (a neglected commodity) on countless idle summer afternoons to generations of boaters, fishermen, walkers, bird watchers and other civilized idlers.'

There is still work to be done. Reconstruction is being carried on by voluntary labour under the direction of Mr. David Hutchings, an architect. The Territorial Army has sent engineers to help by way of exercises, several firms have given free advice and equipment and the Youth Hostels Association has offered to house volunteers. But more direct physical help is needed and funds too. Those who contribute generously can secure immortality by having a lock named after them. (Volunteers can contact Mr. Hutchings at Junction Cottage, Lapworth, Solihull).

Eric de Maré

NEW ROYAL DESIGNERS FOR INDUSTRY

Stefan Buzas, architect and exhibitions and interior designer, Jack Howe, architect and industrial designer and design consultant to the British Transport Commission, and Marcello Nizzoli, the Olivetti typewriter and calculating machine designer, have been appointed to the Distinction of Royal Designer for Industry by the Royal Society of Arts.

OBITUARY

MARIO LABÒ

This past February, Mario Labò died in Genoa. He was in his seventy-sixth year, and no longer busy. But his influence was great all the same. When he was younger he had been prominent both as an architect and as a scholar. His papers on Baroque painters and Baroque architects in Genoa, published mostly in the 1920's, are still indispensable. Also, somewhat later, he turned as an architect from traditional to modern design, and his San Pietro Restaurant of 1936 is one of the earliest examples of the twentieth century style in his part of Italy. But his reputation among colleagues in the fields in which he worked went far beyond what he actually did. This was due to the great integrity of his character. He was a man without enemies, gentle, wise in counsel, helpful to the young, and rigorous in his standards. In the end, indeed, since the war, he was Papà Labò to a surprising number and variety of people. The papà applied to him, had, in fact, a connotation of tragedy as well as endearment. For Giorgio Labò, his only child, was tortured and shot by the Nazis for having worked in the underground movement and refused to betray others. It was in honour to him as an architect, but also as his son's father, that Mario Labò was commissioned to design the monument to the Italians who perished at Mauthausen concentration camp. This monument was illustrated in THE ARCHITECTURAL REVIEW in February, 1959. Mario Labò was a Commander of the Italian Republic, and President of the Accademia Ligustica. He visited England more than once, the last time for the General Assembly of Art Critics in 1955 at Oxford.



5, monument by Mario Labò to Italians who died at Mauthausen concentration camp.

Nikolaus Pevsner

CORRESPONDENCE

RAILWAY ARCHITECTURE

To the Editors.

SIRS,—The article 'Railways and Regions' in your May issue contains a stimulating mixture of criticism and praise and will have been read with great interest by architects in the railway service. It does, however, paint a more gloomy picture of the political and organizational background than is justified by reality and, for this reason, might frighten off possible applicants for vacancies in the various architectural offices concerned.

While there may be some uncertainty as to the shape of the future set-up, there is no doubt at all that a large number of keen and able architects will be needed and will find much scope in work of absorbing interest, both in the centre (whatever its future designation) and in the Regions.



Whatever evils may have come from an excess of admiration among Italian architects for Art Nouveau, the trend has some unexpected successes to its credit in the way of sympathetic treatment of unwanted monuments of that period. The most spectacular example of this is the re-erection of a large part of the façade of Cattaneo and Santamaria's Albergo Corso *in Milan, as part of the exterior skin of a new office block for an insurance company, 6, designed by Pasquali and Galimberti. 1960 has paid its respects to 1905 not by merely conserving the old in quotation marks, or by deliberate incongruous embedding in the new (as in some German examples), but by varying the bay widths and structure of the new work in order to incorporate the old organically into the new.*

It also needs mentioning that the relationship between engineers and architects in the railways is far more co-operative than the uninitiated reader of your article would be made to think—as is evident from the work you illustrate.

Yours, etc.,
F. F. CURTIS,
(Architect, British Transport Commission).
London, N.W.1.

BOOK REVIEWS

FOUNDING FATHER

LOUIS SULLIVAN AS HE LIVED: THE SHAPING OF AMERICAN ARCHITECTURE. *By Willard Connely. Horizon Press Inc. New York.* 1960. $6.50.

The records of the life of Louis Sullivan are much too scanty and insignificant to make a respectable biography. To make up for the want of information Mr. Connely relies on some old devices. 'Many a night did Louis go rollicking round Montparnasse with his friends Millet and Healy.' 'Louis tarried in Rome hardly longer than a week.' 'It was as if all the musical talent of Patrick Sullivan and Adrienne List, which might have begotten a composer, had in their son inclined his prehensile fingers to pencil and triangle instead of to sharps and flats . . .' To the common practices of popular biography Mr. Connely has added an irritating one of his own, an abundant use of quotation marks; it is impossible to detect when he is quoting or when he is inserting them for reasons known only to himself. The depth of his scholarship, and after all he is domiciled in England, may easily be illustrated. 'Long afterward, a British architect, John Summerson, who was also curator of Soane's Museum, had this to say of the *Autobiography* . . .' Alas, poor Summerson! First made British, then deknighted, and finally posthumated!

Sullivan's professional career had some resemblances with that of C. R. Mackintosh. He did his great work largely in conjunction with Dankmar Adler in the last fifteen years of the century and lived on until 1924, an almost jobless and pathetic wreck, long since overtaken by his assistant, Frank Lloyd Wright, in fame and influence. That a man of such remarkable abilities should have had such miserable fortune is tragic, but what the causes of the collapse were is in doubt. The separation from Adler was obviously the beginning. The success of classic at the Chicago Exposition did not help, but it could hardly have been as disastrous to a versatile architect as has been suggested. There is evidence that Sullivan was difficult with clients and put away more alcohol than was good for him. These separate facts hardly provide a suffi-

cient reason for such a professional disaster. Obviously there is not enough on record for a reasonable account of his life. This is implicitly recognized by Mr. Connely when he elaborates on Sullivan's early athletic activities. What possessed him to select such an unlikely subject? Stanford White would have served much better. At least a grand last chapter would have been assured.

There seem to have been at least three aspects of Sullivan's work; that part derived from Richardson, the eccentric and very personal decorative schemes, and his ingenious solutions to the problems set by the requirements of tall commercial buildings. It is the last that has given him the reputation of one of the Founding Fathers of the Modern Movement. The demands were made by real estate speculators and were met by the Chicago architects and engineers with great ingenuity and freedom of mind. Why Sullivan should have thought the results the architecture of democracy is inexplicable. On the face of it the architecture of capitalism would have seemed a more appropriate designation, unless the dime store is equated with democratic institutions. That Sullivan's solutions of special problems, problems that have occurred more regularly in our own century, were conspicuously successful should not be taken as it so persistently is as a licence for denigrating the work of such an accomplished firm as McKim, Mead and White, whose problems were quite different. Had Sullivan been asked to design a club he would doubtlessly have gone eccentrically Romanesque and not all 'modern.' His prominence in Dr. Pevsner's Modern Movement (an entity one has some difficulty in accepting) is as much the result of what he did not have the opportunity of designing as what he did design, and as much the result of land speculators in every large town the world over being forced to do in this century what those of Chicago did in the last —go up. Sullivan went up very well and for that reason has an important place in architectural history. As a subject for a biography, leaving hardly a letter, hardly an anecdote, precious little detail, he has no place at all.

Peter Ferriday

DISPLAY EXAMPLES

ESEMPI: ESPOSIZIONI ARCHITETTURA ALLESTIMENTI. *By Roberto Aloi. Ulrico Hoepli, Milan.* 8,000 *Lire.*

Perhaps criticism of this book should be partially disarmed by the fact that it starts off so modestly by describing its contents as 'examples' of exhibition architecture and display, which all in all is a fairly frank label for a miscellaneous collection of photographs. However, it is both expensive and elegant, and as one of a series of nineteen in which Mr. Aloi sets out to present 'international examples of interior decoration, architecture and design' it has an unnecessary pretentiousness which draws fire.

The photographs themselves are good, well arranged and simply described in Italian and English. Unfortunately there is nothing to alleviate the impression that they have been selected at random from the author's extensive but parochial collection. Over half the examples are Italian. It is interesting to see the work of Italian designers in this field, particularly the vital and original examples from A. and P. G. Castiglioni, but British designers may feel poorly represented by two views of the Festival of Britain, the British Pavilion at Brussels and a couple of unremarkable trade stands. There are no chapters or definite sections to the book. Apart from an historical introduction, one can only dimly discern vague groupings of large exhibition buildings, small trade stands, some murals and decorative features and three or four display units. This lack of any apparent scheme of arrangement is further confused by the failure to translate the names of the exhibitions, so that we are left to struggle alone with 'Il Cinquantanove dal Convegno di Plombières all'Armistizio di Villafranca.' Agnoldomenico Pica's introduction, in spite of bizarre translation which produces sentences like 'Functionalism and new plasticity knocked at the door,' hints at some controversial questions (such as the role of propaganda exhibitions and the subordination of exhibits to the total effect) which could do with expansion and pertinent illustration and do not get it. A pity: this book could so easily have been something more stimulating than the pricey designer's crib that it is.

Caroline Heller

HIDDEN BEAUTY

NEW JAPANESE ARCHITECTURE. *By Udo Kultermann. The Architectural Press.* 63*s.*

How does one account for the particular interest of Japan today for western architects? What other country has been recently so honoured with a reconstruction, in the heart of Manhattan, of one of its sixteenth-century residences? Is the more-than-normal professional curiosity due perhaps to a feeling that the Japanese long ago anticipated forms that we now sense as an ideal, and that fresh new post-war forms are growing out of their rich tradition, under the warm sun of an advanced technology? Or does it come from a feeling that the Japanese, with their subjective genius for the natural form and long history of the successful adaptation of foreign influences, can perhaps show us the way to a more sensitive use of today's material opportunities in building?

Whatever the reason, there is the interest and an image. The latter, unfortunately (or appropriately enough in this age of general urban blight and singular architectural salvation) is mostly sustained through the medium of architectural photography: the art of taking things out of context. There *are* Japanese villages and pockets in Japanese cities where a man might not be ashamed of his condition, and indeed, feel that he is on the side of the angels. And there *are* an increasing number of brave new buildings, gentle in references to the older traditions, unashamed in foreign borrowings, or self-confident in a new concrete strength. But let it also be said that there is another tradition in Japan: that beauty must be well hidden; and that responsibility to the general public is a strange new idea. Thus there are acres of ugliness and pathetic squalor—and Japan today is economically one of the most privileged countries of the world, with an industrial growth rate in excess of ten per cent.

As to the conventional traditional image, we are rather well served by the press, both popular and professional. The contemporary work is another matter, however, and aside from Koike and Hamaguchi's *Japan's New Architecture* of 1956, and the Japanese architectural monthly which recently started an international English edition, there has not been much published of a comprehensive nature on the 'whole' picture of Japanese post-war building. This Dr. Kultermann avowedly attempts to remedy. He succeeds in partially correcting the image but fails in graphically documenting it.

He succeeds in the thirty pages of typographically decorous text, under the three headings of 'Fundamentals,' 'Problems and Solutions,' and 'Architects.' In the first, while admitting the influence today of a contemplative passivity due to an enforced acceptance of nature and a feudal social system, he also includes the ferment due to the impact of new social horizons and technological developments. The exclusive influence of Zen is discounted. The polymorphic nature of the Japanese attitude is emphasized; after all, contemporary with the Katsura no Rikyû is the Yômeimon at Nikkô; however inconvenient this fact is to certain idealized characterizations. On the subject of the Japanese passion for copying he reminds us that, traditionally, originality was not considered a virtue, and that the manner of execution was given greater value.

Under the heading 'Problems and Solutions' he writes briefly of the urban situation, and we are then given an exhaustive review of buildings: valuable in its completeness, but annoying in its provocative references to so many unillustrated examples. Regrettably lacking, in view of their seminal importance to architectural thought, are many illustrations of unrealized projects and future proposals, especially some of the imaginative (to say the least) remedies for the relief of Tokyo's growing chaos.

The landscape of contemporary Japanese architects is as mountainous as their country. There is the older, weathered, Suki-ya range, where the major peaks are the Murano, Horiguchi, Yoshida and Taniguchi. In the Corbu massif are the Maekawa, the Yoshizaka and the Sakakura, with the young volcano Otaka. In an independent group are the Fujiyama of Tange, the Ashihara and Yoshimura peaks whose foothills lie in the USA, the smiling Seike, and the sharp young Kurokawa cluster. Dr. Kultermann includes most of these in his final two dozen biographies, and this does much to remove the facelessness of architecture seen from another country and culture and to present some of the human factors behind the work. But of these twenty-four men, only eleven have their work shown in the following 180 pages of illustrations (the work of eight others is included, however) and almost one-third of all these photographs represent the work of one man. Of the fifty-odd buildings shown, half lack the essential accompanying plans. In view of all this it is difficult to justify the inclusion of a number of photographs showing relatively unimportant details (for example, one of a distant blank brick wall with the silhouette of a plane tree). One hopes that Dr. Kultermann will do another book in a few years, to include more of the work of the post-war generation: and that he will this time have more success with the documentation of the essence of architecture: the three-way interrelationship of the spaces of the environment, the exterior and the interior.

Philip Thiel

SHORTER NOTICES

THE THATCHER'S CRAFT. *Rural Industries Bureau.* 42*s.*

Most books about thatch and thatching are sentimental and nostalgic and treat it as a dying craft. The starting-point of this one is the opposite: the continuing demand for thatched roofs. It is essentially a practical book: a guide to thatching technique. It takes in turn the three main thatching materials: long straw, combed wheat-reed (also known as Devon reed) and Norfolk reed, and depicts the whole process of thatching a roof with each by means of a beautifully taken sequence of close-up photographs—over 200 photographs each in the case of combed-wheat and Norfolk reed.

There are also useful brief appendices on roof-construction, spar-making, thatching tools, fire protection and costing. The only regrettable omission is something about vermin, since the fear that thatched roofs may harbour vermin probably does more than anything to discourage house-owners from choosing this, in many ways excellent, form of roof-covering. Nevertheless the book is greatly to be welcomed and does the Rural Industries Bureau much credit.

EUROPEAN ARCHITECTURE IN COLOUR. *By R. Furneaux Jordan. Thames and Hudson.* 84*s.*

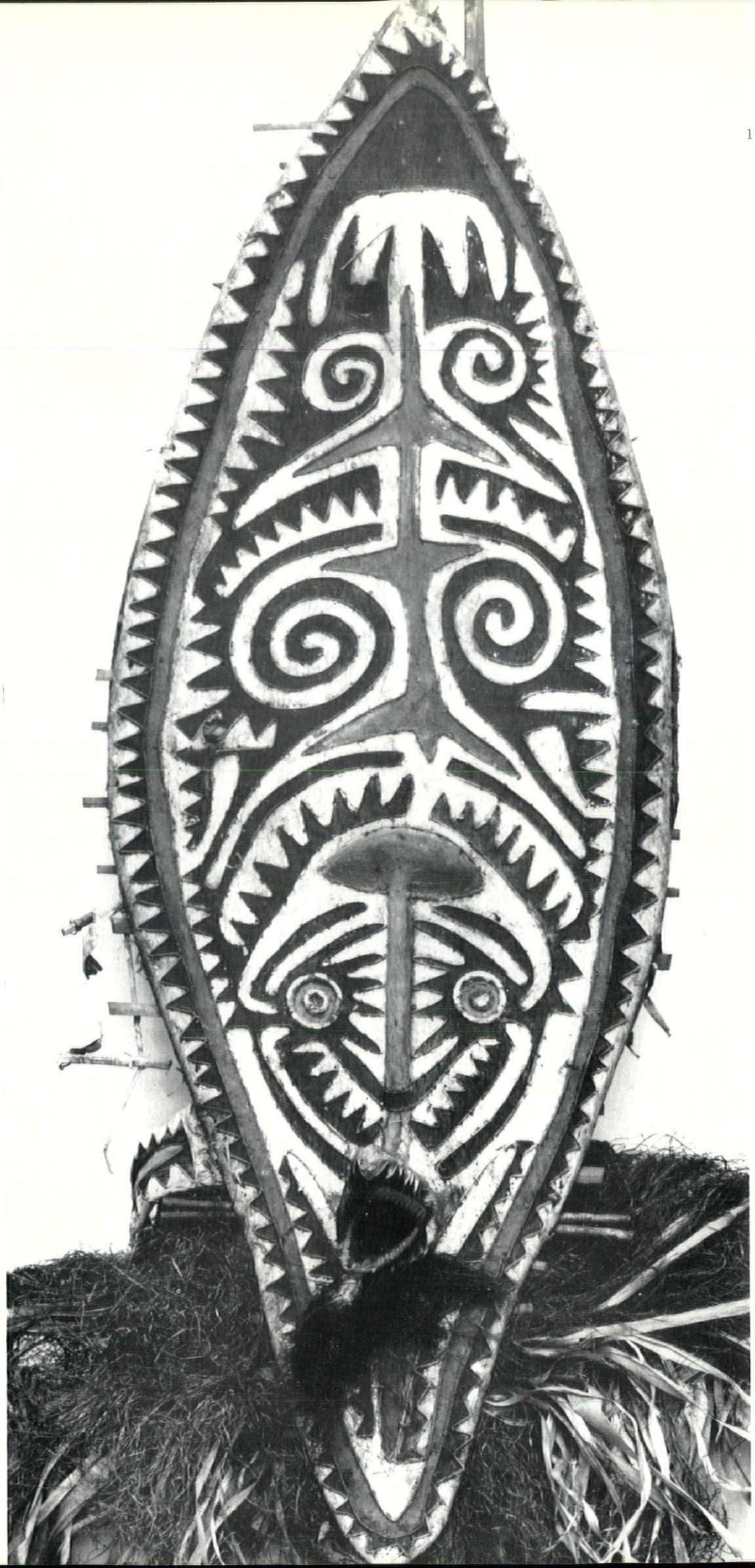
This is a drawing-room table volume, of great weight and bulk, the justification for which—since it contains nothing that cannot be found in the established architectural histories—is presumably that its 112 full-page photographs are reproduced in colour. Their quality is variable, but mostly good.

The arrangement is extremely irritating. The text referring to any given plate is several pages removed from it, and the title facing each plate refers to the preceding plate. Moreover Mr. Jordan's running commentary gets completely out of step with the captions to the plates though printed on the same page. The commentary is well written but clearly designed for the general reader; the captions (by Dr. Bodo Cichy) demand some degree of art-historical knowledge and are not well translated.

J. M. R.

BOOKS RECEIVED

SUFFOLK. *A Shell Guide by Norman Scarfe. Faber & Faber.* 12*s.* 6*d.*
PROCEEDINGS OF THE INTERNATIONAL CLEAN AIR CONFERENCE. *Published by National Society for Clean Air, Great Britain.* 32*s.* 6*d.*
HOUSES. *By Margaret and Alexander Potter. John Murray.* 15*s.*



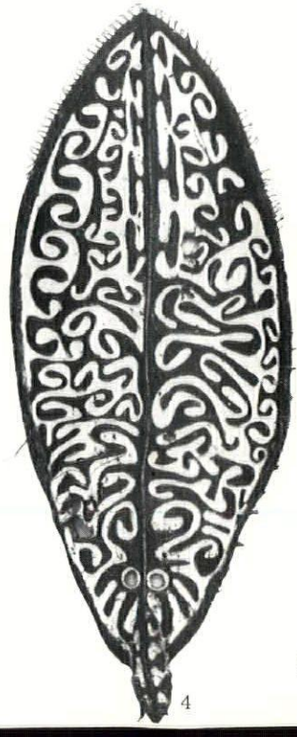
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4

Whatever objections may be raised against a purely formal appreciation of primitive art—and Robert Melville raises them in the article below—the formal elegance of much primitive work is striking. The objects from the Papuan Gulf illustrated opposite are: 1, *a hevehe mask from Orokolo;* 2, *an Era River figure;* 3, *a head ornament of the Gogodara tribe;* 4, *an aiaimunu mask from the inland branch of the Namua people, while* 5, *right, is an agiba for the display of skulls. All are reproduced in Mr. Douglas Newton's* Art Styles of the Papuan Gulf, *referred to below. Readers may like to speculate on the resemblance of some of these elegant patterns to the wall decorations illustrated on pages* 91–98.



5

Robert Melville

THE PROGRESS OF MAGIC

When Roger Fry reviewed an exhibition of negro sculpture just over forty years ago, he tried to convey the impression that he was making a purely aesthetic response to 'pure plastic design,' and there is no denying that he hit on some cool, clean words suitable for use at a purification ceremony. At a later date, his disciple Clive Bell reduced them to a simple magic formula by coining the term 'significant form,' and it enabled a great many respectable people to examine the cone-like breasts, cylindrical penises and other emphatic protuberances of negro sculpture without embarrassment.

In these circumstances, it was unkind of Fry to argue that the British produced bad sculpture because of their 'preference for certain forms which appeared to mark the nobility of man,' blaming in particular their attachment to long legs, and that the negro's greatness was due in part to his 'willingness to reduce the limbs to a succession of ovoid masses sometimes scarcely longer than they are broad.' It's not clear whether he was questioning the validity of our symbols or implying that nobility was not suitable for sculptural treatment, for he was careful to refrain from telling us what qualities the form preferences of the negro carvers might be supposed to symbolize. Nevertheless, there were times when he overstepped the white line of pure aesthetics. There's excitement of another kind in the relish with which he spoke of 'certain nameless savages' and 'the Congolese's ignorance and savagery,' and he accompanied the suggestion that 'if the negro artist wanted to make people believe in the potency of his idols he certainly set about it in the right way' with the admission that one was compelled to 'prostrate oneself before his "sticks and stones".' These remarks were of course accepted by his readers as the playful rhetoric of a scholar and connoisseur, but in the forty years or so of exposure to the arts of primitive peoples since the essay was written we have become less civilized, though possibly more sophisticated, and certainly dubious of anyone's pretensions to disinterested connoisseurship.

These effects of our long exposure to the primitive are exemplified in the admirable

catalogue of an exhibition of 'The Arts of the Papuan Gulf' recently held at the Museum of Primitive Art in New York, and I think the only people who might be disappointed are those artists—there can't be many of them left—who still rake through exotic art books for design suggestions. Every mark a tribe could ever call its own has long since been ground into the mash of the international styles.

The catalogue has been written and compiled by Mr. Douglas Newton, the curator of the Museum, and like those of the Museum of Modern Art has been issued as a well-designed book* between hard covers. It is the result of a lot of research and some hard thinking, and incorporates a great deal of fascinating anthropological material without invoking the ethical conventions of the West except in an occasional phrase like 'legitimized rape.' The cultures of the Papuan Gulf in southern New Guinea are beginning to disintegrate under the effects of Australian protection, partly because the elaborate ritual life of the tribes was inextricably involved in head hunting and cannibalism.

As in the art of most primitive peoples, their art objects are endless variations on a few basic forms and devices, and if the illustrations in the book had been confined to photographs of separate exhibits the results might have been monotonous. But some of the most effective photographs are of masks and painted boards hanging in great clusters in the dark entrances of the long houses, and these, together with descriptions of their ceremonial use, taken from eye-witness accounts of rituals, make it evident that some of their potency depended on quantity and that they were sometimes massed in a way that turned them into a phantom host or a tribe within the tribe. The effect of a typical painted oval mask—even of one of the largest type, which are fifteen feet high—with its inevitable two dots for eyes surrounded by a tracery of curvilinear devices, can seem merely decorative, but when several of them are together the eye dots suddenly take on an implacably concentrated power of staring.

Perhaps even more impressive are the huge, communal long houses. They are sometimes hundreds of feet long and fifty feet high at the entrance, sloping down to about 12 feet high at the back, and they look like the carcases of gigantic animals with the jaws propped open by huge posts. They are made on the same principle as the wickerwork animals which are kept in the sacred section at the rear. The bodies of the members of other tribes taken for sacrifice were sometimes forced into these wickerwork animals and pulled out through a hole in the stomach, and Mr. Newton suggests that this is probably a re-birth ceremony in which the victim becomes a member of the tribe that killed him. The affinity between the basketry animals and the long houses is almost that of an animal and its litter, and it's not surprising to learn that the first 'famous man' of one of the tribes is supposed to have turned himself into a giant pig and split himself open to make a house for his people several miles long. There is no evidence that any of these tribes worship Gods and even their 'famous men' are not particularly reverenced. According to Mr. Newton, the most pervasive supernatural element seems to be the quality called 'imunu,' which is associated with thunder and the noise made by the things called bull-roarers, and is probably to be identified with the life force.

The peculiar sympathy I feel for Mr. Newton's treatment of this area of Oceanic culture may well be due to the fact that he was a poet and an intimate friend of avant-garde artists before he became a museum official. His own first reactions to primitive works were like those of artists and critics. He treated them as independent entities and looked upon differences in the use of a traditional language of forms as modifications of content, and the fact that he now perceives that they may have no such significance for the Papuans doesn't lead him to suppose that the use made of their forms by modern artists is 'illegitimate.' It's become pretty clear that the quality of 'imunu' to which the tribes attribute supernatural powers is often at its strongest in objects which are of little artistic consequence. These objects are only seen in the secrecy of initiation rites, and they gain their sacredness from their association with the terrifying sexual violence to which the young initiates are submitted.

On the basis of a study of the available documents, Mr. Newton puts the types of art objects into an ingenious order of descending magical potency which corresponds with an *ascending* order of artistic value, and although his ingenuity might not please the anthropologists, it has what T. S. Eliot once called 'the logic of the imagination.'

'One may guess,' he says, 'that in the Papuan Gulf there is a tension between the desire to have a secret and a desire to display the secret. The initiated men must conceal much of their ritual life from the women and uninitiated boys: but to do so completely would be to starve their need to assert their sexual superiority.' He goes on to build up the sequence of objects, which I have attempted to simplify by suppressing one or two of the links and the rather confusing Papuan names: the bull-roarers are very sacred and kept in the strictest secrecy; the bull-roarer shaped boards are also kept in secrecy but versions of them are placed where they can be seen by the men; unimportant versions of the same boards are given to uninitiated boys who haven't yet seen those of the men. Finally, the bull-roarer shaped masks, which are often the largest and most spectacular of the objects, are worn publicly so that some of their power is revealed even to the women. 'Thus,' says Mr. Newton, 'the same form is repeated in, so to speak, wider and wider contexts of decreasing secrecy. By the time the mask reaches the audience of women its prototype, the bull-roarer, is already at several removes. Its "heat" is safely dissipated. The secret is safe, yet it has been revealed sufficiently to prevent

**Art Styles of the Papuan Gulf.* Distributed by University Publishers Inc., New York. $6.00.

its retention from being a source of frustration rather than satisfaction.'

There is no analogy for this in our own society, except that, as Mr. Newton points out, one aspect of it at any rate is not entirely alien to us since a fragment of the True Cross is judged holier than the ceiling of the Sistine Chapel. But I suspect that his notion of a kind of ratio between a decrease of potency and an increase of artistic value might throw some light on the 'creative process' as it is conceived by the modern painter. The work the painter displays refers to some quality similar to 'imunu.' It is intimately related to the secrets of the body and the psyche, but the 'heat' is somewhat dissipated by being passed through the kind of 'cooling chamber' which Fry and Bell had in mind. The most popular term for this cooling process was Bell's 'significant form.' It was never satisfactory, and is now completely out of fashion, but there is as yet no equally succinct term to replace it. In any case, now that the current language of painting is non-figurative it is more of a protection for the painter's respectability than the spectator's, since no one need have any reason for feeling a sense of shame in front of an abstract. Professor Wind suggested in his Reith lectures that although more and more people now look at pictures they have ceased to be upset by art, and that this is because it is a marginal activity of no vital importance to society. But very little abstract expressionist work is out to shock; on the contrary, it is as ingratiating as it knows how to be, since a great deal of it is intended to envelop us and all of it is intended to give us pleasurable sensations. I think that more people are looking at these new paintings without being shocked by them because they accept them as acts of what might be called 'decent exposure'—to differentiate them from acts for which people can be prosecuted. Those who go out of their way to look at canvases covered by marks or sheets of colour which the painters themselves claim not to understand, are really in much the same position as the Papuan women entranced by the spectacle of secret signs.

Interior of a men's house in Kaimari, showing the effect of ranks of ceremonial masks in the long perspective of the interior. From Art Styles of the Papuan Gulf.



Mr. Adrian Stokes, in a brilliant little book on contemporary painting,* which is written obscurely in parts in order to provide a screen for some statements of devastating and far-reaching simplicity, suggests that the typical painting styles of our time are determined by a distortion of our environment which was started by the breakdown of architecture in the middle of the last century, and he sees the painter's use of the curious but now universally accepted conception of the 'sanctity' of the picture surface as an attempt to take over the architect's function and provide us with an organic environment. Essentially, he sees this new art of the painter as an erecting of walls; some of them penetrable, other impenetrable, and he reminds us that 'Leonardo's homogeneous wall with adventitious marks . . . has been an especial spur from the time of the Impressionists.'

Paintings of the 'impenetrable wall' type are scratched or splashed to emphasize the wall's resistance and perhaps create a sense of strength and security. Many of these bring to mind the atmosphere of the Lascaux caves and re-present the same sense of sanctuary combined with traces of human presence which are similar in that the precise meaning of the drawings escape us.

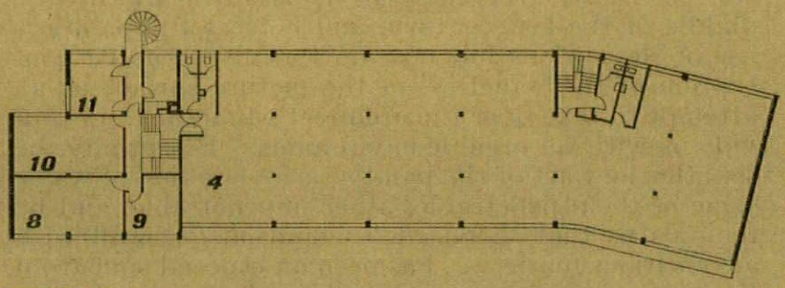
Mr. Stokes relates the paintings of the 'penetrable wall' type to the 'screen colour' we see when we close our eyes, and he considers that both types, in their stress upon homogeneity and limitlessness, represent an unconscious restitution of the earliest of all human experiences—that of the child feeding at the warm, boundless, bountiful, enveloping breast. Having persistently experienced an intense feeling of satisfaction in front of such paintings, particularly those of the 'penetrable' kind—perhaps most authoritatively represented by Rothko and Pollock—I find this analogy quite shatteringly illuminating. But whereas Mr. Stokes establishes this correspondence chiefly to deplore it, I look upon the paintings of Rothko and Pollock as a triumph of the human spirit, and if this art is regressive I think it less harmfully so than the vicarious human sacrifices achieved through the formal distortions of an earlier phase of twentieth-century primitivism. It is a just acknowledgment of the paintings of Rothko and Pollock that their art is now described as 'the abstract sublime.'

Mr. Stokes says that 'the painter has been happiest when surrounded by an actual architecture which provides an assumption (a living style) that made it unnecessary to reconstruct *ab initio* for every work the rudiments of the body and of the psyche, but until that time comes again, the painters of the 'abstract sublime' will have to go on creating an environment instead of adorning it.

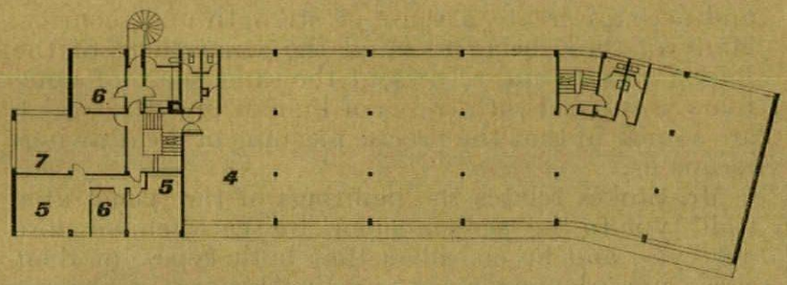
* *Three Essays on the Painting of our Time.* Tavistock Publications.

FURNITURE SHOWROOMS AND OFFICES, WATFORD

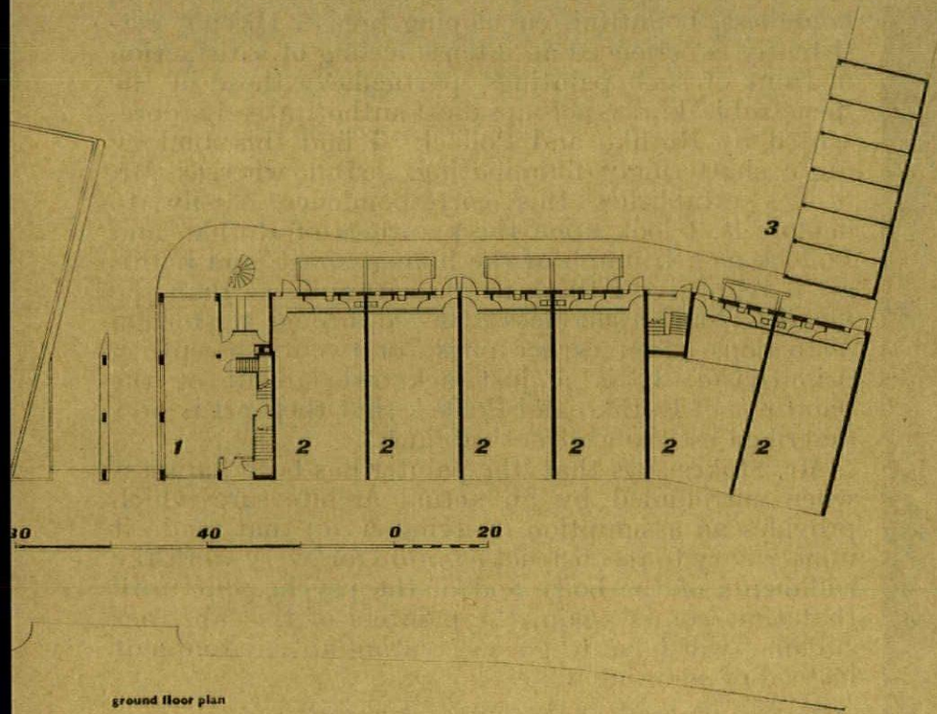
ARCHITECT | **ERNÖ GOLDFINGER**



second floor plan



first floor plan



ground floor plan

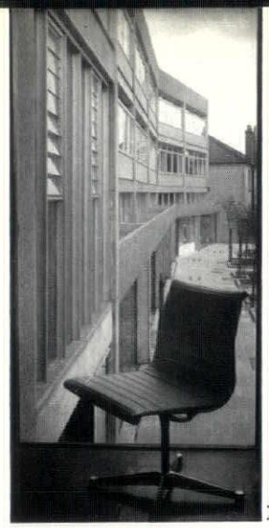
Designed for Messrs. Hille, the building is sited between the company's existing furniture factory and the main road, having its main frontage parallel with the road. It has, however, been set back to allow for future road widening.

It contains showrooms for the display of the company's furniture, administrative offices for the company's use and further office space and six shops along the road frontage, both office space and shops being for letting. The accommodation to be used by Messrs. Hille has therefore been planned as a separate unit, but with communication with the lettable areas. The factory can be reached both beneath and alongside the new building.

The structure is a reinforced concrete frame and floors with panel infilling of white sand-lime bricks. Provision has been made for the addition of another floor in the future if needed. External concrete is either bush-hammered or rubbed to expose the aggregate. The external spiral escape-stair is of precast concrete units built around an *in-situ core*. The metal windows, which are painted white, have photobolic screens (ledges which cut out light from near the window and throw it on to the ceiling to produce better overall distribution). Opening lights pivot horizontally. The furniture showrooms are lighted through standard aluminium patent glazing sections, with banks of opening louvres.

Internal plastered partitions are prefabricated and demountable. Internally the concrete frame is exposed and the brick panels are left fair-faced, but some of the office walls are faced with cork to provide areas for pinning up notices, etc. The walls of the boardroom are faced with grass-paper and the ceiling with acoustic tiles. Flooring generally is thermoplastic tiles, with terrazzo on the staircase and blue quarry-tiles in the showroom. Telephone wiring is run in metal floor-skirting ducts to provide easy access and flexibility. Heating is by radiators supplied from an oil-fired boiler.

key
1, showroom
2, shops
3, parking and garages
4, office area
5, offices
6, secretary
7, boardroom
8, accounts
9, buying
10, drawing office
11, kitchen

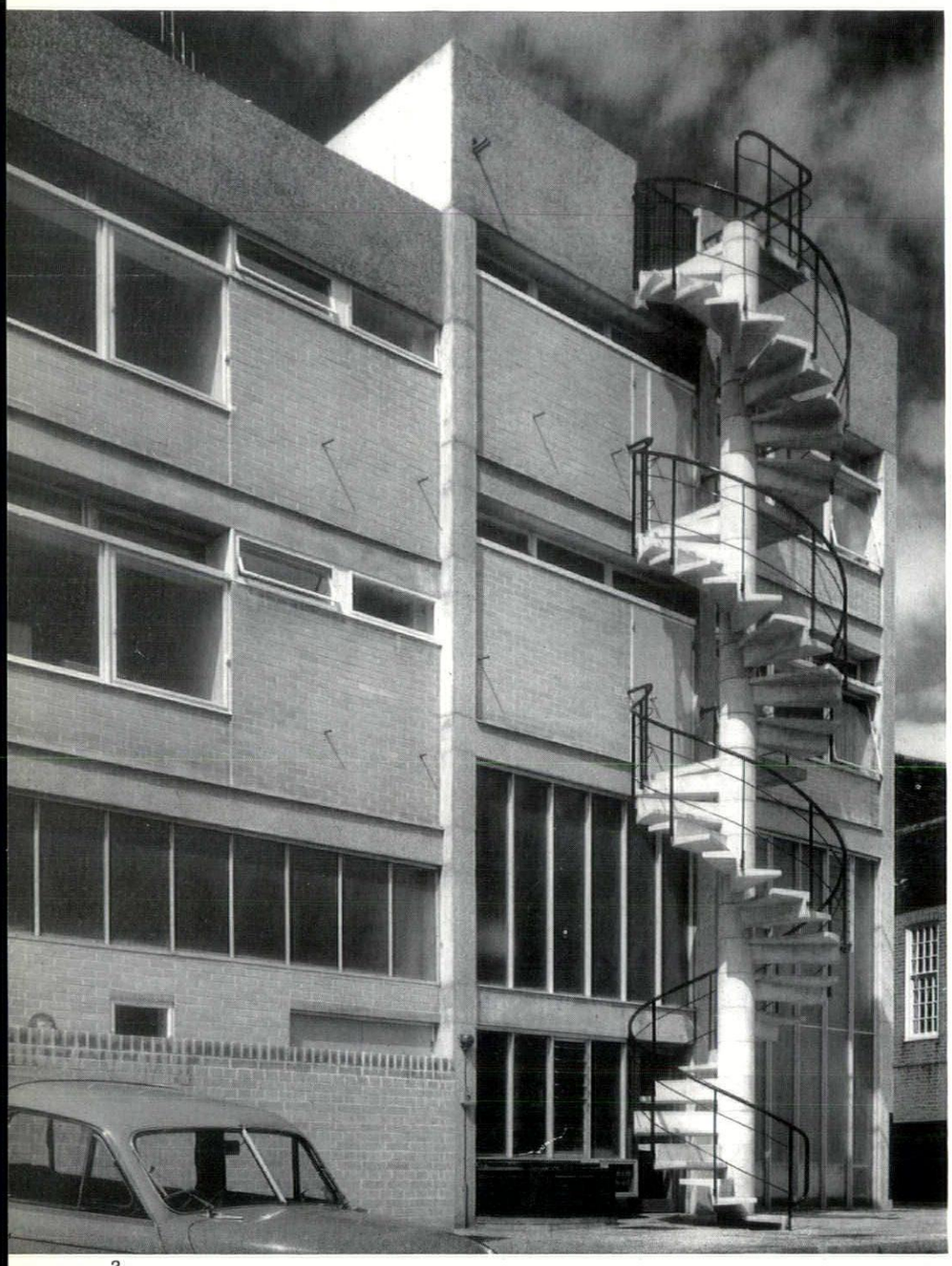


1

1. looking along the front of the building from the projecting mezzanine showroom bay. 2, exterior of showrooms with entrance on right.

2

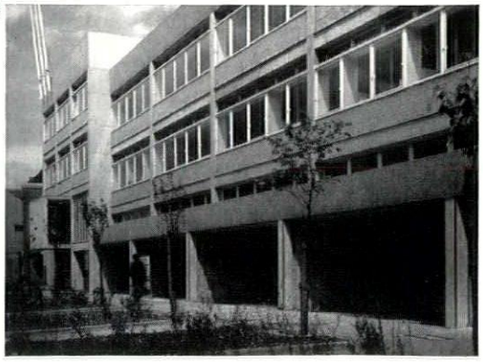
FURNITURE SHOWROOMS AND OFFICES, WATFORD



3

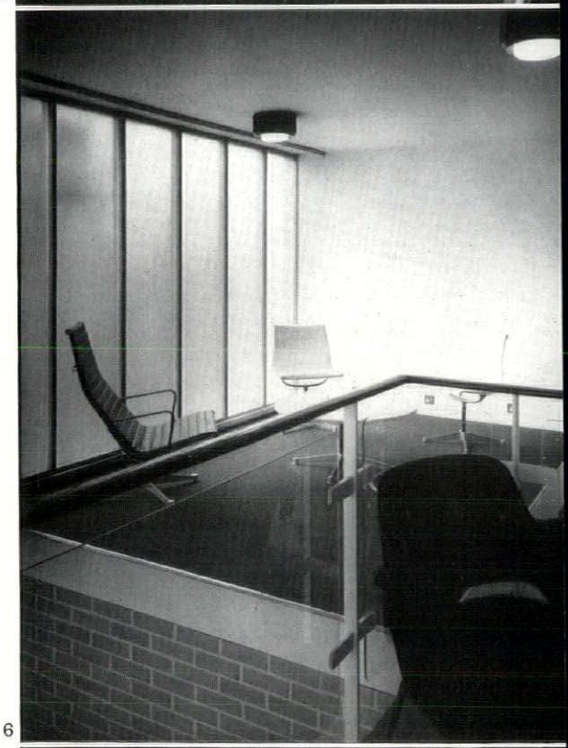
3, the spiral staircase at the rear of the showrooms. 4, looking along the shop fronts to the showrooms. 5, staircase to the mezzanine showrooms, shown in 6. 7, the first-floor landing, with an abstract painting by Show-Yu Lin.

4

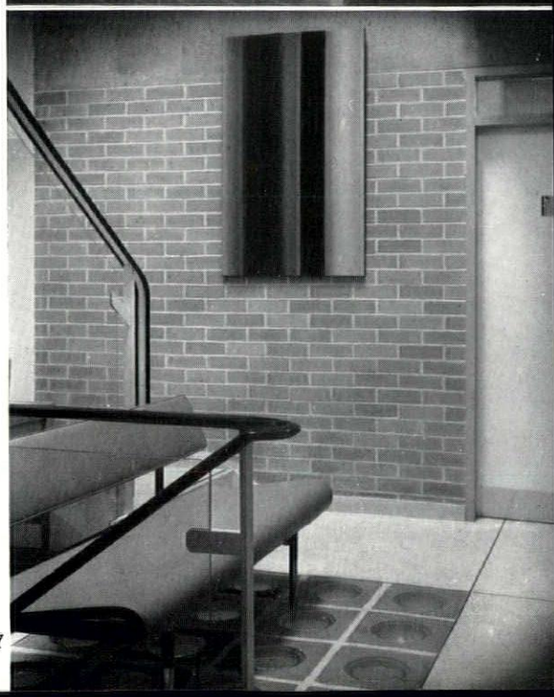




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6



7

8



9



photographs by H. de Burgh Galwey



10

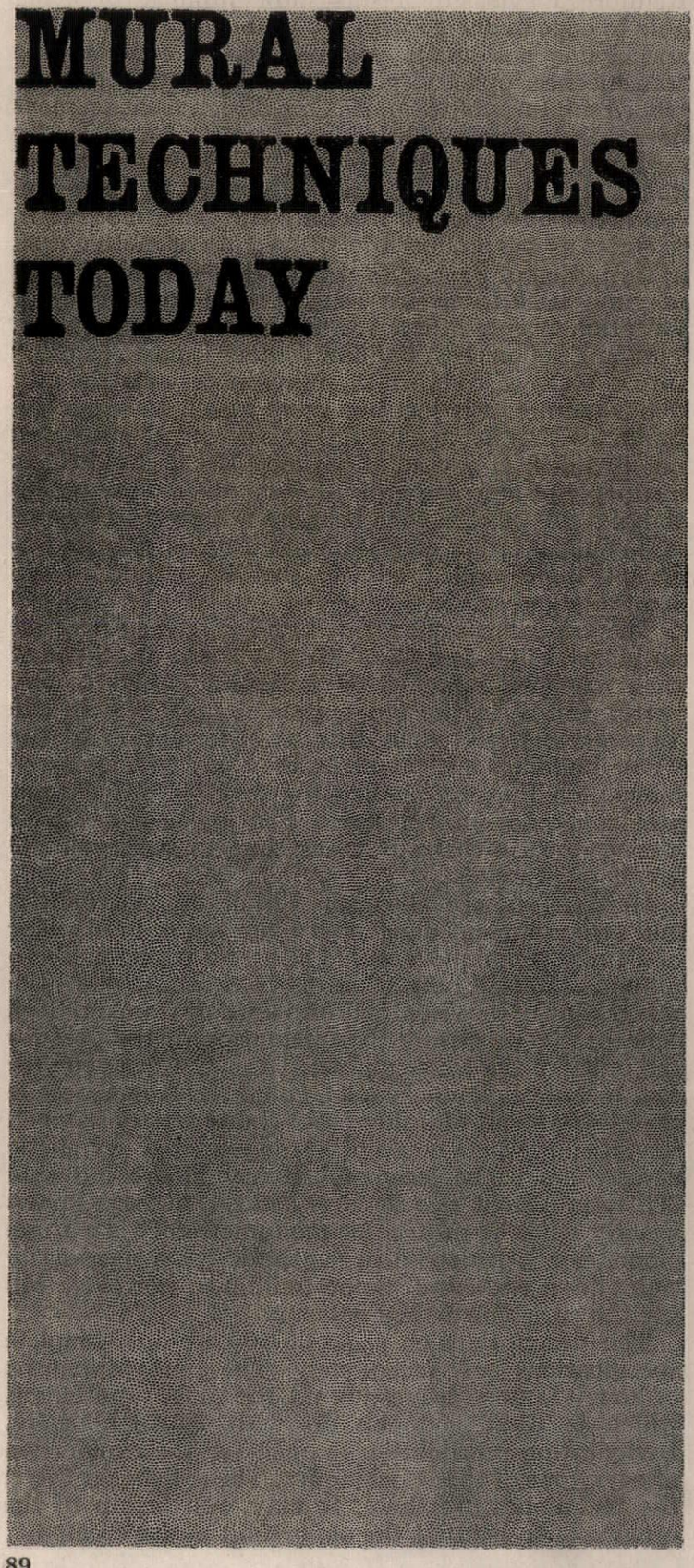
8, 9, the mezzanine showroom with the precast concrete bay with coloured glass windows. 10, general view of the showrooms, which have a quarry tile floor, bush-hammered beams and sand lime walls.



Glass and ceramic mosaic by Fred Millett using paper transfer method—see page 99. It is in a school at Sheffield by the Architects' Co-Partnership.

Oliver Cox and Fred Millett

MURAL TECHNIQUES TODAY



William Morris defined architecture as the art of building suitably in suitable materials. 'Let us begin by considering what materials are available and how we are to use them and then build them up into such a form as will put us in the position of architects who are alive and practising to-day, and not merely handing over to the builders all the difficulties of the profession.'*

New materials and new techniques are now becoming available with increasing speed, and with the widening complexity of the architect's tasks there is a very real danger of his creative control dwindling as the plethora of contractors' packaged goods increases. Yet with this rapid upsurge of new technical invention, how is the architect able to give time to study their potential effects on the building's design, construction and appearance? For the few brilliant universal men like Corbusier this is no problem, but for most of us, as in other matters, it means absorbing another skill into the design team.

It may seem odd to consider the artist in this connection, but it would not have seemed so 300 years ago. Admittedly it is a long time since artists have been deeply concerned with building matters, and although they are at present largely out of touch with them, this is not an irremediable situation—in fact a number of artists are already beginning to turn their attention to the problem of building, its materials and its methods.

One role that the artist could fill is that of agent to the architect for the testing of materials and for 'playing about' with them—someone to digest them aesthetically as well as technically, the latter being the bias normally given by contractors and laboratories. The artist's professional concern with form, colour, image-creating and the communicating of ideas suggests that he may have a valuable contribution to offer in making the task more joyous and the achievement richer and more human.

Much of the excessive experimentation of modern art, with its esoteric character, is due to no more than the insistent type-casting thrust upon the artist by others who think that this sort of creative sensibility is best kept in the studio where it belongs. Let us bring this ability out into the daylight and put it to work; only those artists utterly committed to uniqueness would shun this invitation. The working habits of the sculptor or the painter are after all those of the craftsman, and it is up to others to extend the range of his tools and materials. Cannot a sculptor, for example, devise a wall that is interesting aesthetically as well as serving an acoustical function, or a painter contribute ideas of pattern and of colour to some factory-made component?

*'The Influence of Building Materials on Architecture', an essay in the volume *Architecture, Industry and Wealth:* collected papers by William Morris.

A fresh look at the methods of collaboration is also needed. The work on a series of projects on a consultancy basis initiated successfully at the London County Council creates the opportunity to build mutual understanding by carrying forward experience from job to job, and enables the artist to feel the security and commitment to a group enterprise similar to other members of the team. Peterlee*, and the absorption of the artist into the planning team to the point where the artist as individualist disappears and emerges instead as a contributor to the general character and identity of a scheme, is another venture and the only one to date to demonstrate this approach.

Modern building is increasing in scope and scale, whole areas of mixed use may be designed together, yet we still think of the occasional mural in an individual building in terms of a windowless wall which all too often ends up looking like a framed picture again—only this time in concrete. The new dimension of civic design needs to be thought out aesthetically and on the appropriate scale, and the scope of the artist's contribution and his ideas and vision of the urban scale remain to be investigated. Do the forms and colours of recent paintings throw out no seeds of cross fertilization as did the work of Mondrian and the cubists to the earlier periods? Do the tangled web of Pollock†, the subtle geometry of Poliakof and De Stael, the intricacy of Klee or the calligraphy of Mathieu offer nothing to our consideration of floor and roofscape, tops and bottoms of buildings or the use of neon? Somehow the static conception of our ideas about enrichment and of the creation of a sense of environment, seem utterly inadequate to the real physical situation where our sensations and angles of view are continually on the move.

Some artists *are* trying to get to grips with new materials and techniques and some are battling with the problem of how results are achieved in building, looking at the problem with the factory, the machine and the operative in mind. They are observing the relative economy of the architect's design effort where the aesthetic conception is that of a designer whose work is executed by others, and contrasting it with the tradition of manual responsibility of the artist-craftsman. They are absorbing the lessons of mass production and prefabrication as aids to working in a larger scale with less effort and permitting greater and more selective design control.

In applying themselves to these problems new possibilities and methods of approach begin to emerge. There is a freedom and vigour here that contrasts strangely with the architect's congenital timidity, too conscious as he so often is of his many roles, particularly that of client pacifier. From a study of these efforts may spring a fresh awareness of new potentials and a glimpse of wider horizons.

Why, for example, does concrete, in order to be truthfully expressed, have to look like hairy wood? Of course the answer is that it does not—and in fact many more appropriate formers for the fluid material exist. Some of them, examined here, have the capacity to produce a rich and rugged surface or large-scale modelling which can transform the inherent uneven drabness of the basic material into something rich and rare. But not, of course, by accident—only by deciding what you want to do, that it is worth doing, and going at it full blast and no compromise.

The extensive use of glass in buildings brings new aesthetic possibilities of translucence and reflection, but it also brings with it technical problems. Reinforced synthetic resins show promise of being able to cope in one go with the problems of both sheet and frame and make possible design control over translucence, opacity, gloss and hue as well as controlled mixtures of them. Again a design decision must be made—instead of selecting a natural marble, for example, you specify the mix. From these experiments it is clear that if you really want to do so you can artificially produce precisely the same interesting vagaries as are produced in the setting of molten rock at a fraction of its cost. But once that is done there is no going back to marble—and there is no going in for imitation marble either. A new creative act is required.

In most of our best buildings colour is now repressed into a state of conformity comparable with the city man's suiting or is just not there at all. In some bad buildings it seems to have been used with the abandon not so much of joy as of despair. If the architect is incapable of grasping and using creatively the potential of a full palette, then he must not pretend that he is, but must either educate himself or be prepared to accept more skilled advice, just as he does with structure and services.

The experiments illustrated and described here are no more than a sample of what is going on. Some of them can undoubtedly be criticized as fiddly and better suited to the old approach of the jewel-like 'decorative panel' than to a transformation of the whole building, but the artist may not be entirely to blame for this, as he has to work in the current atmosphere of mistrust and fear of any aesthetic letting down of hair. It takes time to shake off the bonds of primness.

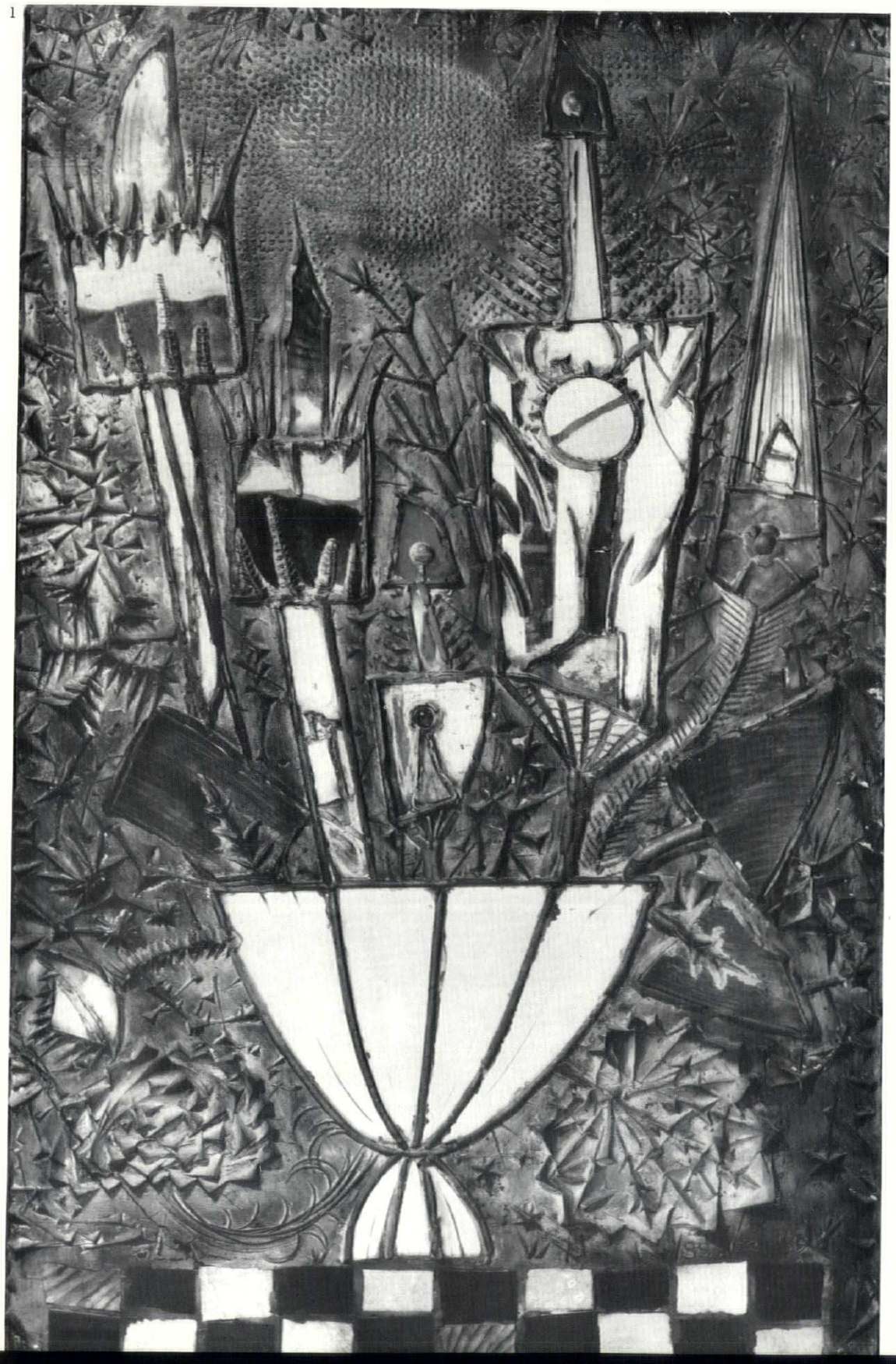
Here are new challenges, stimulating possibilities and some inherent dangers. To run amok in a welter of Disney techniquery would serve no purpose. Technique is after all only a means to serve an end—the integration of the visual arts into a whole from an initial concept. To substitute the fascination of the part for the unity of the whole and treat the artist or sculptor as a technical gimmicks man, could result in the same senseless pursuit of fashion that characterizes so much advertising, where creativity is squandered in frenetic endeavours to be 'original.' Henry Moore has said 'There is a right size for every idea'; and one knows exactly what he means, for monumentality is not size alone, nor is a doodle in synthetic resin necessarily right for a cathedral. Some buildings, however, will get the enrichment they deserve.

The descriptions on pages 99-100 are not complete specifications of techniques. The flat statement of how it is done leaves unsaid the most vital factor, which is what you can do with it aesthetically. Invigorating possibilities lie open for the exploration of every one of these techniques. The artists are there; the techniques are there. It may well be up to the architects to see that the opportunities are created.

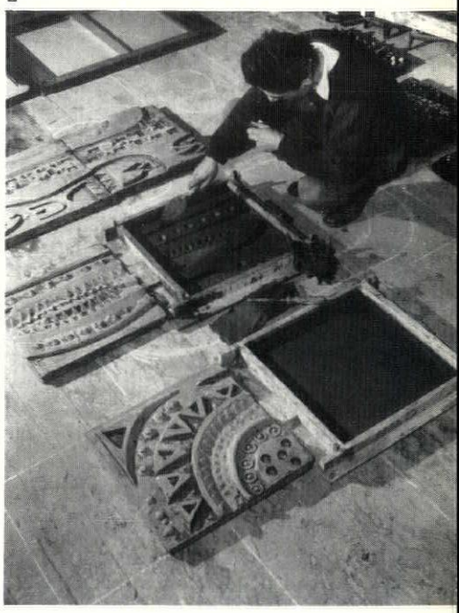
*See AR, February 1961. Victor Pasmore was the artist.
See page 131 of this issue.

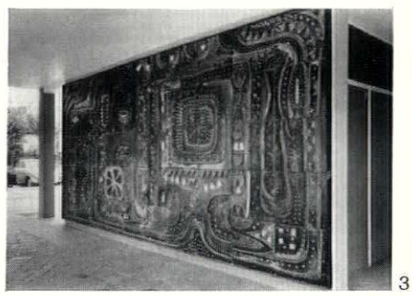
On the following pages are illustrated recent examples of murals in the various techniques referred to in this article, and of stages in their execution. The techniques are described in detail on pages 99-100.

1

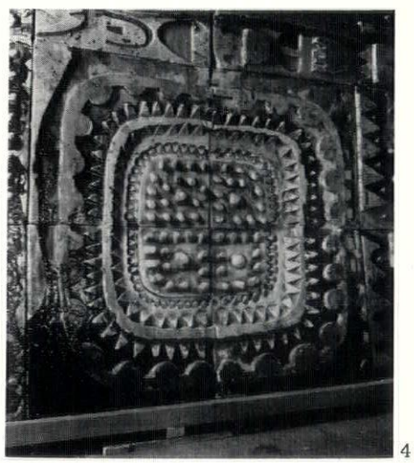


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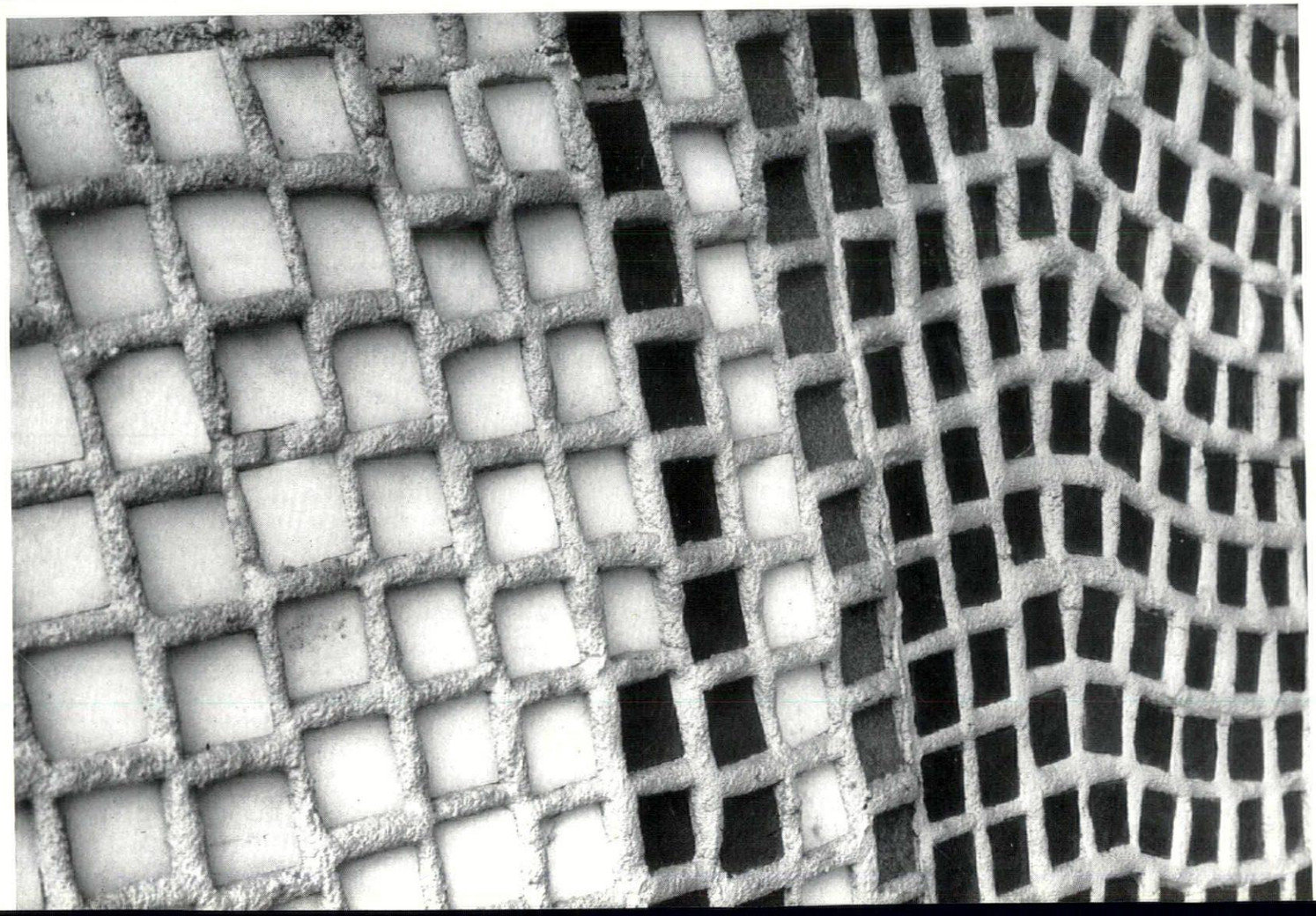
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Precast concrete

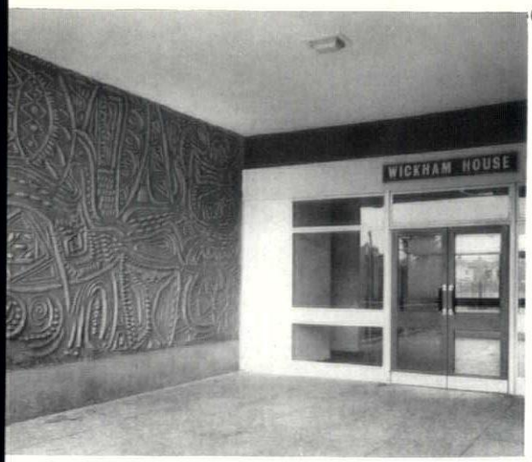
1, *precast concrete panels cast on clay, using glass inserts, by Stephen Sykes.* 2, *preparing clay beds to moulds and panels coated with pigmented resin for a cast concrete mural in a housing scheme at Wilson's Grove, Poplar, by the LCC Architects, carried out by George Mitchell.* 3, *the completed mural.* 4, *close-up of a part of it.*



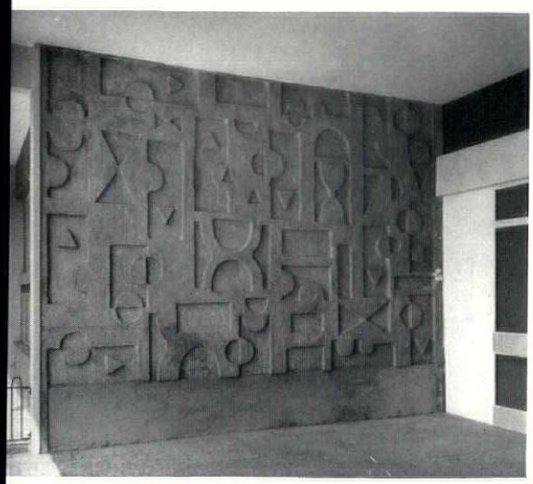
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6



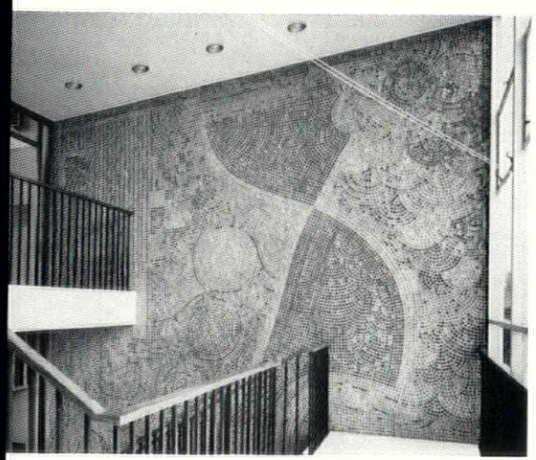
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8

In-situ concrete

8, Antony Hollaway drawing on a sheet of foamed polystyrene to produce a calligraphic design with an electric soldering iron. The result is used as a liner to shuttering for an in-situ concrete wall. The finished wall (in the entrance hall to flats at Clive Street, Poplar, by the LCC Architects' Department) is shown in 6 and in close-up in 5 (facing page). 7, another wall on the same site cast against a shutter lined with cut sections of polystyrene stuck to a thin sheet of the same material.



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12



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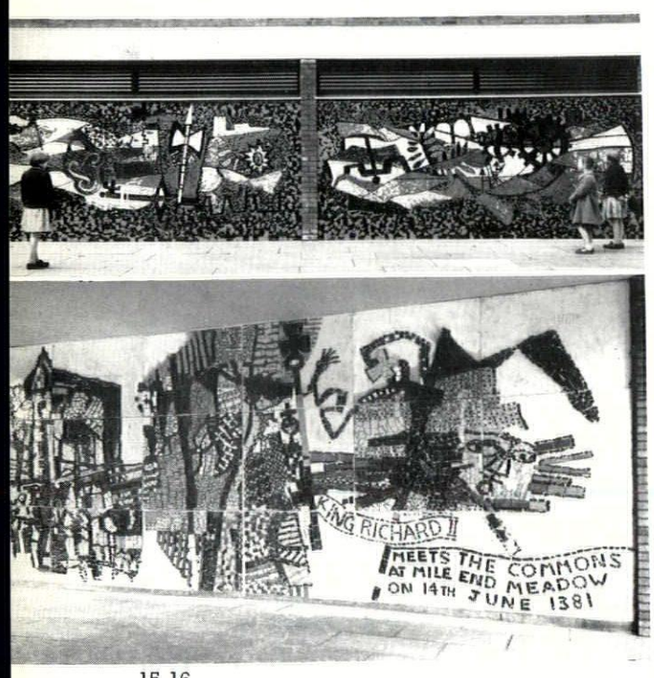
Mosaic

10, mosaic pressed into a wet screed-bed with each piece individually placed by the artist, Philip Suffolk, in situ. It is on a staircase wall at Mayfield School, Putney, by Powell & Moya. 9 (facing page), close-up of part of the same mosaic.

Wood mosaic

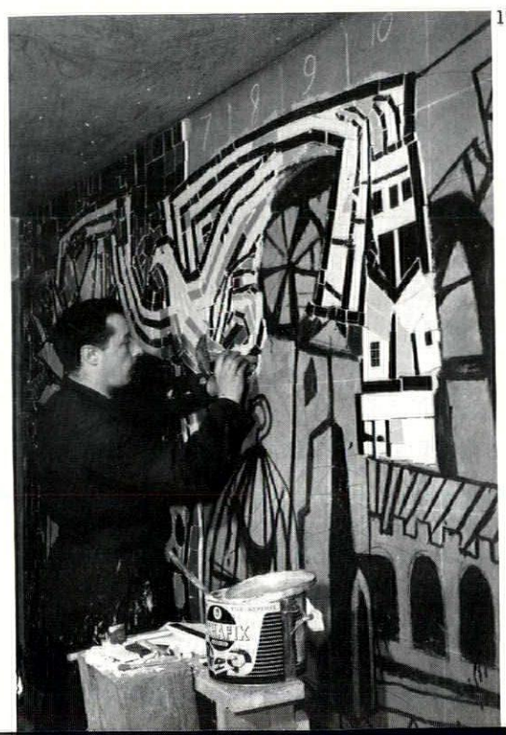
11, cut hardwood sections placed on base board by George Mitchell, filled with resin, sanded and screwed up as prefabricated panels into flats at Ladywell Lodge, Lewisham, by the LCC Architects. 12, close-up of part of the design. 13, the artist at work on the same design.

14



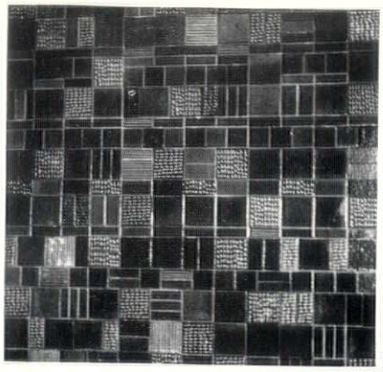
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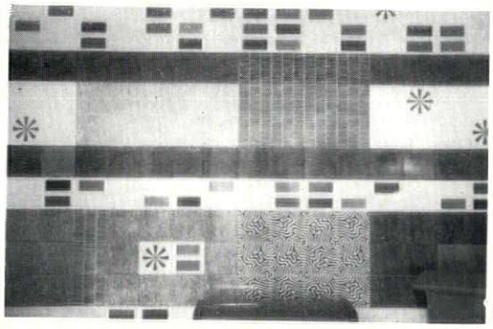


Broken tile

15, *a mosaic formed from sections of cut standard tile with areas of glass mosaic, fixed to a rendered bed with adhesive and grouted, at Brandon Estate, (LCC Architects.)* 14, *close-up of part of the same mosaic.* 17, *setting the broken tile direct on to the wall.* 16, *glass fibre reinforced resin panels prepared in the studio with tiles of various thickness stuck to the panels with resin, grout being dispensed with: Leatherdale Estate, (LCC Architects;) artist, Antony Hollaway.*



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Ceramic tiles

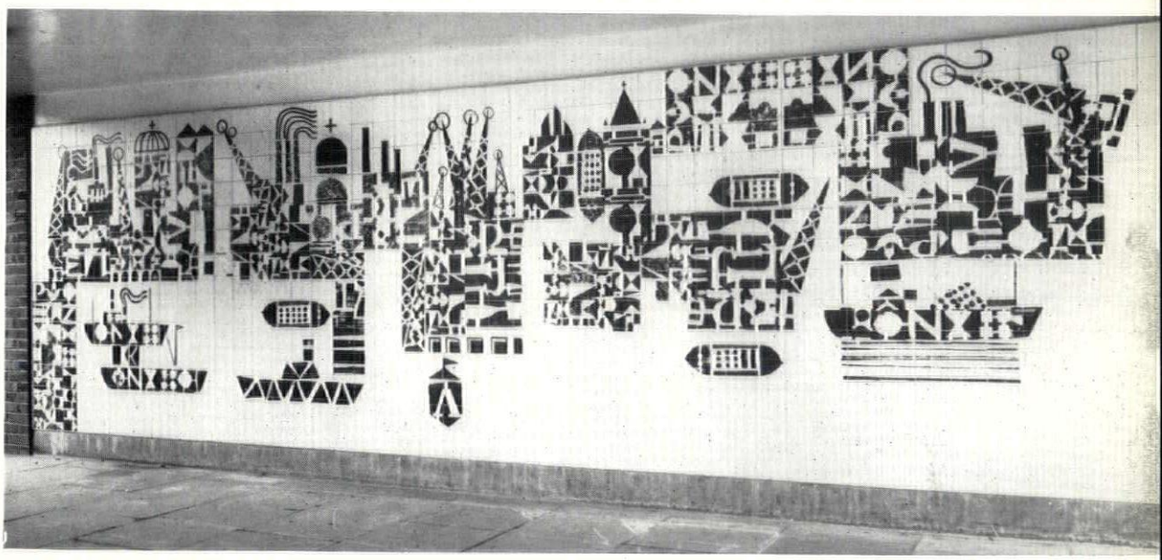
18, *standard tiles by Kenneth Clark of various sizes and texture.* 19, *standard tiles by Ivor Kamlish, of Carter Design Unit.* 20, *a design by Peggy Angus in a public house at Notting Hill Gate, using standard and individually designed tiles.* 21, *tile mural by Victor Pasmore, South Bank,* 1951 (*architects, Design Research Unit*). 22, *direct execution, by Fred Millett, on to frost-proof exterior standard tiles using 'under glaze' technique, for a school at Coventry* (*City Architect*). 23, *stencilled tile using prepared acetate sheet stencil units with pigment rolled on, by Antony Hollaway for LCC housing at Poplar.* 24, 25, *decorated and fired relief ceramic units, modelled by Geoffrey Wickham.*



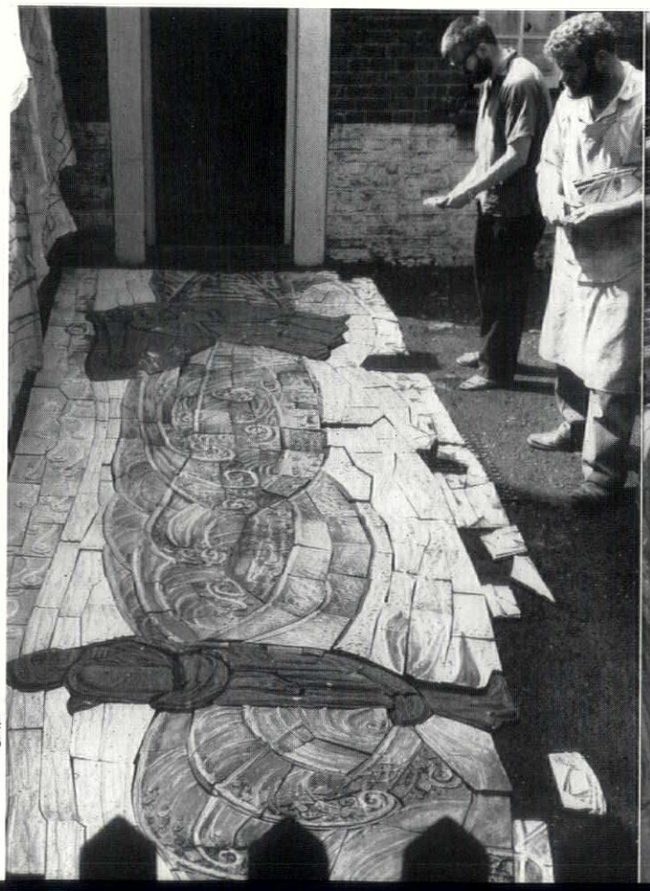
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Sgraffito

26, *cutting into the green plaster, the start of a design by Geoffrey Wickham.*

Incised rendering

27, *mural on a staircase at Brandon Estate, LCC, in cement render by Antony Hollaway.*

Routed and filled fibrous plaster

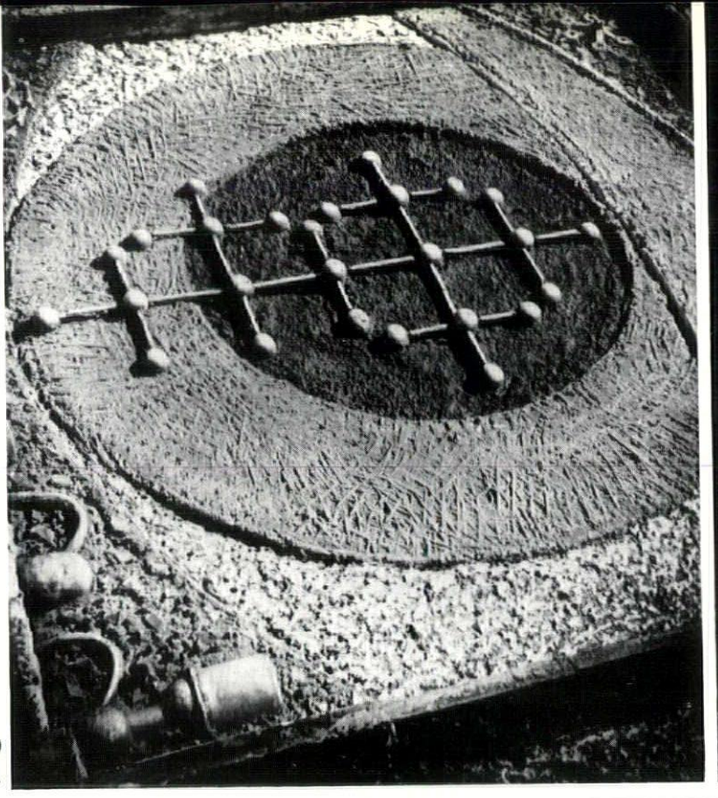
28 *and* 29 *(below), pre-cast panels in plaster, routed and filled with resin in the LCC Ivy Walk Estate, by George Mitchell.*

Precast plaster

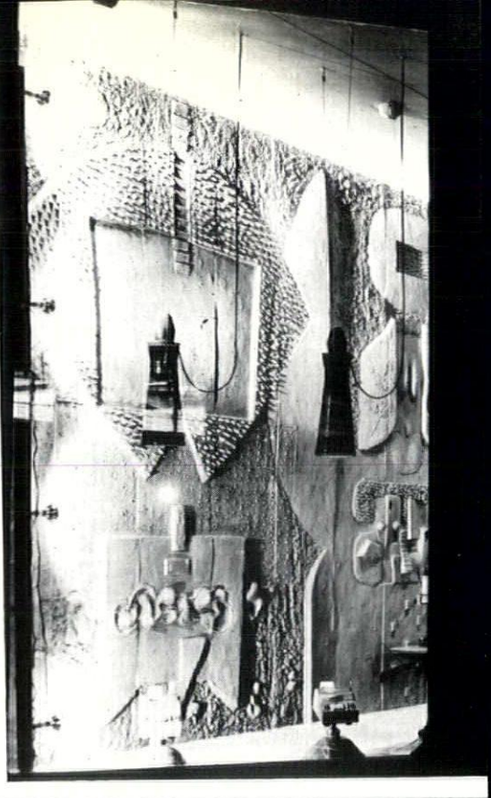
30, *detail of a design by Stephen Sykes in plaster cast on to sand.* 31, *detail of wall in the Olivetti showroom, New York, by Constantino Nivola.*

Routed chipboard

32, *George Mitchell using a routing machine on chipboard to form grooves which are afterwards filled with resin and sanded.*



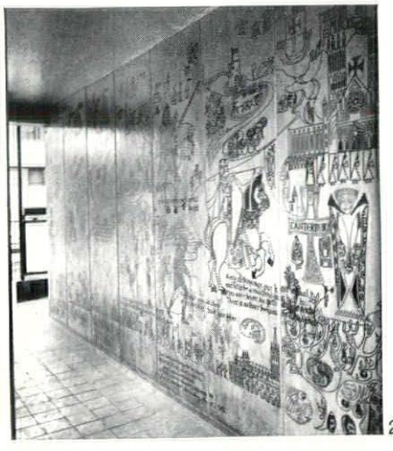
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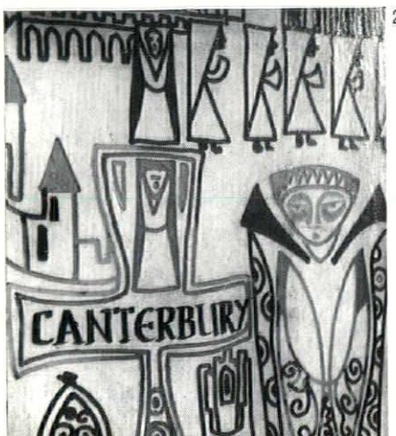
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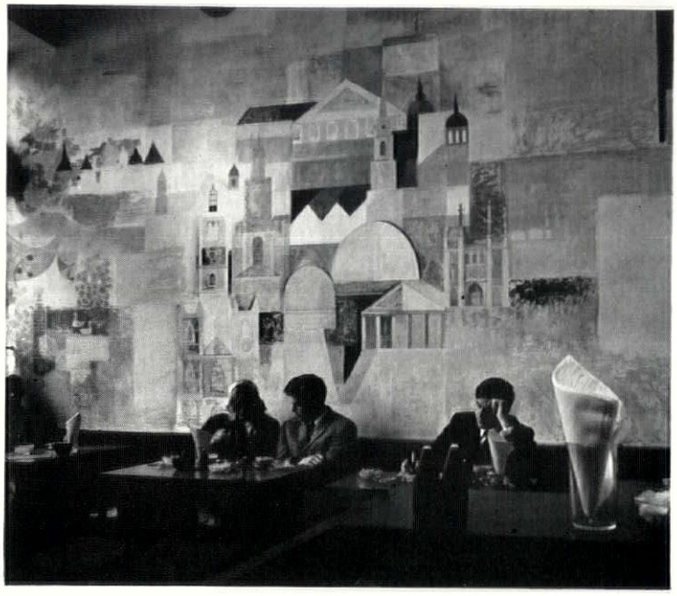
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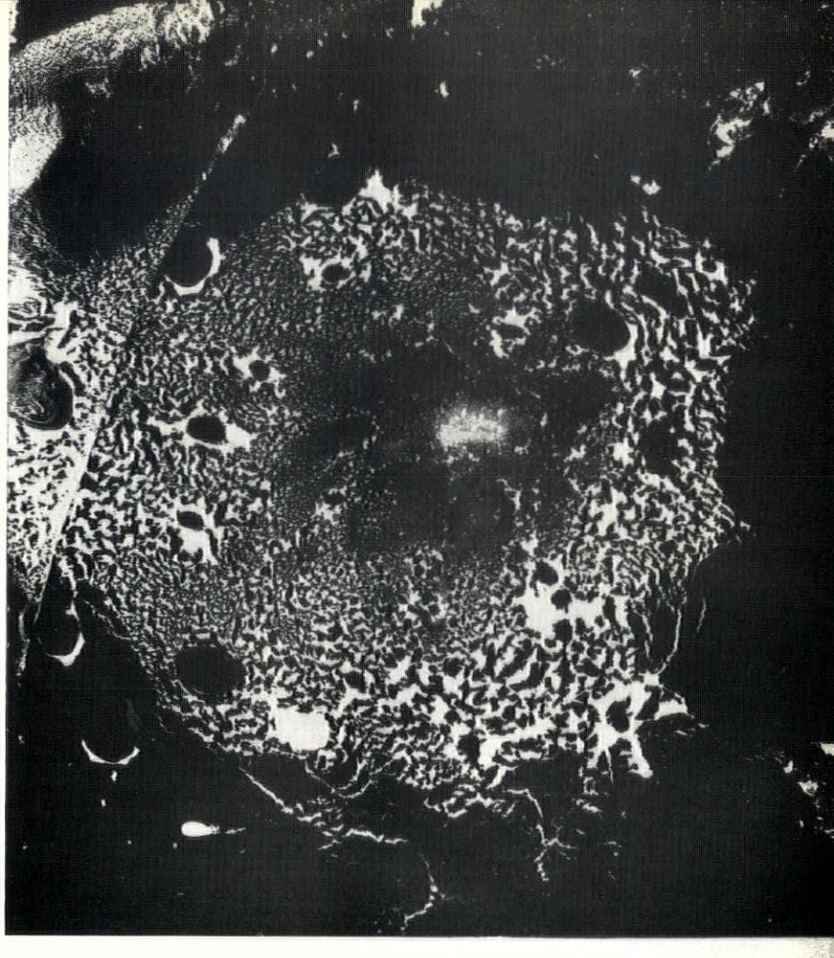
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37

Painting

33, emulsion BSI standard colours were applied by operatives on to asbestos panels and then worked on by Fred Millett for this mural in a school at Mansfield (Notts County Architect). 34, direct painting on to a plaster wall in oil paint with a wax medium by Fred Millett for University of London coffee bar. 35, a fresco panel by a student, Joanna Pogonowska, at Hammersmith School of Art. (below), emulsion paint applied direct to vermiculite ceiling panels by Oliver Cox for Wokingham school (MOE Architects Branch).



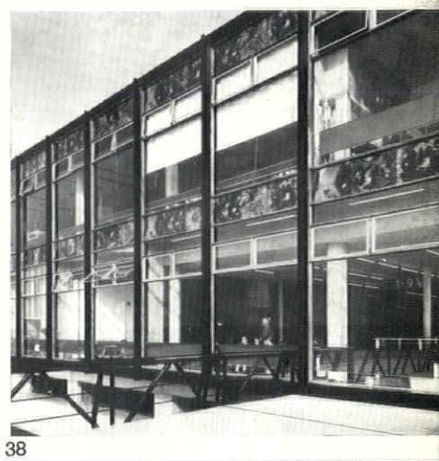
35

Glass

Curtain walling units for Gatwick Airport (architects, Yorke, Rosenberg and Mardall) were designed by Peggy Angus and carried out by a manufacturer screening the designs in oxides on to glass and firing them. 37, in close-up; 38, the glass units in position as part of the wall of the passenger building.

Brick

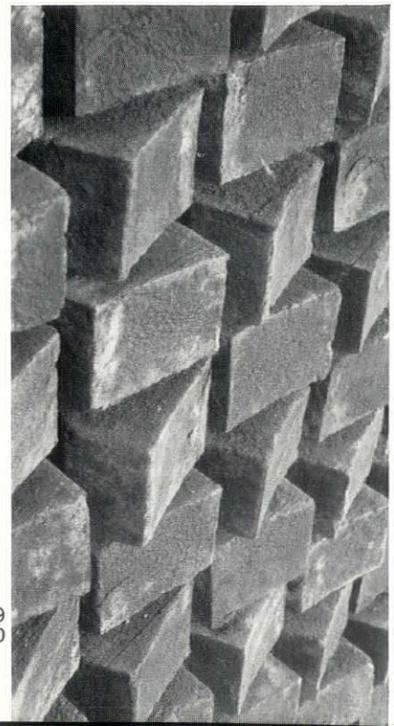
39 and 40, designs by Hans Coper for structural acoustic bricks to contain sound absorbent material in standard brick sizes.



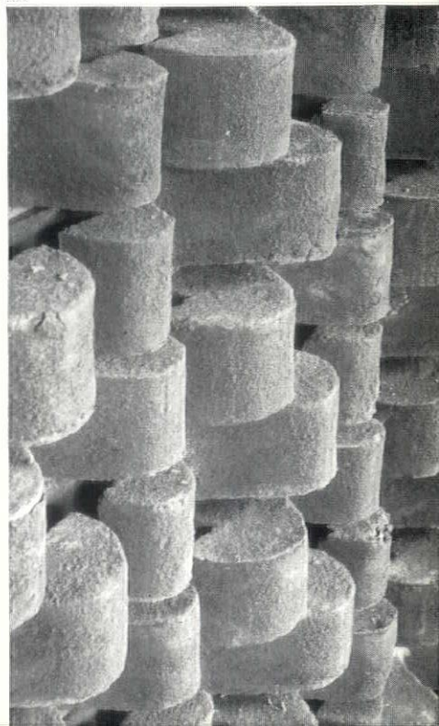
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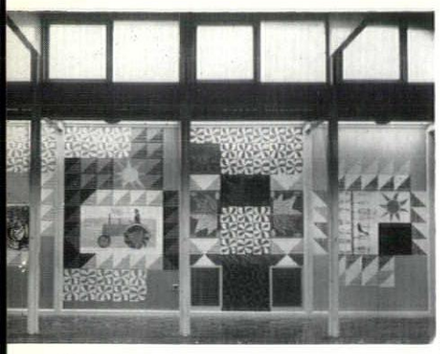


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Paper

41, *sheets of paper, 20 in. by 30 in., were silk screened with various colours to provide the units of a variable design by Fred Millett for a school by Coventry City Architect.*

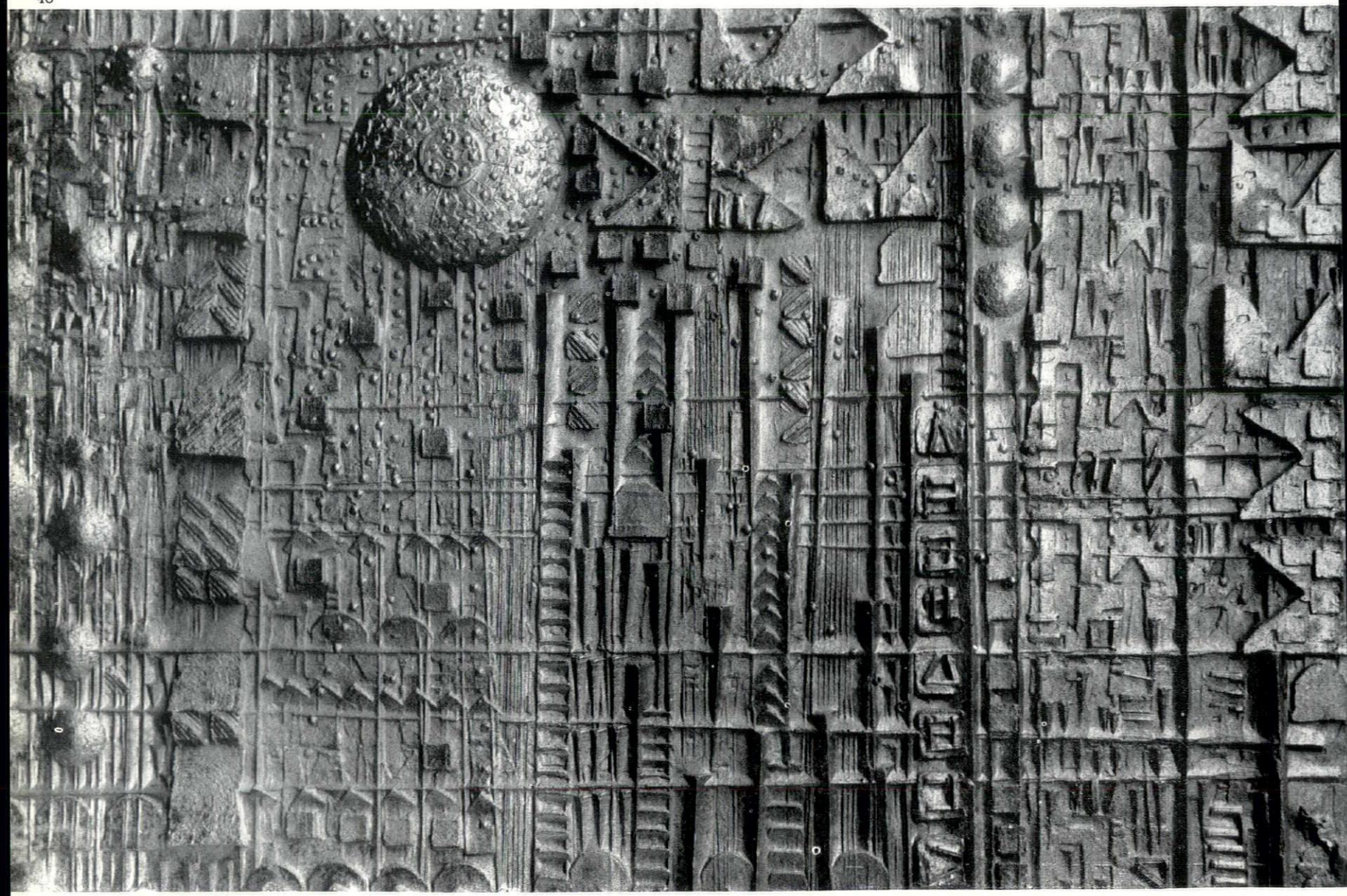
Synthetic resin

42, *direct painting of pigmented resin on to glass fibre re-inforced resin sheets by Antony Hollaway.* 43, *relief panel in sand and pigmented resin poured on to clay mould, designed by George Mitchell.*



42

43



CONCRETE—PRECAST

Casting on clay

Into simple wooden formers is laid a thick base of modelling clay, in a fairly soft, malleable condition. The clay is then modelled and cut to the required shape or pattern and the mould filled with concrete. When set the clay can be dug out of the face of the concrete and reused if necessary. In this way elaborate non-repeating reliefs can be created at extremely low cost. It is found that the surface of the concrete picks up a little of the clay colour, and since this is uneven it can add considerable interest.

The characteristic of this technique is that each slab is designed individually for one cast only, and although broad and elaborate effects can be easily obtained at little cost, the implication is that the moulding of the clay is carried out by the artist under studio conditions. It is thus more suitable where a relatively small number of slabs is required and where the detail is to be viewed from close range.

Blocks cast in this way can be coloured by pouring on pigmented resin, which in running over the uneven surface forms pools of varying degrees of opacity and intensity; this can produce an effect of amazing richness and variety. The adhesion between the resin and the concrete appears to be extremely good and to be likely to stand up to external weather conditions—although so far as is known no such murals have been exposed to the weather for more than a year as yet. If used externally, however, as with paint, it is imperative to use pigments which are not fugitive, and this implies a certain restraint in the hue (and the depth of hue) employed.

Standard moulds—slabs cast by contractors

Where really large areas of cladding are required precast plain concrete slabs, formed with a sufficiently rugged texture, can provide a greater interest than can be obtained by an expensive exposed aggregate finish—and at less cost.

The implication of casting hundreds of panels means standardization and repetition of casting of a restricted number of moulds to an agreed pattern, and, therefore, reusable moulds are required. One idea, using simple wooden moulds, is the creation of the equivalent of a 'fount' of different shapes which, used different ways round and in different juxtapositions, can create a non-repetitive pattern of far greater dimension than that of the slabs themselves.

A further idea is that of casting on a preformed polystyrene sheet which has been vacuum-moulded over a specially prepared master. This technique has the advantage that any number of identical moulds can be prepared from patterns as impermanent as clay—or a large number of slightly differing moulds can be prepared rapidly by using as a pattern an assembly of blocks of wood—the arrangement of the blocks being varied each time.

There would appear to be interesting possibilities in the extension of this type of patterning into the field of paving-slabs—especially where large areas are looked down on from tall blocks. One thinks of the richness of the pattern formed by the narrow incisions in the surface of the Victorian cast-iron cover to the coal-hole. A variety of non-repeating patterns could be created out of a 'fount' of a few slabs with narrow linear incisions on the face.

For a more restricted scale, or where a flat surface is required, the pattern can be obtained by pigmented concrete. A linear pattern can first be extruded on the face of the mould in a light colour and the main colour used as a back-up. This technique, more suitable for use in the studio, can be adapted for use in the casting yard by extruding the pattern on to a thin net (made of paper) cut to the size of the slabs. These can be prepared in the studio, and when set laid in the base of the paving contractor's standard formers in which the slabs can be hydraulically pressed in the normal way.*

CONCRETE—IN SITU

Foamed polystyrene sheet

Large wall-size shutters are first faced with large size foamed polystyrene sheets (8 ft. by 4 ft. or even larger) the sheets being pinned to the face of the shuttering. This material can be cut or incised with a hot soldering iron or small diameter cup brush in the end of a power-drill. A 2 in. thickness of sheet is used where the design is to be incised, and a variety of incision obtained by using tools with different heads. Cut shapes can also be stuck to a thinner lining of polystyrene (using a special adhesive obtainable from the manufacturer of polystyrene sheet)—the latter can give a clean vertical edge as can the cup brush, whereas with the soldering-iron the incised line is irregular.

When the shuttering is struck the polystyrene remains in position and can be left as protection to the wall until the job is in the finishing stages. The shuttering itself comes clean from the polystyrene and can be immediately reused on normal work. The polystyrene can be removed from the wall face by either blow lamping or wire brushing—the latter technique is probably preferable. Although either, of course, means the loss of the polystyrene, this is of little account since the material is not expensive. The rugged concrete face that can be obtained in this way can be so rich in texture that it fully compensates for the dull and maybe patchy appearance of plain concrete straight from the mould.†

MOSAIC

There are two methods of working with small *tesserae*, direct in situ placing of the pieces into wet cement, or the assembly of the design upon sheets of paper (usually about 1 ft. square) numbered and laid into cement rendering. The nature of the first is slower in execution and must also be done by the artist himself; the result is usually much richer in textural effect as the *tesserae* can be varied constantly in angle and depth.

The more effective method of paper assembly, in which the design is spread on a horizontal working surface, enables an area to be made up to the designer's satisfaction before applying the gummed paper in units to the surface. One also sees the design the right way round in this method. Glass and ceramic mosaic may be mixed in one design. Ceramic is the cheaper and the colours when unglazed somewhat dull; glass *tesserae* are rich and glowing in colour. Grouting up the *tesserae* can be carried out by the artist or operative, its colour providing an important element in the general effect.

The cost of mosaic work can be reduced if conventional *tesserae* are replaced by cheap material such as cut or broken tile. The cost of labour can be reduced if the pieces are large rather than small. Using broken tile in this way, broad effects more in common with stained glass can be obtained and detailed interest produced by using tiles with differing degrees of gloss, or printed tiles. If an even surface is required thin tiles can be stuck to adhesive paper as in the mosaic method. To produce a more 'nuggety' effect, with more surface texture, the pieces can be applied direct to the wall using a suitable adhesive, or stuck with resin to prepared panels of such material as glass-fibre reinforced resin for screwing to the wall later. Fixed in either of the latter two ways, tiles of varying thickness can be used to produce a rich surface texture. Where resin is used, the tiles can simply be laid on the prepared panels in the required arrangement and resin poured round them. This forms a rigid fixing and grout can be dispensed with.

*The development of a tool for the extrusion of grout is the subject of a patent application by Mr. Anthony Hollaway.

†The use in this way of polystyrene sheet is the subject of a patent application by Mr. Anthony Hollaway.

CERAMIC

STANDARD MASS-PRODUCED TILES

Silk screen printed tiles

The printed mass-produced tile has the advantage and limitation of being necessarily simple, a basic unit with a design capable of a pattern the same unit size, or with one or more designs capable of being used in various positions to create larger units of pattern. Rich and decorative surfaces or purely repetitive ones are possible. Much depends on the sympathetic choice by the designer of the available patterns and colour.

Stencilled tile

An intermediate (one-off) technique between printed and hand-painted is the stencilled tile. Here the designers' work is intensive beforehand in the drawing up of the design and its breakdown into stencil units. Because the hire of manufacturer's workshop space and firing is often expensive, extremely rapid execution must be achieved by careful planning. The tiles in biscuit state are laid out horizontally, the stencil shapes placed and pigment applied by roller or brush and the tiles fired.

Glazes and pigments applied by the artist

Various traditional techniques can be used. By the nature of the medium much depends upon the character of the clay used, the temperature of fixing and the experience of the ceramicist in the control of these factors. Colours are often different in tone and sometimes in hue for instance before and after firing.

Under-glaze: Metal oxides in powder form are mixed with water and the pigment painted on to a once-fired (biscuit) tile. It is also possible to draw and paint designs on to a biscuit tile dipped in white or coloured glaze, which forms a working surface very similar to blotting paper. In both cases a clear glaze is then applied and the tile fired.

On glaze: On to a shiny white tile (or other colour) already twice fired, once to biscuit state, dipped in glaze and re-fired, pigments of the same kind are applied only with a different medium to make them adhere to the shiny surface, and then fired again. What you can do with these techniques is of course endless; a pigment may be brushed, sprayed or the surface scratched or scored, the glaze clear or translucent; one, several or all techniques may be combined.

Larger ceramic units in relief

Coarse clay with 'grog' (a mixture of clay and powdered fired fragments) to give strength, low shrinkage and high firing (if for exterior use) is modelled up to a profile of 2 in. Units of approximately 2 ft. by 1 ft. can be made to add up to larger units. A factor in the working of units this size is the control of warping, but for what is essentially a non-mechanical rugged surface, slight differences in level are readily acceptable on forms that are themselves modelled. These can be decorated with glazes and pigments and can be fixed according to site requirements by cementing, or counter-sunk holes.

PLASTER AND RENDERING

Sgraffito

Sgraffito is a traditional technique still capable of application to present-day needs. It demands, like

incised rendering, speedy and agile execution, but whereas render tends to have a stencil-like character, that of sgraffito is more refined and calligraphic. The wall is cement rendered to unify the surface. On to this a coat of matured slaked lime plaster ⅜ in. thick is laid; the following day a 1/16 in. coat of a different colour is laid. This is worked into whilst green, the incision of various tools cutting through the top coat and partially into the base coat, which is also still green. Different rates of drying can occur if the wall has different materials such as brick and concrete. This describes a two-colour sgraffito, but a design need not be limited to only two colours or two layers.

Incised rendering

This technique involves a plasterer's skill in the even application of rendering, and thus calls for a joint operation between the artist and the plasterer unless the artist happens himself to possess this skill. The wall is rendered in two ⅜ in. coats of a suitable mix of cement, lime and sand, the first coat being allowed to dry out before application of the second coat in the normal manner. As soon as the top coat is on and while it is still green, sections of the top coat are removed with a trowel, revealing the face of the undercoat and producing a bas relief on two planes. Alternatively, the trowel can be used to produce a linear incision like that of a lino-cutting tool.

If the wall is to remain unpainted, a subtle difference in tone can be obtained by varying the sand from base coat to top coat; if it is to be painted, the pattern can be easily picked out in two colours without any time-consuming cutting-in, by brushing in the base colour to the incised faces and lower planes, and then using a roller on the upper plane. This method can also be used, of course, in normal maintenance repainting without demanding any out-of-the-way skill from the operative. Even the original colours of the design can be changed without difficulty.

This technique involves pretty rapid work by the artist, since the rendering only remains workable for a few hours and goes off more quickly still if exposed to hot sun, so that large areas must be worked in panels or avoided unless the artist can work very fast indeed. Nerve is also required since the design cannot easily be sketched out on the surface, and every stroke of the trowel is utterly irrevocable.

Routed and filled fibrous plaster

Experimenting with polyester resin and plaster of paris, it was found that a coat of resin appeared to be partially absorbed into the surface of the plaster, giving a hard abrasion-proof surface. This suggested that fibrous plaster panels, finished in this way, might be suitable in areas of hard wear such as entrance halls to blocks of flats. The design is first cut into the face of the prepared fibrous plaster panels by a high-speed router, the recesses filled with pigmented resin and the whole sanded down flat. The whole panel is then sealed with a full coat of clear resin.

This technique has one or two difficulties. First, the routing operation fills the air with a fine powder which makes working difficult. Second, the degree of absorption of the resin into the plaster surface appears to vary in practice so that certain areas get inadequate protection against abrasion and water penetration. Lastly, the clear coating is slightly yellow and this is particularly noticeable against a dead white plaster.

Precast plaster panels poured on sand

One of the walls of the Olivetti showroom in New York (design by the Italian architects Belgiojoso, Peressutti and Rogers) was covered with a rich bas-relief in sand-faced plaster by Constantino Nivola. Peressutti's story of how this technique was discovered may be apocryphal, but is worth repeating. Le Corbusier was staying with Nivola at the seaside. One morning the two men went out for a walk along the sand at low tide and, fascinated by the smooth surface, Corbusier began to draw vigorously with a stick. The drawing was a masterpiece and Nivola was appalled by the thought that it would soon be blotted out by the rising tide. Dashing back to his house he returned with a sack of plaster of paris and, applying this to the surface, he was able to preserve for all time a reverse image of the drawing on the sand. A thin film of sand adhered to the surface of the plaster cast, however, giving it a rich, crusty and colourful appearance. Nivola began thinking. . . .

The character of the surface is determined by the coarseness or otherwise of the sand—a fine foundry sand, for instance, can give fine detail and an interesting reddish ochre colour, but is inclined to dust off—a larger aggregate adhering better.

A large mural can prefabricated in sections using lath or wire reinforcement to the plaster—as in fibrous plaster work. Sand beds in frames could in fact be prepared by an artist for casting on by a fibrous plaster sub-contractor with very little extra material cost over that of normal fibrous plaster work—the completed panels being screwed or stuck with plaster dabs to the wall.

TIMBER

Routed chipboard

Standard panels of chipboard are incised with a high-speed portable router, using cutters of different diameters to form a linear design of different widths of line and depth of cut. The router forms a clean square cut recess into which pigmented polyester resin is poured, the colours and opacities of the colours being varied and mixed during the process. When the resin is set the whole surface is sanded flat and a protective coat of clean resin is applied. If a certain amount of clear resin or transparent colour is used in combination with opaque colour the quality of the natural flow of the material is preserved in the finished result. Together with the cut section of the board, revealed under varying depths of resin, this gives variety and interest when inspected at close range. Since chipboard is highly susceptible to moisture movement, the edges and back need sealing with resin or a suitable sealer. The finished panels are most simply fixed by screwing to battens, and the surface has proved itself in practice to stand up to the heaviest wear.

Wood mosaic

Sections of hardwood of different colour and profile are sliced up to a uniform thickness and stuck down to a series of baseboards to form the design. Polyester resin suitably pigmented to contrast with the colour of the hardwood is then poured over the boards, each of which is fitted with an edging trim to retain the resin to a depth slightly greater than that of the hardwood sections. When set, the boards are sanded to expose the face of the hardwood sections and the whole given a protective coat of clear resin. The completed panels can be fixed in the same way as the routed chipboard, and once again provide a permanent and extremely durable finish.

PAINTING

Fresco

Of all mural techniques fresco is the one with the longest history, stretching back to the Roman and Byzantine Empires. This is a highly skilled craft with many specialist variations, and is essentially a painter's medium. A fresh coat of lime and sand is each day laid on to a mortar base, only such an area as can be worked in the day is prepared and if not completed must be cut away, for when dry it will be unworkable. Only certain pigments are chemically sound (mainly the earth colours), and these are painted on to the wet lime and become integrated into the surface, the texture of which can be made marble-smooth or rough and gritty by the control of the mixture and trowelling. Experienced judgment and continuous work on the site is therefore essential to create a unity of surface finish and integrated design, for there is no going back on yesterday's work. The moves must be carefully planned beforehand; this is no hit or miss technique. These conditions do not seem to have deterred many modern artists, notably those in Mexico, from using the medium.

Direct painting

For painting direct on to plaster walls or other base, asbestos, hardboard, etc. normally a smooth finish is required with two coats of flat white paint to provide brilliance if transparency is desired. Most painters and architects prefer a matt finish to a painted mural, and this can be achieved by using wax colours, standard manufacturers' flat oil colours, artist's oil with a wax medium or emulsion paint. By painting direct on site a successfully painted mural achieves a unity with the wall in its way unique. Its other characteristics are immediacy and mobility which allows addition and subtraction until completion. It is by nature a 'thinking' medium, the 'gesture' remains clear throughout the work from start to finish. Not enough developed is the possibility of formal designs using standard colours (or, where a programme may allow, a range of particular character drawn up for the work in hand). Wall and ceiling areas of modular units can be painted on or off site, by operatives or artist according to the nature and complexity of the work. Logically it is just those buildings based on a modular system, which may tend towards a rigid or mathematical expression, in which a free and imaginative use of colour is needed.

Time involved here is often the mixing of paints; if this can be done beforehand either by use of British Standard or manufacturers' ranges for special jobs, execution can be very rapid, the character of the work being not so much individual brush strokes as the play of areas of colour one against the other.

PAPER

As a variation upon ordinary wallpaper with its repetitive character, paper can be used to provide the units of a modular design. By the use of a printing method such as silk screen, one can produce any number of a 'mural.' For this one merely needs a unit size convenient for printing (though it can be quite large; screens can be 8 ft. by 4 ft.). You then also have the components of a mural 'kit' so to speak; variations of a design can be achieved by different combinations, or one mural replaced on the same site by another merely by re-assembly. As with any paper or fabric, different 'colour-ways' of the same design units can be printed, thereby changing the mood and character of the design. It is also clear that screen printing could be applied to materials other than paper.

SYNTHETIC RESIN

Pigmented polyester resin, when poured on or brush-applied, sets with a high gloss finish, and since the film has a far greater thickness than that of conventional paint the surface is apt to be uneven. A flat, matt finish can be obtained without sanding by mixing a fine sand with the resin and pouring or painting in reverse on a flat smooth surface treated if necessary with a release agent. A back-up coat of resin alone will produce sufficient rigidity for small panels, although the addition of glass fibre to this coat as reinforcement would be necessary for large panels.*

*The use of synthetic resin in this way is the subject of a patent application by Mr. William Mitchell.

MEXICAN NEWSLETTER

Irene Nicholson

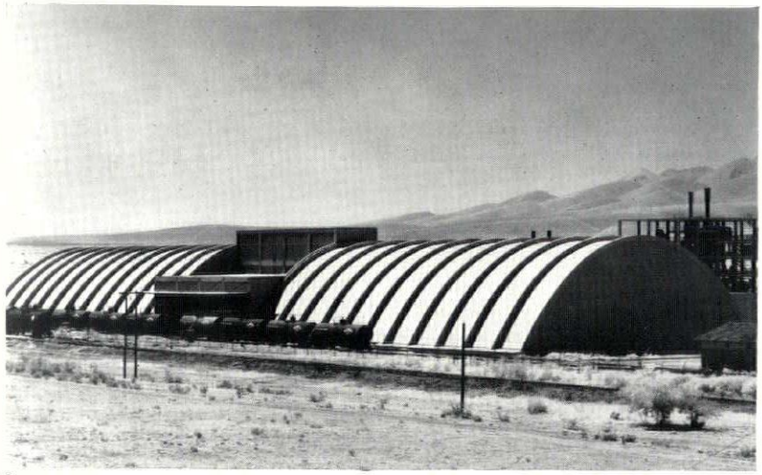
Modern Mexico is a happy hunting ground for architects. Contracts for private homes, office buildings, cinemas, factories, housing estates, tumble into their laps—typical recent examples are 1 to 3 alongside. There are whole new cities to be planned according to every architect's dream, from scratch, for the country is in the midst of an industrial revolution. It is booming, yet with vast areas still undeveloped. In the circumstances, Mexico inevitably has its share of inadequately planned, ill-designed and weakly constructed buildings, and there are plenty of examples of bad manners in architecture, of new buildings that jostle colonial masterpieces or shout their quieter contemporaries out of existence. The Mexican architect has to face the problem of integrating several cultures that stand side by side or are superimposed on one another. Mario Pani, for instance, is at the moment redesigning and adding modern buildings to a square, 4 which contains the foundations of an ancient pyramid and an early colonial church, both of which are historic monuments. Ricardo de Robina has been emptying churches of tasteless nineteenth-century images and replacing them with simply designed modern altars, lecterns and crucifixes, 5.

From shortly after the Mexican Independence, say from about 1830 until well into the twentieth century, Mexico suffered years that were architecturally barren, producing largely pseudo-Moorish, pseudo-renaissance, pseudo-gothic. The results are to be seen in almost every main street in Mexico, and neglect of many minor colonial buildings makes matters still worse. The contrast between the well-kept and finely proportioned National Palace and many equally good but now bedraggled buildings round about, tells its own sad story. But the architectural conscience is reawakening as Mexico City grows and is rebuilt. The younger generation is groping toward a style that shall be in direct line from the best traditions of ancient and colonial days, that shall be genuinely modern and also genuinely Mexican. There have been some brave failures, but 'even our absurdities are absurd in a Mexican way,' says Mario Pani.

What will be the special Mexican contribution to modern architecture? There are obvious influences from Le Corbusier, Frank Lloyd Wright and the rest. Nevertheless, as one studies the latest buildings one glimpses certain tendencies emerging. Foremost is the need for excessive simplicity and budget-paring in all kinds of popular housing, including working-class blocks, 6, schools and many Government institutions such as Social Security and medical centres. Superimposed on the simplicity there is a tendency to highly decorative baroque. Baroque may be regarded in



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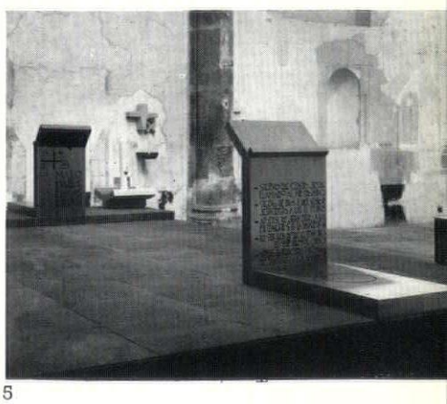
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1, *a typical house in a Mexico City suburb, Jardines del Pedregal; architect, Carlos Reyes Navarro.* 2, *storage warehouses of a fertilizer plant in Monclova, north Mexico; architect, Ricardo de Robina.* 3, *one of Mexico City's newest cinemas; architect, Juan Sordo Madaleno.*



4

4, *the new Central Mexico City police station (architect, Enrique Castañeda Tamborrel) providing a new background to an old square.* 5, *lecterns, crosses and candle holders in the cathedral of Cuernavaca, restored and refitted by Ricardo de Robina.*



5

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Mexico as a historical necessity, certainly from the sixteenth century, and even—if one may be allowed an anachronism—from preconquest times. Nothing could be more in the baroque spirit than the Teotihuacán carved friezes of the gods of wind and rain, or the elaborate low reliefs of Palenque and Bonampak. Nothing is more baroque today than the facades of modern 'matchbox' buildings, covered every inch with feathered serpents and the symbols of independence and revolution. Almost always, though, there is underlying simplicity. On the whole Mexicans are blessed with an eye for proportion. Simplicity has salvaged their extremest styles from decadence, as in the churrigueresque of Tepozotlán and Tonantzintla.

Sheer weight has also been a characteristic of Mexican architecture in the past. Even the pyramids, especially those of Tajin, are really conceived horizontally. Now many tall, narrow office blocks, such as 7, are planned as horizontal designs of coloured tiles or mosaic alternating with unbroken windows. Here we meet another characteristic: the use of local materials—stones, woods, and locally fired tiles—to give texture and colour. Concrete surfaces are often unfaced, or stones left roughly quarried to give a tactile intimacy, as in 8. Colour and texture are used for touches of humour that are very Mexican, with motifs taken from folk art—for example the fountain sculpture in 9.

In private houses, even in apartments and office buildings, the threshold from indoors to out is often blurred. In the tropics and semi-tropics, living rooms may lack a fourth wall, 10, but on the cold high plateau it is necessary to put glass even though it may be in the form of a sliding door that can be left open during the day. The Moorish-Spanish habit of turning houses inward on to patios, leaving the outer walls windowless, allows maximum planning within an enclosed miniature fortress. This inward-turning is a hangover from the days when each social class and each race in Mexico lived apart, when 'to go into the street' was an adventure beset with dangers, real or imaginary. Today it serves the purpose of insulating from the noise and brashness of the outer world.

The period of pseudo-architecture may be said to have ended in Mexico about 1925, when José Villagrán Garcia began to build clean, functional hospitals and dispensaries that look up-to-date even today. Villagrán taught most of the architects now working, and though some have broken into hidden or open rebellion, nearly all show signs of his influence. He recently became the first architect to be received into an exclusive body, the Colegio Nacional, whose membership is limited to twenty. At his investiture he attacked many modern tendencies. He deprecated the seeking after originality. Though he called for sounder techniques, he deplored a tendency to deny artistic and plastic validity to architecture. He asked for a more careful consideration of a country's requirements—social, climatic, psychological and historic. 'Form,' he says, 'is no longer sought as the expression of a solution to a given problem. An uncreative neo-classicism has developed.' He dislikes the tendency to unbroken lines of windows regardless of the climate or of the need for privacy.

Although Villagrán's views are not necessarily shared by his pupils, it is no coincidence that the foremost architects, if questioned, speak first in terms of philosophy, economics, sociology, and only as a corollary of engineering, of materials and of style in its narrowest sense. This is true even of the acutely intelligent Félix Candela, the engineer famous for his shell concrete vaulting.

Mario Pani, for instance, is at present redesigning an overcrowded slum belt of Mexico City, Nonoalco. He is taking advantage of a space left by an abandoned railway goods yard to plan a self-contained unit into which slum families from the immediate neighbourhood will be shifted. A new space will thus be left, which will be built up in its turn. He believes that he can provide much better than minimum housing by increasing the density of population, by creating a residential district close to the factories and work centres, and by calculating rents in such a way that the richer families and the shop and factory owners shall subsidize the poorest strata. He has had to make a complete social survey of the habits, incomes and general conditions in the area.

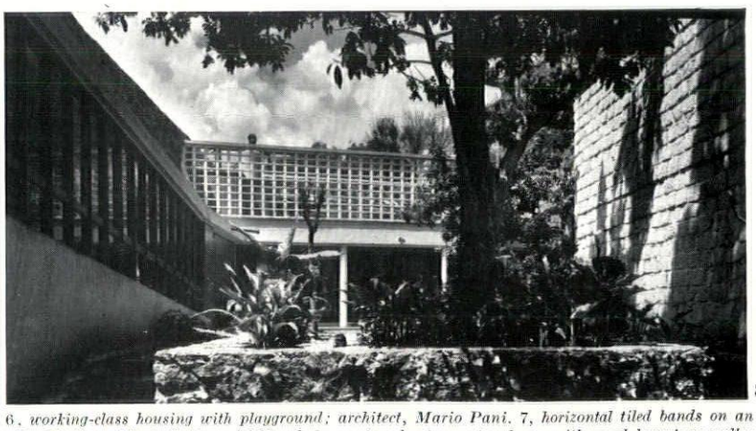
Another example is the new 'Labour City' being built by Ricardo de Robina on waste land expropriated by the State. Financing is by private industrial concerns who are fulfilling a law that has often gone by default, whereby companies over a certain size must provide housing for their employees. Equally interesting are the peasant housing schemes of the National Housing Institute under the direction of Félix Sánchez. In one scheme the peasants are being taught to make their own bricks and do their own building. There is also the prefabricated schoolhouse-plus-teacher's home which has been designed by the Ministry of Education and was exhibited last year at the



6



7



8

6, working-class housing with playground; architect, Mario Pani. 7, horizontal tiled bands on an office block; architect, Enrique del Moral. 8, courtyard entrance to a house with rough lavastone walls; architect, Augusto H. Alvarez. 9, humour expressed in fountain sculpture, and gaiety in brick design on the wall of the largest Mexico City market, 'La Merced'; architect, Enrique del Moral.

9



Milan Triennale.* The structural frame and the furnishings are provided, and individual touches are added by using materials handy in each locality.

New and sanitary markets, 11, of which del Moral and Villagrán are the chief designers, have been modelled to conform with the traditional peasant layout of meat, fruit, vegetables and flowers. Narrow streets roofed over with corrugated iron have been replaced by units that include all hygienic facilities and even playrooms for the vendors' children. Speed of construction is important in such a fast-growing country, and a very beautiful little factory was recently erected in a record 121 days. It is for making fruit-juice and other cartons, and is fitted with plastic screens framed in aluminium to protect against afternoon sun. The offices have mahogany fittings and smoothly swinging doors hung on vertical pins placed several inches inward from the jamb. The architect is Fernando Barbará Zetina, one of the most promising of the younger generation. He has been influenced by Japanese styles and is elegant in his use both of colour and surface texture. A still more startling example of speed is the modernizing and rebuilding of the Pacific port of Manzanillo which was hit by a cyclone in October, 1959. Since then, earthworks, a housing estate, and a civic centre have been erected.

Slightly apart from the general run of work now being done in Mexico are the structural experiments of the Candela-de la Mora partnership. This partnership built the Mexican stock exchange, 12, a vaulted building naturally lit by almost concealed windows. Enrique de la Mora, together with Leonardo Zeevaert and Alberto González Pozo, is engaged on a new experiment, an office building, 13, whose main weight is taken from above. Two hollow concrete shafts reach from the ground to seventh floor, where they support two enormous longitudinal concrete beams. These in turn support transverse armatures on which the building is 'hung.' The method is intended to give maximum flexibility of space. De la Mora, Candela, and Fernando López Carmona have built a series of churches and chapels using hyperbolic-paraboloid surfaces that give sometimes gentle, sometimes steeply upward-flowing lines, 14. Some Mexican architects have criticized what they call an exaggerated pointedness, with loss of emphasis on the altar. Villagrán, together with a young collaborator, Raúl Gutiérrez, and an artist, Federico Cantú, has built a seminary chapel in direct contrast, the prevailing lines being horizontal and massive, 15. Hollow concrete bricks have been faced at one end with coloured glass which reflects on to the inner surfaces of the bricks.

* A.R., November, 1960.

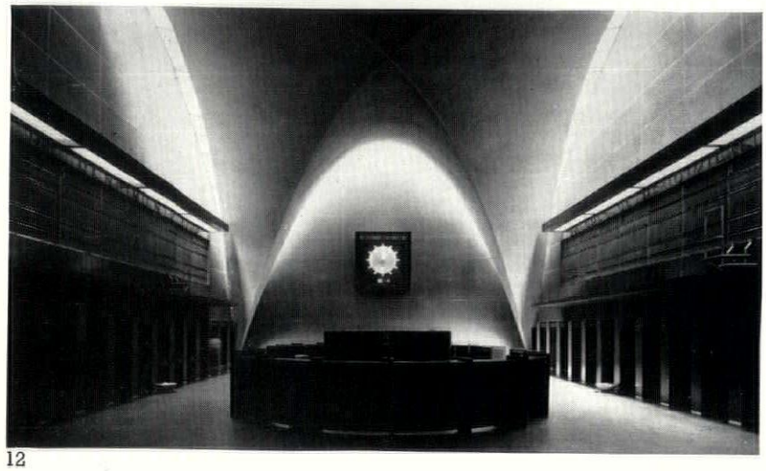


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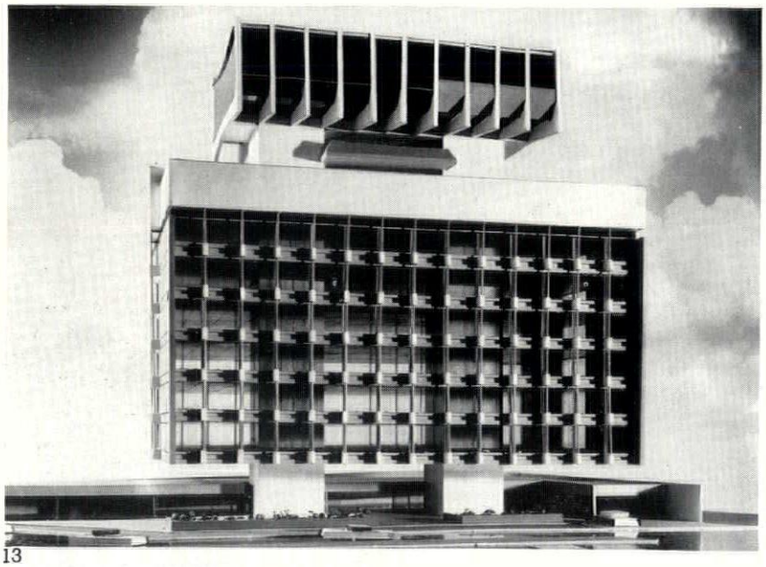
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10, *looking from a house on to its terrace and garden; architect for all three, Enrique del Moral.* 11, *interior of the enormous 'Merced' market, Mexico City; architect, Enrique del Moral.*

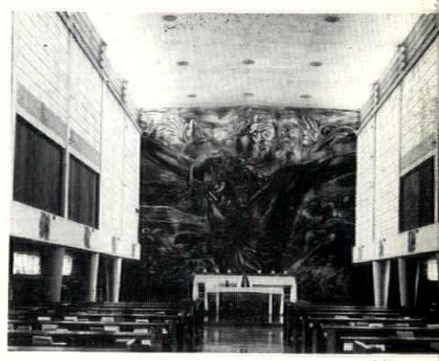


12

12, *the Stock Exchange, Mexico City; architects, Felix Candela and Enrique de la Mora.* 13, *model of the projected 'Monterrey' building in Mexico City by Enrique de la Mora, Leonardo Zeevaert and Alberto Gonzalez Pozo, showing the hollow columns and the armatures from which the building is 'hung.'*



13



15

14 (*below*), *Chapel of the Missionaries of the Holy Spirit, Mexico City, showing the rhombus of the roof, the cross incorporated into the structure, and the lava-rock walls; architects, Enrique de la Mora, Felix Candela and Fernando López Carmona.* 15, *seminarists' chapel by José Villagrán Garcia and Raúl Gutiérrez, with mural and glass-and-brick mosaic by Federico Cantú.*



14



1
2



criticism

J. M. Richards

Stockholm's new commercial centre

Town-planners: Sven Markelius
Göran Sidenbladh

Architects: David Helldén
Anders Tengbom
Sven Markelius
Lars-Erik Lallerstedt
Sven Backström
Leif Reinius

Serenity rather than drama, evolution rather than revolution, are what one expects in Stockholm, yet the commercial centre of that city has, during the last seven years, undergone a more dramatic revolution than that of probably any big city in Europe—certainly than any city not inspired to reconstruct by war-damage. It is acquiring a new architectural character, new principles of traffic engineering are being introduced and Lower Norrmalm —the business area that runs north from the waterfront, of which the reconstruction area is part—is being given a new silhouette.

Five 18-storey office-blocks built in parallel formation south of the old Hötorget—the ancient haymarket which since 1926 has been the forecourt of Ivar Tengbom's neo-classical concert-hall—are the focal point of the scheme, and they are the subject of this article together with the terraces, promenades, roadworks and pedestrian bridges that surround them. Though only two of the five blocks are so far occupied, the scheme is now finished enough for its quality to be judged. Architecturally—subject to a few reservations I shall come to later—it is well conceived, and executed with unusual assurance and precision. Urbanistically it will certainly prove, when the whole scheme is complete in 1964, a model instance of the reorganization of a city centre to meet modern needs. For, apart from the changes it is bringing to Stockholm, it is highly significant because of the way it tackles simultaneously a great many of the problems that architects and town-planners are having to face in other cities all over the world. Among these are traffic problems (the separation of pedestrians and vehicles; parking; delivery access to commercial buildings), problems of architectural control and cohesion (how to persuade property developers to sponsor good architecture and to relate the development of one site to the next) and several aesthetic problems of some topical significance, including the relationship—particularly in scale—of new buildings to old and the relationship to architecture of illuminated and other advertisements.

Before I go on to discuss the scheme I should say something about its origin, because this again has lessons for city-planners. The scheme really began in 1952, when Sven Markelius was director of planning for Stockholm and completed the preparation of a master-plan for the city. One element in the plan was an extension of the underground railway across Lower Norrmalm, which involved a great deal of excavation and demolition of property, since the railway is near the surface and is constructed by digging trenches and afterwards roofing them over—not, as in the London tube, by boring tunnels. Markelius made this the opportunity for some radical redevelopment, including a redevelopment of the traffic system that should do much to enable Stockholm to resolve the conflict that bedevils every modern city, between civilized life in a busy centre and the free movement of vehicles.

Markelius's views about city traffic are clearly given in an article he wrote soon afterwards in *Byggmästaren*:* 'It is clear,

Facing page: 1, *the whole scheme from the east, showing the five office-blocks in different stages of construction (the two on the right, by Anders Tengbom and David Helldén, are finished). In the foreground is Sveavägen (see plan on page* 106), *passing under the high-level road that crosses between the last two blocks. On the far left is the site of the new multi-level traffic intersection, Sergels Torg.* 2, *looking down from the first office-block showing the pedestrian spaces and roof terraces between the blocks.*

* *Byggmästaren*, March 1956: The Structure of the Town of Stockholm, by Sven Markelius.

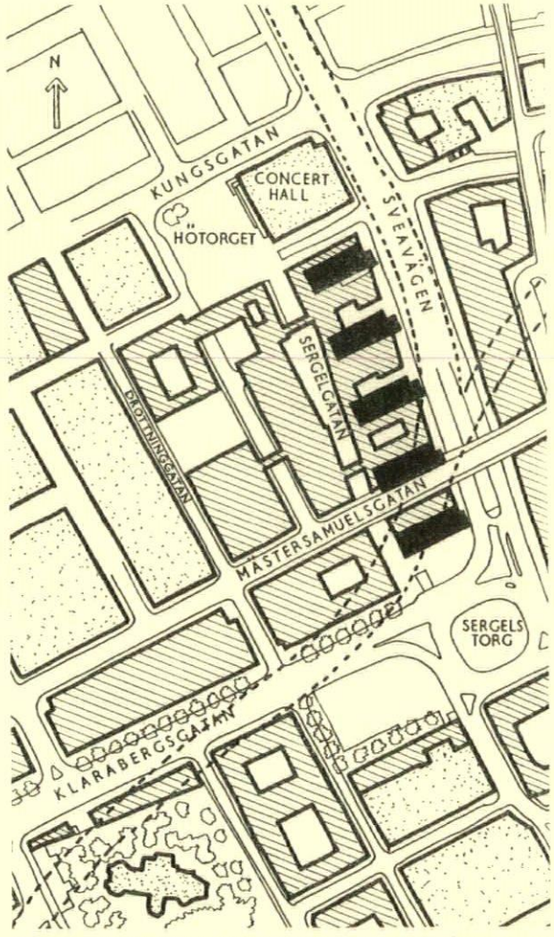
according to present traffic forecasts, that it would be impossible to cope with all the traffic which would appear if it were allowed to develop freely. It is a matter, therefore, of maintaining a balance between two equally important objects: to cope with motor traffic and to preserve the business concentration in the area. An essential condition for this is that private motoring, less vital to the functioning of the area than goods traffic and public transport, must to a certain extent be kept outside the inner city area and served by parking facilities set up on the periphery. If any further expansion of the city area can be halted and if public transport—tube, bus and tramlines—is sufficiently extended, the internal traffic in the city will function satisfactorily even with this limitation. To a large extent, this will be a matter of pedestrian traffic . . . where the pedestrian lanes and footpaths have acquired a convenient form, pleasantly protected from wind and weather, where they offer variety, comfort and freedon from intersecting traffic, people will readily walk short distances and perhaps gain time by so doing.'

Markelius's plan for central Stockholm follows this principle, and the key area is the one I am concerned with here. It lies between four main streets: Drottninggatan on the west, Sveavägen on the east, Kungsgatan (together with the old Hötorget) on the north and two streets now being reconstructed on the south: Klarabergsgatan and Hamngatan. Where these two meet a large two-level intersection—to be called Sergels Torg—is being created, containing an underground station reached from a sunken shopping piazza. Throughout the whole area multi-level planning is the method used to separate different kinds of traffic.

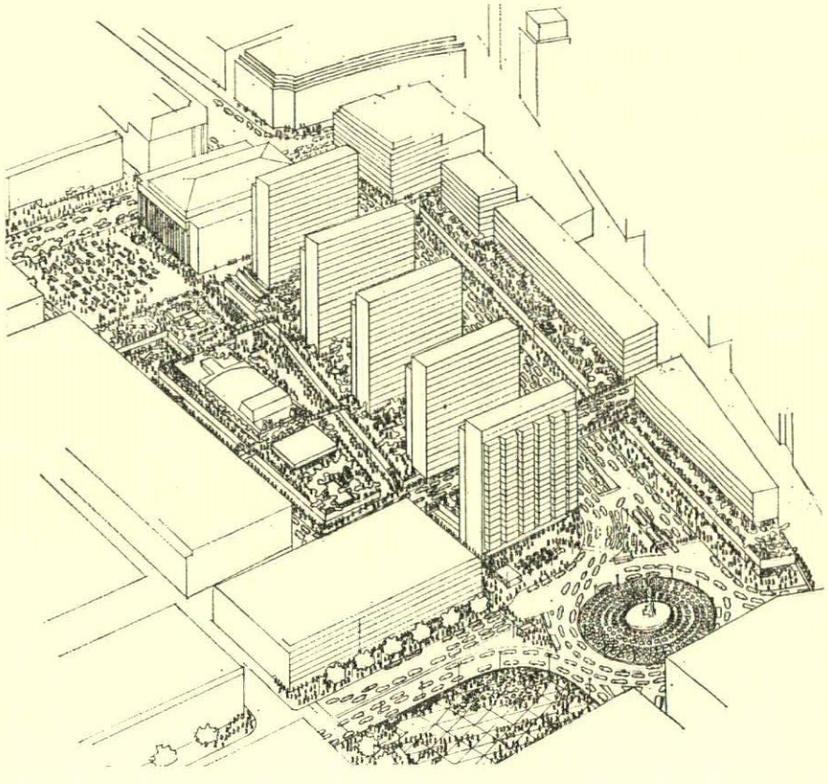
Such radical replanning as the area has been subjected to demanded of course central control over land-use and the possibility of dealing with large areas at a time. Much credit is due to the Stockholm city authorities who had the foresight to begin, as long as fifty years ago, to acquire land in the city and who now own a high proportion of the central sites. The process of acquiring these was facilitated by two further factors: one was the passing in 1954 of the so-called *lex Norrmalm*, which allowed the city to purchase land compulsorily without first submitting a detailed plan for its future use, as the law required previously. This prevented key sites having to be bought at an inflated value. The other helpful factor was that, in the area which is being totally rebuilt between the main streets I have already named, nearly all the property dated from the nineteenth century and was in varying degrees obsolete; its valuation was therefore comparatively low.

In the nine years since this scheme was conceived it has proceeded steadily, with surprisingly few amendments to the original plan, under the direction of Göran Sidenbladh, who succeeded Markelius.* It has involved the clearance of 55 separate sites, containing 180 shops, 480 dwellings and about 225,000 square feet of office floor-space, as well as a church, three schools and other buildings. Evicted residents have been rehoused through the official housing agency, and businesses that wished to remain in the area have been temporarily accommodated, pending the completion of the new buildings, either in other property owned by the city or in special evacuation buildings on the edge of the area (partly in Klarabergsgatan and partly in Sveavägen) which were erected for this purpose as the initial instalment of the scheme. It is worth noting that although the central buildings consist of 18-storey skyscrapers—a height almost unprecedented in Stockholm—there is no great increase in building volume. The scheme is an excellent illustration of the principle that the value of building high is that it frees space lower down. Traffic capacity has been doubled and the circulation space for vehicles and pedestrians has been trebled. If parking space is included it has been quadrupled.

I have given some attention to all these preliminaries, although my purpose is a critical evaluation of the final result, because such logistical and administrative planning is an essential part of the whole operation of rebuilding a central area, and

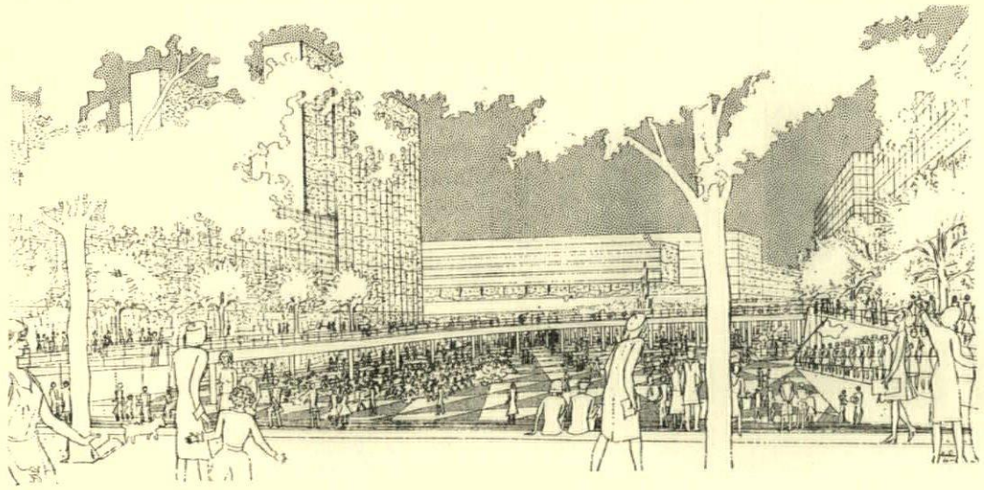


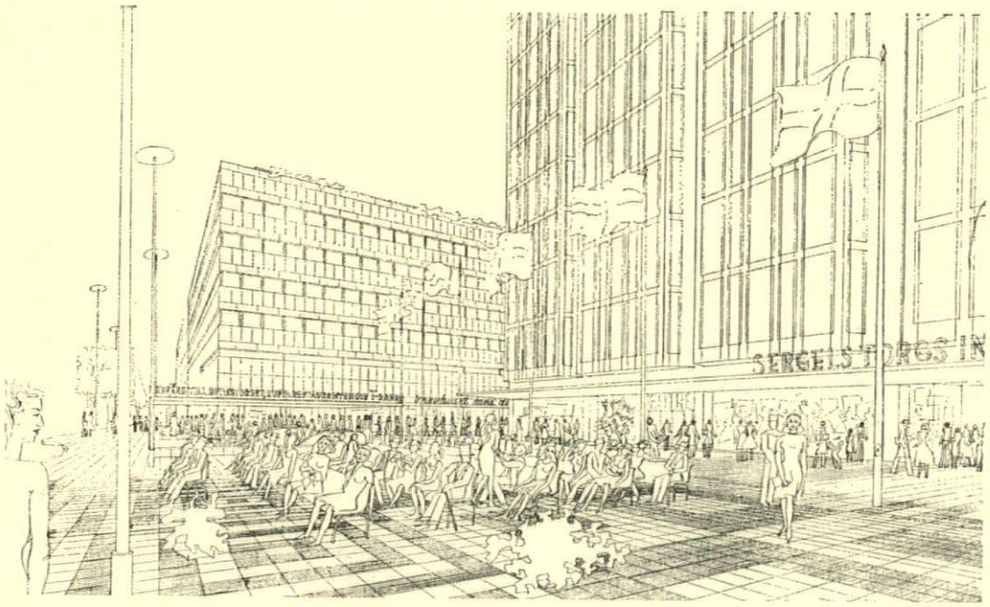
Plan of the reconstruction area in Lower Norrmalm, the business centre of Stockholm. The dotted line shows the extension of the underground railway. The five new office blocks are in black.

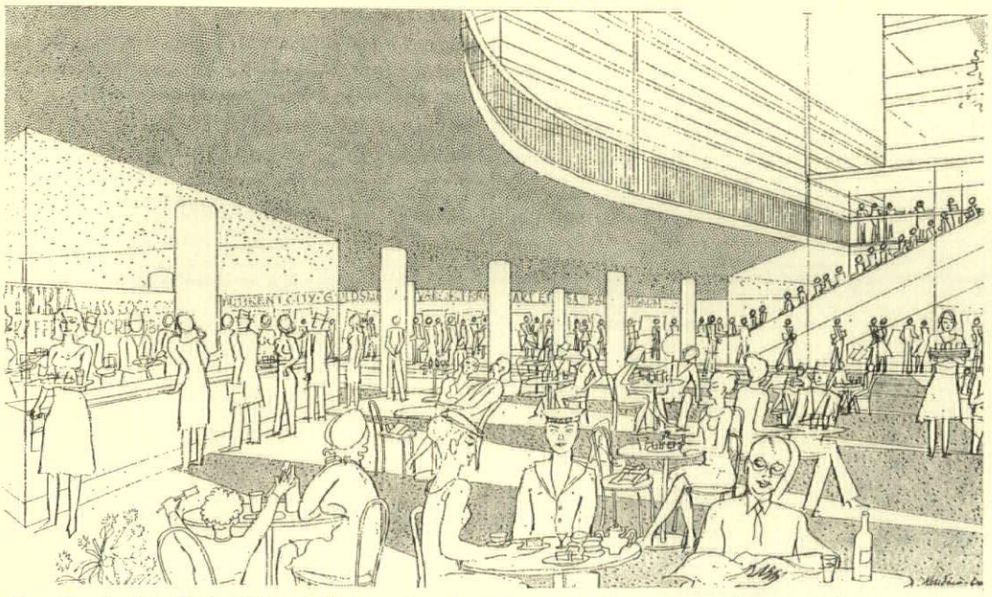


Bird's eye view of the new commercial centre of Stockholm as it will be when the five tall office blocks (the subject of this article) and the new traffic intersection, Sergels Torg, are complete. Sergels Torg is shown at bottom right; at top left is Ivar Tengbom's concert-hall, fronting on to Hötorget.

* There was, however, a change of status which is of some interest. Markelius, while employed in preparing the master-plan, remained a private architect, but on his retirement Sidenbladh was given an official post in the city-planning office, the status of which was raised vis-a-vis his administrative colleagues to give him wide executive powers. His job is now comparable to that of the architect to the London County Council in the latter's planning capacity.





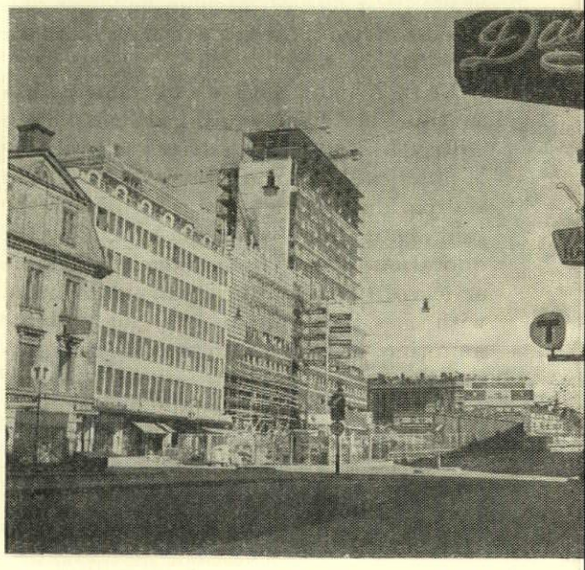


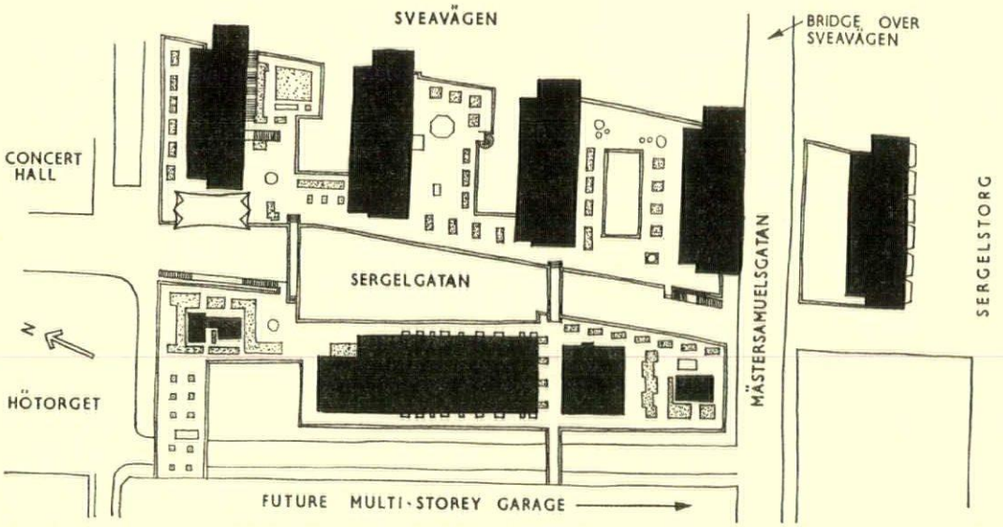
Above, three drawings showing the new traffic intersection, Sergels Torg, south of the new commercial centre, as it will be when completed—see street-plan opposite. Top, from the southern end of Drottninggatan, looking into the sunk shopping piazza, with the eighteen-storey office-blocks on the left. Centre, from the lower level, with the southernmost of the five office-blocks on the right, the main level being reached from here by escalators. Bottom, café beneath the roof of the partly covered low-level piazza

the undoubted success of this Stockholm undertaking is partly due to the way these matters have been handled. Similarly an analysis of the scheme must start with the new traffic layout, before dealing with the five parallel office-blocks and the buildings that surround them, which are its embodiment architecturally. The key to this layout is the new traffic intersection, already mentioned, on the southern edge of the scheme, called Sergels Torg. Here the ground has been lowered about 15 ft., and motor-traffic at street-level will circulate round a large dome through which a lower-level shopping centre will be lighted. The shops will open on to a pedestrian piazza also containing a restaurant and the entrances to one of the two stations on the new extension of the underground railway. The piazza will be connected to street level by some fifteen escalators at various points.

The Sergels Torg intersection will be the last part of this reconstruction scheme to be completed—some three years hence. The other new traffic systems and separations of level involved in the scheme are in operation and are already proving successful, not only as regards traffic flow but as regards the social and architectural coherence of a type of area that in many cities is being utterly disrupted by ad hoc attempts to cater for the needs of the motor-car. Along Sveavägen, the main traffic artery on the eastern side, southbound traffic is carried in a tunnel under Sergels Torg. The main east-west flow will be along Klarabergsgatan (which is being widened from 25 ft. to 118 ft.), leading into the Sergels Torg roundabout, and these two main roads will take some of the load off Kungsgatan and Drottninggatan—both busy shopping streets—which bound the reconstruction area on the other two sides. Within the area a widened Mäster Samuels-

Below, the site of Sergels Torg as it is now, with the partly built southernmost office block—photographed from Klarabergsgatan.





Plan showing the terraces, roof-gardens and bridges surrounding the bases of the five office-blocks and the two-storey buildings on the op posite (western) side of Sergelgatan, the new pedestrian avenue.

gatan, which runs parallel to Klarabergsgatan, will fly over Sveavägen and provide a link to the shopping area on its eastern side. To do this it will pass between the fourth and fifth of the office-blocks—see perspective, page 106.

Independent of this three-level traffic system (which connects with similar systems outside the area) is a pedestrian system, the main artery of which is Sergelgatan, based on a former street now closed to traffic. This pedestrian avenue runs southwards from the old Hötorget in front of the concert-hall and passes underneath Mäster Samuelsgatan. On one side of it is a group of new two-storey buildings—a theatre, shops, etc.—with roof gardens; on the other side are the five office-blocks surrounded by two-storey shops and pedestrian terraces, linked by footbridges over the paved spaces between each building. Bridges over Sergelgatan also connect with the roof-terraces of the two-storey buildings. These terraces and bridges form a complete high-level pedestrian circulation system giving access to upper-level shops and incorporating gardens, cafés and the like. Altogether, around the foot of the high buildings and reached from pedestrian spaces, are one hundred shops.

No such highly worked-out traffic system as this—involving multi-level circulation with vehicles and pedestrians separated—is practicable without careful attention to the parking problem, so a word must be said about this. As was made clear by the quotation above from Sven Markelius's article of 1956, his Stockholm plan is linked with a policy of discouraging private motoring in central areas and encouraging the use of public transport—a policy which the extension of the underground railway is of course designed to support.*

*When the underground extension is finished, the two new stations in this area, Hötorget and T-Centralen, will handle about 300,000 people a day. Between them they will have 15 exits, including one leading direct into the lower hall of one of the tall office-blocks, and another direct into the six-storey buildings on the eastern side of Sveavägen.

At present 75 per cent of the workers in shops and offices do in fact come by public transport. One weapon used by the city authorities to discourage private cars is that of charging high parking fees. The various public car-parks charge one kronor (about 1s. 5d.) per hour, but there is no reduction in the rate for all-day parking, which costs 8 kronor (nearly 12s.), so the luxury of bringing a car to work is an expensive one. Nevertheless there is need for considerable car-parking accommodation in a busy commercial area, and this is being provided immediately by a six-storey parking building (the first in Stockholm) with shops on the ground floor, holding 500 cars, on the edge of the area, and by parks for 700 cars in the lower basements of the office-blocks.† Privately financed parking garages, with room for another 1,200 cars, are planned nearby.

The five tall office-blocks have three basements, which extend also beneath part of the surrounding pedestrian and shopping areas. The upper basement provides storage space for the shops and loading and delivery arrangements, together with a filling and service station; the middle basement contains more storage space and some parking; the lower basement is all for car-parking. These basements are reached by a system of ramps, and delivery of goods to the shops is thus kept quite separate from the traffic circulation round the buildings.

Above these three basements, the five towers are normally planned office blocks. They are equally spaced in parallel formation, and a criticism that might be made of them—and indeed has been made—is that they are a little too close together. According to accepted standards of spacing this is so, and whether there should not be four rather than five blocks in order to allow a wider spacing was, I believe, seriously considered when the plan was being made. There were several practical reasons, apart from the need for the maximum floor-space, why four blocks would not have been as good as five—it would have made the phasing of the long-term rebuilding scheme, and in particular the process of acquiring sites, more difficult—but the decision to build five was taken, I understand, largely on aesthetic grounds, and it was clearly the right decision; four blocks, more widely spaced, would have made a far less interesting group, and in practice the buildings do not suffer from being so close together. This is partly perhaps because their glazed wall surfaces reflect light downwards between them.

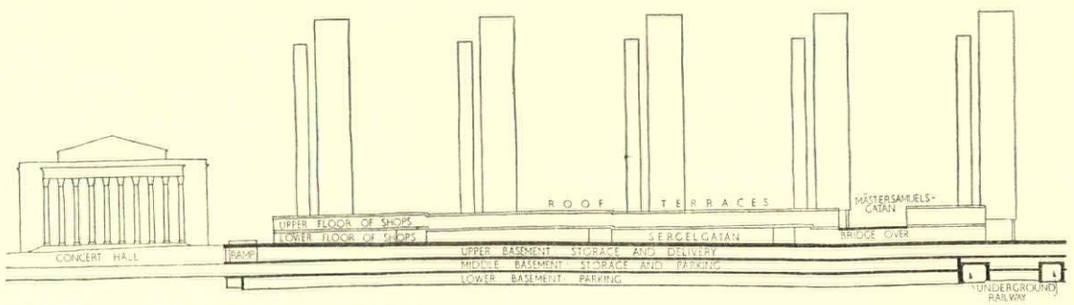
One small sacrifice however has had to be made: to make the space between them adequate, the thickness of each block has had to be kept down to 49 ft. in the case of the first to be built, and to a few inches over 50 ft. in the case of the others, whereas from the point of view of internal planning, a few feet more would have been ideal. But on visual grounds this is not to be regretted; the slimmer such slab-shaped blocks appear the better.

All five blocks (except for the small variation in width just mentioned) are identical in outline, with a parallel and slightly lower slab on the north-side of each.‡ This shape, and the overall dimensions, were laid down in the master-plan for the area. The treatment within this envelope has been left to the architect of each building; so has the treatment of the main facades (it was required that the narrow end façades should be blank except for staircase lighting) and the choice of

†The normal planning requirement in Stockholm is parking-space for one car for every 200 sq. metres of office floor-space (which generally means one whole storey for parking for every eight storeys of offices), in addition to the usual provision for loading and unloading space within the area of the site.

‡And without obtrusive lift motor-rooms on the roof. The lifts stop at the seventeenth floor.

[*continued on page* 113



Section looking east, showing the various basement levels.

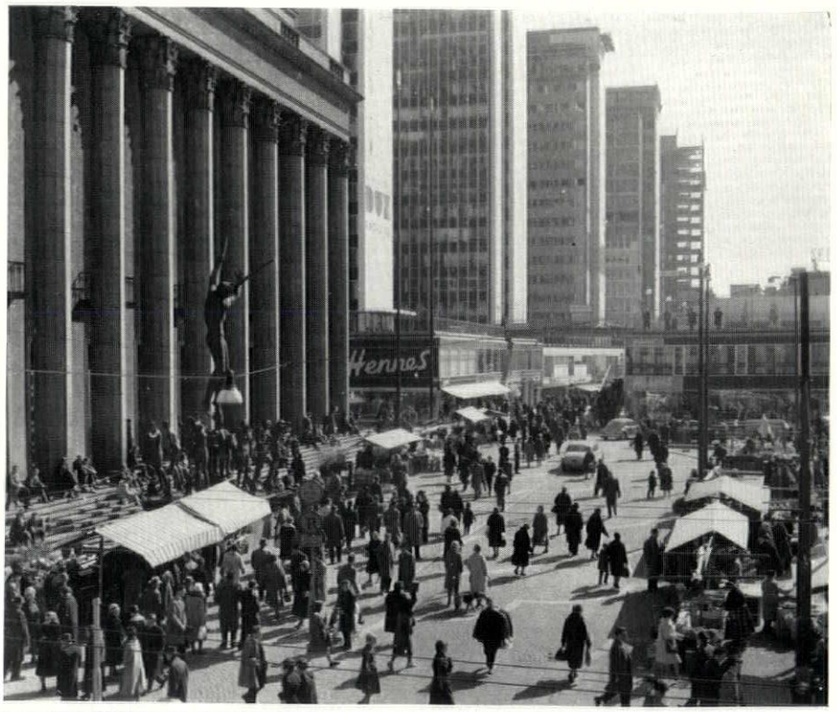
STOCKHOLM'S NEW COMMERCIAL CENTRE



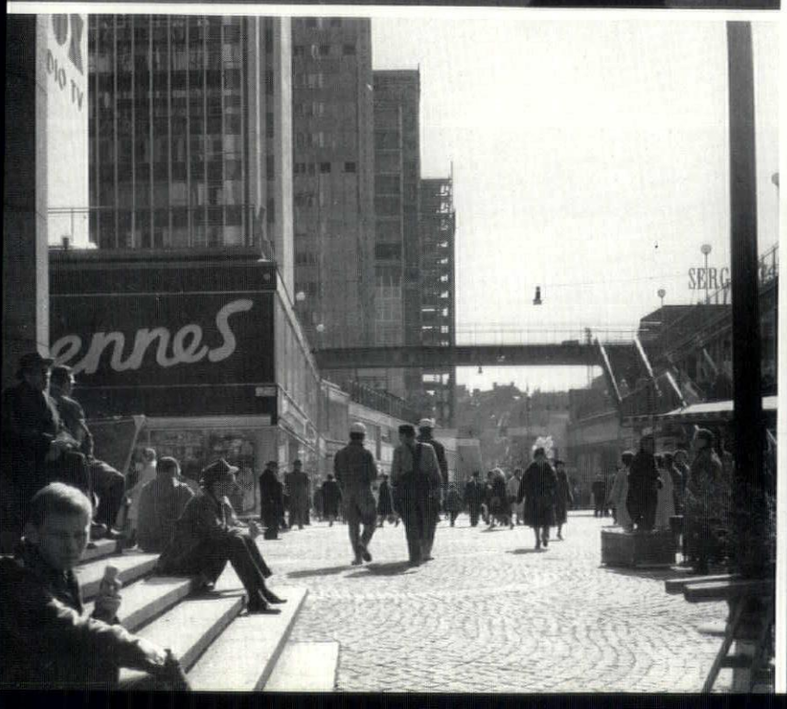
3

3 (left), the new scale in central Stockholm: the two completed 18-storey office-blocks rising above the business area of the city. On the right is a corner of the roof of Ivar Tengbom's concert-hall of 1926, which faces on to the old Hötorget. This is the starting-point of the pedestrian avenue passing down the western side of the five office-blocks, shown in the four pictures below: 4, from Kungsgatan (see plan on page 106) with concert-hall on left, looking across Hötorget towards the two-level shops between which the new pedestrian avenue (Sergelgatan) passes; 5, a closer view—concert-hall, Hötorget and the entrance to Sergelgatan; 6, from the steps of the concert-hall, looking down Sergelgatan, showing a footbridge connecting the roof terraces on either side; 7, looking back beneath the same bridge towards Hötorget, with concert-hall on right and, in the distance, buildings on the far side of Kungsgatan.





4, 5





6, 7

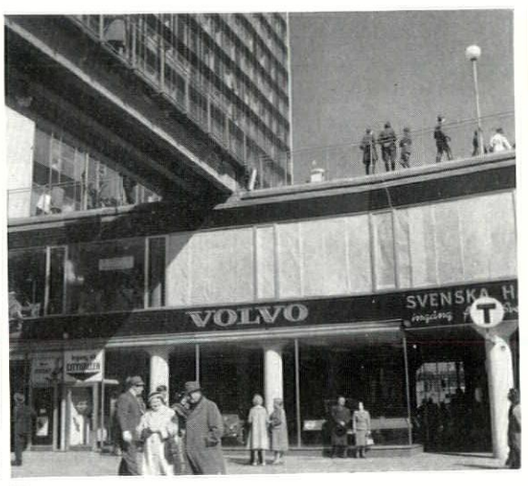


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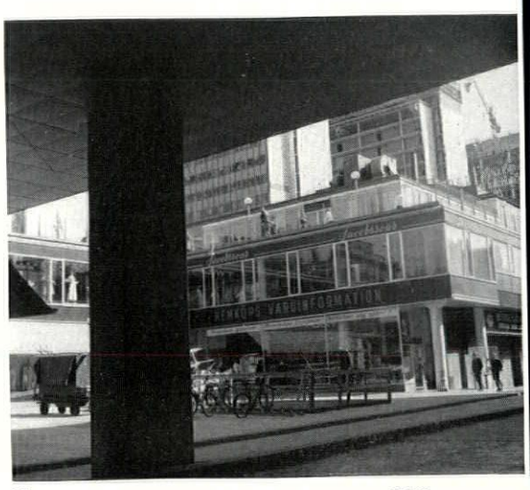
8, the south facade of the first (northernmost) office-block—architect, David Helldén—showing also the roof garden on top of the two-storey shops at its base. Note the curtain-wall pattern with alternating large and small units horizontally. Only the small units open. Below (and continuing on the facing page), views in the pedestrian spaces, surrounded by two-storey shops, between and around the office-blocks.



9

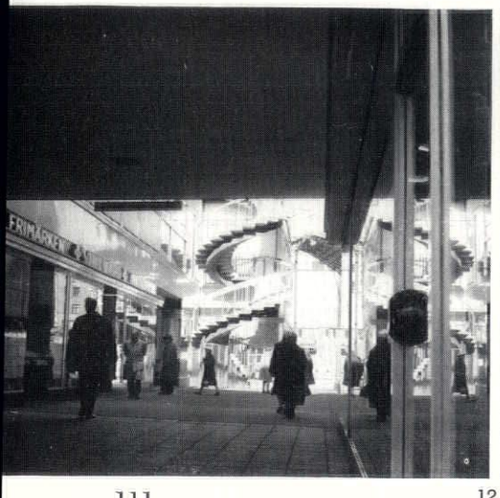


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111



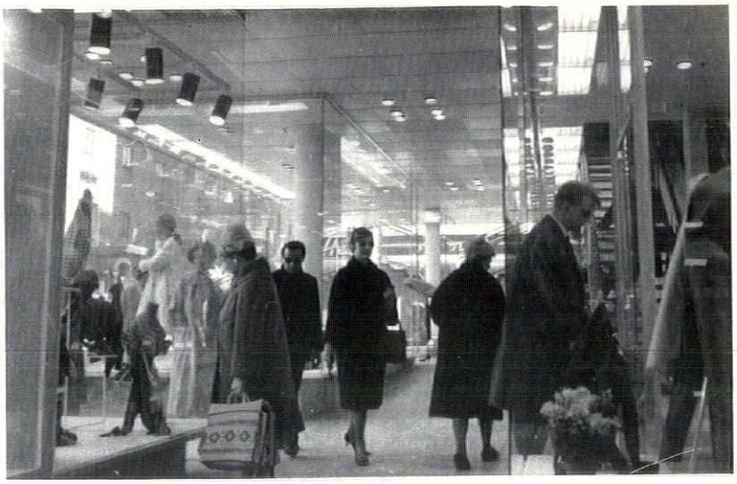
12 13

14 (*above*), *the five blocks from the unfinished (southern) end. In the foreground is the site of the future multi-level traffic intersection, Sergels Torg. Left, pedestrian spaces between and around the office-blocks:* 9, *between the first and second blocks, looking from Sveavägen towards the pedestrian avenue, Sergelgatan;* 10, *looking back from Sergelgatan, showing bridge across it—first office-block beyond;* 11, *the far side of the shops on the western side of Sergelgatan;* 12, *between the second and third office-blocks, looking back towards Sveavägen and the spiral staircase giving access to the roof-terrace over the shops;* 13, *the north side of the first office-block, showing on right the ramp down to the basement garages.*

STOCKHOLM'S NEW COMMERCIAL CENTRE



15



16



17

15, *night view of two-storey shops at the foot of the first office-block (architect, David Helldén) —see also* 8, *page* 110. *In this case the bank on the right occupies the upper storey above the corner shop; wall-painting inside the bank by Carl Axel Persson.* 16, *shops at the corner of Hötorget and Sergelgatan (both for pedestrians only). The upper storeys of the shops are reached by the escalators on the right.* 17, *inside one of the two-storey shops.* 18, *inside the ground-level entrance hall of the first office-block. The wall paintings, in sharp tones of green, and red, exaggerating the perspective, are by Olle Baertling.*



18

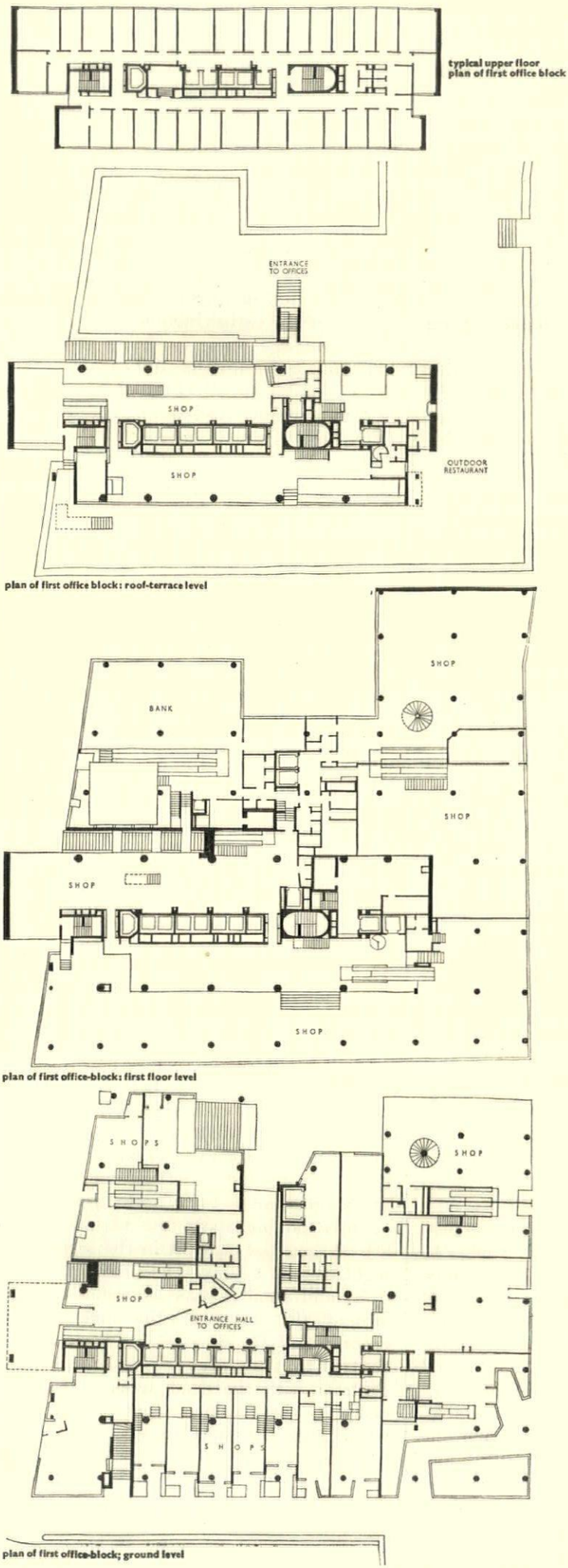
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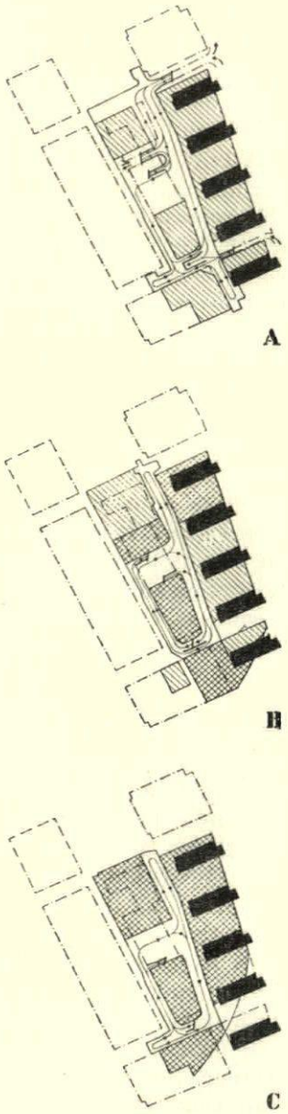
materials, subject in each case to approval by the city-planning office.

The city-planning office has thus no more and no less power to control building volume, and to give or withhold planning consent on grounds of design, than the architect's department at the London County Council, and it is perhaps instructive to compare the remarkable consistency of character and architectural quality achieved in this Stockholm scheme with what one would expect in a similar scheme in London. For the area is being redeveloped, as it would be in London (comparable sites are, I suppose, Piccadilly Circus or the Elephant and Castle), by private enterprise, and each of the five tall blocks is being financed and developed separately. Only the first to be built—the northernmost block—has been financed by the city.* Its architect is David Helldén, who previously worked with Markelius on the master-plan and was nominated by him for this job.

The architects of the other four blocks —chosen by the developer in each case— are Anders Tengbom, Markelius himself, Lars-Erik Lallerstedt and Backström and Reinius. It is only natural for the Englishman to wonder whether the consistent style and quality is due to Swedish private developers choosing better architects than English, to their greater willingness to consult among themselves, to more intelligent guidance from the planning authority or simply to the whole modern architectural tradition in Sweden being of a more civilized, less self-assertive, kind. We have had enough depressing experiences in London to be able to guess what five property developers, each looking after his own interests and indulging his own prejudices and those of his architects, would be likely to make of a similar scheme, even if our authorities—which they seem unable to do—created the opportunity of redesigning so large an area at one time.†

There are variations in the internal planning of each block and in the treatment of the façades. For example the framing of the curtain-wall is aluminium in the case of the first four and steel in the case of the fifth (the southernmost, by Backström and Reinius, yet to be finished), and the southern face of this one is to have more modelling, possibly with an arrangement of bay windows, since it faces the wide Sergels Torg traffic circus instead of the comparatively narrow space between it and the next block. Then there is a degree of variation in the design of the curtain-walling itself. This is exemplified in the two blocks fully completed: the first





The three diagrams above show uses of space and traffic circulation in the three basements beneath the office blocks and surrounding areas: A, upper basement; B, middle basement; C, lower basement. Diagonal hatching indicates storage; cross-hatching indicates parking.

* And contains a central-heating plant for all five.

† There are promises of better things in London's partly built South Barbican scheme, though the architectural consistency shown here is partly spoilt by ill-conceived street-furniture and other details—see AR May, 1960.

(David Helldén's northernmost block) has a 75 cm. façade module, with double units and single units alternating horizontally, the single units providing the opening lights. The latter (Anders Tengbom's block) has a 110 cm. module, each unit—and therefore each window-size—being the same. The infill panels between windows are grey in one case and dark green in the other. These variations are of some significance as indicating the considerable latitude that can be allowed to individual architects within a unified scheme, provided certain rules of scale and massing are observed.

A criticism that has been made of this curtain-wall treatment as a whole is that the rooms inside are likely to become overheated in summer. The danger of this is, of course, inherent in all such treatments—witness the complexities of compensating blind and sunshade seen in many curtain-walled buildings, some of which indicate thoughtless use of the material. Yet the advantages of light and sunshine most of the year are usually worth the need to screen interiors at the height of summer—and the Swedish summer is short. It remains to be seen whether an unreasonable amount of screening is needed on the somewhat exposed southern façades of these particular buildings.

Other criticisms made in Stockholm of the curtain-wall façade as used in these five tall buildings are of a more general kind and arise, I think, from mistrust of an inevitable change in the character of city building, which Stockholm is only beginning to experience. This is the first big group of curtain-walled buildings in central Stockholm, and therefore the first example of the somewhat impersonal, repetitive idiom the curtain-wall brings with it. Stockholm is accustomed to its major buildings being monuments, each with a personality of its own, and finds this new combination of scale and anonymity strange. Some find it especially so alongside Ivar Tengbom's concert-hall which, according to conventional ideas of neighbourliness, the new buildings seem to affront.

But ideas must change as commercial rather than civic buildings come to dominate city skylines, as they are now doing everywhere, and as commercial buildings grow in height under economic and population pressures. The anonymous, diagrammatic character of the commercial block is not only inevitable for constructional reasons but is generally desirable. It would be disastrous to have each one asserting a separate personality, and focusing attention on a component of the city that is essentially no more than a component; that is, one which is in no sense, as were the towers and spires of the earlier kind of city, an expression of the city's collective identity. What is happening as a result of these new developments is that the conventional picture is being reversed; instead of the anonymous, repetitive foreground above which rises an array of attention-catching architecture, we have our anonymity in the air, forming a background to structures of all kinds lower down, in which richness and individuality are concentrated.

Nor are the earlier monuments we value necessarily the worse for being seen as a kind of sculpturesque foil against the diagrammatic architectural backgrounds of this new day. According to traditional judgments they may be 'dwarfed,' but the scale of the new tall buildings is nearer that previously associated with landscape, and certainly Tengbom's concert-hall at Stockholm is well set off—and gains from the contrast in tone and solidity—by the simple shapes and surfaces of the new tall blocks—as it were the urban mountain scenery—towering beyond it.

In order to make this contrast most effective, what we ask of the anonymous commercial buildings now beginning to dominate our city centres is simplicity of outline, lightness of treatment and precision of finish. On these counts the new commercial centre of Stockholm comes out well, though the handling of detail in the later blocks shows signs of not quite reaching the excellent standard set by the first. Where it comes out even better is in the treatment of the two-storey shops, the terraces, bridges and roof-gardens that surround the base of the five office-blocks. They are crisp and lively, and acquire sufficient visual complexity as one moves about and around them to create the richly detailed foreground needed as a foil to the smooth superstructures whose pale tones at times melt into the sky. Lettering, advertisements, illuminated signs, planting and paving of the customary Scandinavian quality all play their proper part in creating depth of tone and variety of detail in this lively foreground—to say nothing of people. Crowds moving about the various levels are an essential element in the scene—by night as well as day. The proliferation of cafés and small kiosks as well as shops around the bases of the high blocks ensures that the area retains life and activity after the offices are closed, a happy contrast with the dead areas that often disfigure the business centres of cities when office buildings are closely grouped together.

So much for the general architectural aspect of the new buildings. It is perhaps worth concluding this article by referring to one more specialized aspect, because this indicates the attention that Stockholm has given to every problem that arises in central area planning—including problems that other cities still have to face. This specialized aspect of the scheme is the control of illuminated advertisements and the efforts that are being made to give them a civic as well as a commercial value. The Stockholm authorities have given this much thought in connection with the scheme described herewith, though it is too early yet to say what success they will achieve.

The blank end walls of each of the five tall blocks contain cavities for neon-lighting transformers so that there need be no visible wiring in daytime. The city's policy is to restrict illuminated advertisements to these end walls and not to allow them on the side walls.* To preserve the scale, the western end of each block—that overlooking the centre of the city—is to carry one advertisement only; the eastern end can carry a number, but not more than five. Other principles the planning-office are trying to lay down are that signs should be designed to look attractive in daylight as well as when lit up and that there shall be some architectural control over their form, colour and lettering. David Helldén himself designed the first big sign on these buildings, on the end wall of his own block. It does avoid being architecturally damaging in daytime but he has run into one of the accustomed difficulties—the conflict between improvement of lettering and the use of established trade-marks.

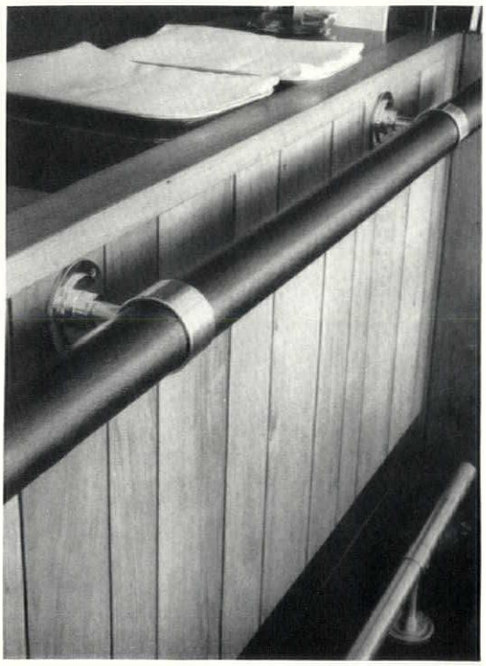
In theory the city building council can control the design of signs under legislation similar to that which the LCC delegates to the metropolitan borough councils but, as in London and almost everywhere, controls that depend on the withholding of planning permission are not powerful in practice. The financial value of advertising sites in particular results in resistance to control on the part of both advertisers and building owners, and whether illuminated signs are an asset or a menace to the townscape must depend in the long run—as must so many other things in a democratic community—on a balance being struck between co-operation and compulsion. The position, however, remains promising because the respect we have for Scandinavian city-planning is largely based on the genius the northern nations seem to have for striking such a balance successfully.

* The difficulties of control, incidentally, are illustrated by photographs 3 and 4, in which it can be seen that a large sign saying Ford has already intruded on to the top of the first block.

Bar, Restaurant & Entrance Hall: Hotel in London

architect : Michael Rosenauer
interiors : Charles Warmouth of Henry End Associates

The general planning and the bedrooms of the Carlton Tower Hotel were discussed in AR October 1960, but the public areas, illustrated here, represent different problems and deserve independent treatment.



1

1, counter-front of the bar serving both the main dining room and the cocktail lounge. The traditional brass foot-rail is supplemented by a leather covered leaning rail carried in handsome brass brackets.
2, as the bar-front suggests, this area is an exercise in Functional Tradition *de luxe*. Buttoned black leather seating, planked walls and framed prints are all in the public bar tradition, but the 'prints' are originals by Feliks Topolski, and the tables, with their tiled tops, are suitably smaller than public-bar scale.

ID
a monthly review of interior design



3



4

3, a general view of the lower restaurant (the Rib Room); the bar may be seen in the distance, and the cocktail lounge lies to its right, off the picture.

4, telephone booths in the main stair-well; vertical structure of mahogany and rosewood, shelf and floor of marble.

5, the stair-well; balustrade in brass with black leather handrail, the wall on the left in panels of antiqued mirror.

6, a view across the main lobby towards the doors; the floor in calicatta marble carpeted in the seating areas only; lounge chairs and marble side tables grouped around glass-topped tables almost six feet square.



5



6

Showroom in Hanway Place, London

designers : Conran Design Group

A characteristic nineteenth - century school-building on a restricted site, converted to provide a ground-floor entrance lobby and a showroom and offices above, for the Conran Group, without disturbing existing occupiers.



7

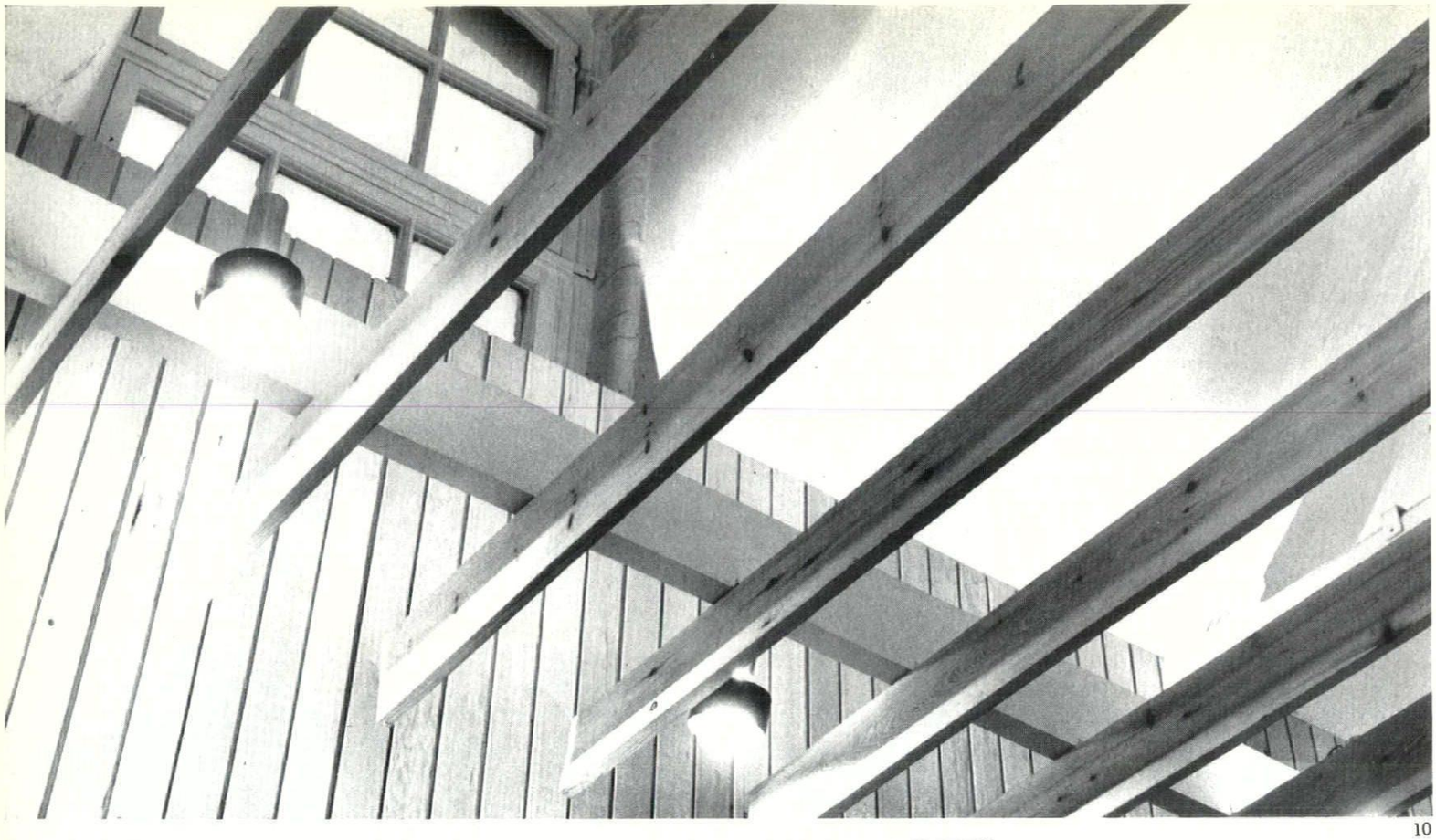
7, the showroom, formerly the main hall of the school, looking toward the former service lift which is the main means of access from street-level.
8, a view down the full length of the showroom, which is used to exhibit fabrics as well as items of furniture. The apparent ceiling of planks on edge, which conceals the high trussed roof of the hall, is illustrated in detail in 10, over the page.
9, the basic architectural repertoire of the showroom is extremely simple ; painted brick, waxed wood, including a simple cover-bead where carpet meets wall. Visible beyond the lift are the offices, which are housed in a projecting wing at the back of the block.



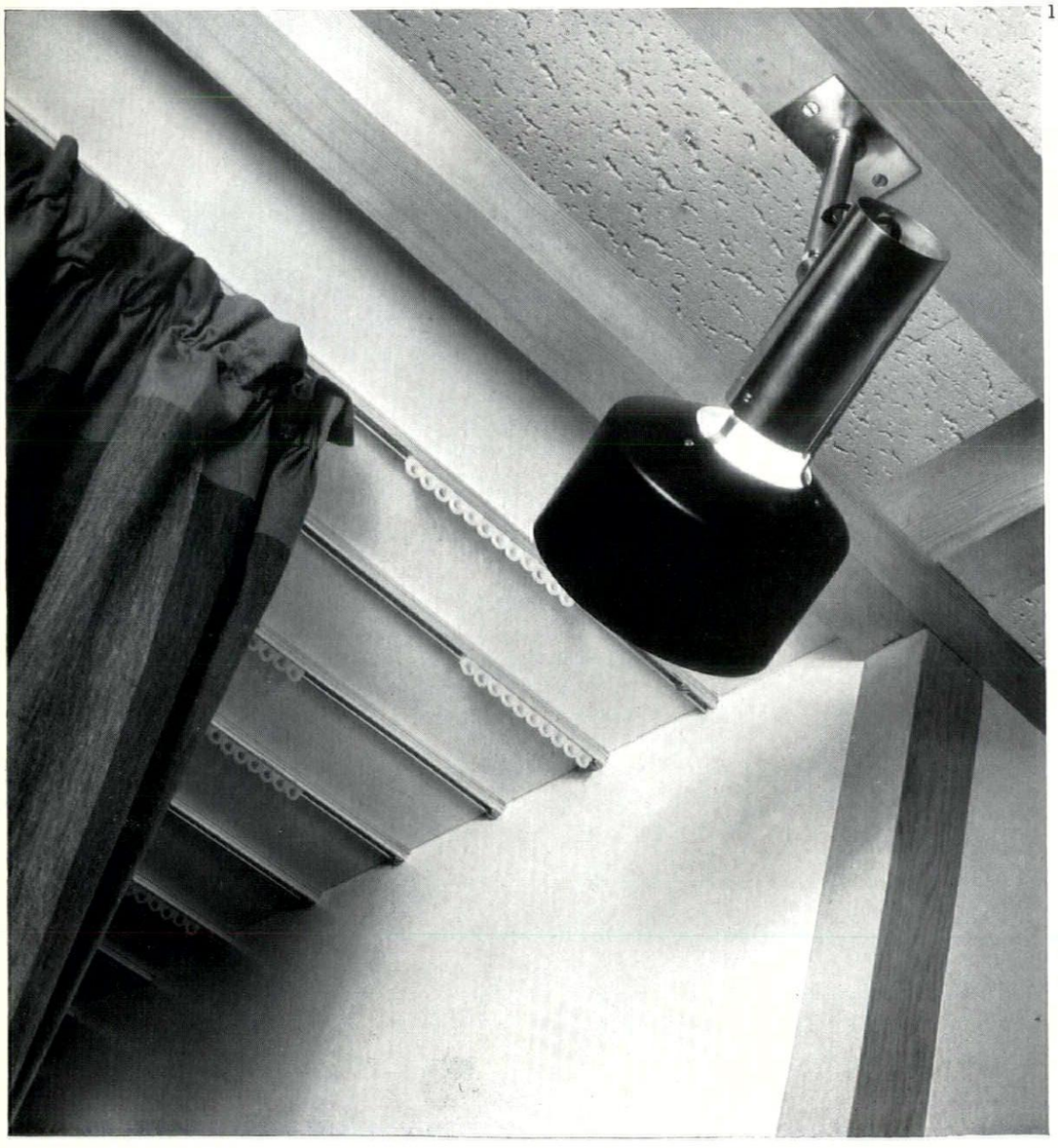
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11

10, part of the original school-hall roof, seen above the vertical tongue-and-groove hemlock siding of the showroom, and the false ceiling of six-inch planks on edge at twelve-inch centres. As will be seen, this ceiling is carried clear of the wall by beams running the length of the room.

11, light-fitting, wooden framing and curtain tracks of one of the display cubicles in the fabrics room. A row of three cubicles, each completely walled from its neighbours, independently lit and provided with sufficient front wall to conceal fabrics that are not being viewed, makes it possible to show full length pieces in their natural drape and fall without visual interference from other fabrics.

12, the fabrics room, seen from the showroom door, showing the cubicles on the left. Other fabric samples are displayed on the shelves, extreme left, and in the adapted filing trolley, right foreground.

12



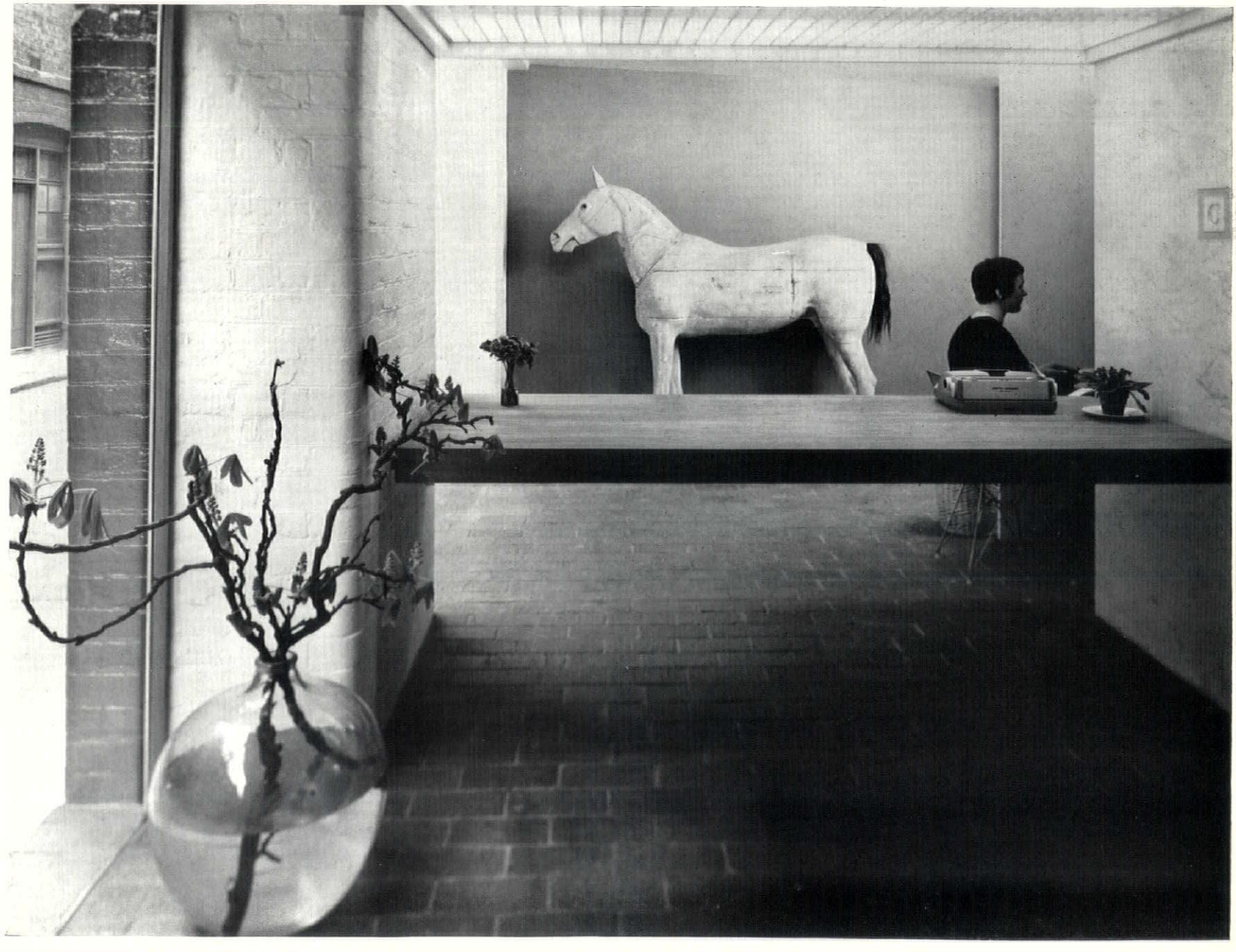
Showroom in Hanway Place

13. the entrance lobby, seen from the street: the construction and form of the archways gives some idea of the original quality of the architecture throughout. the fill of wooden slats and plate glass is an earnest of the treatment of the upstairs rooms, which are reached by the lift just visible down three steps behind the street door.
14. the reception desk in the entrance lobby; the painted brickwork of the piers and the brick floor give an elegantly transformed continuity with the Victorian commercial architecture outside. On the right, the company's house-mark is cut in a marble facing slab, while the life-size wooden horse (like that in the showroom) may be regarded as something of a personal mark of the proprietors.



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Farnham Castle
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*Air views of Farnham (opposite): the upper showing the long main street sequence; East Street **a**, West Street **b**, the lower showing how the town is bounded to the north by Farnham Park **c** and The Hart **d**.*

FARNHAM DEAD OR ALIVE?

Ian Nairn and Kenneth Browne

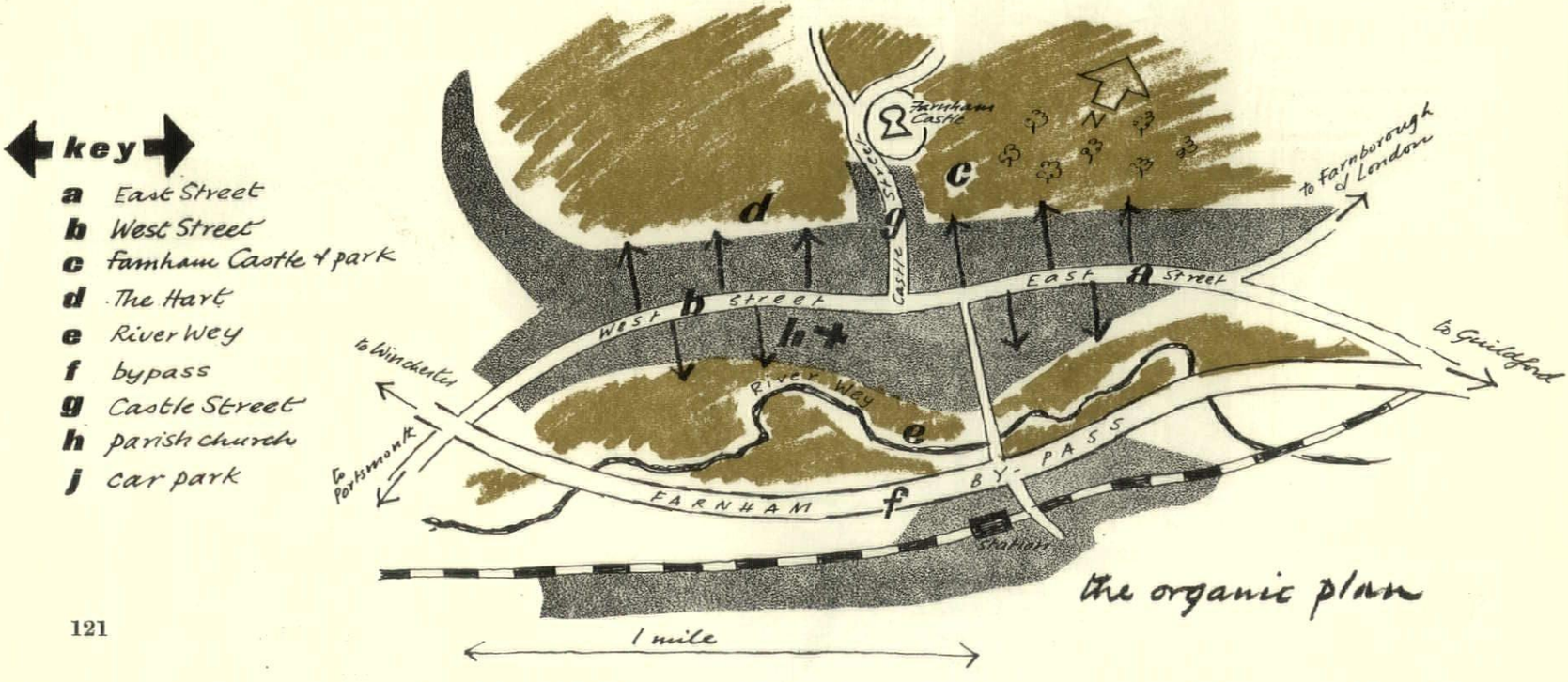
It may seem absurd to suggest that there is anything at all wrong with Farnham in Surrey. Two first-rate Georgian set-piece streets, a scheme of preservation and renovation that goes back to 1910*, and an admirable attention to detail by the local officials, shown particularly in the deft fitting-in of a car park on derelict back land right in the centre of the town.

And yet . . . not a single modern building in the town centre, dozens of mock-Georgian buildings done so cleverly that they devalue the real thing, every shopfront with tasteful modest lettering, every street now pretty and polite. The odd thing about Farnham is that, even with all this preservation, the real pattern of the place, the overall organic plan, has gone almost unrecognized. The long main street sequence of the genteelly shabby East Street, ***a,*** and the genteelly grand West Street, ***b,*** is in fact only the filling to what is potentially a very exciting linear sandwich. On the north side, after a few blocks of cottages honeycombed with footpaths, there is the park of Farnham Castle, ***c,*** and a wedge of real country, frayed at the edges but still intact, coming down to touch the town at an area of broken-down allotments called the Hart, ***d.*** On the south side the river Wey, ***e,*** runs parallel to the town for its whole length, providing a ribbon of poplars and water meadows a few yards from the town centre. It is a very thin ribbon, with the by-pass, ***f,*** immediately on the other side, and it needs intensifying—overemphasizing, as actors have to put on heightened make-up—if it is to stand up to the force and solidity of the other two components.

The contrast is there: what is needed is to make it expressive. And the easiest and simplest way for Farnham to save itself from the risk of ossifying is to seize on the differences and divergences in its parts and make them expressive too. East Street, mentioned earlier, could happily become a rough-and-tumble shopping street, West Street needs to find other means of enhancing its dignity than three shopfronts. The famous Castle Street, ***g,*** is almost perfect, but the richness and variety of the old buildings need not 'good taste' but the firmness and expressiveness in the street furniture that the early nineteenth century understood so well.

The danger is a real one, and not only for Farnham: it is just around the corner for dozens of other towns—Chichester, Rye, Amersham, Cirencester—that risk of being killed with kindness. The answer is not to tear down large chunks of Georgian Farnham and replace them by chunks of Slough High Street (a place, incidentally, with more townscape potential than it is given credit for). All the existing care and

* This is largely the work of Harold Falkner, the architect, C. E. Borelli, the silversmith, and a handful of other enthusiasts.



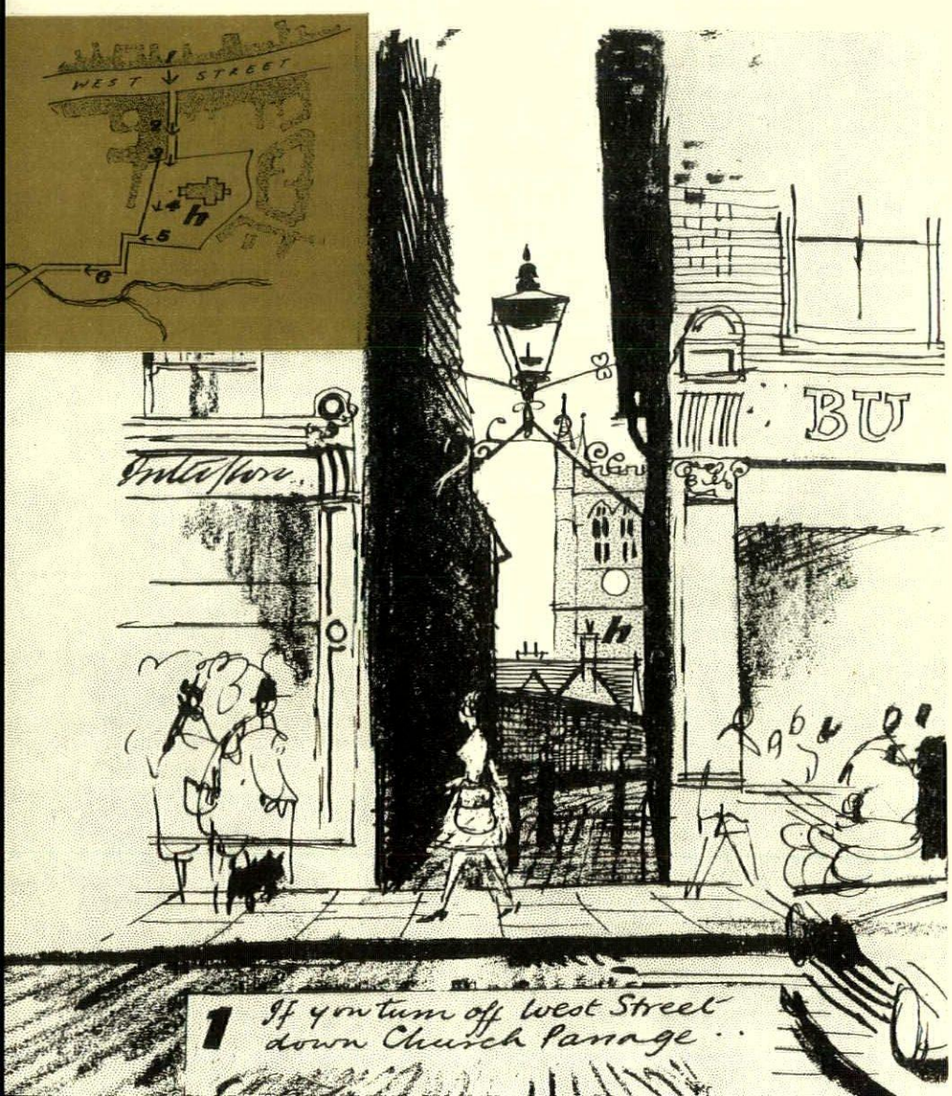
thought must remain, but be channelled positively into providing modern buildings with a standard of finish and self-respect equivalent to the Georgian houses, something like a country town equivalent of Lasdun's Peter Robinson store.

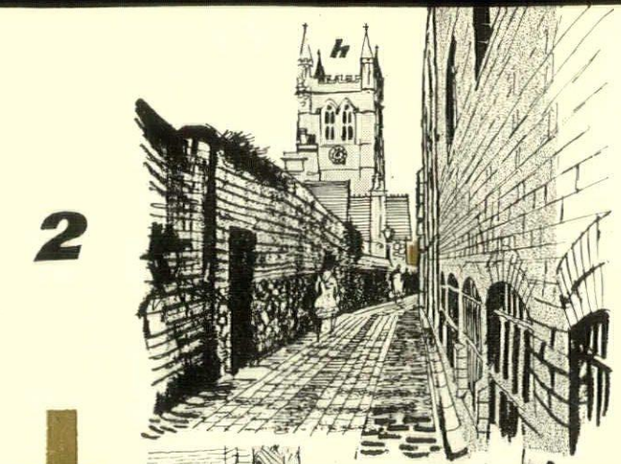
A butcher's shop called Toop's is about to be replaced; does its replacement have to take the weak easy way of providing what will get through with least trouble? Could it not achieve, at least, the quiet elegance of the new Woolworths' at Guildford, ten miles away? A new police station is to be built in the County Architect's department on the site of a robust builder's yard. Does it have to be unrobust, flabbily pedimented, queasily quoined? Those who know their Surrey and its official architecture will, alas, know the answer to that one.

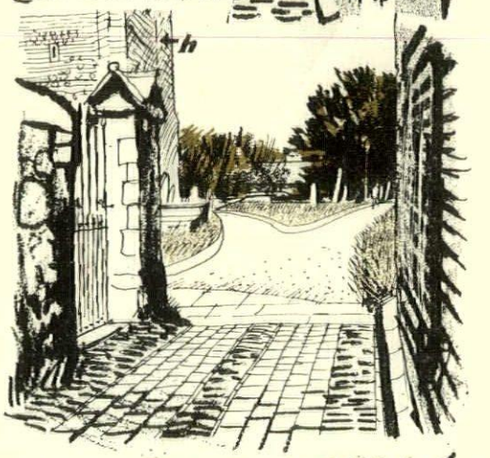
In the end this is not a matter of taste. If the Neo-Georgian replacements had guts they might be justified morally. But as things are, each new building just sucks away a little more of the town's vitality. And vitality is the primary quality of any town, be it urbane or rough-and-tumble. Heaven forbid that Farnham should get to the state where people would come to look at the buildings, say politely 'oh, how charming'—and then go off to Aldershot to find a real place. It could happen.

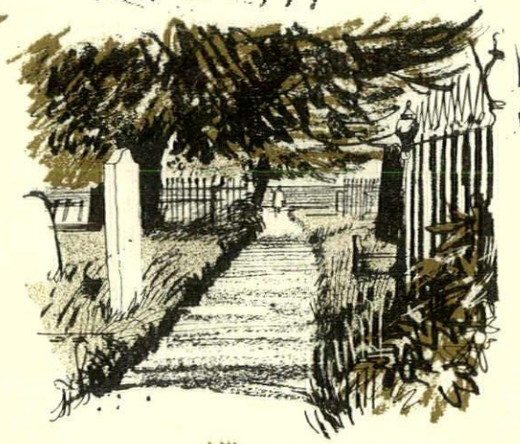
ALIVE

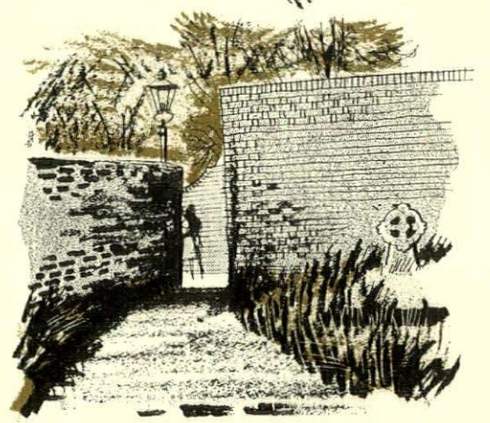
***1-6**, these sketches show a slice of the real, organic Farnham. The scene unfolds in a casual way when you turn off the busy main street down Church Passage; part of the pedestrian network which still remains unclogged.*













a narrow path bounded by high walls, opens on to the churchyard, turns & is restricted again by high walls, then follows the boundary of town & open fields



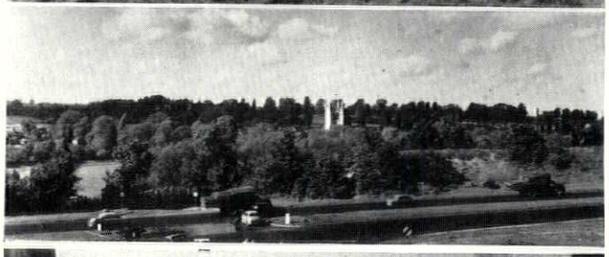
7,8



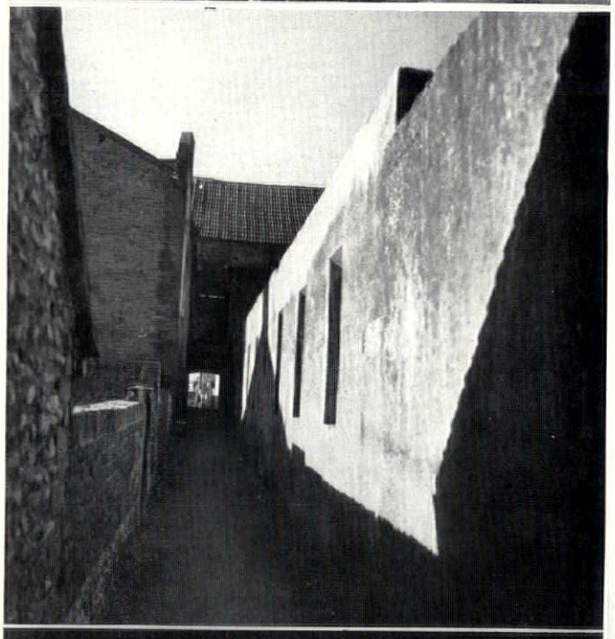
Castle Street ***7*** and West Street ***8,*** the showpiece streets of Farnham, are devotedly preserved, but a town is more than facades and the organic plan goes unrecognized. Until it is, such superficial exercises as the proposed face lift to Downing Street (pretty enough as it stands) makes nonsense. Old Farnham, as distinct from the new housing estates south of the railway, remains a linear, traveller's town (and through crazy signposting the London traffic via Farnborough still bursts through the main streets instead of using the bypass). On the north is the park of Farnham Castle ***9*** and a green wedge known as The Hart. To the south a narrow strip of watermeadows ***10*** before the bypass and this clear-cut transition from town to fields on both sides is a tremendous asset; it needs to be emphasized. Instead, the council are considering plans for building on The Hart, and so throwing the whole thing away. In how many towns can you walk north or south from the main streets and be in open fields in a matter of minutes? But the way you get there is important too—the visual experiences you go through in the process, such as the exploitation of enclosure and penetration ***11, 12***.



9



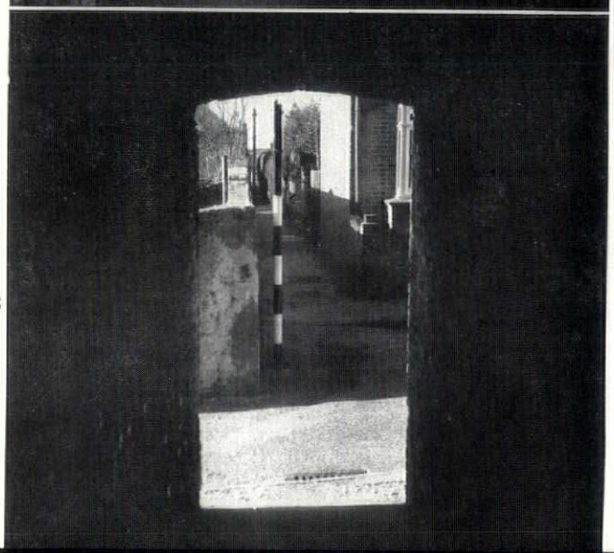
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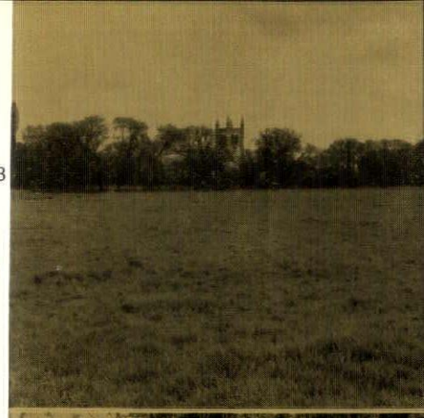
11

If you turn off West Street down Church Passage (***1-6*** opposite) the narrow lane leads through an exciting visual sequence in transition from shopping street to watermeadows. Seen in reverse and approaching from the fields ***13-21*** a high wall, marking the limit of the town, carries you along a path overhung by chestnut trees—turns sharply at right angles with the church tower seen over the wall, turns again, then through a needle's eye ***17*** and out into the open churchyard ***18***—then another narrow slit opens and, directed by the strong paving pattern, you are back in the bustle of West Street. ***21*** Across the way, a narrow road ***22*** leads between cottages ***23*** up another path ending in a stile ***24*** and beyond to the trees of Farnham Park ***25***.

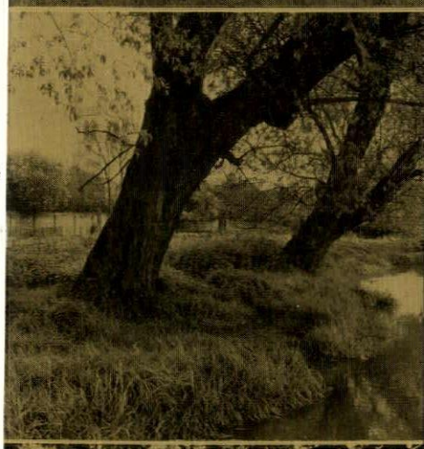
These are examples of the basic pattern



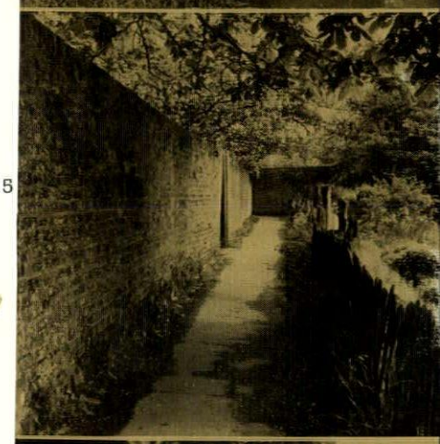
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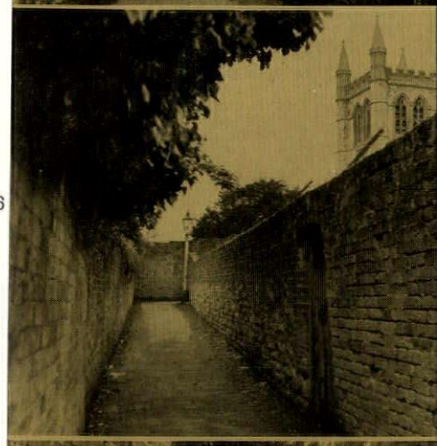
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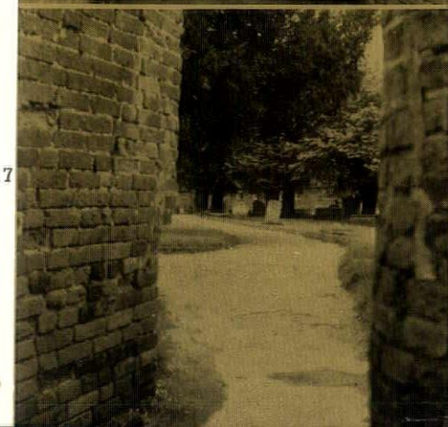
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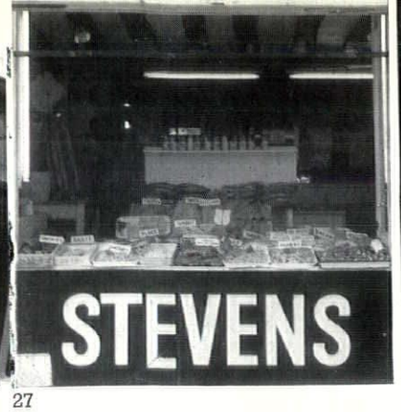
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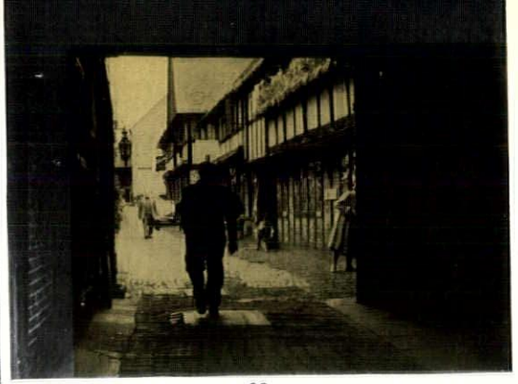
7, *Castle Street;* 8, *West Street.*
9, *the town from Farnham Park.*
10, *Farnham from the bypass.*
11, 12, *enclosure and penetration.*
13–17, *pedestrian route from open fields to town centre*
(continued over page).

ALIVE

OVER

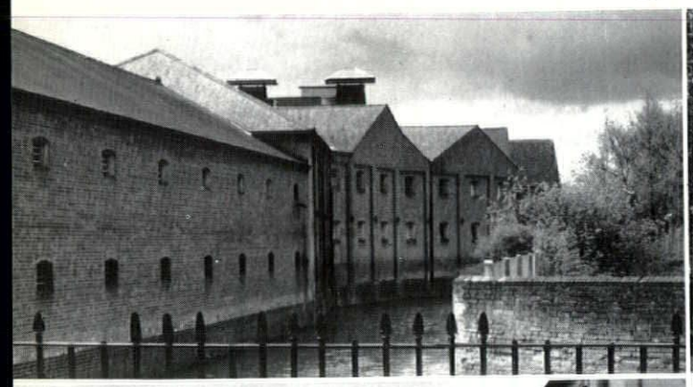


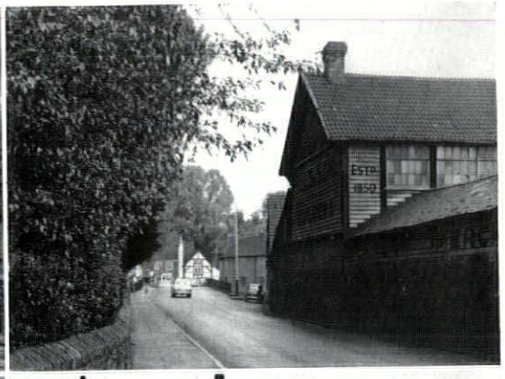




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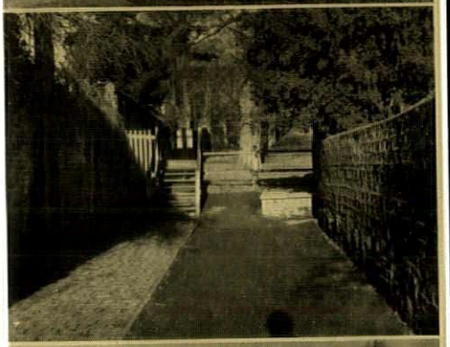
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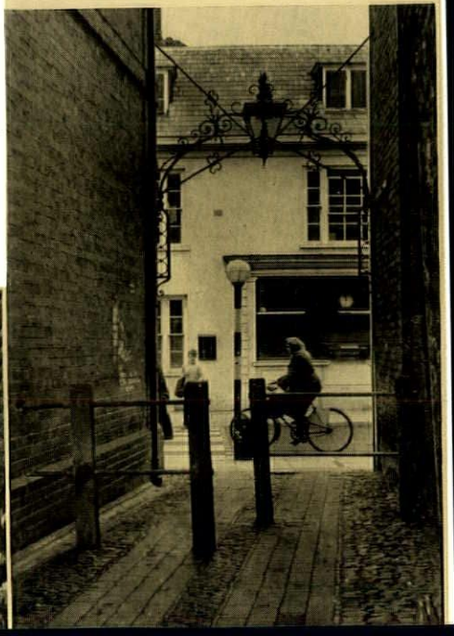


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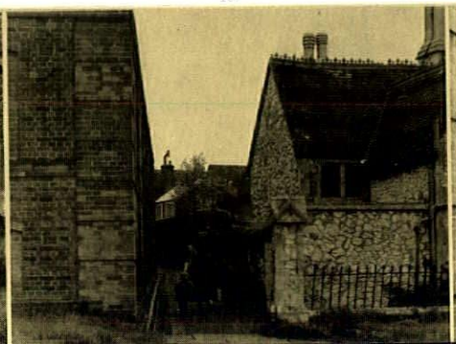
ALIVE



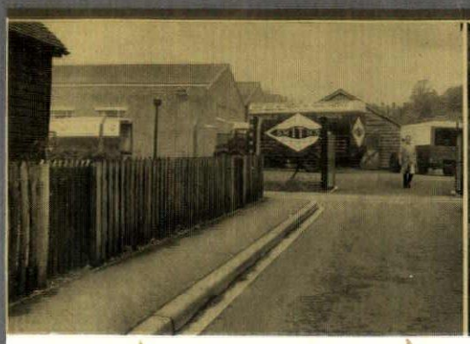
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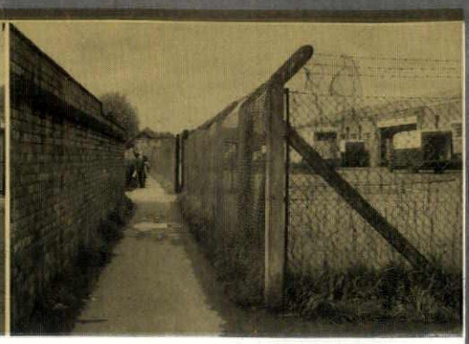
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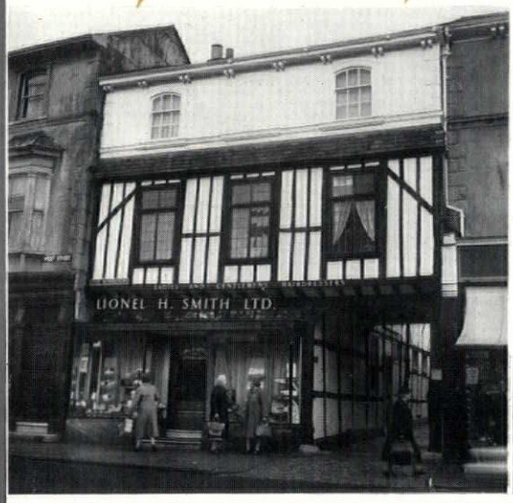


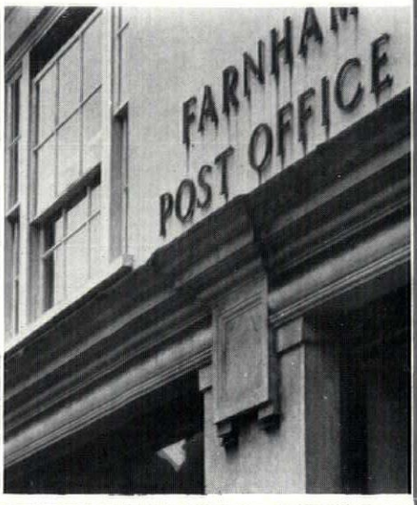


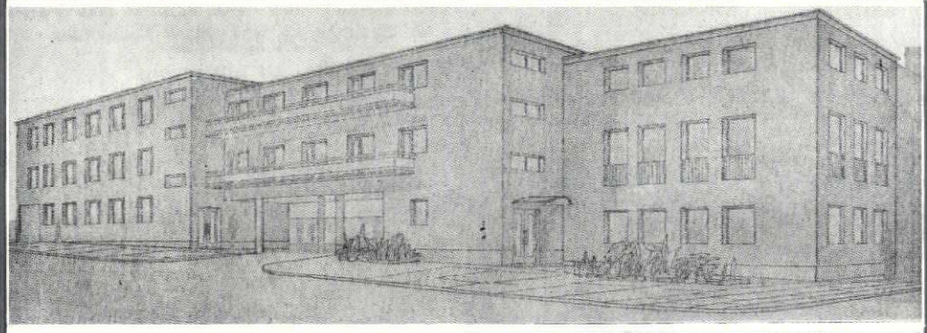


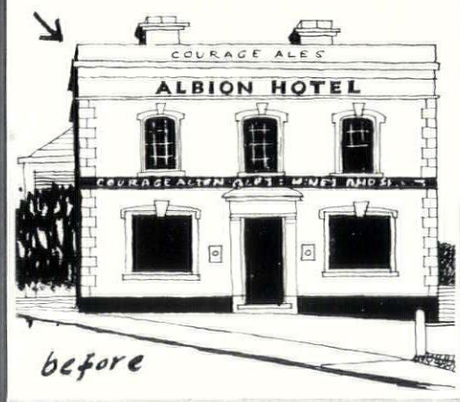


34 35













DEAD

kept coherent and alive. Elsewhere it has choked or run down, e.g. when you penetrate the street wall by The Lion and Lamb ***33***. After a good start, in 50 yards the scene deteriorates into a subtopian squalor of loading sheds, concrete posts and wire (contrast ***35*** with ***16***). Beyond is open country but what an introduction! Again, you soon discover in Farnham that the dead hand of respectability is everywhere, slowly suffocating its character. In detail you have to search to find lettering with any strength ***26, 27***—all is thin and discreet, neither sans nor serif ***36, 37***. Worse, the buildings themselves are not appreciated for what they do to Farnham but only for how they fit into a respectable classification. This
36 wall-eyed attitude to buildings is leading to
37 the decay or destruction of some of the best of Farnham, like the functional tradition maltings ***28*** and timber sheds ***29*** (the latter to be replaced by the police station already mentioned).

Again, the Westminster Bank ***30*** facing the end of Castle Street is a first-rate example of what a building of character can do to a street—in this case really holding the junction of Castle and West Streets and proclaiming it as the town centre. Strong meat for Farnham; also Victorian and therefore held of no value. The same
38 blindness to good building goes for the charming Victoria Terrace ***31*** also threatened. By contrast, anything with a Disney touch ***36*** is welcome as being 'in keeping' instead of being recognized as an insult to the real buildings. New building in Farnham should be modern but good, not phoney ***38*** (this faceless edifice is to replace Toops in West Street). There is no earthly reason why modern buildings should not fit in; ***32*** the streets are a mix up of
39 styles anyway (see ***7***), not the Georgian
40 perfection some like to think.

The approach from London shows Farnhamitis rampant. The Albion, once a four-square Victorian pub ***39*** strongly holding its position at the junction of the Farnborough and Guildford roads, is being medievalized by removal of its straight parapet ***40***. The reason? Because flat roofs are not in keeping with Farnham. At the same time, a stone's throw away, East Street has been carved open for the messy forecourt of a petrol station ***41***, completely breaking the streetline. Such confusion of
41 values just doesn't make sense.

18–21, *continuation of sequence from fields to West Street.*
22–25, *sequence from East Street to Farnham Park.*
26, 27, *lettering on West Street pub and Downing Street fishmongers.*
28, 29, *functional tradition.* 30, *Westminster Bank.*
31, *Victoria Terrace.* 32. *How modern buildings (arrowed) could fit into West Street.* 33–35, *sequence from The Lion and Lamb.*
36, *Noddieland.* 37, *emasculation.* 38, *faceless new building.*
39, 40, *the Albion before and after.* 41, *servicing squalor, East Street.*



1, *looking south along Berwick Street, towards the tower block of flats.*

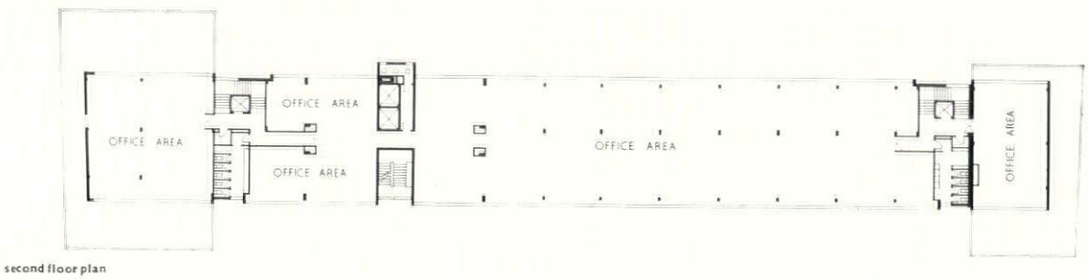
HOUSING, OFFICES AND SHOPS, SOHO, LONDON

ARCHITECTS: RICHES AND BLYTHIN

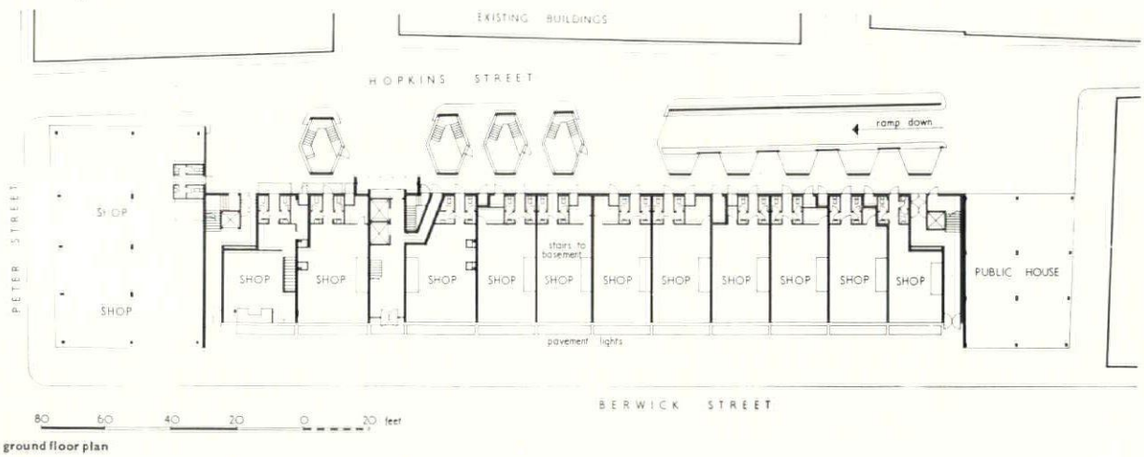
In Berwick Street; designed for the Westminster City Council after most of the site had been declared a slum-clearance area in 1955. It was the first large scheme to respond to the London County Council's call for truly mixed development in central area rebuilding. The residential accommodation is in a tower, which rises above a three-storey slab block consisting of thirteen shops on the ground floor (facing the traditional Berwick Street market) and offices and showrooms above. The total height is 18 storeys.

In the basement is a car-park (reached by a ramp from Hopkins Street), a boiler-room and stores for tenants and shopkeepers. The shops and showrooms also have access and loading-facilities in Hopkins Street. Their main entrance and that of the flats is in Berwick Street. The flats are reached from a central staircase and consist of six one-room flats, fifty two-room and one four-room. Normally there are four flats on each floor of the tower.

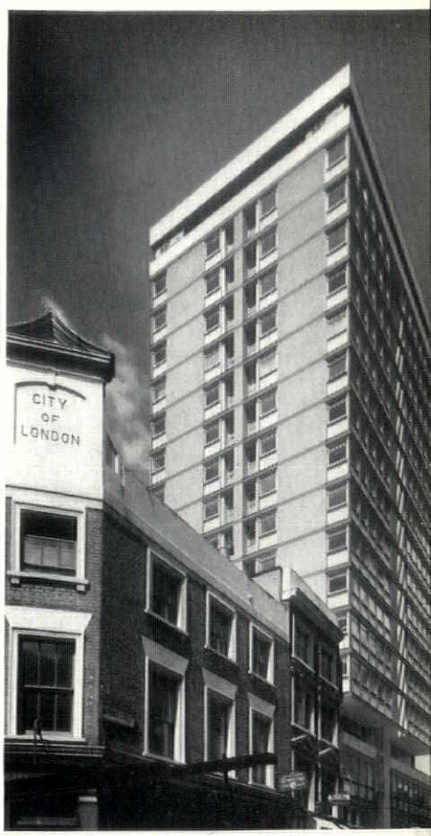
The building has a reinforced concrete frame with flat slab floors and roof. The walls of the lower slab block and the front and back walls of the tower consist of storey-height steel frames, incorporating reversible windows, spanning between galvanized pressed steel mullions. Facing materials are brick, reconstructed stone and glass mosaic.



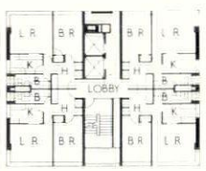
second floor plan



ground floor plan



2, *the tower block from the south.*



typical floor plan, tower block

N

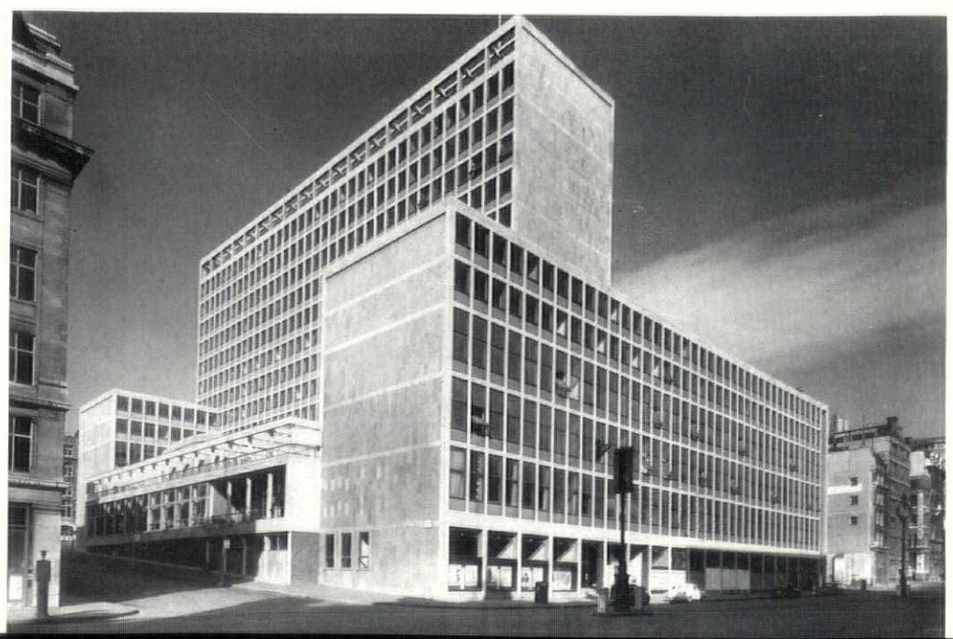
3, *the telephone building from Farringdon Street.*

TELEPHONE BUILDING, FARRINGDON STREET, LONDON

ARCHITECTS: MINISTRY OF WORKS
(senior architect, W. S. Frost, assisted by N. V. A. Crick)

Designed as London's new telecommunications centre, the building houses the automatic switching exchange which gives access to the whole of the United Kingdom, the Continent and other places abroad. It will also accommodate in due course the Fleet Street telephone exchange and, still later, another exchange if need be.

There are fifteen storeys, the lower six being 14 ft. 9 in. high from floor to floor, designed to take heavy equipment. The upper nine storeys, used for offices, are of normal height. The 11 ft. 5¼ in. module on which the planning is based was determined by Post Office apparatus layout.



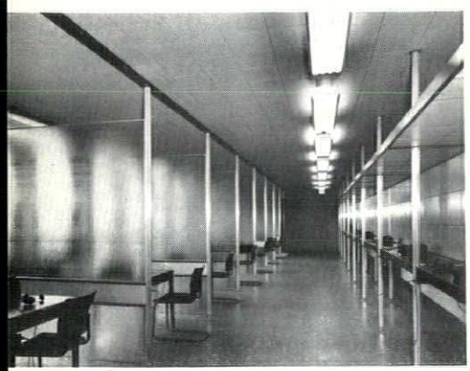


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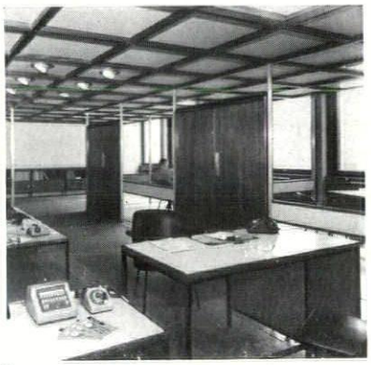
An 80 ft. height limit in Farringdon Street was required by the planning authority; the height of the tower—approximately 165 ft.—was determined by daylighting. At street level the Farringdon Street elevation is enlivened by faience murals and showcases for Post Office exhibits. The Stonecutter Street frontage is wholly taken up at street level by a dining-room and kitchen, placed here because of the size demanded by the staff using the building. There are also an assembly-hall with stage and facilities for showing films, two conference rooms which can be used in conjunction with it and, on the sixth floor, a recruitment centre with medical examination rooms, etc., for the whole London telecommunications region. On the fourth floor is a sales department where equipment can be demonstrated, and on the top floor a training department for telegraphic instruction and foreign languages. Here there is special acoustical absorption in rooms and corridors.

Construction is reinforced concrete, with solid floors in operational areas and hollow-pot office floors and roofs. The external facing is Portland stone except on the end walls where it is Derbydene stone. Window frames are teak except in the dining-room where they are aluminium. Windows to offices and most of the operational areas are double glazed, with Venetian blinds between the two sheets of glass.

Telephone Building, Farringdon Street, London

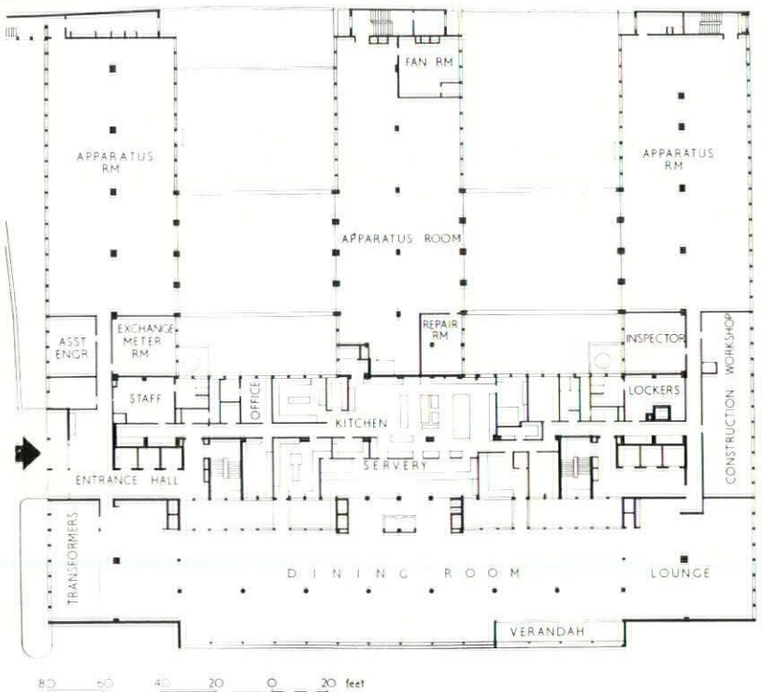


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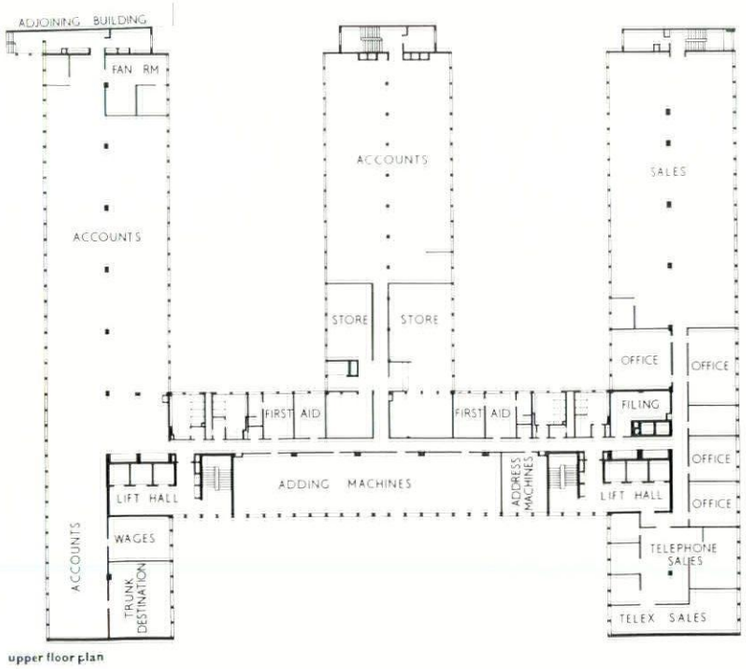


6

4, close-up of the dining-room wing. 5, the recruitment centre on the sixth floor. 6, the sales and demonstration area on the fourth floor.



ground floor plan



upper floor plan

EXHIBITIONS

PAINTING

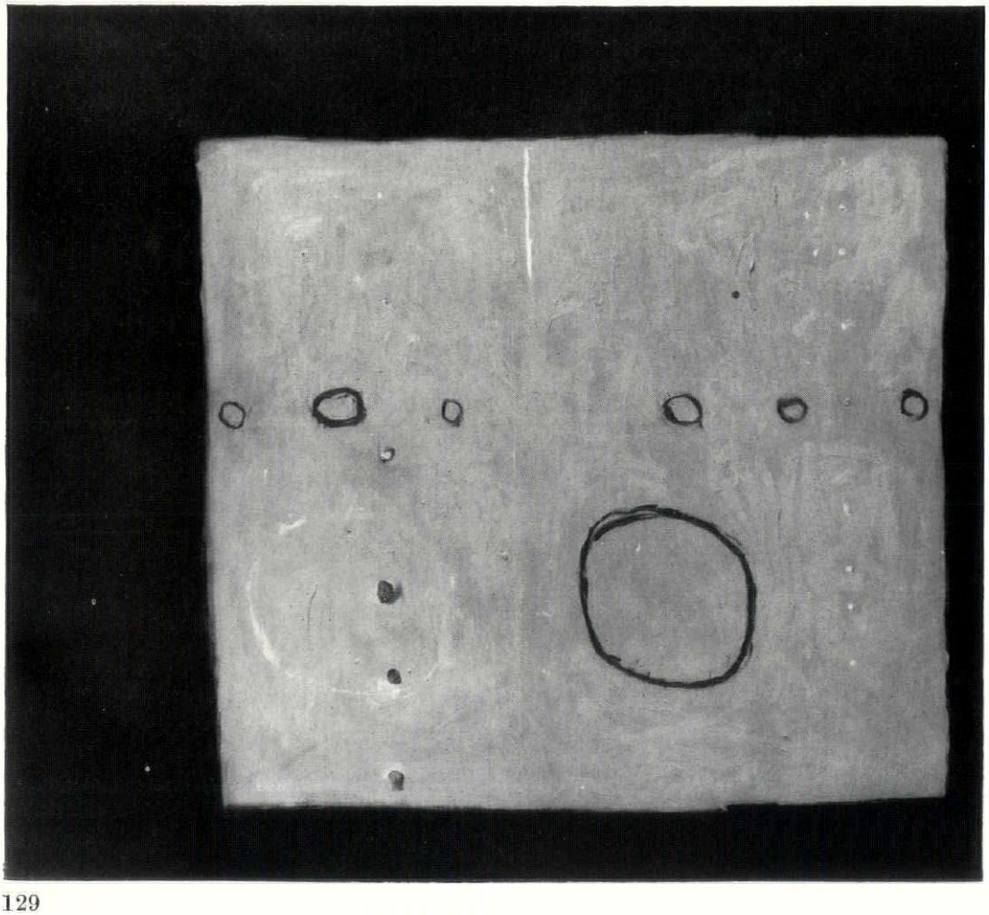
William Scott is probably our most professional painter. His art is firmly based on a master plan derived from the synthetic cubist still life—an aerial view of a table and an eye-level view of the objects on it—and he has managed to keep this still life formula in a constant and lively state of transformation which reflects the major stylistic changes of the post-war years whilst maintaining an air of independence and isolation.

His recent exhibition at the Hanover Gallery was the first in London for five years, but in the interval he has been holding exhibitions abroad which have greatly enlarged his international reputation. The new oils are large, but although he has obviously taken account of the expansiveness of the Americans his paintings do not have that stretched look which is one of the most remarkable characteristics of the Americans, giving the spectator the pleasant illusion that he can jump across yawning chasms: Scott's art is still a matter of forms and intervals, and offers the pleasures of proportion rather than those associated with its negation.

His forms have taken on an artfully crude appearance, and have lost their old associations with kitchen utensils, except in some of the gouaches. In the oils, the table top appears to have turned into a blackboard (in various colours, and naturally a bit cockeyed) and this impression is reinforced by the marks inscribed on it, which suggest that an exuberant but innately tasteful child has made an *art brut* out of the geometry lesson, as in 'Circles Diminishing,' 1. This title and some others—'Two Forms Gathering,' 'Blue Circle Entering' and so on—declare his interest in the idea of a process still at work in the finished painting, and the process he seems to have in mind is partly to do with the visible traces of the wrist movements made when drawing the shapes, and partly to do, as 'Circles Diminishing' indicates, with an invitation to the spectator to stare himself into optical delusions. It's a curious thing, but although illusionist tricks are still heavily frowned upon in representational work, they have become a permissible and thoroughly *avant-garde* ingredient of abstracts.

If, as Baudelaire contended, the pleasures derived from line and colour are absolutely independent of the subject of a picture, it can be said of Scott, whose subject is the art of our time, that the incalculable factors in his art which, after his prudence and calculation are allowed for, leave one with so strong a sense of his independance, are his exquisite feeling for relations of tone and the mysterious rightness of his asymmetrical arrangements.

I expected to find the Moholy-Nagy paintings at the New London Gallery all stiff and obsolete and rather pathetic in their period solemnity. It was quite otherwise. They were gay, cool and elegant, even humorous, as in 'The large Emotion Meter,' 2, painted in 1920, and his curiosity about the science of optics has given his paintings a quiet and, as it seems to me, ineradicable magic. Experimental enquiry has bestowed upon them an unassuming purity which I find infinitely preferable to the cold geometrics in which Kandinsky mechanized his spiritual fervours.



1



2

It's becoming almost impossible to write prefaces for one-man shows. One is expected to write strictly in terms of praise. I, for my part, continue to be fascinated by contemporary art, but sometimes feel that it's the most punishing of my vices. For this reason, I'm afraid I wrote a very obscure preface for Tektas Agaoglu's first one-man show in London recently held at the Drian Gallery. He is a young Turkish painter who works with thick pastes in the manner of Dubuffet and Tapies, and I have not seen this technique put to more personal use by any other painter of his generation. The pigment ranges from a light sand colour to dark brown and a particularly effective coppery black; the texture is that of dried mud. He persistently raises a form from the paste that brings to mind archaic tombstones and commemorative tablets,



3

3, and the general effect is of a remote sad dignity, as if the painter were making monuments to pastoral memories out of the dustbowl of the present. The only thing that might retard acknowledgment of his qualities is the fact that his aesthetic is not quite up to date. He will have to find some way of avoiding the form-against-a-background picture, possibly by making a more deliberate play with the positive and negative aspects. At present they frequently give the impression that the background is something left over.

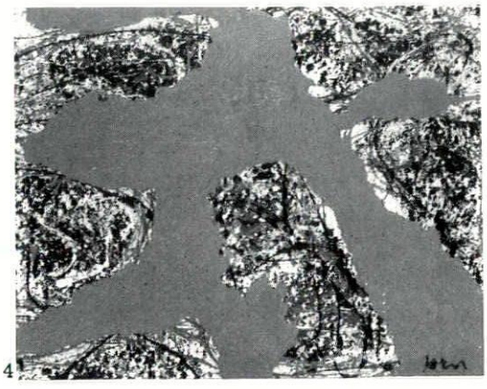
Asger Jorn's violent scrawls are highly esteemed in *avant-garde* circles, and as a bombastic display of virility they might almost be said to make Marinetti's 'roaring motor-car' an emblem of incapacity, but the paintings in his recent exhibition at Arthur Tooth & Sons were as pretty and sugary as the watercolours of Sam Francis. He called them 'luxury' paintings, and quoted four lines from Rimbaud in which the word 'luxure' appears twice. This may have been an *avant-garde* joke, implying that he was lusting after the money of simple-minded collectors in order to live in luxury. Certainly every picture was sold, and it would be a nice extension of the joke if they were bought by simple-minded members of the *avant-garde* elite rather than the Mayfair types who know a good boudoir picture when they see one and for whom they were obviously intended. Some of the pictures were sheets of colour spots, which made an abstract pointillism, magnified and Pollockized. Others were cut-up pieces from canvases of the same type arranged on a neutral ground, 4, and were clever pastiches of a kind of picture that Pollock was doing over ten years ago. If Jorn deserves congratulations for making couture out of automatic devices and other men's pictures, then I congratulate him.

In the catalogue of the Pollock exhibition recently held at Marlborough Fine Art, Lawrence Alloway approvingly quotes Jorn as saying of Picasso's famous 'Weeping Woman' that Picasso 'had painted somebody else's tears, whereas if he, Jorn, had painted such a head the tears would have been his own.' The stupid arrogance of this remark is almost beyond belief, but no sillier than Alloway's own statement that a miserably weak and farcical attempt on Pollock's part to do a painting of the Picasso theme is 'transformed in the direction of a greater tension and involvement,' and is at a 'higher pitch of personal intensity than occurs in a Picasso.'

Let me begin again. The Jackson Pollock pictures at Marlborough Fine Art were from the collection of his wife and ranged in date from 1933 to 1952, four years before his death. Half of them were painted in the thirties, and they make an illuminating background, hitherto practically unknown in London, to the drip paintings.

Lawrence Alloway's catalogue notes on them are intended as a contribution to art history and his catalogue as a whole undoubtedly constitutes the most thorough and painstaking study of Pollock's art that has so far been attempted. Sixty-two drawings and paintings covering twenty years of Pollock's activity have been examined by Alloway in a quiet, scholarly, analytical, dispassionate way befitting the work of one whose art is beyond controversy, and the crude headlines with which *The Times* greeted the exhibition—'Violent Side of Pollock,' 'What Early Works Reveal'—were singularly lacking in awareness of the nature of the occasion. It was a kind of crowning ceremony.

Pollock is treated both as an old master and the 'avantest' of the *avant-garde* whose mastery is founded on an impatience with the 'traditional graces' of such painters as Picasso, Miro, Klee and Masson. The efforts of these painters, whose chances of immortality have obviously been severely reduced by the intervention of Pollock, were, it seems, the dying spasms of nineteenth-century aestheticism, which could produce only 'disembodied and inhuman harmonies'. Presumably, the twentieth century begins with the drip paintings.



4

I can see that for the time being Pollock is the painter who best fits our idea of Now and Forever, but Alloway's reason for seeing him as the Final Sum of the European Tradition—'He makes the autographic mark of the artist, which since the Renaissance has characterized the individual artist as creator, the subject of painting'—is too logical and fits too snugly into what he himself calls 'the formulae surrounding the orthodox interpretation of European art.' He believes in Progress.

The Pollocks painted in the thirties are fascinating because the act of perpetrating them somehow led to a change of ground. They were probably done with the idea of creating a great new figurative art by paraphrasing the work of other painters, but they are horribly inept beside the work of the painters he was trying to challenge. The weakness of this early work does nothing to invalidate his later achievements, but Alloway's treatment of it lends it an insufferable pretentiousness; he treats every wretched and miserable paraphrase of Picasso as an improvement on Picasso and at the same time says very little about Masson, with whose work Pollock was, if anything, even more obsessed.



5

The catalogue note on 'Circle,' 5, says that 'some American Indian influence may be present' but makes no mention of the obvious debt to Masson. Three years after the date to which it is attributed, Pollock had some psycho-analytical sessions with a follower of Jung, and afterwards seems to have accepted the idea that his figurative



6

symbols sprang from the Collective Unconscious.

Be that as it may, he was not able to do without other men's paintings until he had destroyed their images. He became progressively aggressive towards them, until there was nothing left in the paraphrases but the marks of his own destructiveness. One cannot fail to see that anger, envy and frustration produced these marks of defacement and negation, for he quite failed to make a serious contribution to figurative painting. Nevertheless to be finally confronted with a canvas covered by such marks was a kind of victory. He was in total possession of the canvas. His most remarkable work arose from the continuation of this act of negation beyond the point where there was anything left to negate.

We now know that the creative act does not arise simply from noble thoughts and high motives, and that the work which stirs us most deeply often springs from the same compulsions that generate crime, and there was one painting in the Pollock show, carried out almost entirely in layers of poured black paint, 6, that is terribly intimate with chaos and yet seems to me to be supremely beautiful.

Robert Melville

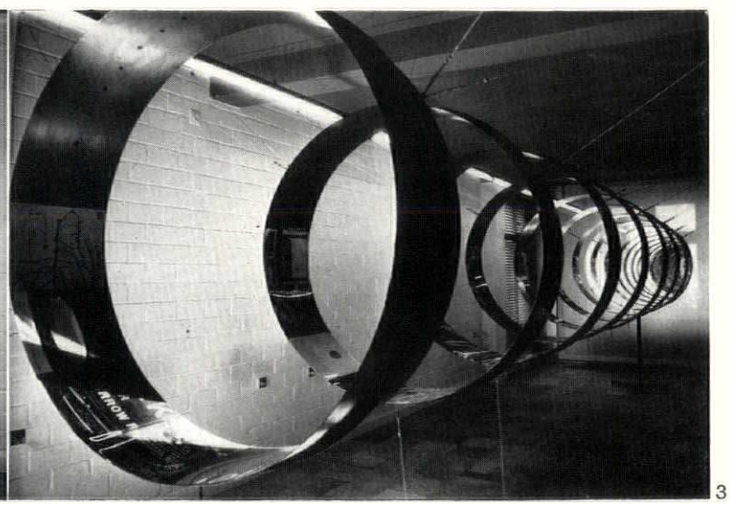
DISPLAYED TYPOGRAPHY

The ARCHITECTURAL REVIEW *was recently paid the rare and distinguished compliment of being made the subject of one of the exhibitions staged by Steendruckerij de Jong*, the celebrated printers, in their works at Hilversum, Holland. 1. Held in a display-space in the works canteen, these exhibitions cover a variety of subjects connected with graphics, photography and architecture, as well as the fine arts, and are marked by great originality in choice of subject matter and display-technique—including such dadaist gestures, on occasion, as inviting a large attendance to a Christmas-party-cum-exhibition which proved to consist of three men eating a gargantuan meal—inaccessibly, on the far side of a glass wall!

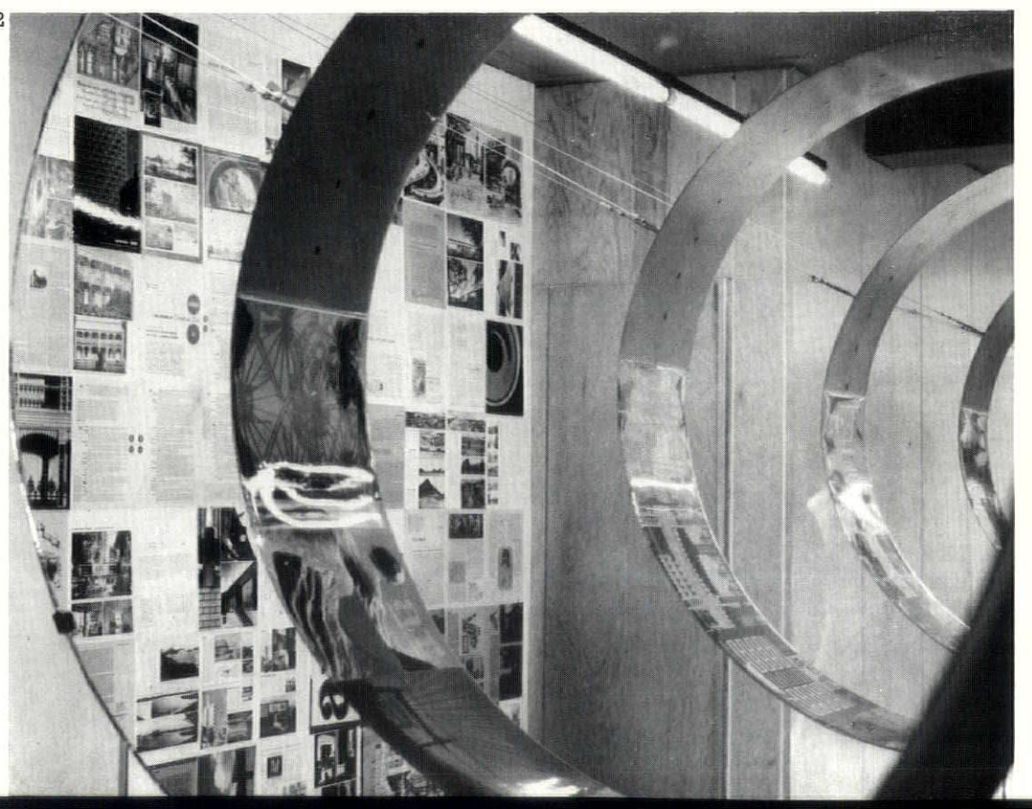
The AR was shown partly in mosaics of pasted-up pages on the walls, 2, and partly in suspended rings containing a selection of typical REVIEW covers from the post-war years, 3. The exhibition was opened by the Dutch graphic designer Jurriaan Schrofer, and with a lecture by the architect Hein Salomonson, which gives an interesting picture of the image of the AR which is entertained in some quarters: 'It is tempting to go into its typically English character, but I don't think that is at all necessary. Each number begins with a general subject, as general



1



3



2

as possible, which shows—quite justly—how catholic an architect's range of interests and ideas must be and can be. You might find an article by some chap who has driven right across the USA and hardly mentions architecture. . . . In AR there is a frequently recurring discussion, the point of which escapes me, on New Brutalism. Among the many positive comments I have to make, I should like to mention one thing I have an objection to: it is especially easy, in this general section, to take a high-handed attitude. It is my belief that we architects are right in being unwilling to exaggerate, and in drawing comparisons based on New Brutalism, AR seems to me to go too far in this respect. . . . It is very remarkable how these very critical, outspoken and pungent articles are usually followed by one or more architectural works; these are topical, sometimes—it is true—accompanied by a criticism, but it is a good thing the choice isn't too fastidious. The editors just show us what is being made at the moment and add their comments . . .'

Sharp-eyed readers who examine the photographs closely, will see that de Jong's choice was not too fastidious either, and includes the kind of article to which Salomonson objected, as well as those he approved.

Q.S.C.

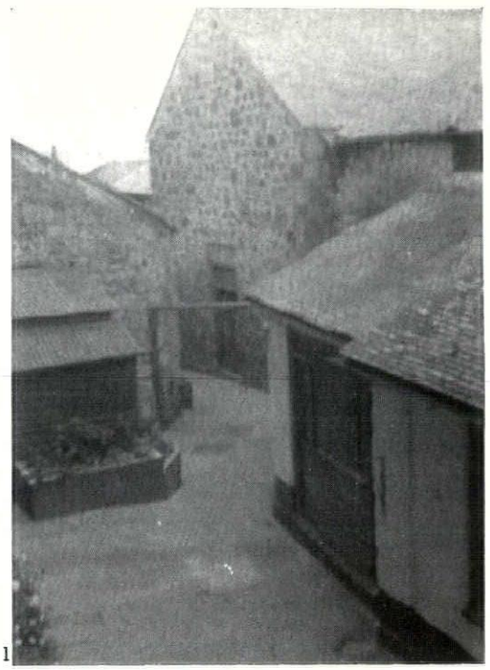
HISTORY

A GEORGIAN THEATRE AT PENZANCE

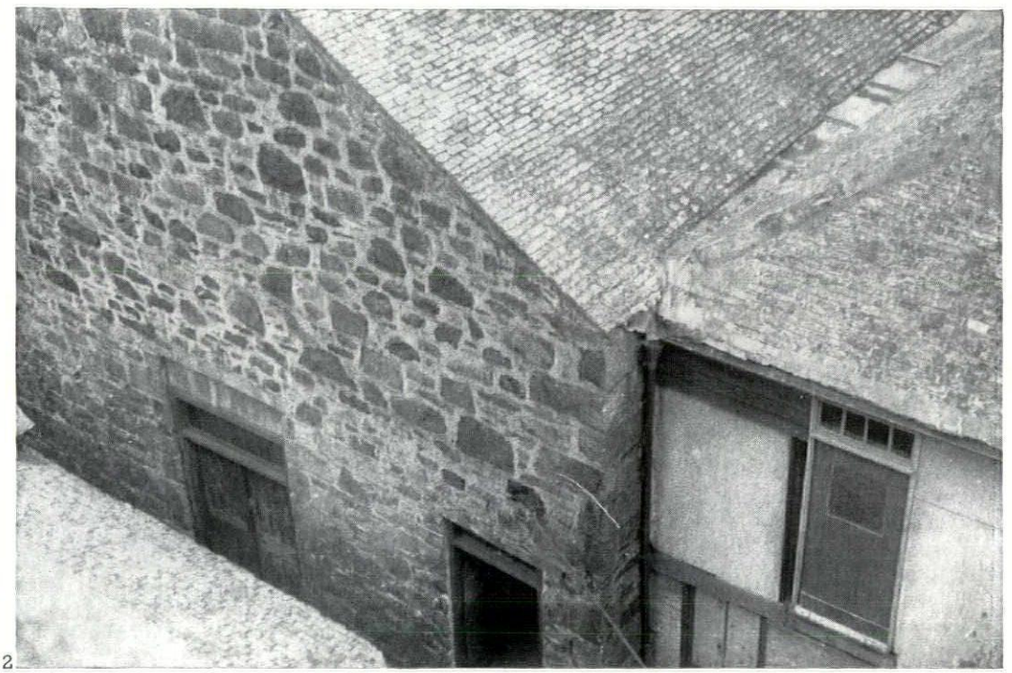
Our lack of knowledge of the state of the provincial theatre in England in early Georgian times is not really surprising. A few plays performed each year in a barn or in an inn yard was often all that existed, but, as the eighteenth century wore on, other more substantial permanent theatres began to arise, until, at the end of the Georgian period, there were few towns without a permanent theatre open for at least part of the year. Provincial life was now less dull.

The theatre at Penzance, here publicised for the first time since it closed its doors 120 years ago, was one of these structures, and it is still to be found as a garage in the inn yard of the handsome Union Hotel in Chapel Street. The theatre was probably opened in the year 1787 by a man—an important and interesting man—from Birmingham called Richard Hughes. As a youth he made his first appearance on the stage of the theatre at Coventry where he appeared as both painter and performer. 'His good fortune' is said to have conducted him to Plymouth Dock, where he met and married a Miss Williams, daughter of the manager of the theatre there, and before he died in December, 1814, revered as the Father of Provincial Drama, he had become manager of the theatres at Sadler's Wells, Weymouth, Plymouth, Exeter, Guernsey, Devonport and Truro. Each theatre was open for at least several months of the year, and as each play in their repertoire was performed they moved on from one theatre to another. In 1804 Hughes negotiated with Fisher, the proprietor of the Falmouth theatre for a merger of interests, and by 1810 performances at Truro were given under the joint management. In a three months' season they produced over seventy plays. Mr. Hughes, junior, who had appeared on his father's stage at Penzance as early as 1787, remained in theatre business for many years and in 1821 went into partnership with two others for the purchase of Vauxhall Gardens for £50,000.

The entertainment business in Georgian times seems to have been a far more

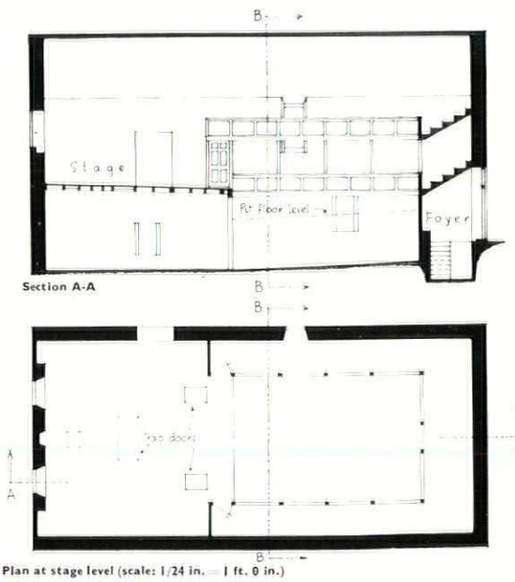


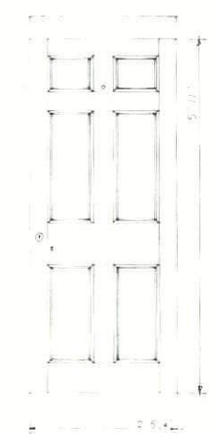
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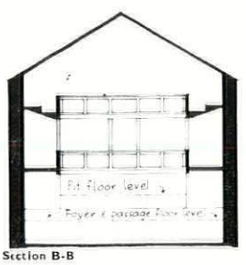


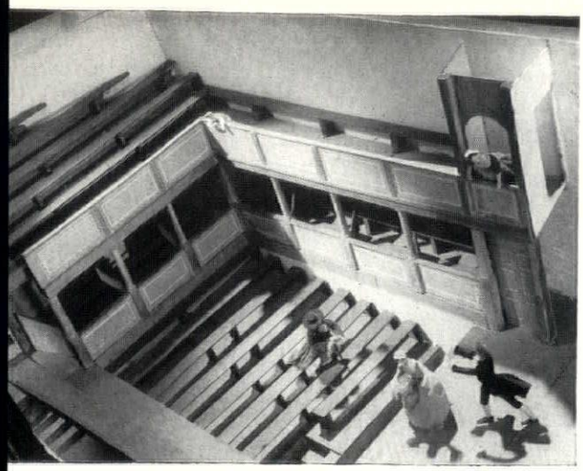
2

1, *distant view and*, 2, *close-up view of what survives of the Penzance theatre.*









3, *model of the interior of the Richmond theatre, which is identical to the one at Penzance.*

lucrative and highly organized business than we have hitherto suspected.

Nothing much survives of the architecture of any of these buildings save for the beautiful Adam-style front of the theatre at Truro. At Penzance we have rather more, a building which has repaid careful archaeological examination. What this examination has revealed is that the Penzance theatre and the theatre at Richmond, hundreds of miles away in Yorkshire, were virtually identical in size, design and plan. One person must have designed both. The building is a simple rectangle 60 ft. by 29 ft. with a stage 21 ft. deep. Originally it had galleries with blue and white painted panelled fronts on three sides, of which remains of two survive. The drawings reproduced here, prepared by Mr. Dalton Clifford in consultation with me, show quite clearly what this eighteenth-century playhouse looked like. The theatre itself has, refixed elsewhere, one of the original proscenium doors from the stage, of which the only other recorded example is at Stamford in Lincolnshire. Although much altered, the Penzance theatre is one of the most complete eighteenth-century theatres to survive, and it could be completely restored to its original state without necessitating any really conjectural restoration.

The first play-bill that has come down to us is reproduced here. It is for a performance on June 20, 1787, of *The Duenna or the Double Elopement*, *The Fable of the Old Man, his son and Ass*, a song by Mr. Bennett, and *Patrick—Prussia, or Love in a Camp*. Mr. Hughes, Mrs. Hughes, Mr. B. Hughes and Master Hughes all appeared in the cast, a really close family affair. Succeeding years saw a great variety of performances, including much Shakespeare, patriotic pieces like *John Bull, or an Englishman's Fireside* and things like *Blue Beard*, *The West Indian*, *Speed the Plough* and *Pizarro*. Doors generally opened at 6 o'clock, the performance began at 7 and half price admittance was allowed at 8.30. Prices were 3s. for boxes, 2s. for the pit, and 1s. for the gallery.

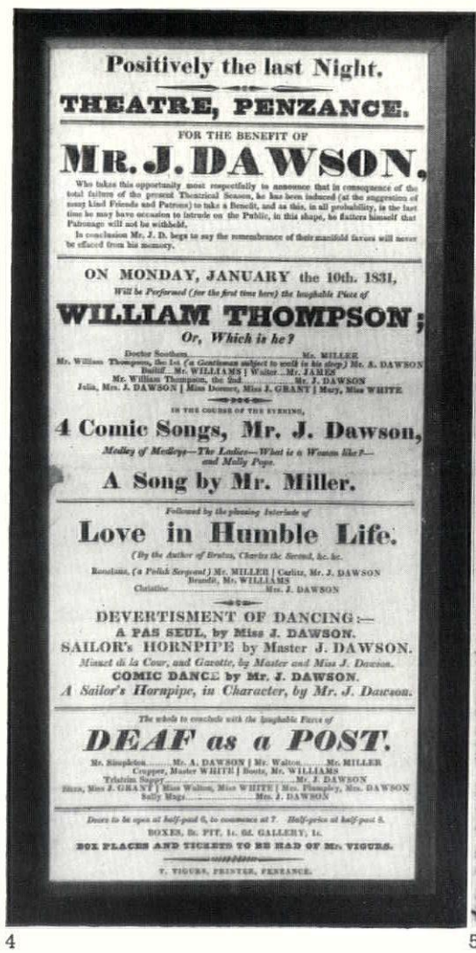
In 1805 the theatre was an onlooker when, in the beautiful still-existing Assembly Room attached to the Hotel, the first public announcement of the victory at Trafalgar was given out. Apparently a Penzance fishing boat intercepted the schooner *Pickle* at sea and obtained the intelligence. The news was given to the assembled throng amid scenes of great excitement.

In June, 1812, the Penzance players took part in one of the earliest recorded foreign tours for an English company. They embarked on the sloop *William* at Penzance for the purpose of sailing to Portugal to entertain members of the forces engaged with Wellington in his campaign in Spain. Some of them stopped on the way in the Scilly Isles, the first time that regular actors had ever been there. The following January their mission in Portugal had been completed 'not lately receiving that encouragement they so well merit.' The forces had been entertained, but commercially the tour had been a flop. Their return journey was in a transport.

Hughes died in 1814 and Samuel Fisher in 1816 and from then on the theatre was run by an actor called Osbaldeston and another actor, James Dawson, who had appeared on the stage here in his earlier days. Dawson was assisted by his son. The immediately following years saw a similar series of plays and melodramas, but they tended to become more and more spectacular as the years went by. Falling rocks, torrents of water, hogsheads of fire, smoke, thunder and lightning and other sensations were much in demand. On June 15, 1819, the famous fire-eating expert Chabert appeared and gave a highly realistic exhibition enlivened by fireworks and rockets. Unfortunately the theatre was filled with flames and smoke; there was panic and the audience rushed for the doors. Apparently the hole cut in the roof to allow the fumes to escape had not been adequate.

Plays recorded from these later years still include many Shakespearean productions. Keene, the African Roscius appeared in *Othello* in August, 1826, and the following week Weber's *Der Freischütz* was performed. The *Royal Cornwall Gazette* often carried advertisements of the performances at this time; times and prices remained constant. However, public opposition to theatrical performances was growing in the provinces and audiences were dwindling. Comfort and amenities, too, had not been all that could be desired. 'One evening when playing Hamlet,'

4, *play-bill for the closing night; 5, play-bill of* 1787.



Positively the last Night.

THEATRE, PENZANCE.

FOR THE BENEFIT OF

MR. J. DAWSON,

Who takes this opportunity most respectfully to announce that in consequence of the total failure of the present Theatrical Season, he has been induced (at the suggestion of many Kind Friends and Patrons) to take a Benefit, and as this, in all probability, is the last time he may have occasion to intrude on the Public, in this shape, he flatters himself that Patronage will not be withheld.

In conclusion Mr. J. D. begs to say the remembrance of their manifold favors will never be effaced from his memory.

ON MONDAY, JANUARY the 10th. 1831,

Will be Performed (for the first time here) the laughable Piece of

WILLIAM THOMPSON;

Or, Which is he?

Doctor Southern ..... Mr. MILLER

Mr. William Thompson, (in 1st *Gentleman subject to swell in his shop*) Mr. S. DAWSON

Bailiff ..Mr. WILLIAMS | Waiter ...Mr. JAMES

Mr. William Thompson, the 2nd ..... Mr. J. DAWSON

Julia, Mrs. J. DAWSON | Miss Downey, Miss J. GRANT | Mary, Miss WHITE

IN THE COURSE OF THE EVENING,

4 Comic Songs, Mr. J. Dawson,

Medley of Medleys—The Ladies—What is a Woman like?—and Molly Pope.

A Song by Mr. Miller.

Followed by the pleasing Interlude of

Love in Humble Life.

(By the Author of Brutus, Charles the Second, &c. &c.

Rosolano, *(a Polish Sergeant)* Mr. MILLER | Carlos, Mr. J. DAWSON

Brandt, Mr. WILLIAMS

Clotilde ..... Mrs. J. DAWSON

DEVERTISMENT OF DANCING:—

A PAS SEUL, by Miss J. DAWSON.

SAILOR's HORNPIPE by Master J. DAWSON.

Minuet de la Cour, and Gavotte, by Master and Miss J. Dawson.

COMIC DANCE by Mr. J. DAWSON.

A Sailor's Hornpipe, in Character, by Mr. J. Dawson.

The whole to conclude with the laughable Farce of

DEAF as a POST.

Mr. Simpleton ..... Mr. A. DAWSON | Mr. Walton ..... Mr. MILLER

Cropper, Master WHITE | Boots, Mr. WILLIAMS

Tribikin Sopp ..... Mr. J. DAWSON

Dicky, Miss J. GRANT | Miss Walton, Miss WHITE | Mrs. Plumpley, Mrs. DAWSON

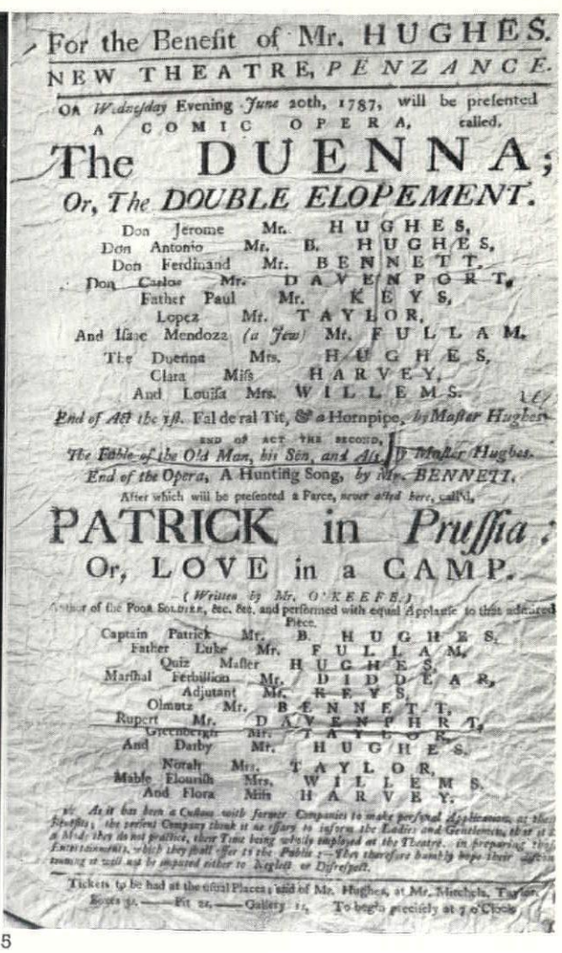
Sally Mags ..... Mrs. J. DAWSON

Doors to be open at half-past 6, to commence at 7. Half-price at half-past 8.

BOXES, 3s. PIT, 1s. 6d. GALLERY, 1s.

BOX PLACES AND TICKETS TO BE HAD OF Mr. VIGURS.

T. VIGURS, PRINTER, PENZANCE.



For the Benefit of Mr. HUGHES.

NEW THEATRE, *PENZANCE.*

On *Wednesday* Evening *June* 20th, 1787, will be presented

A COMIC OPERA, called,

The DUENNA;

Or, The DOUBLE ELOPEMENT.

Don Jerome Mr. HUGHES,

Don Antonio Mr. B. HUGHES,

Don Ferdinand Mr. BENNETT,

Don Carlos Mr. DAVENPORT,

Father Paul Mr. KEYS,

Lopez Mr. TAYLOR,

And Isaac Mendoza *(a Jew)* Mr. FULLAM,

The Duenna Mrs. HUGHES,

Clara Miss HARVEY,

And Louisa Mrs. WILLEMS.

End of Act the 1st. Fal de ral Tit, &c. a Hornpipe, *by Master Hughes.*

END OF ACT THE SECOND,

The Fable of the Old Man, his Son, and Ass, by Master Hughes.

End of the Opera, A Hunting Song, *by Mr. BENNETT.*

After which will be presented a Farce, *never acted here,* called,

PATRICK in *Prussia;*

Or, LOVE in a CAMP.

(Written by Mr. O'KEEFE.)

Author of the POOR SOLDIER, &c. &c. and performed with equal Applause to that admired Piece.

Captain Patrick Mr. B. HUGHES,

Father Luke Mr. FULLAM,

Quiz Master HUGHES,

Marshal Ferbillion Mr. DIDDLAR,

Adjutant Mr. KEYS,

Olmutz Mr. BENNETT,

Rupert Mr. DAVENPHRT,

Greenbergh Mr. TAYLOR,

And Darby Mr. HUGHES,

Norah Mrs. TAYLOR,

Mable Elowish Mrs. WILLEMS,

And Flora Miss HARVEY.

N. B. As it has been a Custom with former Companies to make personal Applications at the Houses, the present Company think it an Office to inform the Ladies and Gentlemen, that as it is a Mode they do not practice, their Time being wholly employed at the Theatre, in preparing their Entertainments, which they hope for in the Public favor; they therefore humbly hope their Conduct in coming it will not be imputed either to Neglect or Disrespect.

Tickets to be had at the usual Places, and of Mr. Hughes, at Mr. Mitchels, Taylor.

Boxes 3s. —— Pit 2s. —— Gallery 1s. To begin precisely at 7 o'Clock.

Dawson tells us, 'a most laughable contretemps occurred in that awe-inspiring scene when the hair doth stand on end like quills upon the fretful porcupine and the most solemn part where Hamlet conjures Horatio and Marcellus "never to speak of this that they had heard" and to "swear by his sword," the ghost, who was in the stable immediately under the stage, had just reiterated the mournful adjuration "swear"! when the ostler roared out with stentorian lungs "Come up, you b-g-r, or I'll scat out the brains of tha !" '

The sands of time were now running out fast. The engagement of The Young Roscius (W. R. Grossmith) then nine and a half years old, who portrayed no fewer than thirty-four characters, enlivened the July of 1828, and in August the theatre probably enjoyed the greatest experience in its forty years' existence when the actor Edmund Kean honoured the theatre by performing there. This was part of a tour which included visits to Ashburton, Falmouth and Exeter, and the play was *The Merchant of Venice*.

On January 10, 1831, the theatre may have opened for the last time. It was a benefit for Mr. Dawson and the play-bill announced that 'In consequence of the total failure of the present theatrical season, he (Dawson) had been induced to take a benefit . . . as this—in all probability is the last time he may have occasion to intrude on the public. . . .' By 1839 the theatre had been dismantled and, in order to provide a stage for another child prodigy, '11-year-old Master B. Grossmith,' a fit-up had to be built in the adjoining assembly room. The theatre in Penzance was dead.

Today, the building lies forgotten and lonely and it takes an experienced theatre historian to detect its real interest. How exciting it would be if this forgotten series of stock rooms and garages could be restored into the Georgian theatre it is.

Derek Sherborn

The writer wishes to express his indebtedness to the following for their kind assistance: Miss Biddiss, the Union Hotel; Mr. Dalton Clifford, Penzance; Miss Chirgwin; Dr. Richard Southern; Mr. J. A. D. Bridger; Dr. Todd; Miss Sybil Rosenfeld; and the Librarians of Harvard University, Islington, Plymouth, Exeter, Truro, and Penzance, The Enthoven Theatre Collection in the Victoria and Albert Museum, and the trustees of the Morrab Library, Penzance.

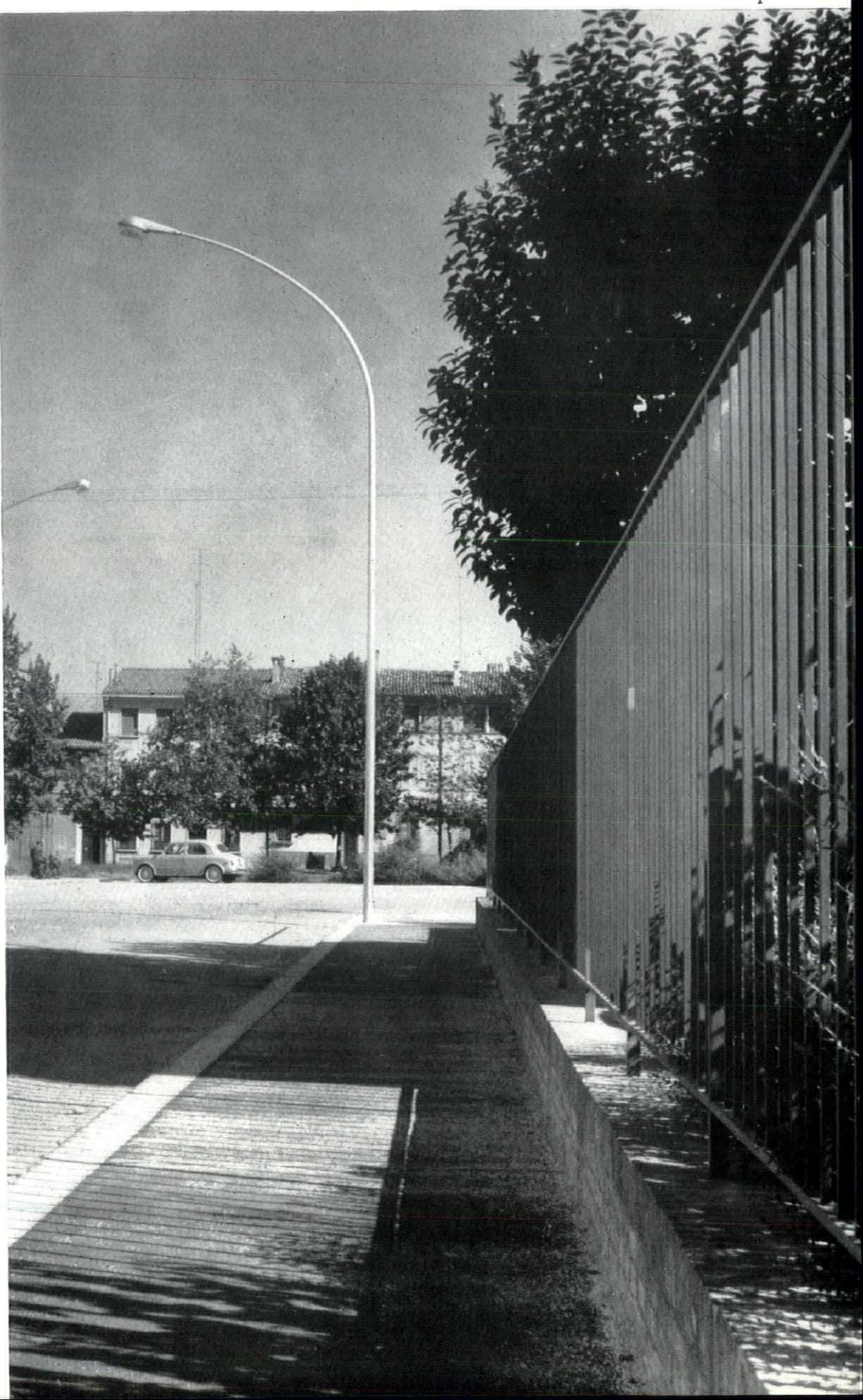
LAMP-POSTS

AT HOME AND ABROAD

Anyone who has been about on the Continent will probably have noticed in some places the exceptional grace, slimness and tallness of the street-lamps, especially on trunk and through roads, and wondered why we so rarely seem to achieve a similar effect in Britain. Some of these willowy continental 'whips' become mannered and self-conscious, with a tiny blob lantern dangling inconsequently at the end of a long neck, but the best of them, aided perhaps by clear sky, broad streets and light buildings, attain a most

Are the 30- and 35-foot steel lamp-posts that light Continental roads, such as 1 in Bergamo, Italy, better designed than our own? At first one is tempted to say yes unconditionally. But a scrutiny of designs now coming on to the market in Britain is more reassuring than one had feared. Some British manufacturers are taking pains to meet the challenge of the motorway and the clearway. The responsibility now lies more with the local authorities who choose designs.

1



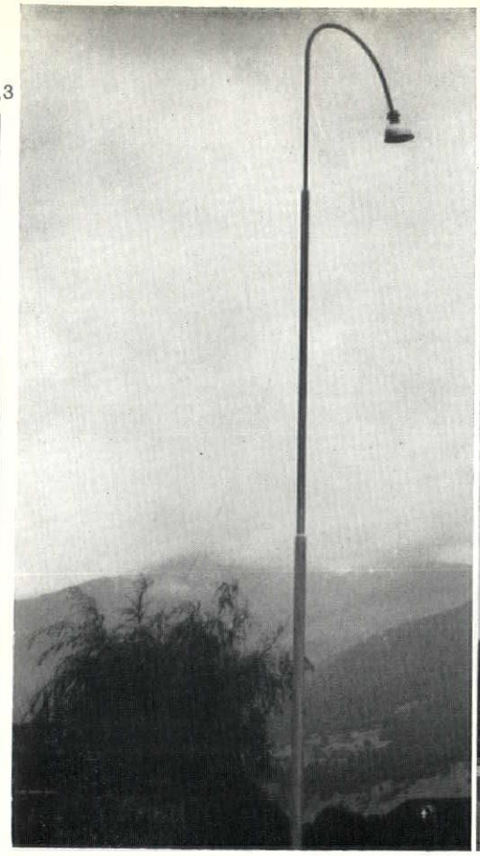
satisfying beauty. It is rarely one can say the same on our own roads. Solidity, utility, yes. Decency, quite often. But beauty, hardly ever. Why?

It is easy to assume the reason is official British conservatism, unimaginative rule of thumb, and the British habit of always expecting the worst, of making everything three times as thick and stout as need be, just in case a travelling circus piles up against a lamp-post once in twenty years. I think there is something in that—too many borough engineers dearly love a herculean steel standard against which cars can smash themselves and their passengers without the lamp turning a hair, whereas the less uncompromising columns don't necessarily kill when you hit them. But after examining a number of official and unofficial attitudes to this particular problem in design, I believe there is more to it than this.

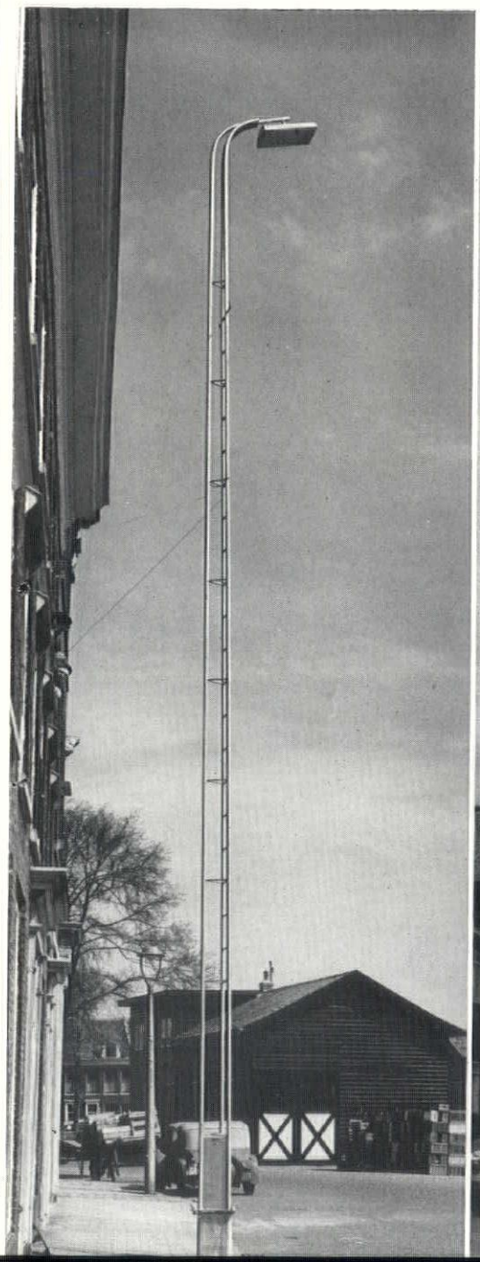
First, at government level. There is no Ministry of Transport objection to 30-foot steel lamp-posts like those common in Italy provided they reach the Ministry's required standards of lighting efficiency. The Ministry is concerned only with technical efficiency of street lamps. It leaves questions of design to be thrashed out by local authorities (if they can be bothered) with the Council of Industrial Design, the Royal Fine Art Commission and the ratepayers (if they are consulted at all). The aesthetics of siting and grouping are the province of the Ministry of Housing and Local Government. At government level the direct encouragement of good design of street furniture is precisely nil. The only indirect control is that the grants given by the Ministry of Transport to local authorities for the lighting of A-class roads are subject to approval of the designs. This has resulted in some improvement, as a result of the Ministry taking the Royal Fine Art Commission's advice on what should be approved. But the government could do much more. It produces model manuals and circulars to demonstrate principles of housing layout and tree planting; why not for the design and grouping of street furniture?

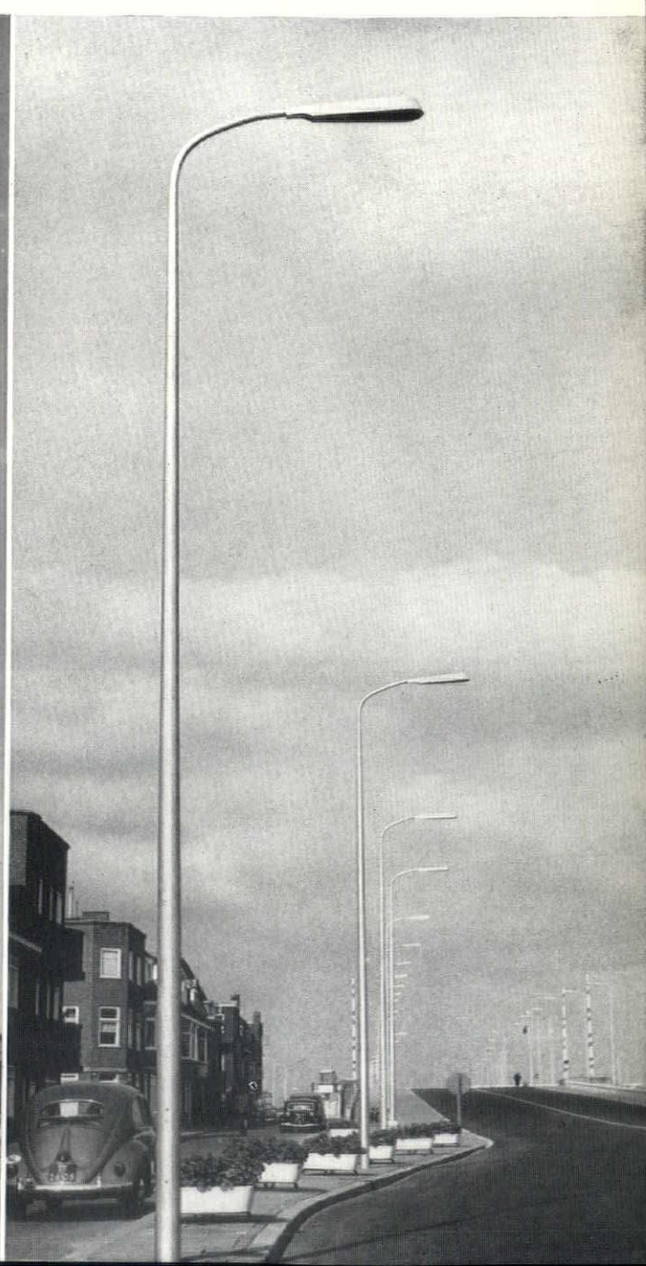
At local authority level, there are admittedly some problems. A very slender equipment may involve housing the control gear up by the lantern. But in London the London Electricity Board insists on cutouts and time switches of a size that can only be accommodated in the base of the column or under the pavement unless

2,3



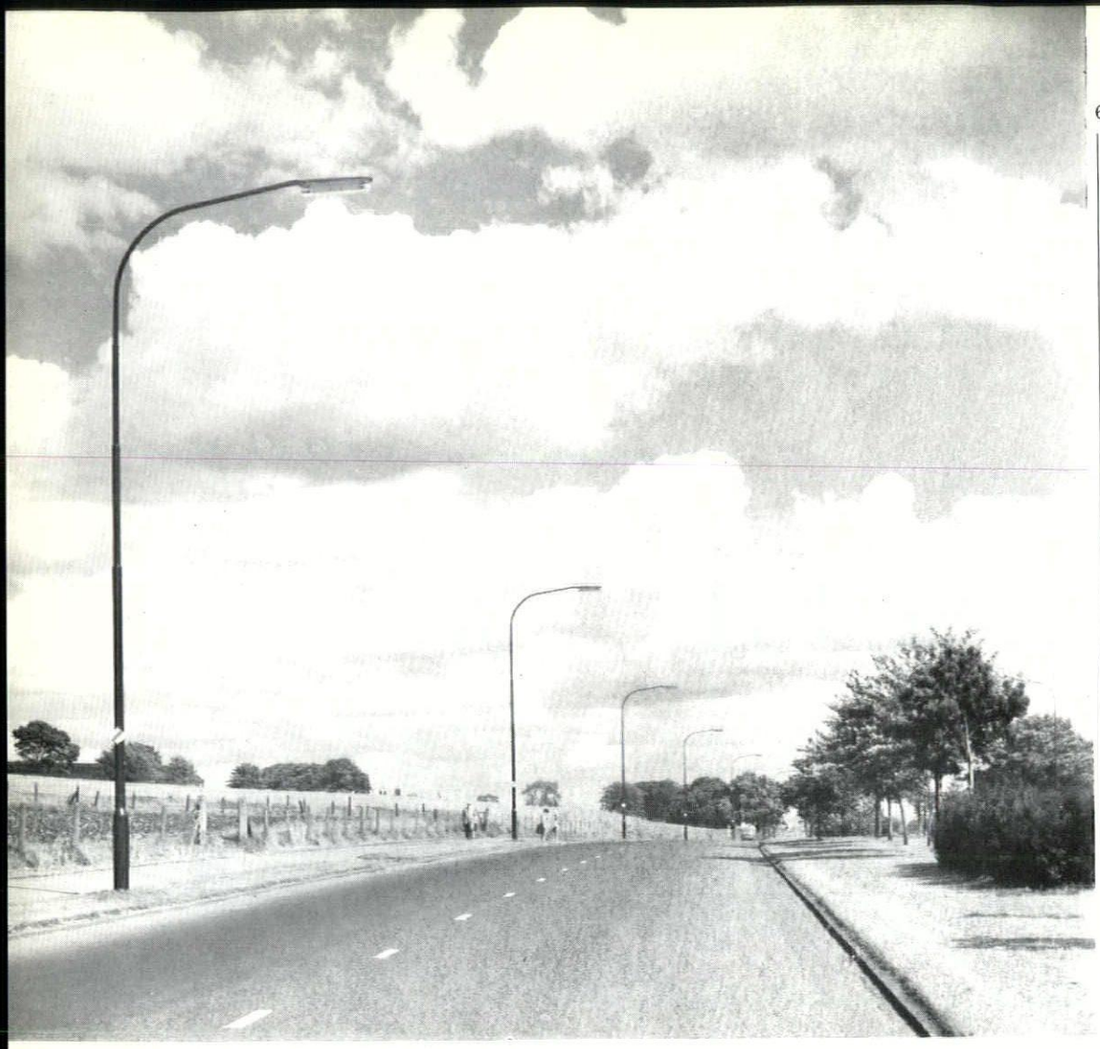


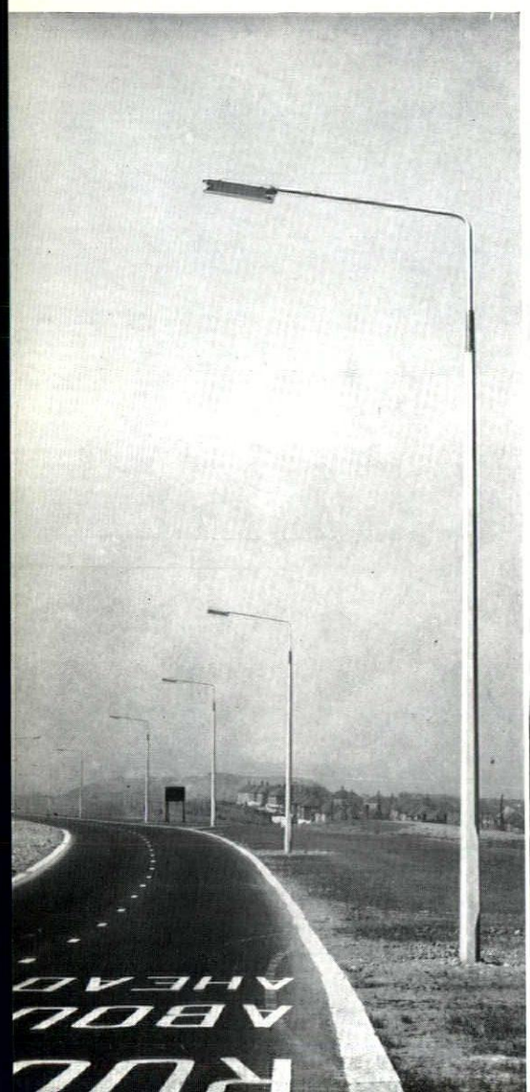




A group of typically slender Continental lamp-posts: The grace of the column is matched by the careful shaping of the lantern. 2, a stepped steel column, from Chur, Switzerland. The curve doesn't altogether escape the suggestion of a dying flower, but the slimness is remarkable. 3, a Dutch example, delicately tapered, used along the central reserve of a motorway. 4, another Dutch lamp-post with a built-in stepladder. 5, a Dutch example in aluminium, with columns drawn in one piece. It solves the problem of incorporating the lantern effortlessly into the design.

4,5







these pieces of mechanism are radically redesigned. Other Electricity Boards do not necessarily enforce this, but local authorities fight shy of such a design because it makes maintenance difficult, especially where there are two separate sets of control gear. Also if the column is run into, an additional length of cable may be flopping about dangerously loose. And there is a suspicion (is this a typical British reaction to anything Continental?) that such a lamp *cannot* be quite up to British lighting standards. There's something in all this, though it can be overcome by a determined and enterprising authority.

And manufacturers: there are not many for the high mounting-heights over 25 feet. 35-foot lamps have only recently started to come on the market in this country for use on trunk roads, and inevitably it's a slow business when a new one may take over a year from drawing-board to production. The chief reason is of course that they aren't asked for much. One is back with the familiar argument. They aren't made because they aren't asked for. They aren't asked for because they're not made.

Luckily, there are some hopeful signs. Not every local authority engineer submits tamely to the restrictions imposed on him by his council with their eyes on their ratepayers. Some are fully conscious that lighting programmes have had to be pushed on ahead of progress in design and manufacture. One enlightened London borough engineer was deeply regretful that in relighting his borough he has been compelled to make do with the equipments available a decade ago when the scheme started; ever since he has had to watch excellent new designs like those shown here arrive too late. For there are some British lamps as good as most on the Continent, if only local authorities will take advantage of certain manufacturers' courage and vision and look beyond this short-sighted cheeseparing. The chief hope is that once some have taken the plunge their example will prove catching. Officials are men of like passions with us in that they too are vulnerable to fashion. Another good augury is that Wandsworth Borough Council are making available to the COID a pitch on Kingston Road, S.W.15, for 30-foot street lamps (and possibly other mounting heights too) to be on permanent exhibition.

Derek Barton

A group of recent and much improved British designs: 6, in tubular steel, by Stewart and Lloyds — the first use of this 35 ft. curved type of stepped column, resembling some of the Continental models illustrated, by Lanarkshire County Council on the Edinburgh-Lanark road. 7, in concrete: 35-ft. New Highway type column, by Concrete Utilities Ltd., with steel bracket, photographed on a Sheffield parkway. 8, in stepped tubular steel; at Hanger Lane, London, with double bracket.

SKILL

UP-AND-OVER DOORS, 1

In the course of a few years up-and-over doors have almost completely ousted side-hung doors for garages. This is the first of two articles in which Anthony Wylson considers the technical problems they raise and describes the varieties now on the British market. This month he reviews his subject and classifies half the products on the market. Next month he will complete his coverage of products and draw his conclusions.

The object of the 'up-and-over' door is to free the opening by taking the door to lintel level. To facilitate this operation the weight of the door is balanced either by counterweight or spring coil. The overhead position of the door saves the 'drive-out' from being obscured and liberates the area immediately in front of the garage. Normal hinged doors are subject to being caught by the wind causing banging and stress on the hinges. The up-and-over door is opened and closed in one operation. In most cases this cannot be obstructed by leaves or snow lying immediately in front of the garage.

The cost of up-and-over doors for domestic garage use varies from £20 to £30, similar to sliding doors of the same size, whereas hinged doors would be in the order of £10.

It is possible to obtain either a complete unit consisting of door and gear or just the overhead door gear. There are standard units for domestic garages at economic prices, but the larger units are purpose made with standard gear adapted to a particular door weight.

Gear

There are two main systems of balancing the weight of doors; counterweight and spring coil.

The counterweight system is achieved by using either a lever arm or pulley system. In the first case the lever arm is an integral part of the door gear. In the second case, the counterweight can either be placed by the jambs of the door opening or on a side or rear wall. This gives a choice in side clearance requirements and the system can be developed in relation to a particular plan. The counterweight can be adapted to the weight of the door unit.

The spring coil system depends upon balancing the weight of the door against coil spring tension. This gear is less bulky than the pulley system and has fewer moving parts for maintenance. At the same time, the tension of the coil must not only be suited to the door units, but requires occasional adjustment. With up-and-over doors the spring coil is situated alongside the jamb or lintel or, as in the case of the Acrow unit, it is fixed to the side wall. Roller shutter gear accommodates the balancing spring within the roller.

Most gear incorporates a track of some form to guide the path of the door. Ball bearing runners, nylon or steel wheels attached to the side of the doors, move along steel tracks either adjacent to the jambs or projecting inwards at lintel level. The adjustment and maintenance of this element is very important for the smooth running of the unit.

Two important factors to be considered in selecting gear are (1) the path taken by the door while it is being opened and (2) the 'open' position. It is necessary to assess the amount of space available for operating the door. In some cases the path taken by the door would be all right for the average saloon car, but would not be suitable for a van or station wagon hard-pressed for room. The open position varies from projecting totally from the lintel outside the garage to projecting completely inside, lying along the underside of the ceiling. The former gives a canopy for car maintenance and leaves the garage roof space clear. The latter neither obstructs the area immediately in front of the garage, nor is it in a position to collect snow and rain when open.

Doors

Doors can be supplied as an integral part of both standard and made-to-measure units. At the same time, there are firms that specialize in garage doors. Door weight and size would be related to particular gears. The door unit is manoeuvred either as a rigid plane or, as in the case of roller doors, it becomes a flexible unit composed of narrow lathes. In individual designs and adaptations it is important to note the stresses caused by the manner of support when the door is open. Most doors have truss bracing across the span.

The majority of door construction is divided into frame and panel using steel, aluminium or timber as both structural and cladding material. Each material or combination of materials has its own advantages and suitability of cost against factors of maintenance, structural stability, weight, insulation value and appearance.

The insulation factor is of importance in some industrial uses or garages used for other purposes besides storage. Car 'freeze-up' is less of a concern today, but excessive heat loss may lead to condensation in the car engine. Nowadays the serious effect of this is overcome by the use of oil filters, but even so, in the case of emergency services, such as ambulance and fire stations, it is a point to be considered.

Locking systems vary, and in not all cases is it possible to unlock the door from both inside and outside. Automatic opening devices can be installed in some cases. This can be controlled from positions accessible to a driver.

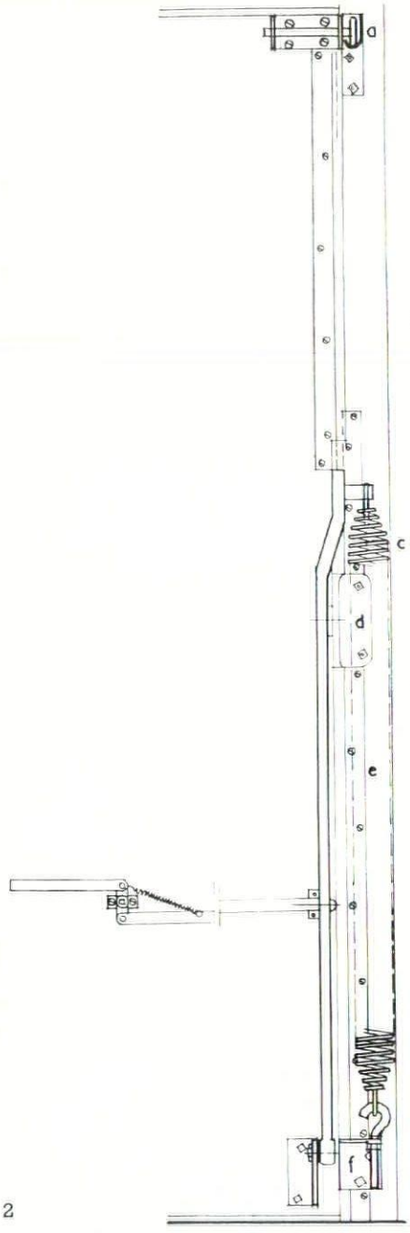
Some framed door units can incorporate glazed or perspex panels. In most units attention is given to weather-proofing along the door jambs.

Clearances

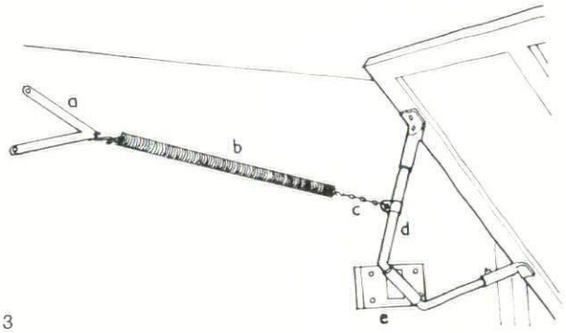
It is important to note the variety of sidewall and headroom clearances required by different units. Tension coil springs require up to 4 in. whereas the pulley and counterweight systems require up to 9 in. for small and 12 in. for large openings if the weight is situated beside the jamb. This

1, *the Bolton 'Glydover' garage door.*

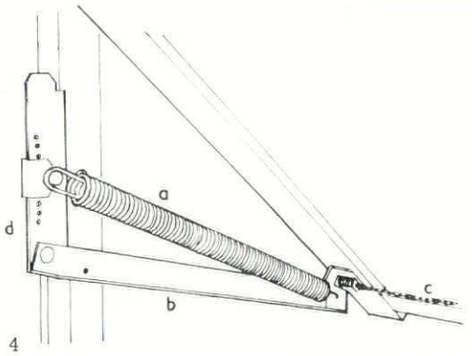




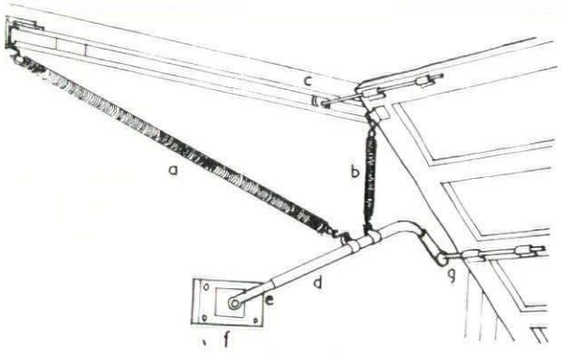
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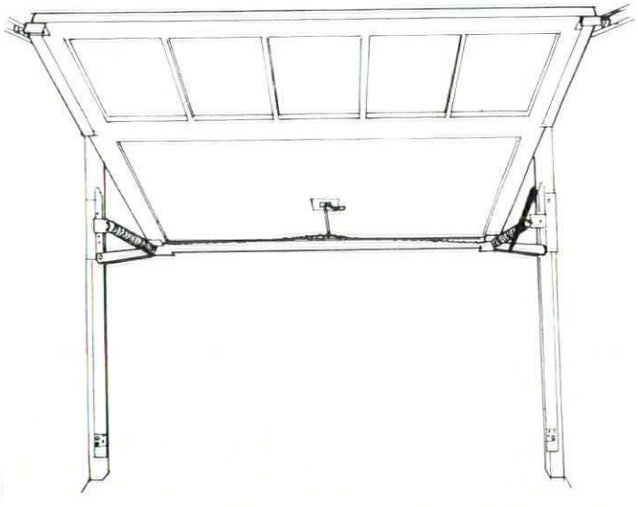
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5



6

2, Ellard 'Overdor' Type H showing spring coil gear against jamb with door in closed position. Weather strip plaster set on door above bracket connection and on frame below bracket connection. a, top track and door roller; b, door weather strip; c, tension spring; d, centre pivot, bracket and lever; e, jamb weather strip; f, spring anchor bracket.

3, Acrow Model No. 1: spring coil gear without track. a, 'V' plate; b, spring; c, connecting chain; d, hinged bracket; e, pivot and wall plate.

4, Batley's 'Suparise': spring coil from jamb to lower rail of door. a, spring; b, bracket; c, latch chain; d, pivot and spring coil adjustment.

5, Acrow Model No. 2: double coil and horizontal track. a, large spring; b, small spring; c, wheel and horizontal track; d, bent arm; e, extension to arm; f, wall plate and pivot; g, door pivot.

6, Batley 'Suparise' showing opening operation on horizontal tracks at hatch level.

7, Brady Rolling wood doors: section of shutter.

8, Brady Rolling steel doors: section of shutter.

9, Batley 'Suparise' door conversion with angle section mild steel stiffeners.

sidewall clearance can be reduced to 3½ in. if the weight is situated near the rear wall.

Headroom clearance is affected by both the gear and the path taken by the door. Extra space is required for motor control. Headroom for small openings is mostly under 4 in. except for the ACROW model 1 and roller shutters.

Generally, the height of the opening is not greatly diminished by the 'open' position of the door. However, in the case of the Westland 'WELL-FOLD,' clear height of the opening is reduced by 9 in.-12 in. according to the size of the door, when it is in the open position.

The table on page 140 shows a representative selection of units to give some idea of prices and variety.

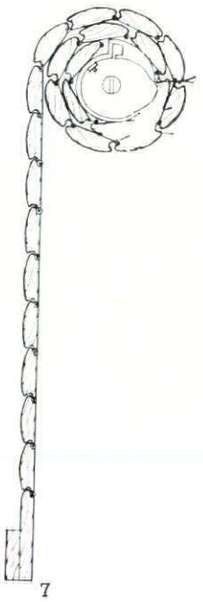
Examples

Two methods of up-and-over fittings, models 1 and 2, are manufactured by ACROW (Engineers) Ltd., priced at £11 15s. and £12 18s. 6d. Both models are suitable for doors weighing up to 250 lb. ACROW also produce metal doors from 6 ft. 6 in. by 7 ft. at £15 11s. 8d. to 7 ft. by 7 ft. 6 in. unit at £17 1s.

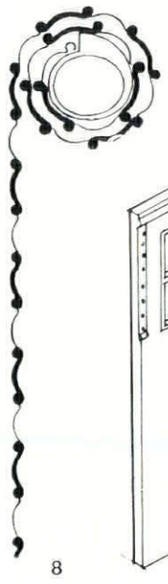
In both cases the gear is completely clear of the lower section of the garage wall. Model 1 consists of a U-shaped arm attached to the door and pivot-fixed at a position inside the flanking wall. Model 2 is a similar principle, but the top edge of the door moves along a guide at lintel level and fixed to the flanking wall. Both systems are balanced with springs. Model 1 requires 16 in. clearance and model 2 requires 2 in. clearance above the underside of the lintel. Adjustment to coil tension can be achieved by sliding the coil clip along the pivot arm. The ⅜ in. gap between door and frame is covered by draught strip placed inside the garage.

AUSTINS of East Ham manufacture units of three standard sizes for £17 19s. using Henderson's ULTRA overhead door gear. Austin also produce standard stock doors and frames from pattern 3PX, 7 ft. by 6 ft. 6 in. by 2 in., at £7 11s. 3d., to pattern 16XG, 7 ft. by 7 ft. by 2 in. at £14 5s., also 3 in. by 3 in. deal frames at 40s. 6d. per set, cylinder locks at 35s., and door braces to give additonal strength at 8s. 6d. per pair.

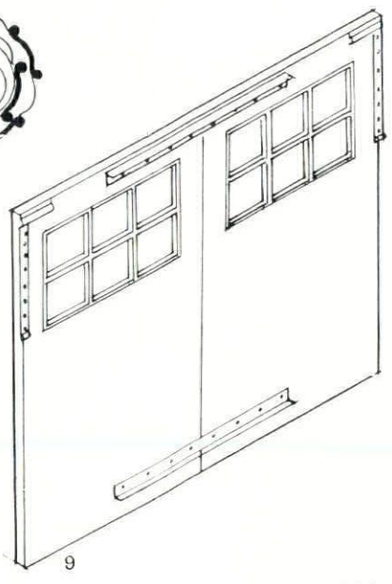
The BATLEY up-and-over door is manufactured by Ernest Batley Ltd., of Coventry. This unit is balanced by a lever arm counterweight that is accommodated along one wall adjacent to the doors. This requires a clearance of 2 in. A 3 in. clearance is required behind and above the door



7



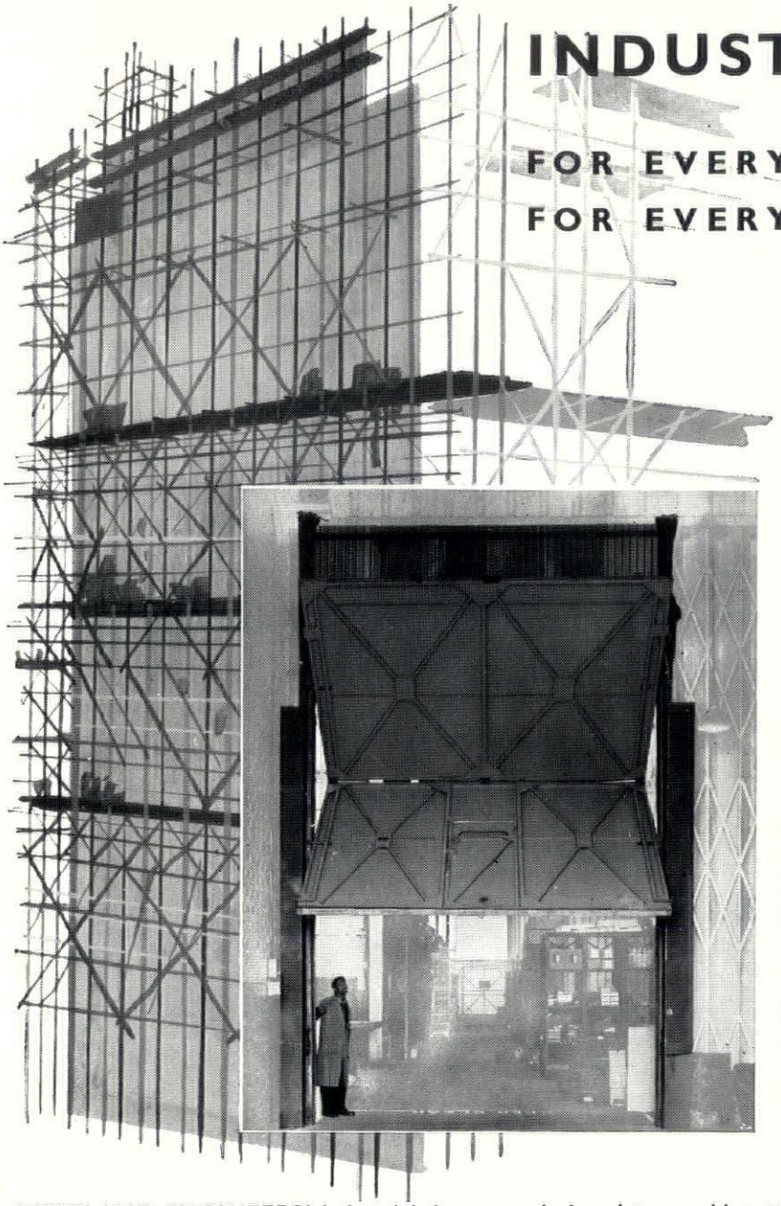
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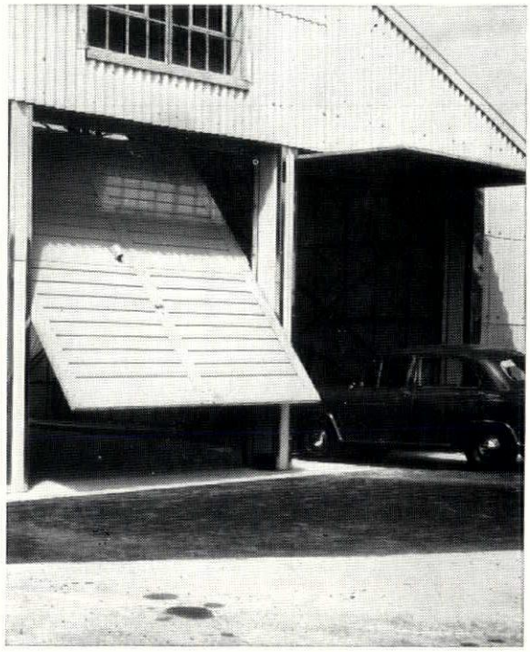


9

INDUSTRIAL DOORS

FOR EVERY PURPOSE—
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WESTLAND ENGINEERS' industrial doors are designed to combine great mechanical simplicity and strength with ease of installation. The wide range of types available between them offer a solution to every industrial door problem.

NEW WELFOLD

As the Welfold rises into the open position it also folds along its horizontal centre line so that in its fully open position the two panels are folded together underneath the lintel, half in, half out of the building. The advantages of this arrangement with very high doors is obvious.

WELLIFT

The Wellift is a one piece overhead door, opening upwards and inwards, so that in its fully open position, half the height of the door projects outwards to form a canopy shelter.

WESTLAND ENGINEERS' industrial doors use no overhead tracks and installations can be made where the fitting of such tracks would be difficult. These doors can be supplied in either steel or aluminium construction and are fully counterbalanced. They can be fitted with electrical operation if required.

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head. The top section of the door is guided along side tracks to give an open position completely within the garage, with a maximum projection externally of 2 ft. 10 in. The door unit is in aluminium alloy riveted and bolted, and is panelled in either aluminium alloy or exterior grade mahogany plywood. Fixings, brackets and tracks are in steel. The prices vary in aluminium from £20 for 7 ft. 5½ in. by 6 ft. 3 in. to £20 12s. for 8 ft. 1 in. by 6 ft. 3 in., and in plywood from £19 to £20 10s. respectively.

The 'SUPARISE' is also manufactured by Ernest Batley Ltd. and is suitable for openings 6 ft. to 8 ft. in height and width, and doors up to 200 lb. weight. Clearance behind jambs is 3 in., and 2 in. above and behind door is required. The gear is of steel angles, and tempered steel springs and doors in aluminium and cedarwood. Price for gear only is £11 10s. The gear is designed to form weather-proofing to jamb-door junction.

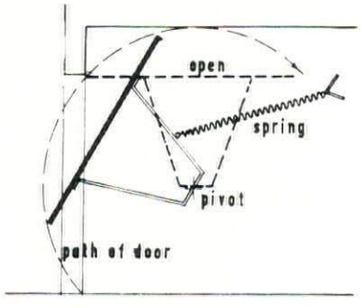
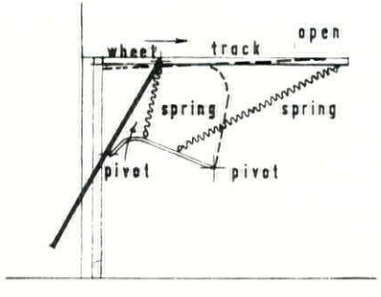
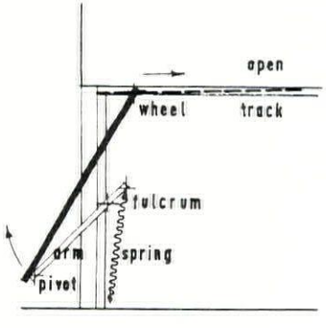
The BRADY roller shutter doors cost from £23 10s. for 7 ft. 5¾ in. by 6 ft. 3 in. to £39 7s. 6d. for 9 ft. by 7 ft. They can incorporate timber lathes with steel or aluminium alloy as an alternative. Plastic windows can be inset into the doors. Counter balance is achieved by helical springs and units can be hand or electrically operated. Roller units require up to 16½ in. headroom clearance.

The Bolton 'GLYDOVER' is an interesting innovation replacing a rigid door unit with a more flexible metal panel. This is made up of galvanized sheet sections connected with sherardized steel hinges spanning the full width to the tracks at each side. The weight is balanced with a spring accommodated at high level making it particularly safe. The minimum headroom required is 12 in., and 4 in. is required either side. The unit can be up to 16 ft. 6 in. wide by 12 ft. high. The standard size, 8 ft. by 7 ft., costs £28 including draught strip. 'Glydover' can be supplied with various systems of automatic operation, and toughened glass windows can be included for an extra 30s. each.

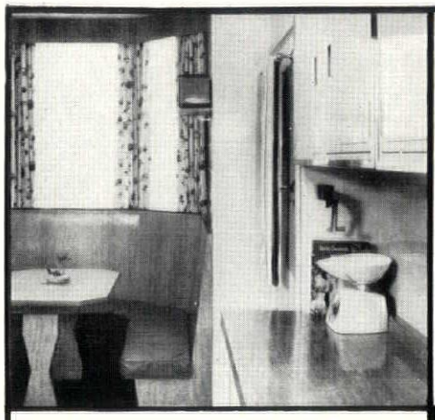
Another roller shutter type over unit is the BOOTH weather-proof rolling shutters. The laths are of galvanized steel and the helical spring counter balance is set within the cylindrical steel barrel. The system is suitable for openings up to 34 ft. high and 25 ft. wide. Large units are operated by means of worm reduction gear with sherardized hand chains.

CURFEW over-doors of Curfew Doors and Shutters Ltd., Manchester, incorporates a high-level track and pulley counterbalance. The open position leaves a section of door projecting outside garage. There are no standard sizes but the gear for an opening 6 ft. 6 in. by 7 ft. 6 in. is estimated at £19 and for an opening 10 ft. by 15 ft. at £45. Curfew Doors and Shutters Ltd. also manufacture rolling doors with helical spring counterbalance. The system will extend to a maximum width of approximately 40 ft. and maximum area of 1,000 sq. ft. The rolling mechanism can be fitted either inside or outside or within openings.

Ellard's 'OVERDOR' unit is manufactured in two sizes, 'L' and 'H.' The first is for doors of 60 to 130 lb. and the gear costs £12. The second is for doors of 130 to 200 lb. and costs £13 10s. Ellard's also produce standard timber doors and extras such as stiffeners and locking devices for inside and outside control. The door unit in operation is supported at all four corners.

Name of Manufacturer.		*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
1 **Acrow. Model 1** Acrow (Engineering) Ltd, South Wharf, London, W.2.		Tension spring coil. No track.	Acrow doors of interlocking pressed-steel panels.	Lintel 16″ reveals 2″ to 12″. Not more than 6″ difference between sides. Locking handles and barrel-type bolts.	From 6′ 6″ to 8′ high. For doors up to 250 lb. weight.	Gear £11/15/0. Metal doors from £15/11/8 (6′ 6″ × 7′) to £17/1/0 (7′ × 7′ 6″).	Spring coil and wall-pivots secured to side walls. No tracks or runners. Open position contained within building line.
2 **Acrow. Model 2** Acrow (Engineering) Ltd, South Wharf, London, W.2.		Two tension spring coils either side. Horizontal track at level of lintel.	As above.	Lintel 2″ reveals 2″ to 12″. Locking handles and barrel-type locks.	From 6′ to 8′. For doors up to 250 lb. weight.	Gear. £12/18/6. Metal doors from £15/11/8 (6′ 6″ × 7′) to £17/1/0 (7′ × 7′ 6″)	Wall pivots secured to side wall. Open position contained within building line.
3. **Austins** using Henderson 'Ultra' door gear. Austins of East Ham Ltd, London, E.6.		Tension spring coil: see Henderson.	Doors of 2″ styles, rails and mountings with exterior quality resin-bonded plywood panels.	Headroom 1⅛″ sideroom 2¾″ cylinder lock for locking or unlocking inside and outside extra.	Three standard door sizes: 8′ wide × 7′ high 7′ wide × 7′ high 7′ wide × 6′ 6″ high. Weights 108, 95 and 90 lb. respectively.	Door and gear £17/19/0.	Lock and Espagnolette bolt 35/- extra.

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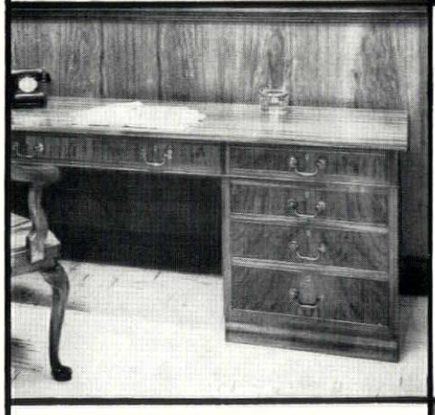
BELFORT

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Wide variety of veneers
AND IT'S REAL WOOD



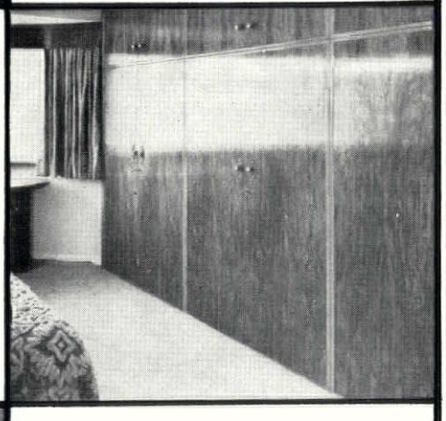
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AND IT'S REAL WOOD



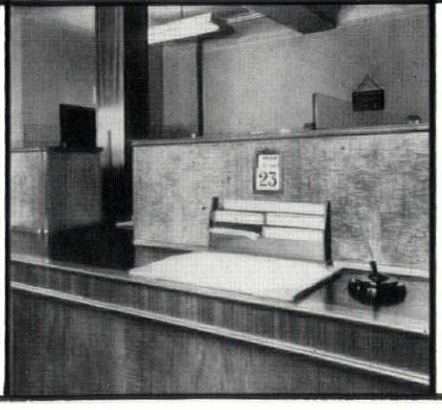
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Indestructible for schools
AND IT'S REAL WOOD



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Ideal for panelling and shopfitting in Banks, Hotels and Offices
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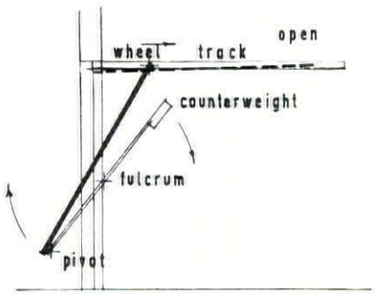
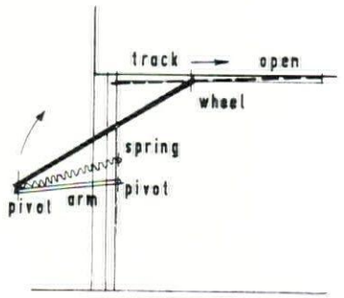
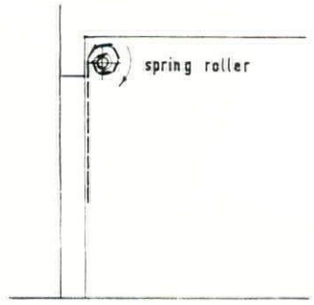
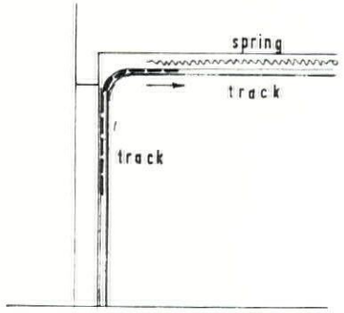


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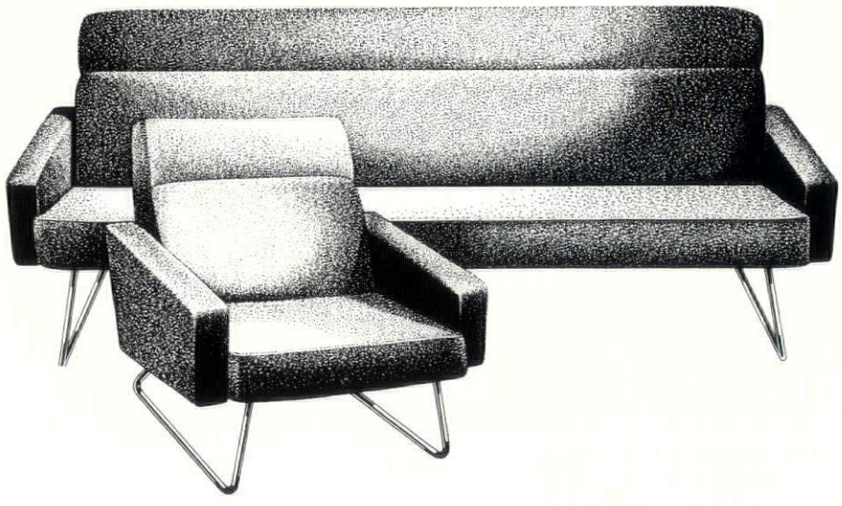
Name of Manufacturer.		*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
4 Batley Up and over (similar to Brady unit). Ernest Batley Ltd, Holbrooks, Coventry.		Pivoted lever arm and counterweight. Horizontal track both sides at lintel level.	Horizontally ribbed aluminium alloy or exterior grade mahogany plywood. Door travels on ball bearing wheels. Gear in angle steel and galvanized steel.	Behind and above lintel 3″. Behind jambs 2″. Aluminium alloy locking handle and shoot bolt.	6′ 3″ high × 6′ to 10′ 2″ wide.	In aluminium alloy: Standard size 7′ 5½″ × 6′ 3″ £20. from 6′ × 6′ 3″, £20/10/0 to 10′ 2″ × 6′ 3″, £30. In exterior grade mahogany plywood: Standard size, 7′ 5½″ × 6′ 3″, £19. From 6′ × 6′ 3″, £19/10/0 to 8′ 1″ × 6′ 3″, £20/10/0.	Open position contained within building line. Maximum projection whilst opening, 2′ 10″.
5 Batley 'Suparise' Ernest Batley Ltd, Holbrooks, Coventry.		Steel spring. Horizontal track both sides at lintel level.	Door in aluminium or cedar wood. Gear of angle steel; pivot; tempered steel springs, galvanized steel tracks. Ball bearing track wheels.	2″ above and behind lintel 3″ behind jambs. Chromium plated cylinder type locking handle.	From 6′ to 8′ high. Weights up to 200 lb.	Gear only: £11/10/0. Doors in aluminium alloy: 8/- per sq. ft. Western Red Cedar: 8/- per sq. ft. Selected Deal: 5/6d. per sq. ft.	Gear forms weather proofing.
6 Brady Roller Shutter Door. Ernest Batley Ltd, Holbrooks, Coventry.		Spring roller. Vertical track in jambs.	Selected timber laths, with steel or aluminium alloy as alternative.	12″ above and behind door head to 6½″ for 20′ high door. 3″ behind jambs.	For any width and height.	Standard size 7′ 5½″ × 6′ 3″, £23/10/0. From 7′ × 6′ at £26/5/0 to 9′ × 7′, £39/7/6.	Can be electrically operated, hand operated (small units) or chain operated. Inset plastic windows can be included in door construction for illumination.
7 Bolton 'Glydover' Bolton Gate Co. Ltd, Bolton, Lancs.		Tension coil spring. Vertical tracks at jambs curving at top section to horizontal tracks at level of lintel.	All-steel construction 'Zintec' panels or 'Galvatite' panels with sherardized steel hinges. Ball bearing rollers.	12″ above door head. (Height of door plus 12″) behind head of door. 4″ at jambs.	Up to 16′ 6″ wide and 12′ high. In steel up to 30′ × 15′.	In timber: 8′ wide × 7′ high, £28 including draught strip. In steel: 8′ × 7′, £40/12/0.	Automatic operation systems can be supplied. Door does not tilt. Door contained within building line. 'Yale' lock, 42/- extra. Toughened glass windows, 30/- each extra.



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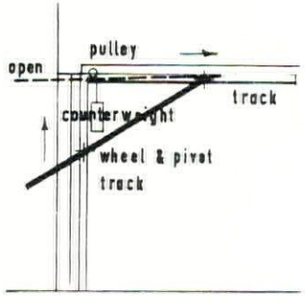
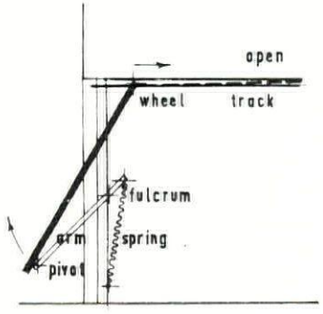


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Name of Manufacturer.		*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
8 Booth Weatherproof Rolling Shutters. John Booth & Sons (Bolton) Ltd, 26, Victoria Street, Westminster, S.W.1.		Helical counter-balancing springs encased in cylindrical steel barrels. Mild steel vertical tracks at jambs.	Laths of British rolled steel grip, galvanized steel strip laths. Aluminium or brass laths.		Up to heights of 34'. Up to openings of 25'.	By quotation.	Shutters up to 10' wide and not more than 100 sq. ft. operated by means of pole or hook. Larger shutters operated by means of worm reduction gearing with sheradized hand chains. Units can be electrically operated.
9 Curfew Over doors. Curfew Doors & Shutters, Curfew Works, Jersey Street, Ancoats, Manchester, 4.		Pulley and counter-weights either side. Vertical and horizontal tracks.		4″ headroom. 9″ sideroom. Cylinder lock handle.	No standard sizes.	Gear for unit 6′ 6″ × 7′ 6″, £19. Gear for unit 10′ × 15′ £45.	Door projects at open position.
10 Curfew Rolling Doors. Curfew Doors & Shutters, Curfew Works, Jersey Street, Ancoats, Manchester, 4.		Helical springs. Reduction gear for large doors.	Steel or aluminium alloy laths with steel channel grooves and steel barrel rollers mounted on steel brackets. Wood laths connected with chain hinges: steel or wood grooves.	Diam. of coils 10″ (for 6′ height) to 17″ (for 20′ height). Space for door coil. 1. for self coiling 7½″ + diam. of coil. 2. for geared hand chain, coil diam. + 2″. 3. Electric, space required for motor bracket and gear, 2′ and 1′ 9½″ from face of mounting surface. Side clearance. 1. For self-coiling 4″ minimum. 2. Geared hand chain, 8½″ to 11½″. 3. Electric. 2′ 7″ to 2′ 9″ for motor 7⅜″ to 9⅜″ other side.	Maximum width: approx. 40′. Maximum area: 1,000 sq. ft.	Up to 70 sq. ft. at 15/- per sq. ft. in 20 gauge laths.	Roller mechanism can be fitted inside or outside or within openings. Operation by pole, endless chain, handle wind or motorized.
11 Ellard's 'Overdor' Ellard Sliding Door Gears Ltd, Works Road, Letchworth, Herts.		Tension coil spring. Horizontal tracks at lintel level.	Cold steel tracks, steel arms on pivot bearing and heavy duty coil springs.	1″ headroom. 2¾″ at jambs. Closed by pair of horizontal bars and cylinder lock in chromium plated T. handle.	From 6′ to 7′ high. Type 'L' for doors weighing up to 130 lbs. Type 'H' for doors weighing 130 to 200 lbs. Standard timber doors, 6′ 6″ high and 7′ wide.	Gear only. 'L', £12. 'H', £13/10/0.	Steel angle stiffeners for conversion of hinged doors, 18/-. To adapt locking device to secure door from inside and outside £1/1/0 extra. 6′ 6″ door contained with building line in open position. Door supported at all four corners.

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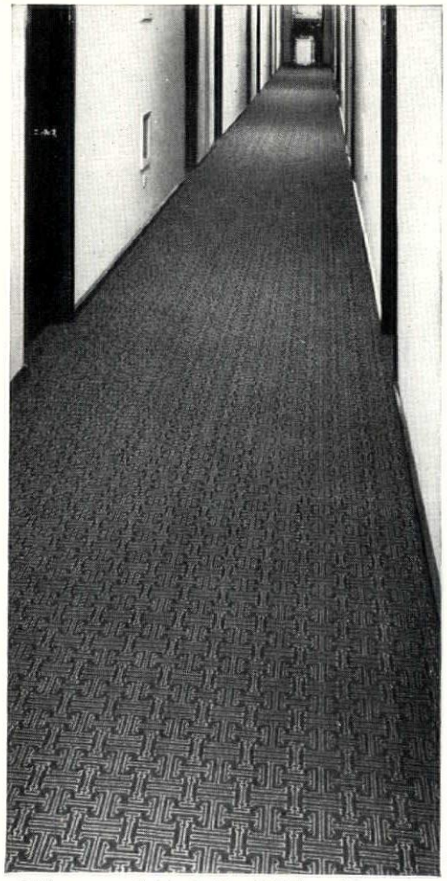
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Hallway, carpeted in Golden Shield wool Brussels. The design is a classical Greek "Key" motif.

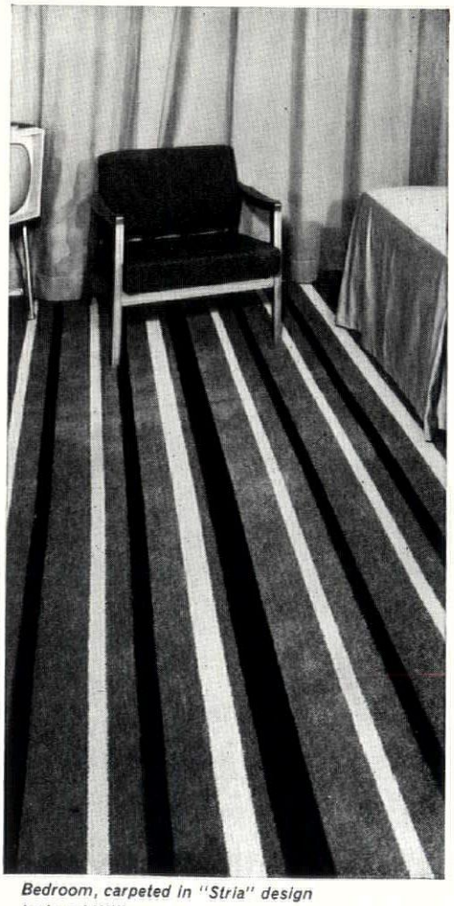
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Naturally, as in the rest of the Skyway Hotel, all the carpets in the new bedroom wing are made by Carpet Trades Limited Kidderminster. (Supplied through Messrs. Andrew Bruce & Co. Ltd. London). In all, 3,296 more yards of Golden Shield carpeting have been added to the Skyway Hotel.

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Bedroom, carpeted in "Stria" design textured Wilton.

THE INDUSTRY

Lighting fittings

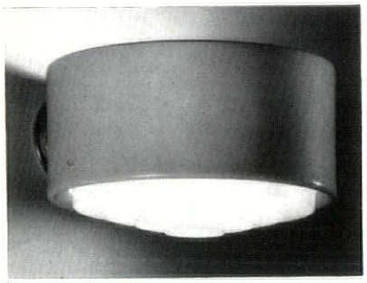
It is probably fair to say that the design of lighting fittings has passed into a new phase. Until now designers have had to prove that this functional element has really exciting possibilities as decoration (not the tizzy chain store variety). To do this they have had to explore every possible variation of shape, size, finish and colour. A decade of imaginative design (with a relatively low proportion of visual failures) has enabled them to make their point and to turn now to the less spectacular but highly important task of consolidation.

The new 'drum' range of fittings, recently introduced by Merchant Adventurers is simple, elegant and businesslike—as good an example of the 'consolidation' stage as any recently produced. The range consists of ceiling mounted, pendant and wall bracket lights (of which the latter is visually least successful). Fittings are available in sizes from 5 in. to 18 in. diameter for 40 to 200 watt lamps. The diffusing louvre is made in opal urea formaldehyde which has a high light transmission, is claimed not to discolour and to withstand high temperatures. The concentric design gives a cut-off of 45 degrees.

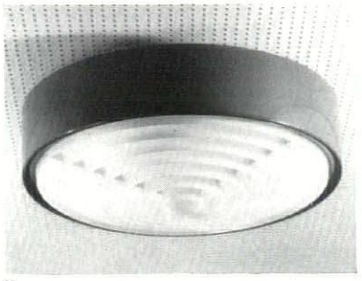
Finish is stove enamel in several colours—pillar box red, jasmine yellow, pearl grey or matt black.

Merchant Adventurers of London Ltd., 43 Portland Road, London, W.11.

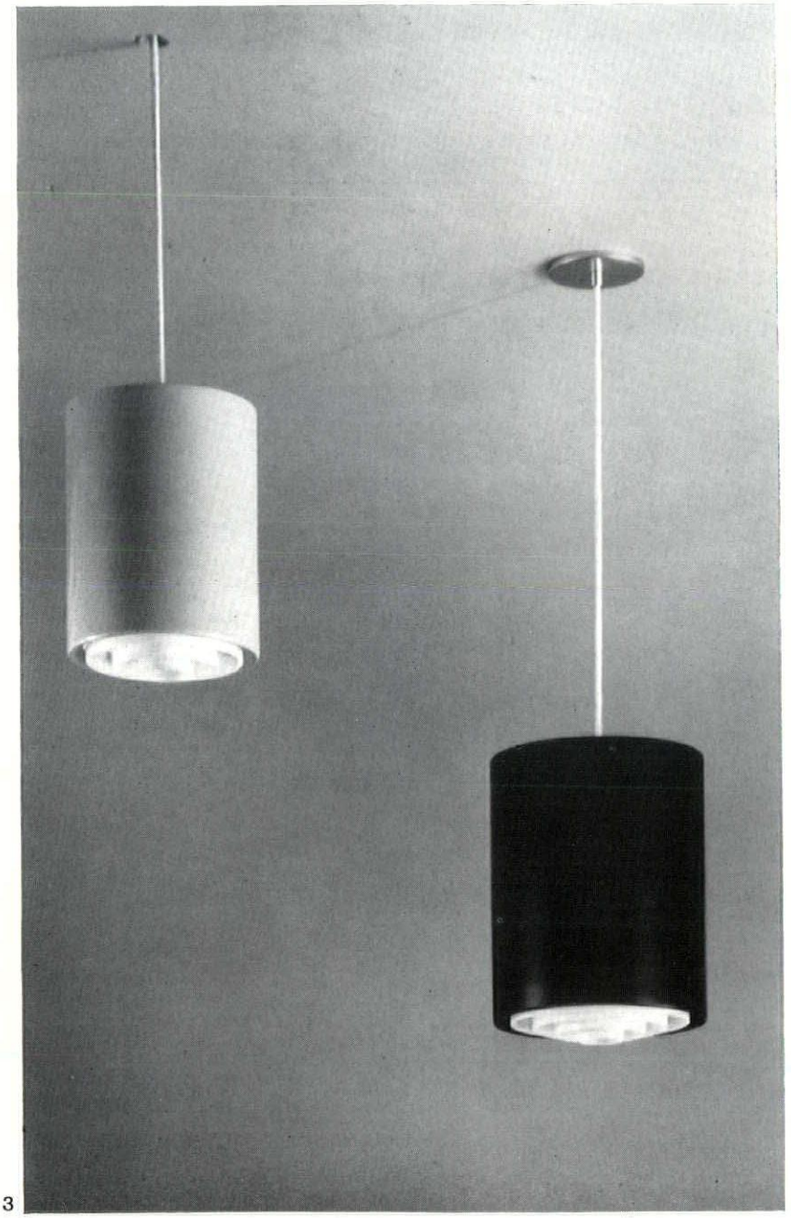
Three light fittings from the new range by Merchant Adventurers: 1, wall bracket; 2, ceiling mounted; 3, pendant.



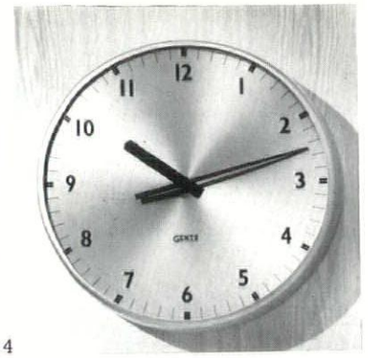
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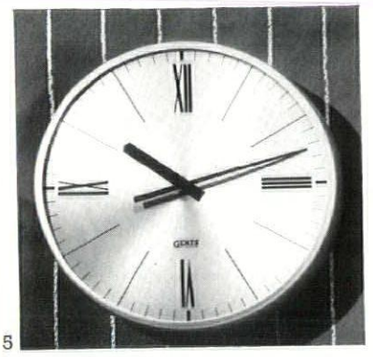
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3



4



5

4, 5, two electric wall clocks, designed by Jack Howe for Gents.

Electric clocks

The fascination which the workings of a clock hold for most people is strangely contrasted with the casual acceptance of it as an element of decoration in the interior of a building. You glance at the clock for that appointment or 'phone call without registering whether its face is well designed or is a visual monstrosity. It may be a perverse rule of the order of things that the better the design of the clock face and the more efficient the workings behind it the less likely it is to be noticed. Yet it is the very competence of the design which ensures an element at once functional and decorative. The wall clocks, 4, 5, were designed by Jack Howe for Gents of Leicester, a long established firm of manufacturing electrical engineers, and are available for operating either on A.C. mains (synchronous version) or as part of a master clock system (impulse version). The designs are included in the COID index and are available in three sizes 9 in., 12 in., and 18 in. diameter dials, having convex glasses in spun aluminium cases finished satin silver.

Gent & Co., Ltd., Faraday Works, Temple Road, Leicester.

CONTRACTORS etc

Furniture Showrooms and Offices, Watford. *Architect:* Erno Goldfinger. *General contractor:* J. Honour & Son. *Sub-contractors: Reinforced concrete frame:* Formcrete Ltd. *Reinforced concrete:* British Reinforced Concrete Engineering Co. *Asphalt tanking:* Limmer & Trinidad Lake Asphalt Co. *Felt roofing:* William Briggs & Sons. *Thermoplastic tile paving:* Armstrong Cork Co. *Terrazzo:* Alan Milne (Flooring) Ltd. *Ironmongery:* Parker Winder & Achurch Ltd. *Metal windows:* Williams & Williams Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Heating:* Weatherfoil Ltd. *Electrical installation:* Troughton & Young Ltd. *Patent glazing:* Williams & Williams Ltd. *Iron and metalwork:* A. W. Gray Ltd. *Precast concrete:* Girlings Ferro Concrete Co. *Doors:* H. Teale & Son. *Ceilings:* G. C. Horsburgh & Co.

Housing, Offices and shops, Soho, London. *Architects:* Riches and Blythin. *General contractor:* Wates Ltd. *Sub-contractors: Roofing:* Frazzi Ltd. *Windows and storey frames:* Crittall Manufacturing Co. *Reconstructed stone:* Shockcrete Products Ltd. *Mosaic and terrazzo:* W. B. Simpson & Sons. *Lifts:* Hammond & Champness Ltd. *Sprinklers:* Matthew Hall & Co. *Pavement lights:* Luxfer Ltd. *Cement glaze:* Cement Glaze Ltd.

Telephone Building, Farringdon Street, London. *Architects:* Ministry of Works. *General contractor:* Tersons Ltd. *Sub-contractors: Bricks, floor and partition blocks:* London Brick Co. *Fletton bricks and hollow tile flooring blocks:* Sankey Ltd. *Lignacite partition blocks:* Lignacite Ltd. *Lifts:* Waygood-Otis Ltd. *Decorative ceramics:* Hathernware Ltd. *Bored pile holes for r.s.j.'s:* The Cementation Co. *Shop fitting work and glass entrance doors:* Brent Metal Works Ltd. *Main joinery of doors, door frames, borrowed lights, partitions and fittings:* John Sadd & Sons. *Roller shutter grilles:* Haskins. *Sliding and folding partitions:* Horsley Smith & Co. (Hayes) Ltd. *Ventilation installations:* Supervents Ltd. *Sprinkler installation:* The Atlas Sprinkler Co. *Stage lighting equipment:* W. S. Furse & Co. *Glazed partitions:* Metalform Ltd. *Demountable partitions:* Gyproc Products Ltd. *Bronze metal handrail:* The Luco Art Metal Co. *Purple and buff facing bricks:* Cape Building Products Ltd. *Paints:* Duresco Products Ltd. *Burwell facing bricks:* Burwell Brick Co. *Midhurst white bricks:* Midhurst Whites Ltd. *Stonework:* Bath & Portland Stone Firms Ltd. *Marble:* Nine Elms Stone Masonry Works. *Hardwood windows:* Rippers Ltd. *Aluminium windows and doors:* The Crittall Manufacturing Co. *Bored in situ piling:* Piling & Construction Co. *Terrazzo partitions, window cills and stairs finish:* Marriott & Price Ltd. *Fire resisting doors:* Durasteel Ltd. *Copper roofing:* Holloway Metal Roofs Ltd. *Acoustic wall and ceiling tiling:* Insulatall Services Ltd. *Lightweight concrete screeds to roofs:* Celcon Ltd. *Composition block flooring:* The Terradura Flooring Co. *Balustrades, railings and ladders:* Builders Iron & Zincwork Ltd. *Window cleaning gear:* Palmers Travelling Cradle & Scaffold Co. *Retractable jibs:* R. Smith (Horley) Ltd. *Mosaic and faience tiling:* W. B. Simpson & Sons.



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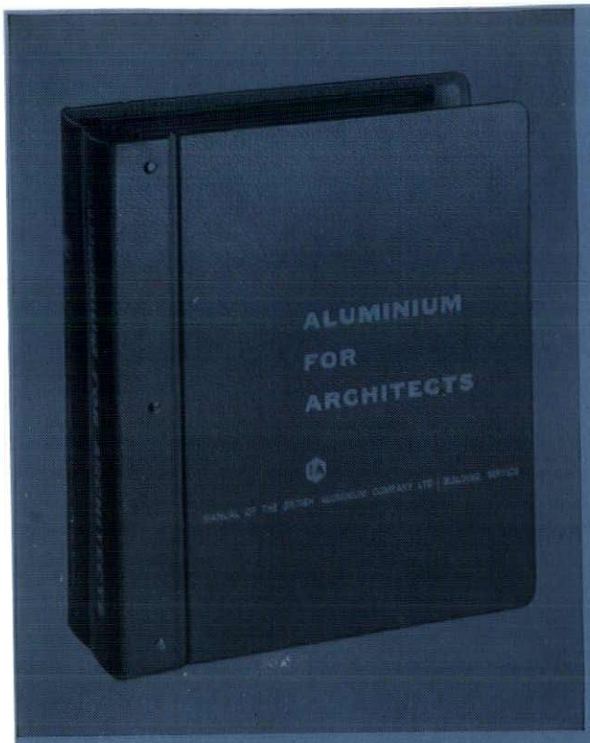
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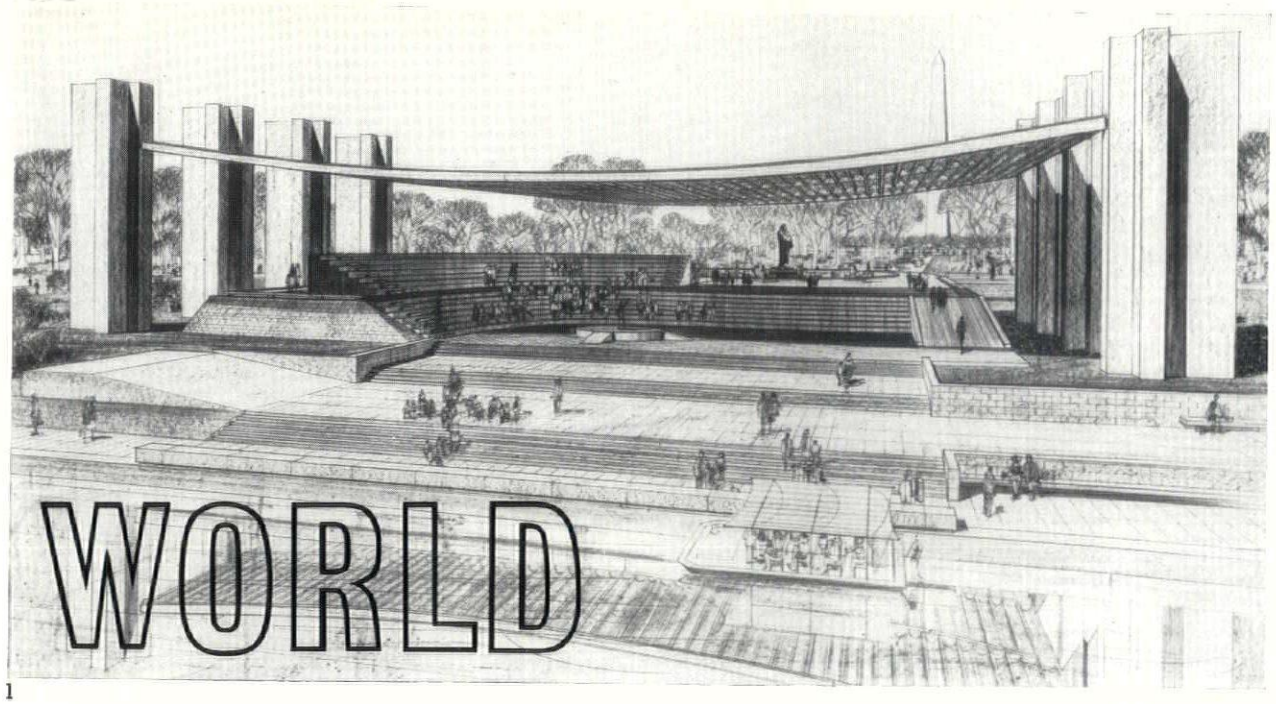
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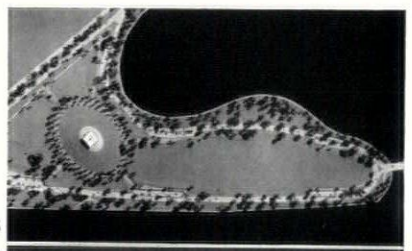
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1

IN MEMORIAM FDR

The competition for a monument to Franklin Delano Roosevelt had a working advantage over other similar competitions (such as the Unknown Political Prisoner) in that it had a definite site. But this particular site, between the Potomac and the Tidal Basin in Washington, DC, is subject to a number of contradictory pulls. Firstly, which should be the stronger presentation: toward the Basin or toward the river? Only one scheme, unplaced, by Ulrich Franzen, 1, oriented itself unequivocally toward the river, with the intention of making the river-bank the main point of ceremonial approach to the statue of the great President, which can be seen in the background. But Franzen's location of the statue calls attention to the second counterpull on the site—the possibility of honouring the lingering ghosts of L'Enfant's geometrical town-plan and the McMillan commission's proposal to revivify it, by fixing the fourth point of a symmetrical diamond based on the Washington and Lincoln Memorials. This the Franzen scheme does, 2, but the only other one to select a site on the neck



3



4

of the isthmus, leaving its head free, seems to have been that of Tasso Katselas, which is true on axis, 3, although its oversailing masses, 4, are a long way from the scholarly classicism of Washington's other presidential memorials.

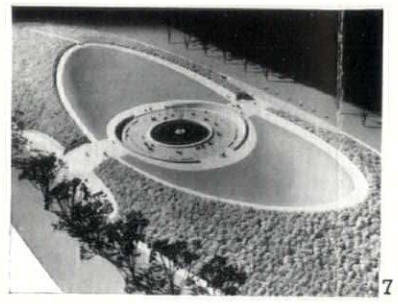
Most other competitors settled for the more obvious solution of location on the point and a major orientation towards the Tidal Basin. But having settled this much, nothing else was settled. The manner of setting up the competition and calling for entries from collaborative teams including sculptors and landscapists as well as architects, clearly opened up creative possibilities, even if those possibilities were somewhat restricted, as Sibyl Moholy claimed (*ARTS*, May/June, 1961) by the decision to make the architects the captains of the competing teams.

Nevertheless, this does seem to have led to a special care over the contribution of specialist designers, such as Tony Palladino's agonized re-appraisal of monumental lettering, 5, for the

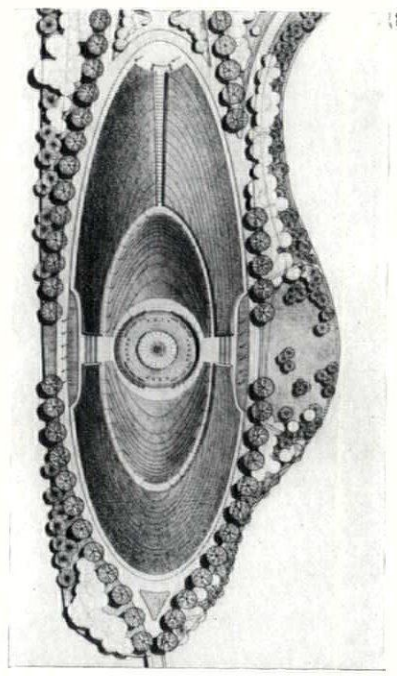


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Abraham Geller entry, a scheme which earned general, and deserved, praise for the way in which the cantilevering 'roofs' of its radiating 'Courts of the Four Freedoms,' 6, would make a pattern instantly apprehensible from the air—a telling point this, since the site is over-flown by practically one air-liner every sixty seconds. On the other hand, the landscapists' contributions were of very variable quality, especially where they were the main element of the design. This seems the more of a pity, not only because America is an earth-moving nation, but also because so many of the memorials that the Roosevelt epoch created for itself were masterpieces of the bull-dozer's art. Yet it must be admitted that Hideo Sasaki's concavo-convex mound is feeble in scale, 7,

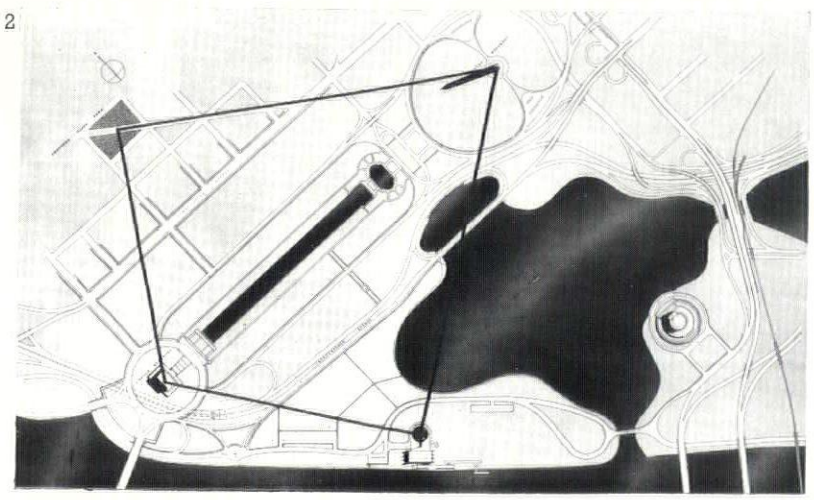


7



8

while its symbolic content as viewed from the air, 8, might be altogether unfortunate in the still Freud-shotten



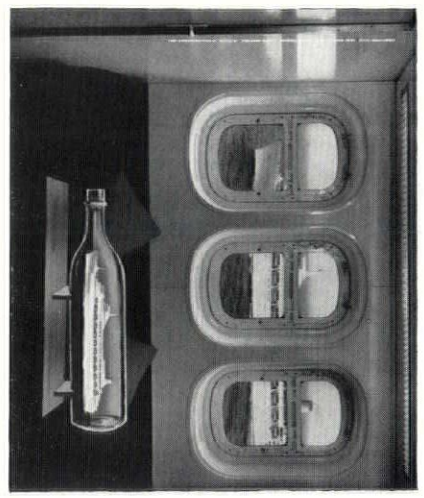
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6

ACKNOWLEDGMENTS

WORLD, pages 147–150: 3, 4, Jay-Bee Studio; 6, Claude Samton; 7, 9, James R. Dunlop; 11, 15, Louis Checkman; 16–20, *Ipari Epiteszeti Szemle*; 21, 22, *Werk*. INDUSTRIAL OFFICES AND LABORATORIES, HARSTON, CAMBRIDGESHIRE, pages 159–161: 1, Toomey Arphot; 2–7, Galwey Arphot. RESEARCH LABORATORIES AT PASSFIELD, HAMPSHIRE, pages 162–165: 1, Toomey Arphot; 2, 5–7, Galwey Arphot; 4, Colin Westwood. WATTS CHAPEL, pages 166–172: Galwey Arphot. STEEP HILL, LINCOLN, pages 176–180: 1–27, Nairn Arphot. ID, pages 181–193: 2, 8–10, 13–15, 19, 20, 24–30, 32, 33, John Maltby; 3, 7, 12, 16, 17, 22, Bryan Heseltine; 5, 6, 18, 21, 23, 31, 34, 35, Nicolas Breton. CONVERTING GAS LAMPS, pages 194–196: 2–4, Toomey Arphot. CURRENT ARCHITECTURE, pages 197–201: 6, Alfred Cracknell; 7–9, British Insulated Callender's Cables; 10–13, Toomey Arphot. MISCELLANY, pages 202–208: 1–4, James Mortimer; 5, 6, John R. Freeman; 7, 9, The Manor Studio; 8, University of Melbourne; 12, Portal Gallery. Sculpture, 1, Toomey Arphot; 2–4, Galwey Arphot. SKILL, pages 209–216, 1, Sydney Newbery. THE INDUSTRY, pages 218–220: 1, Victory Studios (Stratford); 2, Rauma Repola Oy.



The cover *shows SS* Canberra, *with its unmistakable silhouette, seen through its own cabin portholes (montage by Kenneth Browne). The* Oriana *(Orient Line) and the* Canberra *(P & O), two recent passenger liners that have set new standards for Britain as regards the design of ship interiors, are the subject of an article on pages* 155-158 *and an illustrated feature on pages* 181-193 *of this issue.*

THE ARCHITECTURAL REVIEW

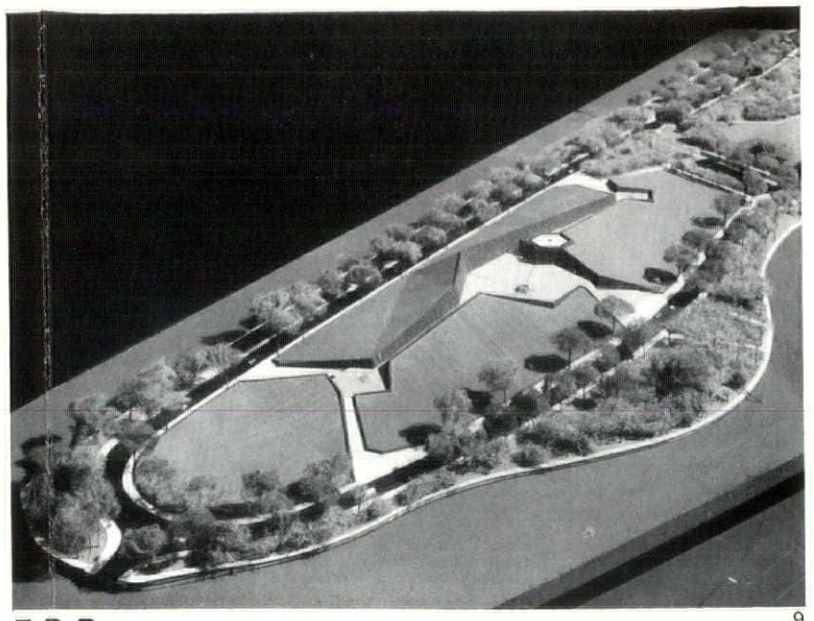
9-13 QUEEN ANNE'S GATE, WESTMINSTER, SW1 WHITEHALL 0611 FIVE SHILLINGS

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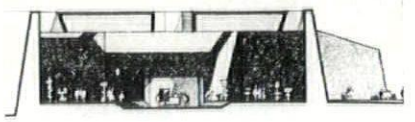
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9

FDR



10

state of the American mind. An altogether more promising solution was that of the Wehrer-Borkin group, whose tough minded terrain-sculpture, 9, was seen as the setting of an annual prize-giving in FDR's memory, with a pavilion to shelter the ceremony, 10, in the central court, and fountains in two subsidiary courtyards.

These zig-zag entrenchments will surely recall, to European eyes, that most influential of modern monuments, the *Fosse Ardeatine*, and the 'Ardeatine' theme is seen in a different aspect in the Rolf Myller Group's low-hanging slab, 11, with the effigy under a central skylight, Philip Johnson also focused attention on a central effigy, but the form of the canopy was to be tall and light, 12, more in the manner of the New Harmony shrine.

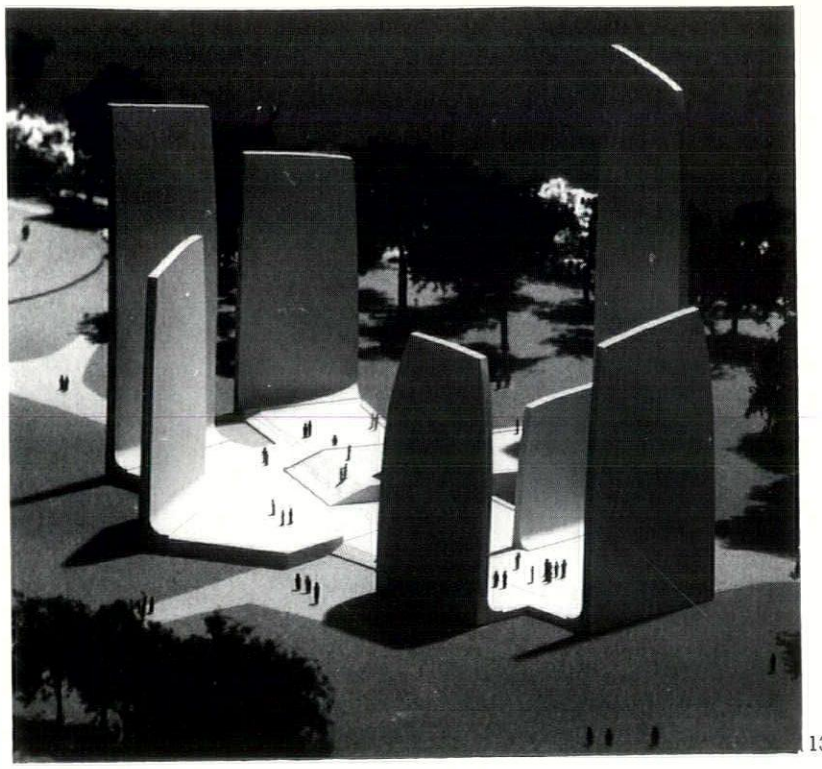
What of the winning design, 13, by the William F. Pederson Group? America's most current architectural catch-phrase came brilliantly into its own in the description of it quoted by Mrs. Moholy—'Instant Stonehenge'—which draws attention to both its strengths and weaknesses. Weak because the towering slabs are



11



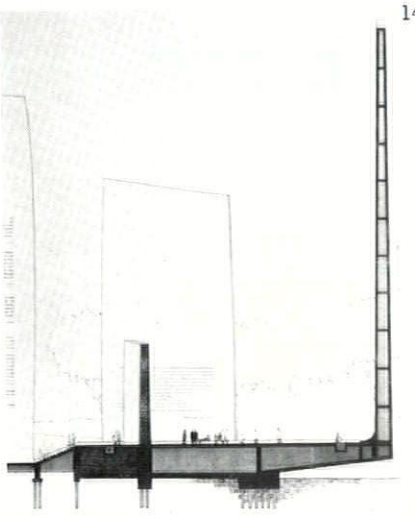
12



13

14

ersatz—the section, 14, reveals their built-up, non-slab structure and the way they are cantilevered from their footings; strength because the henge symbolism seems to work, particularly on this site and particularly as seen from the air, 15. Doubts have been expressed about the wisdom of entrusting FDR's brand of political speaking to permanent inscription on tablets of instant stone, and yet his non-rhetorical turn of phrase, such as 'But above all try something,' might well, over the years, acquire a certain runic laconism proper to a rather rude monument, even when his more sustained passages might not, in practice, stand the amount of neck-straining and eye-shading required to read something which, inevitably, will have to start higher up the slab.

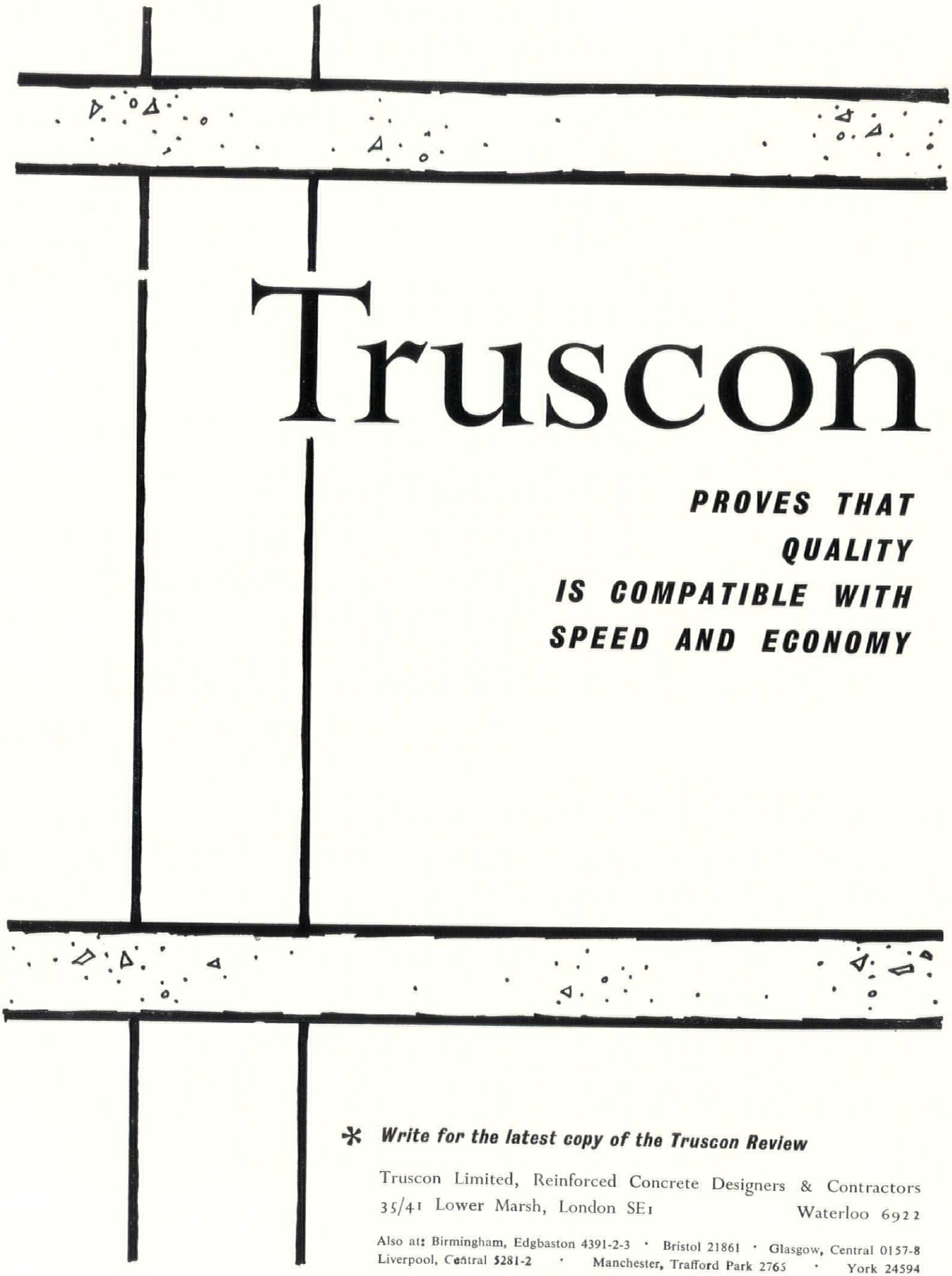




15

Casabella strikes back

For some time past the appearance of the special issue of *Casabella* devoted to English Architecture and Town-planning has been awaited with considerable curiosity. Now that it has appeared (250, 1961) certain interested parties will be disappointed that Ernesto Rogers has not availed himself of the opportunity to return the fire of those English critics who have attacked Italian architecture so vigorously of late, but it should be observed that Rogers's main intention was clearly to weigh up the English situation for the benefit of an *Italian* readership. Three of the main articles are therefore by English authors (Robert Furneaux-Jordan, the Smithsons, David Lewis) and the choice of buildings selected for illustration are such as the AR itself might have picked—the register of architects' names makes this clear enough: Holford, Gollins-Melvin-Ward, Spence, Architects' Co-Partnership, Chamberlin-Powell-Bon, Powell and Moya, Leslie Martin, Lasdun, Smithson, LCC, Stirling and Gowan, Manasseh, and the City Architect's Department, Sheffield. The New Towns are dis-



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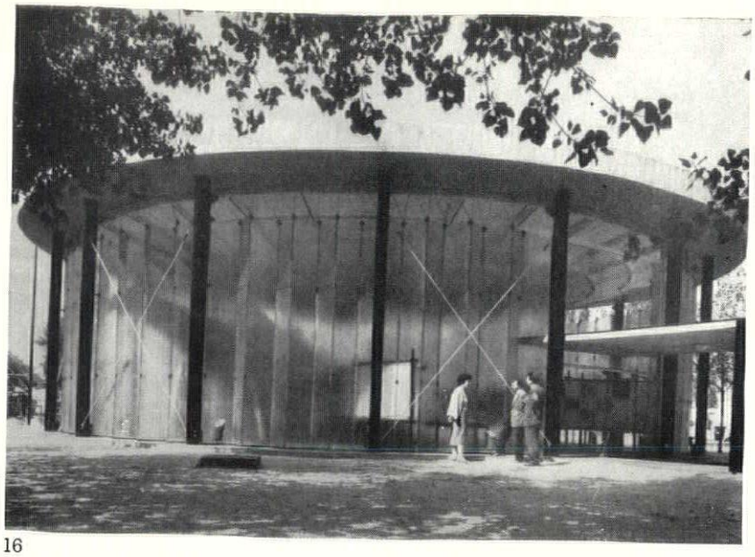
cussed, but Cumbernauld is unfortunately illustrated by a map that appears to antedate the recent traffic studies.

The two Italian articles come from Rogers himself, and from Aldo Rossi. Rogers, in one of those editorial first-essays that have established him as one of the great mandarins of European architecture, dwells on the long relationship between Britain and Italy (remembering, as the British do not, that it has not been a one-way process, that without Britain the *Risorgimento* might have been very different). Throughout his essay runs the theme of the flatness of English culture, in the bad sense—'they almost never succeed in becoming gay, except by way of the bottle'—and the good—**'the English architectural panorama looks more like a fruitful *altipiano* than a landscape of deep valleys and towering peaks.'** Proceeding from this he observes that 'the most original English contribution is **to accentuate the functional component of the phenomenon of architecture . . . its highest achievements are in the interior of the house (down to the details of the furniture) and in town planning. . . .'**

Nevertheless, he draws attention to criticism of the New Towns, which are notoriously a disappointment to Italians hypnotized by the apparent potentialities of British planning legislation, and Aldo Rossi resumes this theme, underlining the political content and primarily socialist dynamic behind that legislation, and drawing significantly on a left-wing observer of the British architectural and political scene whose views are unknown over here—Carlo Doglio, an occasional but brilliant contributor to the Olivetti-sponsored magazine *Communita*.

But Rossi also touches on another point of interest in Anglo-Italian architectural relations—the Team-X proposition that architecture should be conceived 'in terms of human association rather than functional organization.' This, he says, 'is what we are proposing here in Italy, though only at the level of a few speeches and a few suggestions.' At this, the English reader will probably enquire how it is that Quaroni's work at La Martella has been forgotten so early, work that has always been presented to the English as an example of town planning 'in terms of human association.' And here a mystery appears, for the English literature of the architecture of human association, scattered through student magazines and other ephemeridae of the post-war decade, is illustrated almost entirely by Italian instances (such as the Piazza di San Marco or the Galleria) and the English literature on Italy of the same period abounds in carefully noted and photographed instances of human association (usually in the Galleria or the Piazza di San Marco).

Since it is unlikely that Rossi (who must have read at least Kidder-Smith's *Italy Builds*, if nothing else of the period) can be ignorant of these manifestations, it appears that the phrase 'in terms of human association' has already taken on a somewhat different meaning in Italian usage to that current in Team-X, even before battle is fairly joined. *Veramente, é difficile intendersi.*



16

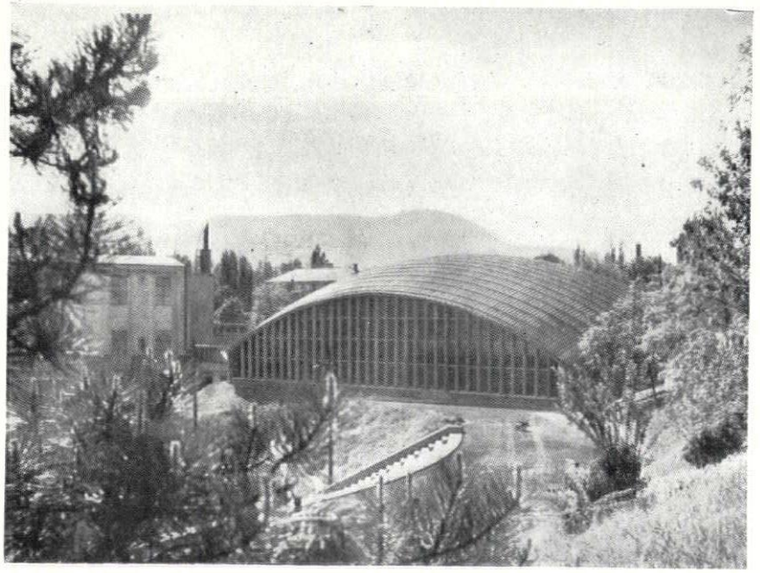
HUNGARY BUILDS

Historians of some future epoch can be left to decide what similarities existed beneath the outward show of differences between East and West in the Mid Twentieth-Century, but it would be fascinating to know here and now whether similar motivations lie behind similar architectural solutions, and what drives the Socialist Republics to use forms that, in the West, are associated with what Robin Boyd called 'The engineering of excitement.'

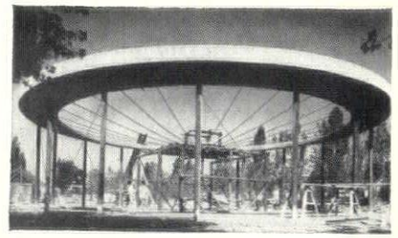
The Hungarian review *Ipari Epitesszeti Szemle* has recently (18, 1960) described and illustrated a number of structures serving a variety of mostly industrial functions, but including two that will look immediately familiar to Western eyes; one an exhibition pavilion with a suspended inverted saucer dome roof, 17, and a pleated glazed exterior, 16; the other a covered tennis court with spectator accommodation, 18, designed by Dr. Lajos Semsey. The date of this structure—1955—would give it something of a pioneering status anywhere in the world (for some reason it did not receive the publicity it deserved at the time of its completion) but the mode of erection adds considerably to its interest. The roof is a doubly-curved vault built up of light metal sections and carried by curved walls of solid brickwork at either end, the sides being glazed. This would not be very remarkable in a country with an advanced building technology . . . but let the English-language summary in IES tell the story: 'To maintain the exact geometrical form, to organize a building technology and working methods assuring a quick and first-class job, with minimal work and without using a scaffolding of 10,000 cubic metres, was a rather difficult task.' Among the devices employed to achieve this difficult task was that of building the lateral window arches flat on the ground, 19, and hoisting them into the vertical, 20, and it is generally clear that far from being a by-product of a copious building technology—as is sometimes alleged of Western vault-work—Dr. Semsey's vault is a product of sheer determination and applied ingenuity.

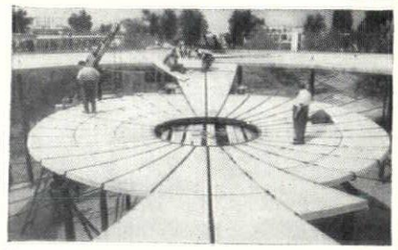


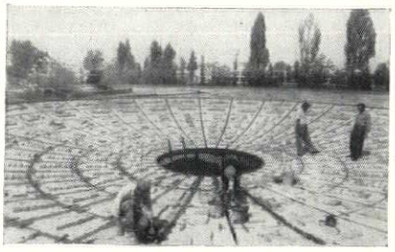
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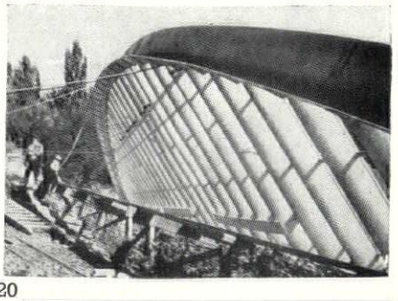
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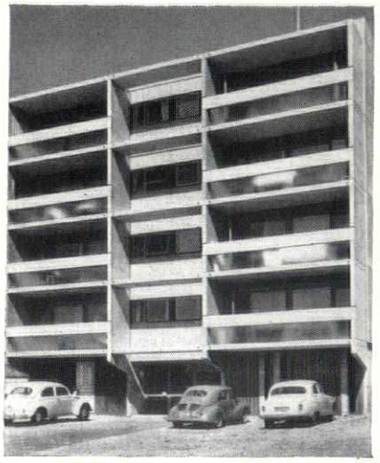
17



20

SIMPLE JOB SIMPLY DONE

The epithet 'modeste,' applied by *Werk* (5, 1961) to the rentals of a small block of flats at Villars-sur-Glâne, 21, might equally well have been applied to their detailed appearance, for rarely can so clearly post-Marseilles

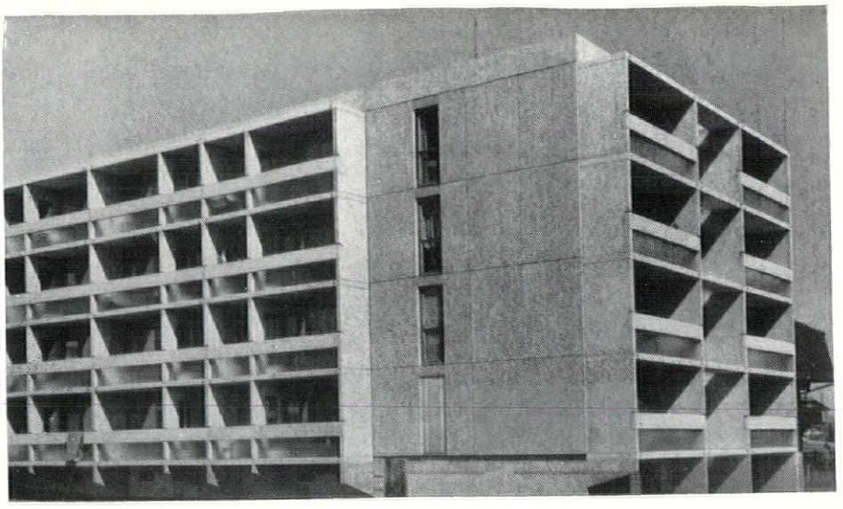


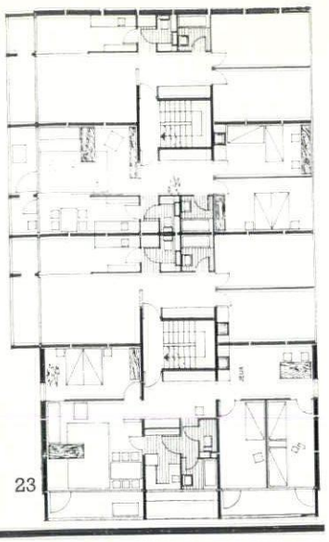
21

simple flats

an aesthetic, 22, have been used with such decent reserve and a complete absence of bravura. Compared with the abstinent elegance of these prefabricated façade elements, the equally Corbusian architecture of the LCC's work at Roehampton seems operatic as well as *brut*. The architects, Decoppel, Veuve and Aubry, seem to have achieved a Szigeti reading of a theme usually interpreted in more Oistrakh terms, and a similar independence within the frame of a given tradition is seen in the planning, in which the flats—true to the *Unité* theme—extend through the block from one façade to another, and have sliding walls to open out narrow spaces, 23, but are entered in pairs from centrally-located staircases.

22



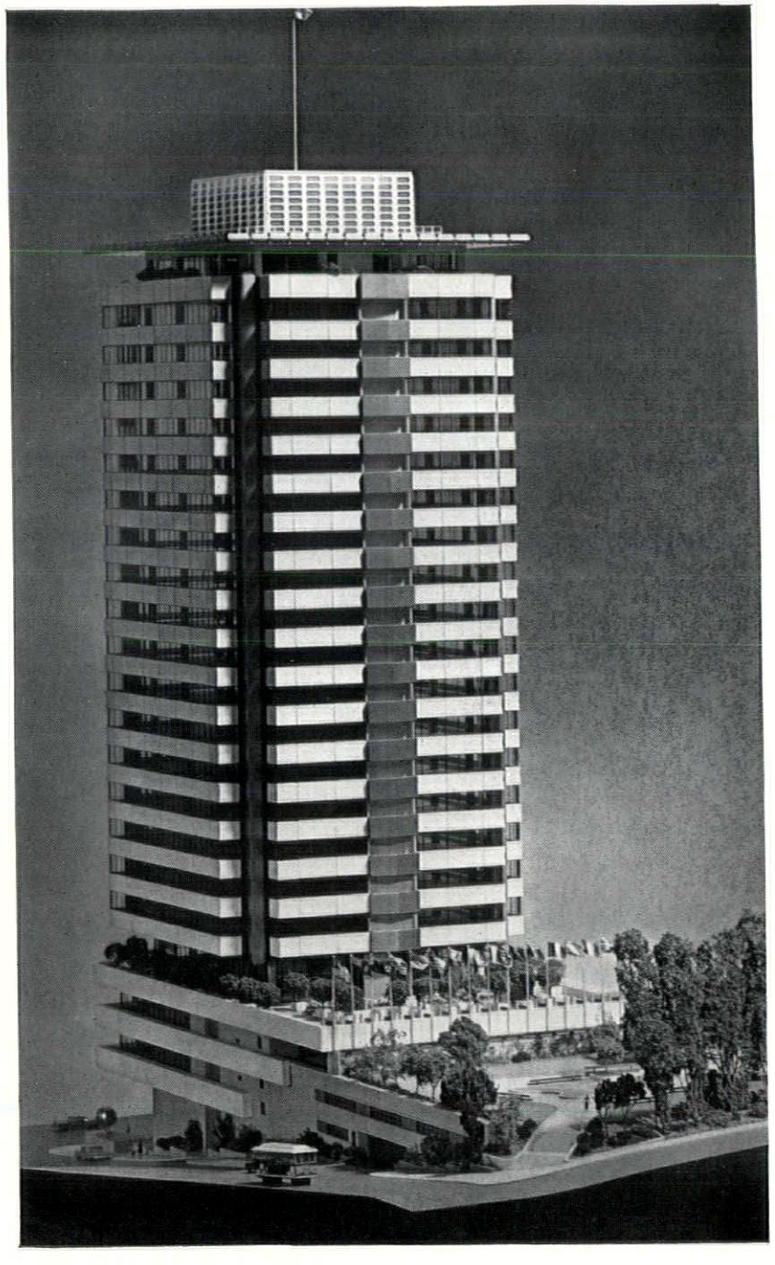


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INTERNATIONAL BUILDING

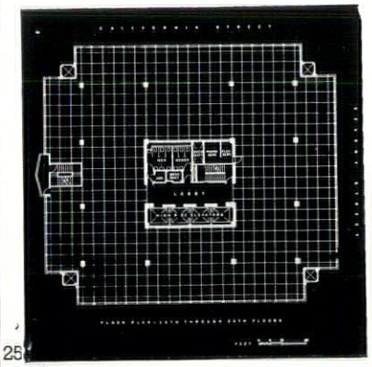
Californian office-tower

24

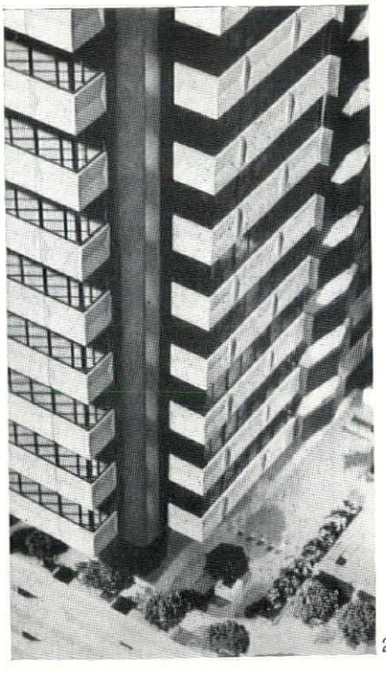


It is possible to integrate your services, or even to expose them, without making mock-heroic gestures out of them *à la* Kahn—the International Building, 24, in San Francisco shows how. Designed by Anshen and Allen, and due for occupation shortly after these words appear in print, it avoids deep, densely packed floor structures by moving some of the vertical service-runs back to the place where they were before curtain walling came in—on the perimeter of the plan. More precisely, they are in the corners of any typical tower floor, 25, cased in the gold-and-grey-clad ducts which can be seen in 26. In spite of their exterior location, they are not dominant visually, because the corners are deeply re-entrant, with some seven feet of floor cantilevering beyond the duct. The site and aspect of the tower also deserve comment—packed into one corner of a block bounded by steeply sloping streets, and largely occupied by a multi-storey car-park, it is assured of reasonably uncluttered views by virtue of the purchase, from the municipal authority, of the air-rights over the garage.

Given all this, the International Building will probably still hold the slightly puzzled gaze of a European viewer, who will feel something exotic or even out of period about it. Detailed examination will show what it is: the lower part, on California Street, when viewed in isolation, 27, evokes Schindler, and the whole tower, viewed in this kind of light, seems to express most of what was best in the middle and late tower projects of Frank Lloyd Wright without his more infuriating mannerisms. The whole project, indeed, reminds us that California is another culture, uninvolved architecturally with the Europe-dominated stylistic disputes of the East Coast school.

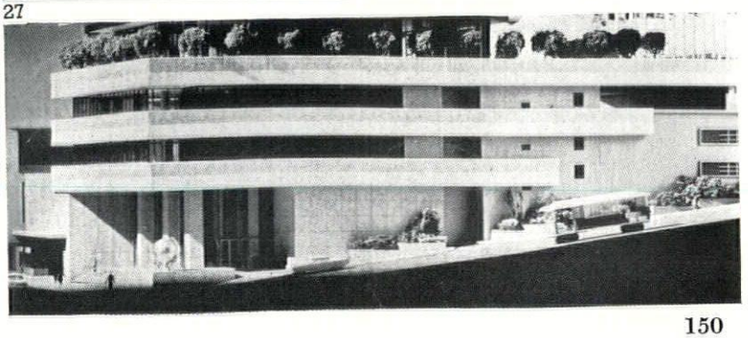


25



26

27



views and reviews

MARGINALIA

CHICAGO HERITAGE

Of thirty-eight buildings in Chicago recently designated as 'architectural landmarks,' two have already been demolished—the Garrick, by Adler and Sullivan, with its irreplaceable auditorium detailing, 1, and the Cable, by Holabird and Roche, notable for its unusually sensitive management of mullions and window openings, 2. In the same period of two years, the Republic, 3, also by Holabird and Roche, has joined them under the demolishers pick and—though it had not been designated—it is difficult to see how a city proud of its Chicago School could be prepared to spare a work of such quality.

As is now known even in Europe, the destruction of the Garrick produced a convulsion of feeling among thinking Chicagoans, and the preservation of its decorative detailing has become a community enterprise that employs many hands and many garages and back-yards. But at the same time, recognizing prevention to be better than cure, thinking Chicagoans were also inspired to set up the Chicago Heritage Committee to defend what remains of the patrimony of the Chicago School. Since many of these works are also part of the common patrimony of the world-wide Modern Movement, the Committee has launched an international appeal for assistance and moral support, and the illustrations of recently-demolished masterpieces shown here are taken from their first publication; a set of ten postcards showing the work of the Masters of the School. These cards, which may be obtained (at one dollar the set) from the Secretary of the Committee at PO Box 4513, Chicago 80, Illinois, also illustrate—one is relieved to note—buildings that still stand, including the Robie House, the Reliance, Unity Temple, the old Stock Exchange, the Auditorium, Carson-Pirie-Scott and the Monadnock, the latter recorded in what must be the first photograph, 4, to show its real appearance as seen by the Man in West Jackson Boulevard.

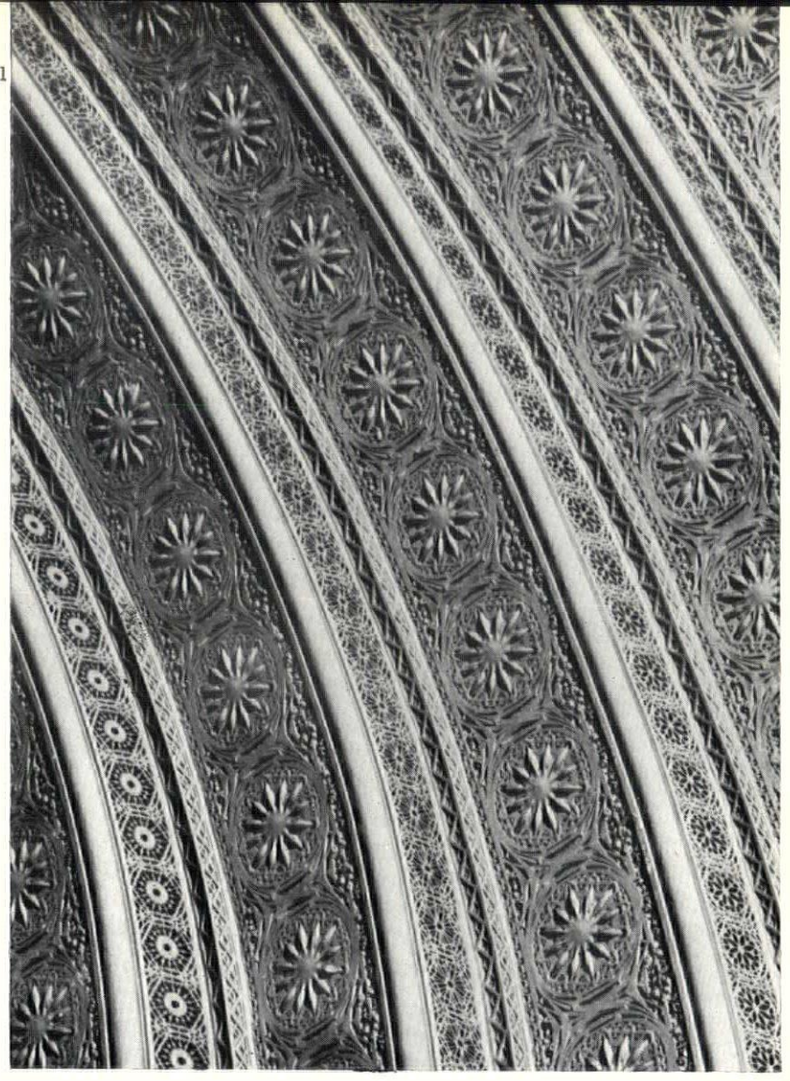
However, the fact that these buildings still stand to-day is no guarantee that they will still be standing in a year's time, though some of them are carefully maintained (and others are hamfistedly maintained, like the Robie House, but still maintained). With so many first class buildings in possible jeopardy, the Committee deserves all the support that can be mustered all over the world from those who—even without having visited Chicago—have felt the liberating influence of its architecture.

HISTORY AGAINST SMOKE

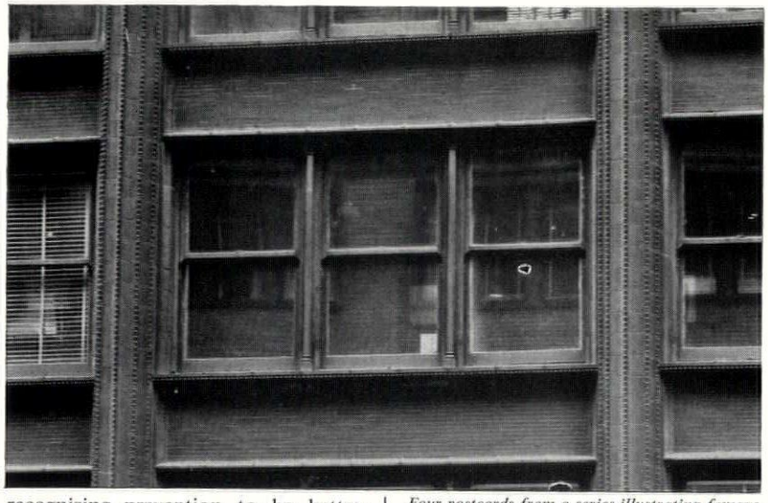
The father of smoke abatement, as of English silviculture, was John Evelyn, and his classic, basic *Fumifugium; or the Smoake of London Dissipated*, has just been re-issued to mark its tercentenary by the National Society for Clean Air.* Irrespective of its utility as history in the service of a good cause, *Fumifugium* is, in a minor way, a crucial document in the emergence of the 'Experimental Philosophy' of which Wren and Newton were the main ornaments. Evelyn is the first of the embattled consumers, at war with the maladies of an undisciplined technological and capitalist environment. But the intellectual armory that he musters against a

* 5s. in hard covers; 2s. 6d., paperback.

1

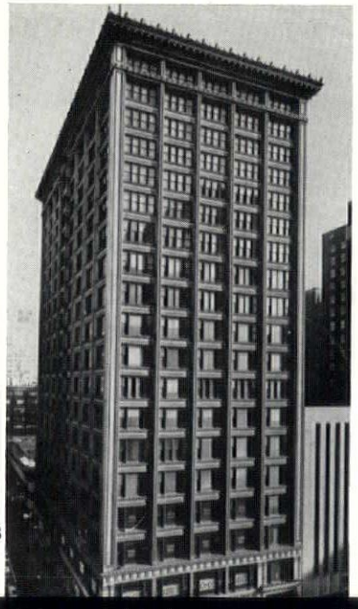


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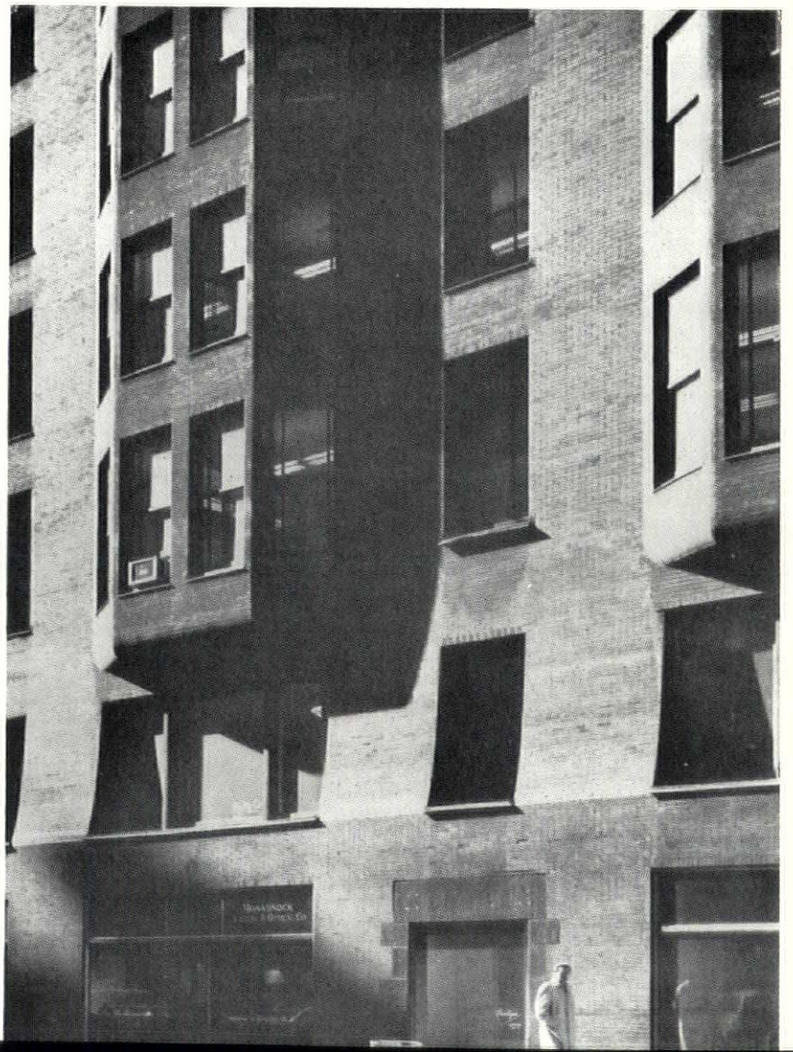


Four postcards from a series illustrating famous Chicago buildings: 1, detail of the auditorium of the Garrick. 2, window bay of the Cable Building. 3, the Republic. 4, the Monadnock.

3



4



problem that is still as modern as the statistics of pulmonary disease, or of land values in Los Angeles, is largely that of the classic authorities, the Hippocratic corpus and—inevitably—*Airs, Waters and Places*. Indeed, the new science, in so far as it was embodied in the Royal College of Physicians, was against him, asserting that coal-smoke was beneficial to some respiratory diseases.

But Evelyn, standing four-square on common sense and the niceties of human life, was not impressed. Coal-smoke visibly made men cough and sneeze and was in general 'an infernal nuisance'—a phrase which he coined and meant to be read literally. It corroded plate, tarnished silver, rotted cloth and yellowed pictures, then as now. His proposed cures are surprising—and commonsensical as far as the knowledge of the day permitted. He saw that he could not hope to forbid the burning of sea-coal, so he proposed that all industrial users—and in 1661 they were already numerous—should be banished from London to a point down-stream of Greenwich, and that large areas up-wind (south-west) of London should be planted with aromatic trees and crops to improve the air of the metropolitan area. Smokeless zones are beginning to effect his first proposal, and three-hundred years after its first utterance, the second begins to sound a little less 'unscientific' than some later followers of the experimental philosophy might have believed. Curiously enough, Evelyn does not suggest the use of deciduous trees as permanent air-filters, even though he observed how soot settled on their leaves, but his views on planting constitute for all that a surprising anticipation of modern ideas of microclimatic control.

CORRESPONDENCE

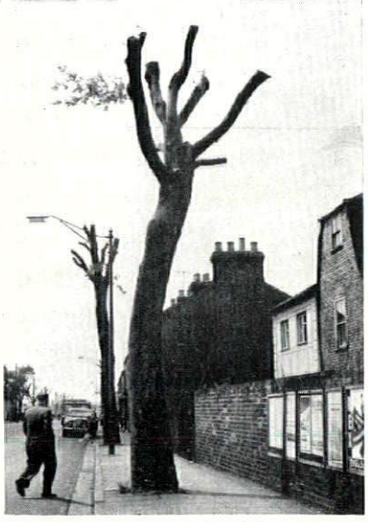
VANDALISM IN CAMBRIDGE

To the Editors.

SIRS,—I write to draw your readers' attention to the truly horrifying lopping of the plane trees on the Newmarket Road approach to Cambridge. As you probably know this is a particularly dreary entry into Cambridge, which until recently was made quite attractive by an avenue of mature plane trees. They have now been butchered. Though I am told the job was done by experts, it appears to me to be the crudest kind of amputation, and the result is painful to see. I hope some emphatic protests have been made, and will continue to be made.

Yours, etc.,
W. HARFORD THOMAS.

Oxford.



5, trees in Cambridge referred to in the letter from Mr. W. Harford Thomas. See also the frontispiece on page 154.

BOOK REVIEWS

GERMAN ACHIEVEMENT

PLANNEN UND BAUEN IN NEUEN DEUTSCHLAND. *Edited by the Bund deutscher Architeckten, Westdeutscher Verlag*, 1960.

The RIBA may be more powerful than the Bund Deutscher Architekten, but the German body certainly does more for publicity for its members than does ours. They first brought out a number of regional books, illustrating and describing the work of the architects in the area, and now they have assembled what they found worth publishing from anywhere in Western Germany and put it all into one massive volume of nearly 650 pages. I don't know how many illustrations there are, but certainly more than pages. The chapters deal with such topics as buildings for government, office buildings, schools, hospitals, swimming baths, etc., and so on to work of the government abroad, the Brussels Pavilion, Interbau and the plan for Berlin, and painting, sculpture, mosaic, stained glass, etc. in conjunction with buildings. There is much welcome stress on gardens and parks. Traffic problems are documented too, and the new fast approach roads to Berlin make London look thoroughly ridiculous. A section on pedestrian precincts and especially pedestrian ways through city centres also have something to teach us. The lesson from the sheer bulk of work done, the number of new public buildings, new big hospitals, new railway stations, on the other hand, it may not be advisable to learn. You need bombing first and a *Wirtschaftswunder* second to create the necessary conditions.

With the exception of a few curious private houses and a few more curious churches all is twentieth century style in this book. The Farmers' Union and the Bank of England are possible only in England. Private houses are the least interesting chapter, and, in any case, they seem to be—in contrast to America, the Commonwealth and Italy—as much of a rarity as they are here. In all other fields the standard displayed is high, especially in that anonymous version of the pre-Nazi style which is the almost exclusive idiom of office buildings, hospitals, schools, etc. The detailing seems to be crisper and more elegant than we could muster, if we had to put before the public some eight-hundred or more illustrations. In large-scale jobs England seems to be more interested in the grouping of blocks of various height and bulk, though the German book also can show some five or six impressive and attractive compositions, e.g. the Ministry of Finance at Bonn, and the headquarters of the Karlsruhe Life Insurance.

Laymen always blame the style of the twentieth century for being international. Turn over the pages of this book, and you will in one place come up against just one building designed by Baudouin. It gives you quite a jerk. On the other hand, if you really try to see what is German in the majority of the buildings, that is not so easy. Negatively, there is little curtain-walling (just as well) and no influence from Le Corbusier's present style at all—in spite of his Berlin Unité. Positively, one notices a different kind of window-glazing which recurs, more stone-facing of course and a few more similarly minor features. Of major facts the most noticeable is perhaps that, if we can trust the book, there seem to be few housing estates on a really large scale and with a unified plan. On the layout of one of these, the Siemens estate in Munich, unfortunately the book gives no information on area, number of dwellings, etc.

I just said: if you can trust the book. It seems so comprehensive that one is ready to regard it as a complete survey of what matters. What shakes this belief is the fact that Professor Eiermann appears in the book exclusively for his Brussels Pavilion and that in the chapter on industrial buildings he is not mentioned at all. Are there other such gaps? How can one know over here?

Stylistically, there runs a break through the book, between the majority of rational designs and a minority of anti-rational ones. The latter are exclusively theatres, concert halls, cinemas and churches. The weirdest are the Cologne Opera House and the Stuttgart Liederhalle, both known to readers of the REVIEW (August-September 1959). The architects of the Liederhalle, Rolf Gutbrod and Alfred Abel, print a curious and very German apology for their design. They say that they tried 'to apply musical laws to the shaping of concert halls.' The asymmetry of the place is intended to express the need for relaxation 'which in the widest sense is always musical.' The rooms are supposed to be in contrapuntal relation to each other—'As one cannot leave out one movement of a symphony, so it is with the rooms of the Liederhalle. You could not add anything without disturbing its accords.' 'We tried,' so they sum up, 'to give people instruments, not just envelopes, beautiful instruments, we hope, as servants of good uses.' Fancy any English architect expressing himself like that.

As apologies for churches this kind of mysticism has quite a tradition in modern Germany. Churches in the BDA book come in all manner of styles, many interesting, a few very moving indeed. Among the architects are the familiar names of Dominikus Böhm and Rudolf Schwarz. Other names are equally familiar from pre-Nazi days: Bartning, Scharoun, Riephahn, Luckhardt, for example. In addition there are of course all the new names, Hentrich and Petschnigg and Sepp Ruf probably coming out top. There are also unknown names which ought to be known—especially F. W. Kramer and Dieter Oesterlen.

I have few criticisms. More plans would have been an additional asset. Dates also would have been useful. The period covered is, after all, about twelve years. Finally English captions: they exist, but not consistently, and English summaries of the text parts might have been provided too. The introductory texts are not consistent. Some chapters have none, others are detailed and extremely informative. The English of the captions is good, with a few exceptions which are welcome merriment in an otherwise very serious book. The mortuary, for instance, is here a dead-house; and why not?

Nikolaus Pevsner

INTERNATIONAL SCHOOLS

SCHOLE. *Heopli. Milan.*

Despite claims in the Introduction—formative influence of good design on the young and the like—this book reflects the descent of school architecture from the prestige of the thirties to the workaday level it is now at. Here in England a school design is seldom news and only the practised eye can distinguish between a good and a bad plan. Out of nearly seventy projects illustrated, five are English; two of these are far the best schools, as against university buildings, in the book—Moro's Fairlawn and Chamberlin, Powell and Bon's Bousfield. Of the remainder Warnecke's well-known design of an elementary school, 'Mira Vista' in California, is the oddest and most interesting, forcing an idea to the limit; but the scale looks rather doubtful.

The projects are arranged in the order of nursery and elementary schools, secondary schools and institutions, university buildings. Italian schools, outnumbering the others in the first two groups, are far from impressive, perhaps due to very mean budgets, but also to the frequent choice of polygonal classroom—pavilion-type—plans, on which are placed tiled roofs. It may well be that honourable intentions, of fitting in well with the locality and of gaining richness from simple and cheap materials, are unphotogenic, but this can hardly account for the grim, non-simpatico, look of the bigger buildings, e.g. the Notre Dame International School in Rome. Indeed, it is a great relief to turn on from these to the gentler designs of the Scandinavians, Swiss, Finns and Americans. Except for a prefab classroom at Villejuif the French are omitted. Looking for distinguishing labels, good English work of to-day retains our eighteenth-century characteristic of blandness; the Swiss are correct, the Danes quietly romantic, the Finns retiring, perhaps. American schools shown here give the odd impression of being still English-provincial.

The considerable space given to university buildings—surely a different category—could easily have been filled by more schools. Perhaps the editors thought this too dull or would have been compelled to leave South America mostly out. Although the last two projects illustrate parts of Saarinen's Drake University and Mies van der Rohe's Illinois, the Paraguayan Experimental School, by Reidy, and the University Cities of Caracas and Mexico provide greater vitality and

sparkle, as exhilarating here as (I hope) in the reality of their surroundings and climate. Some of the illustrations seem familiar, others new. Whether one likes the buildings or not, here is the confident vitality of Picasso at the best and the jolliest of his middle period: image making, bursting with new forms and the enjoyment of power in their execution. Such a refreshingly positive attitude cannot last for long—nor the cash to back such formally extravagant building—but the editors have done a kindness in reminding us that it still exists.

James Cubitt

ST. JAMES'S ITINERARY

SURVEY OF LONDON. *(F. H. W. Sheppard, General Editor), Vols. xxix and xxx, The Parish of St. James Westminster, Part One, South of Piccadilly. Athlone Press for the London County Council, 1960 (646pp. + 277 plates + 86 text figs. + 2 colour plates + separate plan pocket), 8 guineas the set.*

This pair of volumes celebrating the Survey's first sixty years is a gold mine—a Fort Knox if that is still an unshaken simile—and quite unmiserly in its increased humanity of style and choice of supporting material.

The once-rural area of St. James's, which had a patron saint six centuries before it had a parish church, did not 'just grow' like Topsy and Whitehall. The core of it was developed, or enveloped, by that seventeenth-century phenomenon of planning which, in the six decades between Inigo Jones in Covent Garden and Wren's speculation in the Barbican, produced the first eight London squares. And St. James's was the most aristocratic of them all, the texture of its history the richest—what a palimpsest, in fact.

We can trace the permutations around the square, down St. James's Street, and along Pall Mall with street views *à la* Tallis, helpfully provided in the accompanying 'plan pocket,' spread out—the kitchen table is recommended. The square itself has had almost an ABC of London architects: Adam, Brettingham, Cockerell, Cubitt, Flitcroft, Lutyens, Soane, Stuart, perhaps Hawksmoor, perhaps Edward Shepherd (interiors at No. 4 could be compared with his Boreham House in Essex for Benjamin Hoare), and a previously unknown John Field (at No. 6) unearthed from papers at Ickworth. Pall Mall has been pell-mell with curiosities such as the Shakespeare Gallery and Schomberg House, with past glories such as Soane's Buckingham House and its variation on Kent's staircase in Berkeley Square, and with the private glories of the great Clubs. Which, these last, a number of us will never see in any other form than this. Other riches in the parish include Spencer House on Green Park, Wren's church in Piccadilly, and the Haymarket Opera House with its complicated history. Devotees of Miss Vivian Leigh's favourite theatre will find its obituary here.

The poignant thing about this series, indeed, is that so much of it consists of obituaries. But some of London's most elegant shops are very much alive and here are histories of the premises of Berry's, Lock's, Christie's, Hatchard's, and Fortnum and Mason's. Emberton's pioneer Simpson's is also in, and appreciated. Lasdun's flats on Green Park were completed too late to be included, unfortunately; a more typical contribution by our own age to the area, that faceless pile in Pall Mall, is tactfully undescribed.

The side streets are not neglected: a walk along Jermyn Street, or down Crown Passage, or on the site of Lord St. Albans's market will now afford more overtones than ever. And these will be the correct overtones, no olde-guide-booke romancing but based first on leases and ratebooks, then on careful and loving accumulation of all that has been truthfully said and drawn and done about these pieces of land.

Whichever political party may, according to their posters, 'care' more about London, in this enduring work of recording London the LCC itself cares effectively indeed.

Priscilla Metcalf

LOCAL GOVERNMENT BUILDING

BUILDING BY LOCAL AUTHORITIES. *By Elizabeth Layton. The Report of an Inquiry by the Royal Institute of Public Administration. Allen and Unwin.* 40*s.*

Local government in England and Wales has a delusive appearance of system—complicated, no doubt, but nevertheless organized, articulated system. Several authors have purported to describe its structure and operation in quite short books. In practice its workings are almost infinitely various. Most disputes about how it could be made to work better (even — indeed especially —disputes among people who have spent a lifetime in its service) arise because the disputants are generalizing from different experience, without realizing how very different such experience can be.

By the same token, when a researcher who has closely studied the existing methods and forms of organization used by 65 assorted housing and school-building authorities does find it possible to state a generalized finding, that finding commands respect; and conversely, when such an author concludes that no valid generalization can be made on some point, that conclusion also carries weight. When the researcher and author in question is as thorough, disinterested, clear-headed and conscientious as Miss Layton, any general pronouncement on these matters that may thereafter be made by anybody—and particularly any interested body—may reasonably be dismissed as unworthy of attention if it does not take account of her findings, and either accord with them or back its dissent with an equal range and diversity of evidence.

That being said, the best use that can be made of the space here remaining is to quote those of Miss Layton's conclusions which most directly bear on the relations between architects and their municipal employers or clients.

'Part of the failure to prepare co-ordinated long-term programmes . . . is caused by the centrifugal attitudes of committees and the sharply departmentalized authority of chief officers. . . . It is recommended that all authorities should, if they have not already done so, arrange for the Architect or Engineer to be responsible to a particular committee for the operation of the building services in his charge. In this way he can turn to the chairman for advice or support if committees press their demands too hard.

'If the size of the authority and its building programmes justify it, there are advantages in separating the architectural from the engineering services and in appointing a Chief Architect. By this means more able architects and better junior staff are likely to be recruited. Such a team may be able to bring about improvements in the quality of the architectural work and in cost planning and research which could far outweigh the dis-economies due to having two departments. Authorities are urged to consider the setting up of separate Architect's departments under a Chief Architect if the volume of the architectural work would justify such an arrangement.

'There are certainly some advantages in combining responsibility for design with responsibility for maintenance. But there are also differences of approach to the technical problems of maintenance and the human problems of tenants. It is not necessarily in the best interests of the tenants to merge the functions of housing management with architectural design under a Director of Housing, who is an architect. Housing management and architectural design are different functions and there are merits in keeping them separate.

'Many of the criticisms of private architects by local authorities stem from too compressed a time-table. It is recommended that authorities should plan their long-term staff requirements for architects in such a way that more of the work to be done by private architects is determined well ahead. . . . Emergencies . . . should be exceptional.' (But) 'the fault lies partly with those private architects who are unbusinesslike and who have done the reputation of their profession a disservice. . . . To get the best results the private architect should be given adequate time to prepare his plans; clear instructions on procedure and the administrative arrangements; a cost target; a clear brief, which gives the council's essential requirements but is flexible enough for the architect to develop his own ideas; direct access to the committee to explain his plans. . . . It is recommended that large authorities should regularly give a proportion of their work to private architects, and that smaller authorities should commission them from time to time to provide the stimulus of fresh ideas.

'It is . . . important that ways should be found to make the experience of local authorities available to the development groups. . . . In its own field the Consortium (CLASP) is as great a step forward as the Ministry of Education's development group has been. . . . An extension of this form of joint action would bring financial and technical benefits which are out of the reach of local authorities singly.

'To design buildings efficiently the planning and control of costs from the outset of the scheme are essential. This involves the fixing of a ceiling or target cost when the architects are first instructed, and the systematic control of costs throughout the period of design. . . . Such work involves close collaboration between architects, engineers, surveyors and other experts. It is recommended that local authorities should do all they can to encourage it.'

It is on this slightly pious note that the book ends. It is, of course, no criticism of such a book to complain that the author has deliberately confined her suggestions for improvement to what is possible within the framework of existing forms of local authority. But one puts down her book with the fervent hope that she will now write another, telling us what changes in that framework (including the committee system) are suggested by her unrivalled knowledge of the limited scope for improvement it allows.

Derek Senior

EARTH-BOUND ARCHITECTURE

THE FAITHFUL THINKER. *Edited by A. C. Harwood. Hodder & Stoughton.* 21*s.*

The centenary volume in English on Rudolf Steiner consists of a number of essays ranging from the Cosmic Christ to mongol children—the term used in the medical sense. One essay deals with architecture. It is by Kenneth Bayes of the Design Research Unit, an architect himself and the designer of a school at East Grinstead which is frankly modelled on the master's style.

Steiner as an architect must always be an interesting theme; for his must be the only case in history of a man both creating a religion and designing the sanctuary of the religion himself. With this aspect of the Goetheanum Mr. Bayes deals only in passing—especially the interpretation of Steiner's Goethean principle of the metamorphosis of form as illustrated by the capitals of the first Goetheanum and certain other carved details of the same building. This first temple was built in 1913-20. It was of wood and burnt down on New Year's night 1922-23. The replacement which is still standing is of 1923-28. It is of concrete and, according to Mr. Bayes, Steiner only prepared a rough clay model for it. The relation of the two buildings is strange. Mr. Bayes finds the plan of the first of lovely shape—the second 'of little beauty.' Externally both buildings are fascinating to the historian.

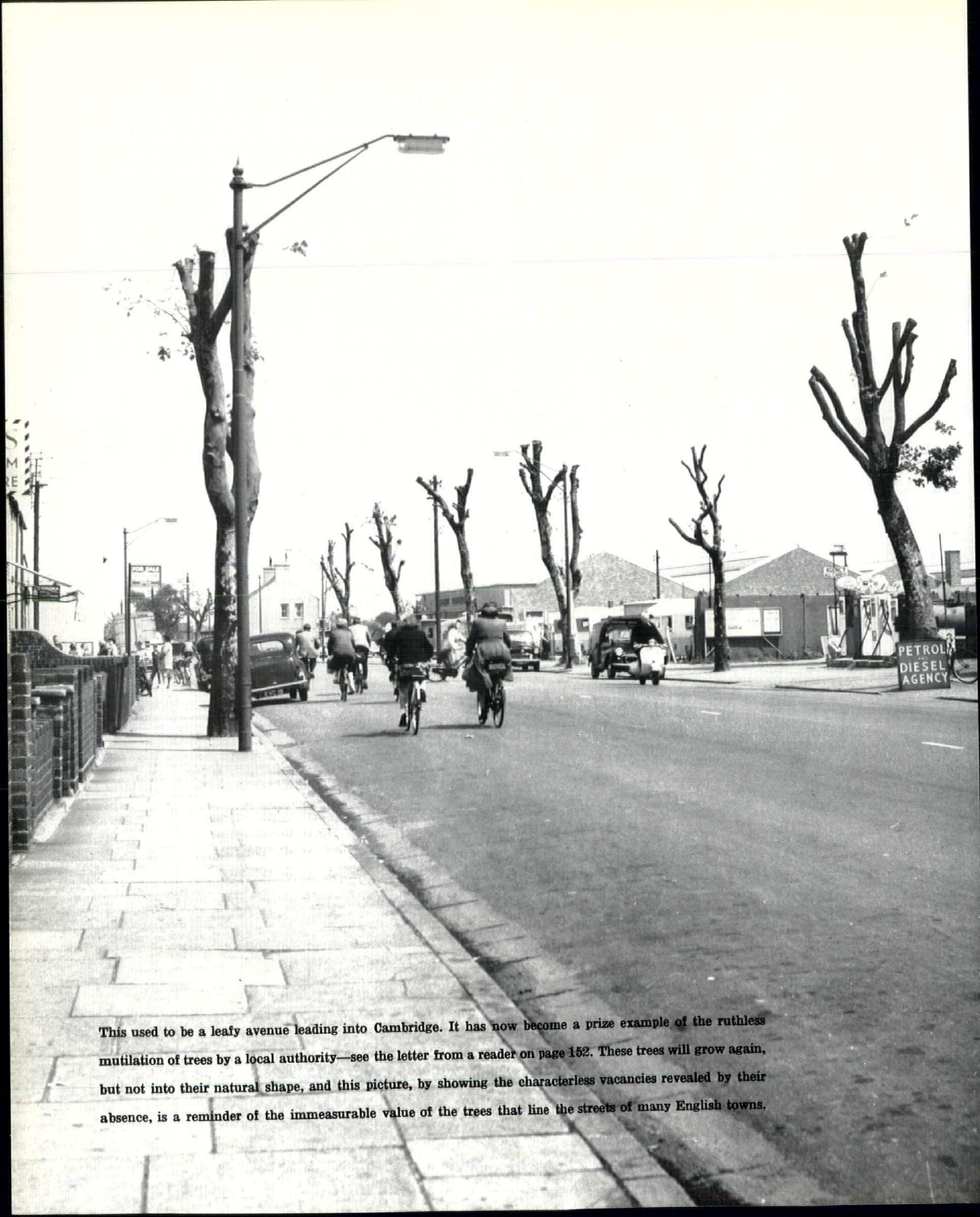
What can Steiner have seen in 1913 to stimulate the first, what in 1923 to stimulate the second? For the first, one is led to look in the van de Velde direction, for the second to German Expressionism. The second is much more puzzling. But Mr. Bayes is not concerned with history but with the present day. He sees the history of twentieth-century architecture as two streams, one of buildings, 'neat, tidy, straightforward and logical,' but also 'mechanistic, inhuman, with the elegance of a precision machine,' the other 'modelled' and designed 'for the love of form.' Gaudí belongs to the latter and also the Einstein Tower and Idlewild and Candela and the Sydney Opera House. Steiner finds his place thus without effort, and Mr. Bayes's chief theme in his essay is to compare recent sculptural architecture with the Goetheanum.

According to Steiner man belongs to the earth and at the same time to the angels. Art expresses this human state and architecture, being patently earth-bound, especially. So Mr. Bayes pronounces against pilotis and against buildings that look as if they might take off any moment. The argument does not seem quite logical. The angelic sphere is space and an active space, i.e. a space acting on the building. It is a stroke of genius on the part of Mr. Bayes to demonstrate this difficult point by printing Christian Morgenstern's immortal poem *The Fence* in R. F. C. Hull's translation. (The poem was published in 1905.)

There was a fence with spaces you
Could look through if you wanted to.
An architect who saw this thing
Stood there one summer evening,
Took out the spaces with great care
And built a castle in the air.
The fence was utterly dumbfounded:
Each post stood there with nothing
round it.
A sight most terrible to see
(They charged it with indecency).
The architect then ran away
To Afric- or Americ-ay.

While this regard for space, formulated by Morgenstern in the Max and Moritz rhythm, has become a commonplace of modern architecture, Mr. Bayes rightly emphasizes that only few have understood it as external, universal space eating into the solidity of form. Of the other principal architectural criterion of Steiner, the criterion of metamorphosis of form, even less use has been made. In the first Goetheanum it meant rather primitively that the seven major capitals were a sequence in which the next always evolved from the preceding. Mr. Bayes now stipulates that this criterion could be applied to the elements of a building in a much more general way and that by combining formal unity with visible evolution of one expression of this unity out of a preceding one, time might be made visible in space and thus architecture become frozen music indeed.

Nikolaus Pevsner



This used to be a leafy avenue leading into Cambridge. It has now become a prize example of the ruthless mutilation of trees by a local authority—see the letter from a reader on page 152. These trees will grow again, but not into their natural shape, and this picture, by showing the characterless vacancies revealed by their absence, is a reminder of the immeasurable value of the trees that line the streets of many English towns.

Stephen Garrett

AMID-SHIPS

The statement by Lord Brocklebank, chairman of Cunard, that he would prefer the proposed new Queen liner to have 'a Georgian type interior', will have deepened the general apprehension felt when the Government announced their intended multi-million pound loan for her construction. But against Cunard's bad reputation in the field of interior design can now be set two new British ships that show how well we can do. The Oriana *and the* Canberra, *which are illustrated on pages* 181-193, *are object lessons in the contribution that sensible ship-owners, and the good designers they employ, can make. The way in which they were designed is discussed in the article by Stephen Garrett which begins below, and he also adduces certain lessons from their design, which there is still time for Cunard to learn.*

Apart from problems of sheer size, the requirements of the Ministry of Transport and of Lloyd's, the nuances of status-grading of the crew's quarters, the allocation of space between cabins, public areas and services—which were not directly the concern of the interior designers of *Oriana* and *Canberra*—there still remained a great range of problems which they, like any other shop designers, were required to handle, and which both ships have in common.

Both are for use in hot climates for most of their voyaging time, and their interiors must reflect this both functionally and visually. But both will also spend some time in the Bay of Biscay and points North in the course of their normal service, which produces an entirely different set of requirements. Both will be used by very varied passengers—robust and athletic, quiet and relaxed, active emigrant families with children travelling tourist, retired couples travelling first class, with the varied eating and drinking habits that must be expected on trips

that start from Southampton and finish up at San Francisco, taking in Africa, Asia, Australasia and Oceania *en route*.

The interior designer of a ship is not merely asked to design, as it were, an hotel that can be adapted to differing clientele and climate; his structure is in motion continuously from the day it is launched to the day it is scrapped and is never quite still even in dock. Furniture and fittings must be capable of taking reversals of stress such as are never met on land, securings and fixings must be of another order of strength, large areas of glass are threatened not only by structural movement but also by sliding or falling bodies (including human ones), a harmless corner or angle on land can become a lethal cutting edge at sea, and the aerodynamics of the superstructure in a brisk breeze can make areas of deck uninhabitable.

All this, it should be remembered, is over and above the main problem that architects generally recognize in this field, that of reaching a working arrangement with the naval architect, his team and his methods, and the one imperative that the more progressive architects, at least, now generally recognize, that of creating a ship-like character. Neither the problem nor the imperative is quite such a straightforward affair as has been supposed in the past, as will be seen from the detailed history of the design of each ship.

Work on *Oriana* and *Canberra* was initiated independently, the two lines (P & O and Orient) being fused into the largest single shipping company in the world only after the boats were launched, though the chairmen of the two companies were brothers. *Oriana* was commissioned for the Orient Line by Sir Colin Anderson in 1956, both Sir Colin and the Orient Line having already a solid reputation for the encouragement of progressive design. *Canberra* was commissioned, in the same year, by Sir Donald Anderson for P & O. The boats are thus of the same generation, intended for similar service, faced by similar economic problems in operation, and of about the same tonnage and carrying capacity—the *Oriana* is of 40,000 tons and carries 2,134 passengers, the *Canberra*, at 45,270 tons, carries 2,238—and comparisons can therefore be made that are not normally possible.

Oriana was already somewhat advanced when Sir Colin Anderson called in Design Research Unit (DRU) to co-ordinate the interior design. This particular office had no previous ship experience, but is the biggest design office outside the USA, is efficient and capable of co-ordinating the work of other designers, and the reputation of its work needs no further advertisement here. Having no previous experience of ship work, it was arranged for members of the office, headed by Misha Black, to fly to Naples and return to England on the *Orsova* to get first-hand experience of an Orient Line boat in service. The elaborate and careful sign-posting to prevent passengers on the *Oriana* getting lost is only one example of the fruits of the lessons learned on this voyage.

The case of the *Canberra* is different in many details. Sir Hugh Casson's office were called on by Sir Donald Anderson at a much earlier stage in the design process, but were paired with McInnes Gardner and Partners, of Glasgow, perhaps the most experienced office in Britain in this class of work. In practice, however, McInnes Gardner were chiefly responsible for technical and operational matters, and were often bypassed in the detail design. Although Sir Hugh's office had only a small amount of ship experience, the partners most actively concerned had between them, at some time, either visited or travelled on most of the major liners of the post-war years.

In practice also DRU, while co-ordinating the overall design, designed the major public areas of *Oriana* (which was more than the client had expected of them), in collaboration with Brian O'Rorke and other specialists as required, while the design of the cabins was in the hands of R. D. Russell and Partners, who had already been retained for this purpose. Ward and Austin were called in for additional assistance on the public areas. Entering the process at a fairly late stage DRU were unable to effect many conspicuous changes in the basic structural design, apart from such matters as the moving of doors to different positions in partitions.

Sir Hugh Casson's office divided the work differently, establishing a sub-office under Timothy Rendle which dealt almost exclusively with the *Canberra*. In addition to overall co-ordination, this office was responsible for main and first class public areas, the tourist class being handed over to John Wright, while the cabins, including the crew's, were the responsibility of Barbara Oakley who had worked for P & O in this capacity before. However, there is a modification to this last statement which arises precisely from the earlier relative date at which the co-ordinating designers were called in, and a difference between their brief and that given to DRU. They were required, at an early stage, to study and report on cabin planning, and produce a full-size mock-up of their suggestions. This resulted in the 'courtyard' grouping of cabins, and the mock-up group were then furnished, some to the designs of Sir Hugh's office, some by Miss Oakley, some by John Wright, and some by the contractors. These were then studied by the management of the line, who selected what they felt to be the best ideas from each, and then handed over the whole job, with their recommendations, to Miss Oakley for development and completion.

The co-ordinating designers were also asked to work with John West, the naval architect, in suggesting improvements to the superstructure of *Canberra*, which again would not have been possible had they entered the design process at a later date. Several refinements were proposed which, though not large in relation to the ship, considerably improved certain areas as seen by the man on the deck—shape of swimming pool, ratio of solid to void around covered decks, degree of overhang of one deck above another, and so forth—and helped to give the ship a more distinguished profile. But in all matters of superstructure to-day, the architect and the naval architect alike are at the mercy of the aerodynamicist. The square 'architectural' form of the older type of superstructure, so beloved of Functionalist propagandists of the Twenties, by its very aerodynamic inefficiency threw much of the wind clear of the decks, but the smoother, rounded shapes of a modern boat do not, and the extended fairings behind mast and funnels of the *Canberra* are not 'styling' but necessary wind controls,

as are the glass screens that appear at various points on deck.

Something similar applies in the vexed question of ceiling heights and the distribution of rooms. This has been commonly discussed in the recent literature as an area of direct agreement or disagreement between the interior architects and those responsible for the design of the hull. Unfavourable comparisons have been drawn between the work of British interior architects since the War, and those before 1939 (or those responsible for the new French liner) who apparently had no difficulty in insisting on, and getting, double or triple height ballrooms, etc., right in the middle of the ship. Where *Oriana* and *Canberra* are concerned, the absence of such rooms does not mean that the interior architects failed to demand their rights; simply that unlike Cunard or French Line prestige boats, they do not enjoy government subsidies and must make every cubic foot of space pay its way. However, by being early on the scene, Sir Hugh Casson's office again had the advantage, and were able to vary ceiling heights and positions of partitions within modest limits.

What emerges from adjustments and negotiations such as this is an earnest of the interior architect's position in the programme and process of designing such a ship. Demands that he be called in 'right at the beginning' are somewhat vacuous: the design of a large ship is at all stages a matter of logistics under high pressure, and basic decisions are often taken in an order and at a speed that bears no relation to normal land-based practice. The ordering of steel must be put in hand while the earliest discussions of the design are in progress, the keel laid before the form of the superstructure is settled, and so on. Thus an interior architect may enter the process some time after the 'beginning' and still be in time to influence the design to a noticeable extent. On the other hand, the period of construction is one in which a vast sum of money (£14 m. for *Oriana*, £16 m. for *Canberra*) is tied up in a project which is not showing a halfpenny profit, and the pressure to conclude the work and get the boat into service is therefore overwhelming. The interior designer must integrate the conception of designs, their approval and agreement with the client, and the production of working drawings, with a tightly-phased programme of construction and fitting out, in which, at any one time, as many as three thousand tradesmen may be working on board the ship.

Similarly, the structure into which his interiors are fitted differs conspicuously from those on land. It does not, indeed, have a regular rectangular planning module such as a large building invariably possesses to-day. There will be few flat floors, and fewer upright walls and square plans, particularly in the cabin areas; on the other hand, the vertical frames of the ship's skin will occur at reliable thirty-three-inch centres or thereabouts and the rest of the structural skeleton follows—no very major mental adjustment is needed for the land-based architect to find his sea-legs for ship design. More surprisingly, in view of the fixed ideas entertained by those who demand that the interior architect will have to make major adjustments if he is to be integrated into the design team along with the naval architects and specialists, is the discovery that he is to work with very similar contractors (the same firms, in some cases) as on land, and that substantially the same kind of woodwork details, for instance, and working drawings will serve for ship interiors as for an hotel or office-block.

When these points are taken, it will be seen that the most successful and useful contributions that a good interior designer can make to a ship do not necessarily depend on dogmatic demands for his integration into the design team from the very beginning, nor do they necessarily depend on his being able to work closely—at the technical level—with the naval designers (though obviously he must join the team in time, and must be capable of working sympathetically with the naval side, and they with him). Operationally, structurally, and in terms of special skills involved, there is a reasonable frontier to be drawn between the domains of the two kinds of designer, even if it cannot be a hard and fast line.

And when this point is taken, another point of narrow dogma must crumble with it—a doctrinaire insistence on a 'ship-like' character in the interiors. THE ARCHITECTURAL REVIEW has campaigned for such a character in the past, but not in the narrow sense of using what are supposed to be 'ship-like' materials only: teak, brass, rope. . . . Ships are not built of those materials any more, but of steel, aluminium, plastics—something which has been honestly recognized in such ships as the *United States*. The traditional wisdom of the ship-fitting profession, as epitomized in the views of Patrick McBride of McInnes Gardner, probably goes too far in the other direction: 'What the public want is an hotel feeling . . . we could give them a ship feeling by taking ducts through the public rooms, or making it look like the *Cutty Sark*, but design ashore and afloat can be exactly the same.'

Of course, they *cannot* be exactly the same for the reasons set out at the beginning of this article. The design of ship interiors starts by posing an array of functional and environmental problems that do not arise on land; the fairly low head-rooms, even above the largest floor areas, the cambered decks, the restrictions on the size of portholes, the canted walls and curved plans, all introduce spatial characteristics not found in land-based structures. Even a designer who set out to design a ship like an hotel would be frustrated by these exigencies, and most of the worst disasters of British ship interior design stems precisely from trying to design a land-type environment inside a ship structure that requires an utterly different approach.

A ship-like interior starts from the unique conditions of ship-board life and ship-board spaces, and becomes expressive in so far as it enhances the life that is lived in those spaces. It needs to be businesslike and direct, particularly in the cabins, and mindful of the sea (as in the courtyard grouping of the *Canberra's* cabins, which give every cabin a seaward view). In the public areas it needs to make excessively wide and low rooms humanly comprehensible before it begins to play games with port and starboard lanterns to remind passengers of something that they know already—that they are on a ship. Indeed, if ship interior architects would stop imitating hotels or falling over backwards to prove they *have* stopped imitating hotels and approach their design problems with the same honesty and purpose

as the best hotel architects, a convincing shiplike character would emerge without strain and equivocation.

Where *Oriana* and *Canberra* are most conspicuously successful is where this kind of result has emerged from this kind of thinking. The decoration of rooms is based on their use, and stems from the way they work; rooms opening on to the deck or lit by portholes giving on the sea are designed to give a sense of being part of the ship structure; wherever possible a strong sense of a particular place or location has been given, but at the same time the fact that the designers have had some hand in the choice of all equipment seen or used by passengers means that there is equally a sense of the visual unity of the whole ship. On both ships, the interior architects have made extensive and telling use of the work of painters and sculptors; on both ships, lighting has been used not only to illuminate but also to accentuate the character of rooms, or even to make that character adjustable to simulate day and night in certain areas without natural lighting.

Many of the lessons to be learned from the success of these exercises are obvious enough, and doubtless the offices involved have learned theirs already. It would be a great waste of research and accumulated experience if it were not followed up while the experience is still fresh in their minds; the momentum would be worth sustaining, the more so since John West, the brilliant young naval architect of *Canberra*, feels that only the surface of the problem has been scratched as yet. Yet leaving all this on one side, the lesson for shipowners remains; by employing a good designer, trusting him and supporting him, they can have a ship that works better and looks better, and the way in which it looks better is crucial. The aims of ship-owning may still remain what they always were, to make prestige and money, but the business of carrying passengers by sea has been transformed completely since the *Queens* were commissioned. The shipowner now has to match his wits against, not only other shipping lines, but against the *Comet* aircraft and the *707* and the enormous prestige of jet travel. But he also has to match his wits against Hilton Hotels International, and other manifestations of a new sophistication among the travelling public. First class modern design is one of his fighting margins.



1

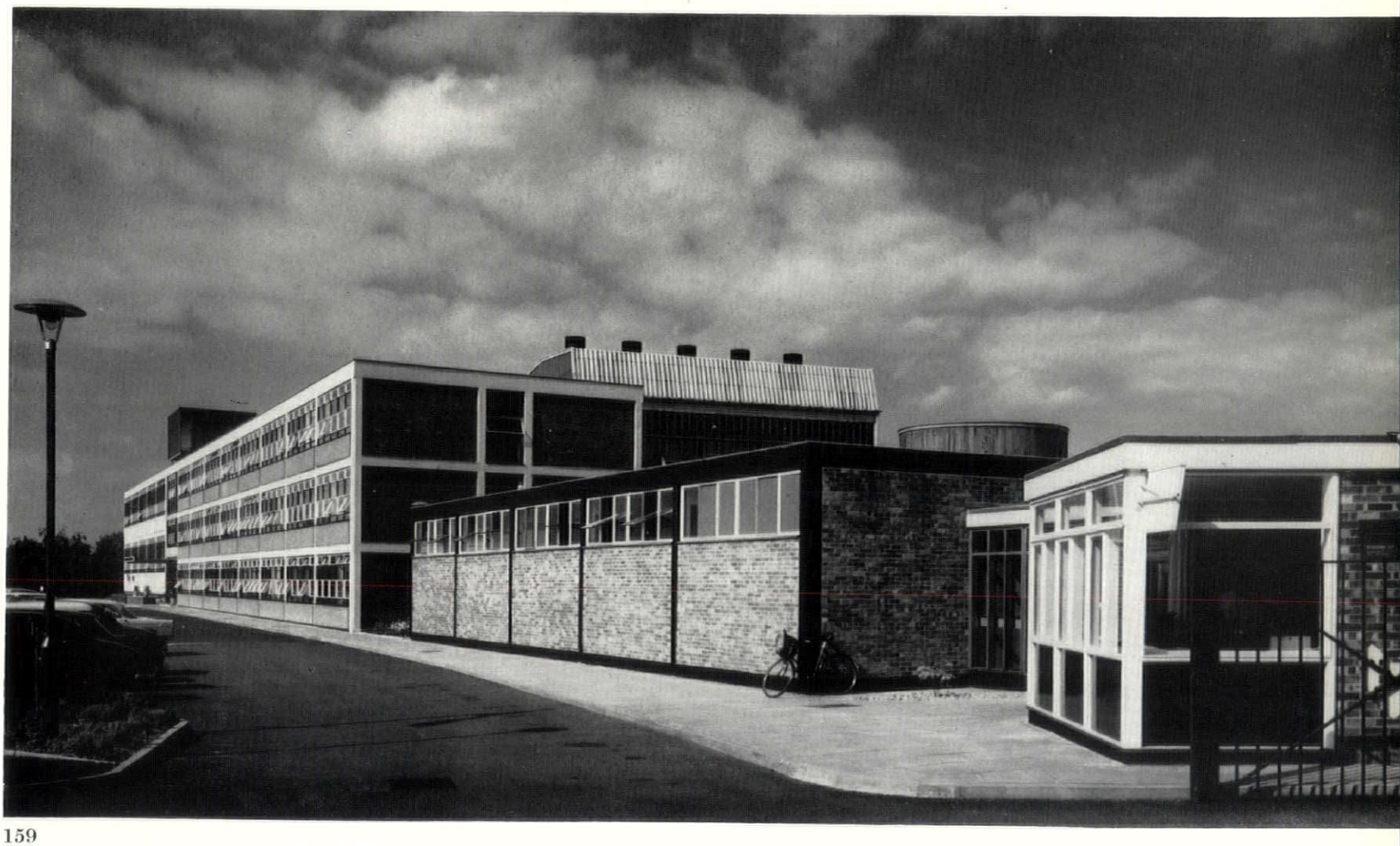
THE INDUSTRIAL LABORATORY IN A RURAL SETTING

1. Industrial Offices and Laboratories, Harston, Cambridgeshire

ARCHITECTS: EDWARD MILLS AND PARTNERS

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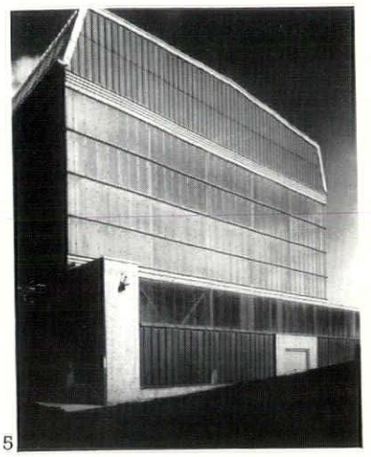
1 (above), aerial view from the east. 2, looking past the cloakroom block to the offices and laboratory block.



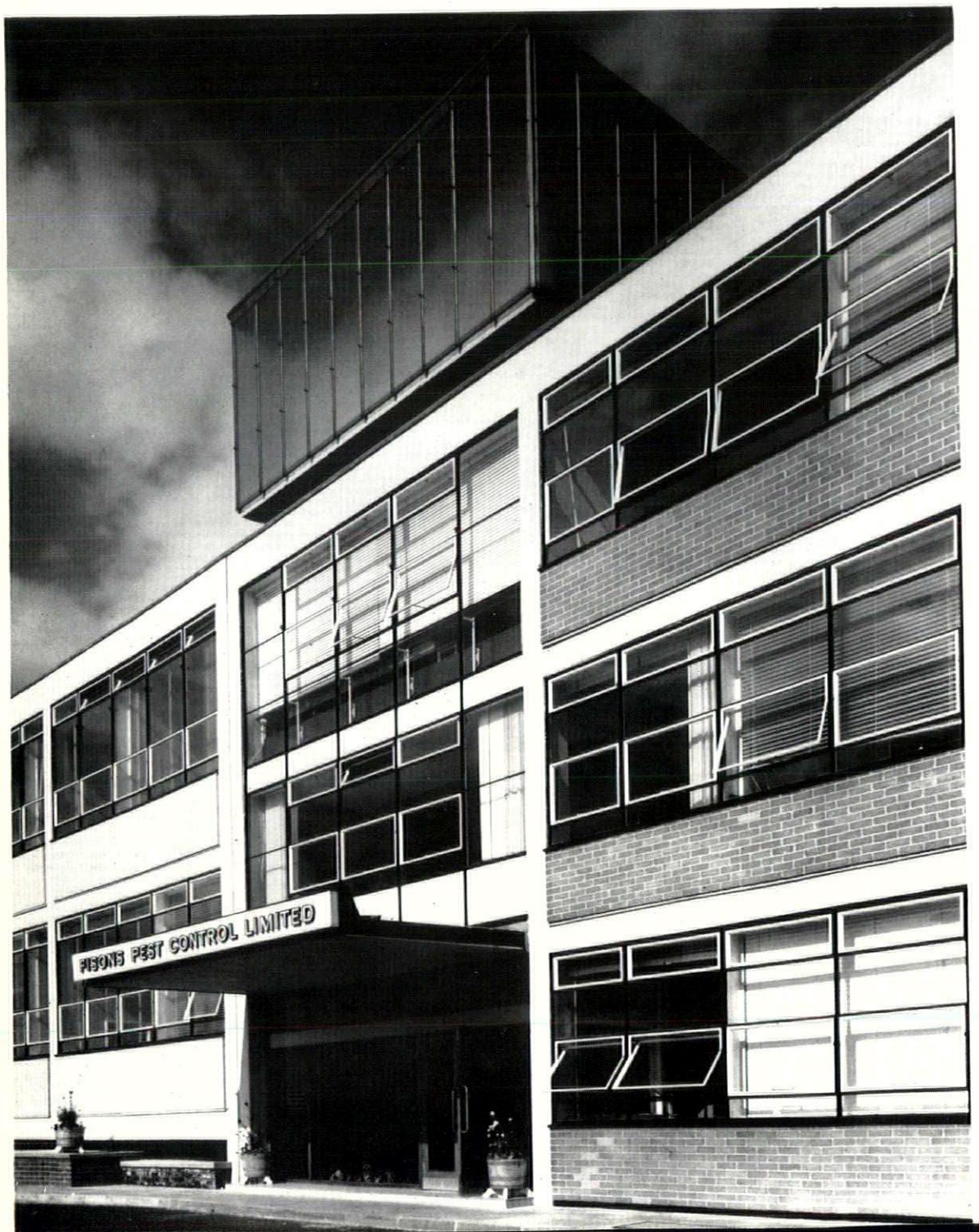
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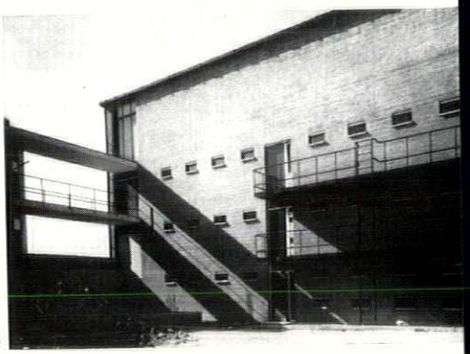
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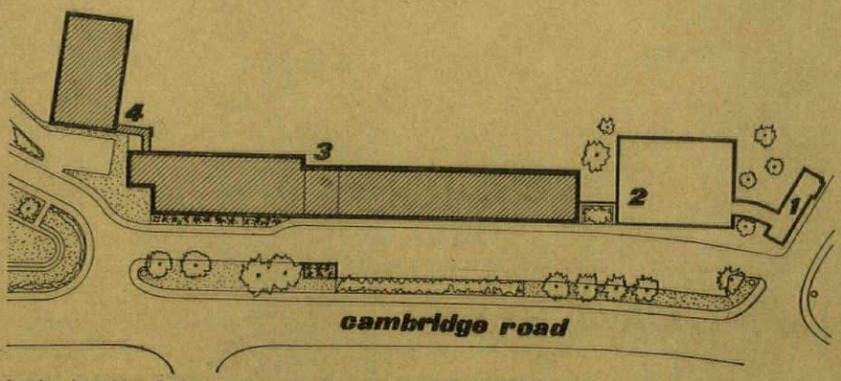


6

3, general view from the north-west. 4, entrance to the main building, with offices on the right and laboratories on the left. 5 and 6, front and side elevations of the pilot plant building. 7, the interior of the boardroom.



7



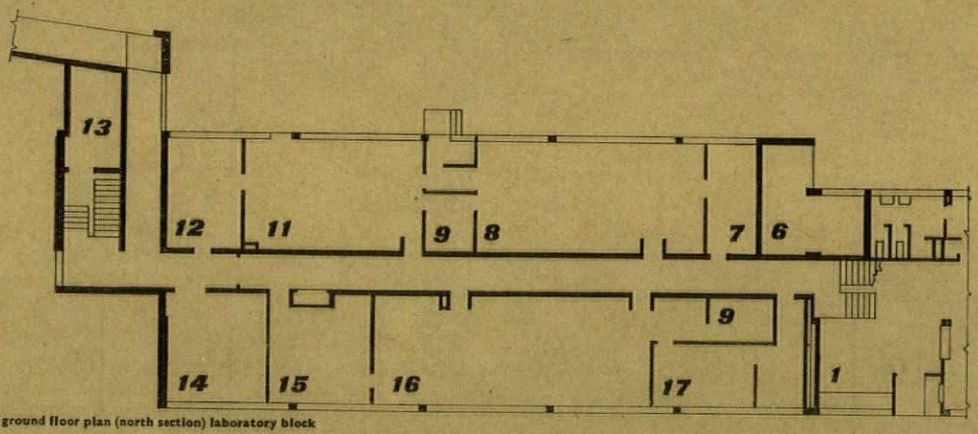
site plan: 1, gatehouse. 2, cloakroom block. 3, office and laboratory block. 4, pilot plant building.

N

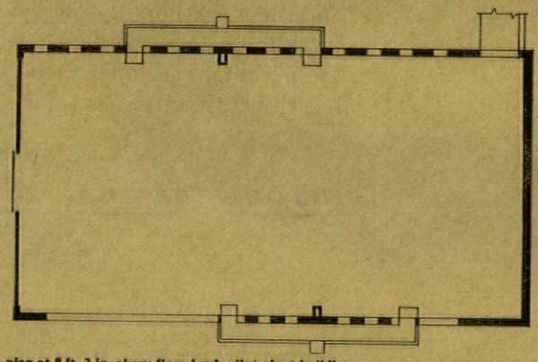
This group of office, laboratory and pilot plant buildings is for Fisons Pest Control Ltd. and is designed to meet the present and future needs of the technical and administration side of the firm's chemical production at Harston and provide a screen along the main frontage of the works to the Cambridge Road. In the post-war years, when the Cambridge planning authorities became alive to the growth of the Harston works, they endeavoured by strict control and by granting only short-term planning approvals to limit or stop any further buildings on the site. An appeal was made to the Minister, which was allowed, but certain conditions on future development were imposed, one of which was the erection of a frontage block to improve the appearance of the works and screen the chemical plant from the main Cambridge Road.

The first stage in the new development was the erection of an up-to-date ablution and cloakroom block, which was given priority on medical grounds and to provide general welfare facilities. This initial phase also included the resiting of the main works entry and the erection of a new gatehouse and control point for inward and outward traffic from the works. The gatehouse is sited to enable clear vision to be obtained along the whole frontage. The second and third stages (illustrated here) contained the new laboratories, offices and a pilot plant building and these were in fact constructed as one continuous operation. A further improvement to the frontage has been the remodelling of the entry from Mill Lane to the north of the new buildings and the closing of a private slip road which originally cut across the frontage. The office block is in three storeys, the laboratory unit in two storeys, and the pilot plant building is single storey—all are connected. The structure is reinforced concrete cast in situ with specially designed foundations to suit sub-soil conditions.

Quantity surveyors: Leslie W. Clark & Partners.
Consulting engineers: Ove Arup & Partners.

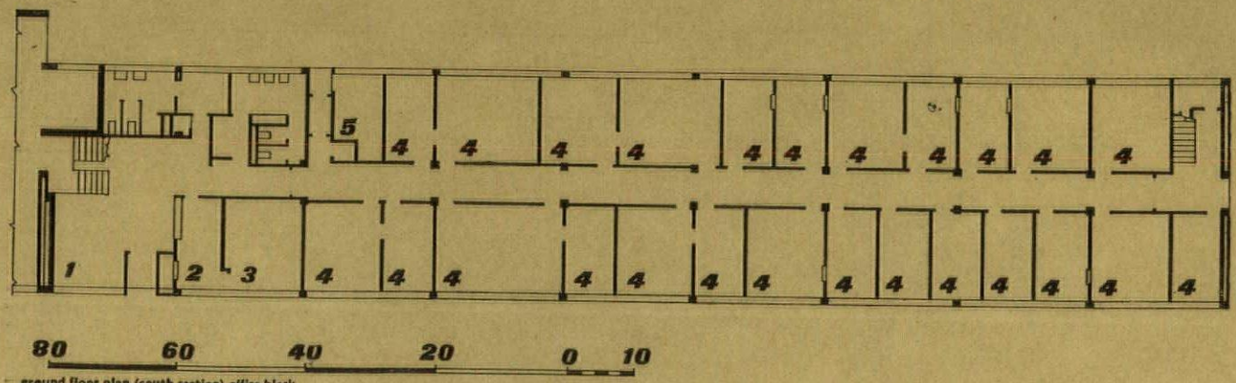


ground floor plan (north section) laboratory block



plan at 8 ft. 3 in. above floor level, pilot plant building

key
1, entrance.
2, enquiries.
3, GPO plant.
4, offices.
5, electrical distributor.
6, plant room.
7, product control.
8, shift laboratory.
9, balance.
10, sample delivery.
11, day laboratory.
12, 14, laboratory stores.
13, electricity sub-station.
15, instruments room.
16, analytical laboratory.
17, chief analytical chemist.



ground floor plan (south section) office block

2. Research Laboratories at Passfield, Hampshire

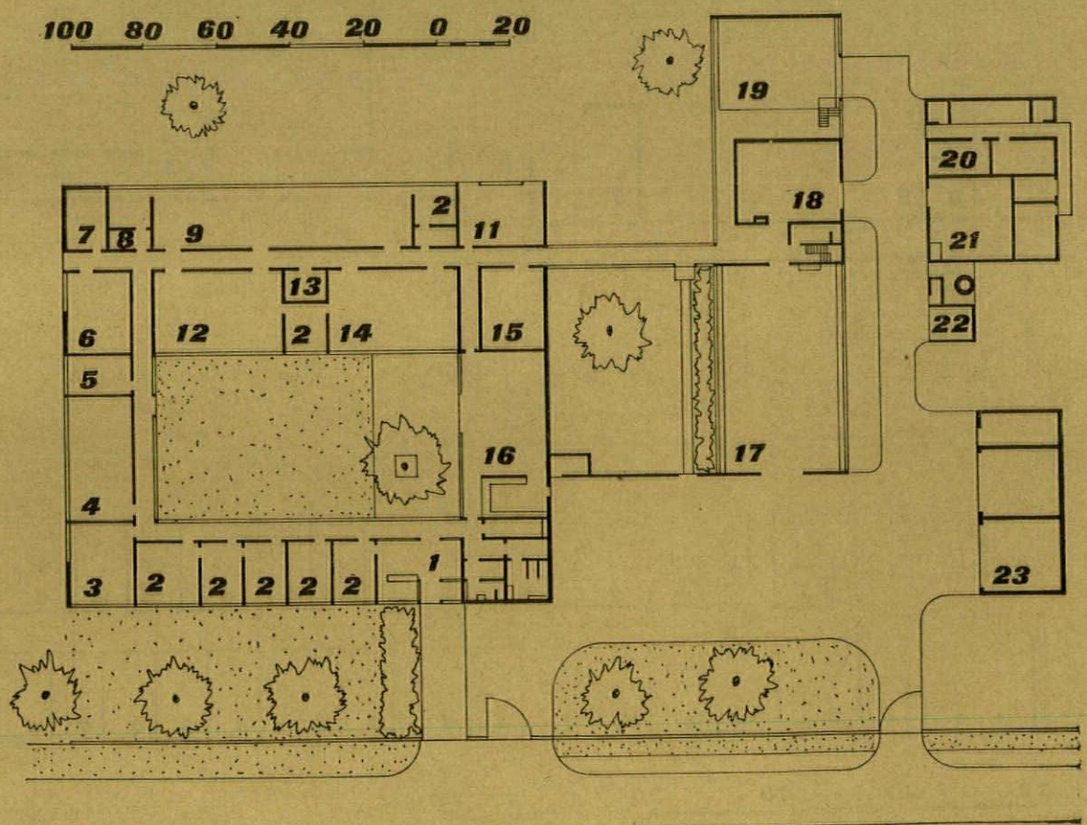
ARCHITECTS: THE ARCHITECTS' CO-PARTNERSHIP

These buildings, which are near Liphook and are for Metal Containers Ltd., contain laboratories, offices and workshops to house approximately fifty scientists and administrative staff. The offices and laboratories are planned round a grassed courtyard, which has a canteen closing the north end. The workshop and development room and the engineer's and draughtsmen's offices are in a separate building.

All buildings are designed for future expansion; the offices and laboratories by the addition of another court, and the workshops by increase in length. The research work to be done requires a very clean atmosphere, and the building had to be sited away from towns and at least twenty miles from the sea. Speed of building was essential, and a negotiated contract was used to give an early start, the working drawings being done as building work proceeded. Work on the site started in November, 1959, and the building was partially occupied in November, 1960.

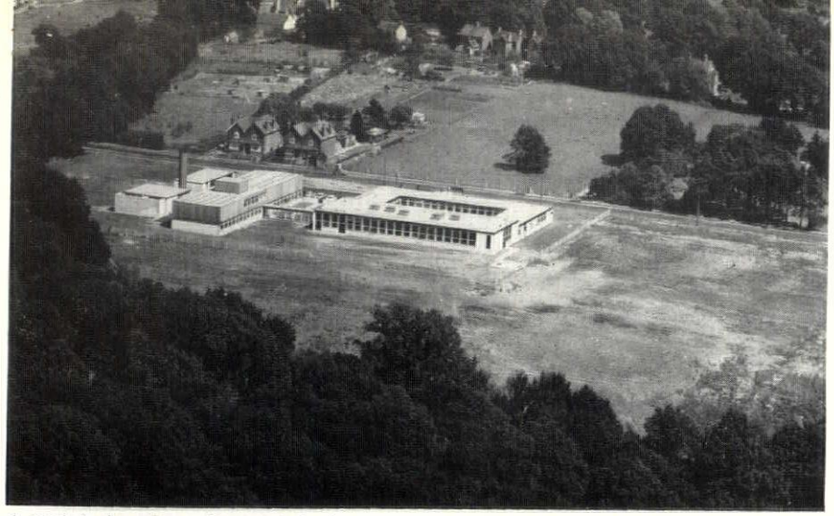
It is of steel frame construction with columns at 12ft. centres. The walls are generally of white gault brickwork, but the upper part of the workshop building is faced in western red cedar boarding. The roof is built-up bituminous felt, finished with chippings and laid on woodwool slabs carried on timber joists spanning between steel beams. The windows are steel framed in timber surrounds. Heating is by oil-fired boilers.

Quantity surveyors: Davis, Belfield & Everest.



first floor plan

ground floor plan



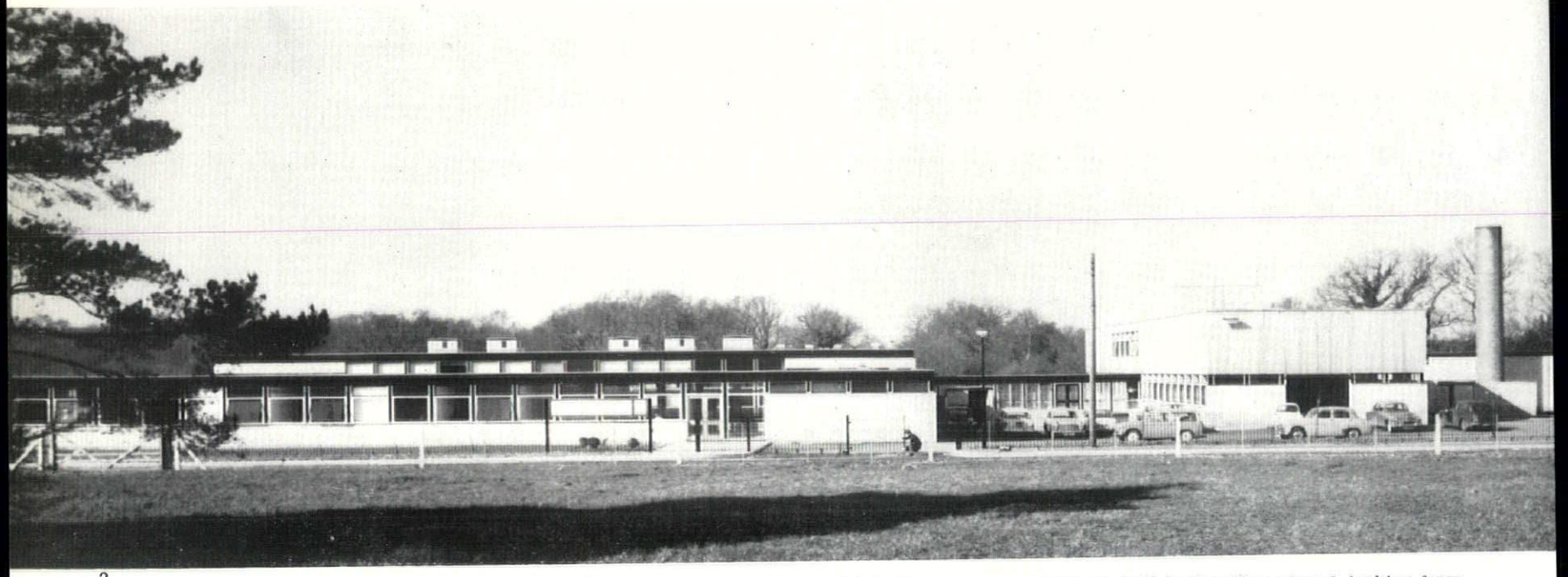
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1, aerial view from the west. 2, close-up of the workshop block from the south-east, with the corridor link to the laboratories on the left.

2



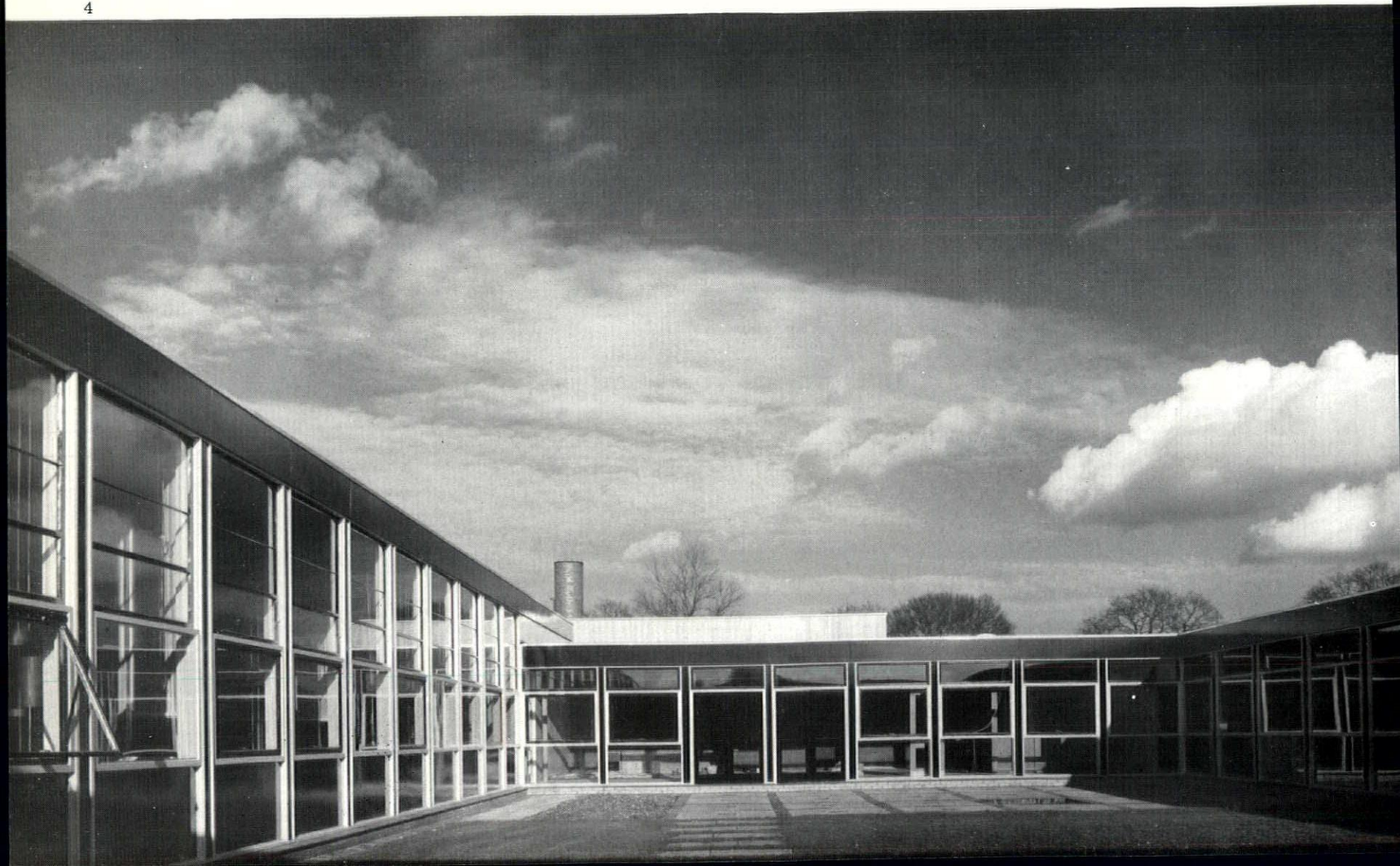
RESEARCH LABORATORIES AT PASSFIELD, HAMPSHIRE



3

3, from the east ; the offices and laboratories are on the left and the workshop block is on the right. 4, looking north in the internal courtyard, with the laboratories on the left and the offices on the right. Opposite page: 5, the entrance hall in the office wing. 6, looking from the entrance hall across the courtyard to the laboratories ; the windows are steel framed in metal surrounds. 7, the canteen in the office block.

4





5

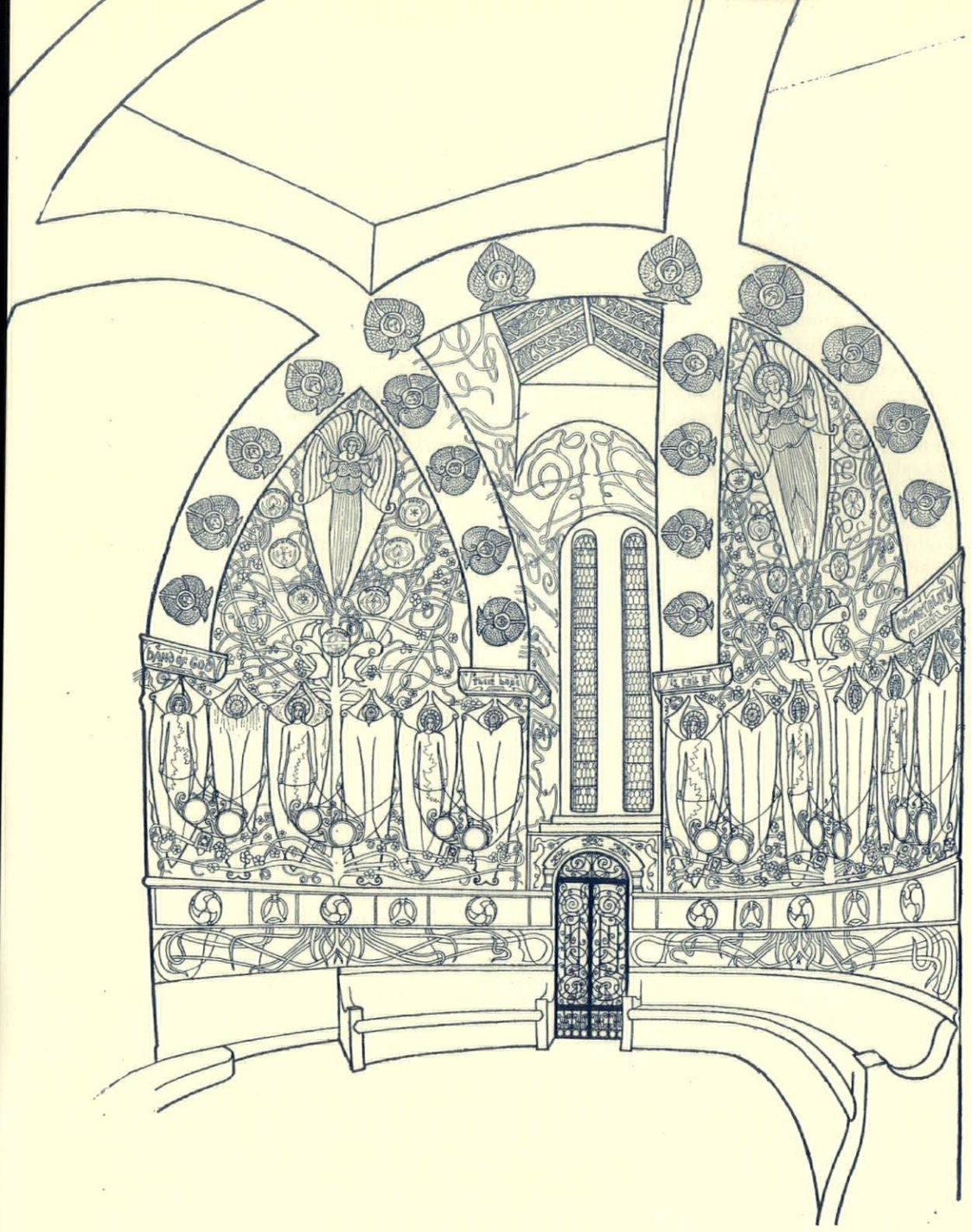


6



7


Righteous



WATTS CHAPEL

One of the few surviving monuments to the ideals of the Arts and Crafts movement: the chapel at Compton, Surrey, designed in 1896 by Mary Watts, wife of G. F. Watts, R.A. The facing page shows the remarkable gesso-work that covers the whole of the interior; it was modestly described by Mary Watts as 'glorified wall-paper.' Above is a drawing of the interior by John Furnival, who also made the drawings on pages 168, 171 and 172.

ELISABETH BEAZLEY

Buildings can arouse all kinds of emotion: admiration, awe, derision, depression, amusement. . . . For straightforward astonishment it is unnecessary to go further than Compton, Surrey. On the altar in the Watts memorial chapel, an inscription states 'This chapel, designed by Mrs. Watts wife of G. F. Watts, O.M., R.A., was built in 1896 by her and the people of Compton.' This alone would be enough to whet the curiosity, but when seen in its context further information about this remarkable building and its builders becomes imperative. For, instead of being homespun, amateur, or earthy, as might justifiably be expected from such a description, it is an expert, highly successful if unusual realization of a unique idea. It also forms part of an interesting (historically rather than architecturally) group of buildings which must be one of the few remaining monuments in brick and mortar to the ideals of William Morris and the Arts and Crafts Movement.

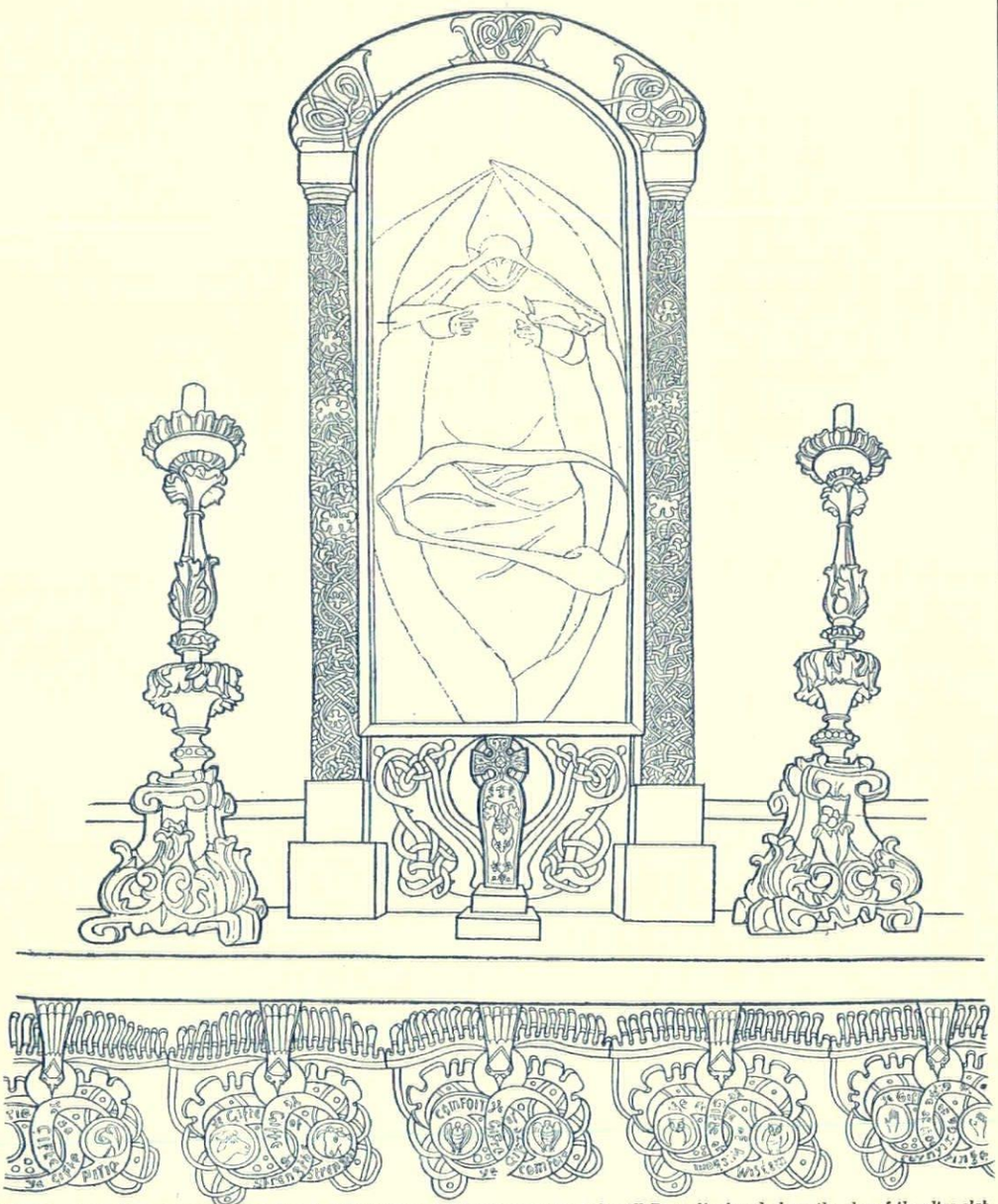
Towards the end of his long life, Watts,* who for many years had been the grand old man of British painting, but who was still working at a furious rate, decided to leave London for Compton. It would be truer to say that Mrs. Watts decided; this remarkable woman apparently had the happy knack of not only making the right decisions for Watts, but of also being a charming and sympathetic wife. Thirty years younger than her husband, Mary Watts seems to have provided the energy and drive which were behind the creation of Limnerslease, the house which they built in the depths of Surrey. Both the Watts's were deeply fond of this wooded country and spent prolonged stays with friends here, but Watts, who was now in the 70's, was fussed by visiting. His special diet (under-cooked beef and fresh cream), the fear that he might be ill while away and cause further inconvenience to his hostess, and, above all, the paraphernalia of packing and unpacking, worrying about missing trains (all of which time and energy might have been spent painting),

* For biography of G. F. Watts see *The Laurel and the Thorn*, by Ronald Chapman (Faber & Faber).

must have made things difficult for everyone. Therefore, Limnerslease was the perfect solution. So perfect that the Watts's soon left London altogether and made it their permanent home. This meant that in addition to the studio, a gallery must be built to house Watts's paintings. Of these buildings there is not much to say architecturally; the house with its mock timbering was in the vanguard of thousands that have since come to Surrey. It has a fine site high above the other buildings; it must have been a pleasant place to live in, being so closely surrounded by, yet above, the trees (the Watts's apparently would not allow a single tree to be felled when the house was built). It was designed by Sir Ernest George and is now converted into flats.

The house, which is about half a mile north-east of Compton village, decided the siting of the gallery and potteries and hostel for potters that were to follow it. This was most fortunate as the group forms a separate entity and does not compete with the old village and the remarkably fine Norman church. The pottery (which only ceased to function in the 1950's) was another of Mary's ideas, although closely backed by Watts. She had run a pottery class for workers in Whitechapel. The idea of training the locals crystallized when a new burial ground and mortuary chapel were needed for the village. It is best described by Mrs. Watts in her *Life of G. F. Watts**: 'A new interest had grown up for us both in the last two years, the building of a chapel for the new village burial ground, his gift to Compton. He did not design it, but suggested that if we proposed to hold a class, the people of Compton might like to come to it and be taught to make simple patterns to decorate the walls; so that by this means a special and personal interest in the new graveyard would be acquired by the workers.' This mild description and a slim volume called *The Word in Pattern**, also by Mrs. Watts, are about all that is known to have been written about this remarkable chapel. Far from being amateurish, it is a building of remarkable expertise not only in execution, a factor which could be contributed to the skill of the builder, but in the assurance and mastery with which the complexity of the original idea has been disciplined so that the parts never detract from the whole. At the end of *The Word in Pattern*, a list is given of those who had worked on the chapel (seventy-one men and women worked on the terra-cotta, often several members of a family are mentioned), but the only designer mentioned is a Mr. George Redmayne who was responsible for the door hinges. From this it seems reasonable to assume that Mrs. Watts designed the building without professional help.

* Published by Macmillan.



The altar faces the entrance; above it is a smaller version of Watts's painting 'The All Pervading' and along the edge of the altar slab is the description 'This chapel, designed by Mrs Watts, wife of G. F. Watts, O.M., R.A., was built in 1896 by her and the people of Compton.'

The chapel stands on rising ground looking across meadow land to Compton village. It is approached from below up a narrow curving path which is lined by black Irish yews. These trees hide the building until you are almost upon it, and this, together with their blackness contrasting with the very red brick of which it is built, add drama and surprise to the approach. The bricks, which were made locally, may also have been a surprise to Mrs. Watts, who, if one can judge by the other buildings, favoured mellow materials. They still look as if fired yesterday and have the texture and colour of a recently rubbed rubber-brick. This is an advantage because much of the building is faced by terra-cotta mouldings, and these, which naturally will not weather, and the plain brickwork, have remained approximately the same colour, giving the wall surfaces a unity that would never have been retained if a normal brick had been used. Since it is a small building, whose surface is deeply broken by shadow, the green English countryside can take the shock. The roof is covered with Roman tiles. It is probably these, and perhaps the yew trees which stand as sentinels as cypresses do in Greece, rather than any architectural style, that makes the exterior slightly reminiscent of a renovated Byzantine church (e.g. those in the fortress of Mistra.)

Approaching from below, one is right up to the door and already too amazed by the galaxy of angels and symbolism in the terra-cotta over the door to pause before plunging inside. The impression is of being inside a circular building with massively thick walls, and, fleetingly only, of a domed ceiling. Colour and low relief pattern cover almost every surface, and an extra-

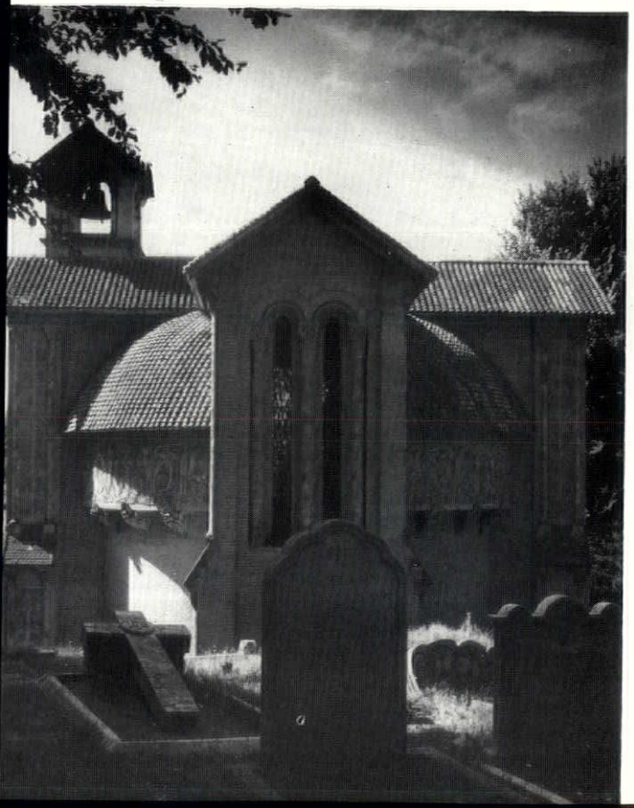
[*continued on page* 172

* Published by the Astolat Press.

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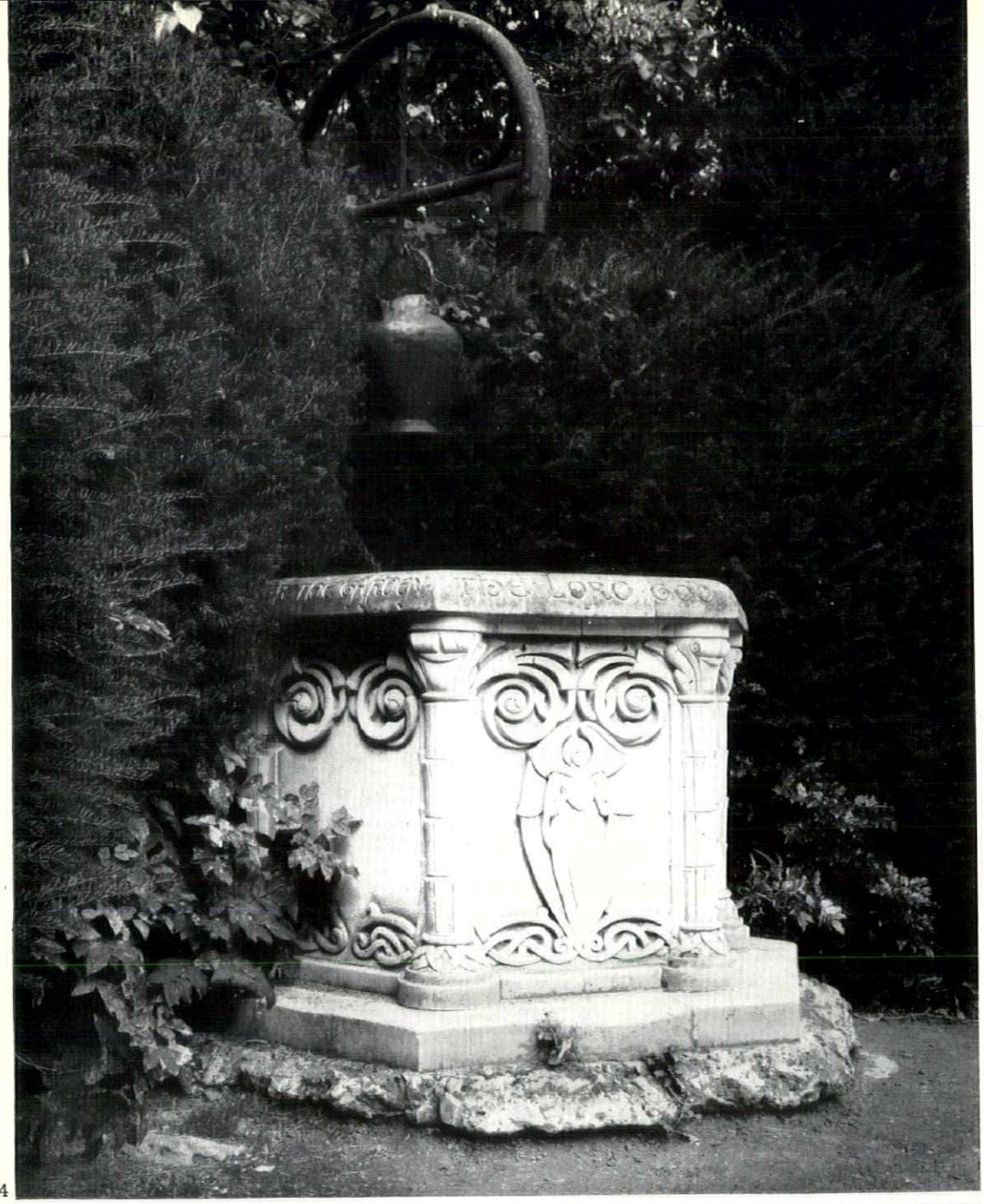
1, detail showing the terra-cotta decoration at the top of a segment of the drum and at the ends of the arms of the cross. The cruciform plan, with segments of a lower drum imposed on it, is clearly shown in 2, but on entering the building, the dominant cross plan is lost and the impression is of being in a circular building with very thick walls. The cloister, 3, lies above the chapel.

2



3

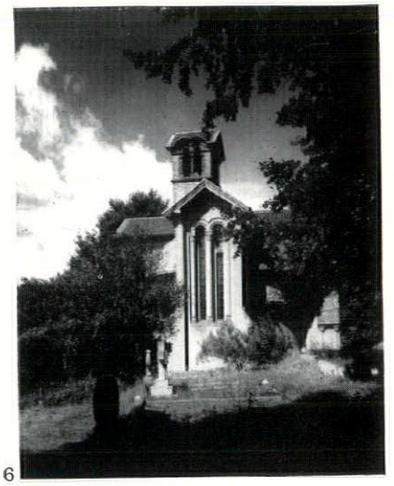




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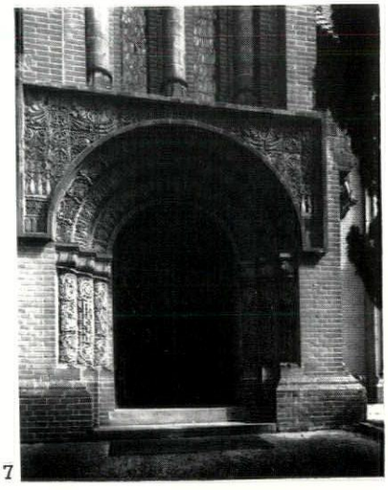


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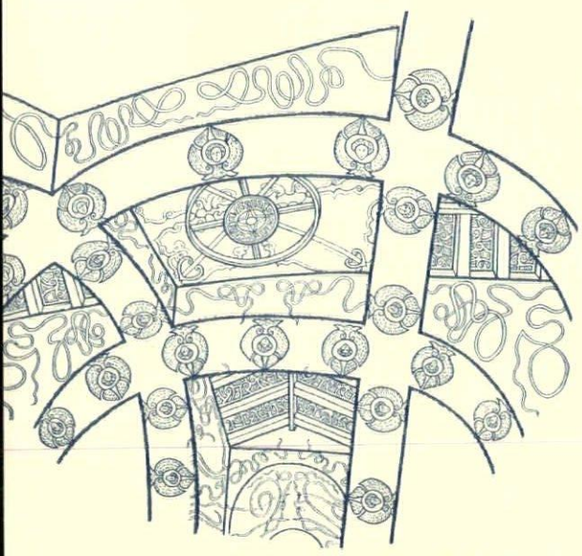
4, the well head near the gate and, 5, the seats round the chapel were also designed and made in the Watts' workshop. 6, both the unexpected architecture and unweathering red brick of the chapel have been absorbed with surprising ease by this most green and English landscape. 7, having followed a curving path lined with dark Irish yews, one comes suddenly on the richly decorated entrance.



7



Interior detail drawn by John Furnival: the low relief pattern, which is built up in plaster and string, gives remarkable richness even where the colour and gilding have faded.



Four arches support the main roof where the walls of the cross have been cut by the lower drum (note the timber rafters outside the crossing).

continued from page 168]

ordinary richness is achieved. It is a mixture of Bavarian Rococo and Art Nouveau with colours taken from the sea bed. The light, coming in at high level and catching remnants of the gold on blue-green paint, deepens the illusion of being in a pool of clear water.

But these are impressions only. What has in fact been most ingeniously designed is a cruciform plan on which is imposed a thin drum of 13½ in. brickwork, approximately 24 ft. in diameter. The arms of the cross project 6 ft. 2 in. beyond the drum, and rise the full height of the building, while the drum is only about two-thirds the height of the main walls (for this reason, the projecting 'transepts' cannot be thought of as buttresses). The window openings are in the end walls of the cross. The impression thus given to anyone inside the building is of immensely thick walls, since the window reveals are the full depth of the arms of the cross from its extremities to the inner surface of the drum. This ingenious if unintentional trick seems an economic way to give apparent weight of masonry with minimum material.

The roof is simply a cross-ridged structure supported on four semicircular arches where the drum cuts off the walls where it meets the cruciform. There is clearly no excuse for imagining a dome, even if the building was entered blindfold with no awareness of its outer form; however, the circular plan of the interior together with the round arches decorated in the same material as the walls give this fleeting illusion.

The decoration of the interior suggests a woven tapestry. It may have been inspired by Watts's saying: 'All creation is the garment of God'; certainly all parts of the design were of deep significance to its creator. From the stone seat that runs round the inside of the building, upwards, every inch of the interior is decorated. Angels, medallions, children's heads, take their place in an orderly but flowing design of abstract strap patterns of Art Nouveau, in low relief. 'A solid plastic material called Gesso, its substance plaster of Paris in which a fibrous material is soaked' was the medium in which Mary Watts worked. In places the fibre (like string) has been built up to give reliefs up to ¾ in. deep. This depth gives pattern and life even where the actual paint has faded, and the richness achieved is remarkable. It is sad that the only drab thing about the chapel is the picture specially painted to go above the altar. It is a smaller version of Watts's 'The All Pervading' and badly needs restoring. Mary Watts's modest comment on this astonishing achievement is 'He (G. F. Watts) had not before realized what I aspired to do in this glorified wall paper.'

The decoration of the exterior is extremely complex and is based largely on Celtic patterns. Almost every design is symbolic, and anyone wanting to study it in detail should refer to Mrs. Watts's explanatory book. It must be one of the last great craft efforts; each piece of terra-cotta has its special significance and few if any are alike (each of the fifteen angels over the door, to take but one instance, has a different face). But what really astonishes is the organized restraint which has prevented this highly imaginative Victorian woman running riot with terra-cotta; the brickwork of the drum, apart from the corbelled frieze, and a large part of the projecting cruciform are built in plain brickwork. In other words, the walls are either highly decorated or completely plain. In this it has something in common with the exterior of Seljuk buildings, whose decoration is so intense that it can only be taken with large areas of plain walling as a foil. The bricks, incidentally, are only 1¾ in. deep; the small scale thus achieved gives the impression of a larger building.

In the graveyard there are a number of graves made by the potteries, and also a cloister (very inferior to the chapel). The hostel where the non-village potters lived is now the curator's house. Both it and the Gallery* (designed by Christopher Turner) were originally thatched. The Gallery contains a large and varied collection of Watts's paintings. That they are varied is hardly surprising when it is remembered that he lived during five reigns, including the longest in British history, and worked with extraordinary energy through most of them. The fascinating paintings (all by Watts) range from what might well be late eighteenth-century portraits onwards to early twentieth—Picasso was already twenty-five when this child of George III's reign, friend of Ruskin and sculptor of Tennyson, died.

* The Gallery is open every day, except Thursday, from 2 p.m. to 6 p.m. (or dusk). On Wednesdays and Saturdays it is also open from 11 a.m. to 1 p.m. Compton is about two miles west of Guildford.

Church at Atlantida, Uruguay

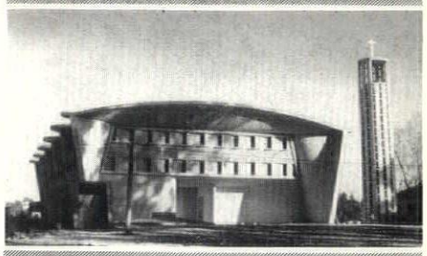
DESIGNER: ELADIO DIESTE

This is a parish church serving a large rural area about 30 miles east of Montevideo. It seats 300, but has floor space enough for a congregation of 500 on special occasions. It is planned so that it can be attended by only one priest, though there is room in the chancel for several to officiate on special occasions and for the main ceremonies of the Roman Catholic liturgical year to take place with proper dignity.

The interior is a simple rectangular space with the

1, distant view of the entrance. 2 close-up of the nave wall.

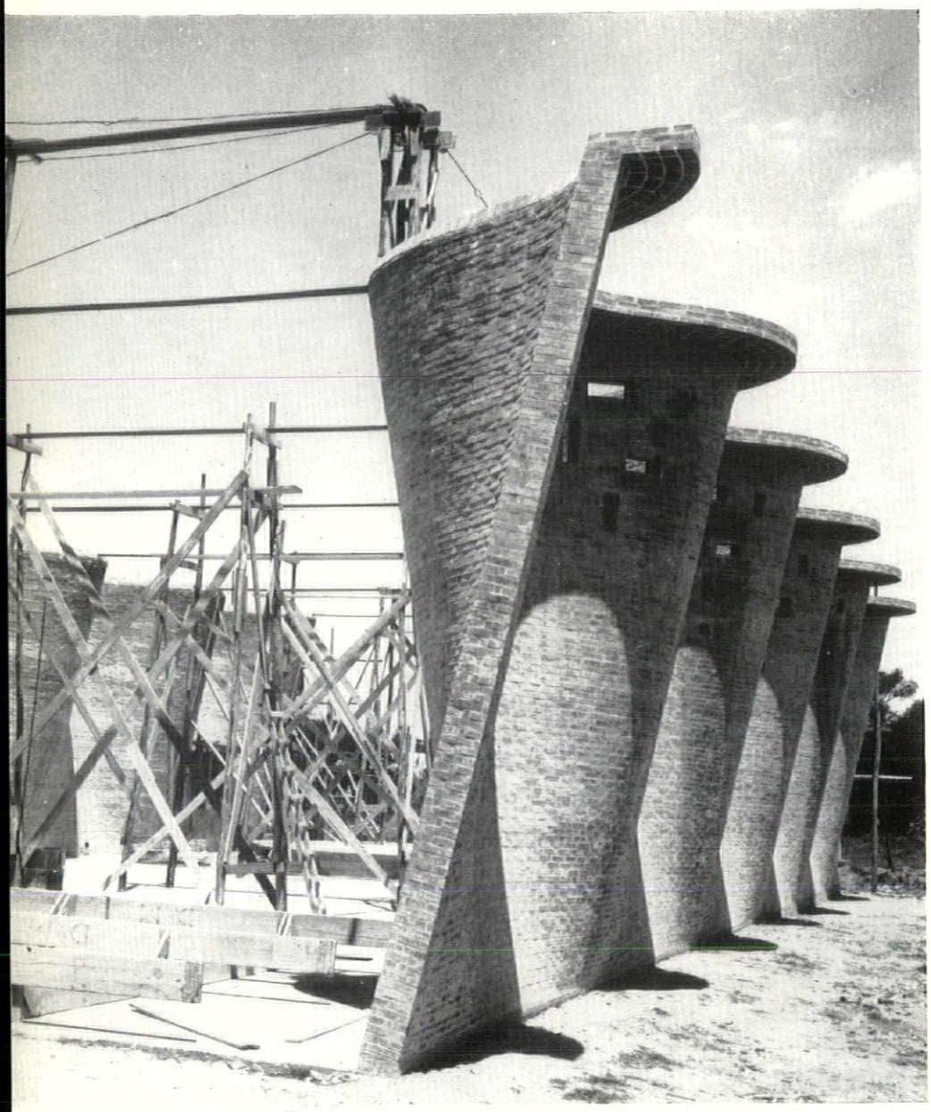
1



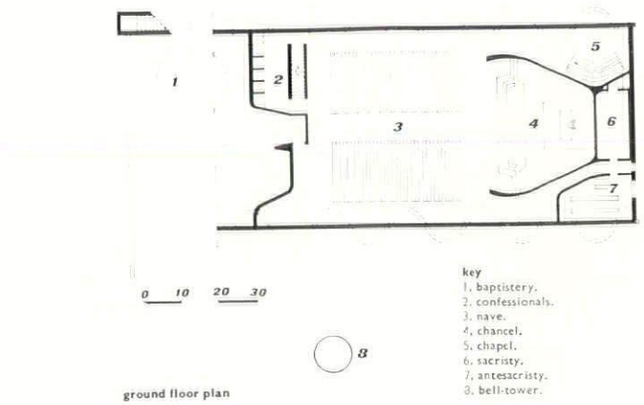
BRICK SHELL CHURCH

2

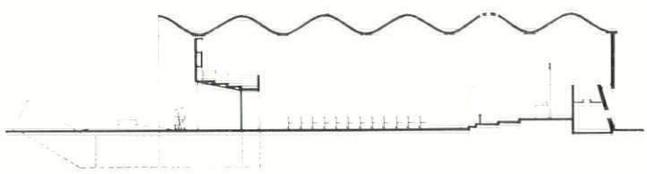




3



ground floor plan



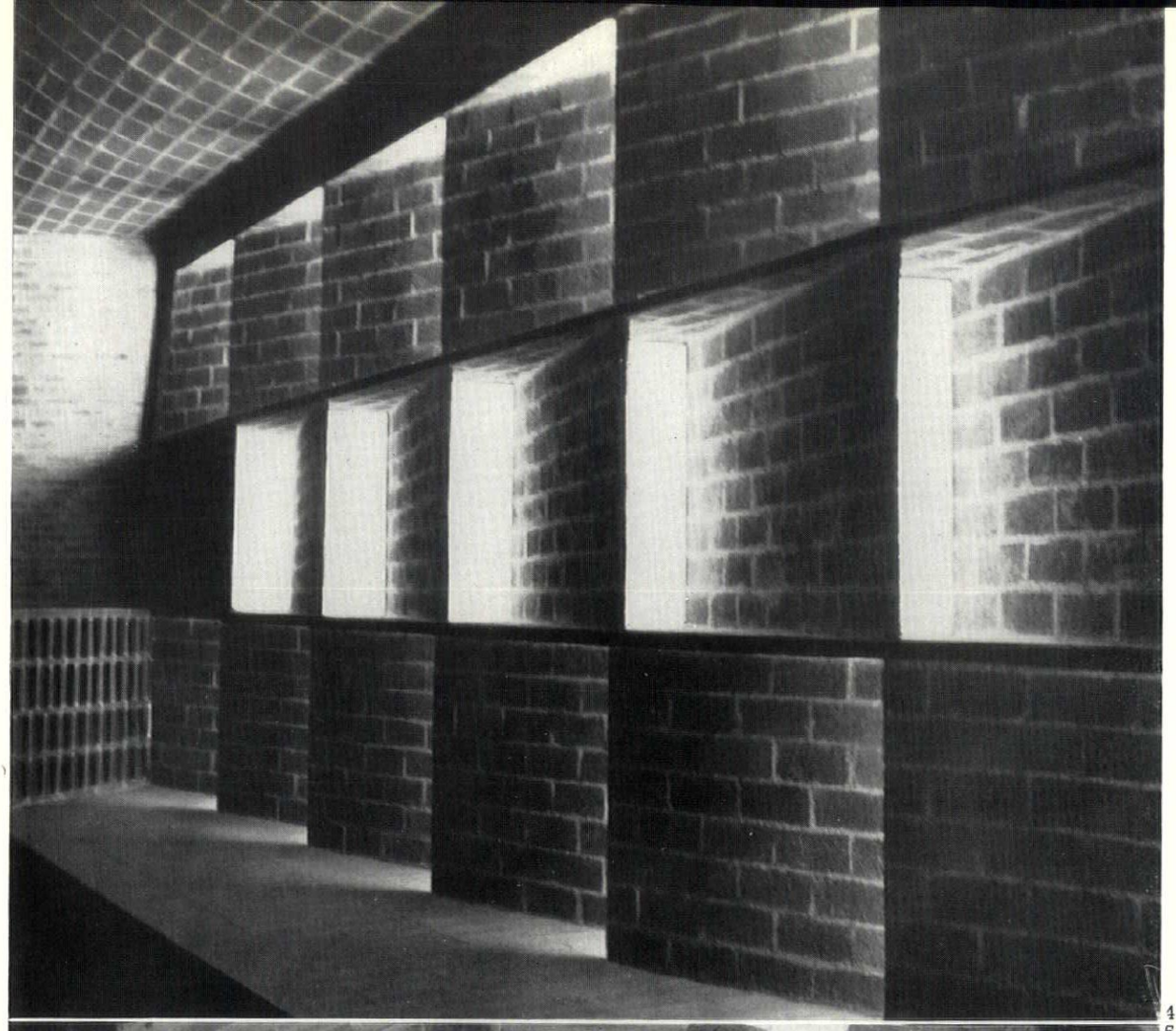
longitudinal section

3, the nave walls under construction. Opposite page: 4, the windows of the choir balcony above the entrance. 5, looking up the interior of the bell tower. 6, the exterior of the bell tower.

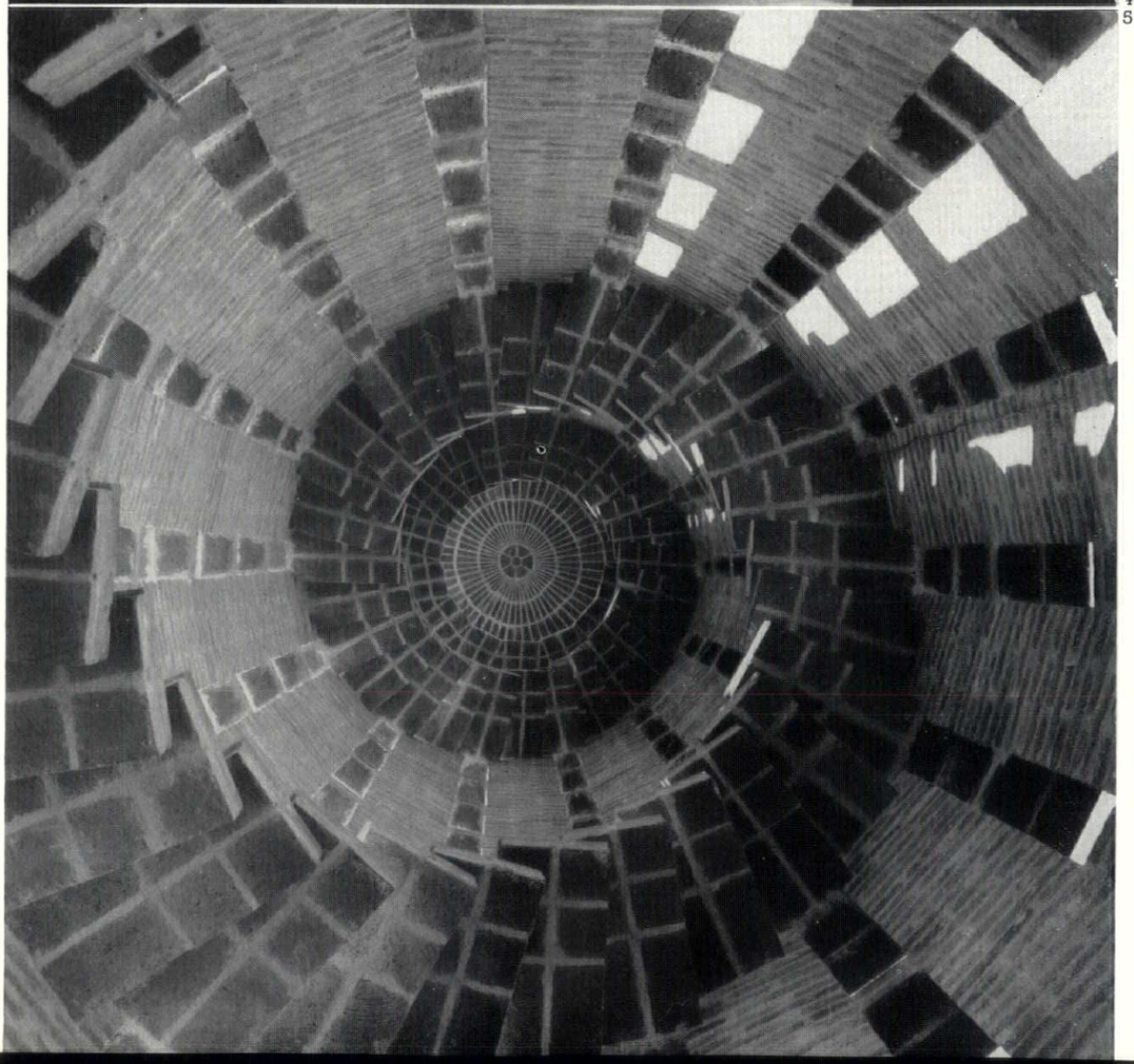
brick walls undulating in plan and with the chancel area defined by its own enclosing walls, which also screen off the Lady Chapel and the antesacristy, the sacristy being behind the chancel. The altar is a rough boulder, dressed only on its upper surface. Windows high up in the side walls direct the light from behind the congregation into the chancel. There is also an aperture in the vaulted roof above. The end wall of the sacristy is slanted inwards (see section), allowing indirect light to be thrown on the wall and vault above the altar. The choir occupy a balcony at the opposite end of the church, which also forms a shaded porch. The wall at this end is of open reinforced brickwork with light admitted through thin panels of marble. Alongside the entrance are the confessionals. The circular baptistery is a separate structure, placed underground. The bell-tower is also separate, and will later be the main feature of a square containing the priest's house and a parish hall.

Floors, walls and roof are all of brick, reinforced where necessary and unplastered. Walls and roof together form a double curved shell, covering an area 110ft. by 54ft. and resting on closely spaced 6in. concrete piles. Each wall, 23ft. high, is formed by a series of conoidal surfaces, straight at ground level and undulating at the top, each wave consisting of a central segment of a parabola and two half-segments. The walls, which are reinforced with $\frac{1}{8}$in. steel wire, are 1ft. thick and have a cavity afterwards filled with waterproofed mortar. The walls are crowned by a beam, of mixed brick and concrete construction, which forms the eaves and takes the thrust of the vault.

The vaulted roof consists of two layers of brick, with a total thickness of $4\frac{3}{8}$in. Its mean span is 53ft., and the rise varies between $2\frac{3}{4}$in. and 58in., which means that the wave valley is almost horizontal. The tensors which are anchored to the beam at the top of the wall, and absorb the thrust of the vault, are enclosed in this valley. Together with the walls the vault forms a type of shell frame with two hinges which has great transversal rigidity. The bell-tower is wholly of reinforced brick, built without scaffolding. The prefabricated steps of the spiral staircase inside it are cantilevered from the outer wall.



4

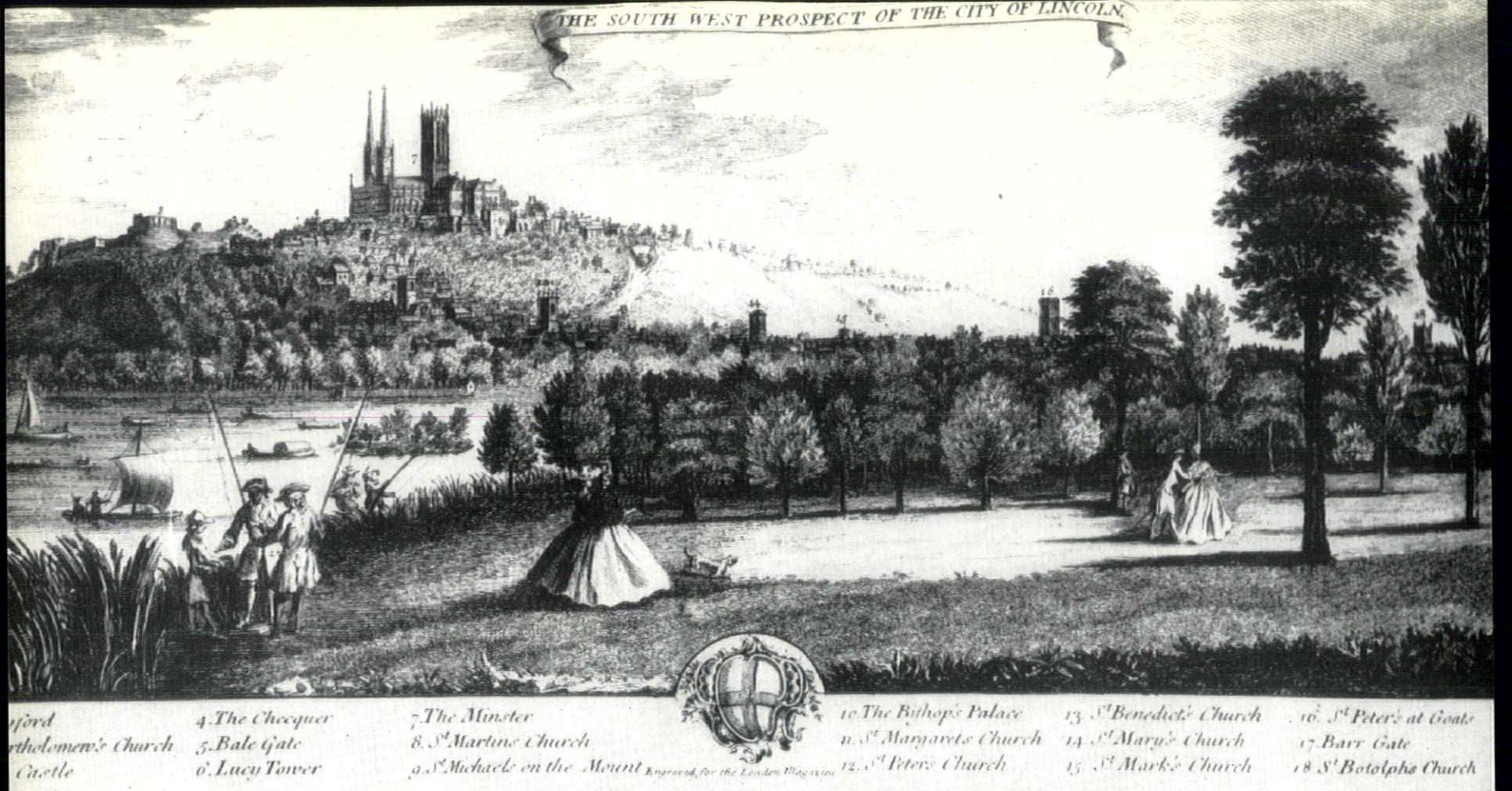


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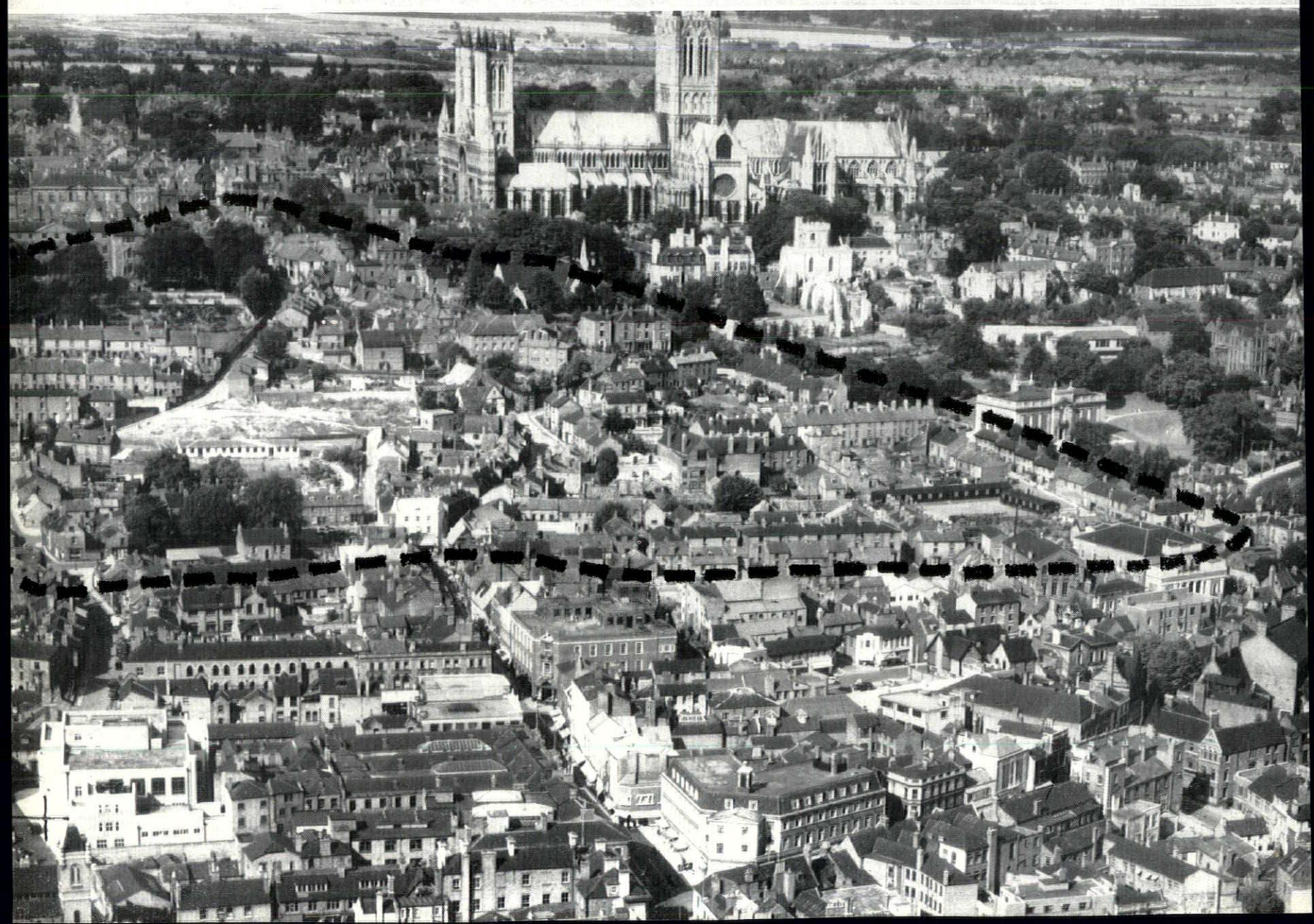
6

CHURCH AT ATLANTIDA



ford
rtholomew's Church
Castle
4. *The Checquer*
5. *Bale Gate*
6. *Lucy Tower*
7. *The Minster*
8. *St Martins Church*
9. *St Michaels on the Mount*
10. *The Bishop's Palace*
11. *St Margarets Church*
12. *St Peter's Church*
13. *St Benedict's Church*
14. *St Mary's Church*
15. *St Mark's Church*
16. *St Peter's at Goate*
17. *Barr Gate*
18. *St Botolphs Church*

Engraved for the London Magazine



The reason for Steep Hill's present state of extreme decrepitude is largely explained by the pair of illustrations opposite. In an aerial shot taken a few years ago, lower picture, the area (dotted) emerges as an intricate tangle of housing, already partly cleared. To-day's view would show much more empty space. This pattern, which can be the basis of our most attractive medieval towns, was here a rather desperate consequence of the Industrial Revolution: for Buck's view of 1736, top picture, shows buildings only on the original Steep Hill, and wooded slopes all around it.

Ian Nairn

Steep Hill, Lincoln

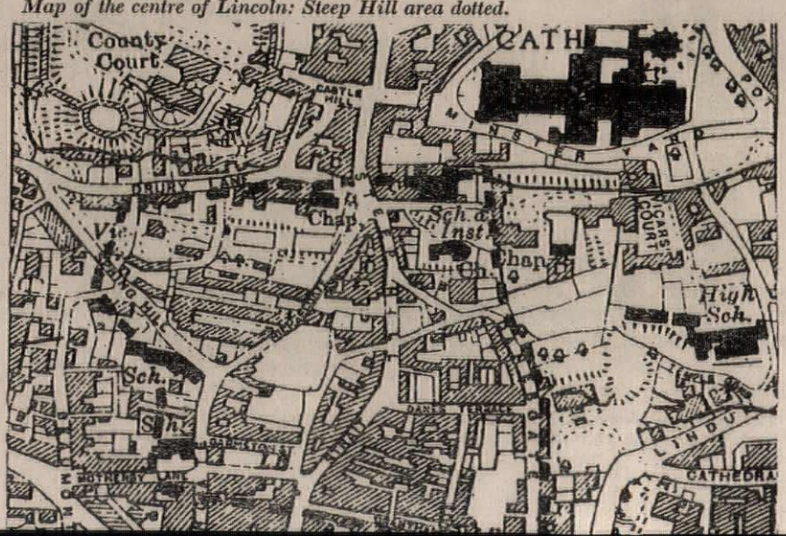
Steep Hill at Lincoln is a perplexing place. It ought to be magnificent—the cliff side joining the quiet Cathedral city at the top to the sprawling industrial town at the bottom, every street curving and dramatic, every view taking in a foreground of chimneys down below, and a background of parkland sweeping up to the skyline. And there it is, fallen-in, depressed, the old buildings decayed or painfully harsh, an amalgam of the worst Midland and East Anglian attributes: the flatness of the one and the hardness of the other.

That Steep Hill should have got like this was inevitable, and is not a case of shocking municipal neglect. Its topographical history must be one of the oddest in England. The central road, called first Strait and then Steep Hill, is simply a stretch of Ermine Street which the Romans in their bald-headed way ran straight up the side of a cliff: both north and south of Lincoln it runs straight on top of the escarpment for twenty miles or more. It naturally collected buildings—the famous Romanesque houses are both in Steep Hill—but until well into the eighteenth century it remained a ribbon on a wooded hillside: Buck's view of 1736 shows this clearly. When it came to be built on, it was not as a gracious section of a country town but under the desperate pressures of a rapidly expanding population, which in Lincoln produced results as mean and nasty as anywhere in the country. This bit of Georgian England belongs to Crabbe, not to Cowper. Once things were set up in this way, the result was as inevitable as the solution of a quadratic equation. Slow decay, intermittent byelaw replacement, wholesale demolition when the slum clearance acts caught up with it. The question now is not whether Steep Hill ought to be preserved but how it can best be redeveloped, and it is nice for once to have the issue so clear cut. Only two or three of the existing buildings on Steep Hill are worth keeping on their own merits, and the various reasons for retention are purely human, not architectural (no less important for that)—to cause the least possible disturbance, to keep any corner that someone cares for, to recondition where possible (not, I fear, very often) and, particularly, to halt further demolition until some new houses are built on the hill. At the moment, parts of it look like Coventry on the morning after the blitz.

Rebuilding implies some sort of plan, or at least a few basic decisions; on a site like this, the more flexible they are the better—the last thing Steep Hill needs is some architect's *folie de grandeur*. One alternative, which might be right here but perhaps nowhere else in Britain, would be to return it to its medieval state—a ribbon of houses up Strait and Steep Hill, the rest a great open hillside with plain grass, big trees, and nothing else at all: no asphalt, no flower beds, no fences. Because of the demolitions and the depression, it would be practicable, and in a way it would satisfy the deepest and most profound topographical need of Lincoln—to resolve its Upper and Lower Towns into something more than an exasperating accident. For, after a thousand years, they are still irrevocably split: Upper Town with a quiet village air plus this thumping monument to the thirteenth century's passion to find out all there was to be found about lancets; Lower Town with all the shops, all the industry, all the offices. And from the shops, industry and offices to the nearest proper open space is farther than from Holborn to Hyde Park. Open downland is the last thing I would ever have expected to suggest for Steep Hill, it is something that has grown on me over repeated visits, and it would be as stupid not to mention it as it would to insist that it is the only solution. It happens to move me emotionally, but there are plenty of different ways of cooking a steak.

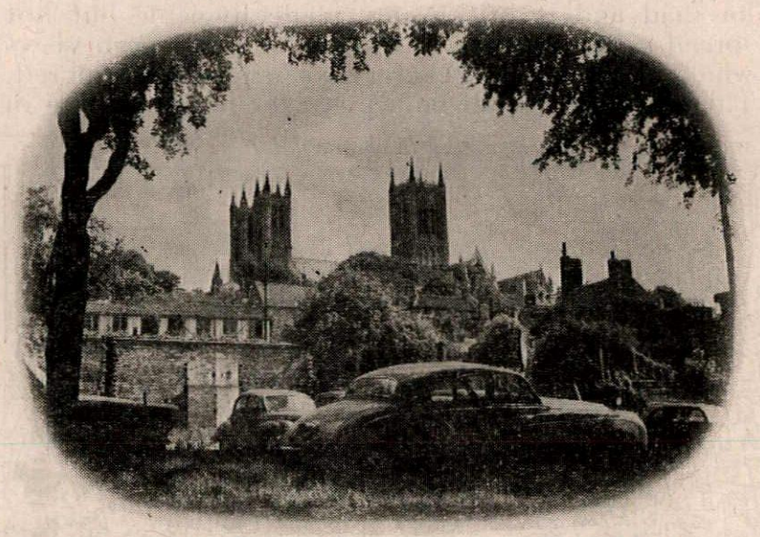
The impossible grand gesture apart, Steep Hill ought to get back the close, intimate pattern that it has had and is just losing, made hygienic but not spread out, and take advantage of the superb views which the eighteenth century so surprisingly ignored. This must first of all be a place for people to live in

Map of the centre of Lincoln: Steep Hill area dotted.



and not a depository, as it is at the moment, for hutted primary schools and ATC headquarters, fenced-off tennis courts, cheapjack garages and small factories. It would build up fairly easily with three basic elements—level terraces along the contours, like those just now being demolished, with a view from at least the upper windows; stepped terraces down the contours, planned with at least one view from a window in the end gable, and tower houses. These would be two rooms thick and four storeys high (basement garage, living, living/bedroom and bedroom); and this idea, so far from being an idealistic dream, is lifted bodily from the only modern house on Steep Hill, designed for himself by H. S. Scorer, the partner of Denis Clarke Hall. Half a dozen of these would give the hill a signature of its own and attract back into the centre of Lincoln the kind of professional person who likes something different. The other inflections are topographical catch-as-catch-can: a little *place* at the join of Steep Hill and Danes Terrace, a new set of steps up to the Minster Yard prolonging Flaxengate, reconditioning even of the polychromed aridities of the 1880's to give a bit of counterpoint and to keep the principle, which ought to be inviolate, that if a person likes his house and takes a pride in it, he has a moral right to remain there, come what may. In the rebuilding, too, it would be good if the colours could become deeper and richer. At the moment the prevailing combination—vermilion and a strident greyish-white—is like a pair of Bach trumpets in different keys, both playing flat. Rose-red and a yellow stock brick would be in the same colour range but would help to dispel the terrifying harshness.

This story has no moral and not much other application: Steep Hill is a unique problem. A bit of a city has simply laid down and died, and nothing could have been done about it until now. This is the exact point when the City of Lincoln can start to remake it. They have shown their enterprise in sponsoring a competition for the Civic Centre; it would be a splendid thing if they could give fulfilment to a part of Lincoln that is as idiosyncratic and English as the jagged lancets in the cathedral nave.



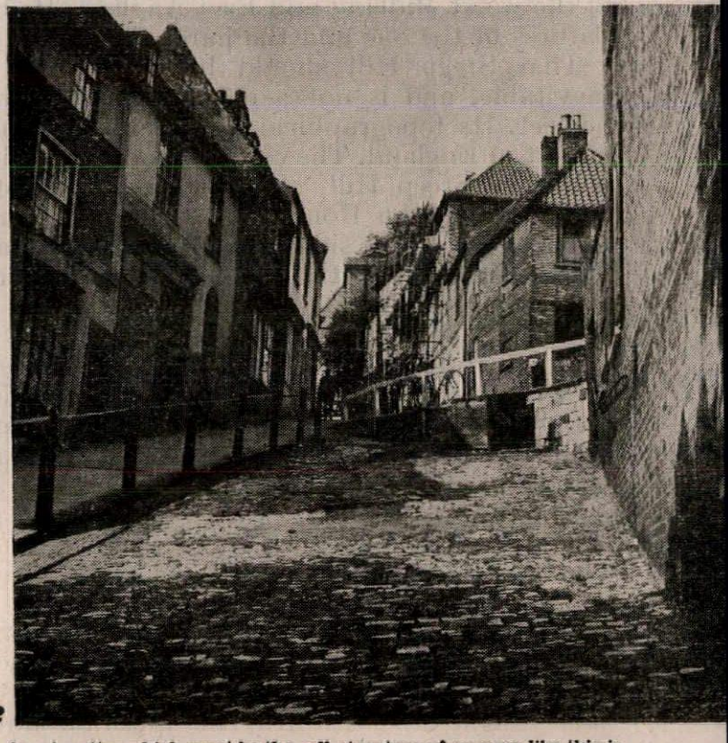
The cathedral from St. Martin's Square. Pretty foreground and splendid background: but what about the middle distance? Parked cars and dereliction.

Character



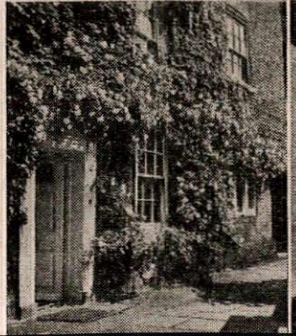
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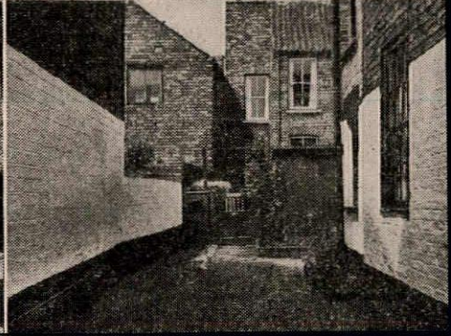
The traditional views down and up the picturesque end of Steep Hill, *1* and *2*: curving views accentuated by a brilliantly sited handrail, narrow streets, a five mile view on the downhill horizon. Alas, everywhere else on the hill the pattern has decayed hopelessly or was never even established. The number of lovable, cared-



2

for vignettes which must be the cell-structure of an area like this is tiny: there is much more humanity in the average bit of East End slum clearance. The human touches do exist, and the two illustrated, *3* and *4*, typify nicely the high- and low-income expressions of self-respect. Both are equally vital.





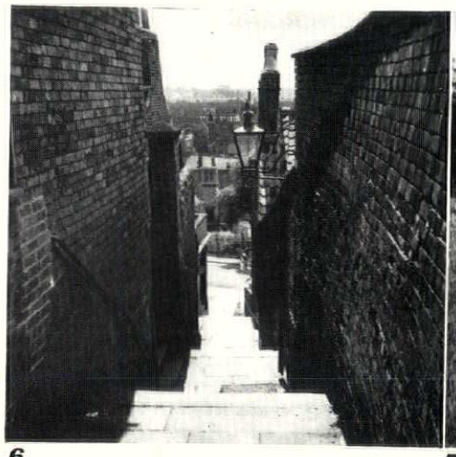
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Dereliction

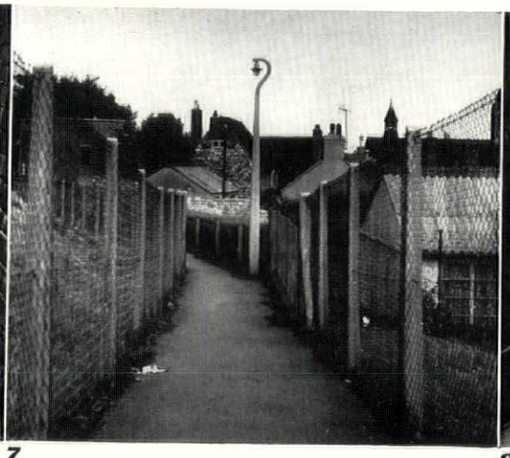
The present state of parts of Steep Hill is more like 1941 than 1961, ***5.*** All this was probably inevitable. But it is the side consequences that are so depressing—and not at all inevitable; contrasted pathways in the old Steep Hill, ***6,*** and the new, ***7.*** More telling still is the terrifying change brought about in the steps by St. Michael's Terrace in two years. It is hardly credible that the two views, ***8*** and ***9,*** taken in 1959 and 1961, are of the same place. This is not only slum clearance but the death of a whole townscape.



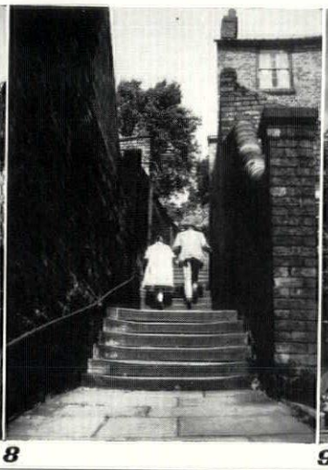
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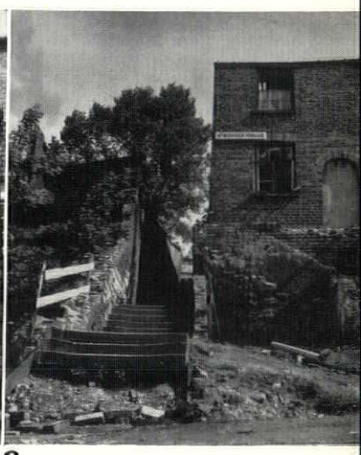
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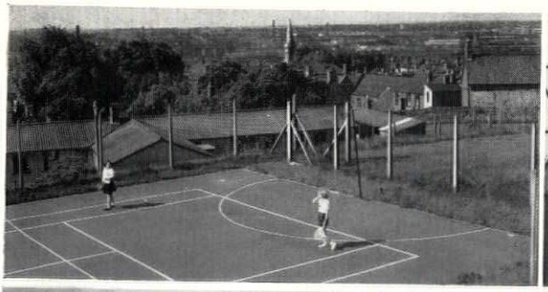
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10



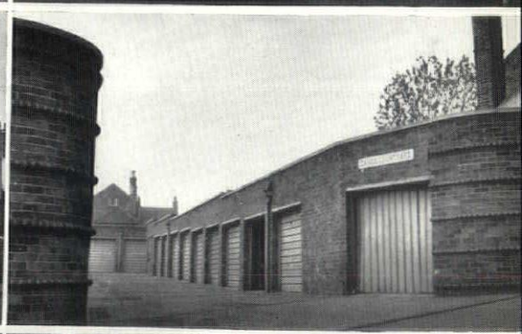
11

Replacement

The death of the old Steep Hill would be acceptable if anything worth while had replaced it. But, so far, the results have been very depressing: a temporary school and its attendant tennis courts with the attendant wire netting, ***10*** and ***11,*** and miserable factories and garages, ***12*** and ***13,*** which give no indication whatsoever that the site is worth any consideration at all. And, alas, Steep Hill can be killed with kindness, also: ***14*** shows the townscape loss in the more famous set of steps immediately east of Steep Hill created simply by opening out and tidying up a be-creepered wall. Even the copy-book picturesqueness of ***15*** hints at the eventual danger if people become too cosy and loving in the wrong way.



12



13



14

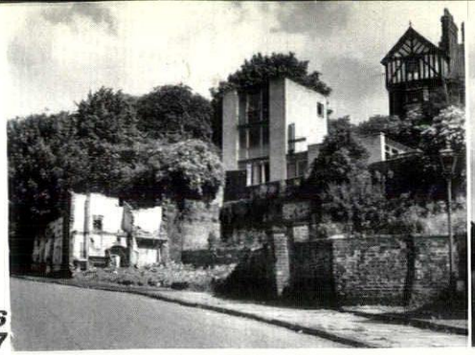


15

Opportunity

The overall pattern of Steep Hill, if it is to be rebuilt at all, should be based on terraces along and across the contours, punctuated by tower houses at focal points. A row like St. Michael's Terrace, which is now being demolished, may have been irreparable, but the pattern is still valid. The idea of tower houses is already being realized by H. S. Scorer, whose house ***16,*** is now dramatically islanded above a foreground of desolation. And a building like ***17,*** even though not quite in Steep Hill and not a house, shows that at least some other Lincoln architects would be capable of understanding the jerky, angular rhythms needed if the new housing on the hill is to have a virile pattern. The architects here were Parker and Roberts.

Specific parts of the site will need special treatment. The desolation that is the north side of St. Martin's Square, ***18,*** a view which sums up the whole story of Steep Hill, needs rebuilding as soon as possible, ***19.*** Even here, replacement would not be a case of second best: the old cottages were mean, and did not make a proper enclosure. The new Steep Hill could easily be a far better place than the old, in terms of townscape as well as sanitation. The triangular space created by demolition at the corner of Strait and Danes Terrace, ***20,*** is a natural site for a tiny place with a cafe just where the traveller uphill begins to feel the gradient, ***21.*** And the view up Flaxengate, ***22,*** which is now blocked, could so easily be prolonged in a set of steps that would cross above Danesgate and go on to come out directly opposite the West Towers of the Cathedral, a route which could become the most exciting of all the ways between Upper and Lower Lincoln were it treated as sympathetically as the more famous steps which run down past Vicar's Court a little farther east, ***23.***



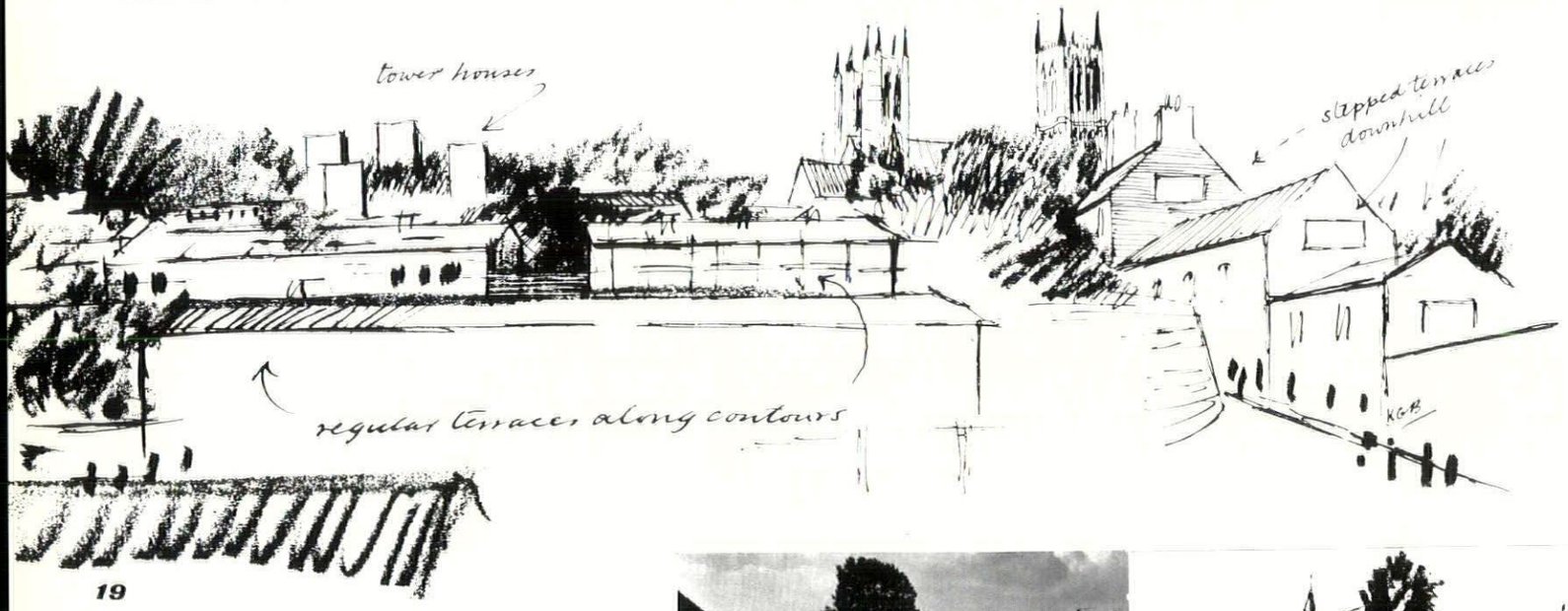
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18



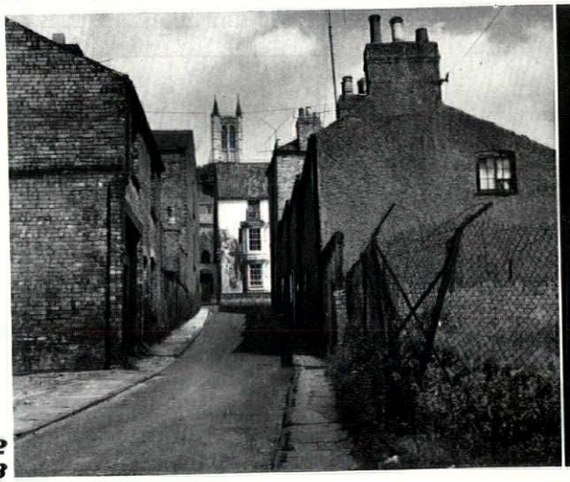
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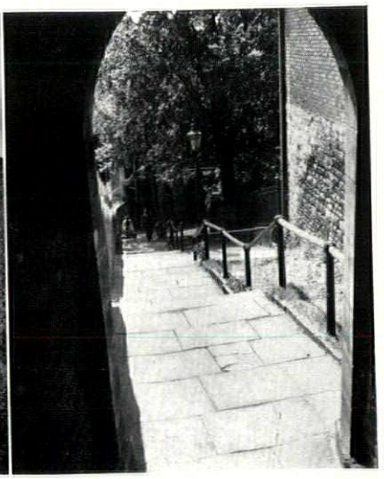
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22



23

ID
a monthly review of interior design

ss Oriana

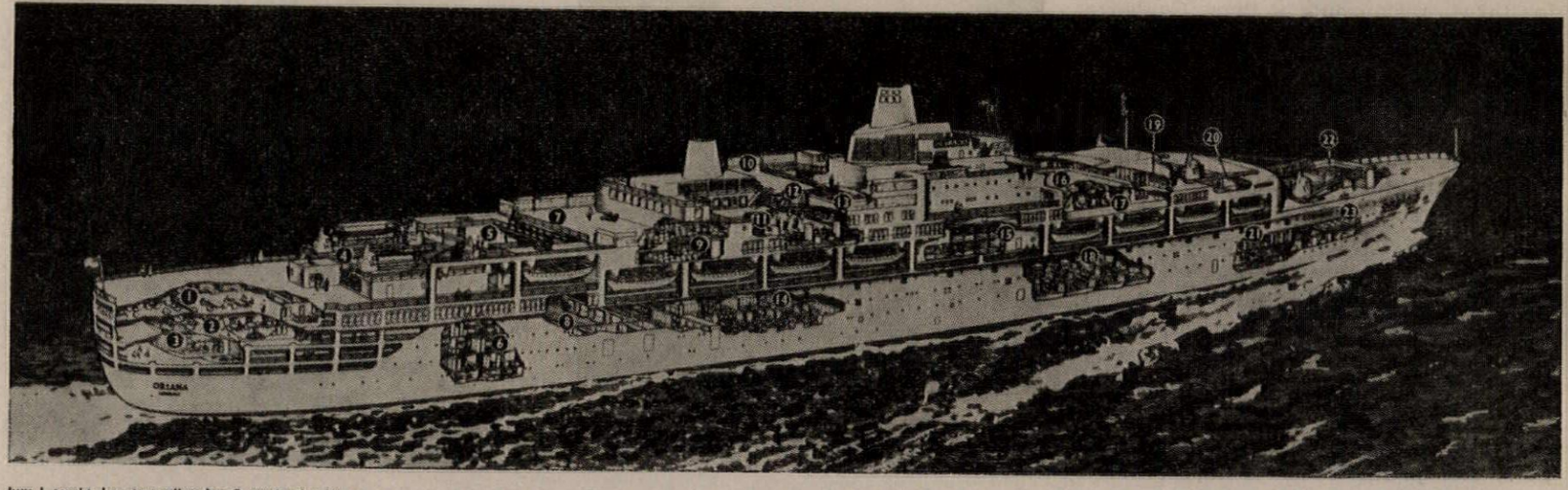
owner : P & O/Orient.
Naval architect : Charles Morris.
Co-ordinators of interior design : Design Research Unit.
partners in charge : Misha Black, Milner Gray, Kenneth Bayes.
consulting architect : Brian O'Rorke.
associated architects: Ward and Austin, R. D. Russell and Partners.

ss Canberra

owner : P & O/Orient.
Naval architect : John West
Co-ordinators of interior design : Sir Hugh Casson, Neville Conder and Partners in Association with McInnes, Gardner and Partners.
associate : Timothy Rendle.
associated architect : John Wright.
chief assistant : Frederick Hickman.
cabin interiors : Barbara Oakley.

Oriana and *Canberra* (whose design is discussed in Stephen Garrett's article on pages 155-158) are ships of closely comparable specification, performance and function, capable of round-the-world service, and the two largest, as well as the two newest, passenger ships built in Britain since the war. *Oriana* is 804ft. long overall, with a beam of 97ft. and a gross tonnage of 42,500. *Canberra* measures just over 818ft. in length, beam 102ft., with a tonnage of 45,000.

Oriana can accommodate 646 First Class Passengers in 337 cabins (some of which

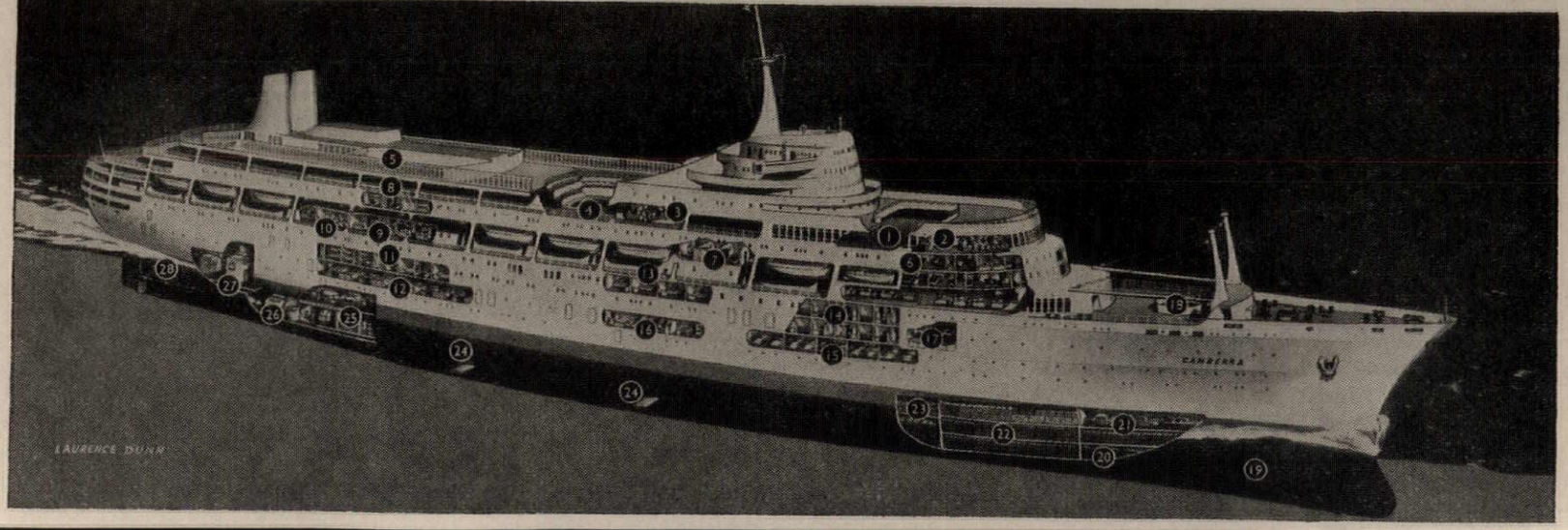


keys 1, tourist class stern gallery bar. 2, tourist class library. 3, tourist class juniors club. 4, tourist class lower swimming pool. 5, tourist class verandah pool. 6, tourist class cabins. 7, tourist class stadium deck. 8, tourist class entrance hall. 9, cinema. 10, first class tennis deck. 11, first class ballroom. 12, first class tavern. 13, first class swimming pool. 14, tourist class restaurant. 15, first class cabins. 16, first class stadium. 17, first class library. 18, first class restaurant. 19, first class stadium room. 20, first class juniors club. 21, crew cabins. 22, crew swimming pool. 23, crew recreation room.

Oriana

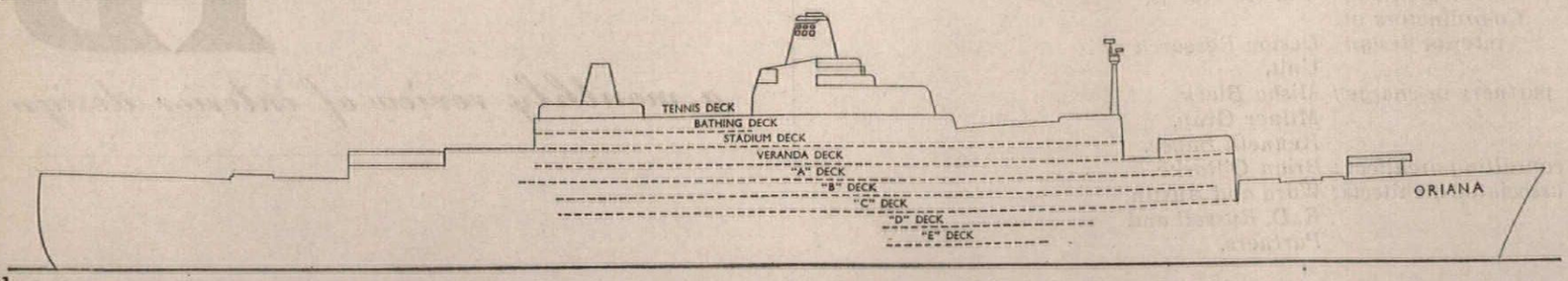
Canberra

key:
1, games arena. 2, observation lounge. 3, the Bonito Club. 4, first class swimming pool. 5, glazed wind screens. 6, first class court cabins. 7, first class cabins on B deck. 8, tourist class cabins on A deck. 9, tourist class lounge (William Fawcett Room). 10, tourist class reading room. 11, hospital. 12, tourist class dining-room. 13, first class verandah suites. 14, first class court cabins. 15, first class dining room (restaurant). 16, first class galley. 17, cargo transporters. 18, light and air hatch over crew swimming pool. 19, opening for transverse propulsion unit. 20, fresh-water tank. 21, No. 1 hold and 'tween deck. 22, No. 2 hold and 'tween deck. 23, No. 3 hold and 'tween deck. 24, stabiliser fins. 25, engine room. 26, propulsion motor. 27, boiler room. 28, open 'A' bracket supporting propeller shaft.



IID

Oriana and *Canberra*



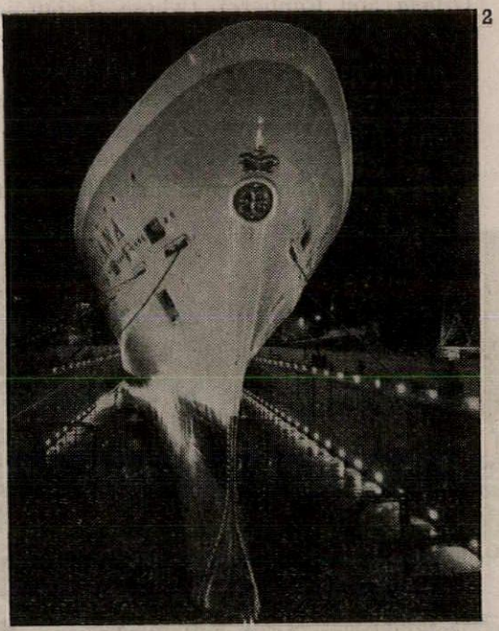
1

are convertible from Tourist use) and 1,496 Tourist passengers in 513 cabins; there are also 50 children's berths in First Class, and 96 cabins in this class have private bathrooms. On *Canberra* the comparative figures are 548 First Class passengers in 305 cabins (with 100 cots for children) and 1,690 Tourist in 509 cabins (some of which, again, are convertible to First Class). 107 First Class cabins have private baths. Cinemas are common to both classes, that on *Canberra* seating 332, on *Oriana* 318, but the latter has more restaurant accommodation—1,201 places in three restaurants — than *Canberra*, which seats 1,038 in two.

The most radical difference between the two ships stems from the disposition of the propulsive machinery. *Oriana*, in spite of the unusual form of her upper works, conforms broadly to established passenger-ship practice of having her engines amidships, which imposes certain obvious restrictions on the disposition of passenger spaces, in order to clear the smoke and ventilation stacks, etc. *Canberra*, whatever the countervailing disadvantages of putting the engines aft, does have the bulk of her midships space free for passengers. However, economic restrictions (see p. 137) made it impractical to exploit this freedom vertically, and on both ships the interior designers were faced with public spaces of considerable extent, but relatively low headroom.

One further point that needs to be made here, since it is difficult to illustrate it fully in a selection of pictures that cannot give absolute coverage to two very complex ships, is the use made by the interior architects of the work of fine artists, and the contribution of those artists to the finished ships. On *Oriana*, DRU called in John Piper, Humphrey Spender, Mary Martin, Anthea McNish, Edward Middleditch, Ian Mackay and Madeleine Pearson, while *Canberra* had the services of Edward Ardizzone, Geoffrey Clarke, Julian Trevelyan, Edward Bawden, Ruskin Spear, Mary Fedden, John McCarthy, George Mitchell, Arnold Machin, Robert Buhler and Humphrey Spender. Some of their work will appear when the Tourist areas of *Canberra* are illustrated in next month's AR, but one of Mary Martin's reliefs on *Oriana* is seen on p. 191.

1, lengthwise section through *Oriana*, showing First Class accommodation diagrammatically ; tourist accommodation starts two decks lower, goes two decks deeper (G deck) and lies aft of First Class.
2, the bow of *Oriana* showing fine lines and 'bulb' below water-line.



2

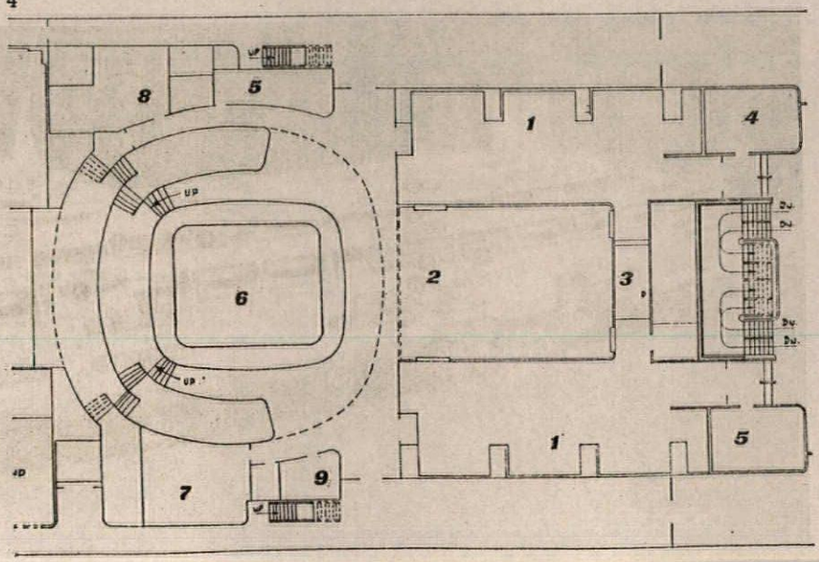


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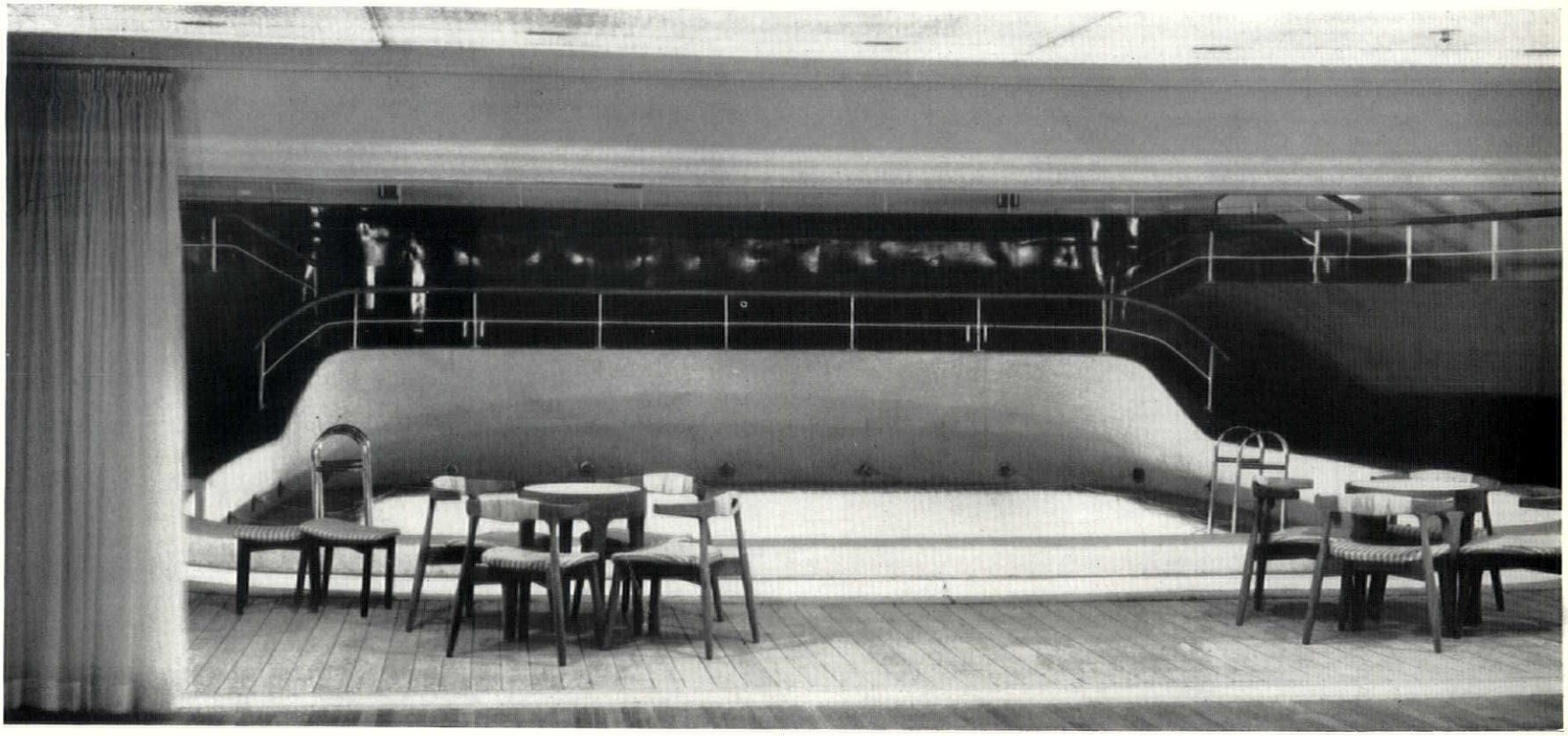
3, general arrangement of First Class swimming pool on *Canberra*, seen from above Bonito Club.
4, plan of pool and Bonito Club area on *Canberra* ; see details and general view on facing page.

key: 1, Bonito Club. 2, dance floor. 3, bandstand. 4, pantry. 5, bars. 6, swimming pool. 7, women's dressing room. 8, men's dressing room. 9, attendant.

4



Swimming Pool / Bonito Club



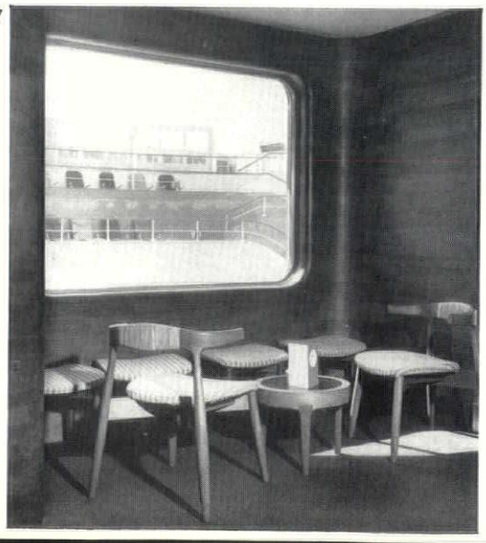
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5, the first class *Bonito Club* and swimming pool (Sir Hugh Casson and Partners) form as far as possible one space. The pool, faced in white mosaic, is set within the enclosing sun terraces, making an arena protected from the wind. On the line of the curtains a glass wall, hydraulically operated, slides vertically into the floor allowing dancing to continue from the interior dance floor out on to the deck space. 6, the band stand at one end the interior dance floor is flanked on both sides with raised seating areas with stacking chairs and fixed circular tables lit internally to give a soft glow through their decorated glass fibre tops, designed by Humphrey Spender. 7, side alcoves faced in strongly moulded teak give a view over the swimming pool.

6



7



Oriana

Observation Deck



8

9



ID

10



Observation Deck



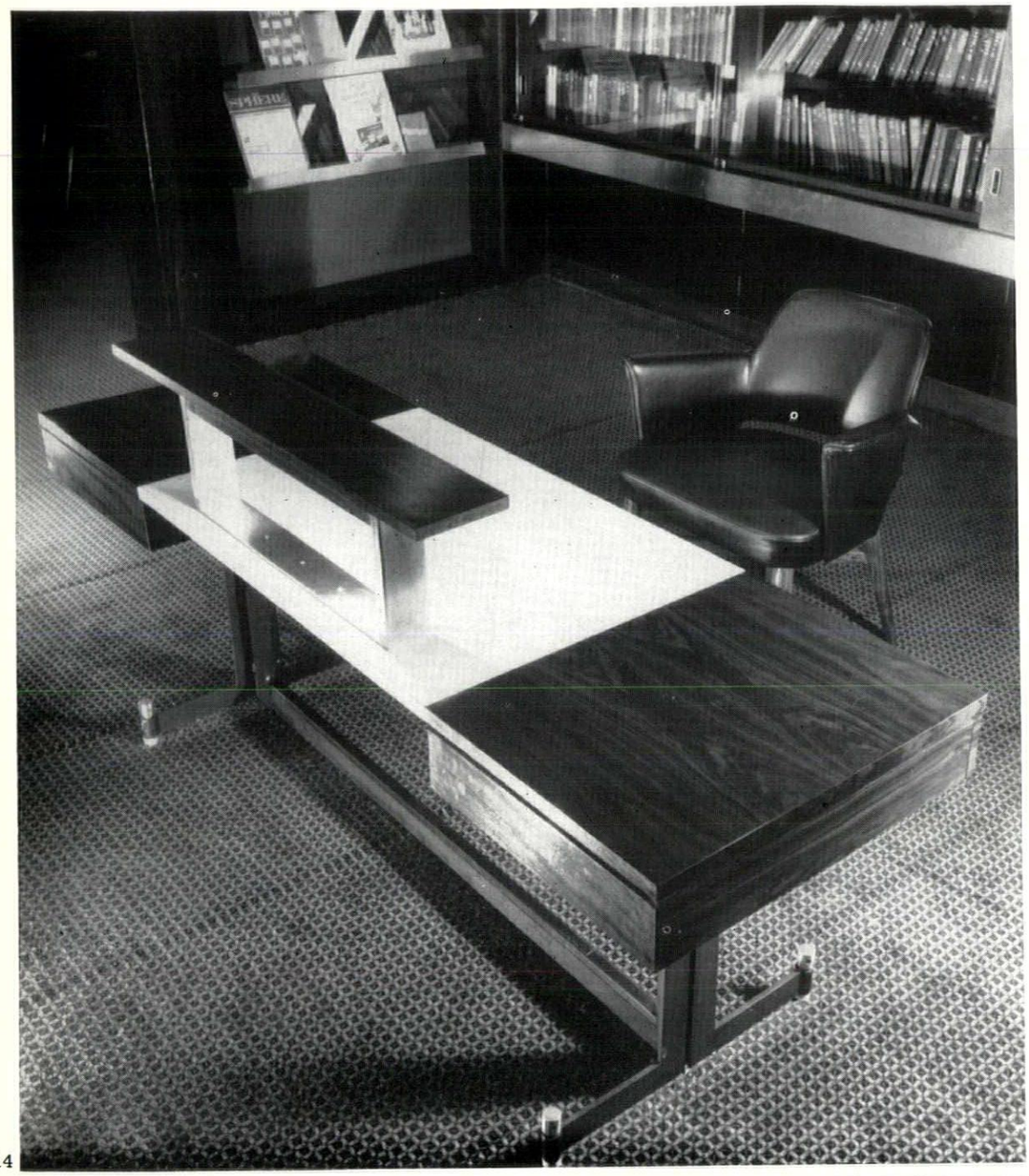
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12



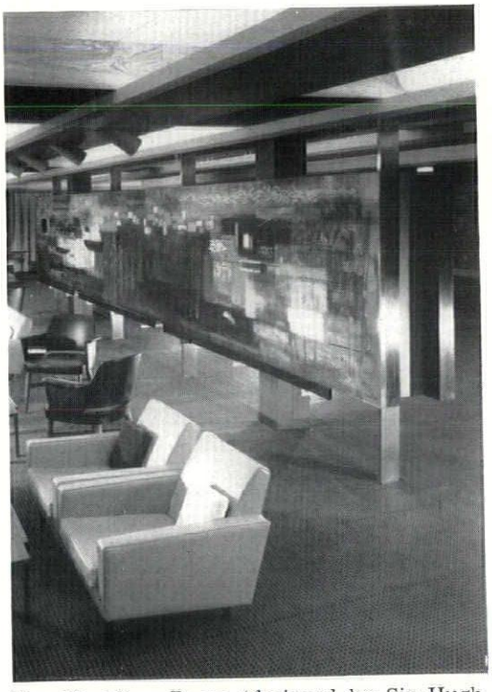
8, first class observation room facing aft—*The Look-out* (Design Research Unit). The bulkheads are in cherrywood veneer and the ceiling in acoustic tiles and boarding painted white. The room contains an exhibition 'History of Oriana' (designed by Ronald Armstrong and Collis Clements, of DRU). The furniture consists of cane chairs on metal frames; the floor is in dark grey linoleum. 9, reclining and folding deck chair with detachable cushion (designed by Ernest Race). 10, detail from *The Look-out*. Compass mounting (designed by DRU) with matt black stove enamelled pedestal and teak handrail.

11, *The Crow's Nest*, first class observation lounge, with full height windows facing forward (designer: John Wright). In the centre is a spiral staircase, with conical perspex light fitting over, leading to another lounge two decks below. The ceiling is close boarded, yacht-fashion, and houses fluorescent and spot lights. The floor is surfaced in teak and close carpeted (carpet design by Audrey Tanner). The area contains various navigational features — compass, miniature buoys, and relief maps with flashing marker buoy positions. *The Crow's Nest* is used for general recreational purposes and includes a bar. 12, 'Bertoia' chairs, chromium plated wire basket construction with yellow and white tweed upholstery and matching stools.



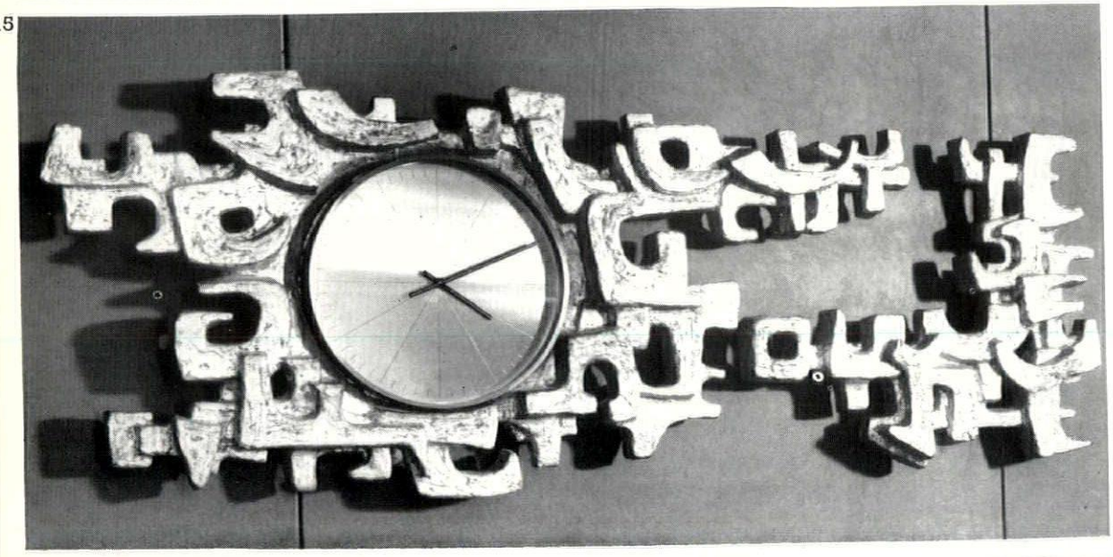
14

13, *The Princess Room* (designed by Design Research Unit), the main first class lounge (about 80ft. by 70ft.) is arranged to provide general sitting area and a screened off library. This screen is formed to include a mural, by John Piper. The chairs are by Robin Day. The walls are panelled in macassar ebony and the ceiling with its concealed lighting is faced with olive ash with acoustc board in the lighting troughs and intensity of the cold cathode lighting can be varied to suit different uses of the room. 14, the librarian's desk, designed by DRU, is in macassar ebony with silver bronze metalwork and stove enamelled underframe. The writing surface is in hide. The chair, upholstered in black hide, is by Robin Day. 15, clock with decorative gold leaf surround designed by John McGill; clock face by Christopher Timings, of DRU. The clock is set against moss green leather panelling which is used in some sections of the room.



13

The Meridian Room (designed by Sir Hugh Casson and Partners), first class lounge, provides general lounge area, card playing tables, access to a spiral stair leading to *The Crow's Nest* observation lounge, and has a bar at one end. 16, a card table with reversible top giving hide or baize top, with chairs upholstered in black hide. 17, writing desk and chairs in the Writing Room. 18, preliminary model, prepared by Sir Hugh Casson's office, showing the arrangement of this room. Writing Room and Library are at the bottom, main lounge area in the centre leading to the spiral stairs, and bar beyond. The suggestion of open planning an area such as this, and the stress on curving forms, is one of the main contributions made by the interior architects.



15

First Class Lounges / Libraries



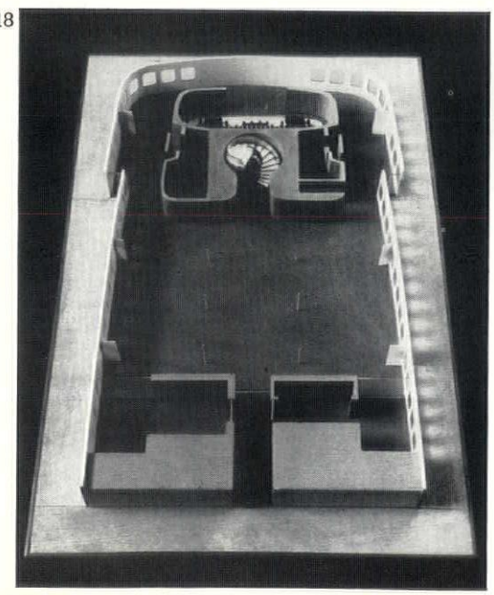
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17



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18



Dining Rooms



19



20



21

ID

22



19, first class restaurant (designed by R. D. Russell and Partners), seating 360. The room is divided into a large central area with smaller bays on either side. The panelling is in figured Brazilian rosewood and dark green leather cloth ; curtains in bright pink, scarlet and dark orange Siamese silk. The lighting can be adjusted to give strong light during the day and more subdued light by night. The chairs (designed by Ian Hodgson) are in rosewood with scarlet upholstery. Specially designed stainless steel cutlery by Robert Welch, and Wedgwood china by Professor Gooden. 20, tourist restaurant (designed by Ward and Austin). The floor is of vinyl tiles ; ceilings in white and beige leathercloth and walls panelled in Indian Silver Greywood and beige leathercloth.

21, first class restaurant (designed by Sir Hugh Casson and Partners). The room extends the full 100ft. width of the ship, but has no portholes. Every effort has been made to reduce an oppressive feeling to the room due to its low ceiling by variety in lighting, a sunken central section, raised central ceiling and high backed seating to side alcoves. 22, detail of inlay to Indian laurel balustrade surrounding central area by William Mitchell. 23, dining chair.



23

Oriana

Cabins / Childr



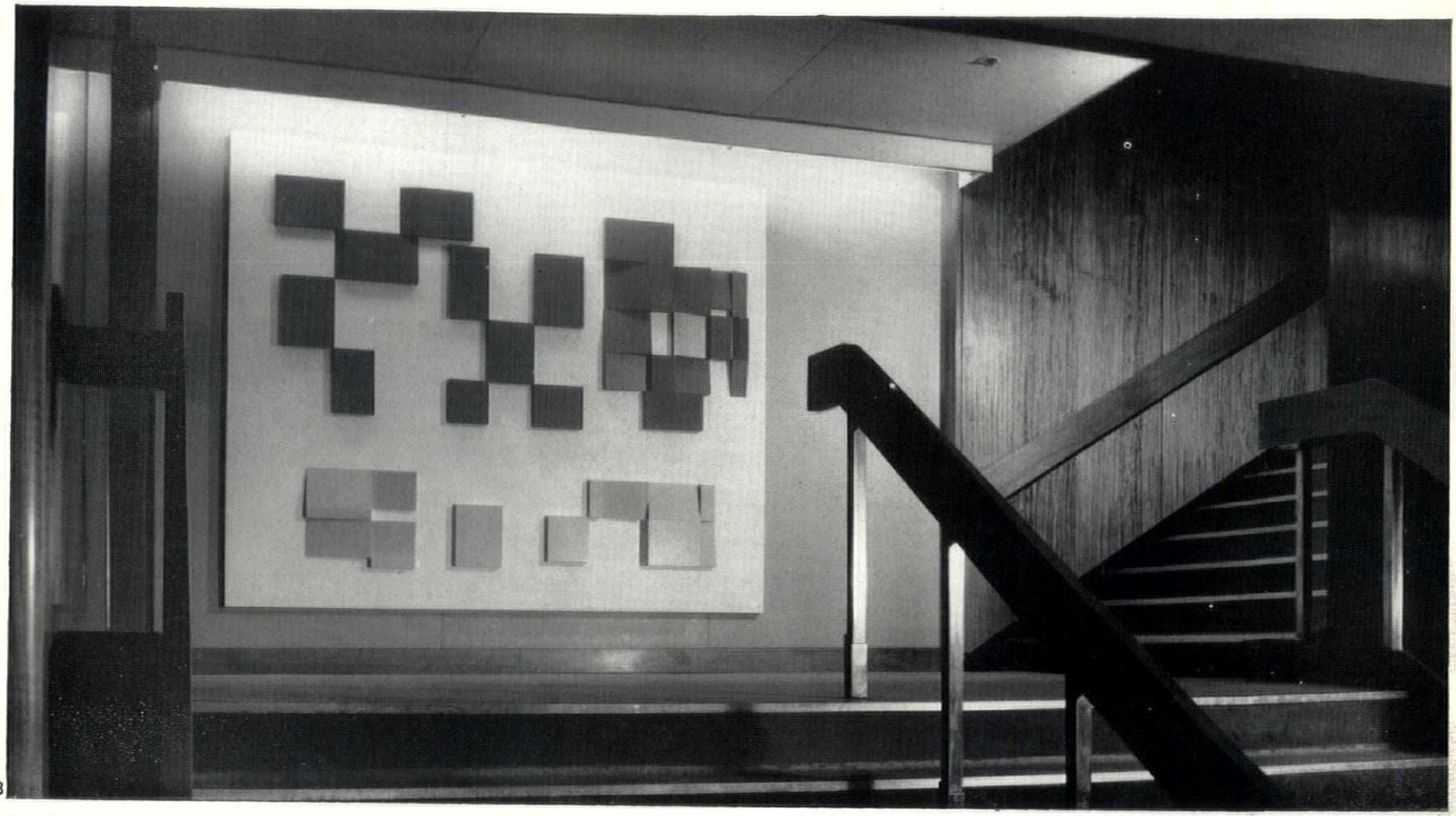


24, tourist class two-berth cabin (
by R. D. Russell and Partners and
Line Management). Charcoal grey flo
and white striped PVC to walls. 25,
the ' verandah ' suites, also by R. D.
and Partners. Each suite has its own
area with large bulkhead windows. 26, t
class *Junior Club* (designed by D
Research Unit). The climbing frame
designed by June Lyon and the pl
mural by Robert Perritt. 27, detail of cl
ing frame in first class *Junior Club*, also
DRU. The frame is made of teak (tou
frame is mahogany, a subtle class distinctio
with aluminium supports.





Circulation/ Signposting



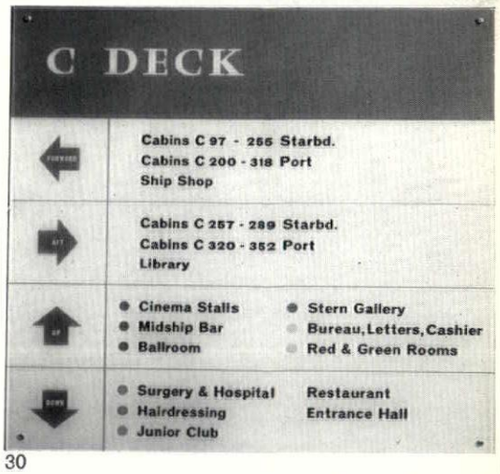
28

28, first class main stairway (designed by Design Research Unit). The low relief is by Mary Martin. Panelling is in paldao and the ceiling surfaced in white PVC cloth. The landing and treads are surfaced in dark and light grey linoleum. 29, ash bins in two sizes designed for cabins and public rooms, in spun aluminium, anodized and stove-enamelled sea-green with white lettering. Designed by Ronald Armstrong, of DRU. 30, directional signposting on interior decks, designed by Christopher Timings, of DRU.

31, directional signposting, designed by David Collins for Sir Hugh Casson and Partners.



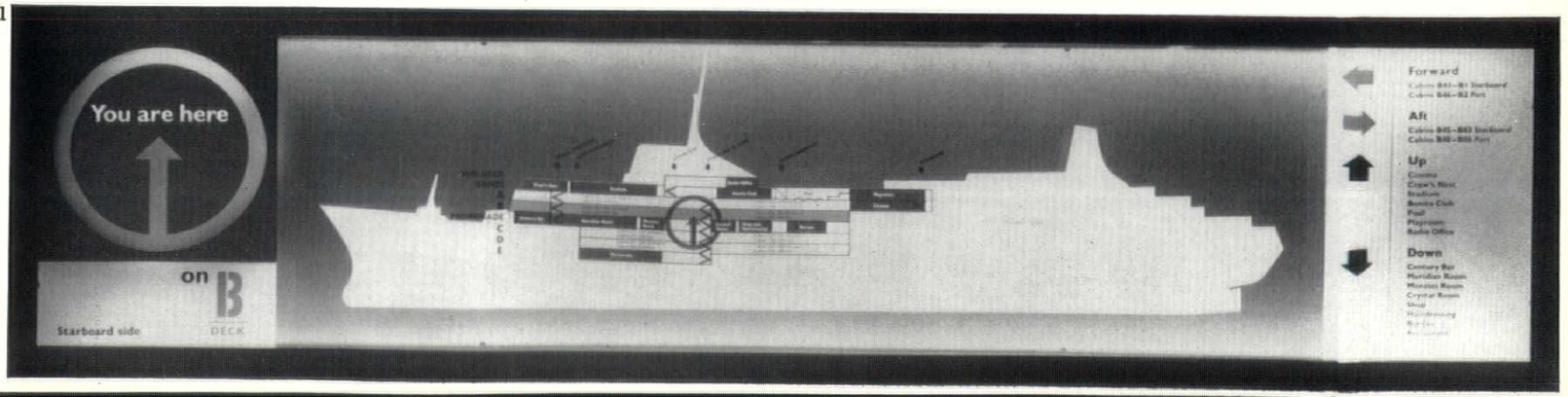
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30

Canberra

31



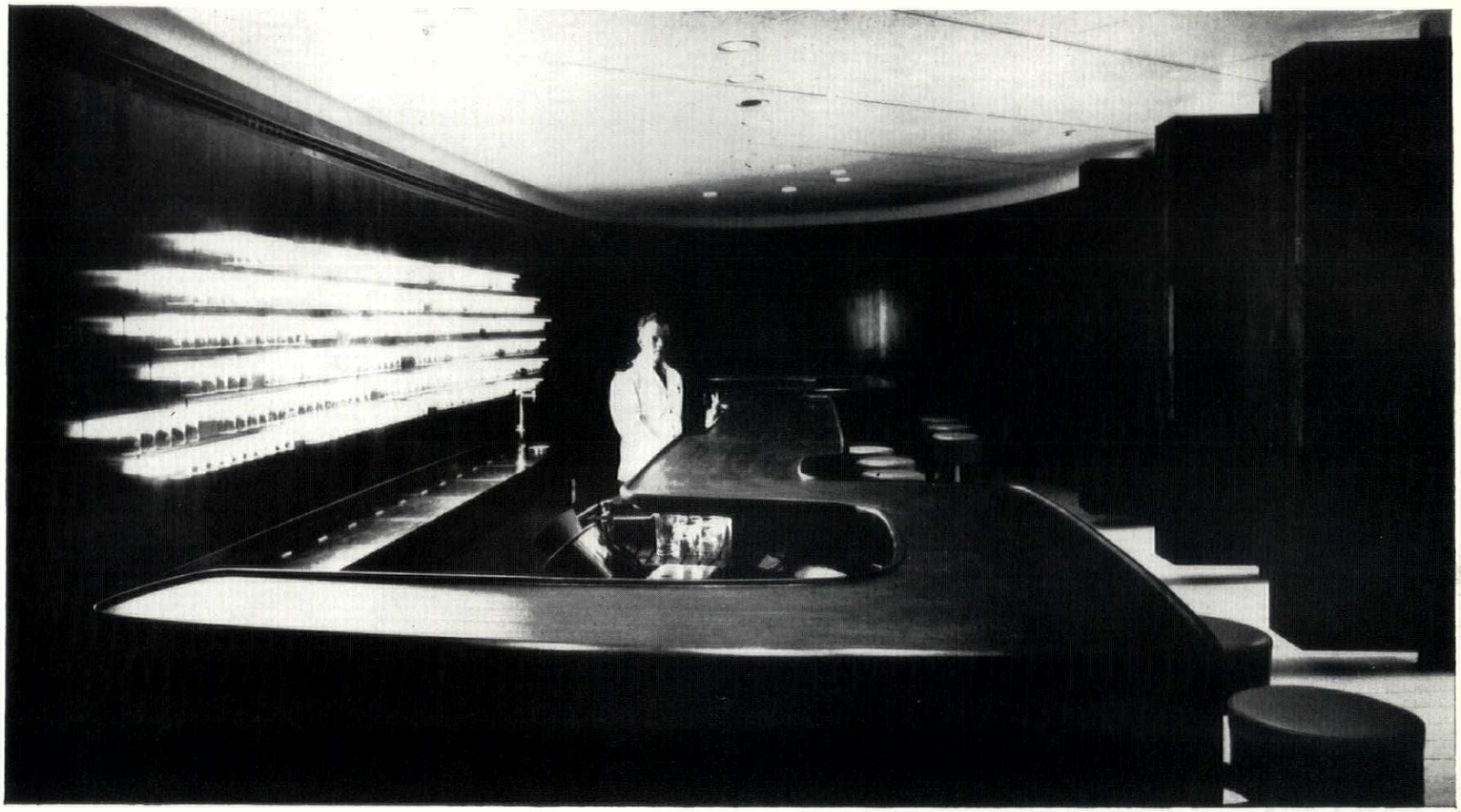


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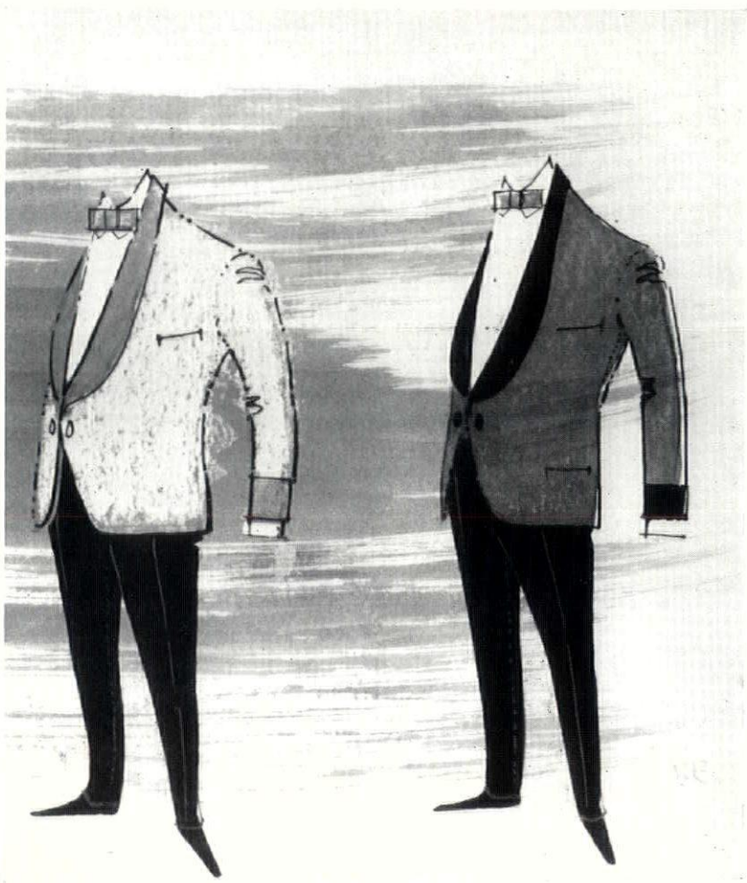
33



32, a passage to the first class *Plough Tavern* from the open deck (designed by Design Research Unit). The glass was recovered from the now demolished *Plough* at Notting Hill Gate and the door panel was designed by Alan Ball, of DRU. The floor of the passage is in white mosaic and the woodwork is cedar. 33, tourist ballroom (designed by Ward and Austin). The room is dominated by five secretly lit orange saucer domes above the teak dance floor at each end of which is a curved green hide covered wall. The dance area is flanked by alcoves leading directly to the open deck and fitted with settees in orange hide. Wall panels by Olive Sullivan. Chairs upholstered in green hide.



35



34

34, preliminary designs for bandsmen's uniforms by Sir Hugh Casson and Partners. 35, first class bar, screened off from the Meridian Room Lounge. Designed as a sit-up bar, a new feature for P. & O. liners, the counter is strongly sculptured and formed in laminates of various dark coloured hardwoods.

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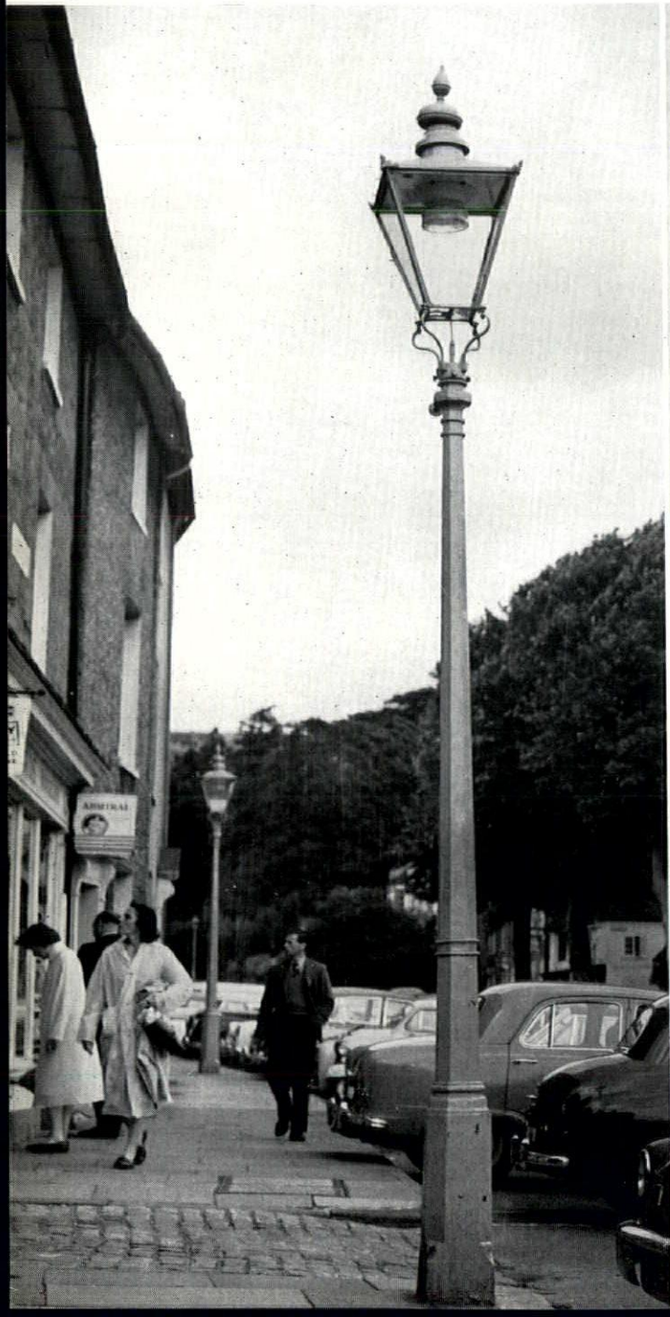
In next month's issue the cabins and Tourist class public areas of Canberra *will be the subject of ID.*

Victorian cast-iron lamp-posts can be successfully converted from gas to electricity. This would be done more often (as the article opposite argues) in the interest of the scale and character of urban streets if it was not for the apathy and false notions of economy on the part of local authorities and the tidy mental habits of local surveyors, to whom a clean sweep and a standard new design mean more than visual appeal and the genius loci. ***1,*** Castle Street, Farnham, where the old lamp-posts have been preserved and converted to electricity and where the substitution of taller modern ones would have been disastrous. ***2,*** a close-up of one of the Farnham lamp-posts. ***3,*** a particularly robust example similarly converted in Hallam Street, London (Marylebone Borough Council). ***4,*** an example in St. James's Gardens, Holland Park (Kensington Borough Council), showing that conversion is still possible if fluorescent lighting is desired. The lantern here contains a fluorescent ring instead of a tungsten lamp.



1

2



3



4



CONVERTING GAS LAMPS

DEREK BARTON

It is difficult not to think that the Victorian ironfounders who cast the hundreds of thousands of gas lamps that lit most British towns till the 1930's smile to themselves in whatever place Victorian ironfounders go to. What they must have regarded as routine orders are now fussed over, petted, fought for, flogged by insensitive councils or their contractors, snapped up to adorn the gates of industrialists' country mansions or to beacon defiantly the porches and backyards of more modest men. Their lamps have achieved status symbol rank, like vintage cars and deerstalkers, signs of style in a styleless age, snooks cocked at mass-production, dead levelling, bureaucracy, etc. But before they become collectors' pieces, overprized yet at the same time underrated, let us not forget that many of them, sensibly and sensitively treated, can still have years of useful and decorative life before them as electric lamps *in the right sort of street.*

I emphasize 'the right sort of street' because the mere mention of preservation, conversion or aesthetics in connection with street lamps is apt to bring the lighting engineers down on one with all the familiar arguments about road casualties and detection of crime, and the less enlightened borough engineers and councillors with all the familiar arguments about 'commercial cheerfulness' and 'equal standards throughout the borough.' I completely agree with them that it is just as important not to be preservationist about all cast-iron gas lamps (one can easily lose all sense of proportion over a restored 1927 Sugg) as it is not to howl *every* time an early Victorian building comes down. Life has to go on, the streets have to be lit, and good (or bad) modern streets look better with good (but not bad) modern street lighting. But neither is it purely fuddyduddy to declare that old streets hardly ever look well with even good modern lamps and that dark brick or light painted Georgian and Victorian terraces and villas *demand* where possible the retention of honest Victorian lamps which alone seem to achieve the requisite blend of solidity, just scale and gently ornate character. Anyone who doubts this should ramble round the side streets of Chelsea or Holborn now and a good deal of Kensington* in the near future. Then let him take a bus up to Hallam Street in Marylebone, where some splendid Victorian lamps have recently been converted to electricity, or a train to Farnham in Surrey, where Castle Street, an eighteenth- and early nineteenth century street of great beauty, is now lighted by converted Victorian lamps and standards.

As councils, with such enlightened exceptions as Farnham UDC (who actually sought advice from two local architects), seem automatically averse from converting gas lamps to electricity unless the ratepayers practically wring their necks, let us soberly examine the main points involved in such conversion, so that intelligent ratepayers can put the arguments sensibly and intelligent councillors follow them sympathetically.

First, let us make it quite clear that we are not advocating conversion for A-class streets (that is main traffic routes), seeing that the high and heavy traffic, as well as the miscellaneous architecture, almost invariably puts short, post-top lamps out of court. It is to B-class streets† whose style and scale require sensitive treatment, that we confine these remarks.

Practicability of repair and conversion

Naturally many of the Victorian lamps have become corroded or bashed about in the course of time. But many haven't. The ironfounders may smile again at the sheer foursquare sturdiness of their handiwork which makes those spoilt darlings of the modern scene, sheet steel, aluminium and concrete, seem insubstantial in comparison. It is therefore up to any council when it conducts the surveys for a new lighting scheme conscientiously to investigate the existing lamps and see how many can be salvaged to replace or supplement, if necessary, the lamps in B-class streets of architectural merit. They owe this to their ratepayers who will probably have chosen the houses on which they pay their rates because they like the character and charm of the street.

Where there is a will there is usually a way. For example, Farnham UDC made experiments and found it was possible to cut doors in the bases of the existing standards to instal the switchgear. As for the lanterns, some enterprising manufacturers provide what are almost 'do-it-yourself' kits for converting them from gas to electricity. Siemens Ediswan, for example, have evolved a Gas Conversion Unit, 5, made for use with filament, mercury vapour and sodium lamps, and embodying the control gear, at a cost of about £7. This demolishes the argument that conversion is a matter of unfathomable difficulty and vast outlay. One town in Scotland has a project for converting 2,000 existing gas lamps to electricity by means of these units. Local conditions must naturally vary enormously, but it is safe to say that, provided there are enough lamps in sound condition for the required number of streets, conversion is perfectly feasible.

Height

Most Victorian lamps have a mounting height of 10 or 12 ft., which is exactly right to the scale of the two- or even three-storey terrace streets which we have principally in mind. Councils tend to be hypnotized by the recommendation of a 15-ft. mounting height in the Code of Practice and sometimes treat it, to their shame, as a regulation. The Code actually allows a tolerance of 13 to 16 ft. where 15 ft. is 'not practicable.'

The 15-ft. height is of course the sort of official prescription that is very useful for a council to lean on 'as a matter of policy' if they have no feeling for their attractive side streets or the borough engineer can't be bothered about two sets of spares or two routines of maintenance.

The reason for recommending 15 ft. is that it allows better illumination than 10 or 12 ft. for traffic, and that such outsize vehicles as fire engines, pantechnicons and units of travelling circuses when they hit a lamp simply knock it through the window of the nearest house without themselves getting damaged by the lantern. In framing the recommendation, the official mind, as usual on the side of the transient motorist against the permanent resident, appears to have disregarded the fact a 15-ft. mounting height is almost exquisitely contrived to shine full into first-storey bedroom windows as well as being villainously out of scale with a coherently designed side street.

The traffic problem that produced this 15-ft. gospel is obviously closely connected with the cognate one of brightness and is more fully discussed under the next heading. Suffice it to say that not all councils have been cowed from introducing new housing schemes with 13-ft. street lamps; and that where old 12-ft. lamps have been converted and resited (and perhaps tactfully given a leg up to 13 ft. with a new base), no wrath from heaven has descended on them, so far as one knows, nor has the Ministry of Housing and Local Government refused them a loan. In other words, a council that is prepared to take trouble for its ratepayers is not necessarily sticking its neck out.

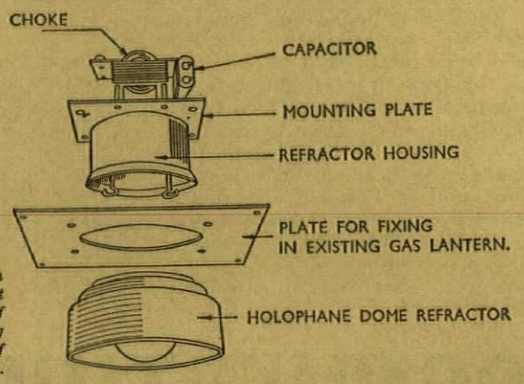
Brightness

Along with the lack of silence, universal brightness is becoming one of the major menaces of civilized modern life. Naturally there is a degree of dimness which can't be tolerated in any side street

* The controversy over the design of the new street lamps in Kensington has raged as fiercely as that in Chelsea and far longer. One is glad to record that Kensington Borough Council has allowed the old lamps to be converted in 26 streets 'of architectural merit' and sorry that it should have made itself ridiculous by having to admit that this selection from the plethora of fine streets and squares in Kensington is purely arbitrary. Pelham Crescent, for example, is apparently slated for the uninspired new concrete standards. So is the delightful enclave of Victorian streets (most of them with no through traffic) west of Gloucester Road and including St. Albans Grove, Victoria Grove and Eldon Road, where any change seems utterly unnecessary.

† There is surely a case for subdividing B-class streets as distinguished in the 1956 BSI Code of Practice (1004) into B and C streets. B, side streets of ordinary character, C, side streets with a preponderance of good architecture or with special character. If this were done councils might be more disposed to give their show streets special treatment instead of lumping all side streets together 'as a matter of policy.'

however romantic if cars and drunks are to use them with safety. At the same time, why should a quiet cul-de-sac which is barred to traffic be lighted with the same intensity as an avenue of stockbroker villas with two garages



5, *The Siemens-Ediswan gas conversion unit showing the simplicity of the process of converting gas-lamps to electricity if the will to do so is there.*

simply because the council is bemused by what the borough engineers on the Metropolitan Joint Standing Committee in their draft practice notes (standardization of street lighting) call 'an air of brightness and commercial well-being'? And though one must accept the general statistic that modernized lighting, i.e. fluorescent, sodium, tungsten or colour-corrected mercury, may well cut the night accident rate by 20 per cent at 'sites,' i.e. crossroads and corners, where they have replaced gas or electric filament,* why should one apply this criterion rigidly to all B streets? Doesn't it simply mean that cars ought not to be using these streets at night for short cuts, and won't the increasing illumination invite more cars to use them and to drive faster down them? In other words, the traffic is in the wrong place, and it is the borough engineer's road plan, not his street lighting scheme, that needs bringing up to date. A judicious planning of one-way streets and no through streets would obviate the need for trying to make all streets as bright as day.

One would be more impressed by the advocacy of brighter side streets if in fact some of the new illumination really did make it easier for the motorist. But if you drive, say, from South Kensington Station to the King's Road through Pelham Crescent, are the converted 12-ft. gas lamps still standing in the Crescent at the time of writing less easy to drive by than the 15-ft. fluorescent lamps recently installed in the Chelsea side streets, which throw a relentless light on the house fronts and leave pools of darkness in the roadway? And if the orthodox placing of the electric filament bulb is thought not to give enough light, resetting it in the dome of the lantern under a 'ceiling' of white titanium or aluminium paint has been known to increase the illumination considerably.

Mention of house fronts brings us back to first-storey windows. The appearance of an unscreened 80-watt fluorescent lantern on a 15-ft. column† directly outside one's bedroom can be fairly hellish to anyone who merely wants to do what the doctors tell you and sleep with their window open. A council worth its salt will of course provide in its scheme for screening inconvenient lamps. The other sort bleakly bids its ratepayers buy thicker curtains (at their own expense). But why not make a real effort to convert the existing lamps if feasible rather than derange people's slumbers and wreck the character of the street?

Fortunately there are some signs that the current rage for fluorescent lighting is past its peak. Further technical advance in this medium appears unlikely. In the last three years no company in this country has produced a new fluorescent lantern for B street lighting into his catalogue, whereas most of them have introduced lanterns for colour-corrected mercury, which is cheaper than fluorescent and more gracious. This information will take some time to penetrate into the backwoods and backwaters, but at least private citizens need no longer be overawed by the official argument that warm white fluorescent (of all misnomers) must be best because it is cheapest.

Actually the capital costs of fluorescent lanterns are very high —two or three times those of other light sources. And the 2-ft. fluorescent tube as used in B street lighting is inefficient electrically and has the disadvantage that two tubes have to be combined in one fitting.‡ The fact that they have to be 2-ft. tubes makes the design of a post-top lantern for a B street a particularly intractable problem. Even a well-designed one is out of scale on a 15-ft. column: it needs an 18-ft. column to do it justice. A badly designed 2-ft. lantern on a 15-ft. column merely looks grotesque.

Cost

It is of course cost that councils play as their trump card in refusing ratepayers' pleas for the conversion of existing lamps. As the comparative costs will vary with every scheme in every different locality, the only sound principle to lay down is not to let the council get away with that one until the costs of conversion have been authentically stated. If councillors state that the cost of converting a lamp is as much as the cost of a new one (and councillors have been known to do so) they are probably being disingenuous, unless they are proposing to put up the cheapest possible concrete column with the most miserable lantern they can find in the catalogues, in which case they are merely being cheeseparing. At the same time, it is as well to be wary of the contractors who promise to do it for a fiver. The Siemens-Ediswan Conversion Unit mentioned above costs about £7. Reconditioning costs vary widely according to local circumstances and any conditions the supply authority may enforce, e.g. if they insist on the provision of an underground fused service box for gas pillars with no base compartment. It is reasonable to say however that the cost of a reconditioned lamp complete is competitive with the cheapest new lamps and well below the expensive ones, which may be over £100. This is the hub of the matter. Also electricity is cheaper than gas and involves fewer lamp renewals. Against this, the council may claim that to get adequate lighting with converted lamps the number of lamps in the street will have to be increased; and that the maintenance costs with good modern lamps will be less—a good deal less if they are concrete and don't need painting.

A council may fairly claim that it must think carefully about the comparative capital expenditures and long-term maintenance costs if it is being asked to embark on conversion of existing street lamps on at all an extensive scale. Its ratepayers may fairly claim to have the aesthetics of their borough considered if they are asking to have the particular character of selected streets preserved. Any council that refuses out of hand to treat the possibility of such conversion seriously is philistine or dictatorial or self-satisfied and should be attacked with the sort of arguments I have outlined and with the most exact figures that architects and engineers among its ratepayers can provide.

* Sir William Glenville's paper on 'Light and Road Safety.'

† The police claim that these very bright lights deter burglars or make them easier to spot. Is this borne out by statistics? Isn't a house every brick, pipe, foothold and window of which is carefully illuminated as inviting to break into as a dim one?

‡ A development which it is hoped may help to eliminate the necessity for ungainly fluorescent lanterns is the 80-watt fluorescent ring which can be fitted into an existing gas lantern. These rings are in fact slated for the 26 Kensington streets 'of architectural merit' referred to above. But some fluorescent rings have been disappointing in performance, and the replacement cost is high.

current architecture



1, *distant view of the rear of the production area.* 2, *entrance to the office block.*

FACTORY, UXBRIDGE

ARCHITECTS, TAYLER AND GREEN

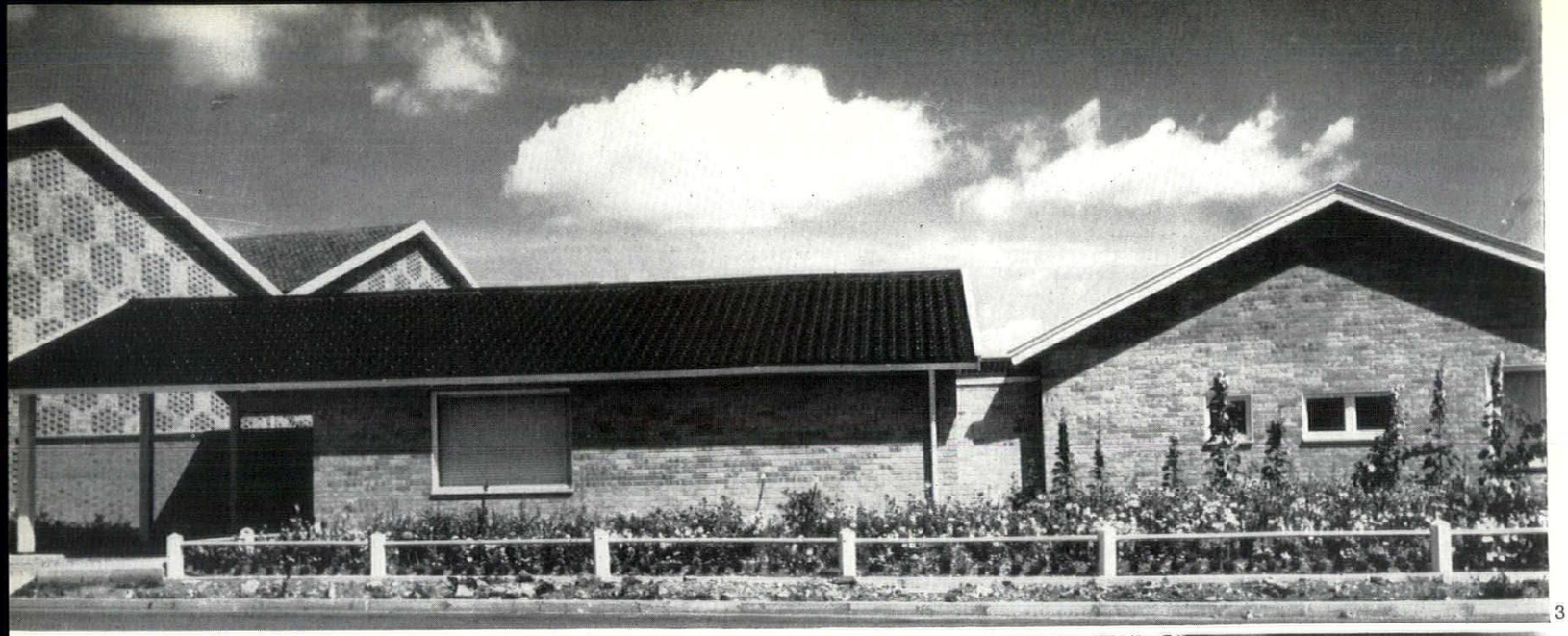
This is a conscious attempt to design something that would be an improvement on the common type of factory building, which uses sheet materials for walls and roofs. These, however carefully detailed, tend to weather badly and add to the slummy atmosphere of most industrial areas.

The architects of this factory, which is on an unattractive site, have not only used more solid and sympathetic materials (which unexpectedly worked out cheaper than sheet materials) but have tried to improve on the usual atmosphere in the planning: the works

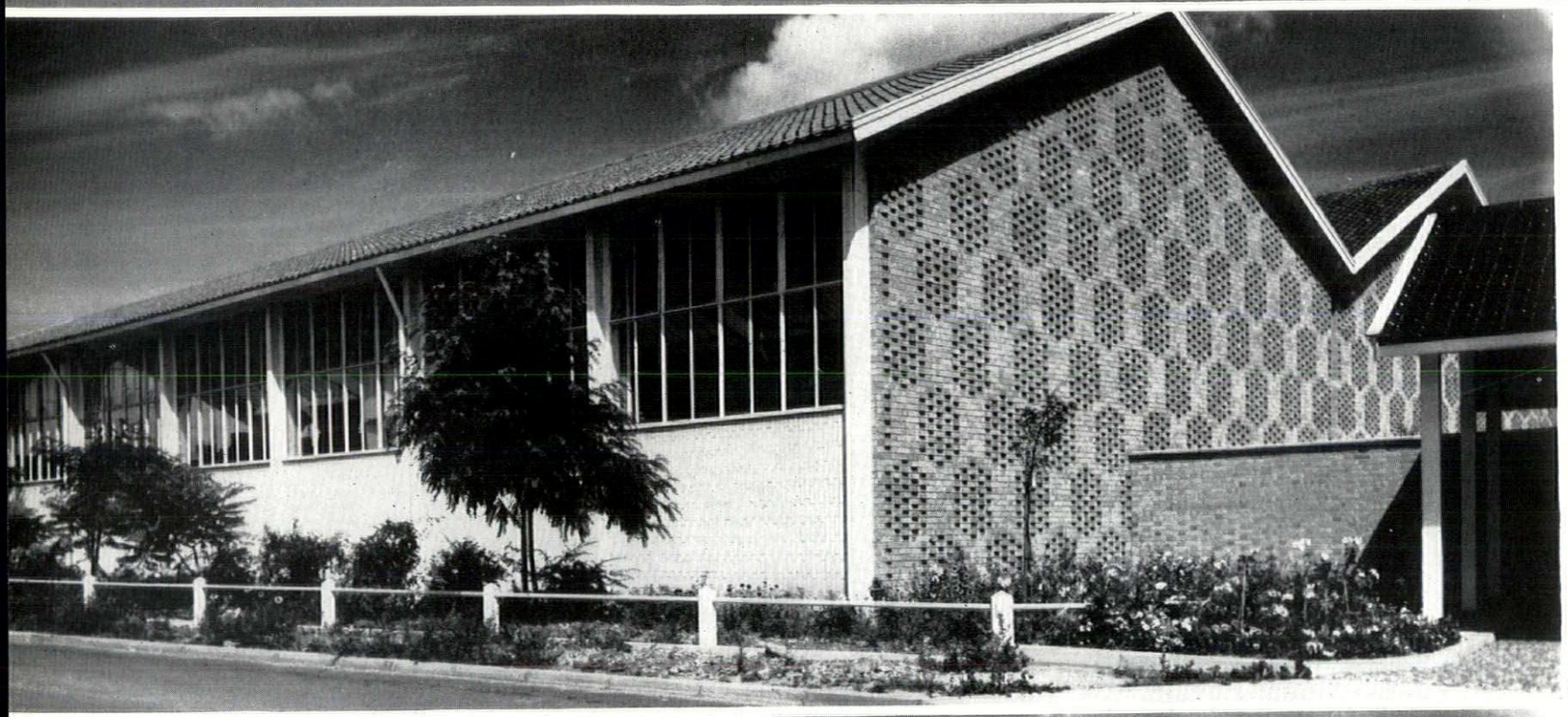
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4



5

Factory, Uxbridge

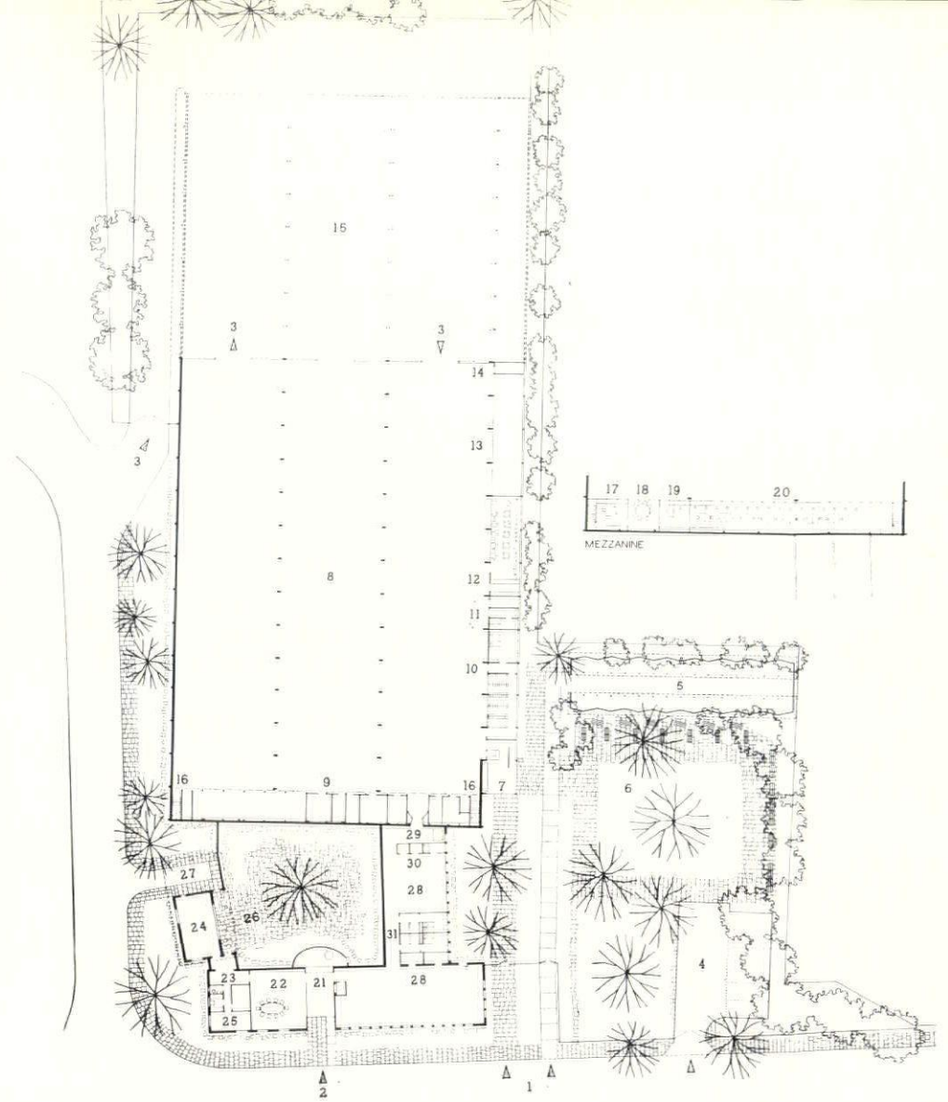
Facing page: 3, the managing director's suite, with the production area on the left and the office block on the right: 4, close-up of the production area; 5, another view of the managing director's suite. 6 (below), the canteen.



6

entrance is at the front, alongside the office entrance, and the production area, instead of being hard up against the office block, is separated from it by a garden courtyard. The managing director's suite opens on to this garden. An office at mezzanine level with a glazed wall runs the full width of the production area. It is for the use of the team most closely connected with production and maintains contact between the office and the manual workers.

The whole factory is on one storey (except for the mezzanine office already mentioned). The production area has a series of portal frames in reinforced concrete with panel walls of brick and brick end walls which have a pattern made with groups of projecting headers. The other buildings are of load-bearing brick. All roofs are tiled.



key
1. factory entrance.
2. office entrance.
3. goods entrance.
4. visitors parking.
5. cycle sheds.
6. staff garden.
7. staff entrance and clocking.
8. production area and stores.
9. works admin. offices.
10. male cloaks and lavatories.
11. female cloaks and lavatories.
12. canteen and servery.
13. prototype shop.
14. cleaner.
15. future factory extension.
16. stairs to mezzanine.
17. managing director.
18. conference room.
19. works manager.
20. general office.
21. entrance hall.
22. conference room.
23. managing director's private suite.
24. office.
25. secretary.
26. garden.
27. car port.
28. general office
29. office to factory link.
30. telephonist.
31. cloaks and lavatories

7, canopy leading to the main entrance.

COLLEGE OF FURTHER EDUCATION, ST. ALBANS

ARCHITECT, G. C. FARDELL (Hertfordshire County Architect)

This group of college buildings, which shares a site with the Hertfordshire College of Building, is the first of a programme of four large colleges which are being designed and constructed on a 32 in. modular planning grid. The design and structural techniques have been under development since 1957 and have already been used for several primary and secondary schools. The present version, embodying advances in the design of the steel frame, windows and other components, will be used for the bulk of future school-building programmes in the county.

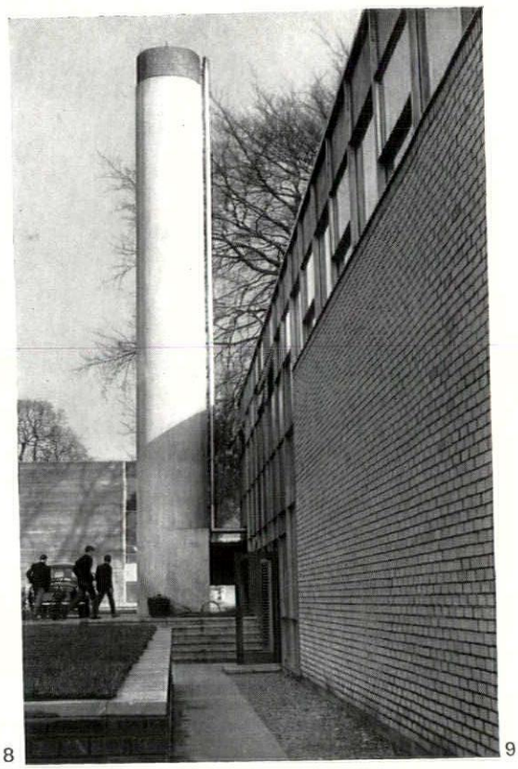
The site, of about 3½ acres, comprises the gardens of two large Victorian houses, which were in use as the nucleus of the college and had to be retained until the



College of Further Education, St. Albans



8



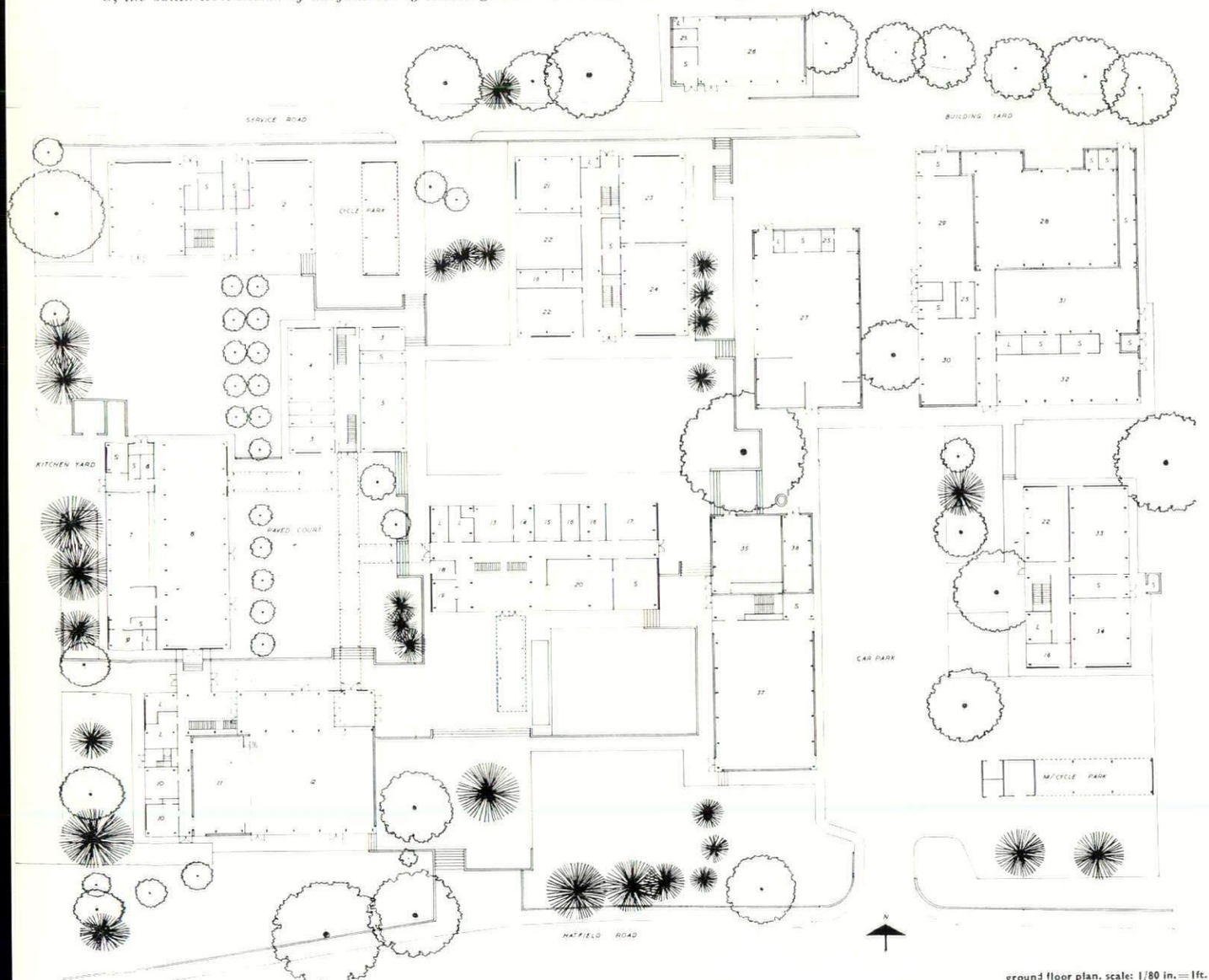
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first phase of the new buildings was completed. The latter are laid out as a group of pavilions around an informal campus, some of them, such as the communal block with hall, refectory and common-room, the main administration and library block, and the main four-storey teaching block, being linked at first floor level by glazed bridges.

The light steel frame was developed by Messrs. Hills of West Bromwich in collaboration with the architects. The stanchions are fabricated from angles and ring battens and the beams are of light welded lattice construction. Spans of floor and roof beams are in multiples of 2 ft. 8 in. up to 26 ft. 8 in. and 32 ft. respectively, at a constant depth of 1 ft. 6 in. Storey and cill lights are related to the 4 in. base module and allow co-ordinated arrangements of varying height structures with changes of level in multiples of 2 ft. The floor construction is of precast prestressed concrete planks spanning 5 ft. 4 in. between secondary beams. The roof decking is troughed asbestos units of maximum span of 10 ft. 8 in. The external cladding is in aluminium curtain walling. Opaque panels are plastic faced, but cedar boarding is used in larger areas and facing brickwork in workshop areas.

Group architect, R. J. Whitley. Job architect, R. J. A. Wakely. Quantity surveyors, Thomas Barrett, Sons & Partners.

8, the south-west corner of the four-storey teaching block. 9, the boiler-house chimney.

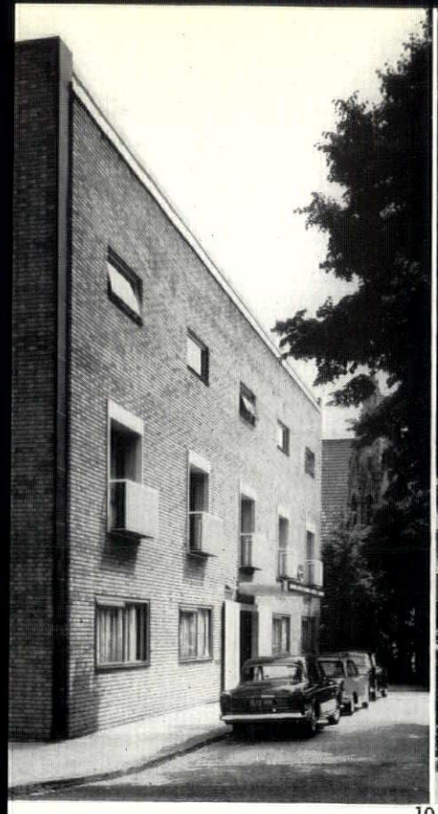


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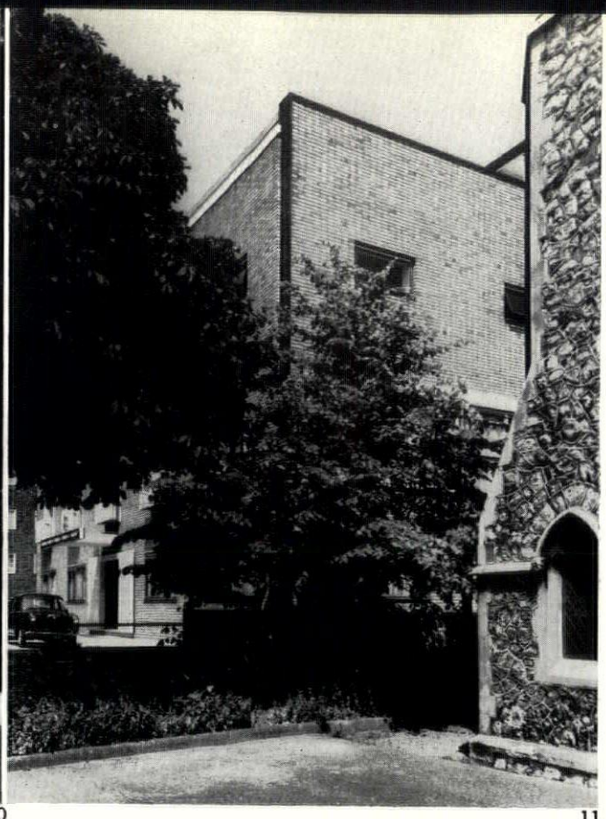
1. domestic science.
2. art and craft.
3. tutorial room.
4. book-keeping.
5. geography.
6. kitchen supervisor.
7. kitchen.
8. canteen.
9. kitchen staffroom.
10. dressing room.
11. stage.
12. assembly hall.
13. principal.
14. secretary.
15. rest room.
16. department head.
17. committee room.
18. porter.
19. book shop.
20. general office.
21. drawing office.
22. classroom.
23. electrical engineering.
24. mechanical engineering.
25. instructors' room.
26. gas fitting shop.
27. machine shop.
28. brickwork and plastering.
29. soft metals shop.
30. hard metals shop.
31. advanced carpentry and machines.
32. elementary carpentry.
33. elementary building science.
34. advanced building science
35. boiler room.
36. fuel store.
37. gymnasium.

L. lavatory.
S. store.

ground floor plan. scale: 1/80 in. = 1ft.



10



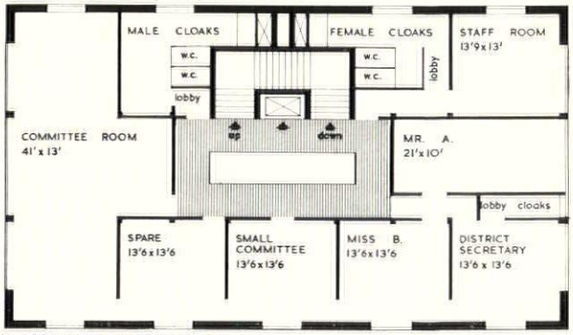
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TRADE UNION OFFICES, HENDON.

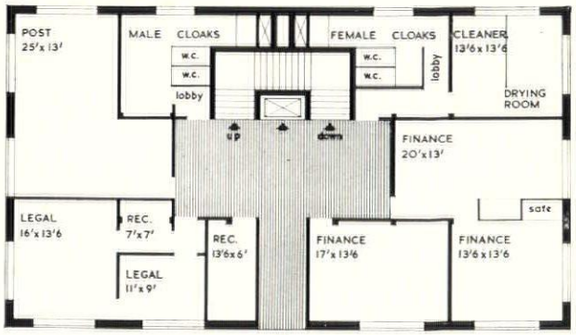
ARCHITECTS, C. WYCLIFFE NOBLE AND PARTNERS

A building in Brent Street, Hendon, for the National Union of General and Municipal Workers. It provides office accommodation for the district secretary and his administrative staff. It has three storeys plus a basement devoted to stores and an oil-fired heating system, and a penthouse for lift motor, tanks and rest room. The offices are planned round a central staircase with galleries providing access to the rooms on each floor. The central well and galleries are lit by dome lights in the flat roof.

The local authority encouraged the architect to use a facing brick as the main external cladding material in order to maintain the character of Brent Street. The structure is a reinforced concrete frame designed to suit a steeply sloping site with clay subsoil. The materials used in the interior are Honduras mahogany, light polished oak and olive green terrazzo. Quaker grey and white are used for the wall surfaces. All pipes, plumbing and services are contained in ducts within the building.



first floor plan (second floor similar)



ground floor plan



13



12

10 and 11, two distant views of the front of the building. 12, close-up of the entrance. 13, the committee room on the first floor.

EXHIBITIONS

PAINTING

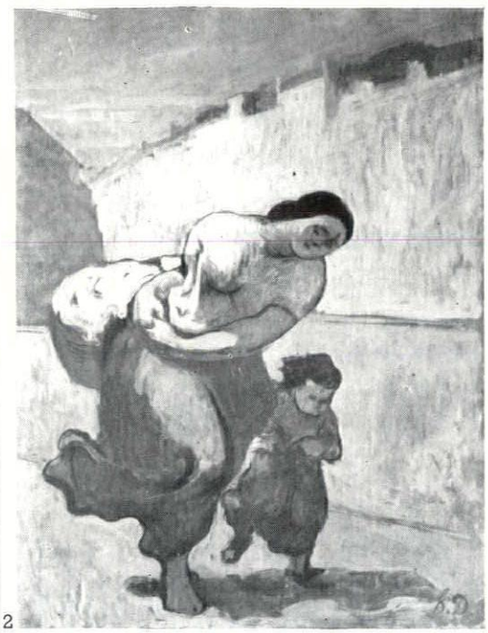
Picasso once remarked that what compels our interest in Cézanne is his anxiety. This isn't surprising. Cézanne's anxiety was the best that money could buy, and he was able to focus it year in year out upon the act of painting: it moves through every probing, sensitive stroke of his brush like a life-giving sap. Daumier could rarely afford anxiety of this quality and had to put up with a more corrosive kind, associated not with the act of painting, but with the wish to paint. He wasn't even as lucky as Van Gogh. He had a wife to keep and there was no Theo in his life. He earned his living as a cartoonist, and was so badly paid that he had to keep up a steady output in order to make ends meet. There were two short periods in his life in which he gave up cartooning to devote himself to painting, but it was obvious even to his friends that he didn't know how to finish the paintings he started, and most of the pictures in the Tate exhibition were still in his studio when he died. They are miraculous crumbs from a poor man's table.

The exhibition, devoted entirely to paintings and drawings, was arranged by K. E. Maison for the Arts Council, and was the largest and most comprehensive to be held for sixty years. There were a hundred paintings and one hundred and thirty-one drawings. The hundred paintings—many of them small—represent a very large proportion of his total output of oils, yet they had the look of being a selection from a much larger *œuvre*, chosen to represent his development over a long period of time, from early works in borrowed styles to the insousiance of a later style with all the experience of a life-time supporting its casual grandeur.

The experts still find it difficult to arrange the paintings in a satisfactory chronological sequence, and Maison catalogued and presented the Arts Council show according to subject: so there were groups of religious and mythological pictures, pictures of bathers, horsemen, children, washerwomen, travellers on the railway, actors and entertainers, connoisseurs of prints and paintings, with fourteen paintings on the theme of Don Quixote making a fitting climax.

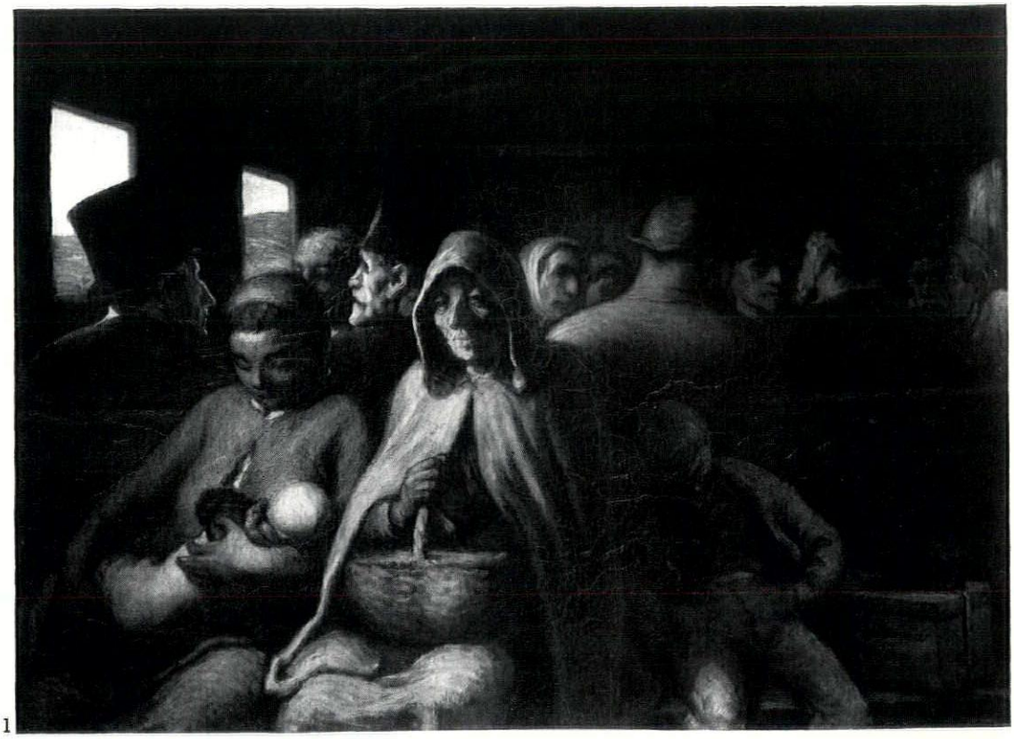
Daumier was tormented by his inability to give his pictures a conventional finish, and it was probably not until he was nearing the end of his painting life that he became sufficiently aware of the nature of his creative gifts to realize that his paintings brought themselves to a natural conclusion before they could assume the appearance of a conventionally finished work. The famous painting of passengers in a third-class railway carriage, 1, is one of the few which his contemporaries considered to have been taken beyond the sketch stage. It is a work of profound social observation, but what makes Daumier a great master is his power to transcend observation, and one feel its presence here only in the treatment of the young mother's hands. The way in which her hands are depicted so marvellously conveys the weight and feel of the sleeping child that it is almost as if one were holding the child oneself. This power to undermine the disinterested appreciation of the spectator by purely pictorial means is very much more in evidence in some of the pictures which never got beyond the sketch stage.

The choice of subject was of fundamental importance to his development as a painter. Many of the subjects he treated called for the kind of observation which he angrily or humorously exaggerated in his cartoons and left no room for an image to be formed out of his own psycho-physical experience. Alan Bowness, in his excellent introduction to the catalogue, points out that Daumier was dependant upon such artists as Millet, Diaz, Decamps and Meissonier—'much more skilled than he was'—for both subject and style, but he does not say how long he considers his



2

dependence to have lasted. The experts think that in the second and longest period in which he devoted himself to painting, that is to say from 1860 to 1863, his subjects were drawn almost entirely from everyday life, so it seems likely that it was during this period that he freed himself from the example and advice of his artist friends and began to abstract certain figures from the *genre* situation in which he first observed them and transform them into great imaginative conceptions. Almost all the washerwoman pictures are of this high order, but the largest of three paintings, all entitled 'The Heavy Burden,' 2, is



1

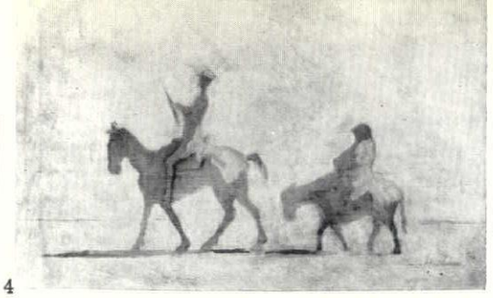
perhaps the finest and certainly the most revolutionary, in treatment. If it is unfinished, it is impossible to imagine how Daumier could have taken it further without doing irreparable harm to its immense physical impact. The background is blocked in, and the woman and child are simplified to the point where characterization is lost and all that remains are the postures of strain and hurry. The woman is bent over sideways by the weight of the basket of washing, but she walks with a mindless persistence and the child is almost running to keep up with her. But because of the sheer vitality with which this desperate weariness has been depicted, and because of the sumptuous nakedness of the paint, which makes no concessions



3

to the difference between cloth and flesh and stone, the picture radiates well-being. Their flight, and there is no better word for their activity, brings to mind Daumier's concern with the theme of refugees and emigrants and his interest in depicting what his first biographer called 'the feeling of dread that man has before the unknown,' but the washerwoman and her child seem on the point of outdistancing their exhaustion, as if they were responding to some compulsive call such as 'come unto me all ye that labour and are heavy laden. . . .' Daumier has, so to speak, shared with them the victorious outcome of his own creative spirit.

His two large paintings of a man on a rope are equally fine. Bowness says the figure is probably a *badigeonneur*, a man whitewashing. But he has lost his place in the labouring class and has turned, without the faintest sign of a symbolic gesture, without a trace of romantic rhetoric, into an image of Man suspended between Heaven and Earth. The version



4

reproduced, 3, is quite evidently an unfinished work, and has been nearer to a finished state than it is now. Large areas of paint have been scraped off and one of them has taken part of the man's right arm with it, leaving the arm looking as if it were partly hidden by cloud. As Maison suggests in his catalogue note, Daumier was probably dissatisfied with it and finally abandoned it. But it's so marvellously satisfying as a painting that one cannot help feeling that he at any rate made certain that it would be abandoned at its highest point of achievement. If a *genre* picture of a man whitewashing had been left in this state, the sense of looking at an unfinished painting might well have been acute, but in this picture we are presented with the pictorial essence of what it feels like to be clutching a rope in mid-air. Looking at it, one is not simply a spectator but, for the time being, an athlete.

The Don Quixote paintings undoubtedly belong to the last phase, and most of them must have been painted after he was forced to go back into cartooning, but it's clear that he is unhindered at last by the giftedness of his painter friends, and impervious to what Cézanne might have called their 'widely known methods of production.' The little painting reproduced here, 4, which the Goncourt brothers described as 'une spirituelle grisaille' and which gathers up his superb knowledge of the figure into a kind of phantasmal projection of the human condition, is as totally achieved in its own way as Van Eyck's portrait of the Arnolfinis.

At the Tate, his art impinged disturbingly and wonderfully on the present, and yet I suppose that if any single example were included in a mixed show of choice items like the one recently held at the Hallsborough Galleries in the Piccadilly Arcade, it would simply represent one of the beautiful formulæ of the past. The Hallsborough show ranged from a Madonna and Child by Isenbrant to a nice if belated fauve picture of dressmakers by Louis Valtat, but there were no brutal juxtapositions. Even the very fine Paris scene by Jongkind, 5, who was one of the formative influences on Monet, didn't look out

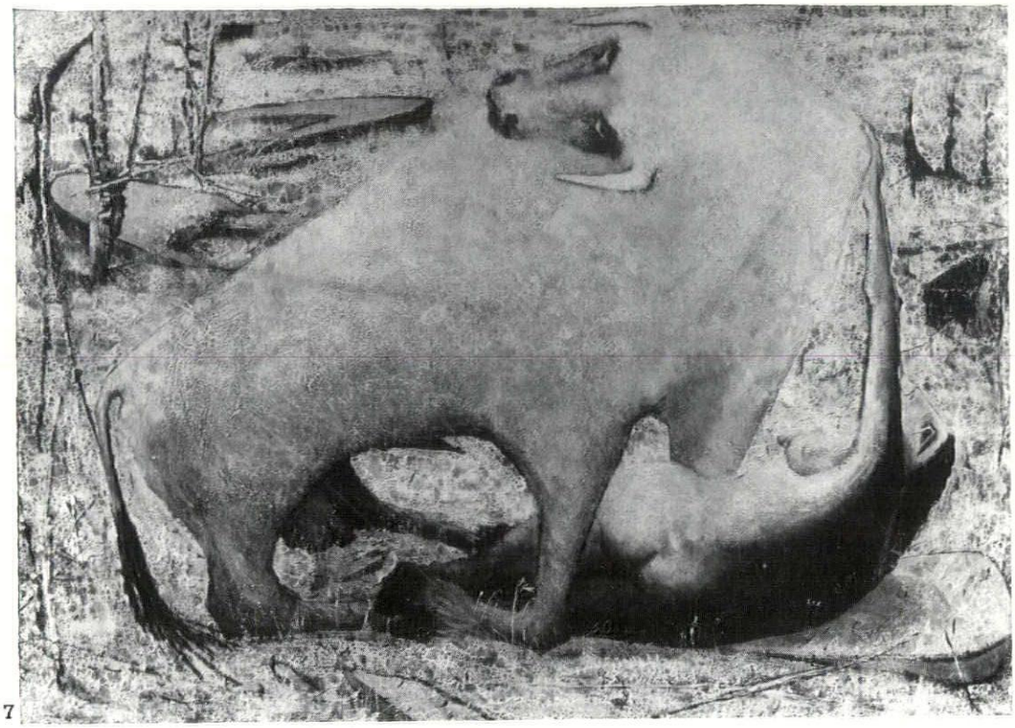


5

of place, although it was hanging next to a Boucher Shepherdess. It simply turned into a connoisseur's item, and even looked ever so slightly smug, as if the artist had all along intended it to be a sign of some-



6



7

one else's wealth and good taste.

The charming Boucher, 6, was described in the catalogue as a pastoral scene with a shepherdess and her children, but it is so utterly remote from the life of the peasantry that I prefer to think of the young mother as Europa, the two children as Minos and Rhadamanthus and the horned beast on the left as Zeus, still in the guise in which he carried off Europa, but somewhat softened by domestic bliss and even a little cow-like. Zeus was in any case extremely gentle when he made his advances to Europa: it was his affectionate ways that made her climb in play upon his back, and I have always taken the word 'rape' to mean, in this connection, only that he took her away without actually asking her permission, and that what happened afterwards was a consequence of their mutual esteem.

Clifton Pugh's 'Rape of Europa,' 7, is not amenable to such an interpretation. But it may have a double meaning. It is set in the Australian outback, and the bull looks like the kind of antediluvian variant that the land of the kangaroo might conceivably produce, so Pugh has perhaps used the myth as a symbol of the same situation which Arthur Boyd celebrated as a grotesque marriage between a stone-age giant and a little white woman all decked out in bridal gown and veil, 8, in the remarkable series of paintings which he exhibited at Zwemmer's a few months ago.

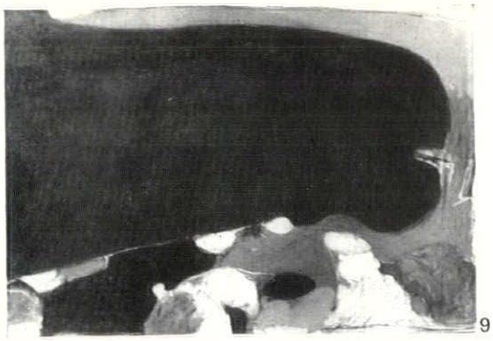
Pugh's 'Rape of Europa' was among the most interesting of the figurative paintings in the exhibition of Recent Australian Painting held at Whitechapel Art Gallery. It included the painters whose work we already know—Drysdale, Nolan, Tucker,



8

Boyd—and introduced many new names. The work was about equally divided between the figurative and the abstract, but Bryan Robertson, who organized the exhibition, says that many Australian artists mistrust the painters who have evolved 'something like an Australian mythology' and are equally suspicious of our enthusiastic response to it. Robertson adds, however, and it seems to me to be well said, that there is 'some confusion in their attitude between national roots and provincialism.'

Brett Whiteley and Arthur Boyd appear to me to present the abstract and the figurative aspects of the Australian situation in terms which need not remain totally opposed. Whiteley has used Arshile Gorky as brilliantly as Boyd has used Chagall, and both of them have produced very personal and vigorous paintings. Whiteley's abstracts don't look like provincial echoes of Gorky, and if they are making a contribution to 'international abstraction' it's because they don't look like anything that's already made the grade. His 'Untitled Dark Painting,' 9, has a naïvely vital, fearsomely organic,



9

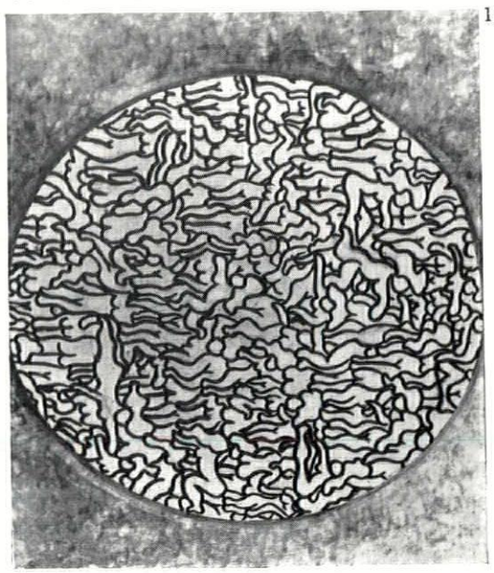


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awkwardly beautiful quality that somehow stamps it as Australian.

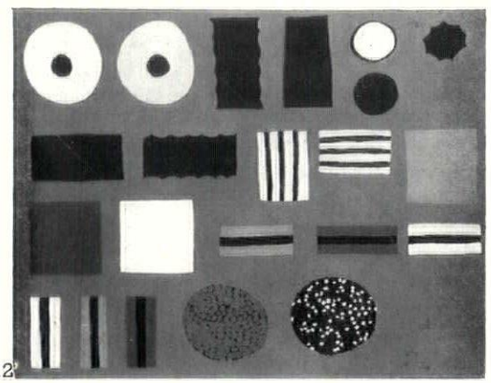
The Boyds are interesting for the same good reasons. The pictures he showed at Whitechapel have been painted since his Zwemmer show. One of them at least is connected with his marriage theme. It depicts the bride alone, lying out flat in her gown and veil and drinking from a jungle stream. The comic and forceful 'Lovers in a Boat,' 10, with its undertones of pathos, is perhaps an ironic comment on the complicated mating customs of humanity in general.

Two bright and clever heirs of Dada have recently been holding shows in London—Bill Copley at the ICA; Patrick Hughes at the Portal Gallery. In both cases it's Dada with a difference. If they are knocking at 'fine art' we don't really notice it, because they have found the appropriately brash means for expressing



11

their delight in our fantastic, ridiculous and specifically twentieth-century environment of visual aids to false conclusions. Copley has devised an isomorph of sex appeal; a naked blonde with a large bosom and wide hips, which he shovels by the hundred on to his canvases and calls the result the ceiling of the Sistine Chapel, or names it after Ingres' 'Le Bain Ture,' 11. It is part of the joke that his squiggly, mass-produced blonde has no sex-appeal whatsoever. More potent in this respect is his image of a girl who lives her life in a corset ad, and wears an eye-patch borrowed from the man in the famous American ads for men's shirts. Hughes uses the clean, flat



12

shiny colours of Valspar and achieves a kind of farcical, up-to-date heraldry. The perfect example of his work to date is his abstract of liquorice allsorts laid out like a do-it-yourself pack, 12, and, as David Sylvester says in his very pertinent preface, 'it isn't about sweets but about ads for sweets–Bertie Bassett taken apart and his components laid out neatly.'

Robert Melville

FUNCTIONAL TRADITION

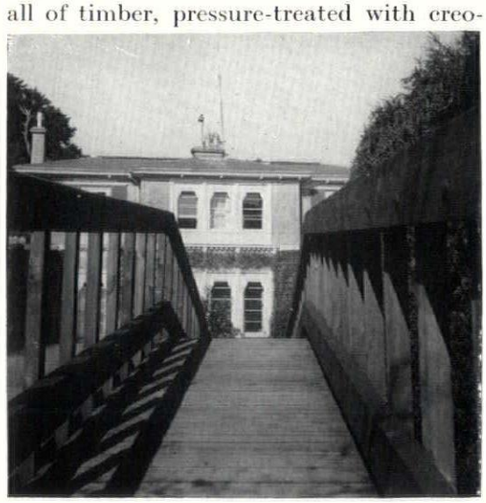
A MODERN FOOTBRIDGE

A footbridge in the grounds of a villa garden sounds more like a task for an eighteenth-century than for a modern architect, and it is one of the merits of the timber footbridge illustrated here (and recently constructed in the garden of a villa at Horsford, Torquay, by John R. A. Wilson) that its design is as timeless as the purpose it has to serve. This is because it belongs to the Functional Tradition, which operates independently of style and fashion and bases architectural character on the straightforward, and therefore, expressive, use of structure and materials.

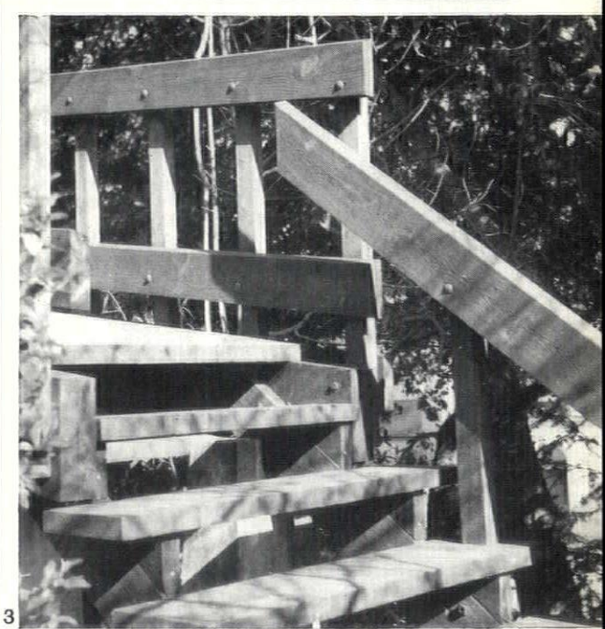
The bridge, 1, links two parts of the villa garden across a sunken approach drive, giving clear headroom of 15 ft. above the surface of the drive and leading the pedestrian right up to the walls of the villa, 2. The span between concrete supports is about 33 ft., but the main beams of the bridge (which consist of 11 in. by 2 in. timbers bolted together in pairs) are supported intermediately by diagonal struts springing from concrete foundations in the banks of the drive. The decking of the bridge, the handrails and the flight of steps at the end farthest from the villa are all of timber, pressure-treated with creosote, and the handling of these details, 3, also shows the vigour and simplicity the Functional Tradition demands.



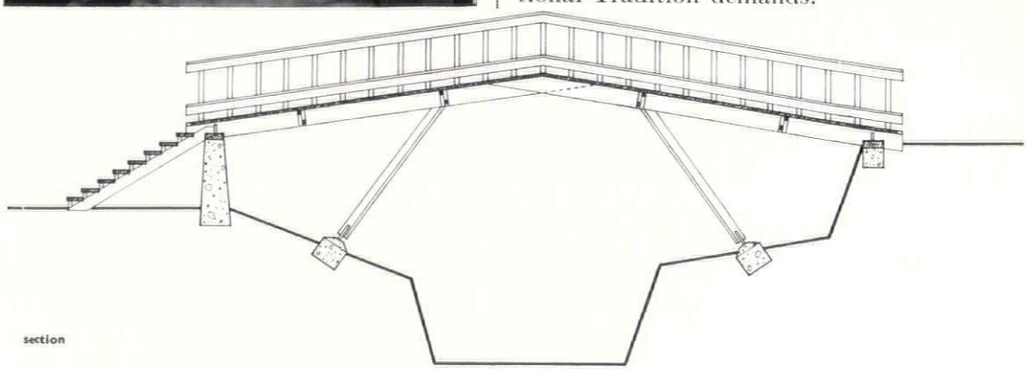
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2



3



section

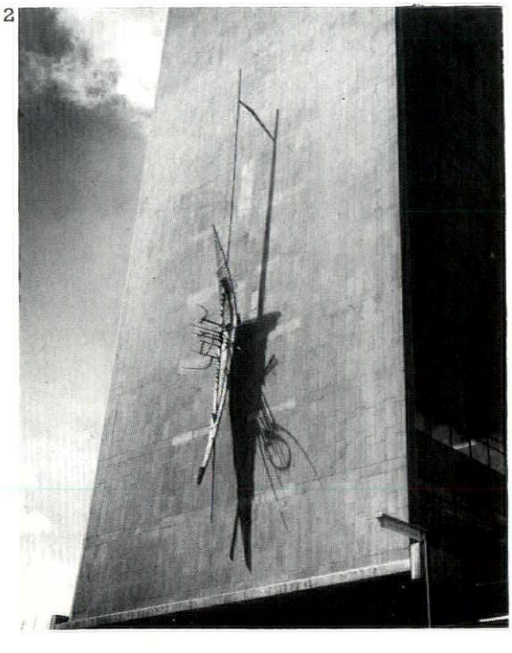
SCULPTURE

BRAVE NEW PATRONS

It is a long time since the comment was first made that in the modern world the patrons of the arts ought to be big business, which has the money that aristocracy has no longer. Big business also has—at least in theory—the advantage of being more closely in touch with the various modern developments that have changed the nature of art and through which it maintains its relationship with modern life. But until lately business men have shown themselves, with a few exceptions (the directors of the Orient and the P & O shipping lines—see pages 181–193 are among them) conservative and unadventurous patrons.

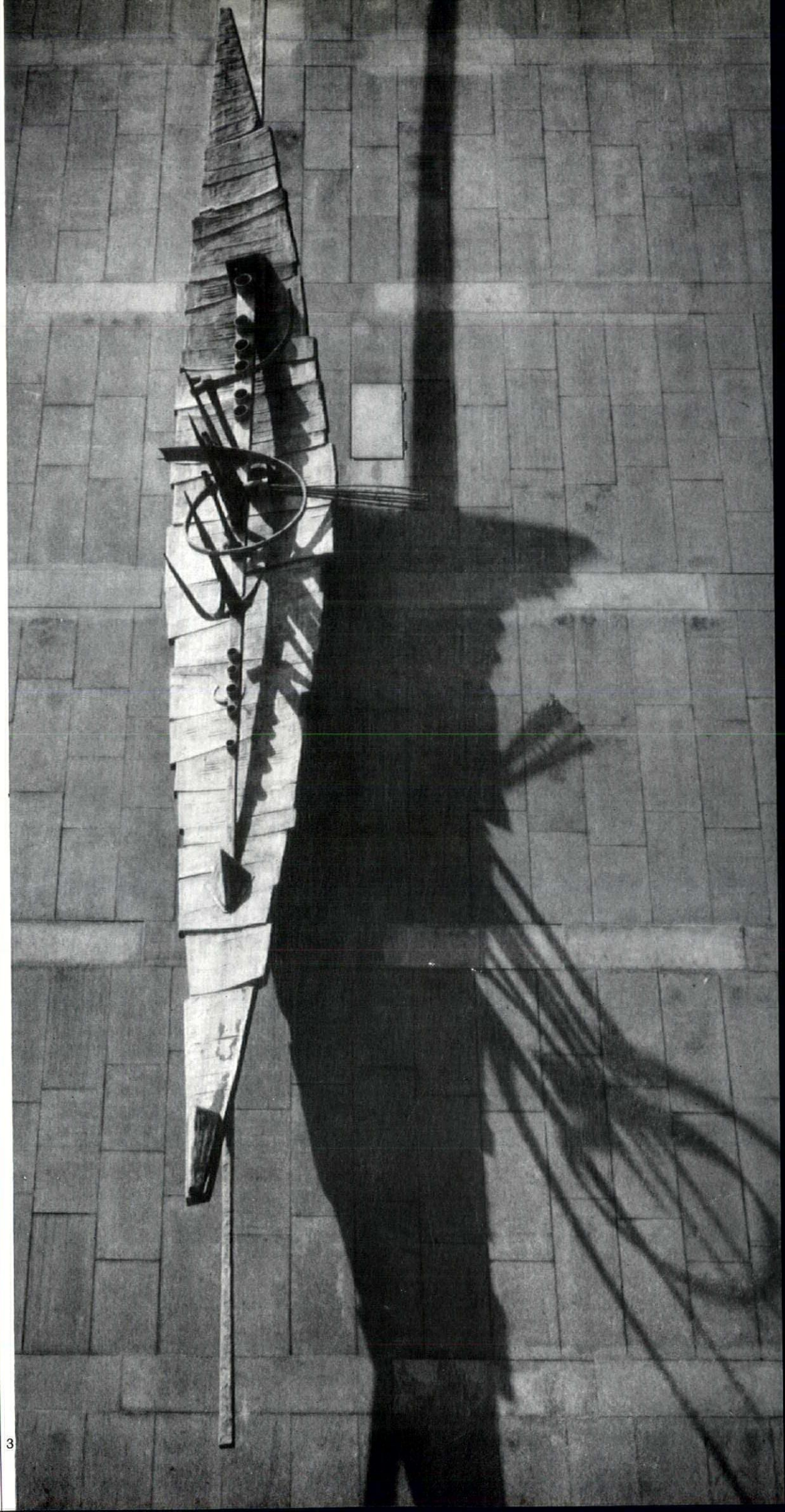


1



2

1, *Barbara Hepworth's 'Meridian,' in the courtyard of State House, High Holborn. 2 and 3, Geoffrey Clarke's sculpture on Thorn House, St. Martin's Lane.*



3



4, *Sculpture by Elizabeth Frink at the Carlton Tower Hotel, Chelsea.*

It has already been noted that this does not now apply quite as much as it did to the patronage of architecture. Now there are signs that things are improving in the sphere of the fine arts, especially sculpture. Three major London buildings—two office-blocks and an hotel—have been embellished externally with works by three of the best British sculptors, all more or less abstract in form. These three works are Barbara Hepworth's in the courtyard of State House, Holborn, 1 (illustrated in the AR in April), Geoffrey Clarke's on the end wall of the tower of Thorn House, St. Martin's Lane, 2 (which building was illustrated in February, 1960, before the sculpture was in position—it went up in April) and Elizabeth Frink's on the façade of the Carlton Tower Hotel, Chelsea, 4 (which has just gone up; some interior details of the hotel were illustrated last month).

The fact that these sculptures are all displayed to public view is particularly encouraging. It is easier to be bold and uncompromising in private or inside a building that few of the public visit. Sculpture outside a building means that its sponsor is willing to identify himself publicly with the taste it represents. That some business men have had that much courage has resulted in London suddenly acquiring several worthwhile public examples of the sculpture of our own day, in which it has hitherto been very poor.

COUNTER-ATTACK

HELENSBURGH

Helensburgh: the start of the 'Royal route to the isles,' the 'garden city of the Firth of Clyde.' The first claim presumably refers to a fact; the second needs looking into. Helensburgh was (as they say of the variety programmes) based on an idea by Sir James Colquhoun, who owned the land and decided to found a town there in 1776. He named it after his wife. Sir James's plan was severe, a piece of paper planning characteristic of Scotch urban developments of this period. Helensburgh's works better than some, because the land rises fairly steeply to the north, and the hills prevent the views outward from merely disappearing into the distance. So the east-west streets run along the contours; the north-south ones climb. Colquhoun Square was planned as a grand central *place*.

The town grew slowly until 1857, when the Glasgow, Dumbarton and Helensburgh Railway



Map of Helensburgh.

was opened. As the official guide tactfully puts it, 'this helped the progress of the Burgh, and enhanced the value of property in the district.' The ground plan was then filled in, though in a way which was surely not what the original designer had in mind: Helensburgh, apart from the sea-front and a few streets immediately round the station, is a town of large detached villas in large detached gardens, a Victorian Letchworth.



1

Typically the villas, 1, are solid, tough-looking and too big: many of them are divided into flats. (One of the last of this kind to be built was Mackintosh's Hill House, probably the best private house he did, and still containing many of the original fittings and furniture). The gardens and streets lack big trees and are a little bare;



2

only Montrose Street, 2, has the real arcadian touch. But as a period piece Victorian Helensburgh has character.

The centre of the town, on the other hand, is like that of nearly every Victorian town in Scotland—drab, stingy and dilapidated. The sea-front has a kind of crude vigour, but an asphalt car-



3

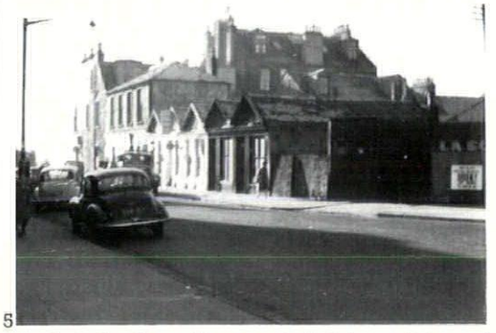
park, 3, does its dreary best to cut the town off from the sea. The newest buildings are in the contemporary style; and pretty contemporary they are, too, 4. Moreover, there is a plan on foot, at a present esimated cost of £280,000, to enormously extend this car-park by reclaiming some of the land shallowly covered by the estuary. The idea is to get the parked cars off Clyde Street, so that it can do its duty as part of a popular route from Glasgow to the West Highlands. Certainly something needs to be done, for in the summer the town



4

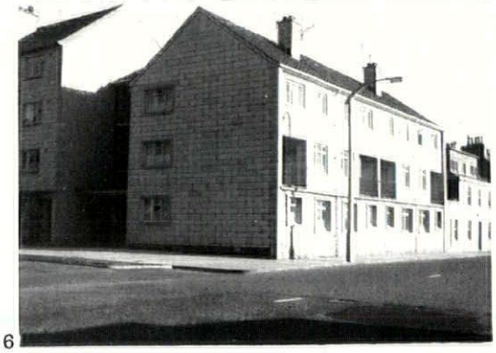
seethes (and at present the only plausible by-pass route would be along Montrose Street, which would be very unfortunate). But this is a dismal scheme. An alternative, which might in the end cost no more, would be to use the reclaimed land for the road itself (perhaps with car-parking underneath). Through traffic could then effectively by-pass the busy part of the town.

The town council is also said to have in hand a redevelopment plan for the sleazy area between the sea and the railway. Here again something



5

needs to be done. At present, 5, it is a mixture of outworn houses, decaying back-yards and land never properly built on, decrepit shacks and the gas-works. (Colquhoun Square needs some attention, too. It never really got going, and it is now a windy and comfortless hangover from more robustly ambitious times. The area in the middle is carved into four squares by the roads which cut across it. As neither of these is supposed to take through traffic, there is no reason why they shouldn't go round instead of across; there would then be room in the middle for decent-sized trees and the paved area of a real *place*). A comprehensive scheme is clearly needed; and here the Dumbartonshire county plan ought to help, but doesn't. For though already nine years late, it does not yet exist. So the burgh will do the work—or perhaps will merely let it be done. The town council has managed a small block of flats on the



6

Esplanade, 6, cheap and clumsy, with a coarseness of detail eloquently shown up by the early nineteenth-century houses next door.

They don't augur well for burgh action in the future. But at least they are better than the post-war private developments which now more or less surround the town. These are in the very worst tradition of speculative building—the site cleared



7

of its trees at the start, the houses self-assertive, vulgar and hideous, the trim wretched, and no planning of the estate whatsoever, 7. It is perfectly plain that no attempt has been made by either the builder or the planning authority to think out what would be a tolerable addition to the town. Anything goes, so long as there are houses. Two partial exceptions: some flats with decently modest detail, lying under the hills (known affectionately by their more tasteful neighbours as the barracks or the prison), and on one estate a row of five houses actually designed by an architect. They are not striking (that in itself is something of an achievement), but they and the next-door trees do suggest how some of Helensburgh's garden amenities might have survived in a bearable environment, 8.



8

But that chance has gone. The hills remain—for the moment. The town council seem convinced that more estates to the north are out of the question.* Owing to the height, a new water-tower and (presumably) pumping-station would be needed; the council think that this would make the estate prohibitively expensive. Why? As the helpful guide eagerly points out, the 'fine new houses . . . typify the growing demand for property in the town, accelerated by the electrification of the railway.' Helensburgh is the most favoured of Glasgow's outer suburbs, and land values are already phenomenally high. There is almost certain to be strong pressure from the land-hungry speculators who have made such a mess already. This needs to be foreseen, not just given in to.

Helensburgh started 200 years ago with a plan—not a very interesting one, but it was kept to and it has given the place some coherence. To-day it is a first-class example of selling out to the highest (or it may be the quickest) bidder. Obviously a planning consultant has never even been considered. He is urgently necessary if the town is to be kept from total spoliation.

Andor Gomme

* To the west there is supposed to be a green belt between Helensburgh and Rhu: it must be all of 200 yards wide. To the east it's anyone's guess. To the south mercifully there is the estuary, though even this doesn't seem inviolable.

SKILL

UP-AND-OVER DOORS, 2

Last month Anthony Wylson considered the technical problems posed by the up-and-over door and began his review of the products on the market. This month he completes his review of products and draws his conclusions.

HENDERSON'S 'Ultra' overhead door gears include a range of units that can operate doors up to 325 lb. weight. The standard range allows for 140 lb., 150 lb. and 210 lb. The 'Ultramatic' 180 is a self-opening unit. With all units, the balance is on the coil spring system and the open position brings the door completely inside the garage space. The top section of the door is guided along a galvanized steel track by means of nylon wheel runners. A headroom of 1½ in. and sideroom of 2¾ in. is required. The standard 'Ultra' from 140 to 210 range in price from £11 to £11 14s. The 'Ultramatic' unit costs £16 5s. and the 'Ultra' 325 is priced at £34.

E. Hill Aldam and Co. Ltd. manufacture the 'HILLALDAM FLYOVER TWO' and 'FLYOVER DELTA.' Both have tension coil spring counterbalance, but the Flyover Delta has no guide tracks. It is guided by a system of pivot arms that link jambs and door unit. The Flyover Delta is also equipped with an improved locking spring bolt, which can be operated from within the garage by an inside T handle. The gear of the Flyover Two for doors up to 210 lb. costs £11 15s. whereas the Flyover Delta for doors 60–120 lb. costs £10 15s.

The 'PORTALDOR' overhead unit is made by the Portal Engineering Co. Ltd., of Reigate. The unit is hinged at the top and opens wholly outwards which gives complete clearance within the garage, and with a similar 'jamb' detail to an outward opening door. The construction is of rustless 'Galvorsheen' steel ribbed sheet and channel throughout. The framing to the door is gusseted. The weight of the door is balanced with one counterweight on a pulley system. Prices for complete units range from £23 for 6 ft. 6 in. by 7 ft. to £25 for 7 ft. 6 in. by 8 ft. Fitting instructions are provided in order that the door can be installed by an unskilled person.

Westland Engineers Ltd. produce a wide selection of overhead door systems. These are mostly based on the counterweight and pulley principle.

The 'GARADOR' is a standardized unit that is manufactured in three sizes, 7 ft. by 6 ft. 6 in., 7 ft. 3½ in. by 6 ft. 4 in. and 7 ft. 5 in. by 6 ft. 6 in. The intermediate size is used for Wimpey houses. The unit is constructed of a light gauge aluminium skin on a heavy gauge aluminium channel frame, braced and gusseted. Horizontal swages dominate the external appearance of the door. The operating gear is of steel with nylon wheels and cast concrete counterweight. The vertical guide tracks are set in the jambs and pivot arms provide a further guide and fulcrum to the opening operation of the door. The door is weather stripped along top and both sides. The door closes with a spring latch and provision is made for locking this handle on the outside by padlock. All sizes cost £17 10s. ex-works. A car-type lockable handle can be fitted for an extra 10s.

The 'WELRISE' and other Westland overhead doors are made to measure. The 'Welrise' unit works along similar lines to the 'Garador' but incorporates a horizontal track as well as the vertical track set in the jambs. The counterweight can be placed either immediately at the sides of the doors or at the rear of the garage. The door is manufactured in two types of construction, one for private garages or small openings, and the other for large industrial openings or private double garages. The prices extend from £23 2s. for 6 ft. 6 in. by 7 ft. to £41 10s. for 7 ft. by 12 ft. 6 in. unit. Larger doors, 12 ft. to 16 ft. wide, are priced at approximately 17s. 6d. per sq. ft. Sidewall clearance for light and heavy doors is 8 in. or 10 in. respectively if weights are hung at side of door and 3½ in. or 4 in. if weights are hung on rear walls. Six inches headroom is required in all cases. Rear hung cables amount to an extra of 15s. per side.

Openings up to 24 ft. are covered by the 'WELLIFT' overhead door. This is similar in principle to the 'Garador' with only a vertical track set in the jambs. It can be hand or electrically operated. It is manufactured in two types of construction, one for private garages and small industrial openings and the other for large industrial openings or private double garages. The smaller unit is constructed of horizontally fluted aluminium sheets in a steel channel boundary frame, cross braced on the inside face. Doors between 8 ft. 1 in. and 12 ft. wide have a vertical 8 in. wide box section centrally positioned. The door is operated along vertical heavy gauge steel tracks and by steel arms that act as a fulcrum and further guide. The larger unit, up to areas of 300 sq. ft. is divided into panels by 3 in. wide steel sections, the panels being fitted with fluted aluminium sheets cross braced on the inside.

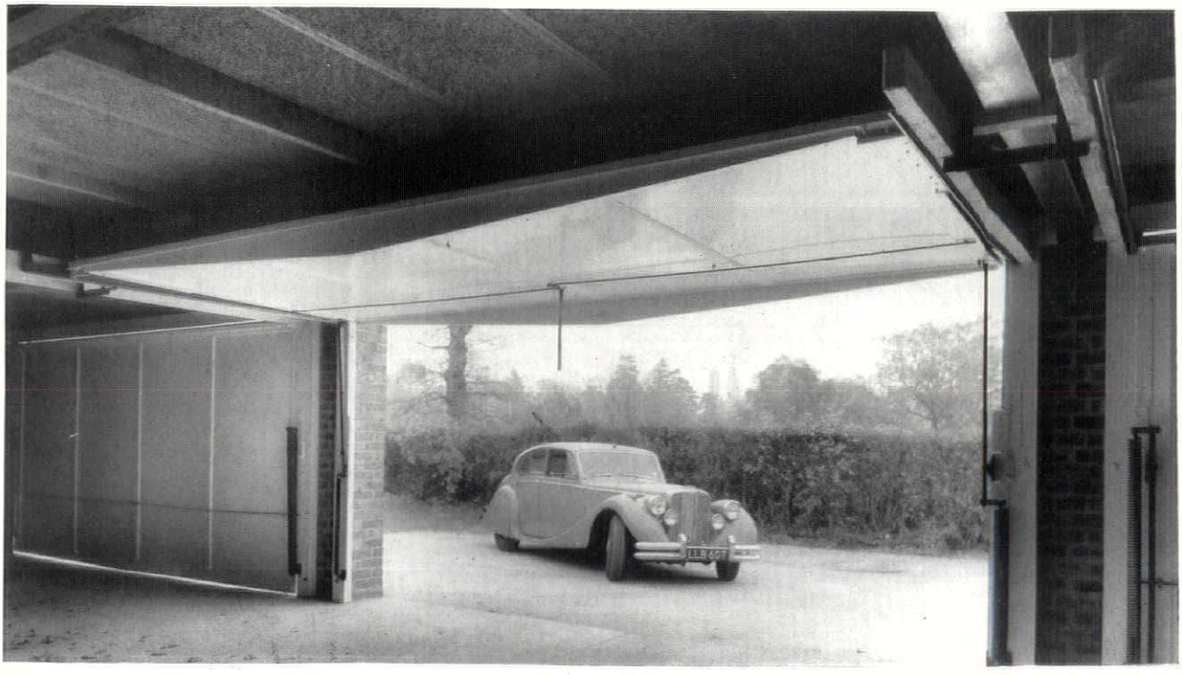
On all hand operated doors there is a slam type catch and provision is made for locking with a padlock. On electrically operated doors, security is obtained by means of a solenoid operated latch working in conjunction with the electrical operating mechanism.

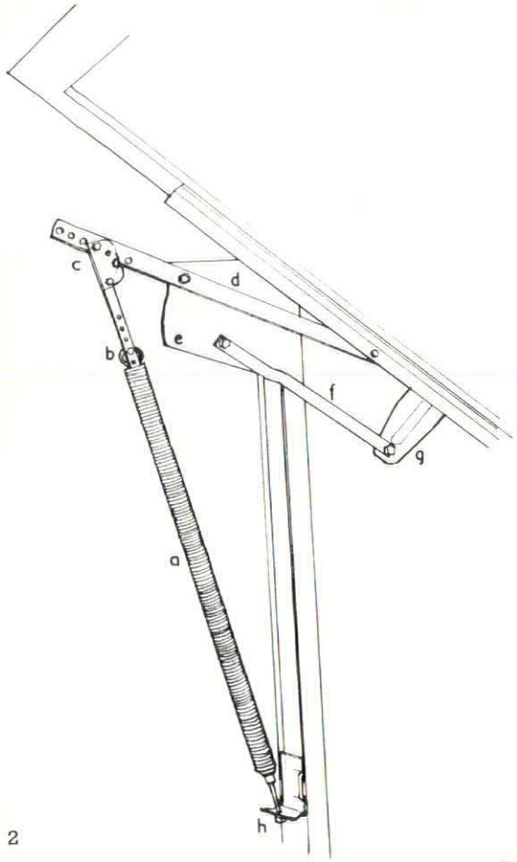
The price for the 'WELLIFT' of lighter construction for openings up to 10 ft. is approximately 10s. per sq. ft. and 17s. 6d. per sq. ft. for the heavy industrial construction. For the former, clearances required are 8 in. sidewall, 6 in. headroom if hand operated and 12 in. headroom if electrically operated. If weights are hung on rear wall, sidewall clearance becomes 3½ in. minimum. Clearances for the heavier doors are up to 12 in. for sidewall and up to 15 in. for headroom for both manual and electrically operated. Sidewall clearance is reduced to 6 in. when weights are hung on rear wall.

The 'WELTILT' door is similar in appearance to the 'Welrise' and 'Wellift,' but does not project from the opening. The combination of a sloping and horizontal track permits the door to be located completely within the building line. It is constructed of aluminium sheet in a steel channel boundary frame, cross braced on the inside face. Doors between 8 ft. 1 in. and 12 ft. have a vertical 8 in. box section centrally positioned. The tracks are of heavy gauge steel section and guide rollers are of nylon or ball raced according to the size and weight of the doors. A 10 in. clearance is required either side of the opening if the weights are adjacent to the opening. 3½ in. to 4 in. is required if the weights are situated on the rear wall. Six inches headroom is required in all cases. Costs vary from £27 14s. 5d. for a unit of 7 ft. wide to £47 7s. 1d. for a unit 12 ft. wide by 7 ft. 6 in. high.

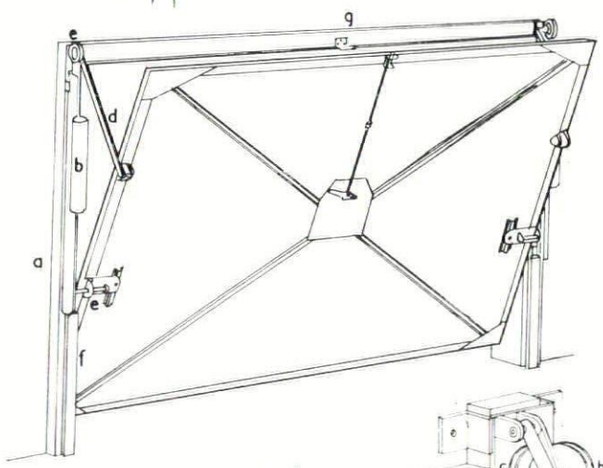
The Westland 'WELFOLD' overhead door is designed for high openings and particularly suited to large industrial openings and fire stations.

1, *Henderson 'Ultra' 325 gear. Note stiffeners at top and bottom of door.*

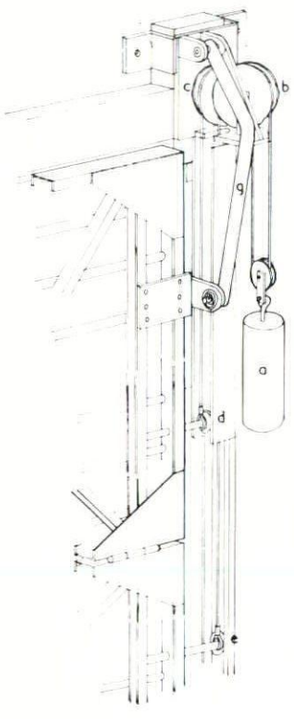




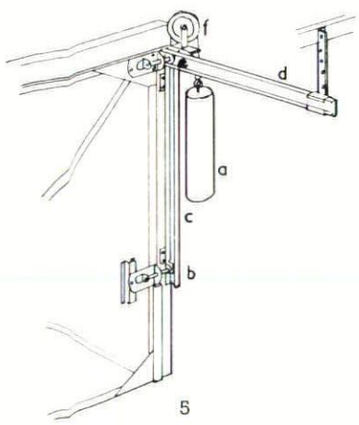
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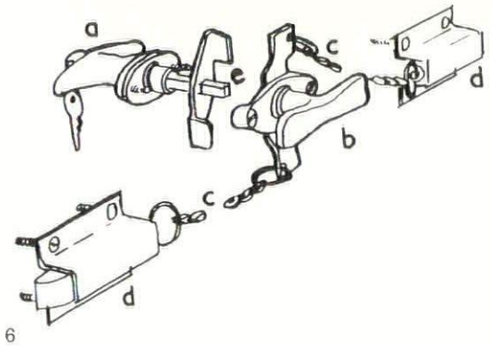
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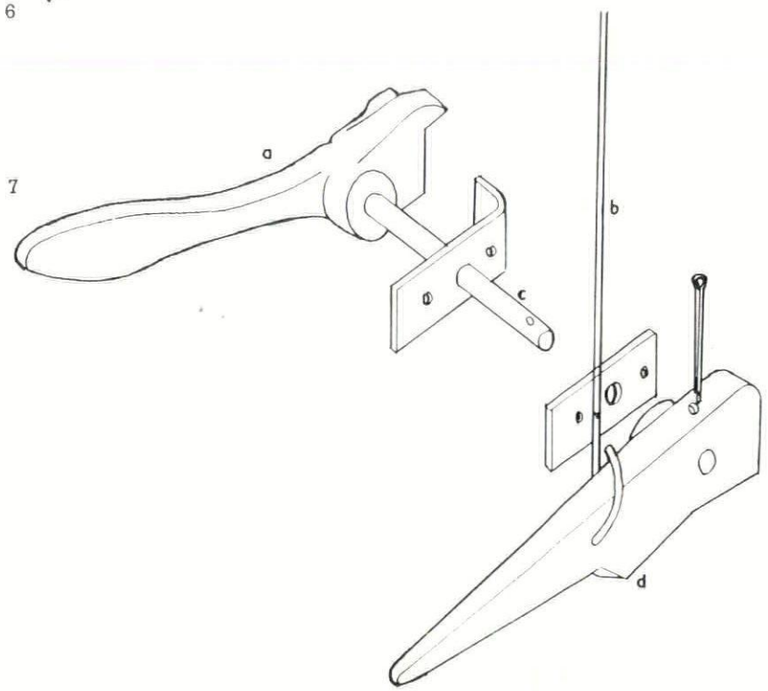
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6



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2, *Hill Aldam 'Flyover Delta.' Spring coil gear without tracks.* a, *spring;* b, *tension adjustment;* c, *pivot and kicker;* d, *main arm;* e, *jamb plate;* f, *control link;* g, *door plate;* h, *lower spring bracket.*
3, *Westland 'Garador.' Counter weight, pulley and vertical track at jamb.* a, *track;* b, *counterweight;* c, *pulley;* d, *bracket;* e, *wheel bracket;* f, *weather strip;* g, *latch keeper.*
4, *Westland 'Welfold' unit, showing door construction and counterweight systems.* a, *counterweight;* b, *pulley for lower section of door;* c, *pulley for upper section of door;* d, *wheel in track to upper section of door;* e, *wheel in track to lower section of door;* g, *bracket arm.*
5, *Westland 'Welrise' unit with horizontal and vertical track, counterweight and pulley.* a, *counterweight;* b, *door bracket and wheel for vertical track;* c, *vertical track;* e, *door bracket and wheel for horizontal track;* f, *pulley.*
6, *Hill Aldam locking spring bolt detail.* a, *outside handle;* b, *inside 'T' handle;* c, *connecting chain;* d, *spring bolt;* e, *spindle.*
7, *Westland 'latch' gear.* a, *outside handle;* b, *latch connecting rod;* c, *spindle;* d, *inside handle.*

In the open position, the door unit folds into a flat plane that lies immediately beneath the door lintel, projecting half in and half out. The opening process is straightforward, based on counterbalance weights situated either side of the door. These weights act on each panel. The panels are guided by vertical heavy gauge steel tracks and pivoted tubular steel arms. Closing requires a pole to hook the lower leaf down. The unit can be electrically operated. The 'Welfold' is constructed of aluminium sheets set in steel channels. Alternatively, the doors can be divided by framing into small panels in which glass or aluminium can be fixed.

The units are made to measure with a maximum size of 24 ft. wide by 24 ft. high. Locking devices are as for the other Westland doors. Twelve inches clearance is required for units up to 17 ft. high and 15 in. for over 17 ft. A sidewall clearance of 12 in. is required.

The 'WELROLL' is the only Westland overhead door that does not use the counterweight principle. This unit is constructed from light alloy extensions forming horizontal panels about 2 ft. deep. These panels are hinged together and run on ball raced wheels in a track that extends from a vertical position at the jambs and curves to a horizontal position over the garage area. The panel infilling is in either 14 s.w.g. light alloy or $\frac{3}{16}$ in. perspex. The counterbalance is by means of torsion springs situated behind the lintel operating cable drums at each side. This gives fast operation, particularly suitable to fire stations, ambulance stations, airfield crash and rescue stations. The speed of the doors opening is checked by pneumatic buffers.

The maximum size of this unit is 15 ft. high and 21 ft. 6 in. wide. The unit is made to measure and on cost it is not recommended for small domestic garages. A 20 in. headroom is required and clearance of 6 in. either side of the opening.

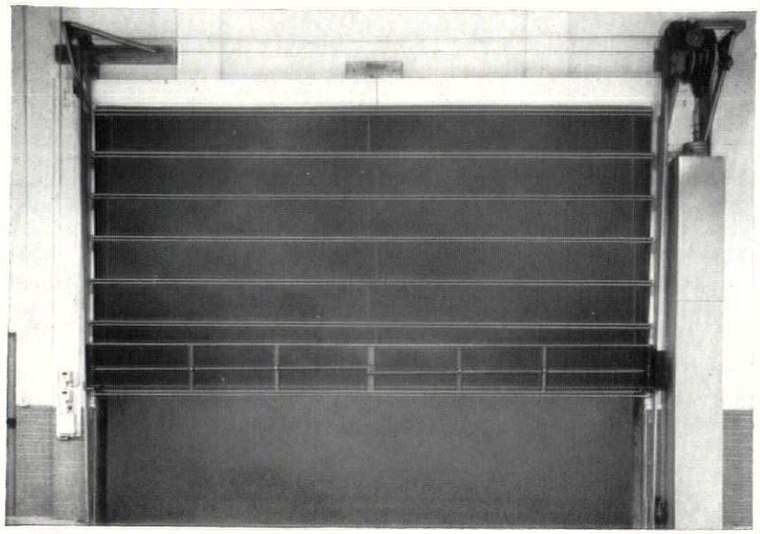
The 'WELPACK' door is particularly suitable for wide openings as each panel remains in vertical position. It is a vertically lifting door composed of a series of 14 gauge light alloy panels 18 in. deep designed to interlock along the top and bottom edges. These panels are manoeuvred up or down vertical heavy steel jamb guides. As the panels are raised they

clear the head of the opening and stack into a compact group about the height of a single panel and 1 in. per panel in depth. The door is operated by means of a hand chain or motor control and the counterweight cable is taken up on a spiral in which the increasing circumference compensates the increasing weight as the panels stack and add to the load being lifted. Electrically operated doors are fitted with a safety bar that causes the doors to open if it comes into contact with an obstruction whilst the doors are closing.

Sidewall clearance requires 2 ft. 1 in. on the side of the drive unit and 6 in. on the other side. A depth of 4 ft. above this lintel level is required to accommodate drive mechanism and a minimum headroom of 2 ft. 7 in. is required. The price for the unit varies from 22s. 6d. per sq. ft. for a unit of approximately 300 sq. ft. to 20s. per sq. ft. for a unit of 400 sq. ft. Electrical equipment is priced at approximately £50. Size of units are up to 24 ft. wide and 20 ft. high.

Conclusion

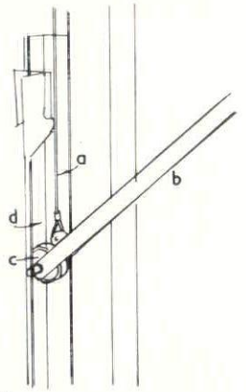
In most cases it is possible to control the design of the actual door. The size and weight must be assessed. It is then necessary to decide upon the 'open' position of the door and



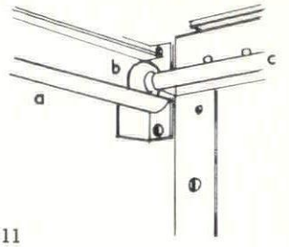
8, *the Westland 'Welpak' door.*



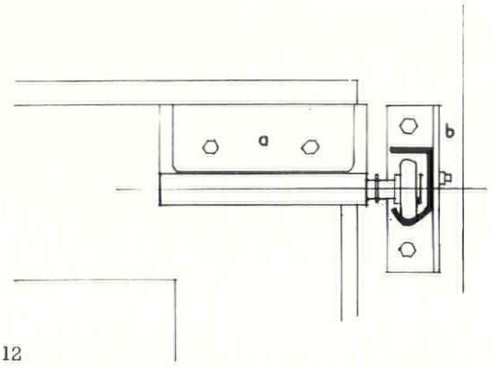
9, *the Westland 'Welfold' door for high openings.*



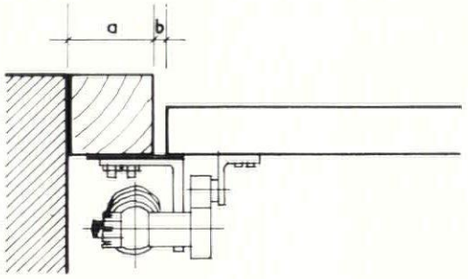
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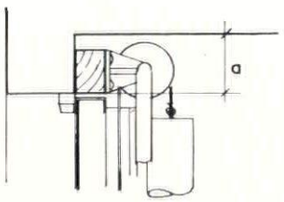
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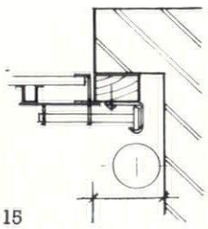
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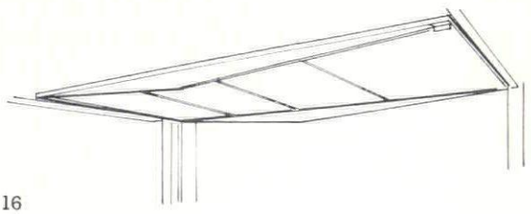


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10, *'Portaldor' thrust arm and vertical track at jamb.* a, *counterweight connection;* b, *thrust arm;* c, *wheel;* d, *track.*
11, *Henderson 'Ultra' horizontal track at lintel level.* a, *track;* b, *wheel;* c, *door bracket.*
12, *Henderson 'Ultra' horizontal track at lintel level.* a, *door bracket;* b, *jamb bracket.*
13, *Henderson 'Ultra' jamb clearance, and door clearance to allow for lateral movement.* a = 2¾ *in.;* b = ⅜ *in.*
14, *Westland 'Garador' lintel clearance.* a = 4 *in.*
15, *Westland 'Garador' side wall clearance.* a = 4½ *in.*
16, *Henderson 'Ultra' 325 unit with tapered timber stiffeners to top and lower rail to point of support.*



16

the path taken by the door when opened. Space available for clearances must be known. On these points, it is possible to decide on the type of gear. Locking devices and opening mechanisms can then be considered.

In selecting the type of door and gear, the factors discussed, cost, size, weight, type of gear, path taken by door and open position, and space available for clearances, must be considered.

The basic action of either counterweight or spring coil door gear, where the centre of gravity of the door is not maintained on a vertical path, must balance the leverage effect of the door.

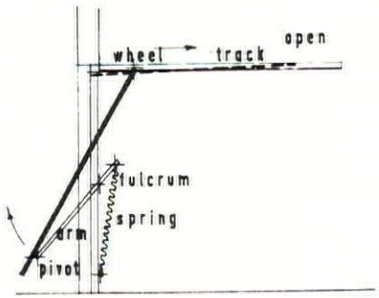
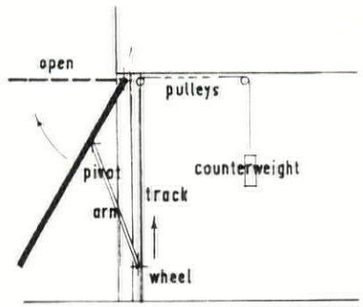
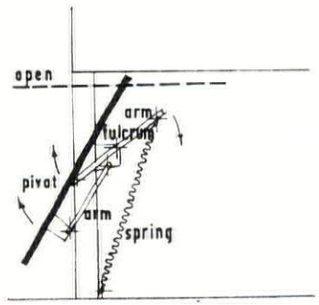
In the case of the counterweight system, the vertical track at jambs locates the centre of gravity of the door, and easy operation depends upon the smooth running of track wheels and pulley. In the case of the Batley unit, the leverage effect of the door is counteracted simply by means of a lever arm balance. In these cases, where the door partly projects in the open position, the base of the door should be designed to divert water settling on the flat surface, clear of the operator when the unit is closed.

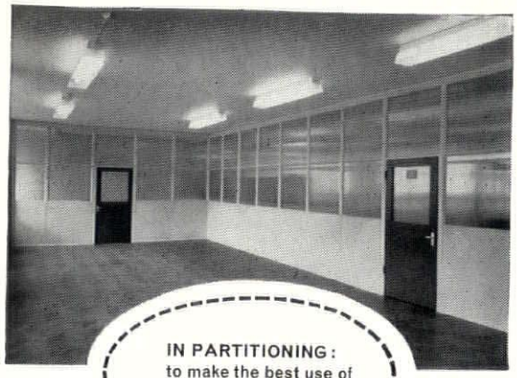
In most cases involving spring coil gear incorporating a horizontal track at lintel level, the door is supported at the corners. The spring either acts on an extended lever or directly from jamb to the lower corners of the door. The former avoids obstruction at the sides of the opening which may amount to 5 in. (an important consideration in small openings), where as the latter is mechanically more effective. The lightness of action depends upon the careful adjustment of coil tension. Over-tensioning will give springy action on opening, but makes closing difficult. In the case of the 'Ultramatic,' the leverage effect of the door, which varies over the course of the opening operation, is carefully controlled by a secondary mechanism, adjusting the effective leverage and spring tension of the coil. Otherwise the coil spring adjustment, to allow for a range of door weights and sizes for a particular gear mechanism, is sometimes a compromise to achieve a continuous balancing effect in the opening operation. In most cases, coil spring gear places the open door within the building line.

Both counterweight and coil gear require smooth running track mechanism and light door units for easy action. In fact, the door has to combine lightness with structural stability and weather resistance. In this respect, the light metal unit has an advantage. Timber doors adapted from hinge frames would be better placed upside down to bring the centre of gravity to a high position. In designing doors, the points of support at the open position give a guide to the design of stiffeners and bracing. 'Bow spring' metal bracing can cause curving when the door is in a vertical position. A combination of timber and metal bracing is recommended especially in the case of wide openings (double garages). If the door projects from the building line, a weather rail to throw the water clear of the operator could be part of the bracing system.

Doors operated with trackless gear must be carefully braced against whipping caused by uneven action on either side. In all units a degree of lateral movement is allowed for in the door to frame tolerances.

The majority of small units can be fixed by unskilled labour with assembly instructions. The heavier units require specialist advice and installation.

Name of Manufacturer.	*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices; ex Works.*	*Comments.*
12 **Henderson's** **Ultra 140** **Ultra 150** **Ultra 210** **Ultramatic 180** **Ultra 325** P. C. Henderson Ltd, Harold Hill, Romford, Essex.	 Tension coil spring. Horizontal track at lintel level.	Nylon wheels in galvanised tracks. Solid steel arms, brackets and steel weatherstrips. Exterior quality plywood doors. Ultra 325 with top brass rollers, roller bearings running in galvanised tracks.	Headroom 1¼″. Sideroom 2¾″. Cylinder lock for locking or unlocking inside and outside extra.	Standard timber doors, 7′ and 8′ wide and 7′ and 6′ 6″ high with standard frame, 3″ × 3″.	Gear only. Ultra 140. 5′ 11″ to 6′ 6″ high, 40 to 140 lbs., £11. Ultra 150. 6′ 3″ to 7′ high, 70 lb. to 150 lb., £10/15/0. Ultra 210. 6′ 9″ to 7′ 6″ high, 100 lb. to 120 lb., £11/14/0. Ultramatic 180. 6′ 9″ to 7′ 6″ high, 140 lb. to 180 lb., £16/5/0. Ultra 325. 6′ 10″ to 7′ 6″ high, 225 lb. to 325 lb., £34.	Door contained within building line in open position. Ultramatic includes mechanism which opens door automatically after it is released from a catch. Doors may be wholly or partially glazed. Gear also suitable for metal doors. Ultra 325 suitable for double garages; bracing for doors up to 17′ wide.
13 **Hillaldam** **'Flyover Two'** E. Hill Aldam & Co. Ltd, Britannic Works, Red Lion Road, Tolworth, Surbiton, Surrey.	 Tension coil springs. Horizontal track at lintel level.	Nylon wheels run on steel axles. Rigid steel section track, steel brackets and weatherstrips. 3″ × 3″ timber frame recommended.	No headroom required above 3″ timber frame. Standard Espagnolette bolts only operate from outside in conjunction with padlock.	Up to 7′ 6″ high and 210 lb.	Gear only, £11/15/0.	Stiffeners provided as an extra for hinge doors conversions. Spring bolts that can be operated by inside and outside, £1/18/6 extra. Door stops to be provided.
14 **Hillaldam** **'Flyover Delta'** E. Hill Aldam & Co. Ltd, Britannic Works, Red Lion Road, Tolworth, Surbiton, Surrey.	 Tension coil spring. No tracks.	Gear steel throughout ball bearing pivoted main arms. 3″ × 3″ timber frame recommended.	Espagnolette bolts for operation outside only.	From 6′ 3″ to 7′ 6″ high and from 60 lb. to 180 lb. weight.	Gear only, £10/15/0.	Gear fixed entirely to jambs and the door; large pivot plate either side. Spring bolts with chrome locking handle, £1/18/6 extra. Door trusses, 8/6 extra.

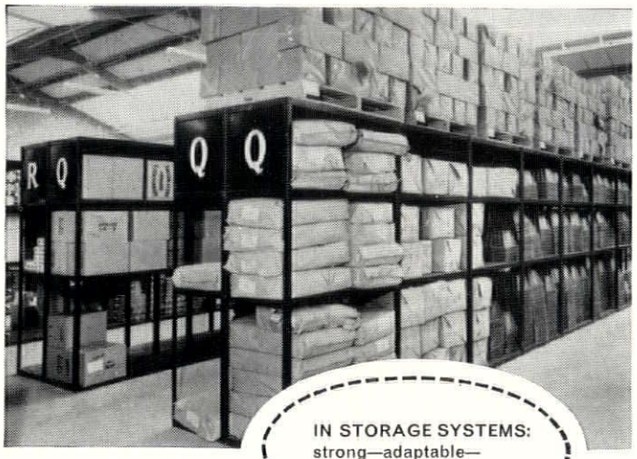


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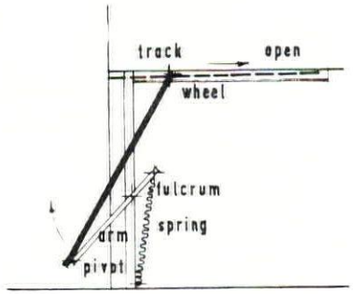
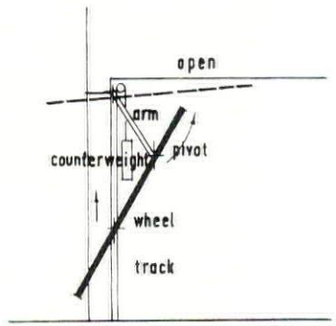
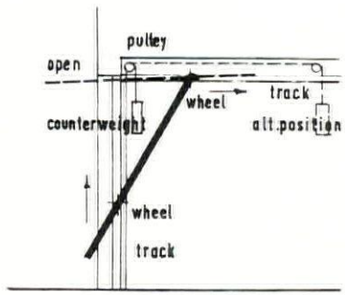
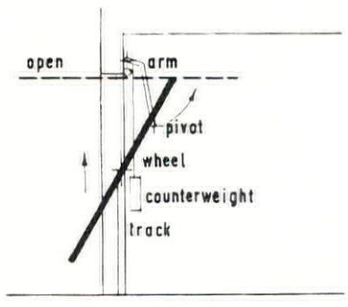
Steel storage systems ☐

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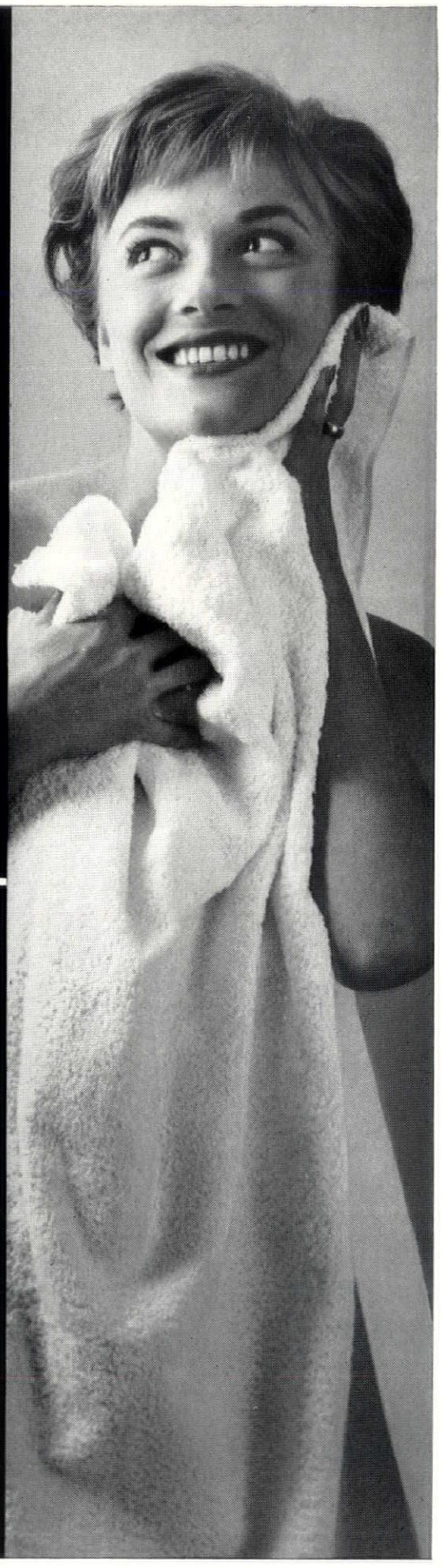
Name of Manufacturer.		*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
15 Portaldor Portal Engineering Co. Ltd, Pool House, Bancroft Road, Reigate, Surrey.		Counterweight and pulley system. Vertical track in jambs.	'Galvasheen' steel ribbed sheet and channel.	Jamb, nil. Lintel, nil. Key in handle and cylinder lock.	Standard units up to 18′ wide. Larger sizes to special order. 6′ 6″ high × 7′ wide. 7′ 6″ high × 8′ wide.	Complete unit. £23. £25.	Open door forms awning. Counterweight can be placed anywhere in garage. Fitting instructions provided for unskilled labour. Draught excluding strips down each side. Base or top strip at 2/- per ft. extra.
16 Westland 'Garador' Westland Engineers Ltd, Yeovil, Somerset.		Counterweight and pulley system. Vertical track in jambs.	Door: light gauge swaged aluminium skin set in heavy gauge aluminium channel frame, gusseted and cross braced. Steel operating gear vertical tracks and pivot arms.	Headroom clearance 4″. Side wall clearance 4½″. Centre spring latch locked by padlock on outside.	Standard sizes: 7′ wide × 6′ 6″ high. 7′ 3½″ wide × 6′ 4″ high. 7′ 5″ wide × 6′ 6″ high.	Complete unit, £17/10/0.	Car type lockable handle can be fitted for 10/- extra.
17 Westland 'Welrise' Westland Engineers Ltd, Yeovil, Somerset.		Counterweight and pulley system. Vertical track in jambs and horizontal tracks at lintel level.	Door is manufactured in two types of construction for small and large units. Aluminium construction door of fluted sheets braced on inside. Doors 8′ 1″ to 12′ have vertical 8″ wide box section centrally positioned. Heavy gauge steel tracks.	Light doors 6″ headroom, 8″ side wall clearance if weights at side; 3½″ side wall clearance if weight on rear wall. Large doors 6″ headroom; 10″ side wall clearance if weights at side; 4″ side wall clearance if weights on rear wall. Centre spring latch locked by padlock on outside.	No standard sizes. Light type of construction for openings up to 12′ and areas up to 100 sq. ft. and doors up to 150 lb. Large type for openings up to 16′ and areas up to 200 sq. ft. and doors up to 600 lb.	Complete unit from £23/2/0 for 6′ 6″ × 7′ to £41/10/0 for 7′ × 12′.	One third of door projects at open position to form canopy. Cylinder deadlock can be fitted as an extra. Counterweight can be situated by side wall or at rear wall.
18 Westland 'Wellift' Westland Engineers Ltd, Yeovil, Somerset.		Counterweight and pulley system. Vertical track in jambs.	Doors of aluminium fluted sheets, braced inside. Two constructions, one for small openings up to 8′ and the other for large industrial openings to 12′. Heavy gauge steel tracks and pivot arms.	Small doors up to 10′ wide, 6″ headroom; 8″ side wall clearance if weights at side; 3½″ side wall if weights on rear wall. Large doors 10′ 1″ to 24′, 12″ to 15″ headroom; 9″-12″ side wall clearance if weights at side; 6″ side wall clearance if weight on rear wall. Centre spring catch locked by padlock outside.	Light construction for openings up to 10′ wide and 8′ high. Large constructions for openings up to 24′ wide and 300 sq. ft.	Guide to price. Openings up to 10′ wide approx. 10/- per sq. ft. Heavy construction, approx. 17/6 per sq. ft.	Door in open position projects to form canopy. Can be electrically operated, 12″ to 15″ headroom required. Cylinder type deadlock can be fitted as an extra.



Bath after bath after bath...



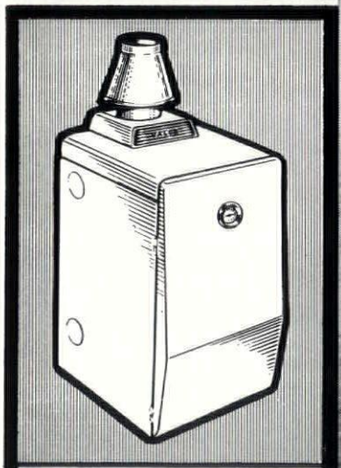
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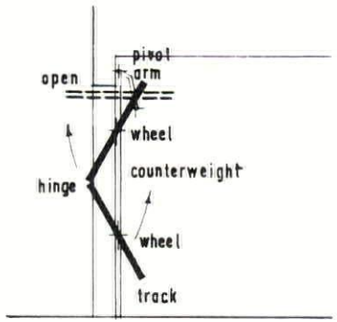
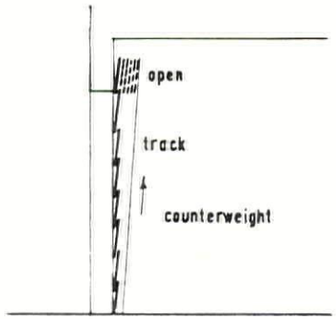
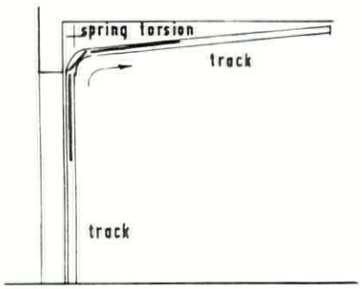
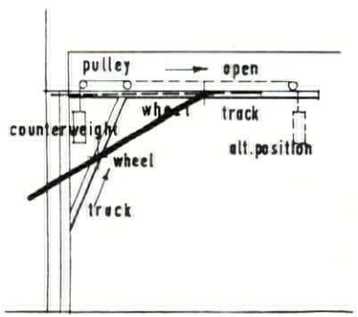
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Name of Manufacturer.		*Balance and Track position.*	*Construction.*	*Clearances and Locking System.*	*Size and Weight.*	*Prices: ex Works.*	*Comments.*
19 Westland 'Welfold' Westland Engineers Ltd, Yeovil, Somerset.		Counterweight and pulley. Vertical tracks at jambs.	Doors of aluminium horizontally fluted sheets set in steel channel runners; crossed braced on inside. Alternatively door divided into small panels fitted with glass or aluminium.	Headroom above lintel 12″ for doors up to 17′, 15″ for doors over 17′ high. Side wall clearance 12″. Slam type catch with locking by padlock.	Maximum size 24′ ×24′.	Opening greater than 190 sq. ft. approx. 23/- per sq. ft. with 16 g. aluminium flat sheets or 26/6 elec. operated, 22/- per sq. ft. with 18 g. steel flat sheets or 25/6 electrically operated. Wicket door incorporated at extra cost of £15.	Particularly suitable for openings of tall proportions, large industrial openings, Fire Stations. Projects beyond face of lintel in open position. Hand or electrically operated. Cylinder type deadlock can be fitted as an extra. Clear height of opening reduced by 9″-12″ according to size of door.
20 Westland 'Welpak' Westland Engineers Ltd, Yeovil, Somerset.		Counterweight and pulley. Vertical tracks at jambs.	Door of 14 gauge light alloy panels 18″ deep, interlocking at top and bottom edges. Heavy steel jamb guides.	Side wall clearance with drive unit 2′ 1″ minimum. Side wall clearance idler unit side, 6″ minimum. Depth required inside building 4′ min. above lintel level to accommodate drive mechanism. Headroom required lintel to ceiling 2′ 7″.	Maximum size: 24′ wide and 20′ high.	Examples: 300 sq. ft. door at approx. 22/6 per sq. ft. 400 sq. ft. door at approx. 20/- per sq. ft. Electrical equipment, £50.	Panels stack into group at level of lintel. Operated by hand chain or motor control. Spiral winding drum compensates increased weight as panels stack. Speedy operation.
21 Westland 'Welroll' Westland Engineers Ltd, Yeovil, Somerset.		Spring torsion operating cable drums at either side. Vertical track with curve at lintel level into rear horizontal.	Constructed of light alloy extensions forming horizontal panels about 2′ deep. Panels hinged together. Units run on ball raced wheels in vertical and horizontal tracks. Panel infilling either 14 s.w.g. light alloy or $\frac{1}{8}$″ perspex.	Headroom 20″. Side wall clearance: 1′ 1″ one side, 6″ other side.	Maximum size: 15′ high and 12′ 6″ wide.	Approx. £2/10/0 per sq. ft. delivered and erected.	Door can be automatically opened by applying additional torsion to the spring when door is closed, giving high speed operation. Particularly suitable for emergency services. Not recommended for small domestic garage on cost.
22 Westland 'Weltilt' Westland Engineers Ltd, Yeovil, Somerset.		Counterweight and pulley. Sloping inwards and horizontal tracks.	Aluminium construction similar to 'Welrise' and 'Wellift.' Smaller type door for openings up to 8′. Openings 8′ 1″ to 12′ have central box section. larger type door has steel frame.	10″ at side, 6″ headroom. If weight positioned on rear wall side wall clearance 3½″ to 4″ required.	Small doors maximum size 12′ wide and 10′ high. Large doors maximum size, 16′ wide and 12′ high.	From £27/14/5+5% for 7′×7′ 6″ to £47/7/1+5% for 7′ 6″×12′.	Door contained within building line during operation and in open position. Extra cost of 15/- per side for rear hung cables.

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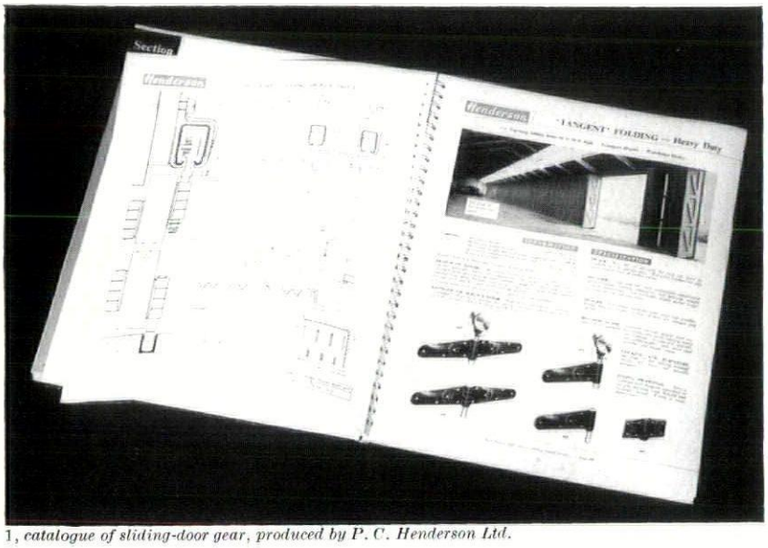
THE INDUSTRY

Catalogues

There is a healthy growth of interest amongst manufacturers in producing useful catalogues for architects. Amongst the factors which are stimulating them, no doubt, is the annual competition for manufacturers' technical literature sponsored by the RIBA and the Building Centre. This year's competition showed that standards are rising, though not yet high enough. Most of the award winners had the stamp of sound design. The highest award went to Alumin Building Components Ltd. for their aluminium double hung window catalogue, referred to in these columns in March, 1961.

Two manufacturers' catalogues which recently have been produced are worth comment for their differing approach. Hendersons, whose sliding door gear is a household word amongst architects, have produced an admirably comprehensive catalogue, 1. It has a spiral binding and opens flat on the drawing board. Details of their various gear are presented in such a way that users will be able to extract all the information they need easily and quickly. The drawings are clear and informative and an intelligent use has been made of photographs of components. The catalogue fails, however, in one or two important respects. The next time the manufacturers are producing one they should (1) make it A4 size, (2) put an SfB number on the top right-hand corner of the cover and (3) improve the index.

P. C. Henderson Ltd., Tangent Works, Harold Hill, Romford, Essex.



1, *catalogue of sliding-door gear, produced by P. C. Henderson Ltd.*

The second catalogue is on Jonwindows metal windows. It is a bound volume and is more than just a catalogue, containing, for example, an interesting account of how the windows are made. It is to A4 size and the designers have obviously given thought to the type and extent of information which an architect needs. The book opens flat at any page and the drawings which are to scale are most useful. Points against the catalogue, however, are the absence of an SfB number and the inclusion of too many quite useless photographs.

John Williams of Cardiff Ltd., Curran Road, Cardiff.

Strength of timber

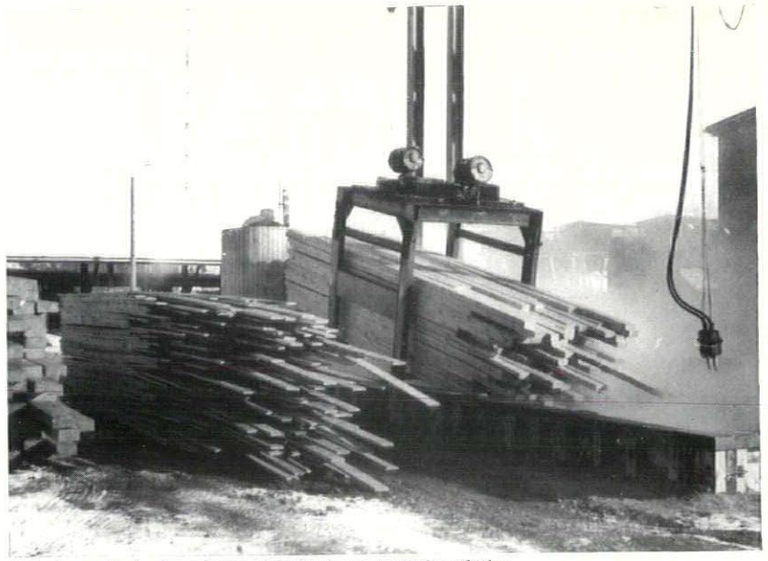
A recent publication by the TDA, *The Sustained Load Strength of Timber* by H. Tottenham (Research Report E/RR/11) deals with the behaviour of timber under sustained loads. Previous research in this country was carried out by W. W. Barkas who considered timber as a gel and in Russia by Belyankin and Ivanov who viewed it as a viscous-elastic and viscous - elastic - plastic medium. The Russians make the assumption that there is an initial stress below which no plastic deformation occurs. This stress they define as the 'limit of plastic flow' (L.P.F.). Tottenham, in this study, regards timber as a viscous-elastic material and he examines various criteria for the onset of plastic flow. He suggests that the Coulomb Hypothesis—that breakdown occurs when a critical strain is reached—agrees with present experimental data and on the basis of this hypothesis puts forward a rapid method of determining the sustained load strength of timber.

The report is available from the TDA, price 3s. 6d.

Timber Development Association Ltd., 21, College Hill, London, E.C.4.

Timber preservative treatment

Most people concerned with the use of timber are aware of the value of preservative treatment against decay, fungal and insect attack. Adequate penetration into the wood is essential if full protection is to be achieved. A new process using a preservative called 'Timbor' is claimed by its manufacturers to ensure 100 per cent impregnation. 'Timbor' is a form of boron having a high solubility. Boron has been used as a preservative for many years in Australia and New Zealand. The process used by the manufacturers in this country is diffusion impregnation, the principle of which is that a concentrated soluble chemical when placed in contact with a wet medium will tend to move into the wet medium until the chemical is in solution equilibrium throughout the whole volume of the wet medium. Timber cut from the log has a high moisture content. In softwoods it ranges from 100 per cent to about 180 per cent. Fresh sawn timber, retaining this moisture is immersed in a strong 'Timbor' solution, 2, and a quantity of 'Timbor' is deposited on the surface. It then diffuses through the timber, the time taken completely to impregnate the timber depending on temperature, density of timber, moisture content and concentration of preservative solution.



2, *fresh sawn timber being lowered into Timbor preservative solution.*

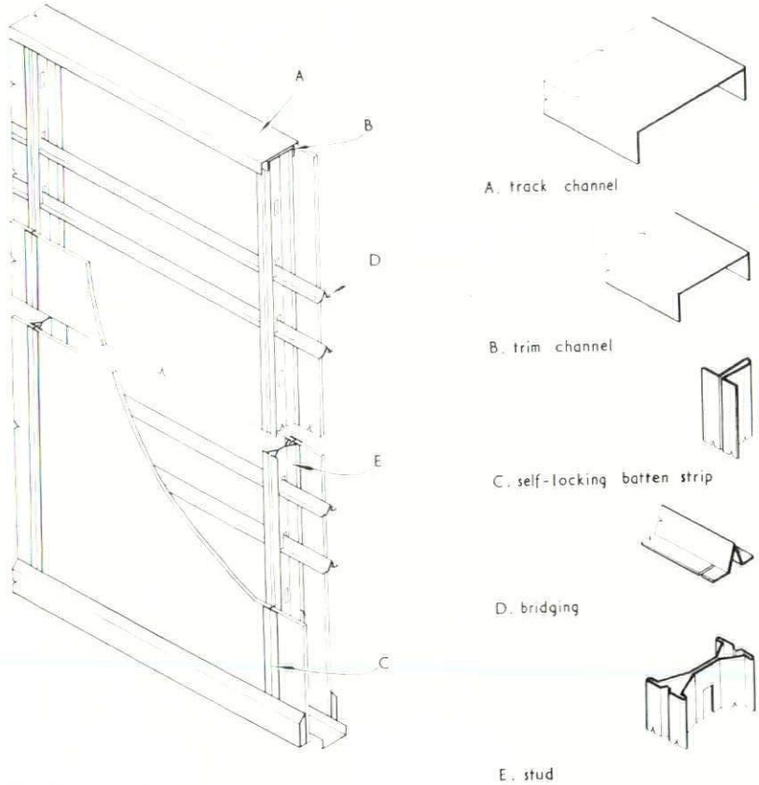
As a general guide complete diffusion is usually achieved in two weeks for timber 1 in. thick, six weeks for 2 in. thick timber and nine weeks for 3 in. thick timber. It is important, of course, that drying of the timber be restricted during diffusion. Full details are available from the manufacturers.

Borax Consolidated Ltd., Borax House, Carlisle Place, London, S.W.1.

Partition system

A lightweight partitioning system first developed in the United States by the Penn Metal Company Inc. has been introduced here by The Expanded Metal Company. The system is called *Permalock*. All framing components are metal and assembly closely follows that of a traditional timber stud frame partition, 3. Erection procedure is as follows: (1) mark out partition runs and door openings; (2) fix track channel to floor; (3) fix track and trim channels (one inside the other) to ceiling; (4) fix trim channel and stud to existing wall against which the partition abuts; (5) set studs into floor and ceiling tracks at 24 in. centres and clip intermediate bridging into studs; (6) position and secure door frame to stud framing; (7) cut wallboard panels to length and shape and insert them between track and trim channels at ceiling; (8) fit T batten strips firmly into studs between wallboard panels; (9) fix architraves and skirtings. Partitions can be taken down and rearranged quite easily, the only making good being at the fixings of floor and ceiling tracks. Slots in the studs enable wiring conduits and pipes to pass through although all metal members may be cut with a hacksaw for this purpose. Price is around 6s. per sq. ft. for the standard partition having $\frac{1}{2}$ in. plasterboard linings with an emulsion paint finish. For a finish comprising plastic faced board the price is from 10s. to 11s. per sq. ft.

[continued on page 220

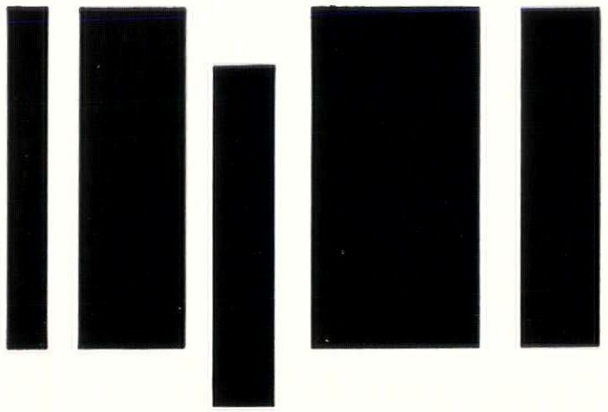


3, *cut-away section of the Permalock partition.*

CERAMIC CONSULTANTS, a group of young ceramic manufacturers, chemists, and designers, offer a new service producing designs, prototypes and products for: architects and town planners—contract furnishers and designers—building contractors and industrial developers —landscape gardeners.

an exhibition

ceramic design in modern building



To illustrate this, the group have pleasure in inviting you to an exhibition of products and ideas to be held at the Tea Centre, Lower Regent Street, London, S.W.1, which will be open from Wednesday September 6th. until Friday September 15th. 10.0 a.m.—6.30 p.m. and includes: ceramic reliefs and murals—wall plaques and lamps—tiles: interior and exterior; relief and patterned; plain and decorated—vases and tableware—pottery convectors—pottery screens —garden terracottas and barbecues—fireplaces and tables.

A limited number of tickets is available for the official opening at 11.0 a.m. on Wednesday September 6th. and can be obtained on application to:

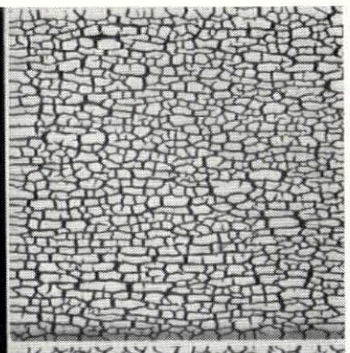
CERAMIC CONSULTANTS 36 Thayer Street, London, W.1. WEL 0398—HUN 2488.

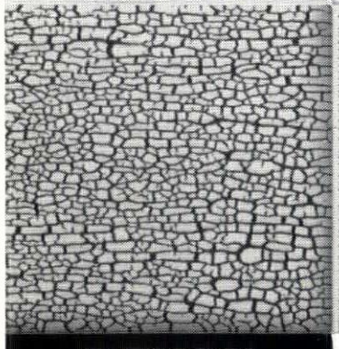


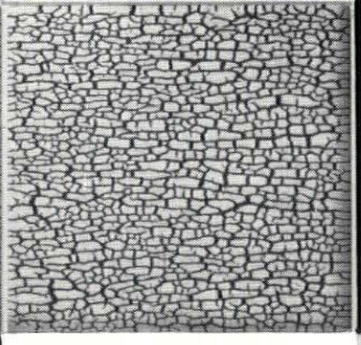
A NEW 'CRACKLE' TILE

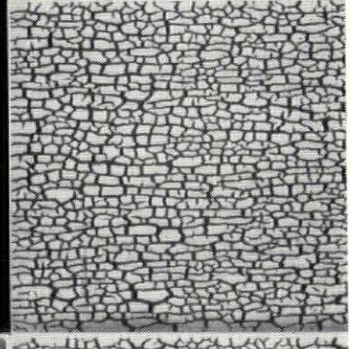
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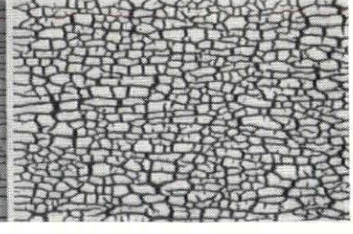












DEVON WALL TILES

Made by Candy & Company Limited, the sole manufacturers of the Devon Fire. Write for further information and catalogue to: Department R8, Candy & Co. Ltd., Newton Abbot, Devon.

continued from page 218]

The Expanded Metal Company service covers the complete job—design, estimate and installation.
The Expanded Metal Co., Ltd., Burwood House, Caxton Street, London, S.W.1.

Rectangular hollow sections

Round section hollow tube has been used structurally for many years now. Its advantages include weight saving and savings in painting as there is less surface area than on rectangular sections. Square and rectangular section tubes are now being produced and details concerning properties and sizes are contained in a brochure entitled *Rectangular Hollow Sections* put out by the manufacturer.
Stewarts & Lloyds Ltd., Broad Street Chambers, Birmingham, 1.

CONTRACTORS etc

Industrial Offices and Laboratories, Harston, Cambridgeshire. *Architects:* Edward D. Mills & Partners. *General contractors:* Rattee & Kett Ltd. *Sub-contractors: Heating, plumbing, ventilation:* Richard J. Audrey Ltd. *Partitioning:* Tenon Contracts Ltd. *Asbestos cement panels:* The Universal Asbestos Manufacturing Co. *Asphalt roofing and woodblock flooring:* Cambridge Asphalte Co. *Cork tiles and Nairns lino tiles Poly-flor p.v.c. sheet:* The Lino Tile Co. *Insulation board and acoustic tiles:* Celotex Ltd. *Patent glazing:* The Standard Patent Glazing Co. *Granolithic flooring:* Johnson Floor Co. *Steelwork:* Brownlie & Murray Ltd. *Roof screeding:* Isocrete Co. *Bricks:* Fisons Ltd.; Cape Building Products Ltd. *Metal windows:* John Williams of Cardiff Ltd. *Concrete roof lights:* John Healey (London) Ltd. *Asbestos cement roof decking and cladding:* W. M. Walker & Co. *Pipework:* Prodorite Ltd. *Lift:* Hammond & Champness Ltd. *Wallpaper:* The Wallpaper Manufacturers Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Balustrading and ladders:* Allen & Greaves Ltd. *Ironmongery:* Yannedis & Co. *Illuminated sign:* Pearce Signs Ltd. *Royal Coat of Arms plaque and company's name panel:* E.G.C. Ltd. *Flush doors:* W. Lawrence & Son Ltd. *Laboratory fittings:* F. J. & T. E. Prime. *Light fittings:* Troughton & Young (Lighting) Ltd.; Thorn Electrical Industries Ltd.; Falk Stadelmann & Co.; G.E.C. Ltd.; Rotaflex (Great Britain) Ltd.; Merchant Adventurers of London Ltd. *Carpets and chairs:* Catesbys Contracts & Export Ltd. *Boardroom and executive furniture:* Knoll International Ltd. *Library shelf fittings:* Savage & Parsons Ltd. *Paints:* Lewis Berger (Great Britain) Ltd.; *Wareite plastic laminates:* Bakelite Ltd. *Staircase handrails:* Marley Tile Co.

Research Laboratories at Passfield, Hampshire. *Architects*: Architects' Co-Partnership. *General contractor:* Bovis Ltd. *Sub-contractors: Heating, ventilation, electrical drainage, plumbing:* Matthew Hall & Co. *Reinforced concrete:* Rom River Reinforcement Co. *Steelwork:* Oxford & Cowley Ironworks Ltd. *Venetian and cloth blinds:* London Blinds Ltd. '*Plastapac*' *finish to thermacoust slabs:* R. A. Brand & Co. *Boiler house chimney:* Danks of Netherton Ltd. *Woodacoustic ceilings:* Coronet Engineering Ltd. *Asbestolux ceilings:* Anderson Construction Co. *Slate cills:* Bow Slate & Enamel Co. *Sliding folding shutter door:* Acme Metal Works. *Hardwood and p.v.c. flooring:* Acme Flooring & Paving Co. *Metal and chain link fencing:* J. B. Corrie (Flextella) Ltd. *Concrete roof and floor slabs:* Concrete Ltd. *Galt glass rooflights:* Allan Blunn Ltd. *Ironmongery:* Alfred G. Roberts Ltd. *Laboratory furniture:* A. Gallenkamp & Co. *Paint:* Leyland Paint & Varnish Co. *Composite felt roofing:* William Briggs & Sons Ltd. *Sanitary fittings:* John Bolding & Sons Ltd. *Metal windows:* William & Watson Ltd. *External and internal joinery:* Constructional Units Ltd. *Tarmac roads:* Tarmac Roadstone Ltd. *Glass:* Faulkner Greene Ltd. *Monogranolithic flooring:* Stuart's Granolithic Co. *Furnishings:* Bath Cabinet Makers Ltd.; Conran Contracts Ltd. *Planting and seeding:* J. Waterer Son & Crisp Ltd.

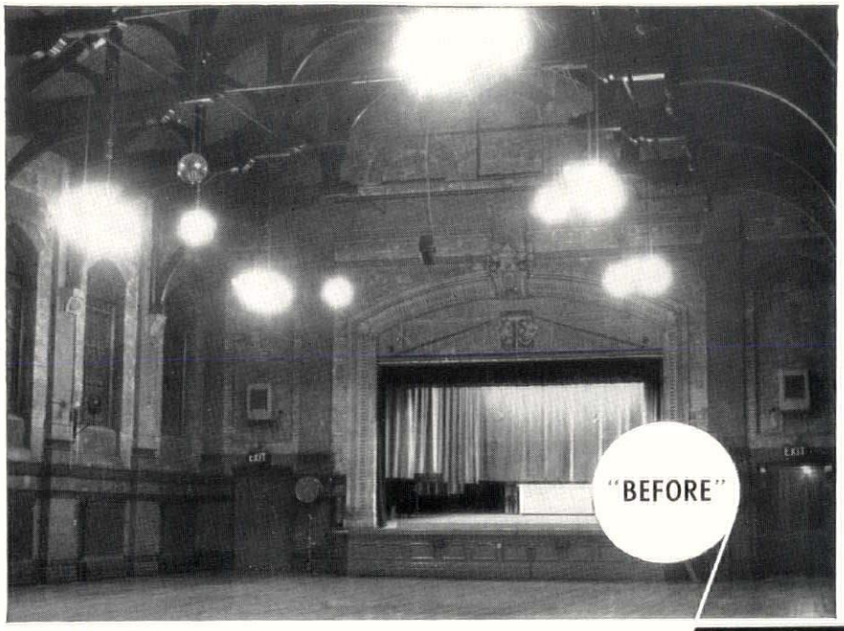
SS *Canberra.* *Naval architect:* John West. *Co-ordinators of interior design:* Sir Hugh Casson, Neville Conder and Partners in association with McInnes Gardner and Partners. *Shipbuilders:* Harland & Wolff Ltd. *Sub-contractors: 1st class dining room, lido, playroom, cinema, tourist class dining room, lounge, long bar, pool café, nursery, dance space:* Heaton Tabb & Co. *Teenagers' room, tourist class stairways and entrance:* Fredk. Sage & Co. *1st class lounge and suite rooms:* White Allom Ltd. *1st class stairways and entrances:* H. H. Martyn & Co. *Cabins-de-luxe, 1st class observation lounge:* Heal's Contracts Ltd. *1st class shop and hairdressing salon, tourist class shop and hairdressing salon, Bureau Square:* William Mason & Son Ltd. *1st class swimming pool, tourist class swimming pool:* A. de Cecco Ltd. *Blind/window units (1st class):* Accordo Blinds Ltd. *Combination washers and tumbler dryers:* Acme Domestic Equipment Ltd. *Stainless steel sinks, cereal bins and racks:* Associated Metal Works Ltd. *Linoleum:* Barry, Ostlere & Shepherd Ltd. *Leather for furniture (senior officers' accommodation):* J. Crisp & Son. *Sound insulation:* Fibreglass Ltd. *Electric Alarm Bells:* Gent & Co. *Tourist berth ladders (aluminium):* Gravity Ladders Ltd. *Refrigeration plant, electric lifts:* J. & E. Hall Ltd. *Steel roller shutters:* Haskins. *Plastic faced plywood, furniture, glass fibre, shower units and window boxes:* Heaton Tabb & Co. *Acoustic ceilings:* W. H. Heywood & Co. *Melamine plastics:* Holoplast Ltd. *Venetian blinds:* Horsley, Smith & Co. (Hayes) Ltd. *Soft plastics (vynide):* ICI Ltd. *Linoleum:* The Linoleum Manufacturing Co. *Timber for decorative veneers:* Wm. Mallinson & Sons Ltd. *Marinite:* Marinite Ltd. *Plastic hand rail:* Marley Tile Ltd. *Electric clocks:* Thomas Mercer Ltd. *Plastics:* Perstorp Products (GB) Ltd. *Master key system, cabin fittings, hardware:* N. F. Ramsay & Co. *Toilet fittings:* Roanoid Ltd. *Sanitary outfit:* Shanks & Co. *Furniture:* Shapland & Petter Ltd. *Galley gear:* W. M. Still & Sons Ltd. *Sound powered telephones:* The Telephone Manufacturing Co. *Perspex baths:* Thermo Plastics Ltd. *Glass fibre decorative panels:* Verplex Ltd. *Teak parquetry flooring:* Vigers Bros. *Everflex wall covering:* Bernard Wardle & Co. *Veneers:* John Wright & Sons (Veneers) Ltd.; Duprint Ltd. *Teak chairs:* Finmar Ltd. *Tables and chairs (tourist class ballroom):* The Edmonton Panel Co. *Cane furniture, etc.:* G. W. Scott & Sons Ltd. *Settees (1st class lido café):* Hille of London Ltd. *Tables and chairs:* Wood Brothers. *Blinds (1st class lido café):* Sandersons Ltd. *Walls and ceiling Blue Birds Eye Maple veneer:* W. I. Brine & Sons Ltd. *Rubber flooring (1st class restaurant):* The Runnymede Rubber Co. *Dance floor, Burma teak strip, Canadian Hardrock maple strip:* A. Macdougall & Son Ltd. *Rubber flooring (tourist class restaurant, smokeroom and tourist and 1st class nursery and cardrooms):* Leyland & Birmingham Rubber Co. *Vinyl tiles:* Humasco Ltd.; Semtex Ltd. *Deck covering tiles:* Robert Kirk Ltd. *Flooring (teenagers' room):* Korkoid Ltd. *Plastics:* ICI Ltd.; Formica Ltd. *Fibreglass ceilings, pillar casings:* Bristol Aeroplane Plastics Ltd. *Cane blinds (1st class restaurant):* Tidmarsh & Sons. *Armour plate doors:* Steel's (Contractors) Ltd. *Cineprojection equipment:* Rank Organisation Ltd.

SS *Oriana.* *Naval architect:* Charles Morris. *Co-ordinators of interior design:* Design Research Unit. *Shipbuilders:* Vickers-Armstrongs. 1ST CLASS GALLERIES: *Main sub-contractors:* Waring & Gillow (Contracts) Ltd. *Carpet:* Wilton Royal Carpet Factory Ltd. *Settees and easy chairs:* Hille of London Ltd. *Small chairs:* Russell Furnishings Ltd. *Tables and stools:* Beresford & Hicks Ltd. *Chair covering:* Old Bleach Linen Co. *Curtains:* Edinburgh Weavers. *Lamp standards:* Dernier & Hamlyn Ltd. *Pottery bases:* Chelsea Potteries. 1ST CLASS BALLROOM: *Main sub-contractors:* Waring & Gillow (Contracts) Ltd. *Carpet:* Wilton Royal Carpet Factory Ltd. *Settees and easy chairs:* Hille of London Ltd. *Settees and easy chairs (outboard):* Heals Ltd. *Small chairs:* Russell Furnishings Ltd. *Tables and stools:* Beresford & Hicks Ltd. *Curtains:* Edinburgh Weavers. *Chair covering:* Arthur H. Lee & Sons Ltd. *Decorative glass screen:* London Decorative Sand Blast Co. *Metalwork:* Comyn Ching. *Light fittings:* Dernier & Hamlyn Ltd. *Piano:* Danemann & Co. MONKEY BAR: *Main sub-contractors:* Waring & Gillow (Contracts) Ltd. *Carpet:* Wilton Royal Carpet Factory Ltd. *Sectional settees:* Hille of London Ltd. *Easy chairs:* Contex. *Small chairs:* Russell Furnishings Ltd. *Tables and stools:* Beresford & Hicks Ltd. *Bar stools:* Waring & Gillow. *Chair covering (leather):* Bridge of Weir Leather Co. *Chair covering (verandah):* Donald Bros. *Light fittings:* Dernier & Hamlyn Ltd. *Plants:* Longmans. OCEAN BAR (TOURIST CLASS): *Main sub-contractors:* Bath Cabinet Makers Ltd. *Chairs:* Wrinch & Co. *Coffee sideboards and seating:* Esavian Ltd. *Tables:* Beresford & Hicks Ltd. *Chair coverings and curtains:* Donald Bros. *Light fittings:* Dernier & Hamlyn Ltd. *Decorative bar front:* Warerite Ltd. *Decorative recesses:* Frank W. Clifford Ltd. *Sliding folding wood windows:* Esavian Ltd. GENERAL 1ST CLASS AND TOURIST ROOMS: *Fluorescent lighting:* General Electric Co. *Bar and table tops, etc.:* Formica and Waretite Ltd.

Factory, Uxbridge. *Architects:* Tayler and Green. *Foundations (factory):* Pynford Ltd. *Foundations (extension):* Precast Utilities (London) Ltd. *Building work:* White Bros. *General contractors (west site and office site):* E. J. G. Morgan Ltd. *Sub-contractors: Bricks:* Aldeburgh Brickworks Ltd.; Fison Ltd. *Dricrete blocks:* Crendon Concrete Co. *Rooflights:* Williams & Williams Ltd. *Steelwork:* R. Stevenson Ltd. *Reinforcement:* BRC Engineering Co. *Windows:* Crittall Manufacturing Co. *Metal door frames:* H. Hope & Sons Ltd. *Sliding doors:* P. C. Henderson Ltd. *Sanitary fittings:* Shanks & Co.; W. & G. Sissons Ltd. *Thermostatic mixing valves:* Walker Crosweller & Co. *Light fittings:* Merchant Trading Co.; Thorn Electrical Industries Ltd.; A. Imhof Ltd.; Courtney Pope Ltd.; Finmar Ltd.; GEC Ltd.; Troughton & Young Ltd. *Water heater:* Aidas Electric Ltd. *Heating system:* Tropicair Ltd. *Water storage tanks:* Turners Asbestos Cement Ltd. *W.C. partitions:* Venesta Ltd. *Paints:* Walpamur Co. *Exterior colour:* Cement Marketing Co. *Metal fittings, special joinery, rainwater goods, electrical installation:* Imhofs Ltd. *Stairs:* Precasters Ltd. *Doors:* Adamite Ltd. *Electric fans:* Vent Axia Ltd. *Furniture:* Heal & Son Ltd.; Storeys & Co.; Imhofs Ltd.; Catesby Ltd.; Finmar Ltd. *Acoustic tiles:* Merchant Trading Ltd. *Wallpaper:* Wallpaper Manufacturers Ltd. *Precast paving:* Noelite Ltd. *Pre-cast kerbs:* Girling Ferro-Concrete Co. *Slate threshold:* Bow Slate & Enamel Co. *Underfloor heating:* Panelec Ltd. *Entrance hall clock:* Gent & Co. *Venetian blinds:* Crittall Manufacturing Co. *Pine wall facing:* Venesta Ltd. *Eggcrate ceilings:* Lumitron Ltd.

College of Further Education, St. Albans. *Architect:* G. C. Fardell, Hertfordshire County Architect. *General contractors:* William Sindall Ltd. *Sub-contractors: Structural frame, gates, balustrades and staircase:* Hills (West Bromwich) Ltd. *Blinds:* Tidmarsh & Sons. *Built-in furniture and book lockers:* E. C. Hodge. *Bricks:* E. H. Smith Ltd. *Fibrous plaster ceilings:* Claridges (Putney) Ltd. *Curtains:* Super Theatre Furnishings. *Flush doors:* Jayanbee Joinery Ltd. *Cork floors:* Cork Insulation & Asbestos Ltd. *Terrazzo floors:* Art Pavements & Decorations Ltd. *Wood block and thermoplastic flooring:* Hollis Bros. Ltd. *Flues:* Chimneys Ltd. *Internal telephones:* The Reliance Telephone Co. *Stage lighting:* W. J. Furse & Co. *Window gearing:* Teleflex Products Ltd. *Changing room benches:* A. J. Binns Ltd. *Drinking fountains:* A. F. Collins & Co. *Gymnasium equipment:* Spencer, Heath & George Ltd. *Heating:* Weatherfoil Ltd. *Ironmongery:* James Gibbons Ltd. *Lavatory partitions:* Flexo Plywood Industries Ltd. *Light fittings:* Falk Stadelmann & Co.; Fluorel Ltd. *Paints:* Docker Bros. Ltd.; Vitretex Ltd. *Roof, structural:* Universal Asbestos Manufacturing Co. *Rooflight:* S. Warner & Son. *Rainwater goods:* High Duty Alloys Ltd. *Sanitary fittings:* Adamsez Ltd. *Mechanical vents:* Greenwoods & Airvac Ventilating Co. *Walls, internal:* J. Gliksten & Son (Glinex). *Walls, external:* Vulvan Plastics (Mfg) Ltd. (infill panels). *Curtain walling:* Quicktho Engineering Ltd. *Sliding folding metal doors:* Bolton Gate Co. *Floor blocks:* Kingsbury Concrete Ltd. *Sliding folding partition:* Silent Gliding Doors Ltd. *Lift-over metal door:* Westland Engineering Ltd. *Dust and fume extract installation:* Keith Blackman Ltd.

Trade Union Offices, Hendon. *Architects:* C. Wycliffe Noble & Partners. *General contractor:* W. H. Gaze & Sons Ltd. *Sub-contractors: Reinforced concrete substructure:* Demolition & Construction Co. *Steelwork:* Redpath Brown & Co. *Asphalt:* Permanite Ltd. *Reinforced concrete floors:* Siegwart Floor Co. *Heating installation:* Troughton & Young (Heating) Ltd. *Asbestos spray:* Wm. Kenyon & Sons. *Slate and marble linings:* Art Marbles Stone & Mosaic Co. *Metal windows:* W. James & Co.; Quicktho Engineering Co. *Suspended ceilings:* Anderson Construction Co. *Terrazzo paving:* Marriott & Price. *Joinery:* Samuel Elliott & Co. *Lifts:* Bennie *Lifts. Block flooring:* Bennetts Wood Flooring Ltd. *Roof lights:* T. & W. Ide Ltd. *Canopy:* Ward & Co. (Letters) Ltd. *Ironmongery:* Alfred G. Roberts Ltd. *Sanitary fittings:* Adamsez Ltd. *Light fittings:* Merchant Adventurers.



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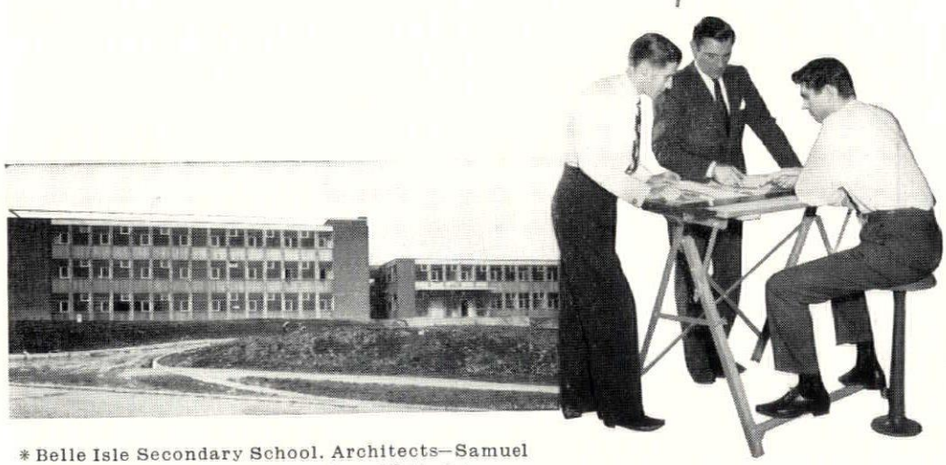
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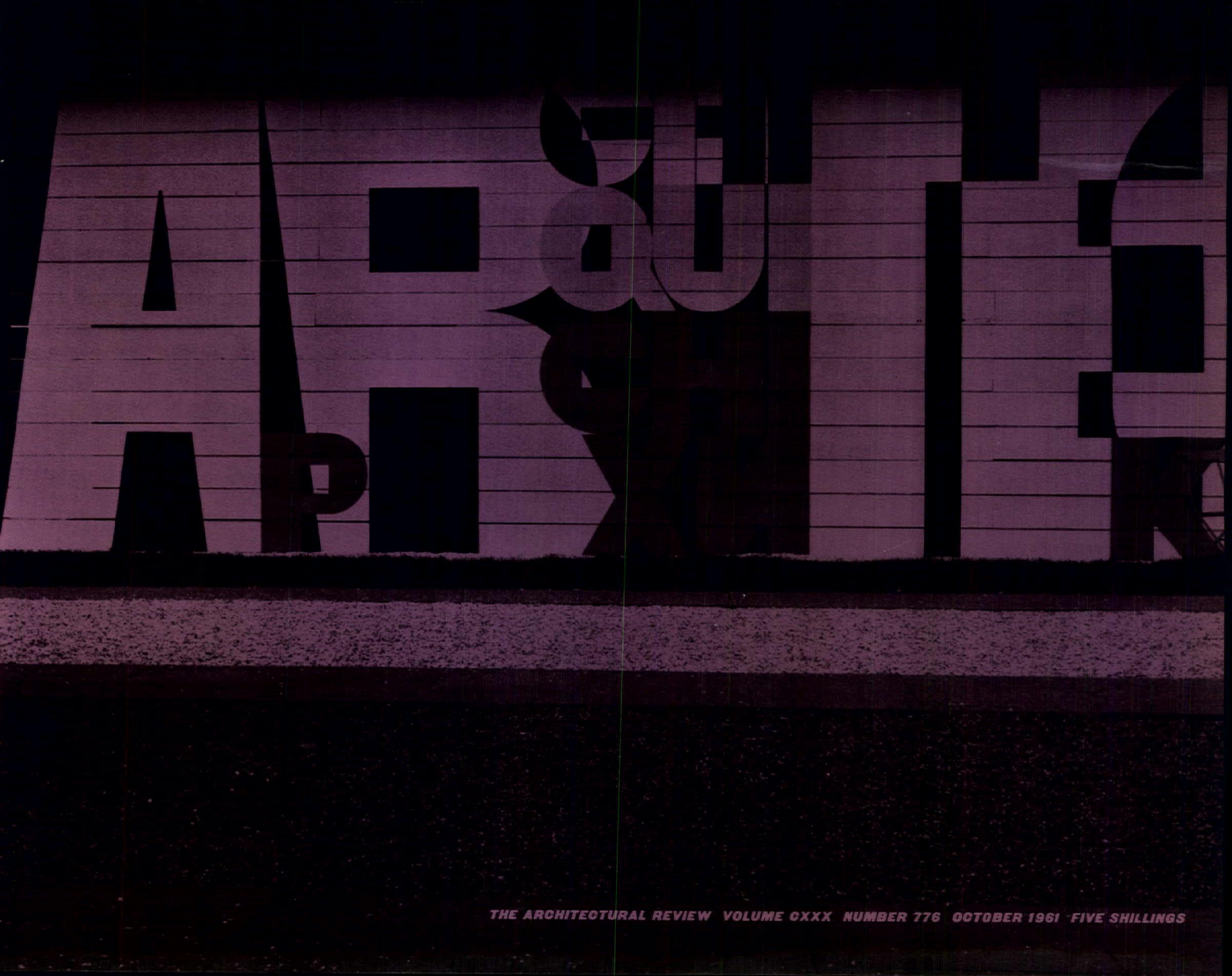
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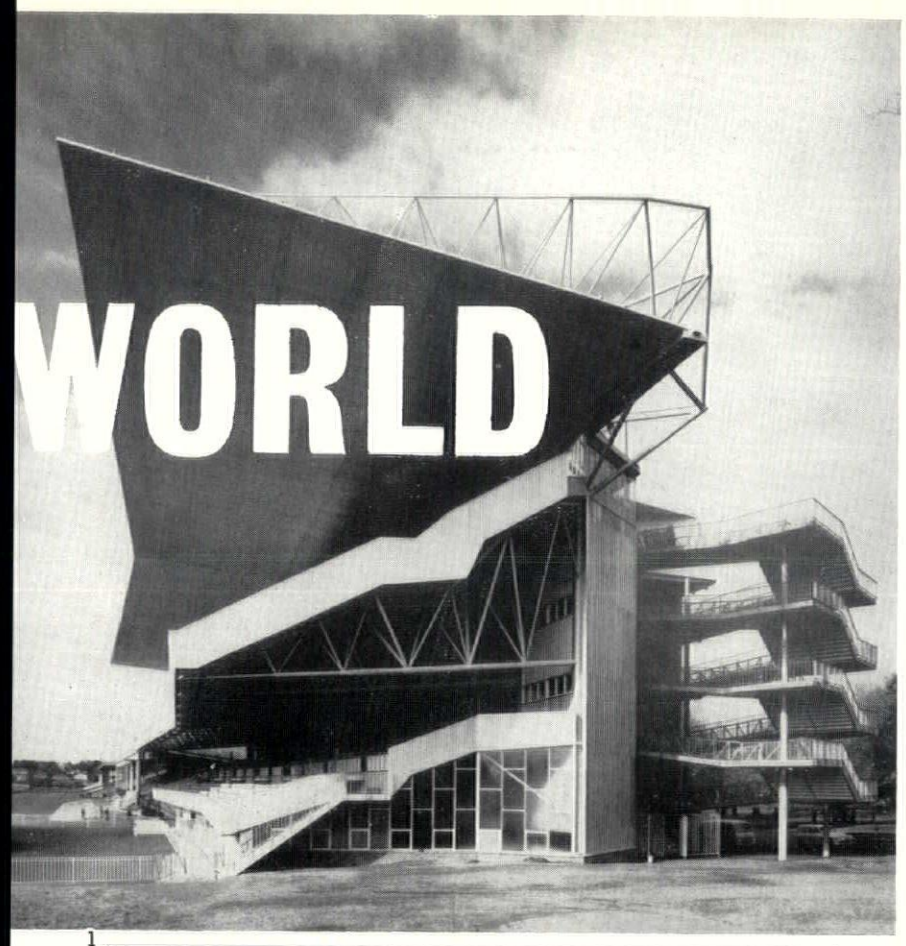
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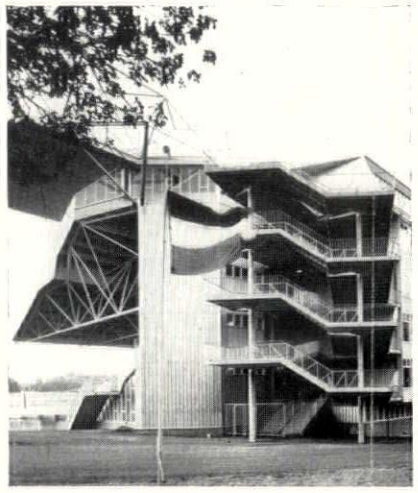


2

PROFILE

There are a certain class of buildings that seem to surprise themselves by setting out to do something simple and ending by making an unexpectedly dramatic architectural gesture, a kind of Functional Expressionism. The Auckland Racing Club's new grandstand at Ellerslie, NZ, is a case in point, 1. The architects—Wilson, Moodie and Gillespie—do not appear to have set out with any intentions beyond making an honest job of a straightforward functional problem, and their absence of pretensions is underlined by the extensive use of standard aluminium profiles and corrugated sheets on external surfaces. But design decisions, such as carrying the roof-canopy *under* the roof truss (so as to give no perch to birds) and present a flush under-surface, 2, and the cantilevering of the upper balcony in order not to obstruct the view from the lower one with supports, resulted in a building whose section, consisting of two sophisticated space-frames and little else, 3, is like nothing the modern movement has seen since some early Russian projects of the Constructivist epoch. The engineers, Grey, Watts and Beca, are clearly to be bracketed in any credits that are given for the achievement of this design and the space-frame tracery that holds it up, but somewhere in the argument must be some one person, be he architect or engineer, who conceived the idea that resulted in this extraordinarily expressive 315-foot long wedge section of uncluttered viewing space.

3

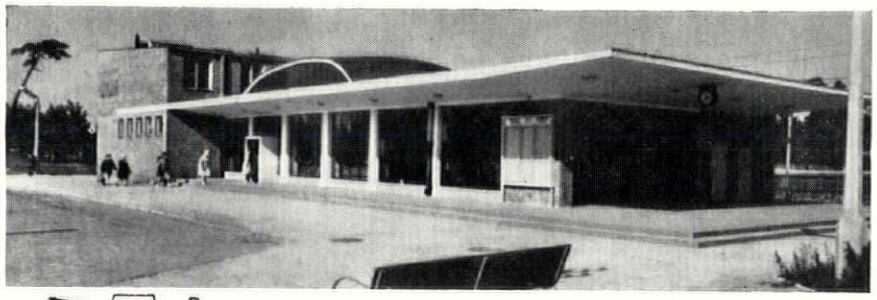


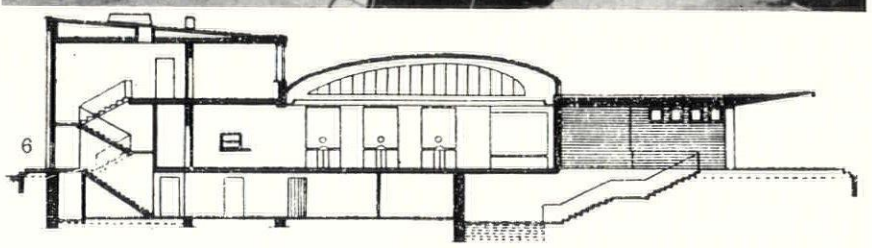
WAWER

Polish railway architecture

Wawer station, 4, in the Warsaw suburbs, affords an instructive comparison with current British Railways practice, and an equally constructive contrast with what is commonly regarded as the approved style for Socialist Realist railway architecture, as exemplified by the Moscow underground. The booking-hall, on the street side, is housed under an asymmetrical saucer dome, 5 (and section, 6) which, if not of heroic scale, still represents a structural adventure that is fully competitive with Midland Region's wooden hyperboloids (see AR May, 1961). The stairs down to the subway are flanked by a screen window of stained glass, 7 (Harlow was never like this!) and—even more unlike British practice—are accessible from the street without buying a ticket, but this appears to be due to the fact that the subway also serves as a public underpass from the far side of the tracks via the entrance unit, complete with yet another wall of stained glass, just visible in 8. At the island platform, the stairs come up under the canopy, which—though strictly intended as a backbone structure carried on a row of central columns

4

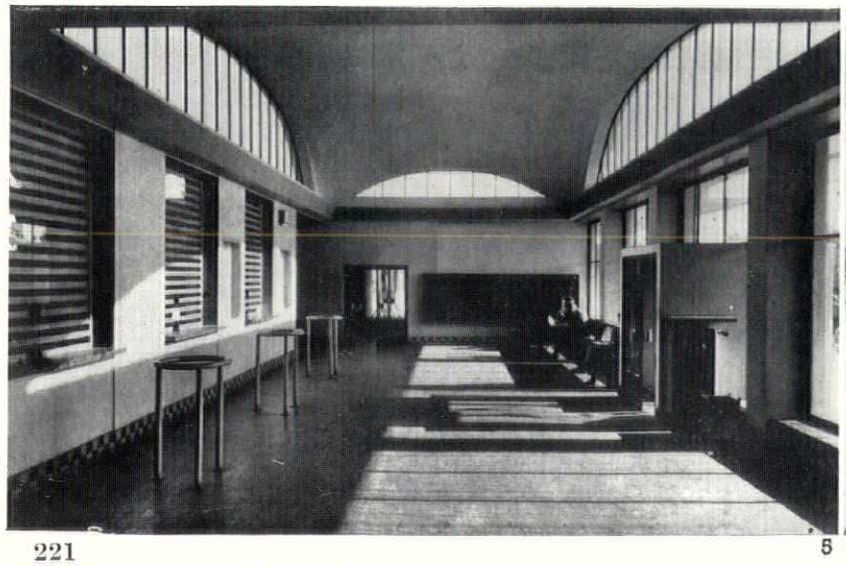




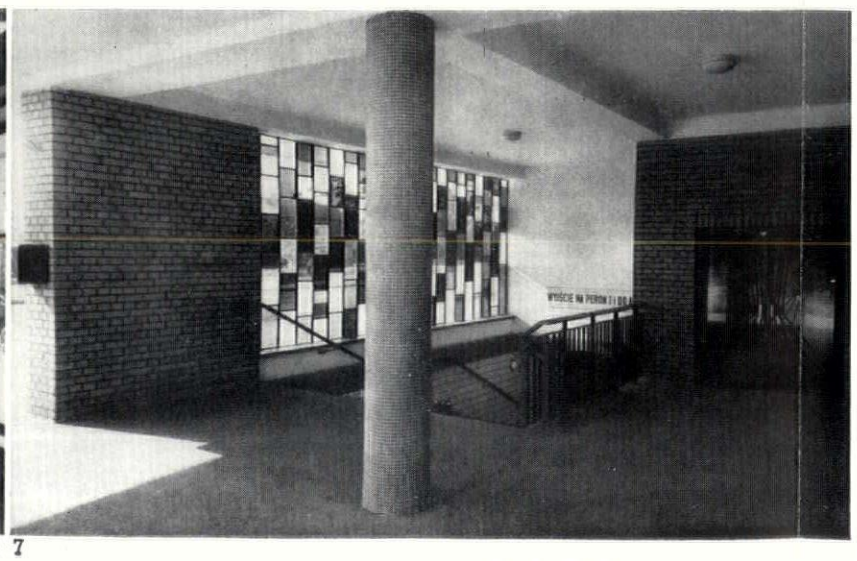
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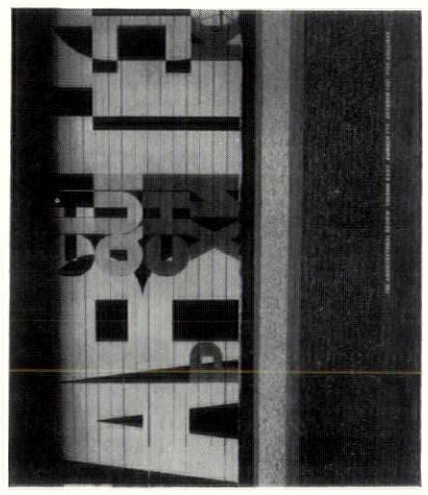
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ACKNOWLEDGMENTS

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The Cover *The painted lettering by Edward Wright on the timber walls of one of Theo Crosby's congress buildings on the South Bank makes by chance a contribution to the series of covers based on the AR's own initials. The exhibition building of which a corner is here shown was one of two temporary buildings put up to accommodate this summer's congress in London of the International union of Architects, to which the July AR made special reference.*

THE ARCHITECTURAL REVIEW

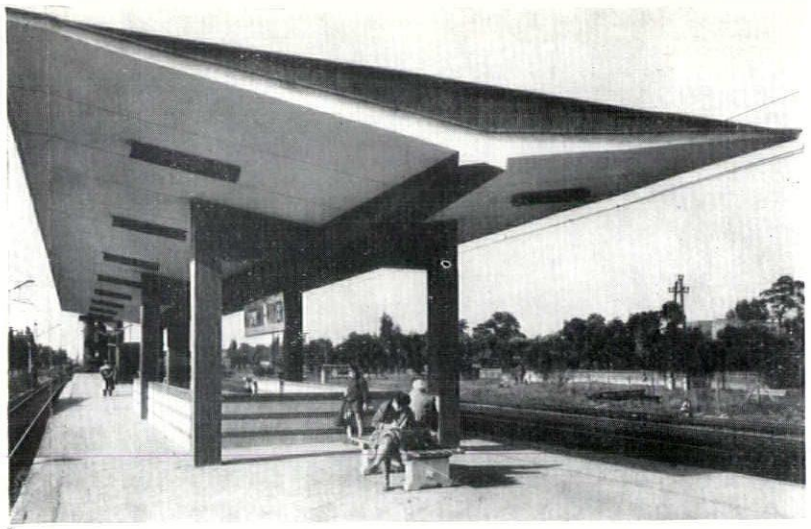
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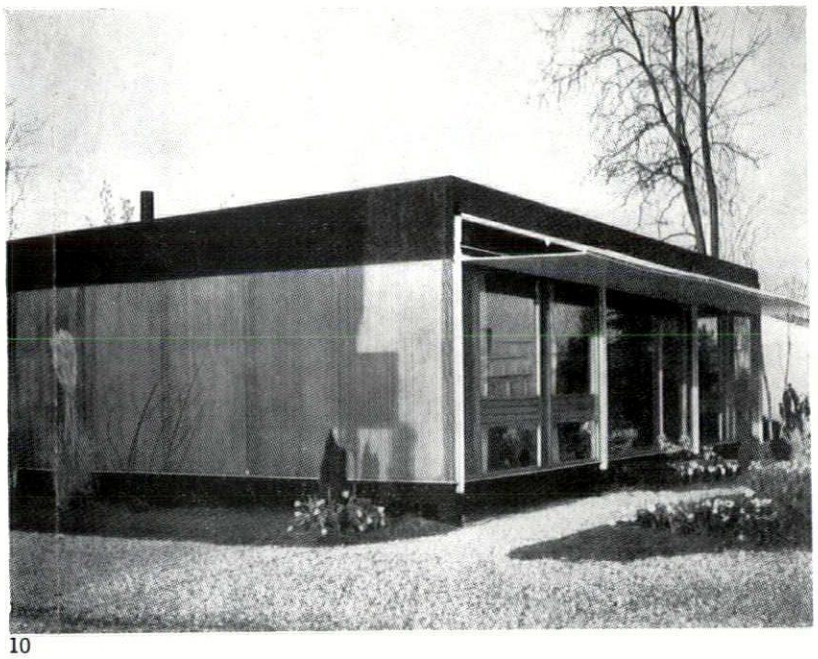
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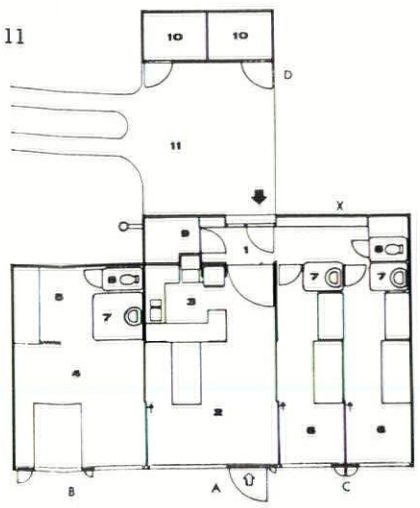
Wawer

—has its supports modified to provide portal frames wide enough, 9, to span the stairs at this point. Although the British preference for Functional Traditionalism might fight shy of stained glass, etc., as being inappropriate to a decent railway style, Wawer is pretty restrained by comparison with some recent German architecture in the same idiom.



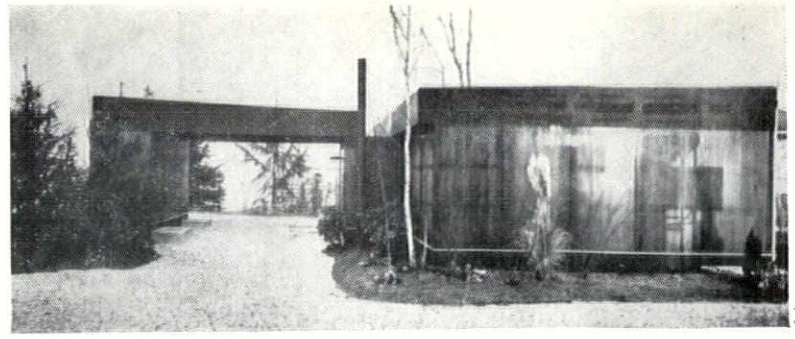
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MEX

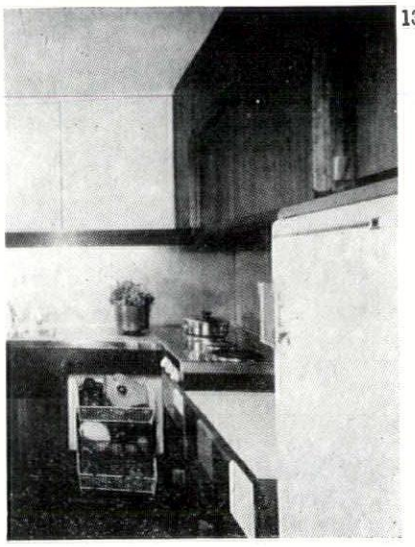


11

The fairly widespread tendency to see French architecture as once more split into two hostile camps, one devoted to architecture as an art and the other obsessed with technique, Corb at the head of one and Jean Prouvé of the other, should receive some well-deserved revision following the publication of MEX, 10, the extensible house commissioned for the Salon des Arts Menagers by *Elle*, the highly esteemed women's magazine. Designed by André Wogenscky, Le Corbusier's former *chef d'atelier*, on the proposition that 'the financial necessity of standardization is no longer disputed' it breaks down the function and structure of the dwelling in a manner related to, though less radical than, the techniques employed by Berua or Jacques Baudon (AR April, 1960). The prefabricated elements that can be assembled to form a house that grows with a growing family and shrinks with a dwindling one, are seen in the plan, 11—*a*, the living/kitchen unit; *b*, the parents' room, and *c*, the children's room(s), with two storage units (10 on plan) to



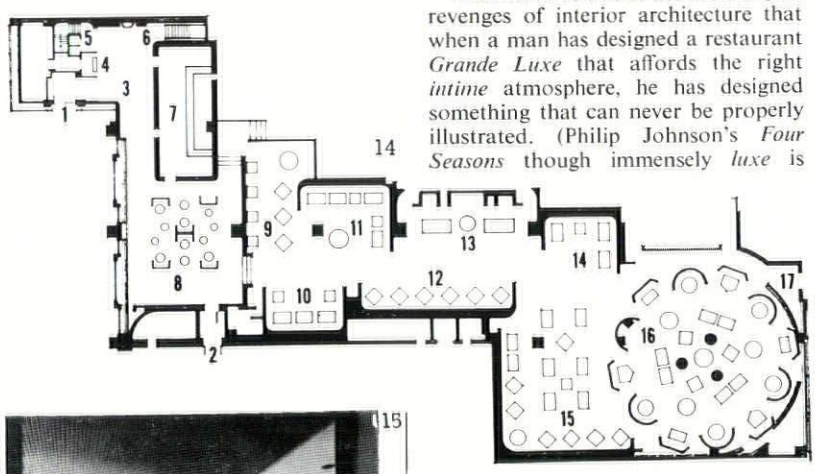
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13

support the free end of the car-port seen in 12. Although, as will be noted, the service areas are not separated from the living spaces, but are very elegantly designed into them, 13, the subsidiary X-unit (corridor, wc, etc.—1, 8 and 9 on plan) permits considerable freedom of planning, and the assembly of houses of considerable size if need be. One wonders what the fate of this project will be—it is by far the most sophisticated pre-fab conceived in terms of available structural techniques (sandwich panels, lightweight trusses, wood, fibre-glass, foamed polystyrene) to appear in France for some time, but with so much capital and talent tied up in heavy on-site prefabrication it might well prove difficult to get the system developed and on the market at an economic figure.

FONDA & BIRRERIA

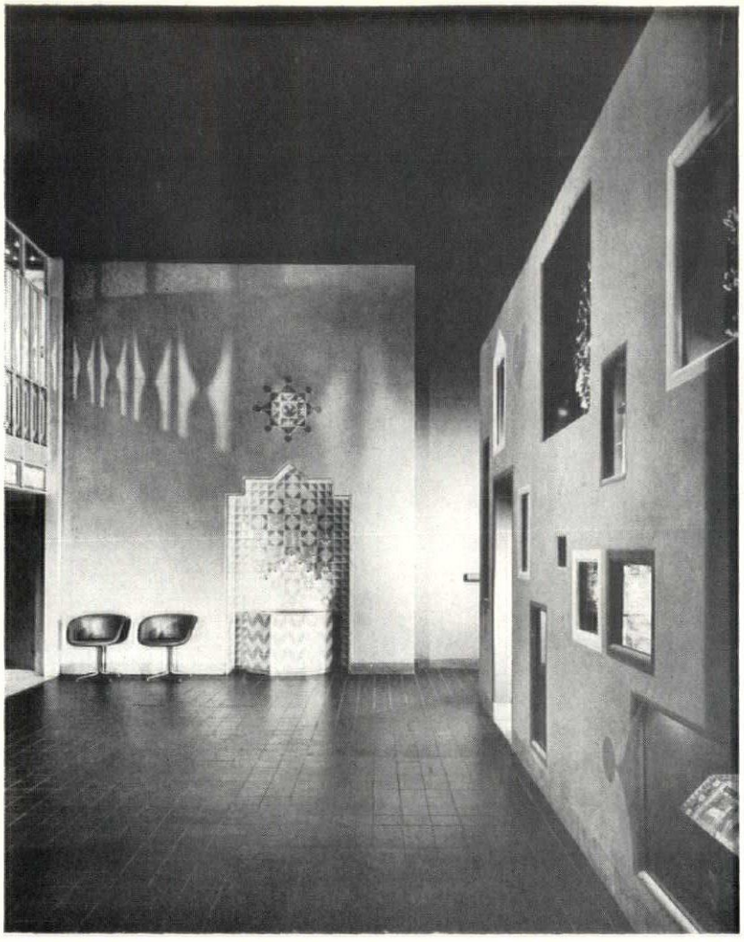


14



15

It seems to be one of the more unjust revenges of interior architecture that when a man has designed a restaurant *Grande Luxe* that affords the right *intime* atmosphere, he has designed something that can never be properly illustrated. (Philip Johnson's *Four Seasons* though immensely *luxe* is hardly *intime* in the sense that a great restaurant needs to be.) Alexander Girard's stunning *Fonda del Sol* in the Time-Life Building, New York, has so far been failed by two of the world's great magazines, but by piecing together their separate records, it is possible to give some idea of the place. The plan, 14, shows one reason why it cannot be photographed well—the spaces are small, miscellaneous and discontinuous. *Interiors* (Feb. 1961) managed to make a fair fist of the rotisserie and the restaurant it immediately serves, 15 (which appear at 12 and 13 on the plan) and of the



16

Fonda—Birreria



17

entrance to the 'adobe' bar-house, as also of the courtyard outside, 16 (which is in fact the entrance) with the 'curtained' windows of the ladies' room casting suitably romantic patterns on the end wall. But the curtains are, in truth, back-etched on the glass, and this particular wall is an elaborate pun at once on purdah screens and Spanish balconies, since the ladies enjoy the heightened privacy of seeing without being seen.

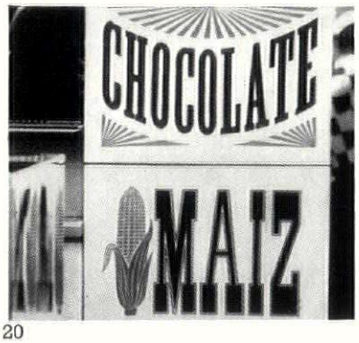
But Girard is also, and famously, a collector, lover and exhibitor of hand-



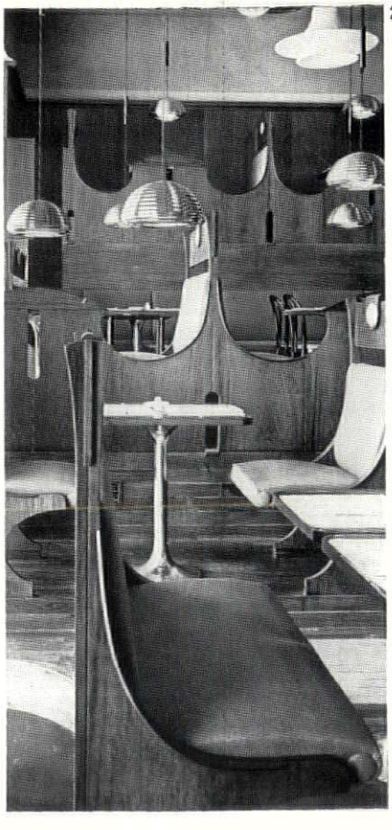
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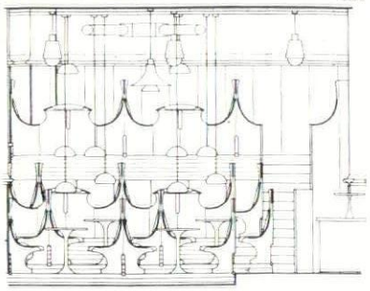
21

some objects, and for this side of La Fonda, *Domus* (July, 1961) comes into its own, if only because its editor, Gio Ponti, may have detected a twin soul in Girard (whom he has long known). In *Domus*, the bar becomes a treasure house, 18, the *couvert* becomes a still-life by Morandi, the waiters' uniforms are one with the pageantry of the Palio, 17, while the great splurges of typography, that rather go by default in *Interiors*, here receive their due, whether in small, 20, or in wall-size spreads, 19.

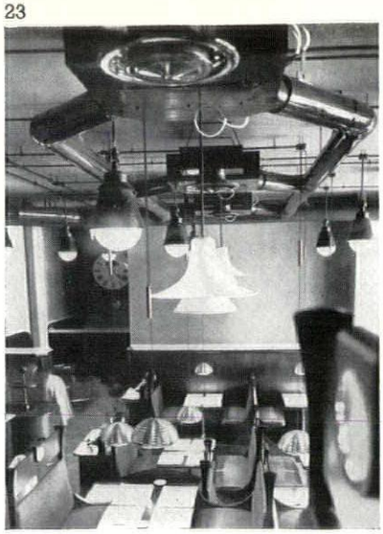
The same issue of *Domus* also illustrates a new bar in Milan, designed by the two Casiglionis, and tucked under the end of one of Caccia-Dominiani's 'black diamond' blocks in Corso Europeo. Here, 21, the atmosphere of

Birreria

22

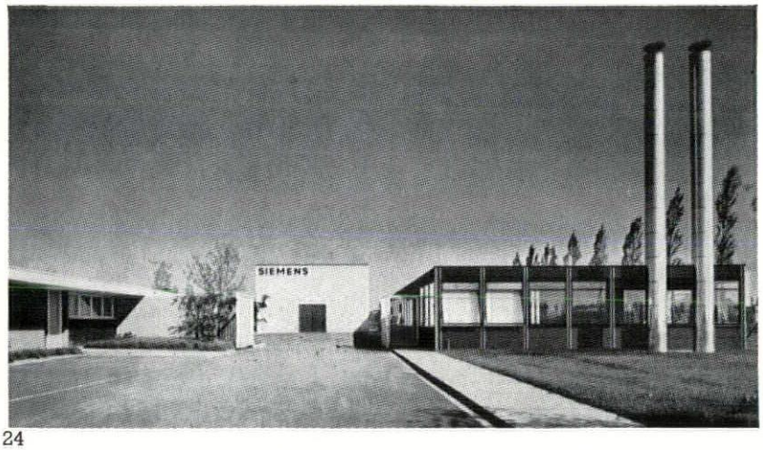


23



'1900' has erupted in Neo-masculinity in benches and overhead services that suggest a ship interior or barber-shop of the period. However, the section, 22, with its split-level seating, makes sense —and a display of air-conditioning, 23, is still good advertising copy in Milan.

POWER-HOUSES



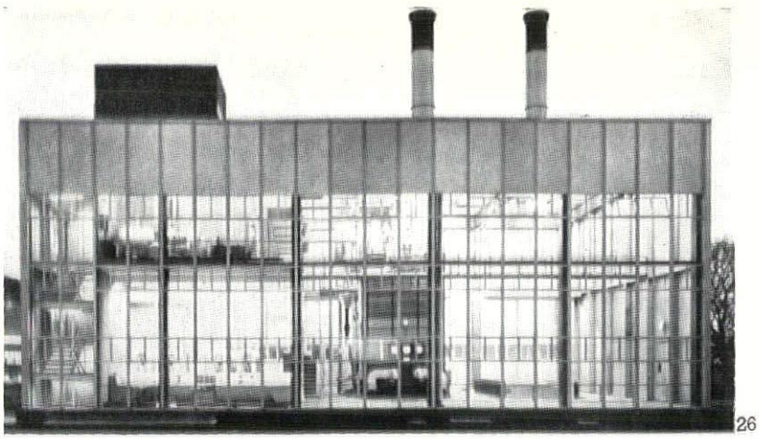
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Not long ago, teachers at the Architectural Association were bemoaning the paucity of good examples of power-houses and boiler-houses to be found in the available literature. Had they waited a few months, *Bauen+Wohnen* would have gone some way to satisfy their wants, for its April 1961 number produced two excellent examples of more or less Miesian boiler-houses, and one that looked as if it *ought* to be a boiler-house. This last was the Siemens experimental atomic reactor at Gärching, 24, outside Munich, designed by Hans Maurer and the Siemens technical staff. The building immediately behind the two chimneys is not a boiler-house at all, but a laboratory block, and the reactor itself is housed in the white building that bears the firm's name (shades of Mies's white box of tricks for that other German giant, AEG, at Barcelona!) The whole scheme is notably understated, the visitors' building, 25, having almost a college-campus air about it.

Undoubtedly a boiler-house, however, was Kündig and Weinmann's recent addition to the buildings at Zurich airport, 26. Unfortunately this is its only successful elevation, as 27 shows, but it boasts some magnificent interiors such as 28, and a characteristically cool control room. By contrast the boiler-house for the Aller Press works at Halsingborg (a factory that looks as if it ought to have been designed by Arne Jacobsen, 29) seems entirely satisfactory as a piece of architecture and and an exercise in the purest Miesian aesthetic. Although its relationship to the rest of the factory is not equally happy in all views, it seems in itself, 30, to be about as near perfect a box of works as anyone in Europe has done.

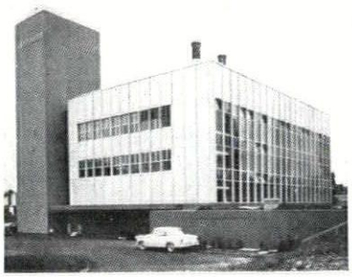
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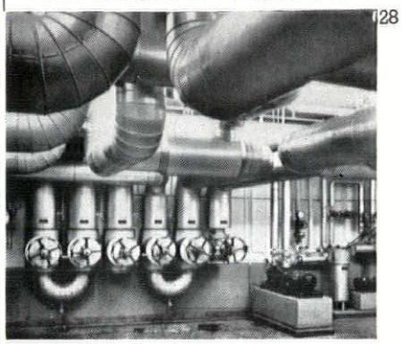


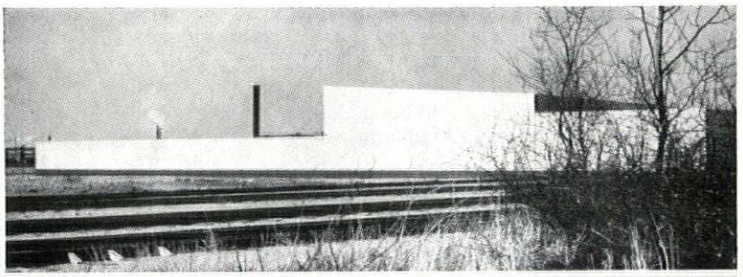
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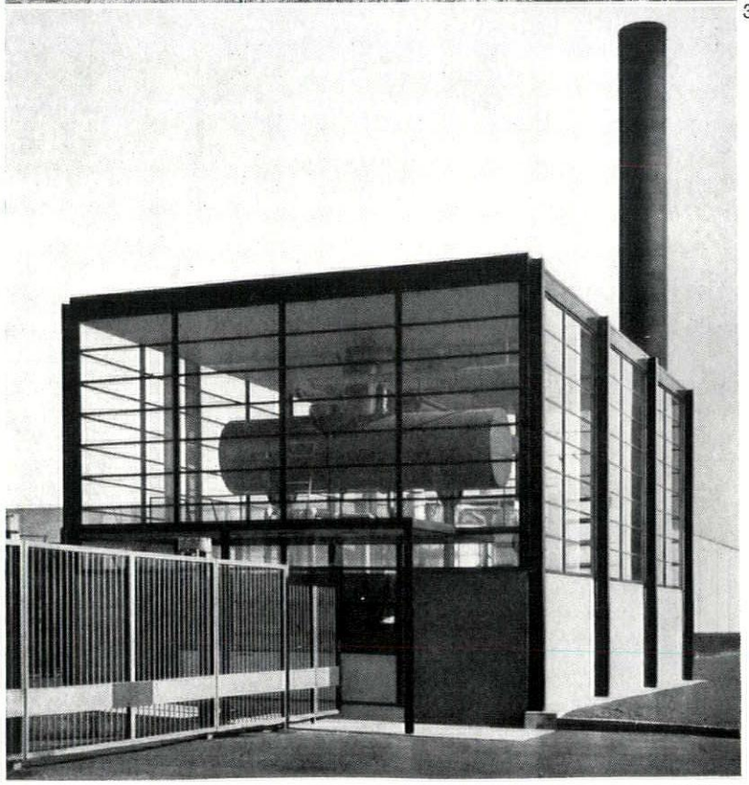
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views and reviews

MARGINALIA

NASH TERRACE CONVERTED

The first of the Regent's Park terraces to be converted into flats in accordance with the promises made by the Crown Estate Commissioners, after the insistence in Parliament and elsewhere that the façades facing the park be preserved, is Cumberland Terrace. Work has been completed on the South Block, formerly consisting of six houses. These have been converted horizontally into sixteen flats of varying sizes on the ground and three upper floors.

The architects acting for the Crown Estates are Messrs. Louis de Soissons, Peacock, Hodges and Robertson, and they have shown (which many people denied when the future of the terraces was being debated) that such horizontal conversion is practicable. They have been meticulous in restoring the exterior detail, and the park façade is now probably closer to Nash's original than it has been for a hundred years. Conversion of the centre block (illustration alongside) into twenty-eight more flats is to be finished about the end of this year.

The chief economic difficulties, it has been found, are that floor areas of flats tend to be large in relation to the number of rooms and that each entrance and each pair of lifts serves comparatively few flats, and a minor difficulty has been that, owing to slight differences between one house and another, standardized details have had to be varied in the course of the work. Within the houses a new reinforced concrete structure has been built, carried on piles, so that the old walls are now, in effect, non-load-bearing.

HITCHCOCK MEDALLION 1961

The Alice Davis Hitchcock Medallion, presented annually by the Society of Architectural Historians of Great Britain for outstanding contributions to the literature of architectural history has this year been awarded to Dr. Kerry Downes of the Barber Institute of Fine Arts for his book, *Hawksmoor*, published by Zwemmer in 1959.

THE AJ's NEW VENTURE

This month the AR's sister publication, *The Architects' Journal*, embarks on what is perhaps the most formidable task ever attempted by an architectural magazine. This involves the weekly publication of a series of 52 supplements, each devoted to one elemental heading in the SfB classification.* Each file proposes a rational method for architects to follow when designing the element in question and gives both references and technical information. What the *Journal* is establishing, in fact, is a new methodology of architectural design.

*A special classification for building developed originally in Sweden and now adopted internationally.



1, *the restored facade of Cumberland Terrace in Regent's Park.*

PRESTRESSED STRUCTURE

Illustration no. 6 in Mr. Alan Harris's article, 'Structural Developments in Britain Today,' in the July, 1961, AR, showed a prestressed concrete beam structure at St. Helens. This, we are informed, was designed by Mr. Gerald R. Smith in association with the central engineering branch of Pilkington Brothers and Messrs. A. J. and J. D. Harris.

TORQUAY FOOTBRIDGE

The consulting engineer for the footbridge at Torquay illustrated on page 205 of the September, 1961, AR, was W. Frischmann.

OBITUARY

EDUARDO TORROJA

Eduardo Torroja, who has just died, was one of the few great engineers of this century, unfortunately unknown to many. His tremendous influence on the architectural expression and use of structure will be experienced for many years. He was born in Spain on August 27, 1899 and graduated as an engineer in 1923. After about four years working with a contractor, he became a consulting engineer on his own account in 1927. His structural ingenuity and appreciation of practical problems of construction can be clearly seen in his early work while with a contractor. His interest and search for purity of structural form became apparent in some of his first structures after 1927, such as the stadium streetcar station for the University City of Madrid. The roof of the hospital built in 1934 on the same site was an original space structure. Torroja was not satisfied with calculation alone so verified his design by means of a model test, a technique which was to become one of his major tools for design.

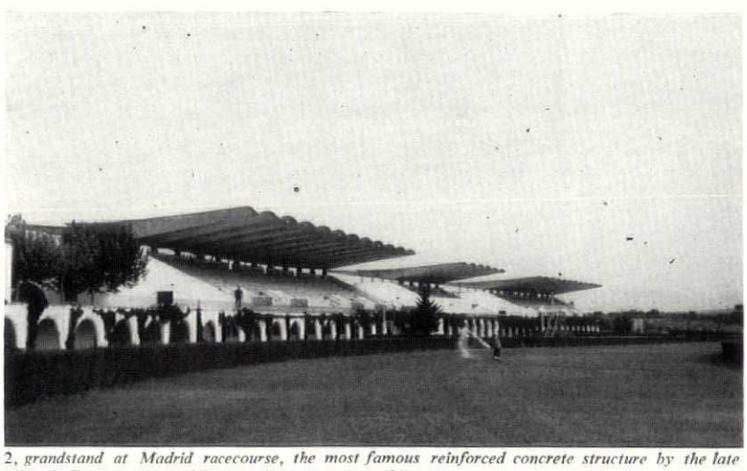
His first concrete shell, a dome of 156 ft. in diameter and 3½ in. in thickness, appeared in 1933 in the design for a covered market in Algeciras. The shaping of the skin to provide the required stiffness near the supports shows his fundamental understanding of shell action and his natural feeling for satisfying shape. In 1935, at the age of 36, he designed his two finest shell-roof structures, which even today have not been surpassed for their elegance and structural perfection—namely, the Madrid racecourse and the Sports Hall in Madrid. In his book, *The Structures of Eduardo Torroja*, he describes for the racecourse the various searches for correct shape which led to his final design of a hyperboloid butterfly shell-roof cantilevering out some 43 ft. and of thickness varying from 2 in. to 5½ in. near the supports. A full scale model test confirmed his intuitive design. Of its historical importance he is reported to have remarked: 'For the first time in history of art, structure has acquired an independent personality so that its own intimate esthetic quality can be appreciated.'

For the Sports Hall Torroja had not only to solve a structural problem of roofing a large area 180 ft. by 107 ft., but had to satisfy the functional requirements of providing north light for the playing area and for the upper balcony. His cylindrical shell of two lobes was a masterly solution of a structural and architectural problem.

He later confirmed in his work his appreciation of the importance and value of structure in the design of a building. In all his projects he collaborated with architects and contractors, and in his writings and lectures he emphasized the great need for each member of the team to understand each other's problems. He was not a prima donna engineer and it is unfortunate he was not able very often in later life to exhibit his unique potentialities as an engineer-architect.

After the Spanish civil war Torroja founded his own research laboratories so that he could carry on his investigations of properties of structures and materials. Coupled with his command of mathematics he carried out many notable structural and civil engineering projects in concrete, steel and timber which show Torroja to have had a rare gift of being able to control and direct the forces through a structure in apparent simplicity—the hallmark of a great engineer.

In 1951 he engineered and became director of the 'Instituto Technico de la construccion y del cemento' which has become one of the three leading model testing laboratories in the world. Here he designed with model tests the roof for the Tachira club in Caracas which exemplifies the possibilites of shell construction. Torroja has been internationally recognized as a pioneer of shell structures who has developed analysis techniques which enable engineers to-day to explore further the variety of shell forms which he insists will appear in the next decade. As a teacher of structural logic he was supreme and his book *Philosophy of Structures* should be studied by all engineers and architects for it embodies



2, *grandstand at Madrid racecourse, the most famous reinforced concrete structure by the late Eduardo Torroja, whose obituary notice appears on this page.*

the results of his many years of patient research, practical building and humanist observation.

Frank Newby

CORRESPONDENCE

RUSSELL SQUARE

To the Editors.

SIRS,—It is high time someone spoke out against the desecration of Russell Square garden. Until recently this was the only municipalized square in Bloomsbury to have retained its original plan and character. It was the only work in London of Humphry Repton, perhaps the leading landscape gardener of late eighteenth-century England. Because of the square's immense size, the garden gave a better sense than any other of the original intention of the Bloomsbury planners —to bring the country into the heart of the town. Large areas of lawn were broken only by serpentine gravelled paths and small irregular flower beds. The effect was one of spaciousness, loneliness, freedom.

Now, however, the improvers have moved in with a vengeance. Repton's layout has been bulldozed into something resembling the garden in any minor Hessian *Kurort*. Grass has been torn up to make room for an enormous central paved space containing fountains. Around it has been imposed a rigid geometrical pattern of paths and flowerbeds. The people who used to sit or lie on the grass are being herded by park-keepers on to benches arranged in glum little paved squares, or into deckchairs arranged in tidy circles around the fountains. A large brick-built snack bar has been cunningly placed so as to obscure the best remaining view across the square. In front of it is a terrace where the detailing might have looked right in Stockholm's Hötorget (or even in an enclosed space in London, such as Shepherd Market) but which has been laid down here without any sensitivity for the essential character of the place.

Holborn recently scored a good mark for a library. The present debacle can only be put down to municipal schizophrenia.

Yours, etc.,
P. G. HALL.

Birkbeck College, London, W.C.1.

TRINITY LIBRARY

To the Editors.

SIRS,—The note in Marginalia in the August AR on the Trinity College Library Competition wonders just what Franco Albini means about harmonizing with the surroundings; but, judging purely from the accompanying illustrations, Albini's quoted comments, disregarding any question of 'signs of the times,' seem very fair. The three upper floors of the design by H. J. Nicolais are divided, like the existing buildings, into clearly expressed equal bays and the relationship between floor height and bay width is the same in each case. This would certainly appear to be more conducive to a happy relationship than any consideration of cornice or string course levels, particularly as in the case of the winning design none of the elevations is in the same plane as the existing work.

Yours, etc.,
JERRY GRANGER-TAYLOR.

Barnes, S.W.13.

INDIVIDUALITY IN HARROGATE

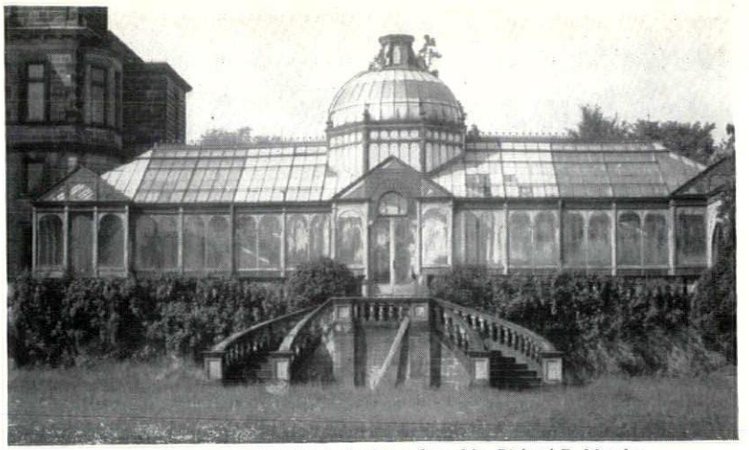
To the Editors.

SIRS,—The enclosed photographs show a disused conservatory at Harrogate in Yorkshire. The conservatory is part of an estate in Wetherby Road, near the middle of the town, which has recently changed hands. On requesting permission to photograph the conservatory, I was told that it was proposed to demolish it in the course of rebuilding on this comparatively central site. This would appear to me to be a very great pity. In a town of Harrogate's particular character, buildings suggestive of leisure, elegance and decorativeness once abounded, should have been preserved, but are slowly being destroyed and replaced, in many instances by comparatively characterless buildings that dilute Harrogate's individuality and make it less and less distinguishable from other towns which never had the atmosphere of a spa. At the moment in the centre of the town a cinema constructed in the 1920's, with a white pseudo-classical façade and an abundance of odd key-pattern, leaf, and other decorative elements inside, is being dismantled to make way for a large store.

I send the photographs to you as a way of registering a protest against the destruction of this and of similar buildings.

Yours, etc.,
RICHARD E. MORPHET.

Cambridge.



5, *the conservatory in Harrogate referred to in the letter from Mr. Richard E. Morphet.*

BOOK REVIEWS

TRANSPARENT GOTHIC

BURGUNDIAN GOTHIC ARCHITECTURE. *By Robert Branner. A. Zwemmer. 70s.*

This book belongs to the series edited by Sir Anthony Blunt and Professor Wittkower in which previously Blunt's *Delorme* and Kerry Downes's *Hawksmoor* have appeared. It is good to see that there is no rule confining it to biographies. Mr. Branner's book deals with a regional school instead, the Gothic of Burgundy in the thirteenth century. Burgundian Romanesque is familiar, and tourists look on their Michelin maps to find Vézelay and Autun, Cluny and Tournus. But Burgundian Gothic means nothing to the same tourists, and even to architects with a hankering after history. Ignorance includes Nôtre Dame in Dijon, in spite of Viollet-le-Duc's brilliant analysis of this arch-Burgundian edifice.

Mr. Branner treats Burgundy as a region with a regional style, a style in many ways curiously akin to that of Normandy. He follows in all this Professor Bony, whom he fully acknowledges. Bony a few years ago brought out the character and importance of the anti-Chartres tendencies in French thirteenth-century architecture —or what Mr. Branner more Americanly calls para-Chartrain. However, let it be said at once that he writes well and that his analyses of buildings are no routine and always felt.

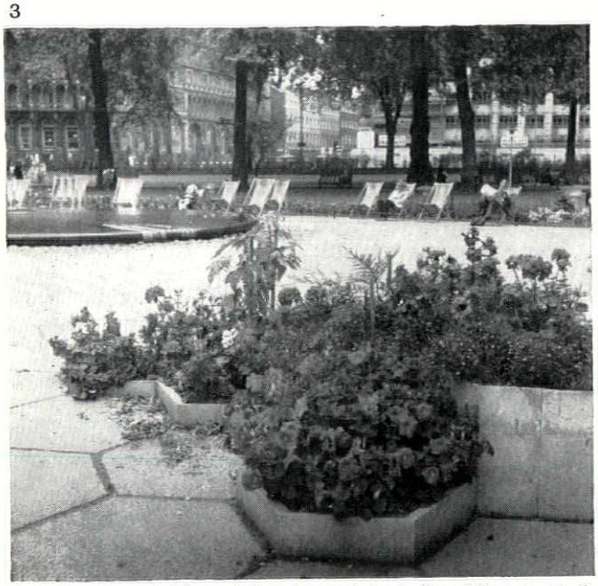
The book consists of 100 pages of text and 100 pages of catalogue. It starts with the twelfth century, and shows that Burgundy at that time was not successful in its attempts at coming to terms with the emerging Gothic style, neither in its Cluniac nor in its Cistercian forms. Burgundian Gothic appears at last fully-fledged at Auxerre Cathedral and Nôtre Dame, Dijon, about 1210-20. The style is characterized by a tall triforium and a clerestory of only moderate height—the latter of course decidedly para-Chartrain—by a slow rhythm and especially by that division of the walls into layers in depth which fascinated Viollet-le-Duc. Aisles have a wall-passage above the dado, naves a wall-passage inside the clerestory wall. Shafts and colonnettes are detached, wherever possible. The effect is of transparency—diaphanous, as Professor Jantzen calls it—and a slenderness of supports deceiving about the true structural members. The sources of the style are manifold, but the most important seem to me St. Remi in Reims, Soissons and also Reims Cathedral.

About 1250, as everywhere in France, Rayonnant won over original preferences, and that also Mr. Branner demonstrates well. He ends with a few buildings where the Burgundian idiom reasserts itself in the late thirteenth century. The most rewarding is the much too little visited St. Thibault-en-Auxois, depending more than Mr. Branner admits on St. Urbain at Troyes.

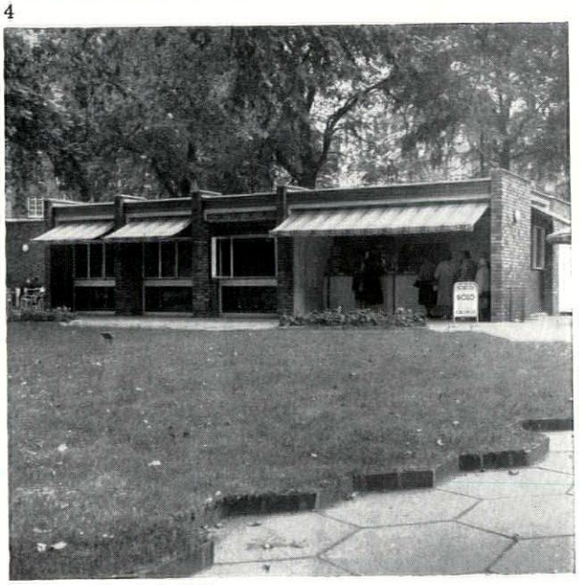
The book has about one hundred half-tones—not enough really to follow all Mr. Branner's arguments—and a large number of rather rough plans and also many drawings of mouldings, a rare and welcome feature.

Nikolaus Pevsner

3



4



3 *and* 4, *geometrical flower beds and a snack bar in Russell Square—see the letter from Mr. P. G. Hall.*

FEATURISM

THE AUSTRALIAN UGLINESS. *By Robin Boyd. Published by F. W. Cheshire, Melbourne.*

Robin Boyd's latest book is a slashing attack on the galloping visual blight of man-made Australia. It hits out at the standards of taste of the people and at the physical environment which they have shaped. The deadly accuracy with which Boyd has captured the image of visual decadence is evidence of his own involvement. For the man who makes this attack displays an underlying concern which can come only from one whose heart is in his country. The author is an Australian who can claim to have contributed to the riches of his country through his own work as a writer and practising architect.

Most people in this country who know anything about Australia are aware that, despite the great wave of post-war migration, the vast landmass of the Australian Continent is sparsely populated, and most of the population is concentrated on a seaboard strip stretching roughly from Brisbane in the north to Melbourne in the south. But to anyone fortunate enough to have visited 'Down Under' it may come as a shock to find that most Australians are townsmen and not from the bush. They live in a handful of sprawling suburban 'cities,' two of which are each larger in population and area than anything else in the British Isles outside London. Sydney and Melbourne between them account for more than a third of the total population.

The Australian ugliness of which Robin Boyd has written is man-made. It is skin deep—a veneer, epitomized in the tizzy patterned plastic veneers favoured by the shopfitter and the popular mass furniture stores. Those who are aware that this ugliness exists would no doubt agree that it springs from an attitude of mind, if there can be such a thing as a national attitude of mind. It manifests itself in what Boyd describes as *Featurism*, 'the subordination of the essential whole and the accentuation of selected separate features.' Hence the rows of neat suburban houses with their featured columns supporting the corners of the entrance porches, the plasticized featured front doors, the black plastic silhouette cockatoos featured on the feature doors. Not that Featurism, as he defines it, is confined to Australia or to the twentieth century. Jacques Tati recognized it in his own country and conceived the brilliantly satirical *Mon Oncle* in passionate protest. But in Australia to-day Featurism happens to be more deeply rooted and widespread than anywhere else. What makes it so? If Featurism is not confined to Australia, what makes her version so deadly distinctive, so certain to be devastatingly ugly? Boyd says it is Australia's failure to come to grips with herself, and for this he blames the pioneering outlook which has been a part of the way of life from the days of the first settlement over 180 years ago. 'Featurism,' he says, 'is the most elementary form of expression historically displayed by peoples emerging from primitive functionalism.' Whatever its virtues the pioneer outlook demands an unquestioning belief in the idea that nothing must stand in the way of development and progress. Its aims are to clear the decks and reduce everything to a level on which the new can be built. The pioneering of the last century and a half, the breaking in of a raw country, has only now been superseded by a new pioneering era, one which had its beginnings not much more than a decade ago and is concerned with factories and sub-divisions rather than with sheep and virgin bushland. So we are still relentlessly clearing away, flattening out, evening up—away go those trees (can't divert the drain), down comes the historic building (road going through there).

The cult of pioneering has stamped itself on the Australian character—a virtue in some respects but showing up pathetically in the unwillingness to accept the beautiful merely for the sake of beauty, a sort of he-man, no soft stuff outlook. There is an apparent contradiction here, for everyone who practises Featurism does so in the earnest conviction that the results of his efforts are beautiful. If Australians are so anxious to embellish their own homes, why do they put beauty so far down the scale in the broader field of civic works, townscape and planning? The answer may be that there are, in fact, two motives at work: on the one hand the rugged independence of the average Australian which drives him to do for himself (and this includes providing his own visual delights, i.e. the features), on the other hand the pioneering instinct which assures him that, in matters affecting progress, function is the prime—indeed the only—consideration.

The real tragedy of this Australian ugliness is that it is only just beginning, for Australia is still a young country. True, she has not had the turbulent history of other new world countries, the United States, for example. But she has much in common with the US, including a firm belief in the value of a high material standard of living. Motor cars, television sets, washing machines, refrigerators are every family's right. Despite the image of sun-lovers who would sooner spend the day on the beach, Australians are a hard-working people and these standards have had to be earned. Is it because their natural heritage of countryside, flora and fauna has come to be taken for granted that Australians are so casual about them, so unconcerned with defacing them with their Featurism? Whatever the reason his countrymen should heed Robin Boyd's lonely voice of warning.

Jim Tanner

BOOKS RECEIVED

ORNAMENTAL HOUSE PLANTS. *By Lilian K. Donat. Oldbourne Press.* 8*s.* 6*d.*

BRITAIN'S NEW TOWNS. *By Maj.-Gen. A. C. Duff. Pall Mall Press Ltd.* 10*s.* 6*d.*

GRAPHIC STATICS. *By Cyril S. Benson. B. T. Batsford.* 25*s.*

KATSURA: TRADITION & CREATION IN JAPANESE ARCHITECTURE. *By Kenzo Tange. Oxford University Press.* 120*s.*

TRANSACTIONS OF ANCIENT MONUMENTS SOCIETY. *Ancient Monuments Society.*

FIELD MEASUREMENTS OF SOUND INSULATION BETWEEN DWELLINGS. *National Building Studies Research Paper 33 by P. H. Parkin. HMSO.* 50*s.*

THE SOUTH BUILDS. *By Edward and Elizabeth Waugh. Oxford University Press.* 100*s.*

ESKIMO SCULPTURE. *By Jorgen Meldgaard. Methuen.* 15*s.*

A FUTURE FOR THE PAST. *By Moultrie R. Kelsall, Stuart and Harris, Oliver and Boyd. Edinburgh.* 21*s.*

IL VULTURE, IL CILENTO. *By Corrado Beguinot. Edizioni Scientifiche Italiane—Napoli. Edizioni del Centro Studi per il Cilento e il Vallo di Diano. L.3,000 each vol.*

INTERIOR BOOK OF RESTAURANTS. *By William Wilson Atkin and Joan Adler.* $15.00.

ARCHAEOLOGY IN THE USSR. *By A. L. Mongait. Pelican.* 5*s.*

OSPEDALI E CLINICHE UNIVERSITARIE *By Corrado Beguinot. Fausto Fiorentino Editore, Naples.*

VETRINE NEGOZI ITALIANI. *By Bruno Munari and Emilio Bertonati. Editrice 'Ufficio moderno', Milan. L.6,000.*

NATURAL STONE AS AN ELEMENT IN DESIGN. *By Gerd Zimmerschied. Editions Herausgeber (Standard Catalogue Co. Ltd.).* 80*s.*

THE FACE OF TORONTO. *By Ralph Greenhill. Oxford University Press.* 24*s.*

NATURAL PERSPECTIVE. *By James Last. Pitman.* 21*s.*



6

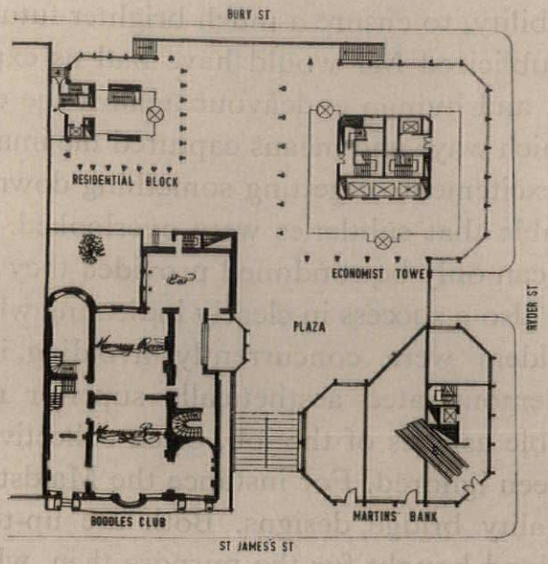
Earlier this year, the British Museum published Volume I of its catalogue of drawings either by British artists, or in some way concerned with Britain. Although the collection, for all its marvels, is not strong on architectural drawings, the plates reproduced in the catalogue throw frequent sidelights on the history of architecture and design in the period (sixteenth and seventeeth centuries). There is, for instance, an extraordinary presentiment of Neo-classicism about Edward Pierce's design for a Bishop's monument, 6, *in spite of the Baroque forms and a date probably in the late sixteen-eighties, while a more than documentary interest attaches to Thomas Johnson's busy sketch,* 7, *dated* 1618, *of the baths at Bath before the arbiters of elegance and the great Palladian estate-developers got to work there.* (Catalogue of British Drawings, *Volume I, XVI and XVII Centuries; by Edward Croft-Murray, Paul Hulton and Christopher White. Published by the Trustees of the British Museum, in two parts* 110*s. the set.*)



7



The group of buildings in St. James's Street, London, designed for The Economist *by Alison and Peter Smithson, will utilize the site (between Boodles Club and Ryder Street) in a way more sensitive to the character of the area and more productive of interesting townscape than most recent rebuilding schemes. Instead of building up round the perimeter of the site, the architects have opened up the interior and formed within it a raised pedestrian piazza with car-parking beneath. The piazza, shown in Gordon Cullen's drawing opposite, is reached from St. James's Street and Bury Street at the back, by short flights of steps between the buildings. There are three separate buildings—see plan alongside—the tallest, a sixteen-storey office block, at the back of the site. Their siting and open planning avoids the change in scale that the large business block often produces and retains the small semi-enclosed spaces traditional in St. James's.*



Raymond Spurrier

BETTER BYPASSES

The much criticized bridge designs for the original length of M1 are not to be repeated along the rest of the route northwards. Behind this news lies welcome evidence of a much more positive Ministerial support for better looking highways. And there may soon be further proof in the design of service areas. Hitherto official support has been confined to pamphlets and bland pronouncements; now it is beginning to find its way into the end product.

A convenient comparison exists in two structures along the Cromwell Road: the lumpish, brick-faced mass-concrete and cost-controversial bridge (the antithesis of *fly*over) at Chiswick, and at Hammersmith the exciting vertebral construction of what promises to be a most elegant piece of engineering.* This will form a fitting flourish to an already well-architected piece of road and add considerably to the aesthetics of Hammersmith. And to be really effective that is what any work of architecture or engineering should do—not only respect existing amenities but enhance them.

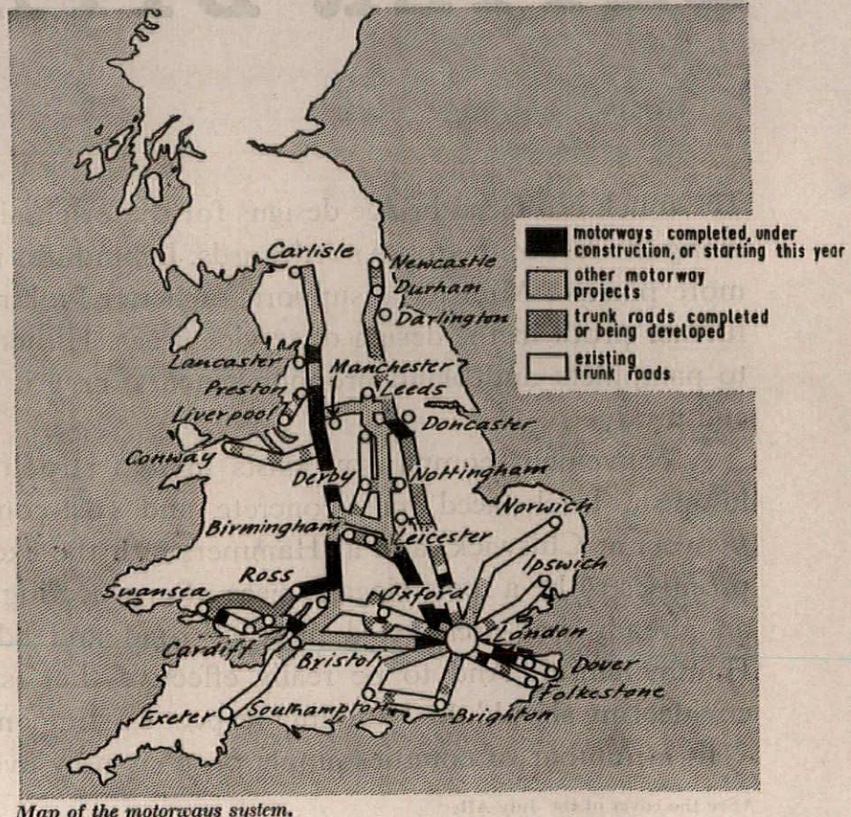
In a number of counties ample proof is now available that enough engineering skill

* See the cover of the July AR.

exists, combined with visual sensibility, to ensure a much brighter future for the motorway programme than the over-publicized M1 would have had us expect. In terms of muckshifting, time, organization, and human endeavour against the elements M1 was undoubtedly a success story in which ways and means captured the imagination whereas the visual results do not. In the excitement of getting something down in concrete and tarmac it is perhaps understandable that subtleties were overlooked. Yet the startling ineptitudes built into the scheme can only be condoned provided they are omitted from later works. In this sense M1 was also a success in clearly indicating what to avoid, even though elsewhere other roadbuilders were concurrently avoiding it. More recently opened motorways have ably demonstrated aesthetically superior results and given tangible proof that the less tangible aspects of the job, often collectively referred to as the 'amenity aspects', have not been ignored. For instance the Maidstone and Maidenhead by-passes present high quality bridge designs. Both are up-to-date motorway versions of pre-war schemes, on land bought for the purpose then, which may account for the mature look of the landscaping—also of a high quality.

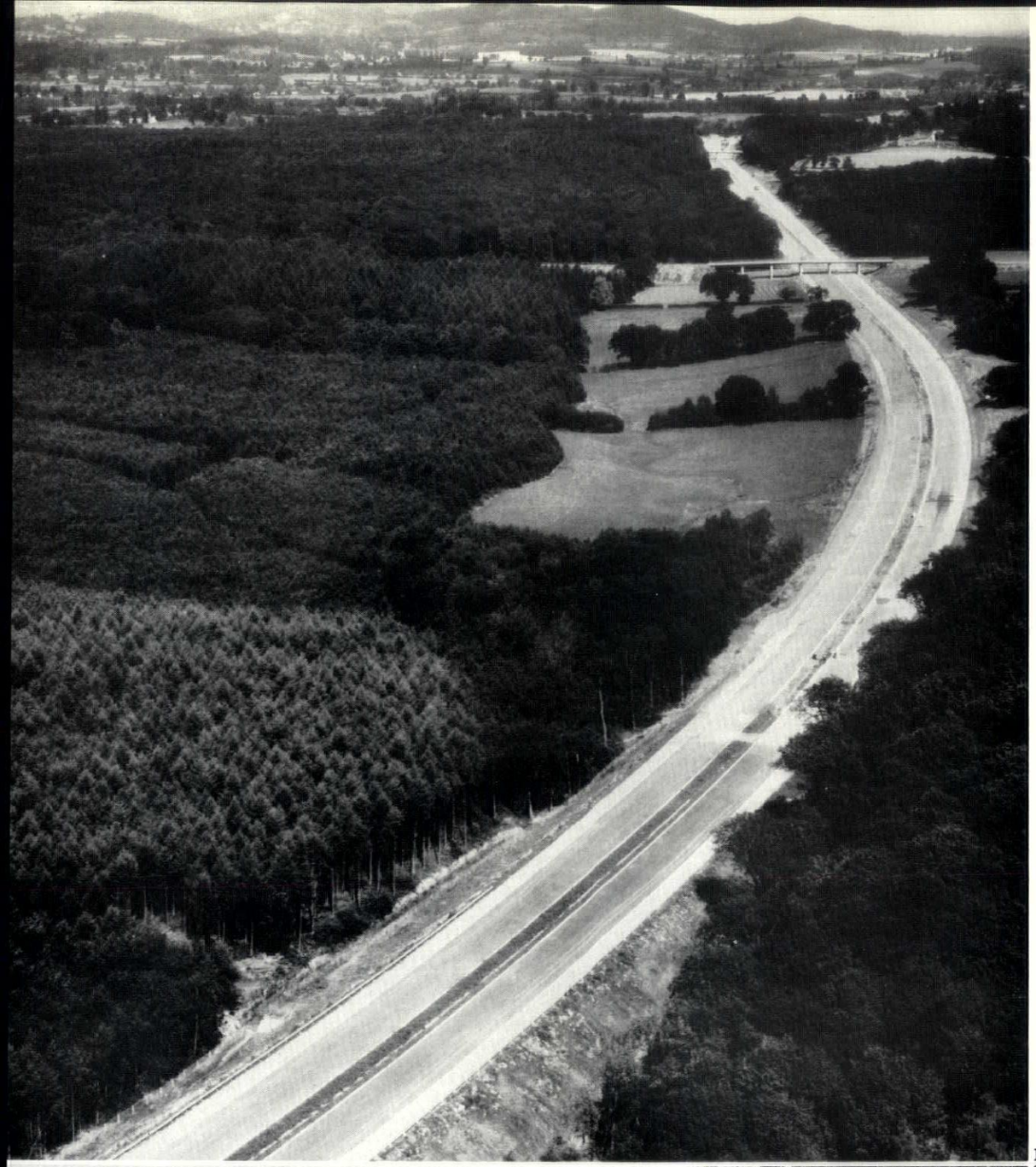
Ross Spur is a piece of motorway of which the Ministry of Transport is particularly, and rightly, proud. In claiming that design contributes to much of the road's charm, the Ministry has given due credit to the three county surveyors who planned it and many of the bridges, and to the consulting engineers who designed the principal bridges. These latter had to be one-off jobs, but the remainder, in contrast with other motorways, are surprisingly various. Natural material is often used for facing: Cotswold stone in Worcestershire, local red sandstone in Herefordshire give the structures an air of belonging—not that belonging is necessarily a virtue in motorway detailing, and one could equally well argue that such a road, like a railway, is an artefact with its own style. But the result is what counts, and the success of belonging on the Ross Spur may be due to its close involvement with its landscape. It crosses the flood plains of the Wye and the Severn, runs through the Dymock State Forest whilst providing views of the Malvern range; it penetrates rock cuttings and leaps deep ravines, articulating a piece of fine and varied scenery that, because it needed no enhancement in the first place, must have presented a formidable challenge to any roadbuilder. Yet this road, the Ministry points out, was built not for the tourist but for industry. As indeed was M1, begun at about the same time.

Whether a dull landscape demands more skill from the designer than a fine one, or whether the more impressive landscape inspires the more beautiful road is open to

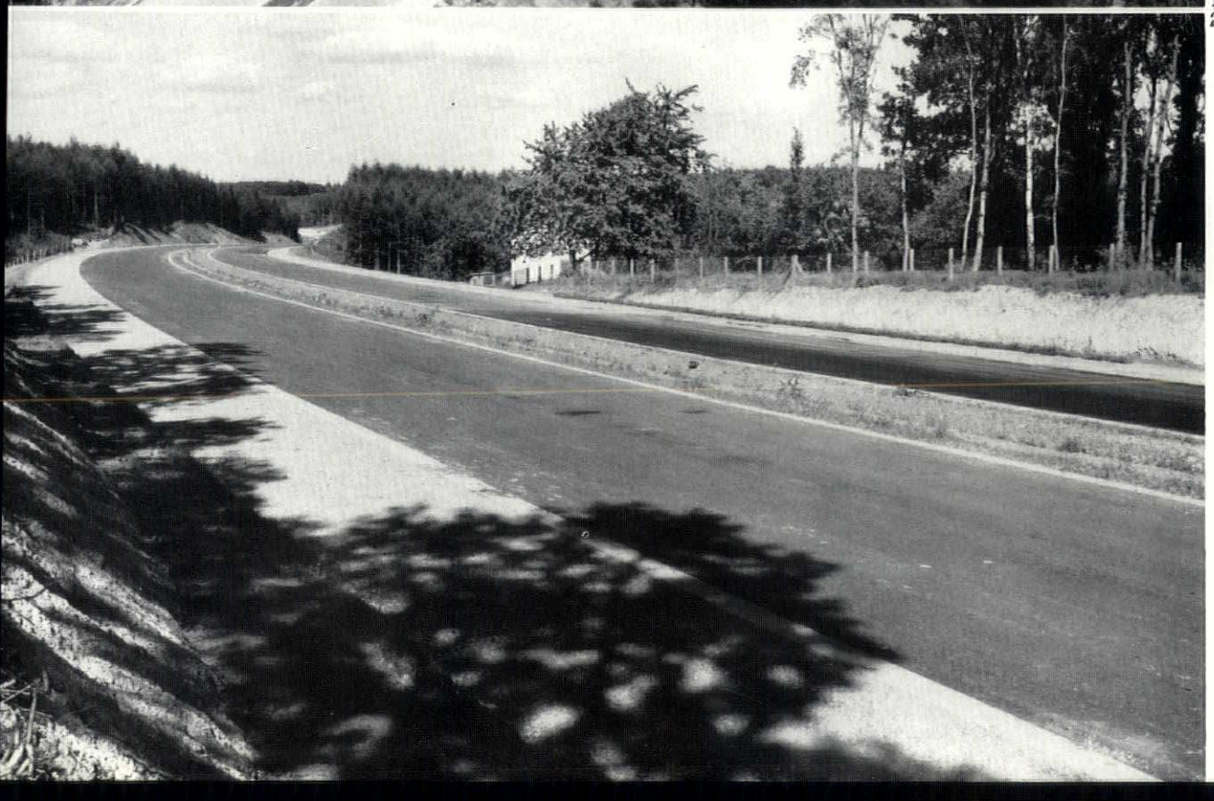


Map of the motorways system.

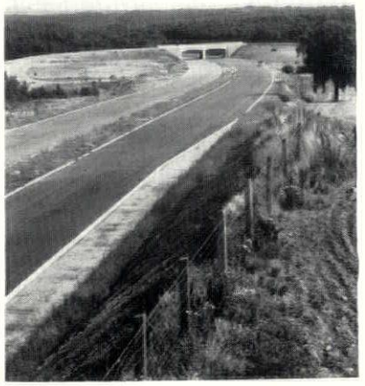
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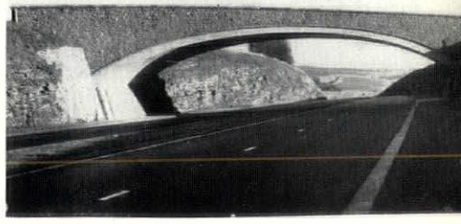


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1, *this dramatic airview of the Ross Spur sweeping east through the Dymock State Forest toward the Malvern Range on the horizon indicates something of the quality of the landscape and demonstrates how easily a motorway can be absorbed into such a setting when the scale of both is compatible.*
Less diagrammatic, these more normal views, 2-4, *are bold enough to be taken in at* 60 *m.p.h. or more and show the road* penetrating *the scenery. The forest laps at the verges without ever hemming the driver in or making him feel he is part of an alien swathe cut through the woods. In fact alignment ensures that the views are self-contained. From this point of view, too, compatibility of scale tends to reduce the apparent width of the road; modulations at the boundaries help counteract parallelism. Apart from its normal function, an overbridge like* 4 *can punctuate progression and introduce extra interest. In* 3 *it appears as a gateway to the forest. Whilst red sandstone abutment facings tie the structure to local geology, the concrete arches are clearly allied to the road; their gently curved soffits echo the distant silhouette of the Malvern Hills that at long range close a vista already concealed at short range by alignment and forest edge. This is road landscape of a high order. It depends much on the ready made landscape but even this asset could have been outraged by insensitive siting, crude tree felling, and unsympathetic bridging.*



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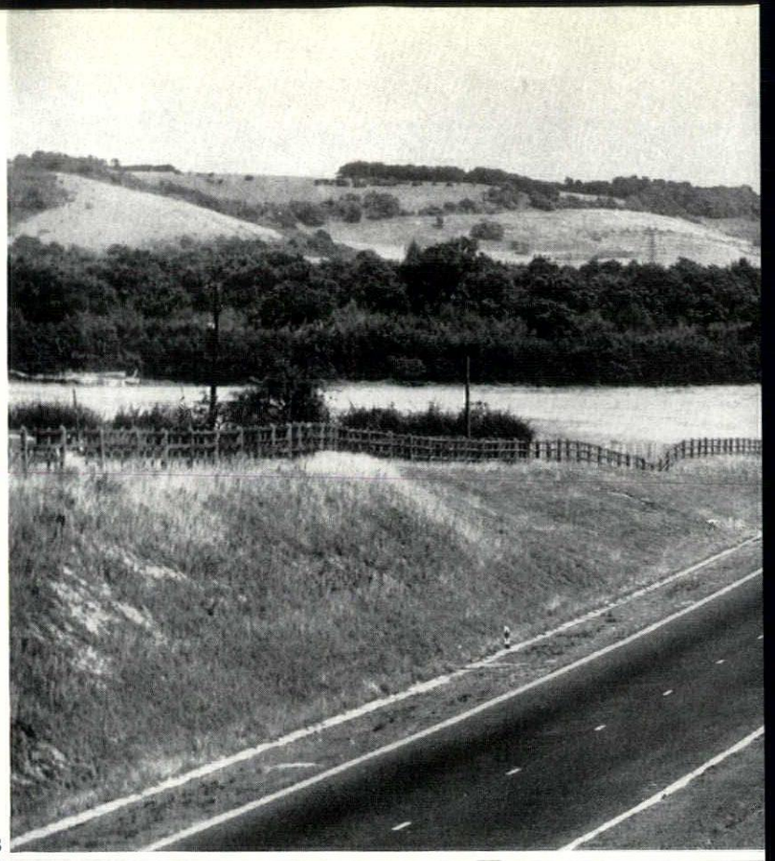
5, *this overbridge braced against the sides of a rock cutting and matched with it in facing material comes at a convenient point for a little minor drama. The single arch span makes the most of the new view revealed over the brow of the hill. But for most motorway situations overbridges require to be self-effacing structures so that visual interruption is scarcely noticed (unlike the M1 bridges that thump, thump, thump against the sensibility with painful monotony like the expansion joints along a bad concrete road).*



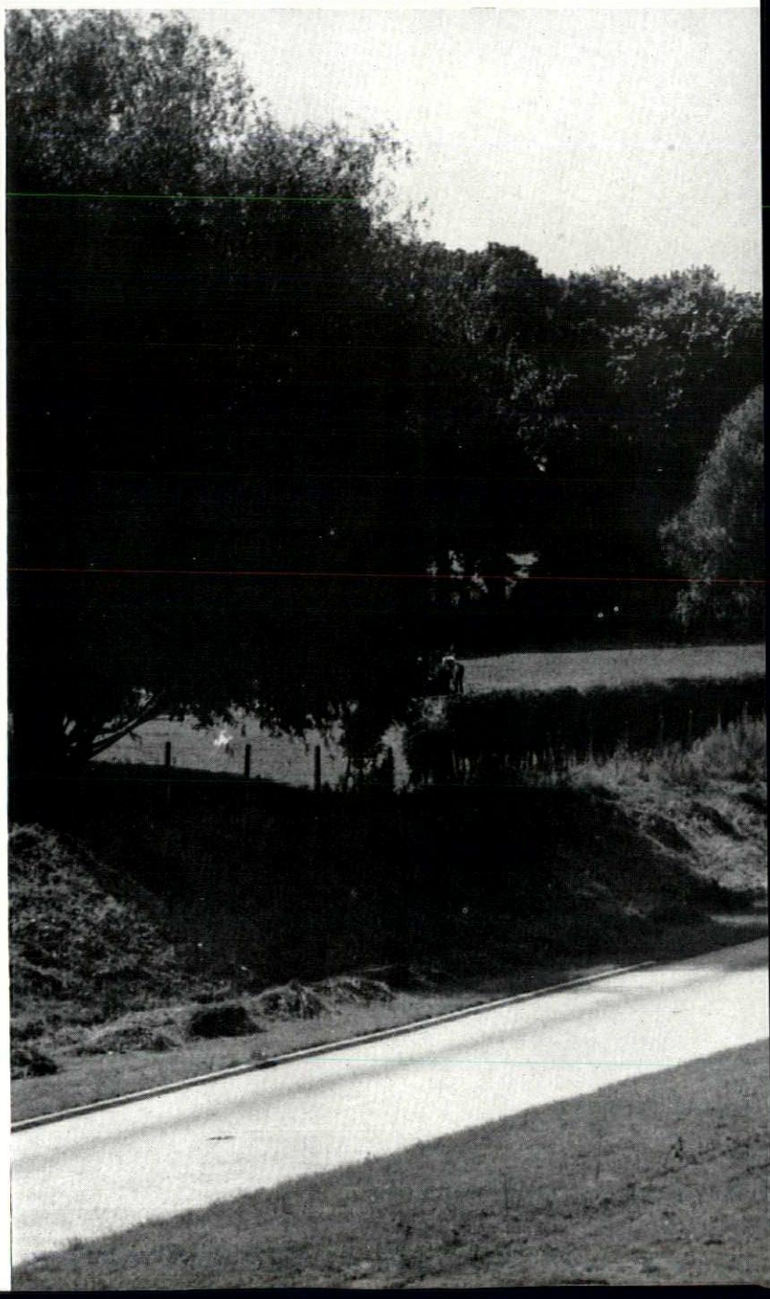
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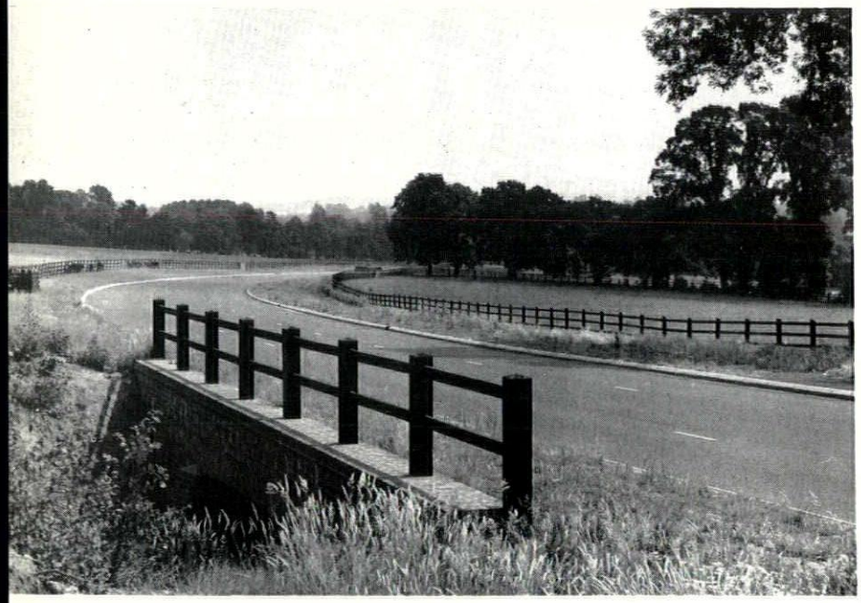


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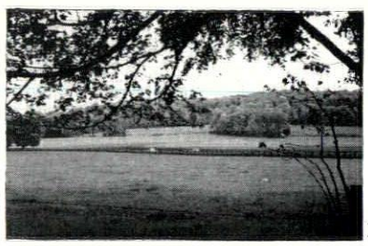
6, *in less dramatic country the Stamford bypass displays qualities of vertical and horizontal alignment which, despite the rigid standards of motorway curvature, which do not always allow complete integration with landform, nevertheless fit this road well with the contours.*

7, 8, *the Maidstone bypass flows more completely with the landscape and in these views there is also that sense of penetrating the scenery with the important feeling of participating in the surroundings. Note, too, the way the woods play their own rhythmic counterpoint to the highway limits, and with the distant hills help to create self-contained views. (The vertical sign supports in* 8 *sound an unfortunate discord.)*

9, *this section of the Ashford bypass presents a true landscape experience in tune with motorway scale—from enclosure to openness where the road boundary is effectively concealed at the outside of the curve by variations in level.*

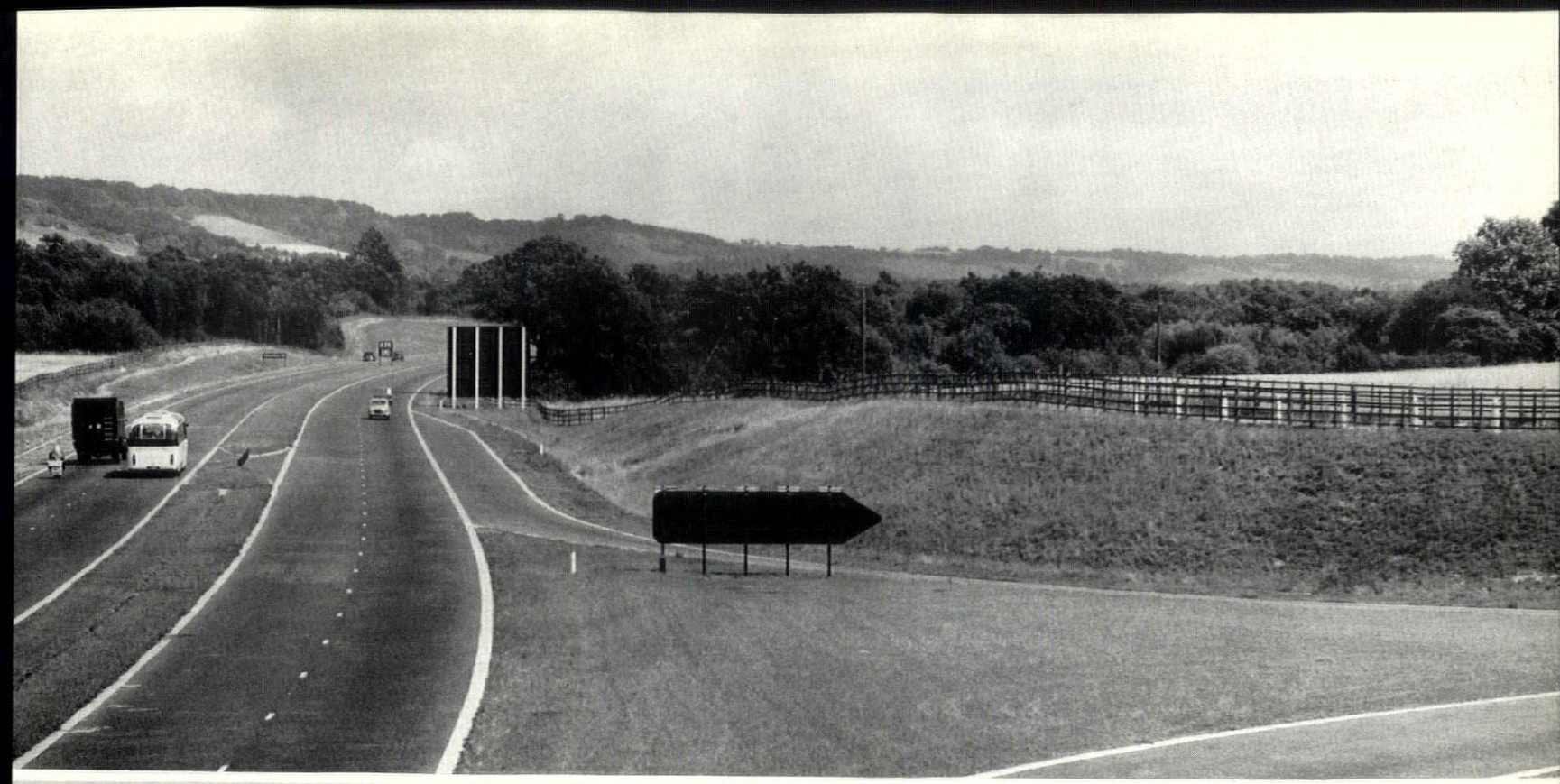


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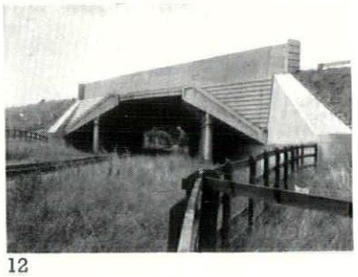
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10, *even minor bypasses, with admittedly lesser problems now display a respect for their setting. The three-lane Shere (Surrey) bypass sits lightly in National Trust landscape north of the village from which it is mostly invisible,* 11. *From the bypass itself the view of sloping parkland is unsevered visually, even enhanced by the curving alignment. Existing trees form a suitable background to the view; rural fencing and park railings are appropriate here.*





These two bridges perform the same function of supporting a motorway. 12, an Owen Williams M1 design does it with the grunting for effect of a second-rate acrobat and still leaves an impression that it would be unsafe to venture beneath such a complicated structure. 13 carries the Maidenhead bypass over a minor road with effortless confidence. 13 is also an example of current trends in highway bridge design; 14-17 are variants of more economical and aesthetically improved design.

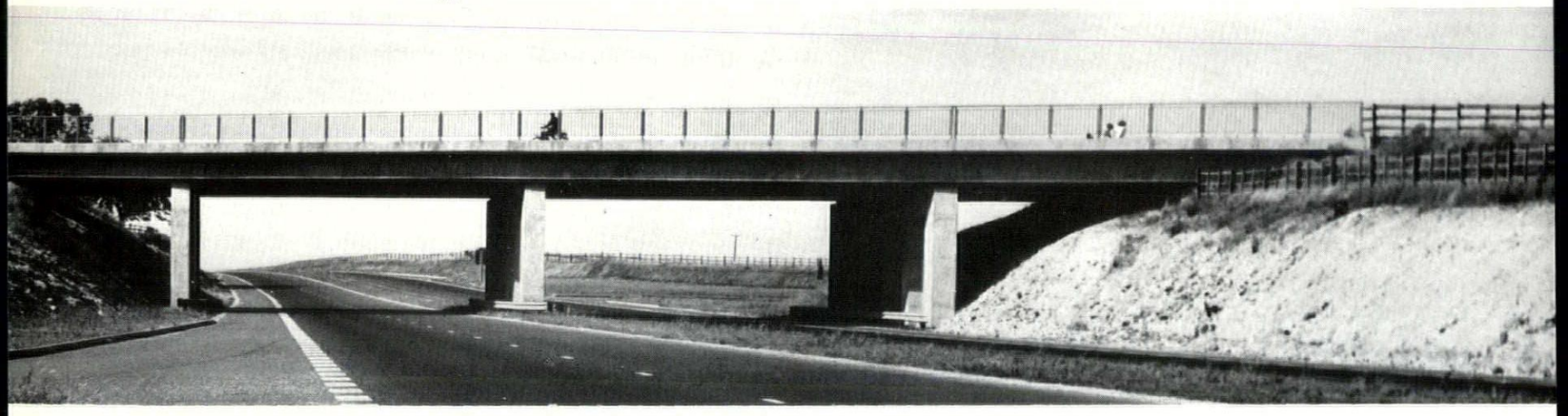


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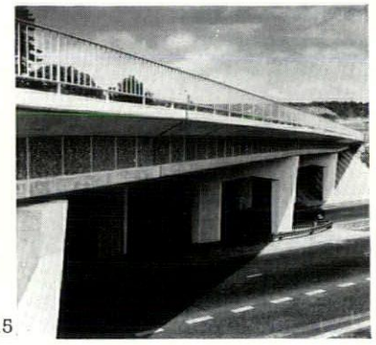
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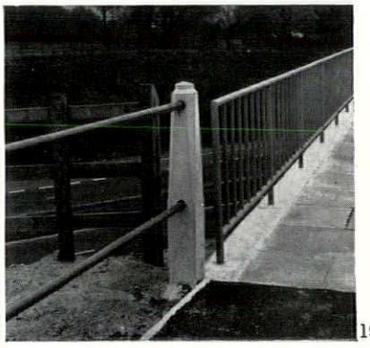


The family likeness shown in (14-17) *stems from a more universal application of prestressed concrete construction assisted by the development of a range of standard beam sections and revised standards that allow greater working stresses. The use of approach spans instead of earth retaining abutments whilst showing a slight saving in cost, also lightens the look of the structure, causing less of an obstruction to the rhythmic sweep of the road and the view beyond,* 16. *This way the arch is clearly seen to spring from the surrounding land and unresolved duality ceases to be a problem. Minimal deck and support thicknesses contribute to a more elegant and less obtrusive design that can bear the constant repetition required along British motorways. Chamfered end-on view of already slender piers further reduces visual interruptions* (16). *Canted verticals supply an additional refinement* (15, 17). *Similarity in basic appearance does not preclude local variations, for instance in embankmen facings which at Ingatestone* (17), *are hexagonal in pattern, squared at Maidenhead* (16), *whilst along the Maidstone bypass* (15), *strips of flint pebbles add a Kentish flavour and an interesting texture when alternated with plain stripes resulting in an appropriate motorway style trim. In* (17) *note the depth of the undercut in shadow that highlights an extremely thin leading edge. This is managed by a different technique (facing materials) elsewhere; in* 18 *the deck reads as only a thin white line. See also in* (17) *the neat change from one type of railing to another. And in Kent someone has obviously been thinking about the effect where three different fence patterns meet; in* 19 *they in fact all but meet.*

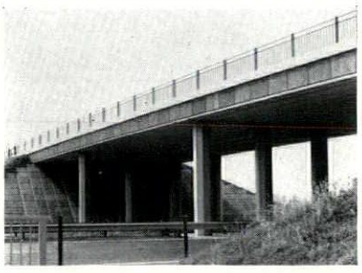
20 is a non-standard design for a ramped pedestrian bridge over the Maidenhead bypass. Big trees set the scale along this stretch of the road. The many belts of planting which the road penetrates form a background to the view, containing the road (18). *Fully grown hedges, planted pre-war at some of the highway limits, give the road a sense of maturity already, reducing scale and helping to impart that important feeling of inevitability.*



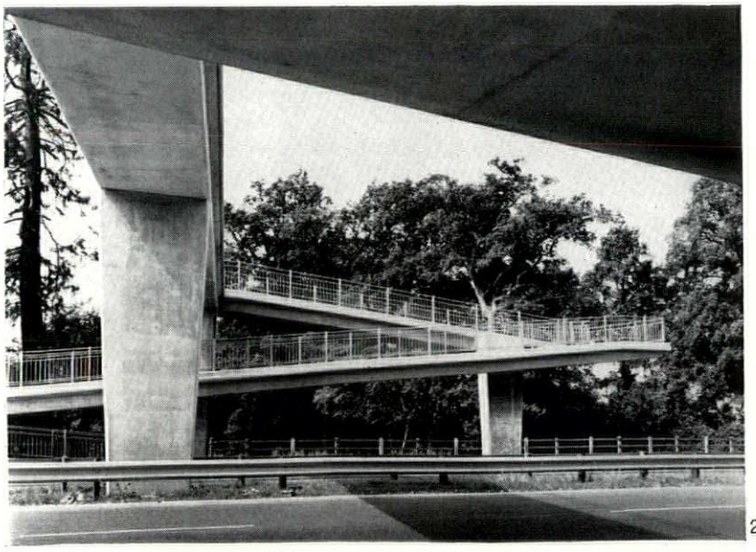
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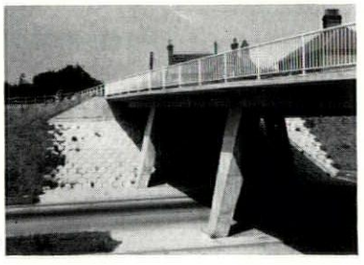
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16



20



17



18

continued from page 230]

argument. Whether the use of county surveyors is preferable to one consulting engineer is not yet proven by the few examples to hand; it depends presumably on the particular county surveyor and the particular consulting engineer.

What is interesting, though, is how, from the separate efforts of different county surveyors and different consulting engineers, a distinctive pattern of motorway bridge is evolving—entirely appropriate to a modern highway and visually acceptable when repeated as often as it must be in this country. Individual examples display a strong family likeness which is attributable to the combination of a number of economic and engineering factors as well as to current aesthetic taste. Although no two bridging problems are identical, the spanning of a regular formation at even height with modern methods of construction must inevitably lead to something like a standard solution even though local variations are possible, for instance in the facing of deck edgings and the treatment of embankment slopes. So it is probably better that different designers should leave their imprint on similar solutions than that one man should strive too hard for variety by elaborating a single design.

The Minister's clearly stated policy of reserving the right to appoint a consultant for lengths of motorway that pass through more than one county need not preclude this. An overseeing consultant with a light enough touch should be able to tap local ability and at the same time preserve a sense of continuity.

In the rush to reconstruct the nation's road system there was always the danger of lacerating the landscape with too much tarmac. But much recent roadwork really merits the title 'improvement'. Precedents have been set which, with a further 700 miles of motorway still in the planning stage, to say nothing of other modernization programmes, could have far reaching effects and put this country at least on a level with those others that have established a name for high quality highways. The skill and talent that we always thought we ought to possess somewhere is beginning to show. It is therefore most important that as the shape of the new network of national routes emerges its pattern should be imprinted across the countryside by men who are sensitive to landscape and persistent in matters of detail.

VARIATIONS ON THE POINT BLOCK

The tall, square block of flats, providing at the same time a compact, agreeable form of housing and a vertical element in the landscape, was originally a Scandinavian conception; so much so that housing developments in this country that make much use of them—whether at Roehampton, Coventry or Harlow—acquire thereby something of a Swedish character. The point block is now an established architectural form all over the world, but Swedish architects have continued to create new variations on it, from the point of view of internal planning, construction and relationship to the landscape, as they have developed new housing areas. Illustrated herewith are two recent examples, both on the outskirts of Stockholm.

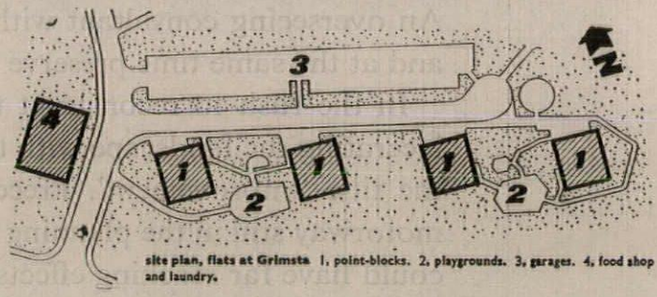
1 (facing page), close up of one of the blocks at Grimsta.

1, at Grimsta

ARCHITECT: SVERKER FEUK

A group of point-blocks at Grimsta, a residential area adjoining Vällingby, the satellite town west of Stockholm. Grimsta lies across the main highway from Vällingby, between it and the waterfront. The group, which has been designed for AB Svenska Bostäder by the company's staff architect, consists of four point-blocks, identical in plan but varying in height between seven and nine storeys, spaced at equal distances along the foreshore and backed by a double row of garages. At one end of the scheme is a low block containing a food-shop and a laundry.

The ground floor of each block is given over to storage, bicycle-sheds and a porter's office. Above there are four flats to each floor, arranged round a central staircase and lift hall, and containing living-room, two bedrooms and kitchen recessed behind a balcony. At certain levels, however, two floors form a maisonette with two living-rooms, three bedrooms and a similar kitchen. Construction is a reinforced concrete frame with insulated block walls rendered white.



site plan, flats at Grimsta. 1, point-blocks. 2, playgrounds. 3, garages. 4, food shop and laundry.

2, at Kevanga

ARCHITECT: GUNNAR JACOBSON

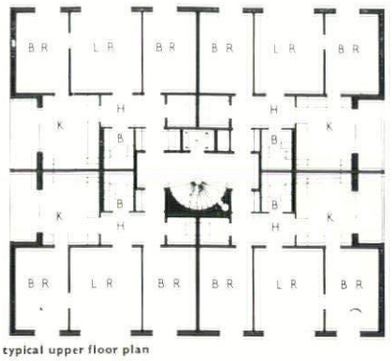
A group of three point-blocks, sited in open country north of Stockholm. They are linked at ground level by one-storey buildings containing shops and garages. Their most unusual feature is their external sheathing which is wholly of copper.

Each of the 13-storey blocks contains 50 flats, four on each typical floor, reached from a central staircase and lift hall. Two contain living-room, dining-room and three bedrooms and the other two living-room and two bedrooms. The larger flats also have a workroom. On the top floor of one of the blocks is a large restaurant and a clubroom for the use of tenants.

Construction is by the Skarne system, a semi-prefabricated system evolved by the contracting engineers, Ohlsson and Skarne, in which the central unit of each block, comprising the stair and lift well, is first erected in the form of a reinforced concrete tower and a crane positioned on the top of this tower then swings the load-bearing inner wall units into place. Floor-slabs are then cast and the non-load-bearing outer wall units hung in place. These are prefabricated panels, framed in wood, with gypsum board on the inside, insulated with mineral wool slabs and various layers of building paper. The outer sheathing is of ribbed copper sheets, five millimetres thick.



FLATS AT GRIMSTA

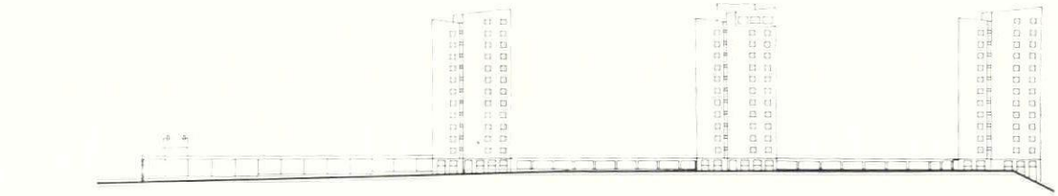


typical upper floor plan

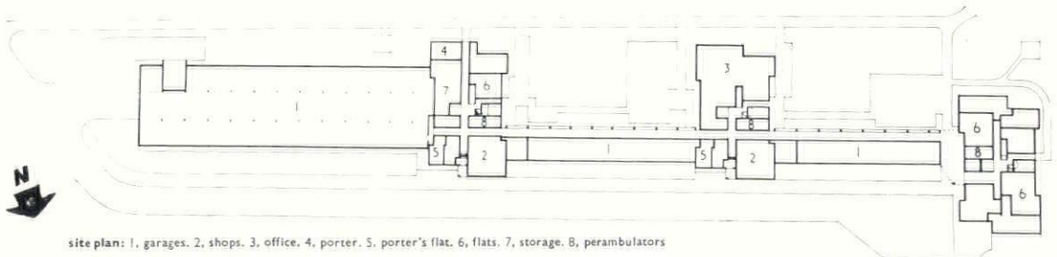


2, distant view from the north-east, showing the two blocks at the east end of the site.

3



elevation



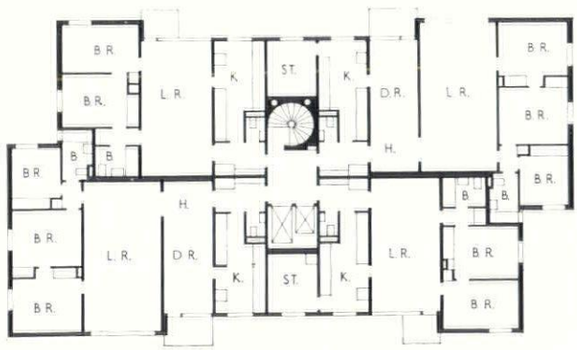
site plan: 1, garages. 2, shops. 3, office. 4, porter. 5, porter's flat. 6, flats. 7, storage. 8, perambulators

3, the three point blocks at Kevanga seen from the west.
4, aerial view from the north-east.

FLATS AT KEVANGA



4



typical upper floor plan, west block





LIBRARIES

1. Nutrimentum Spiritus

Nikolaus Pevsner

After some five-hundred years of development, the concept of a monastic library was triumphantly resolved into a single monumental book-lined space in the great Baroque examples in southern Germany and Austria, such as St. Florian  *(opposite, above) completed in* 1742. *But hard on its heels arose the concept of the public library, the spiritual nourishment of all. Diverse in its users, in the documents they may consult and the manner of consulting them, the public library is still in evolution towards a fitting degree of spatial diversity, exemplified by Carl Koch's Youth Library at Fitchburg, completed in* 1950, *below*

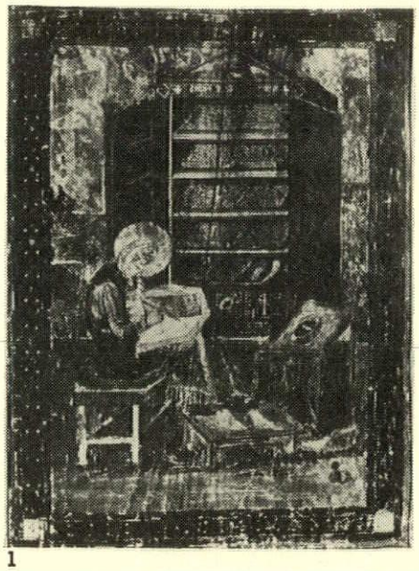
Of the making of books there is no end, and for this reason the history of library buildings is one of increasing quantity and increasing complexity, as Dr. Pevsner recounts in his historical survey below, which is the first of two articles in this issue of libraries. The final solution to both the problem of increasing quantities of books and of complexity was the separation of reading rooms from stack rooms, and the creation of the closed library as distinct from the earlier open-access type. Since then the professional interests of librarianship have concentrated discussion on the relative administrative merits of these two types, to the exclusion of the human problem of the environment of reader and his book. Michael Brawne, in the second article (beginning on page 245) proposes that this is still a more important matter than administration and circulation.

There is no direct line of succession from such libraries as that of Ephesus of *c.* A.D. 115 to the Middle Ages, and moreover, books only became books instead of being rolls in the course of the second century A.D. at the earliest. For these two reasons this survey is confined to the countries of the west and the centuries after the end of Imperial Rome. Books were precious possessions in the early Middle Ages, and at least one illustration, still surprisingly Roman in realism and use of some kind of free perspective, the famous so-called Ezra in the Codex Amiatinus of the Laurenziana Library in Florence, tells us what a book cupboard was like in the sixth century. The codex is North English, the page in question is probably copied from Cassiodorus's *Novem Codices*. Cassiodorus was a contemporary of St. Benedict, and Montecassino had a substantial number of codices for which provision was probably made in a similar way.

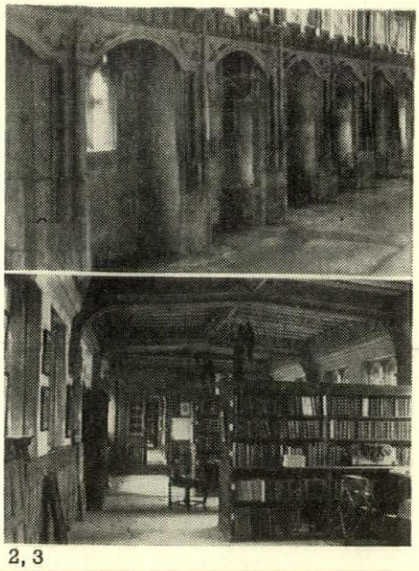
The earliest library proper occurs in the Plan for St. Gall designed by a high cleric at Cologne about 820 to serve as an *exemplar* how the abbey of St. Gall ought to be rebuilt. Here, to the east of the north transept of the church, in the angle between this and the chancel, is a square room labelled: *infra sedes scribentium, supra bibliotheca.* So the books were to be written below and preserved above. But no such room has survived. Nor were large rooms really needed. Centula in the ninth century had 256 codices, Bobbio 666, and they were two of the major abbeys of Europe. The usual thing was apparently not a library room at all, but a mere book niche or cupboard in the cloister, or at most a small room in the east range of the cloister between the transept and the chapter house. At Furness Abbey in the late twelfth century two such small rooms were provided, to the left and right of the chapter house vestibule. In addition there were occasionally niches or *carrels* for monks to work in. The south range of the cloister of Gloucester Cathedral, then not a cathedral but an abbey, has twenty such carrels from the late fourteenth or early fifteenth century.

Of English cathedrals Wells in 1425, etc., built a room 106 ft. long as an upper floor to the east range of the cloister, and Salisbury in 1445 a long room in the same position. Other cathedrals did likewise, and the houses of monks and friars also felt the need now for greatly enlarged libraries. The Greyfriars in London, for example, in 1421–24, choosing the same position above the east range of the cloister, built a room 129 ft. long and 31 ft. wide. In France the need and its fulfilment was exactly identical. The library of Rouen Cathedral of 1424–28, remodelled in 1477–79, is 105 ft. by 25 ft. and lies along one side of the Cour des Libraires. At Noyon Cathedral in 1506 a detached building, oddly enough timber-framed, was started for housing the books. It is 72 ft. long. Similarly, of major abbeys, Hirsau in South Germany has a Late Gothic library, in this case with the prettily carved presses preserved, and Clairvaux, the celebrated Cistercian abbey, had a library above fourteen studies for monks also in one range of the cloister. The building was described in 1517 as richly carved externally, provided with windows on both long sides and furnished inside with *banctz.*

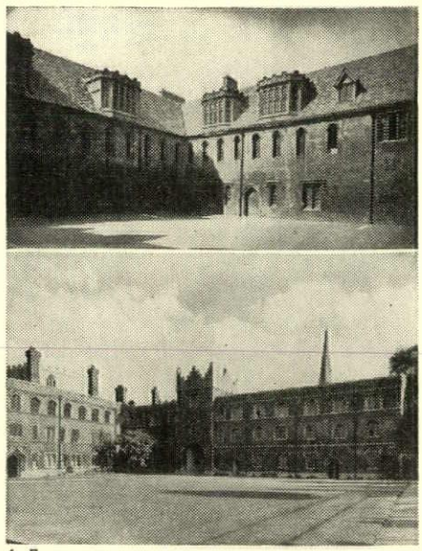
That was certainly the usual thing, and we have in England plenty of evidence of it in the oldest surviving libraries of the Oxford and Cambridge colleges—libraries such as those of Merton College, Oxford, begun in 1377 and filling one side and the major part of another of Mob Quad (that is, a total of 133 ft.), New College of the 1380's, University College, Oriel and Balliol of the fifteenth century, Jesus College, Cambridge, of about 1500 and so on. Books were arranged on low sets of shelves set at right-angles to the walls and the middle passage, their tops raised into desks towards both sides. The books were chained. The Sorbonne, a college then, not the university,



1



2, 3

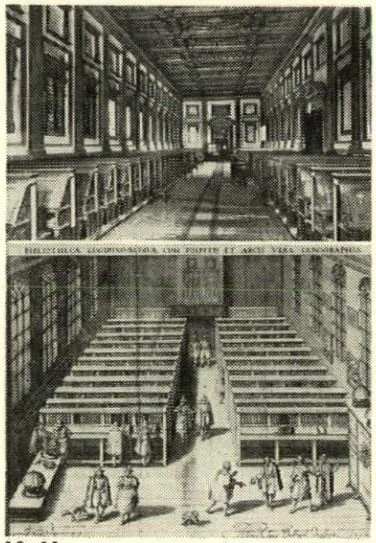


4, 5

1, *'Ezra,' from the* Codex Amiatinus, *showing sixth-century book cupboards.* 2, *carrels in Gloucester Cathedral cloisters.* 3, *fifteenth century library in Wells Cathedral.* 4, *library at Merton College, Oxford,* 1377. 5, *Jesus College, Cambridge, c.* 1500. 6, *library at Corpus Christi, Oxford.* 7, *the library of S. Marco, Florence,* 1437-41. 8, *the Biblioteca Malatestiana, Cesena,* 1452.



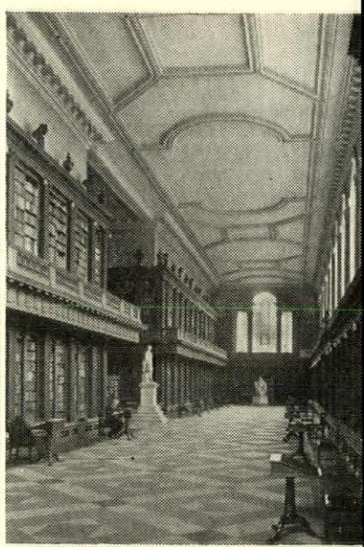
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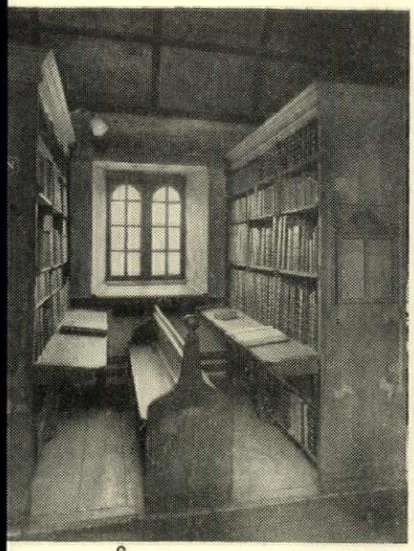
received a free-standing library building with such desks in 1289. It does not exist any longer. College libraries of course were an innovation beyond the cathedral and monastic libraries, until then the almost exclusive repositories of books. This change is one of the seats of learning and does not concern us here. In addition, the Emperor would have a private library; kings would; the Pope had one in his palace of about 1335–40 at Avignon. It was placed in the Tour des Anges above the Pope's bedroom and had five *armarie;* i.e. cupboards.

The oblong room with windows along the long sides and presses at right angles was functionally so satisfactory that in library planning the change from the Middle Ages to the Renaissance remained a purely formal change. The first Renaissance libraries of Italy are Cosimo Medici's Marciana—that is, the library given by him (with the books left by Niccolo dei Niccoli) to the Dominicans of S. Marco and built by Michelozzo in 1437–41, and the library which Domenico Malatesta of Cesena gave to the Franciscans in 1452. Both are long oblong rooms and both use rows of columns to divide the middle passage or nave from the aisles in which the presses stand. The Marciana has a tunnel vault in the nave, groin vaults in the aisles, the Malatestiana groin vaults throughout. These and similar libraries such as the Marciana in Venice, started in 1468 with the books left by Cardinal Bessarion, or the Vatican library of Sixtus IV (i.e. of *c.* 1475–77), were of a functionally new type in so far as they were public to the extent that scholars were freely allowed access. The library of Sixtus IV had 3,000 volumes. That was much compared with earlier libraries (Sorbonne 1338, 1,722 codices; Papal Library Avignon 1377, 1,677 codices; Duke Humphrey's at Oxford, about 600), but little compared with those of the sixteenth century.

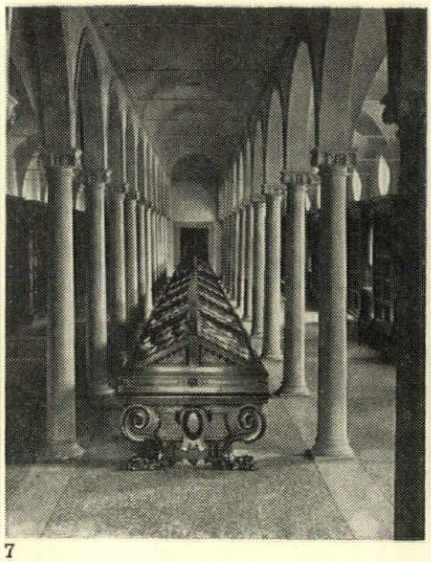
For 1455 is the year of the Gutenberg bible, and by 1500 printing presses had been set up in all the principal countries. The printed book called for larger libraries. Michelangelo's Laurenziana in Florence, begun in 1524, has the low presses with desks across the side spaces. The library of St. Walburga at Zutphen in Holland, of 1561–64, is entirely a medieval library in its appearance, and that of Trinity Hall at Cambridge, also of the 1560's, does not differ from its pre-Reformation predecessors either. Nor does, for instance, the university library of Leiden as illustrated in 1610 or the library of St. John's, Cambridge, of 1623–24. In England it was due to Wren that the first change was made. His Trinity Library of 1676 places the windows not at the readers' level but sufficiently high up to obtain a more diffuse light and to allow him to run his presses at the same height along the wall as well as across to it.

The tendency to place the presses along the walls only, functionally hardly progressive though spatially no doubt a new asset, goes back on the Continent to the sixteenth century. It was the century's principal innovation in library design and inaugurated a development of unprecedented splendour. The first of these large, aisleless vaulted rooms with tall presses along the walls is the Escorial, i.e. the monastic library of Philip II's palace-cum-monastery. It was built in 1567 and possessed about 18,000 volumes and is covered by a monumental tunnel vault. It was soon emulated by the Vatican Library of Sixtus V (1585–90) and the noble Ambrosiana in Milan of 1603–09. This was founded by Cardinal Federigo Borromeo and has another tunnel vault. Functionally it was novel and important; for it was more liberally open to the public than any before. In France the royal library remained closed, but Cardinal Mazarin's library of 1643 was regularly open one day a week, which was less than the Ambrosiana. Duke Augustus of Brunswick in 1666 made his private library accessible daily to the public.

As more and more books had to be accumulated the halls grew higher and the walls, lined with the presses, too high for the books to be reached by



6



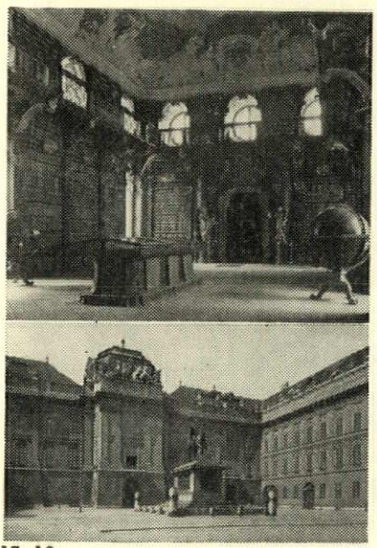
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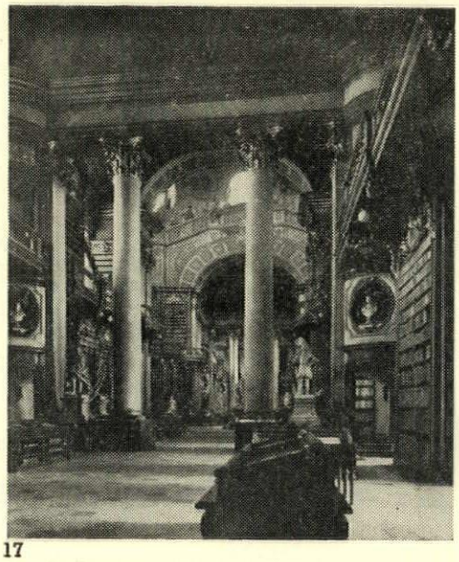
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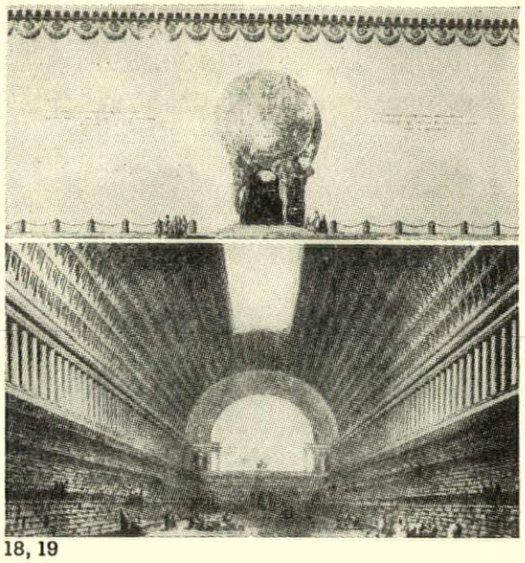
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9, *dedication of the Vatican Library, c.* 1475. 10, *the Biblioteca Laurenziana, Florence, by Michelangelo,* 1524. 11, *university library of Leiden,* 1610. 12, *Vatican Library of Sixtus V,* 1585-90. 13, *Hawksmoor's Codrington Library, All Souls College, Oxford, c.* 1717. 14, *Ottobeuren, S. Germany, c.* 1720. 15, *Melk Library, Austria,* 1732. 16, 17, *the Vienna Hofbibliothek.*

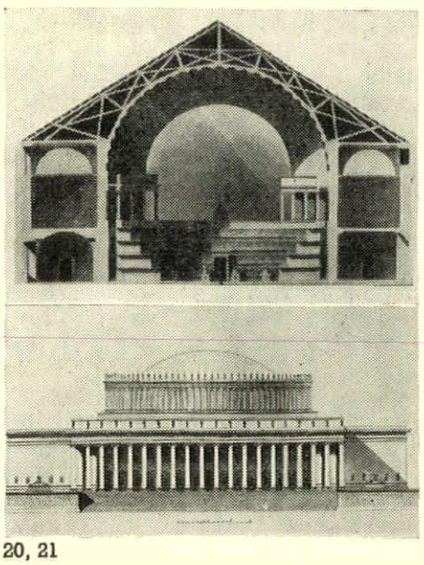
library ladders. So balconies or galleries were introduced. When exactly that took place cannot be said. At Oxford the first with a balcony (and the last with chains) was St. Edmund Hall of the 1680's. In Rome the Casanatense by Carlo Fontana, founded in 1698, has a balcony, and then the Angelina and the Vallicelliana. In France Cardinal Mazarin's library, which has already been mentioned, was installed after 1661 at the Collège des Quatre Nations, founded by him. There was no balcony at first, but more book space and a balcony were added in 1739. The grandest English early eighteenth-century library also has a balcony, Hawksmoor's Codrington Library at All Souls of *c.* 1717, fitted up internally only after he had died in 1736 and completed about 1750. It is in all its elements essentially identical with the most splendid of the monastic libraries of south Germany and Austria and indeed the younger Fischer von Erlach's Imperial Library in Vienna of 1723–26, but in style it is utterly different. The English library is rectangular as a whole and in all its elements, where the German Baroque replaces all right angles by surging and drooping curves. Also the English library is classical in the pilasters, the metope frieze, the balustrade, the cornice, the Venetian end-windows, where the German Baroque uses curly brackets, tapering pilasters, entablatures jutting or undulating forward and backward and ceiling paintings to create the illusion of space interminably continued upward. There are more outstanding examples in southern Germany and Austria than can here be mentioned. The former country preferred on the whole to place the balcony on columns—*see* for example Ottobeuren of the 1720's—the latter on brackets (Melk, completed 1732, St. Florian completed 1742).

The Vienna Hofbibliothek, when the new building was decided upon, must have had about 100,000 volumes. The building was to form part of a comprehensive scheme of remodelling the Imperial Palace. In the later eighteenth century, thanks to the conviction of enlightened monarchs that intellectual resources—as indeed the resources of aesthetic enjoyment—ought to be made freely accessible to the people, the library became an independent building, just as did the museum and the theatre. The stages by which museums and theatres cut themselves off from the court are fascinating to follow but cannot be followed here. However, in 1769–76, to give just one example, Landgrave Frederick II of Hesse-Cassel built in the newly-laid-out principal square of Cassel the Museum Fridericianum as a museum below, a library above. In 1774–78 Frederick the Great built a library for Berlin, at right angles to Unter den Linden and on a plan and an elevation adapted from a design of Fischer von Erlach's for the Hofburg. It was from the start intended as a public library and it carries the inscription *Nutrimentum spiritus*, a telling testimony to the new, universally educational function of libraries in general.

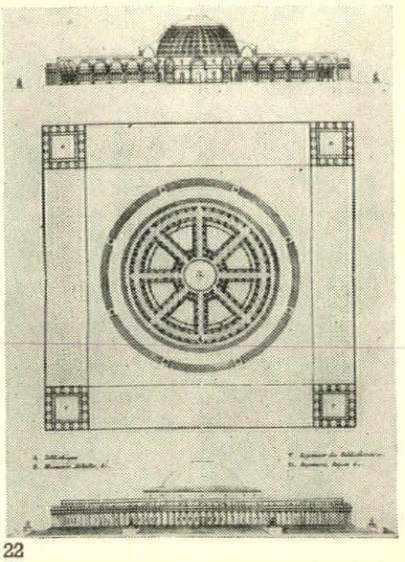
Vast libraries (like vast museums) in their monumentality paying homage to the new ideals of education, became one of the favourite themes of the progressive architects of France. The most influential, though never published, was evidently Boullée's idea for making the royal library a Bibliothèque Nationale which seeems to have been worked out about 1785 and certainly before 1788. The exterior is as ruthlessly cubical and as unprecedented in its iconography and details as one expects Boullée to be; the interior however is clearly nothing new—except of course for the scale. Another plan of Boullée's foresees the same three recessed upper tiers but placed in an amphitheatrical room. In 1787 the Academy, for its Grand Prix, asked for a Bibliothèque Publique and premiated J. B. L. F. Lefebvre with a scheme influenced by Boullée and culminating in a circular reading room. As in all other fields, the immense projects of Boullée, of Ledoux and of the Grand Prix were codified by Durand in his *Précis* of 1809; i.e. the summary of his lectures given at the Ecole-



18, 19

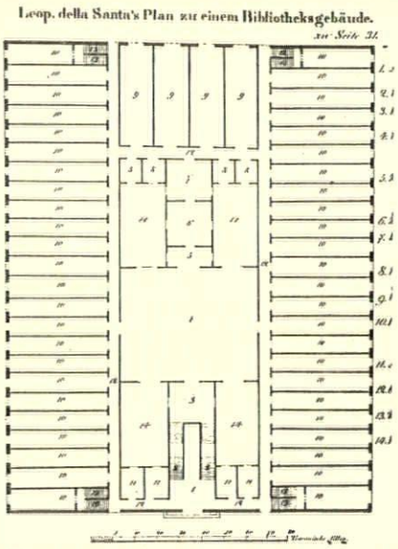


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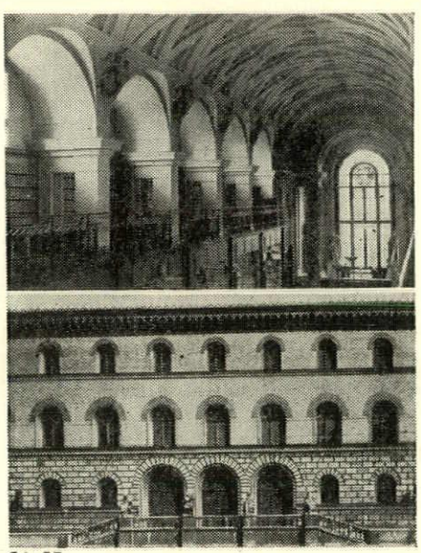


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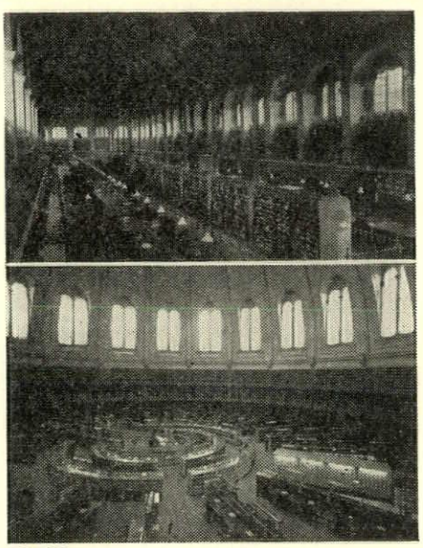
18, 19, 20, *project for a Bibliothèque Nationale*, 1785, *by Boullée*. 21, *design for a Bibliothèque Publique*, 1787, *by Lefebvre*. 22, *project from Durand's* Précis, 1809. 23, *della Santa's plan for a library with separate reading room, offices and stack-space*, 1816. 24, *Cambridge University Library*, 1830. 25, *the Staatsbibliothek, Munich*, 1832. 26, *Bibliothèque Ste Geneviève*, 1843-51. 27, *reading room of the British Museum*, 1854-56.



23



24, 25



26, 27

Polytechnique. The *Précis* was widely known and helped to spread this megalomaniac style.

However, while for cathedrals, academies, or indeed Halls of the Virtues, the scale of Ledoux and Boullée was such that megalomaniac is the only term to characterize them, in the case of libraries there was an excuse for this scale. Libraries by 1800 had grown very big indeed. Göttingen University had started in 1737 with 12,000 volumes and possessed 110,000 by 1786. The Bodleian in 1817 had about 150,000, the British Museum in the 1830's about a quarter of a million. To house them on the Escorial-Ambrosiana principle—which is what Boullée was trying to do—was no longer possible. A new principle had to be worked out. It was the task of the first half of the nineteenth century to do so. The principle was that of separating reading room, offices and stack-space. It was first presented by Leopoldo della Santa in 1816 in his *Della costruzione e del regolamento di una Pubblica Universale Biblioteca*.

Della Santa's plan was reproduced by Christian Molbech in a Danish book *Om offentlige Bibliotheker* in 1829, and this was translated into German in 1833.* But already in 1817 a little-known Frankfurt librarian Beyerbach had not only endorsed della Santa's idea but added the necessity of stack rooms being low—he suggested 7 ft. 9 in.—and the partition walls being simply double stacks. Much special research would be needed to determine in the case of every library how the separation of reading from stack-space took place. As a rule it was no doubt a gradual change. In new libraries also it could be done discreetly or prominently. Mr. Eugene Dodd, who is working on C. R. Cockerell, referred me to the manuscript comments made by Cockerell in submitting his designs for the new Cambridge University Library in 1828. The reading room is a noble example of the Escorial-Ambrosiana type, but Cockerell writes: 'Apart from the bookcases in the Libraries, additional shelving might be provided in subsidiary rooms.' The Bavarian State Library was designed in 1832 by Friedrich Gärtner and completed in 1843. Externally it is in the *Rundbogenstil*; i.e. a rather severe Quattrocento palazzo. Internally it has two courtyards, a monumental staircase running up in the range between them from the entrance hall below to the reading room above, and, apart from a representational hall and the librarian's offices, nearly all the upper floor is stacking-space.

In 1835 Benjamin Delessert suggested for the Bibliothèque Nationale a circular reading-room with stacking-space round it. In Labrouste's famous Bibliothèque Ste. Geneviève of 1843–51, the ground floor is all shelving, though still with wide distances between high stacks, and the first floor is all reading-room. The innovation which has made Labrouste's library famous is of course the extensive use of iron and the frank exposure of it in the reading-room. In April 1845 Count de Laborde in Paris in the eighth of his letters *De l'Organisation des Bibliothèques de Paris* illustrated a design for a library of 300,000 volumes, a building with four inner courts, a cruciform reading-room and very generous stacking provision. Ten years later Panizzi's reorganization of the British Museum was under way (1854–56) with a spacious circular reading room with 364 seats and stacking all of iron, with floors only 8 ft. high and stacks only at this same distance.

With that modern conditions are reached. For well over fifty years nothing essential changed except size, and when it comes to the one change which distinguishes to-day's library planning from Panizzi's or that of the Bibliothèque Nationale, as remodelled by Labrouste in 1854, etc., that is the change from the monumental to the unmonumental reading room, that belongs to Mr. Brawne's rather than to my contribution.

* The separation of reading-room and stack-space had been carried out once a century before, but on a small scale, in the library of the Foundling Hospital at Halle founded by A. H. Francke, the German philanthropist and educationist.

LIBRARIES

2. Communicating with Individuals

Michael Brawne

In terms of purpose, the library is, like the museum or art-gallery, shelter for a medium of communication. It is also, in terms of the organization of areas, greatly akin to the supermarket; like the self-service store its problems are movement, supervision, storage, enticement. Yet though both these aspects need scrupulous analysis and more than competent solution, neither is in the last resort the key to the architectural idea.

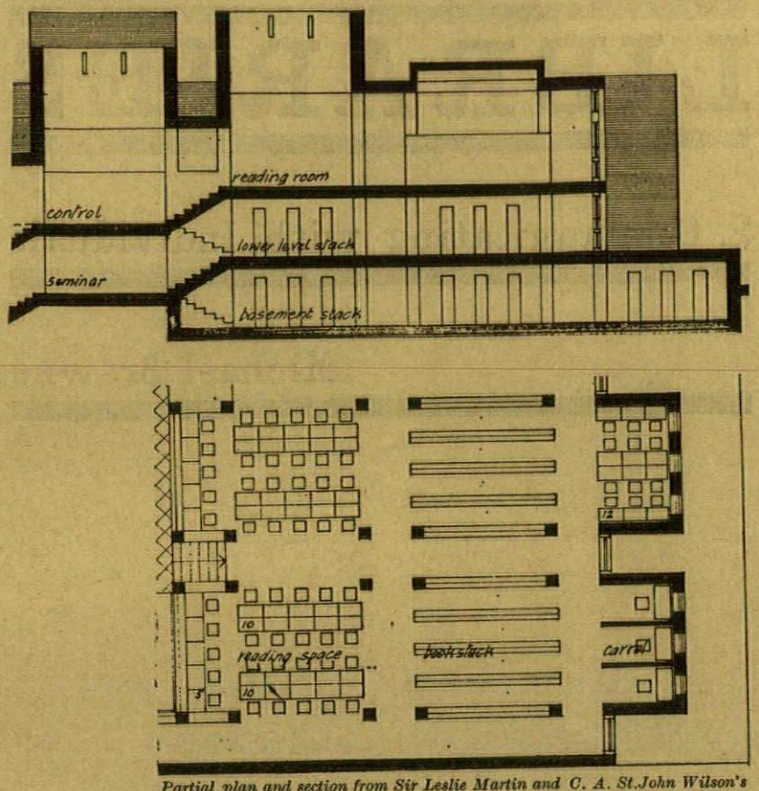
The library, whatever its size or speciality, acts as an information warehouse—information being in this context anything from a nursery-rhyme to a recording of a heartbeat. This is, of course, only part of its task. The other and more difficult part consists in making this information easily available and, in all but the smallest libraries, providing an environment in which it can be readily assimilated. It is thus as much work shop as warehouse. This communication takes place between book, recording, microfilm and an individual; it is a private, static act.

Communication in the theatre or the cinema or even on the television screen is, in some measure, a corporate activity. It is obviously so in the theatre; it is so to a lesser degree in the cinema, which however in terms of size presupposes group viewing and on the television screen which does so in terms of simultaneity. Communication in a museum is dependent on the movement of the observer and the resulting juxtaposition of objects in sequence. The library is the opposite of both these conditions: information is communicated by way of a small handleable object to a seated or standing individual at no predetermined time. It is this relationship which provides the clue to what, in Kahn's phrase, 'the building wants to be.'

This relationship does not differ in any of its essentials of course from taking a book off a shelf in one's own room and sitting down to read. It is only that by being done publicly, by being more deliberate, the action becomes in some way more meaningful, is in some measure heightened. The degree to which this should find architectural expression, however, has been sadly miscalculated in a large number of libraries. It stems probably from our medieval and renaissance legacy of considering the written document and the literate person as rarities. It is surely no coincidence that the most pretentious building on the Cambridge skyline is the tower of the New Library or that in the other Cambridge the most monumental flight of steps in Harvard Yard leads up to the Widener Library. When pretention is absent it is often replaced, thanks to Andrew Carnegie's munificent efforts, with worthy, hard Victorian patronage towards those seeking self-improvement. In both cases the idea of pleasure is totally absent, would even perhaps be considered vulgar.

The miscalculation is one of both extent and emphasis, for the aspect which in fact needs elaboration is the crucial relation of book and reader. This elaboration is, moreover, not a matter of whim but of functional necessity. The library differs from one's own room in being shared with others, there is thus a need for reducing disturbance, for in some way isolating each reader.

There are obviously a very large number of ways of achieving this result. Historically, it was achieved, as Dr. Pevsner's article shows, by suitably arranging the distribution of books and readers, a situation



Partial plan and section from Sir Leslie Martin and C. A. St.John Wilson's first Oxford library scheme. Small reading zones within the main space are defined by the clusters of four columns and the skylights above.

which persisted for 400 years until a clear-cut division between stack- and reading-room was established.

From then on, isolation was a matter of building volume. This was partly achieved by the psychologically imposed hush of the monumental, and partly by generous space standards, mostly in the vertical dimension. Neither monumentality nor volume is, however, any longer possible: the first is out-dated emotionally, the second economically. The individualization of the reader must therefore take other forms.

Two obvious possibilities are the break up of space and the design of aedicular furniture. The simplest space division is created by using bookshelves as screens. This presupposes that no clear cut division has been made between reading and book selection. A number of libraries are of this type, 10, 12. A further method is to find a spatial organization of structure and use which also becomes partial enclosure and, possibly, a repetitive unit. The first design for the Library Group for Oxford University by Leslie Martin and Colin Wilson provided such an arrangement and created a recognizable enclave by means of a change of level, a column cluster and a skylight. This design was regrettably abandoned because of the possible difficulties of supervision, in this instance surely more imagined than real.

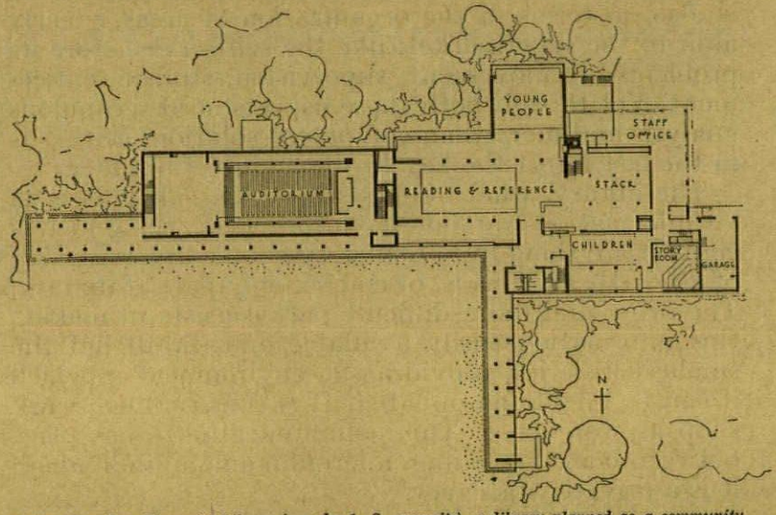
Enclaves of this sort can also be created with great advantage by breaking up the outer walls of the library. This increases the perimeter of the building and thus makes it possible to place a large number of readers next to windows. Once the shattering of the boundary is accepted, there is obviously a great variety of possible forms varying from slight folds punctuating seating to an almost complete pavilion-like detachment of spaces.

In reading areas where trolley movement is not important, a similar break-up can take place vertically. Two or three steps are often sufficient to define a sunk seating area, a raised study platform or to demarcate different groups of readers. A high order of complexity is thus possible, and probably desirable, both on plan and section.

The design of furniture is crucial to the success of any library. It can, more than anything else, emphasize or destroy that individual, static relationship between book and reader, yet surprisingly little work has so far been done on library furniture.

EKZ, a German organization for the bulk purchase of equipment and books for public libraries—a kind of library CLASP—has commissioned a number of designs for shelving, catalogue-tables and picture-book stands; Garber and Burquist developed some special tables for the Cincinnati Public Library and Franco Albini and David Rock have designed furniture for bookshops which would, however, be equally suitable for libraries. David Rock's revolving bookstand, like a Victorian picture postcard display, is for example both witty and space-saving and would bring worthwhile variety to a great deal of library shelving. The space it saves can well be used for the face-display of books which is, both in the library and bookshop, an extremely useful device for attracting attention.

What appears to be missing however is a design for library seating and workplaces which acknowledges the specific conditions of the library beyond robust-



Grace Allen Dow Memorial Library (see also 1, 2, opposite), a library planned as a community building with adequate provision for the differing library needs of that community.

ness and anthropometric correctness. The conditions of this year's Trinity College, Dublin, library competition, for example, pointed out that even in a university library at least 20 per cent of the students in the reading room need not sit at tables yet there does not appear to be a low chair with a book support, an armrest designed for taking notes, and possibly a space elsewhere on the chair for keeping one or two other books; a variation in fact of the lecture-room chair

[continued on page 251

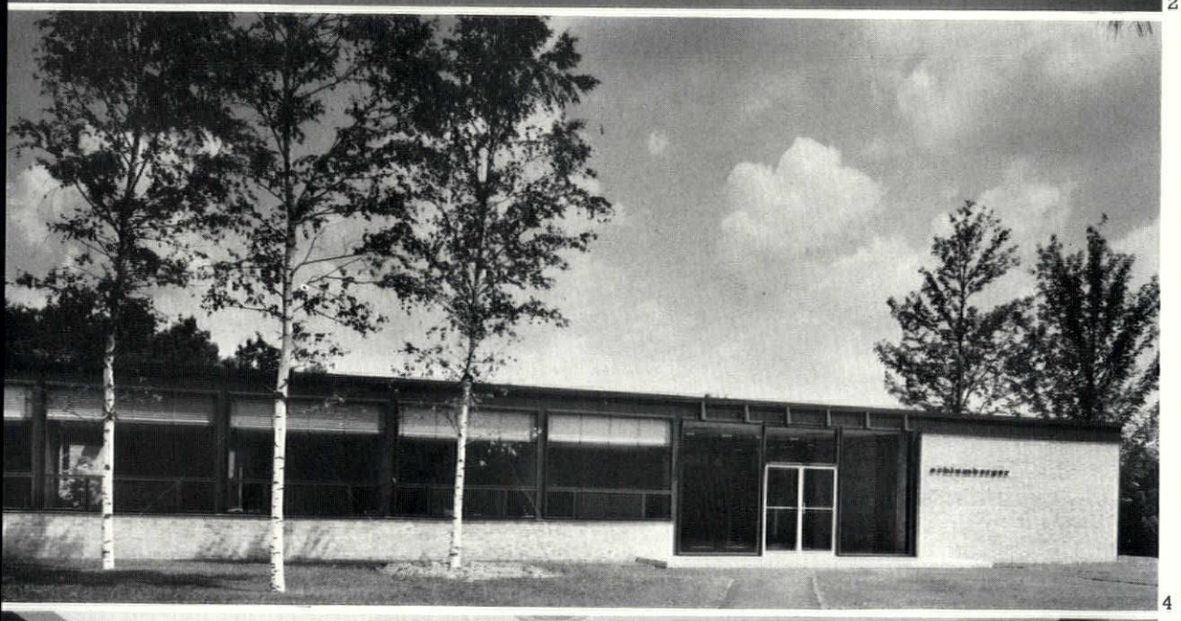




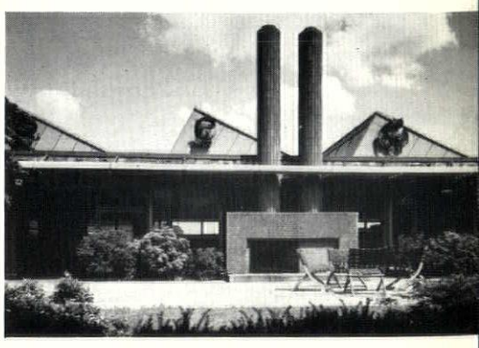
1

The Grace A. Dow Memorial Library in Midland, Michigan, designed by Alden B. Dow and opened in 1955 *is, like Fitchburg* (3), *conceived as a community building. It is flanked by a parking area for* 100 *cars,* 1, *and houses a reading and reference room, special rooms for young people and children, a stepped story telling room, an exhibition hall, conference rooms and an auditorium seating* 260. 2, *the general reading room has alcoves off it both at ground floor level and on the balcony which are defined by brick piers and at the ends by returning walls.*

2

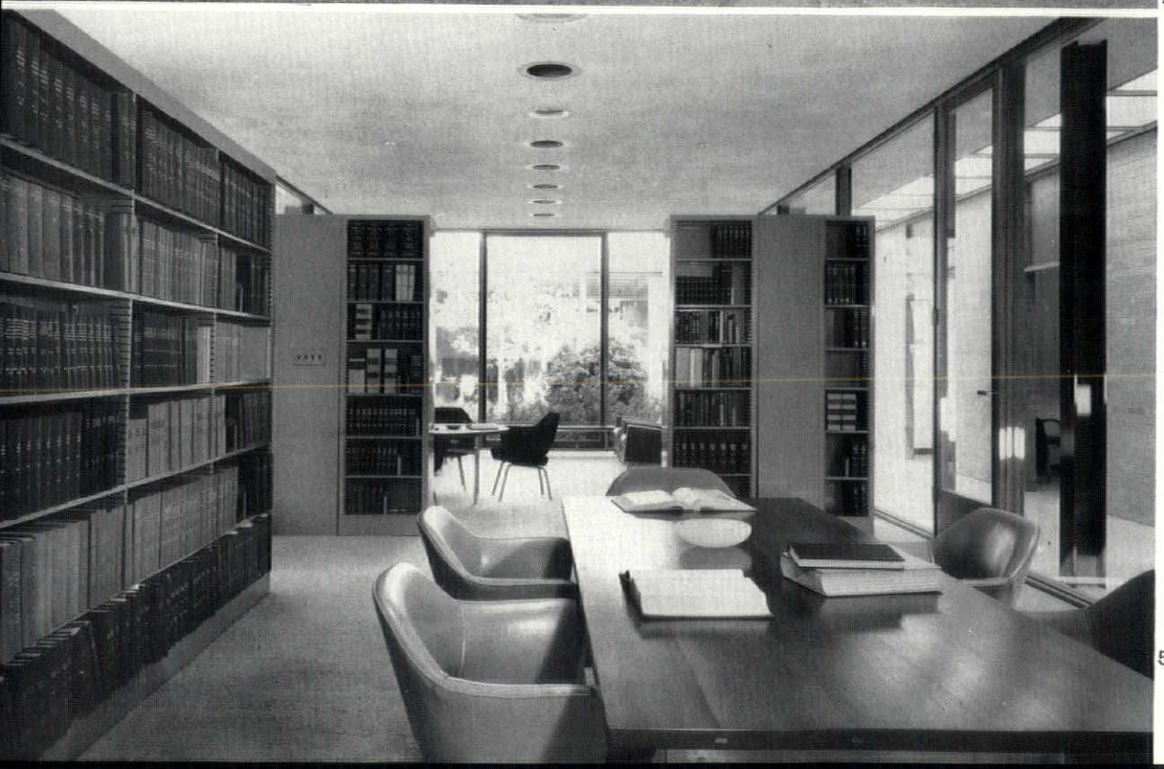


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3

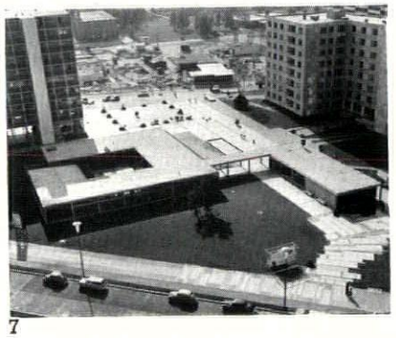
3, *the pivot of the Youth Library at Fitchburg* (*seen also on page* 340) *is a central court with a large fireplace. The porcelain enamelled decorations are by Gyorgy and Juliet Kepes. All the rooms of the building open on to this inner garden which becomes an additional reading room and meeting place.*



5

4, 5, *the administration building of the Schlumberger company at Ridgefield, Connecticut, by Philip Johnson, has the library as its central core. Conveniently situated as the information centre at the heart of the organization, it achieves the equivalent of spatial variety by a diversity of aspects—solid walls of books, views into the corridors* (*right, in* 5) *or into the garden court which is also just visible at the left-hand end of the block in* 4.

6



7

The new library in the Berlin Hansaviertel by Werner Düttmann demonstrates two important library planning principles: location and diversity of space. The small building on the right in 7 is an underground station and the planted courtyard with sculpture and seats, 6, again creates a visual outlet and a multi-purpose space.

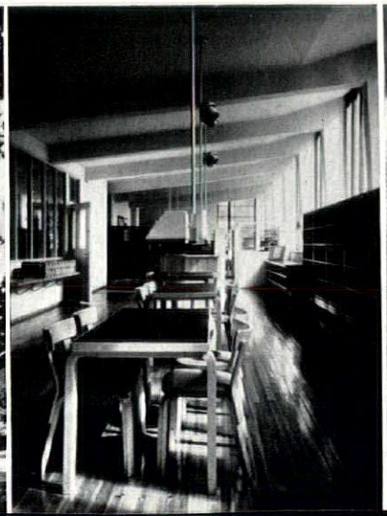
Alvar Aalto's town group at Saynatsalo includes a small library, 9, a long room lit by deep windows down one side, 8. The library gains greatly both socially and visually by being part of a larger complex.

10, the Holborn Library, designed by the Borough Architect's Department resolves the problem of the urban site by arranging rooms vertically according to function, with the reading areas well above street level, as this view shows.

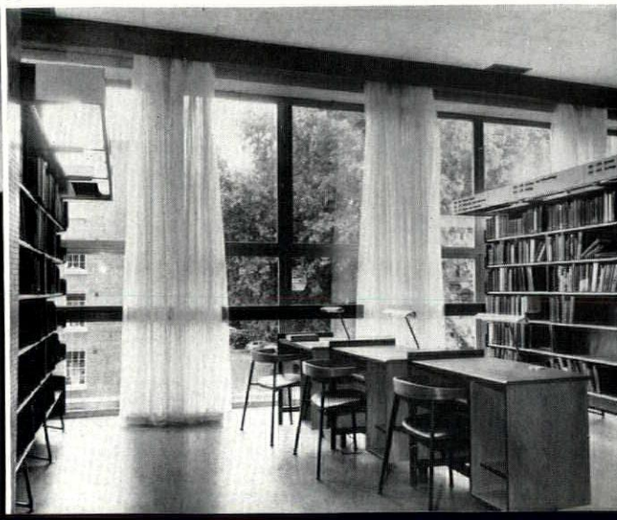
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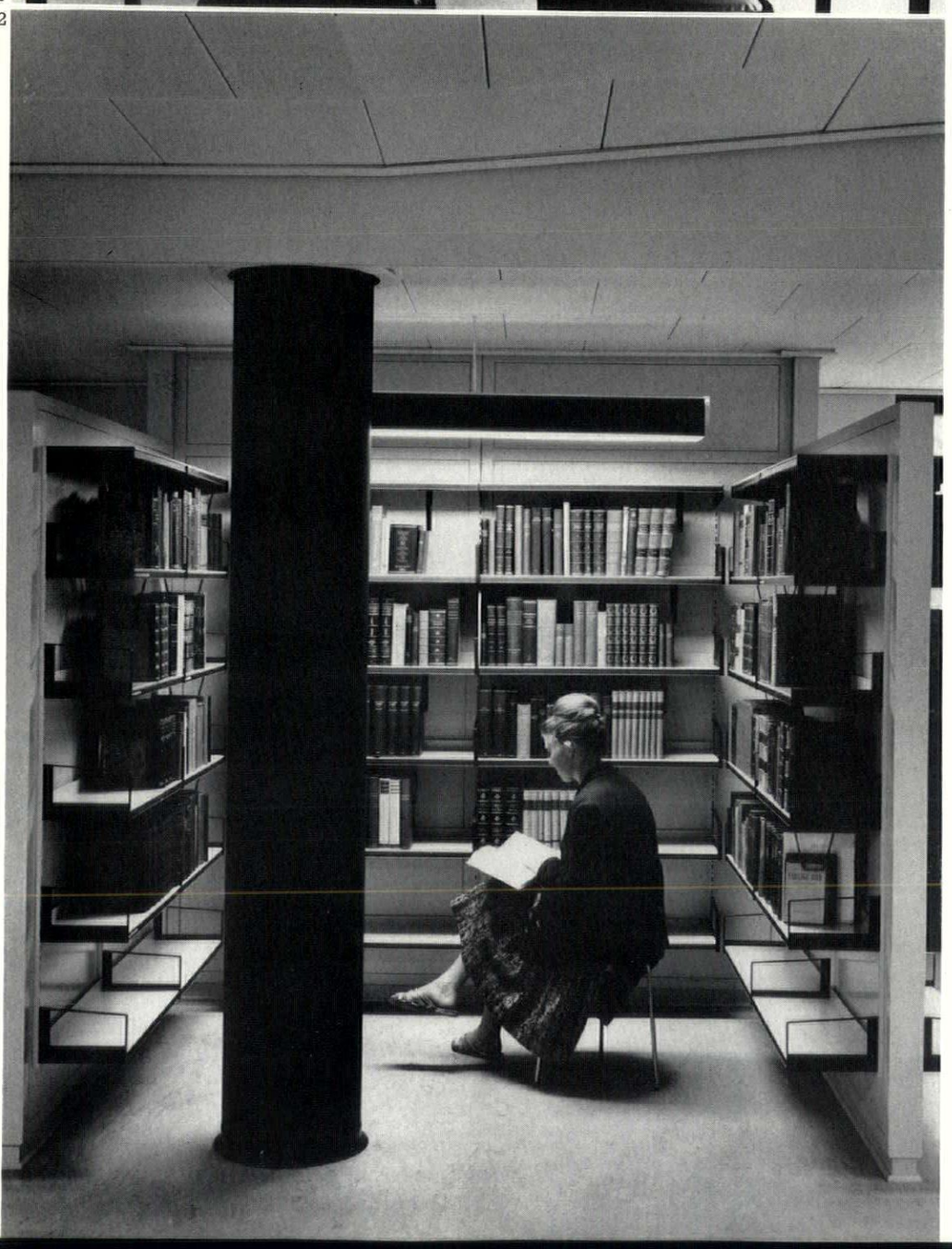


10





11



12

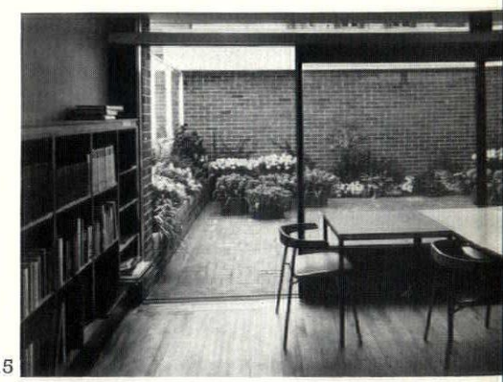


13



14

11-14, *the library in Flensburg for the Danish minority of South Schleswig designed by Tyge Holm and Flemming Grut has a narrow street frontage,* 13, *but great depth up a sloping site to a garden at the rear. It thus makes contact with the life of the street yet provides the necessary quiet.* 11, *the newspaper reading room;* 12, *a corner of the main reading room;* 14, *the librarian's office.*

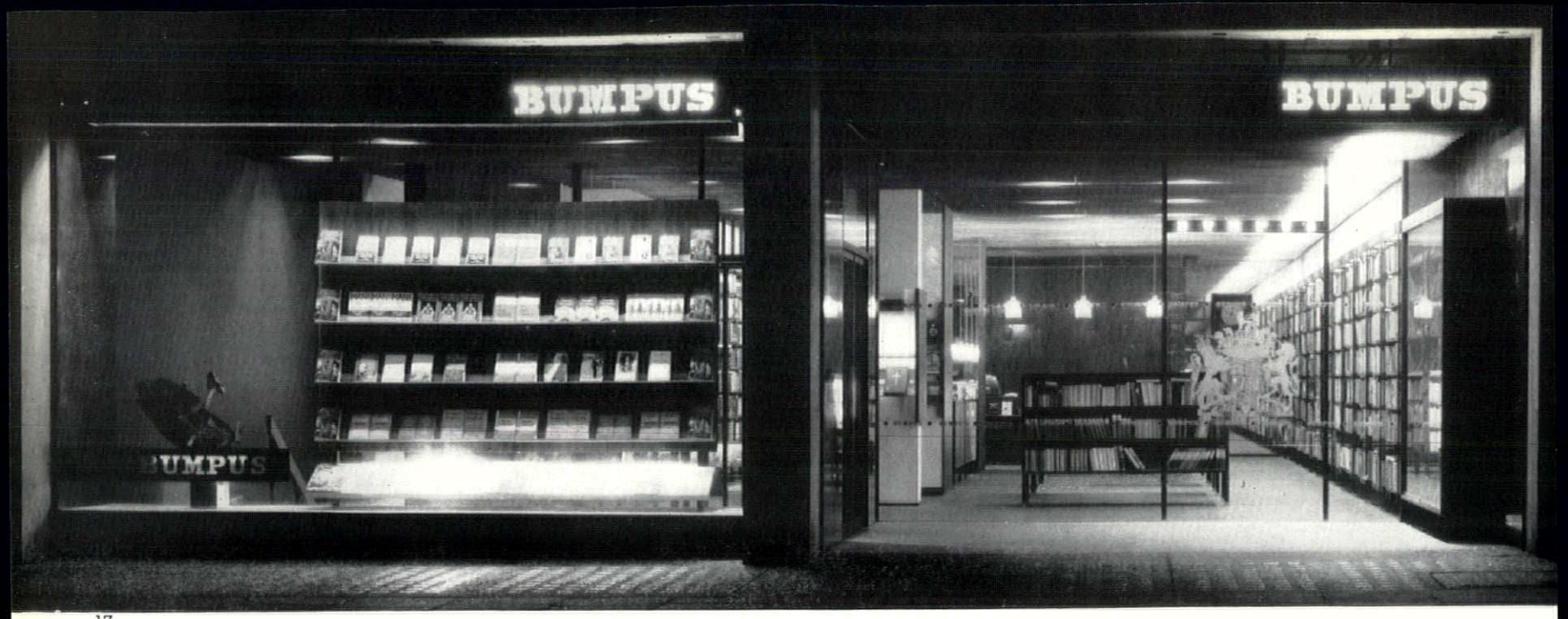


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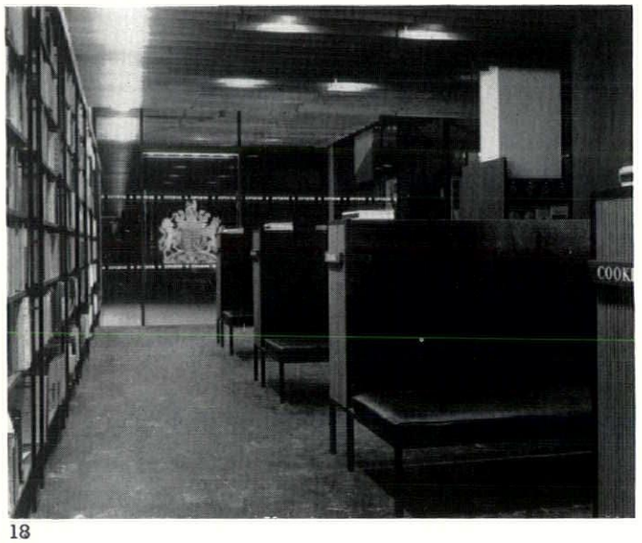
15, 16, *Powell and Moya's Children's Library at Pimlico, London, also opens its reading room on to an outdoor space.* (*see also AR, Sept.* 1960)



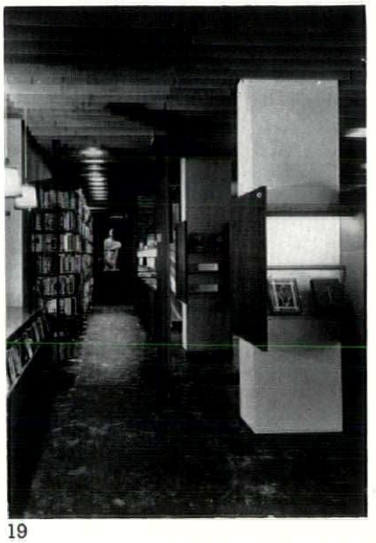
16



17



18



19

David Rock's design for a bookshop needs hardly an amendment to become a branch library; 17, *the enticement of the lit street front:* 18, *the close grouping of books and seating and* 19, *the variety of display forms are all equally appropriate to a public building yet few have been given this degree of consideration.*

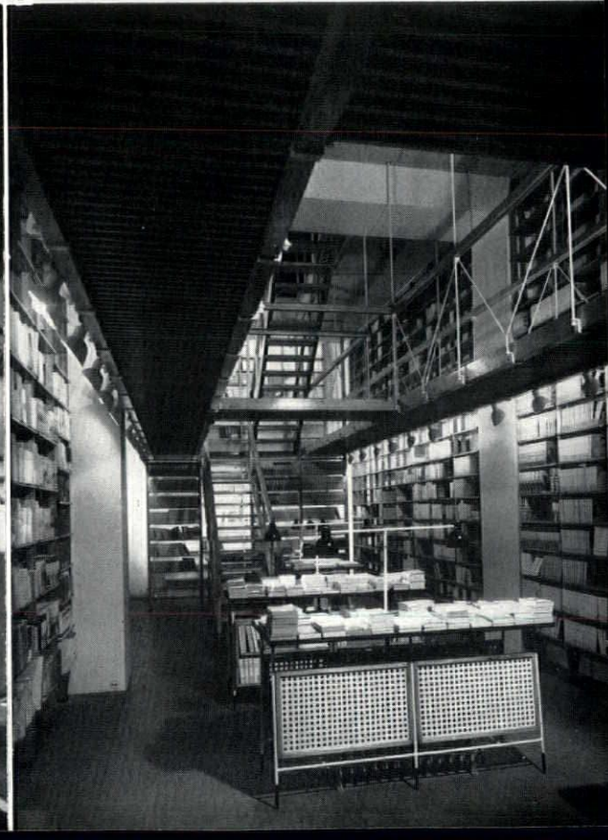
20, *the seating around a fireplace at the end of Jorgen Bo and Vilhelm Wohlert's Louisiana Museum outside Copenhagen, subtly divided by the insertion of small tables, is a model for any library building.*

21, *Franco Albini's bookshop in the Galleria in Milan exploits enforced density to create a rich visual pattern that few libraries are able to match.*

20



21

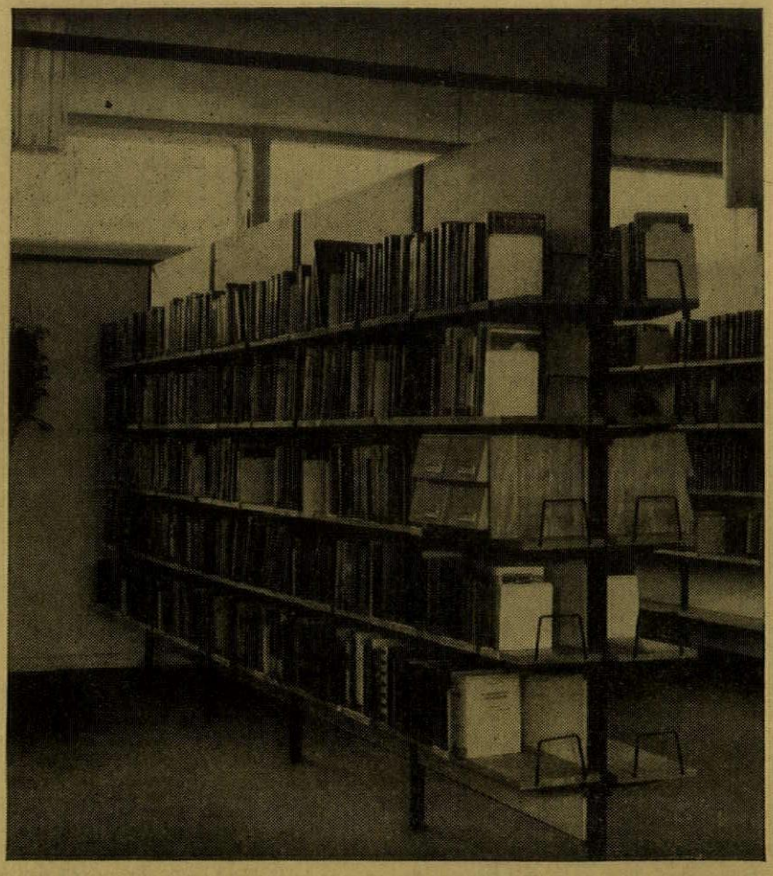


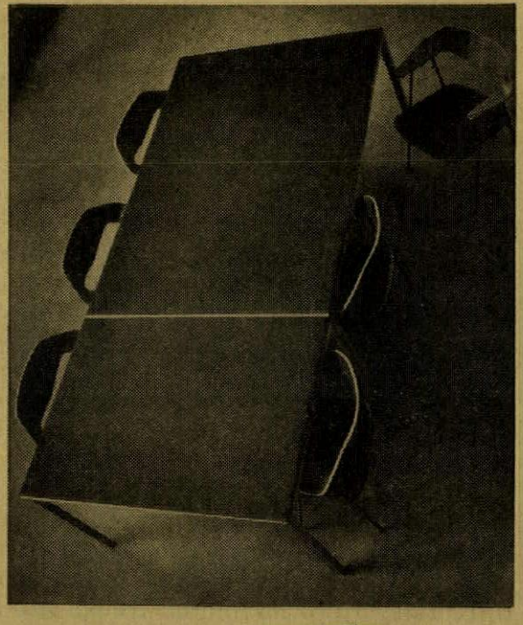
continued from page 246

which has a single enlarged armrest. The lesson of the Victorian club with its deep upholstered chair and movable adjustable bookrest, as in Charles Barry's Reform Club, for example, has not yet been applied. Nor does one often find a table which includes a shelf for books in use and which with this simple device provides some screening and at the same time relieves the often overcrowded table-top.

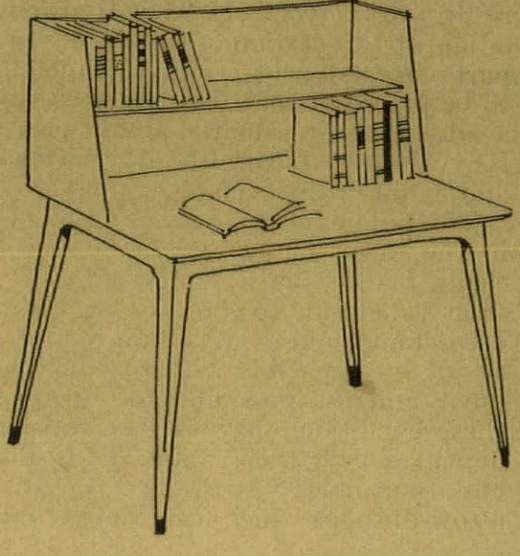
What is equally often lacking is the successful anchoring of all these loose objects in a relatively large space, of providing some order without regimentation. The first need is for a correct scale relationship between space and furniture. As the scale of everyday furniture is only variable within certain small limits, this may again argue for the visual break-up of most library spaces.

The carrel is of course the extreme form of the personal niche. This table and seat lost among the stacks or closed cubicle off some larger space stems, like so much library organization, from monastic precedent. The carrel is not, however, feasible as a general solution. In some cases it may be undesirable because it is difficult to supervise, in others it is too remote from catalogues, other books of reference or the help of the librarian. Its extreme isolation may occasionally also be unwanted; there is after all for some people a useful psychological pressure towards work which comes from being near others doing the same thing. Library spaces ought thus to be sufficiently different in each library to cope with varying desires for separation.

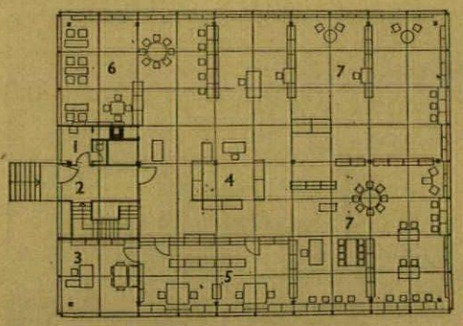




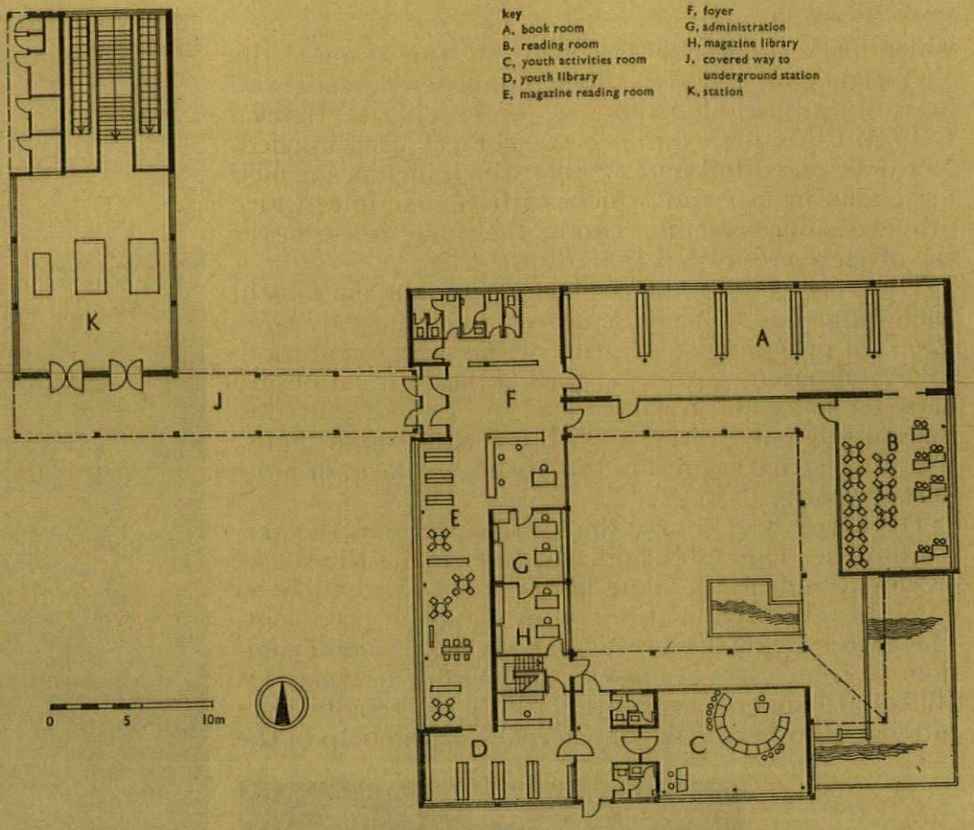




Library furniture: above left, unit tables from Sheffield University Library; top, EKZ standard shelving in the Hansaviertel Library, Berlin; above, purpose-designed reading desk, Cincinnati Public Library, by Garber and Burquist; left, a small study table with fixed shelf, New York Public Library, Donnell Building Branch.



key
1, w.c.
2, staircase
3, librarian
4, reception
5, office
6, periodicals
7, lending and reference



Contrast of simplicity and complexity: above, the Horsholm Public Library, a small branch serving all age-groups within a single room; 9, Hansaviertel Library (see 6, 7) larger and more complex with its pools, inward and outward views, and covered approach from the station, K.

Private study is not the only library activity which benefits from a feeling of seeming isolation. It appears as appropriate to book choosing as to book reading. Both suggest therefore some break-up of space into areas which convey a feeling of individuality, of being undisturbed. Nor are these two activities in many cases as separate as library planning would often indicate from the clear-cut division between shelving and seating. It is interesting that it is a bookshop, David Rock's new Bumpus's in London, which has produced one of the most intimate combinations of shelving and seats, 18. It brilliantly suggests that book choosing is after all a civilized pursuit. A similarly successful combination of space, seating and shelving is the sunk reading enclosure at the end of the Louisiana Museum, Copenhagen, 20. This is probably one of the most sensitive reading places in any public building and occurs, paradoxically, not in a library but a picture gallery.

This kind of free grouping has so far been taken furthest in what the Scandinavians describe as family libraries; small public libraries catering for children, teen-agers and adults. The public library at Horsholm, just north of Copenhagen, provides this kind of arrangement within one room 70 ft. by 55 ft. Only two offices are behind solid partitions; the remainder of the space is subdivided by shelving and various kinds of seating, yet can still be supervised from a single reception-desk near the entrance. The room is probably at the upper size limit in which such a relatively open grouping can be tried successfully. Beyond this a more complex fragmentation may be needed.

The Hansaviertel Library in Berlin, built as part of the Interbau Exhibition, achieves this sort of desirable complexity and relates it to both public and private open spaces. It pivots about a courtyard which becomes a visual centre for the library and is in fine weather a sitting area. Parts of this space are shaded by overhangs, and furniture can be moved out on to the paved terraces. Carl Koch's Youth Library at Fitchburg, Mass., works equally successfully on the same principle. In each case the outdoor space is large enough, so that it is not only possible to withdraw into it for isolation, but also to join others for discussion. Both aspects are important, yet neither is much catered for in the standard library. Serried rows of tables do not give the variety which is functionally necessary; no library is a reading factory. The administrative convenience of supervision must never become the prime design motive.

The Hansaviertel Library also shows the very great importance of siting not only in terms of the view as one looks up from the page, but also in terms of the urban plan. The library, like the supermarket, depends a good deal on accessibility, and both public and university libraries ought to be sited on the normal routes of movement. The Hansaviertel Library is adjacent to a station of the Berlin underground and is part of a small urban centre. University libraries ought to be placed so that they are accessible from both the academic and residential areas (where these exist), for they are used during the day, often between classes, and again in the evening.

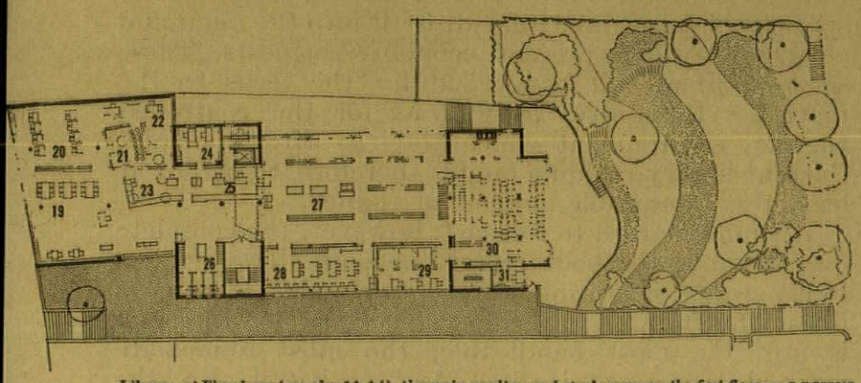
The public library deserves a location which puts it in the midst of pedestrian flow, which makes it as easily reached as a Woolworth. Its placing must be such as not only to cater for the confirmed user but to attract and hold the reluctant reader. Such a situation is not incompatible with the acknowledged need for quiet and the possibility of future expansion. Both these conditions may well be satisfied by working in depth and on the section. Thus Powell and Moya's children's library at Pimlico, 15, 16, uses two bays in a row of shops which form the ground floor of a seven-

storey building. The small library, however, opens on to an enclosed garden to the south which corresponds to the service area of the shops on either side. A chair-store, staff room and lavatories and the entrance face the street. The same principle can be carried out vertically, either simply as floors within a building such as in the newly completed libraries in Holborn, London, 10, and Flensburg, North Germany, 11–14, or, with advantage, as a series of levels related to outdoor spaces of the kind seen in the recent proposal for the development of the South Bank adjacent to the Royal Festival Hall. Nor would it, for example, be difficult to transpose the brilliant library group for Oxford University so that the flight of steps leading up to the library entrances rose from a shopping precinct.

Such close integration with other activities is essential for most libraries, public as well as university. Specialized libraries achieve it naturally by being part of learned institutions, museums and the like. It becomes doubly important to very small facilities such as branch or village libraries since their gravitational pull is in any case rather weak. The community library at Säynätsalo, for example, gains enormously by being part of Aalto's complex of town-hall and shops, 8, 9.

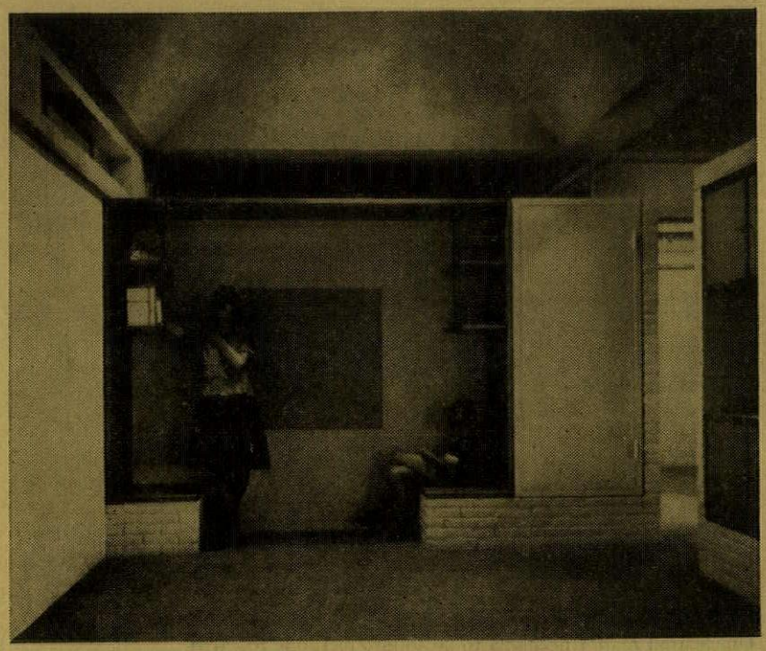
The shopping centre is in many ways the natural location for the adult branch library. To neglect it because of high land values is both an economic and a social mistake. The cost of a library service is largely determined by annual running charges—staff, book purchases, lighting, heating, cleaning—and very little by capital expenditure. American figures give annual operating costs at from a quarter to half the cost of the building. These yearly outgoings do not vary a great deal with the amount of library use. It is clear, therefore, that the greater the use, the less the cost per book borrowed. An unfrequented library is in fact a poor investment.

Branch libraries are also rather more than book-lending institutions. They become the gathering place of the old, of those living in cramped or unheated rooms. This additional function ought to be accepted as desirable and catered for in spaces which can at other times become a lecture room, a meeting hall, a cinema. Local libraries are, in northern climates, the only covered social gathering places with a permanent functional justification. They ought thus, as Werner Mevissen has suggested, each have an enclosed 'market place.'



Library at Flensburg (see also 11-14), the main reading and stack areas on the first floor — a narrow sloping site makes functional stratification by floors both necessary and possible.

The children's library ought also to allow for this element of foregathering and escape from an overcrowded home. There ought to be spaces for story-telling, for school-children doing homework away from television and near books of reference, for children losing themselves in a private world of make-believe. There is a splendid architectural hint of what this could be in the reading-nooks and story-telling spaces of Aldo van Eyck's children's home in Amsterdam.



Reading corner, children's home, Amsterdam, by Aldo van Eyck: though not strictly a library, this building's humane approach to children's reading and story-telling needs can teach many library architects a lesson.

Sentimentality and Disneyism are the principal bugbears of the library's left-over room labelled children's corner. What is needed is generous space and a preservation of the wonder of another reality in the tough-minded manner that children understand and appreciate.

None of these group activities in any way invalidates the characteristic function of the library of communicating to individuals. This has been its task whether it was an Alexandrian collection of scrolls or a Victorian philanthropic institution. What has, however, changed significantly is the amount of information available and the number of people interested in it. In 1950 American public libraries, for instance, issued 384,606,000 volumes despite the fact that in the same year something like 200,000,000 copies of 25-cent pocket books alone were sold. Last year the public libraries in this country lent the even more staggering total of 440,095,000 books. The annual rate of publication throughout the world is now close to 323,000 titles. Yet even the greatest libraries store only a fraction of this output. Harvard, by a considerable margin the most sizeable university library, has 6,800,000 books and pamphlets. University College, for purposes of comparison, has 675,000; the Science Museum has 455,000 and the Victoria and Albert has 300,000. The national libraries, of course, equal or surpass these, and have over many years amassed enormous collections: the British Museum has over 6,000,000 volumes, the Library of Congress in Wash-

Statistics

BOOKS

In public libraries the suggested allowance is 1½ to 3 books per head of population. Minimum useful size of a library is 3,000 adult's books and 500 to 1,000 children's books.

With aisles at 4 ft. 6 in. centres and 7 shelves within a 7 ft. 6 in. height the average storage capacity is as follows:

Books per square foot of book stack space	15
Books per cubic foot of book stack space	2
Books per foot run of wall space	50
Books per foot run of double faced shelving	100

If aisles are at 3 ft. 4 in. centres and books are shelved by size, the number per square foot can be increased to 30. Books in great demand on open access shelves should have aisle centres of 5 ft. or more.

Shelving Capacity

Type of book	*Books per foot of shelving*	*Books per linear foot of single faced shelving*	*Recommended width of shelves in inches*
Fiction	8	56	8
General non-fiction	7	49	8
Technical and scientific	6	42	10
Medical	5	35	10
Law	4	28	8
Bound periodicals	5	35	10–12
General average	7	50	

At the opening of the library only half the shelf area should be in use.

READERS

One seated reader needs 25 to 30 square feet, one research worker 35 to 75 square feet.

In public libraries the allowance should be as follows:

Population under 10,000	—	4 to 10 seats per thousand
between 10,000 and 24,000	—	4 to 5 seats per thousand
25,000 and 49,000	—	3 to 4 seats per thousand
50,000 and 74,000	—	2 to 3 seats per thousand
75,000 and 99,000	—	1½ to 2 seats per thousand

In university libraries the allowance should be three seats to eight undergraduates.

STAFF

Offices and work spaces should be planned on an allowance of 100 sq. ft. per person.

In public libraries the allowance should be ¼ to ½ an employee per thousand population depending on the number of hours the library is open during the week.

CATALOGUE CASES

At least 2 ft. from floor and not more than 5 ft. high; 10 trays fit in this 3 ft. height.

A 5 tray wide case is approx. 2 ft. 9 in. wide, 1 ft. 7 in. deep.

An average tray holds 1,000 cards; allow four cards per volume to permit cross-reference.

HEIGHTS OF LIBRARY EQUIPMENT

	ft.	in.
Book shelving (adults)	7	6
Book shelving (children)	5	0
Reading tables (adults)	2	5
Reading tables (children)	1	10
Lending desks (adults)	3	3
Lending desks (children)	2	9

Figures taken from: Hoyt R. Galvin and Martin van Buren, *The Small Public Library Building;* UNESCO Public Library Manual No. 10, UNESCO, Paris, 1959.

Hoyt R. Galvin and Kathryn A. Devereaux (Editors), *Planning a Library Building;* American Library Association, Chicago, 1955.

Werner Mevissen, *Büchereibau/Public Library Building* (bilingual text), Essen, 1958.

ington 15,000,000, Moscow 20,000,000.

The warehousing of this information becomes an increasingly acute problem, especially as it is not unusual for a book collection to double in size in 25 years. This has frightening implications on the amount of flexibility needed in planning and the amount of space to be allocated at the outset for expansion.

All book shelving should be calculated on the assumption that at the opening of the library only half its capacity will be filled. This allows for the first gradual increase of books during a number of years until two-thirds to three-quarters capacity is reached —shelves should not be fuller than this if books are to avoid being damaged and are to be easily handled. Thereafter the amount of shelving will have to be increased.

There are possible stack arrangements which increase book capacity beyond that shown in the table of library statistics. They are, however, only suitable for closed access storage since they demand some movement of the racks as well as familiarity with the system of operation. These arrangements, some of them patented and marketed by specialist companies, depend in general on double banking the racks and swivelling or sliding the forward rack to reveal the one behind. The live loading on the floor will naturally be increased proportionately and this must of course be allowed for at the outset.

Sliding or swivelling shelving increases the book capacity of any given area by making storage more compact. The alternative and more drastic answer is to compress the information itself. Microphotography does this and can reduce storage needs by as much as 90 per cent. This has at least one significant architectural implication. The ratio of stack to reading space is likely to change drastically. A great many stacks are at the moment naturally designed with the most economical floor to ceiling height of 7 ft. 6 in. or even less and the thinnest possible floor-slabs. These may, however, in future have to become areas in which microfilm-reading machines are placed. There may equally be a need in association with these for various mechanical data processing machines since it is becoming increasingly difficult to select useful information quickly. It is eminently feasible to reduce a library catalogue to an inventory of punched cards from which a very large number of bibliographies can be extracted speedily. There may thus in future be considerable mechanization of several library functions. Each of these is likely to want horizontal service spaces which it will be difficult to fit into the minimum clearances which present economy suggests. These service spaces will be needed for the feeds to the machines themselves as well as for the controlled thermal environment which they so often demand. Current library building ought, therefore, to permit at least this foreseeable amount of change.

It would be rash to forecast, however, the complete extinction of the book merely because there are less bulky ways of storing information. This is in any library far from being the first consideration. The book is still the most handleable, the most immediate method of communication. And probably also, the most cherished.

22

Libraries are used a great deal at night and their appearance by artificial light is therefore important. The Public Library in New Orleans, 22, *by Curtis and Davis discloses the whole of its interior through an aluminium sun-screen.* 23, *the penalty of such transparency, however, is that concentration becomes difficult and the apparent isolation of the reader impossible.*

24, *In his design for the Northeast Branch Public Library in Seattle Paul Thiry also recognized the importance of the night view within the scale of a suburban building.*



24

23





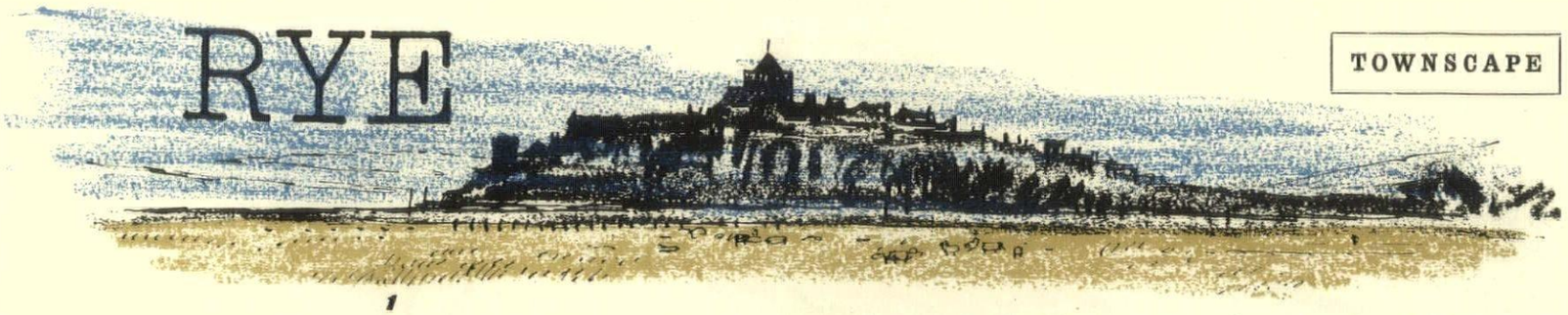
25

25, 26, *the recent University Library at Sheffield by Gollins, Melvin, Ward and Partners marshalls its architecture and readers with considerable precision. Unless the librarian's ease of supervision is assumed to be the principal functional requirement, such planning—despite its frequent application—rests on highly challengeable assumptions.*

26



RYE



1

Kenneth Browne

Rye has the special problem that, being a hill-town, it overlooks the countryside around it and anything that happens there is obvious and obtrusive. To run a major road across that landscape would be fatal. The solution proposed in the following article employs the art of putting the thing you do not want to see so close that you cannot see it. It is the old story of the fat man who cannot see his shoes.

Like other ancient towns whose original raison d'etre has gone, and which remain principally as tourist attractions, Rye is in imminent danger of being wrecked not only by misplaced and ill-designed building, but by the very traffic it attracts. To counteract these dangers it is essential that the basic qualities of the place be understood and quite consciously emphasized and safeguarded. Things cannot be left to chance and the facelifting of one or two streets. This is particularly so in the case of Rye for it has a basic conception that will not allow of compromise.

Seen from Romney Marsh, which bounds it on three sides, the silhouette of Rye *1* is something you remember; a tight packed mound of ancient buildings, in outline more Italian than English, topped by the short pointed spire of the parish church—in maximum contrast to the dead flat marshland, once sea, that surrounds it. And from inside the town, looking out, the contrast is, or could be, equally satisfying. This contrast of town and landscape is something more basic than all the cobbles, tilehanging and half timber. But already the picture is part compromised, to the east by an ill-placed council estate *2* and to the south, towards Rye Harbour, by gravel digging and concrete works. The latter, however, are sufficiently distant that they could be masked by a belt of trees and this should be done. Provided further encroachment is stopped, there is still sufficient marsh to make the contrast; but only just.

However there is another threat, for the A259 Folkestone-Hastings coast road, which at present fights its way through the town, is to be diverted. The choice of the right route is of utmost importance to Rye, and the alternatives *4* are either north of the town

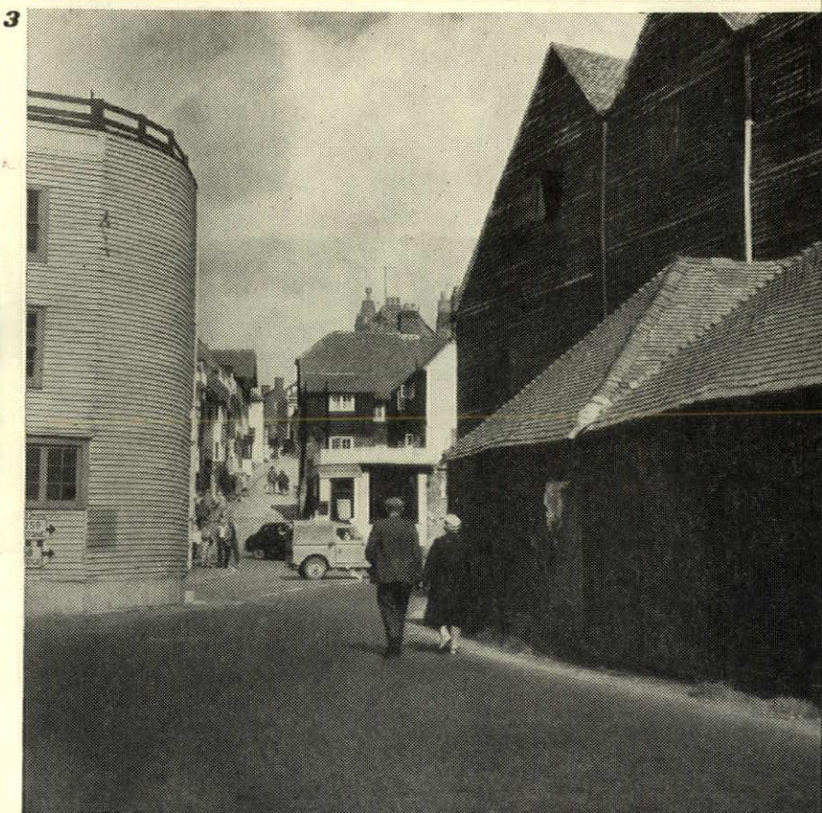


SKETCH MAP showing alternative routes of A259

4

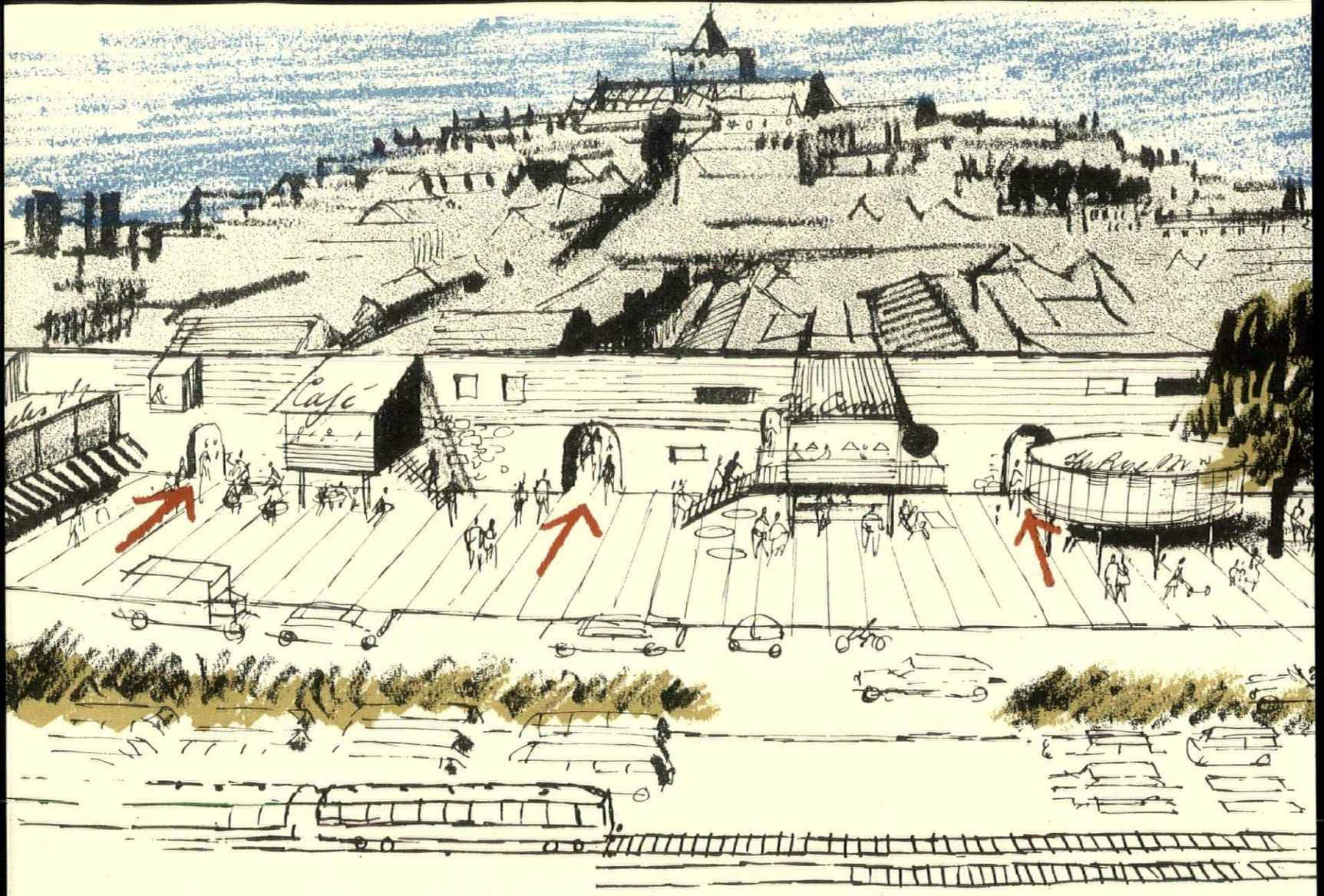


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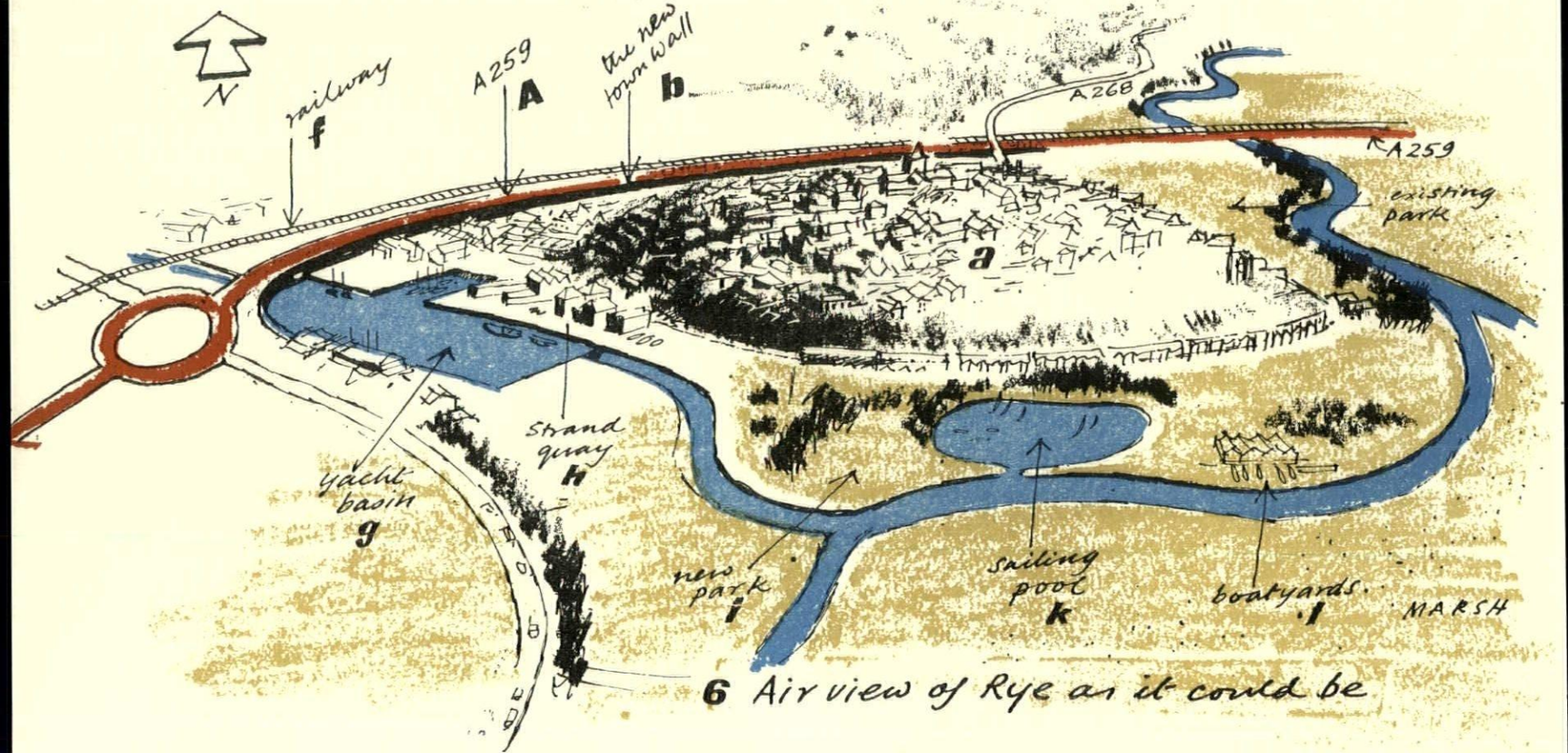


3

*This conspicuous council estate **2** east of the River Rother completely ruins one sector of the marsh when seen from Rye. Black weatherboarded cornsheds **3**, fine examples of functional tradition on Strand Quay are threatened by road improvement!*

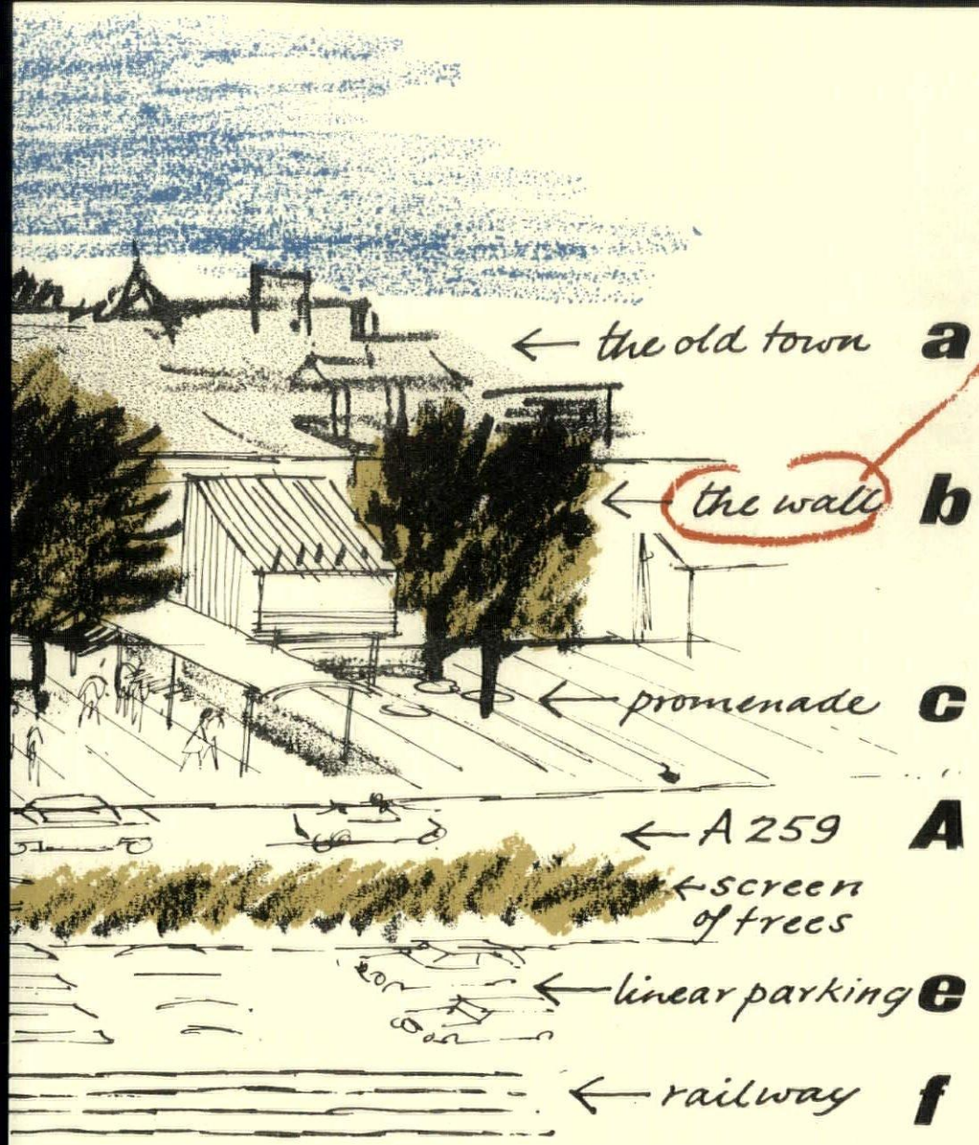


5 *View looking south from the railway showing suggested new town wall*



6 *Air view of Rye as it could be*

A Solution



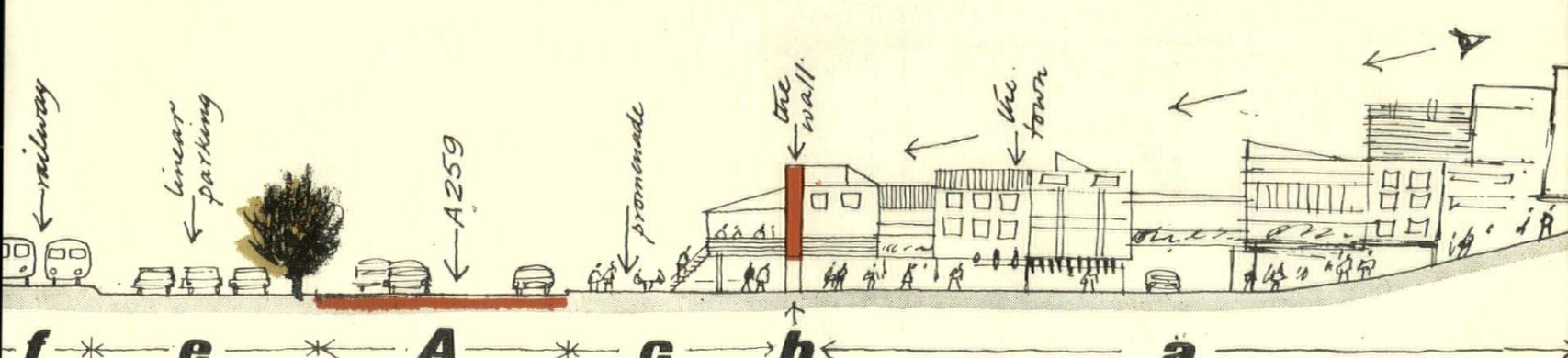
A, parallel to the railway, or south of it ***B***, across the marsh. A further compromise route which has been suggested, an adaptation of the existing route, along South Undercliff ***C***, should not be considered for it would involve either the destruction of the fine black tarred cornsheds on Strand Quay ***3***, some of the best buildings in Rye, or if the road ran in front of them along the quayside it would divorce them from their context, the water.

Of the workable routes ***A*** and ***B***, the latter would undoubtedly ruin the contrast of town and marsh once and for all. It would run right across the foreground, looking out from the town, with no possibility of concealment. This leaves us with route ***A*** which is surely the right solution for then the road would be virtually out of sight at the rear of the town.

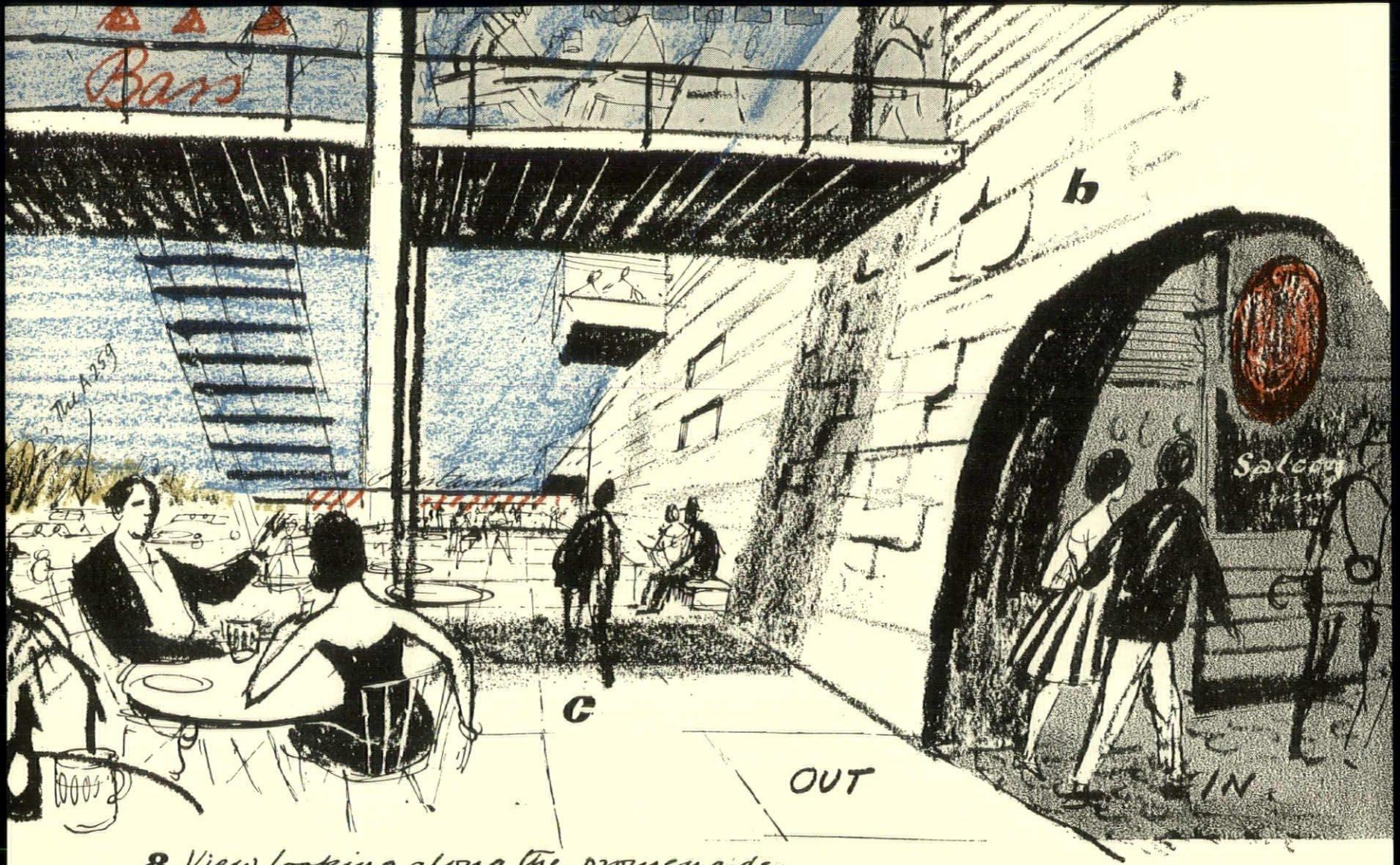
If, furthermore, this new road were placed on the town side of the railway it could be used to serve Rye in more ways than mere traffic flow. Sketch ***5*** outlines a scheme based on the fact that Rye was once a walled town. The original wall defended it against invasion and following this precedent, if the wall were rebuilt ***b*** but this time farther out, immediately on the town side of the new road, it would visually and physically defend the old world of Rye from the new world of the ring road and its fast moving traffic. It would also achieve a new clarity, now quite absent, on the landward side of the town, besides masking the road. At present the area involved, between Cinque Ports Street and the railway, is a shambles and needs redevelopment. This could go hand in hand with the building of the new wall which would not be a separate structure but integrated with the buildings behind it ***5, 8.*** However, from the road it would read as a barrier clearly defining Outside and Inside; thus setting up an exciting contrast between the Outside expressed by the straight road and railway with their fast moving modern vehicles and the Inside with its pedestrian scale and its picturesque, medieval, tortuous streets—the power of the magnet would be increased.

Traffic entry to Rye would be strictly limited to avoid the present congestion and the irritation of seeing everything over car roofs, but there would be ample linear parking for cars and coaches ***e*** between the road and the railway (masked by a screen of trees). A roundabout would be necessary opposite the station to facilitate movement between it and the town. Between the road and the wall there would be a wide pavement promenade ***c*** with cafes, pubs, etc., from which the old town ***a*** would be entered on foot through postern gates in the wall ***8***.

In addition steps should be taken to



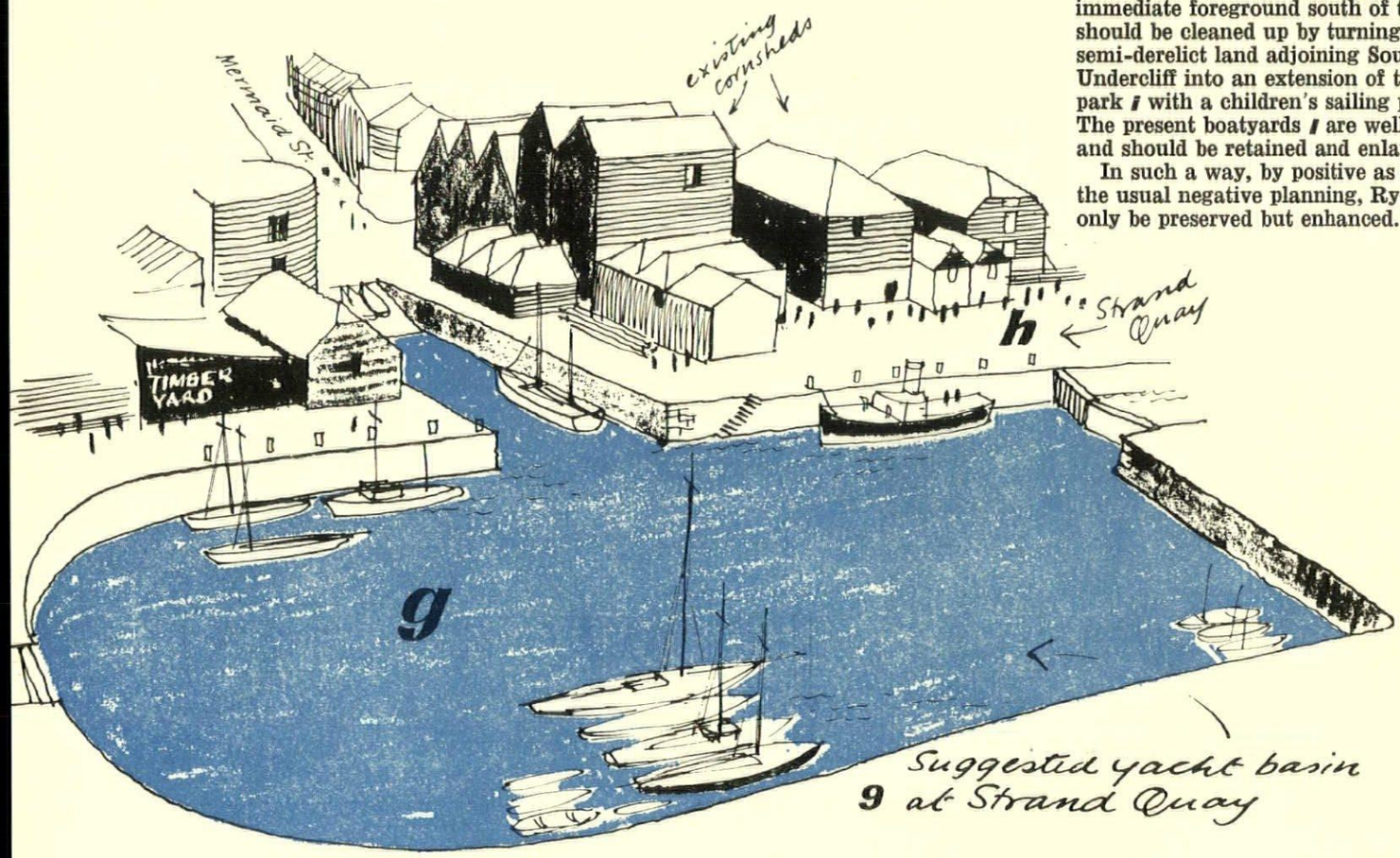
diagrammatic SECTION 7



8 View looking along the promenade — outside the town wall

revitalize the run-down Strand Quay by the provision of a yacht basin ***g*** (***6***, ***9***) and the immediate foreground south of the town should be cleaned up by turning the semi-derelict land adjoining South Undercliff into an extension of the existing park ***i*** with a children's sailing pool ***k***. The present boatyards ***l*** are well placed and should be retained and enlarged.

In such a way, by positive as opposed to the usual negative planning, Rye could not only be preserved but enhanced.



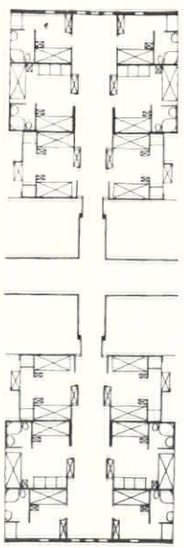
Suggested yacht basin
9 at Strand Quay

ID
a monthly review of interior design

ss Canberra

owner: P & O/Orient.
Naval architect: John West
Co-ordinators of interior design: Sir Hugh Casson, Neville Conder and Partners in Association with McInnes, Gardner and Partners.
associate: Timothy Rendle.
architect for tourist public areas: John Wright.
chief assistant: Frederick Hickman.
cabins, service areas, officers' and crew quarters: Barbara Oakley.

Last month's ID dealt with the main first-class areas of the *Canberra* but not the first-class cabins. These now appear on the next two pages, and are followed by John Wright's designs for Tourist class.



sketch plan of court cabin layouts

The first class cabins of the *Canberra* (designer: Barbara Oakley) are planned in a manner that is a major innovation in ship design. The grouping in sixes around public courts was worked out by the naval architect and the interior co-ordinators, and taken to full-size mock-up as described in last month's AR. The staggered plan gives each cabin a slit window facing the sea and a little borrowed light, while the view, right, cross-ship, reduces corridor claustrophobia.





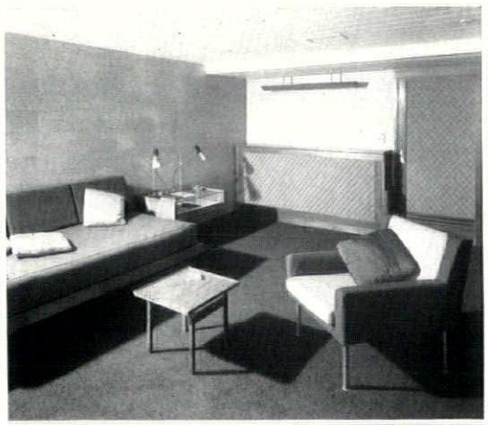
The de luxe suites (designer: Barbara Oakley) with a floor area of approximately 400 square feet each and four large windows, designed as dayrooms (but convertible into bedrooms), with entrance lobby, bathroom, toilet and luggage space. Ceilings in the cabin areas are of white painted strip boarding. The walls are surfaced in grass cloth, wheat cloth and wallpaper, and the suites are fitted with specially woven mottled carpets. There are four colour schemes to the eight cabins and the furniture is in teak, Swedish pine, elm and Rhodesian rosewood.

2, detail of bedside unit housing controls to ventilation, lighting and radio. Lights act as bedside lights for twin beds. 3, principal fitment unites dressing table, clock, radio, 17in. television set, storage for glasses and refrigerator. 4, daytime arrangement with one bed used as settee and other folded. 5, night-time arrangement with twin beds and fitted table between.

2

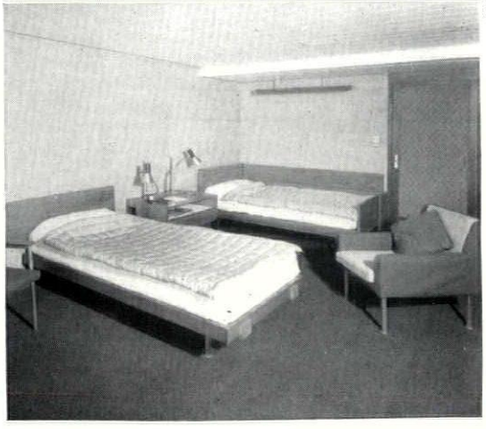


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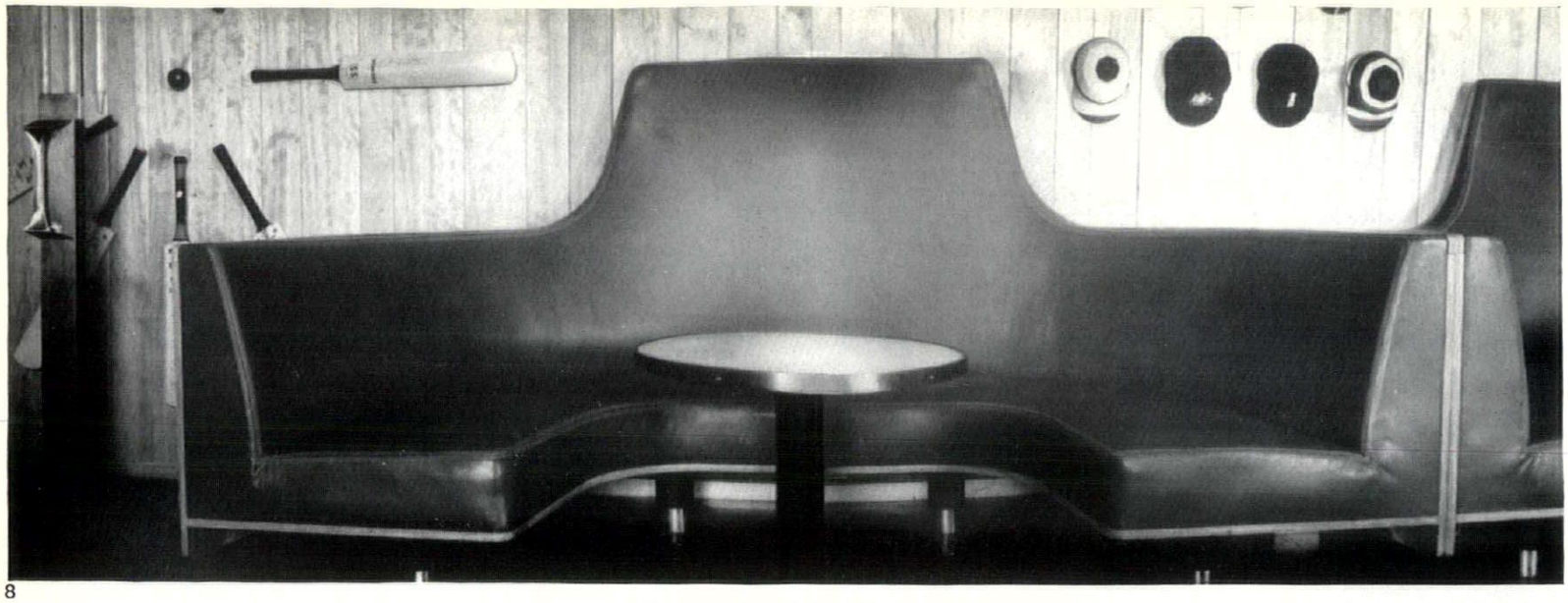


6

The Tourist Class Restaurant (designer: John Wright), seating 704, is the largest afloat. 6, detail of dumb waiter and fixed bent ply seating upholstered in dark blue and green leather. The timber throughout is M'ninga. Behind the table is one of the slotted fins which project from the side walls providing partial screening. 7, general view. The large area has been further broken up with cast aluminium bas-relief sculptures. The walls are of iridescent greeny-gold glass fibre sheets. Floor in dark blue lino, and the ceiling white slotted acoustic panels. Lighting is controlled so that it can be softened for night use.



7

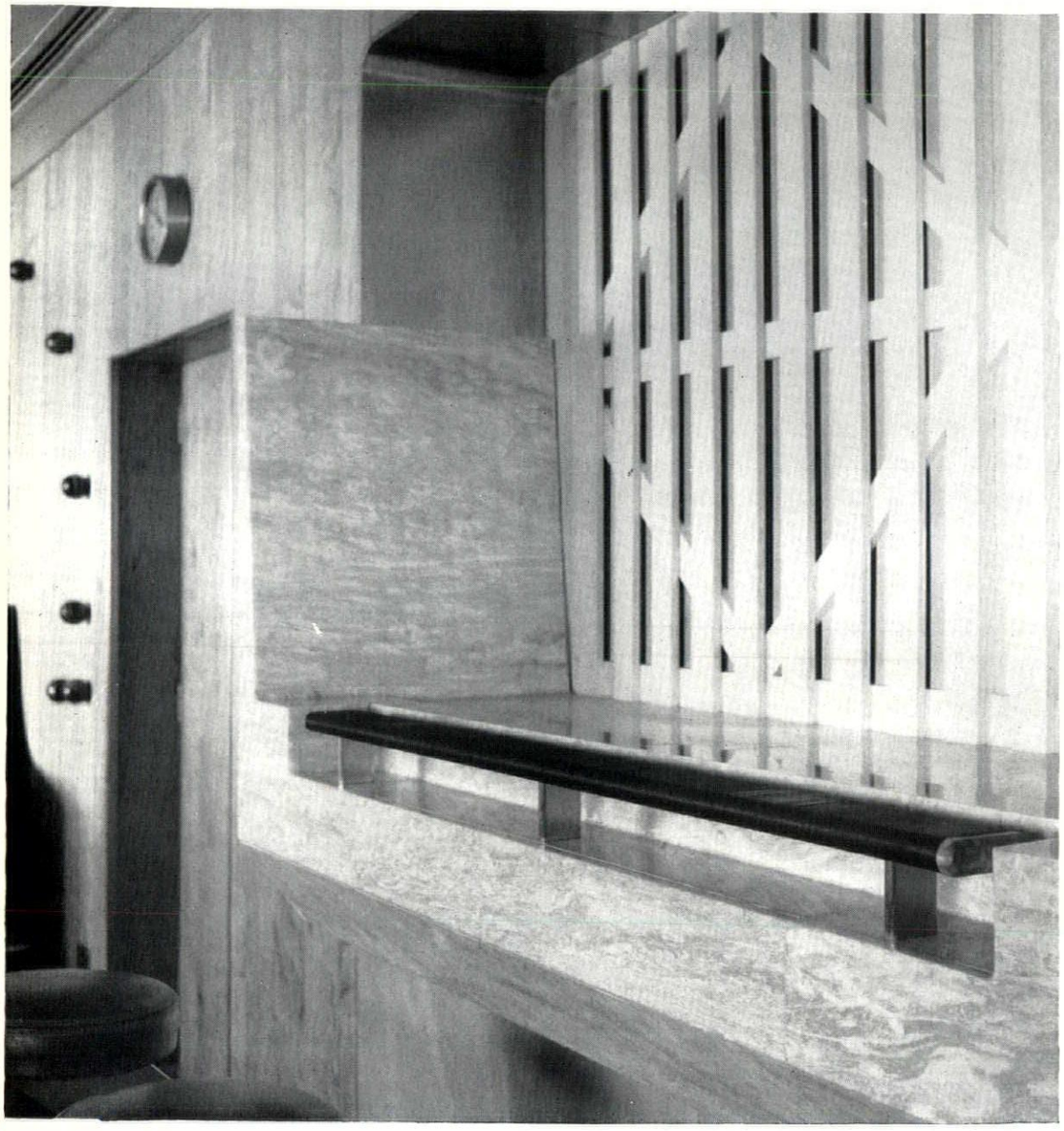


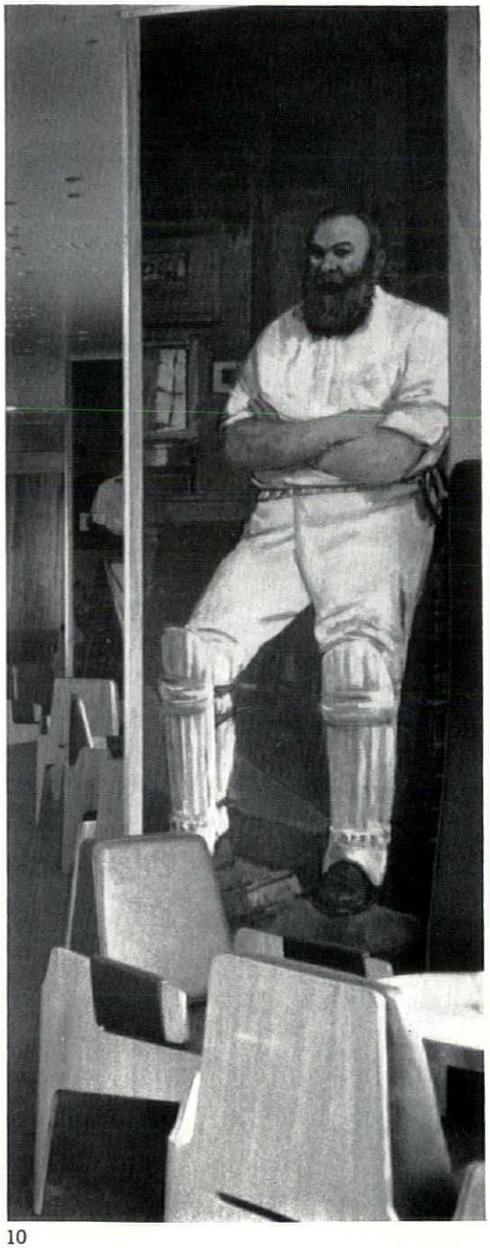
8

Tourist class Cricketers' Tavern (designer: John Wright). 8, behind the semi-circular seating the wall is faced in willow, with a montage of bats, balls, caps and pads designed by Margaret Redfern. 9, the bar is topped in white marble with hand grips for unsteady passengers wound round in black twine bat-handle-fashion. 10, seating areas are subdivided by life-size paintings of W. G. Grace and others by Ruskin Spear.

ID

9



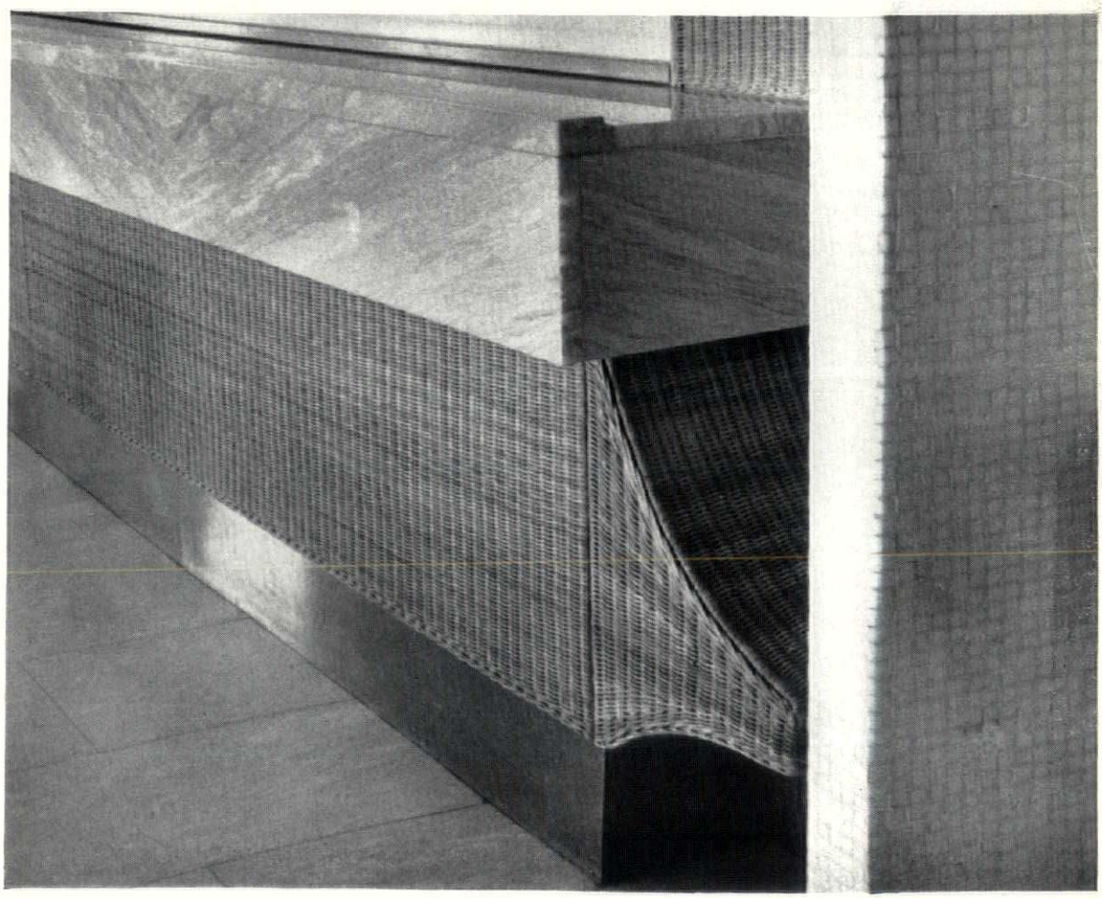


10

11

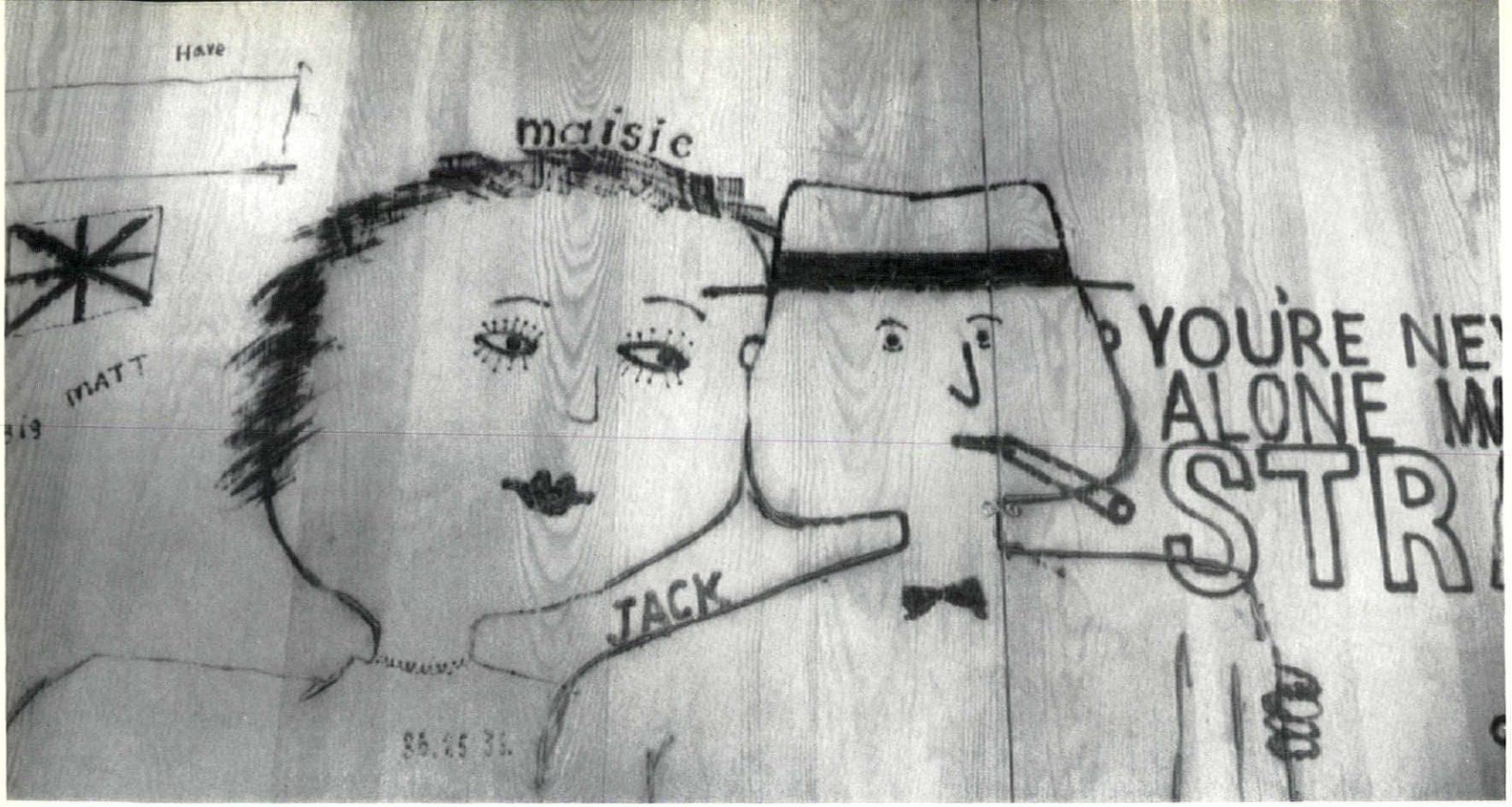


12

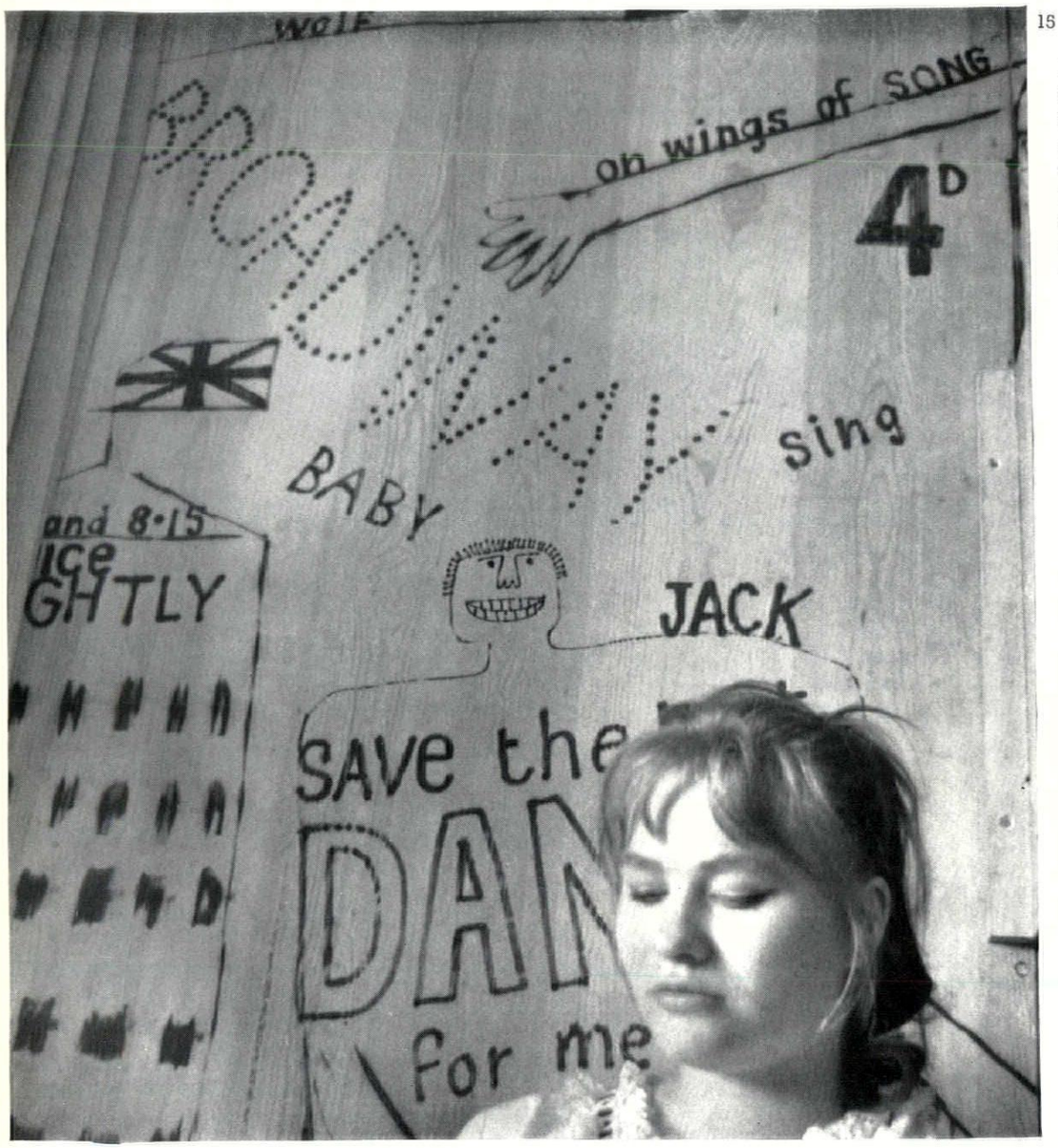


13

The Peacock Room is the principal lounge for the Tourist Class (designer: John Wright). 11, cardroom off the main area. 12, the floor is white to the main area with diagonal stripes to a small section which can be cleared for dancing. The walls and ceiling are dyed blue wood veneer. The wooden relief on the far wall, and the canopy overhead, were designed by Robert Adams. The cut-out bent plywood chairs form a fixed serpentine section in the centre of the room with table and loose chairs beside. 13, detail of the bar in 'Alice Springs,' the tourist lounge by the swimming pool. Marble bar top with cane-work which is also used for fixed seating elsewhere.



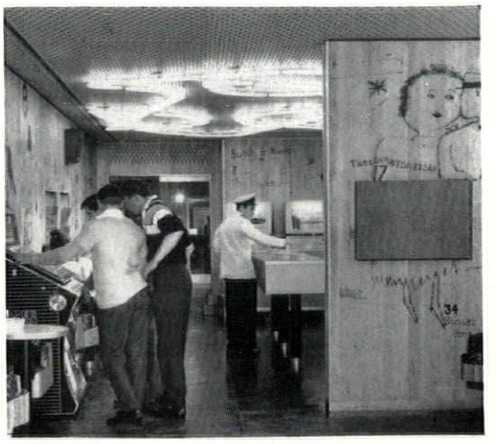
14



15

14, 15, 16, 'Pop Inn,' tourist class teenagers' retreat (designer: John Wright) an idea not tried afloat before. Vice-absorbers are provided in the form of a coffee bar, soft drink dispenser, nylon fur upholstery, juke box. Stand-up tables are made of hundreds of strips of coloured perspex with internal fluorescent lighting. On the deal panelled walls David Hockney, of the Royal College of Art, has drawn poker-work sgraffiti that may encourage, or inhibit, teenagers from extending the design on a do-it-yourself basis.

ID



16

Peter Collins

Vose Pickett: A New System of Architecture

METALLURGIC ARCHITECTURE 1844

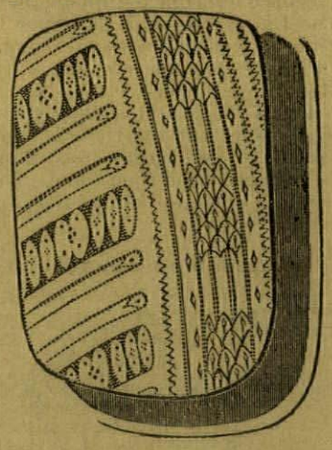
If the demand for a New Architecture, formulated in the 1830's and 1840's, produced no recognizable response until the end of the century, it was because the architects of that century were confused in their own minds as to what they were actually trying to bring about. They seem to have assumed that a *new* architecture must also be a structurally *true* architecture, and since no radically new structural system was evolved before the creation of the rigid multi-storey frame of steel or reinforced-concrete in the 1880's (which differed essentially from the frames containing cast-iron columns, in that the latter could not resist tensile stresses), any attempts to produce a New Architecture before that time inevitably resulted in little more than superficial decorative modifications to traditional tectonic shapes.

There was, however, one prophet who understood the true nature of the demand, and for that reason, if for no other, he deserves to be rescued from oblivion. His name was William Vose Pickett. With a single-mindedness and lack of scruple unique at that time, he appreciated that the only profitable aim in undertaking such research was to seek a completely new vocabulary of shapes, without worrying about structural rationalism, since once this was created all else could be made to accord. The essential thing, he said, was to devise a kind of beauty which was integrally dissimilar from that exhibited in existent architectures, and he considered that two things were necessary to achieve these objects: firstly, 'a new order of forms,' and secondly, increased amenities such as 'comfortable modifications of temperature, free admission of light, and general convenience and economy of space.' Other writers had regarded the slow evolution of past styles as an overriding reason why no new style could ever evolve otherwise, but Pickett maintained that 'that which the world has never yet had is now within the reach of ourselves, and is nothing less than *a really* NEW *Architecture*.'

Two occurrences seem to have combined to give him his inspiration as to how this could be brought about. The first, he informs us, was a visit to some caverns in Derbyshire, where the stalactites suggested to him the idea of a new architecture of curves. The second, about which he is rather reticent, was the publication, in 1842, of Ambrose Poynter's prize-winning RIBA essay entitled *On the Effects which should result to Architectural Taste, with regard to Arrangement and Design from the general introduction of Iron in the construction of Buildings*. Poynter had not considered that there was any logical way in which iron could radically modify traditional forms, but Pickett insisted that iron, being cast, was not suited to sharp angles, and by combining the two ideas, proposed a 'Metallurgic Architecture' of plastic shapes, which he patented on May 7, 1844. Despite the name, he did not confine this architecture to metal construction, but considered all manufactured materials, such as papier-mâché, as appropriate for the application of his theory.

Two analogies were used to

First Primary Principle.



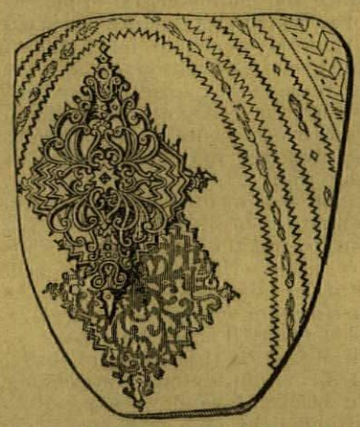
The first principle of Vose Pickett's New System involved the use of hollow metal walling carried on a metal skeleton, with a 'chased ornamental surface' and paint or enamel 'for the introduction of various colours and resplendency'.

support his proposals. Firstly, as evidence of the perfect and satisfactory applicability of metals to 'numerous synonymous purposes,' he instanced bridge-building and ship-building. Secondly, as evidence of the logic of curved structural forms, he instanced 'organic nature in general.' In the human skeleton, he observed, the rounded or undulating line is generally predominant, whilst in the composition of flowers, the curved line is also predominant, although counterbalanced by the introduction of straight lines in the stamens and stems. These curved forms can be justified on structural grounds, since the variations in the thickness of, say, the leg-bones of animals, clearly correspond to the variations in stress to be resisted, and he noted that animal bones invariably swell out wherever there is a joint. The same principle was observed by engineers in designing the components of machinery, such as piston-rods, so why not also in architecture?

The incidence of both straight and curved lines in plants was used by Pickett to justify similar juxtapositions in his New Architecture, since he saw that it was inevitable that certain elements, such as floors, would have to be designed as flat surfaces; but he objected to any angular junctions or sharp corners, and envisaged an angle-less architecture composed predominantly of curves. He foresaw that this would mean rejecting all the traditional canons of proportion, but again he could justify his theory by analogy with natural organisms. The existence of proportion in the productions of organic nature, he explained, could not be ascertained by measurement or calculation, but could only be perceived intuitively. It therefore followed that a similar condition applied to an architecture modelled on nature, in that the proportions of a building designed in this manner could only be adjusted in the way a sculptor gave beauty to a statue, i.e. 'through the mental operation of feeling and judgment in the artist.'

In addition to his general notion of plasticity, Pickett put forward several other ideas which seem to have anticipated the architecture of a later age. Firstly, he proposed that instead of supporting roofs on a series of columns, they should be designed according to a system analogous to the suspension bridge. In its most modest form, the system he envisaged merely involved the substitution of suspended canopies for colonnaded porticoes, as in the design he submitted to the Commissioners of Woods and Works for the modification of Nash's Regent Street Quadrant in 1848. But he also envisaged the spanning of vast halls, such as auditoria and churches, and considered that the recently completed suspension bridge at Charing Cross, with a span of 700 ft., was 'perfectly analogous to a roof.' In applying the principle of suspension, he explained, it would be sufficient merely to provide an efficient skeleton frame on which to rest the roof, and from which to hang the chains. The enclosing walls might then be as slight and thin as the

Second Primary Principle.



The second principle was 'interstitial ornamental form'—in other words, suspended pierced screens and grilles to control the light reaching windows, and to cast ornate shadows on wall-surfaces.

general purposes of shelter and comfort would permit. This system should not, he said, be concealed, as so often happened with structural ironwork, since being the simple expression of a basic principle of metallic construction, it must inevitably be in perfect harmony with the rest of the building. The skeleton frame would give singularly beautiful effects of light and shade round the outer circumference of the building, and a fine sky-line would be produced by the pinnacles with their suspended chains. He submitted a project incorporating this principle for the Army and Navy Club Competition of 1847

but his only reward was a derisive paragraph from the editor of *The Builder*.

Secondly, he envisaged the introduction of built-in furniture. The hollow walls of his metal-framed houses could be used, he said, for the purposes of storage usually fulfilled by wardrobes, cabinets, and other heavy or cumbrous pieces of furniture, which mar the architectural effect of an apartment, harbour dust, occasion trouble with the carpeting, stand in the way, increase the cost of housekeeping, and 'constitute the class of furniture most difficult to reconcile with architectural proportions and arrangements.' Could their presence be dispensed with in houses, he continued, the difficulties of making furniture harmonize with the general design of interiors would be in a great measure overcome. 'Modern builders,' he complained, 'instead of following the example of nature, and causing beauty to issue out of each and every utility, have renounced the offered conveniences, rather than call in the aid of taste and invention to the accomplishment of the latter result.'

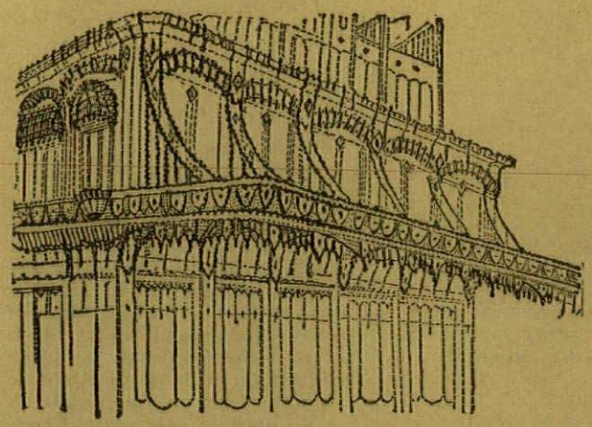
Pickett also proposed the use of pierced metal screens, suspended a short distance in front of the façades of buildings, in a manner which sounds curiously descriptive of the currently fashionable metal *brises-soleil*. He thought of these elements as mainly decorative, arguing that since the characteristic ornament of masonry architecture consisted of forms carved in relief out of the solid structural mass, the 'extraneous or decorative features' of his New Architecture should consist of delicately pierced plates secured by rods in advance of the wall. These, in addition to being ornamental in themselves, would cast shadows on to the surfaces of the hollow metal walls to which they were attached. But he also envisaged them as performing a functional service. 'The utility it is intended to serve,' he wrote, 'is that of a sun-shade, it being an external appendage to heads of windows exposed to strong light and sunshine. Being composed of interstitial or transparent metalwork with an inner lining of brass gauze, it is eminently calculated to check the force of the sun's rays, without excluding the light during dull weather.' It was, he claimed, equally suited to public as well as private edifices since, while serving a similar use, it would impart a bold and imposing effect to the external façade, and at the same time exhibit its decorative effects of light and shade inside the building.

Pickett marshalled every argument which might serve to persuade his readers and his audiences, and he did not fail to explain that the forms he recommended could be justified on practical grounds, with respect to the technique of casting metals. But whilst urging the adoption of his proposals by appeals to structural rationalism, he had none of the fastidious distaste for shams evinced by most of his contemporaries. Indeed, it is his brazen disregard for the sacred nineteenth-century principle of the primacy of structure as the determinant of architectural form which distinguishes him from the other theorists of the period, and relates him so closely to the creators and successors of Art Nouveau. 'In the practice of this Architecture,' he proclaimed, with even more italics than usual, 'there will of course be no more *necessity* for the employment of *iron* in the construction of the walls of edifices, than there is for the use of *stone* for the like purposes of other Architectures; brick, bitumen, and various species of cement being equally available as substitutes for either. But while (in the practices of pre-existent Architecture) *cemented walls* are required to be cut or marked out in straight lines, to represent the effects of blocks of stone in masonry, so likewise whenever similar substances are made use of in *this art*, it will be equally necessary to employ them in such a manner as that *they* also shall represent the external effects of a principle of construction consistent with the forms and general purpose of this art, and adopted to the native properties of *iron*.'

It is not perhaps immediately apparent why Pickett's ideas should have taken so long to be accepted, in view of the fact that all his proposals have been put into effect during the last sixty years. But he had, alas, one grave deficiency which proved an insuperable barrier to the propagation of his schemes. He was unable to draw. In the preface to his book, he made a pathetic appeal to 'any artist who might find himself prompted by the impulses of genius to produce illustrations of the system,' but presumably none was forthcoming, for no illustrations were included in his published descriptions, and only vague sketches accompanied his patent, and the advertisements he handed round. He thus had to rely on the impassioned imagery of the written word. In 1845 he published, with the tardily acknowledged assistance of his sister Elizabeth, a 144-page book entitled *A New System of Architecture*, and for the next four years he tried to promote his ideas by means of articles in the *Athenaeum* (No. 867), the *Fine Arts Journal* (vol. i, nos. 15–26), and the *Westminster and Foreign Quarterly Review* (April, 1849); by lectures to such organizations as the Society of Arts and the Brighton Literary and Scientific Institution; and by addresses to the Prince Consort, the President of the Board of Trade, the RIBA, the Royal Commission of Fine Arts, the Royal Society, the Royal Academy and the King of the French.

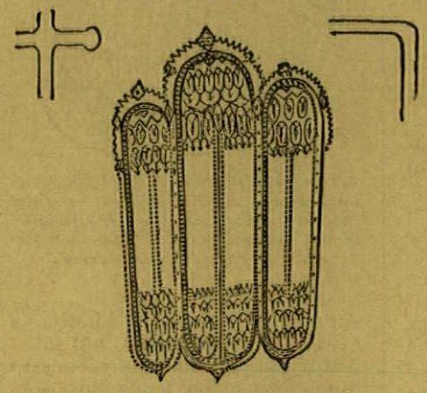
The Academy Professor (C. R. Cockerell) suavely replied to his letter by saying that he rejoiced in the acquaintance and polite regard of a mind of Pickett's deep quality, cultivated with so much sound and various learning and eloquence, but he continued: 'With the accustomed warmth of genius and originality, you have treated the subject with an enthusiasm that few readers will acquiesce in; for you term that a discovery which is an improved and enlarged view of what has been going on in Europe for some time; . . . where shall I send your precious manuscript, being unwilling to consign it to the post?' The Prince Consort's secretary's reply was less tortuously subtle, and simply stated that 'from the investigation which his Royal Highness has made on the subject of your invention, he regrets to say that *he does not consider it of any value and importance*, and will therefore *not trouble* you to send any model for his inspection.' But Pickett's ideas were not entirely without influence, since it seems reasonable to suppose that Jean-Baptiste Jobard, the director of the Belgian Industrial Museum, got his much-publicized idea of a 'Metallurgic Architecture' from Pickett's book, and it may even be possible that the latter's *New System of Architecture* was thus the direct inspiration, and not merely a prefiguration, of Belgian Art Nouveau.

Third Primary Principle.



The third principle of Vose Pickett's system involved the substitution of suspension members for brackets and columns to all projecting members such as porticoes and canopies.

Fourth Primary Principle



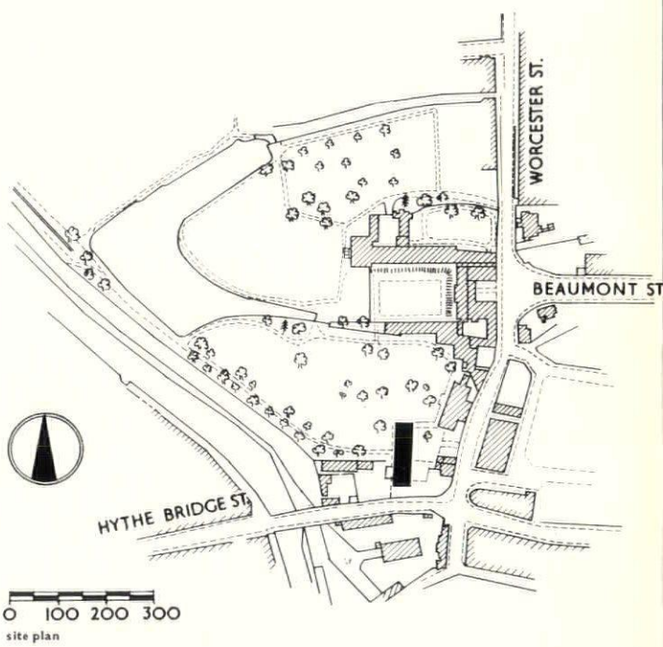
The fourth, in Pickett's own words, 'consists in the general substitution of curves . . . throughout the primary parts and apertures of buildings, instead of the angular forms so prevalent in all erections in the masonic arts.'

Undergraduate Rooms, Worcester College, Oxford

ARCHITECTS: SIR HUGH CASSON, NEVILLE CONDER AND PARTNERS
PARTNER-IN-CHARGE: RONALD GREEN

1





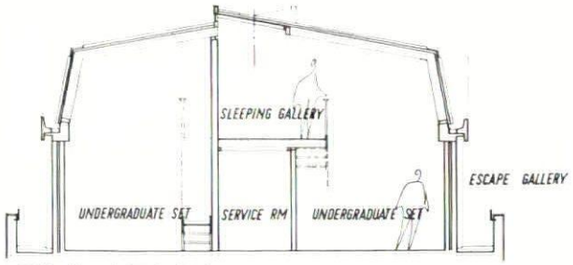
site plan

1, *the east elevation.* 2, *from the north-west.*



2

This is the first stage of a proposed development at the southern end of the existing college grounds, backing on to Hythe Bridge Street. The building, which houses 40 undergraduates, one Fellow and two guests and provides also a large common-room on the ground floor, is placed at right-angles to the street, its northern end therefore protruding into the college garden—see site plan. Later buildings will be along the perimeter of the site, one of



section through two studio sets

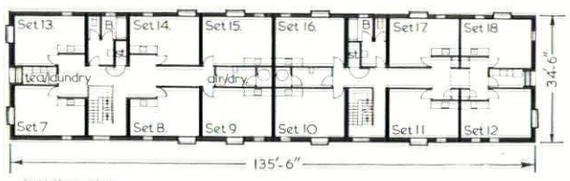
them creating a partly enclosed quad with the building illustrated here.

The four-storey building is planned on the traditional staircase system, with a sitting-room and bedroom recess for each undergraduate, each 'set' having also basin-wardrobe area closed off by a partition (not shown on plan), reaching to within four feet of the outer wall. Six 'sets' lead off each landing, and on each staircase are bathrooms, scouts' pantries and tea-points or drying rooms for communal use. The rooms on the top floor are two-level studio rooms—see sectional drawing.

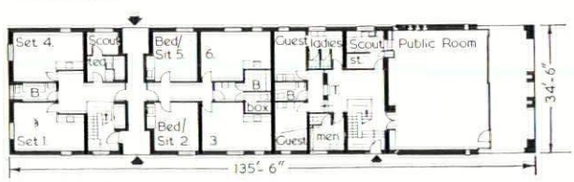
The building is of load-bearing cross-wall brick construction with reinforced concrete floors insulated against sound transmission. Facing bricks are 2 in. hand-made Crowborough. Modelling is given to the façades by projecting study-windows (in aluminium) on brick corbels and by a recessed top storey. The ground floor is set back outside the common-room to form an arcade, and a new underpass has been made in the old buildings to form a visual link between the old and future quads between the new buildings. The roof-covering is ribbed aluminium sheeting. Internal joinery is Burma teak. The rooms have electrical under-floor heating operated by separate thermostats, supplemented by panel electric fires.

Undergraduate Rooms, Worcester College, Oxford

3, the north elevation, with the public room on the ground floor. 4, interior of the public room.



first floor plan



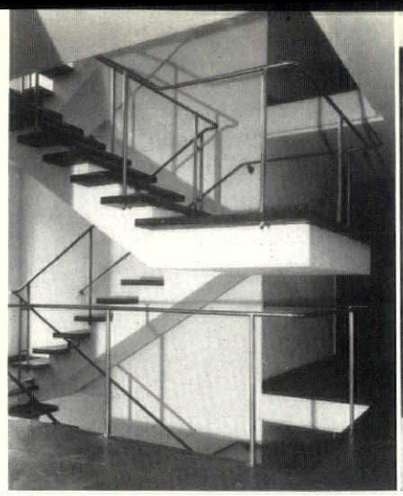
ground floor plan



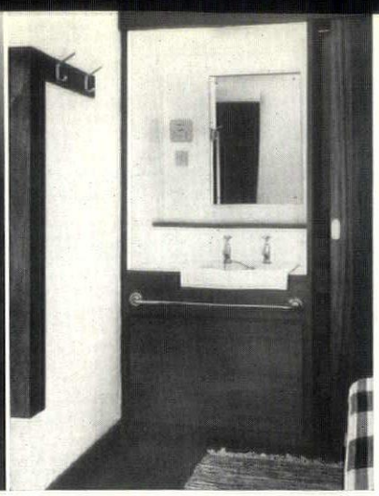
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4



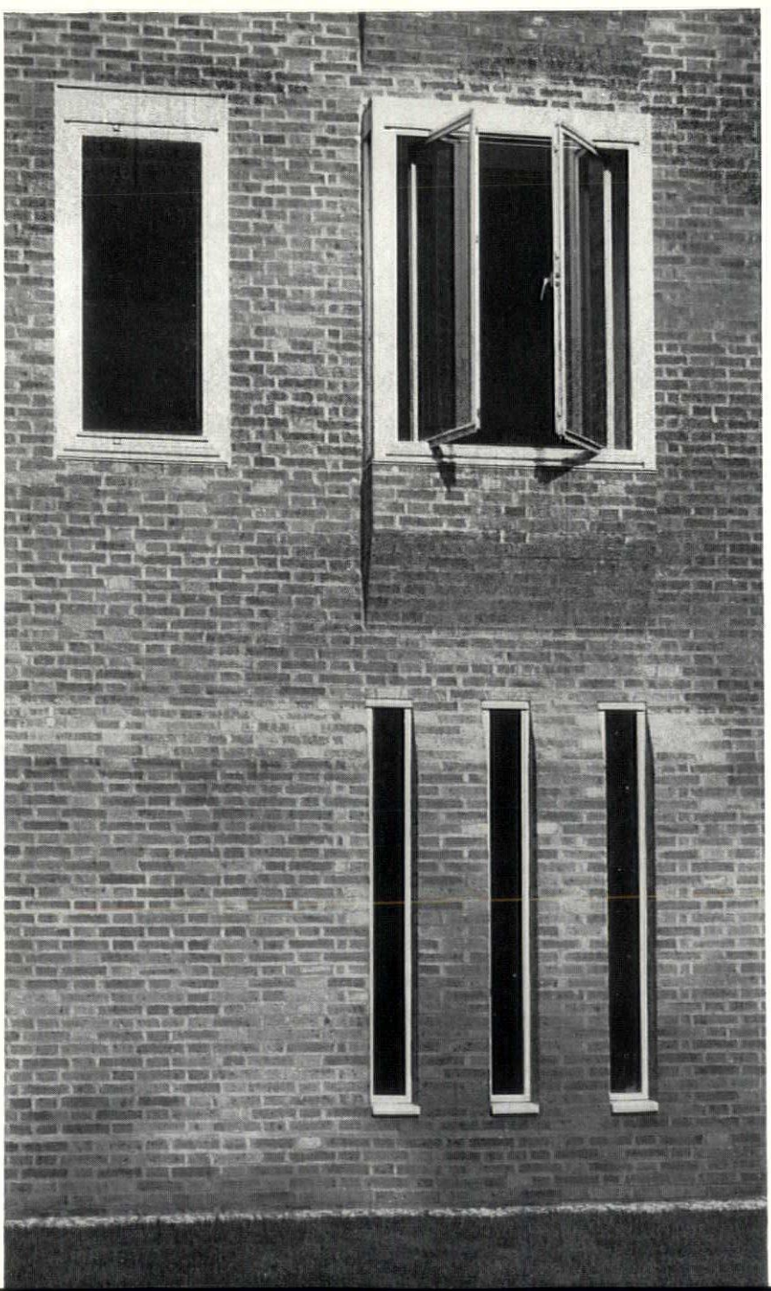
5



6

5, one of the staircases. 6, inside a typical set. All rooms and corridors are painted with white emulsion paint, but in some rooms a bright patch of colour has been introduced to give individuality. This patch is either on the wall behind the fireplace or by the bed, to hide marks by people leaning against the wall. A limited number of pieces of furniture were chosen and a different combination was worked out for each room. This was also done with colours of the curtains, bedcovers and upholstery fabrics, but all the curtains were lined with the same colour. Hard-wearing, washable and reversible rugs were specially made, which would fit in with any of the schemes. 7, detail of the windows; the slit windows are to the public room.

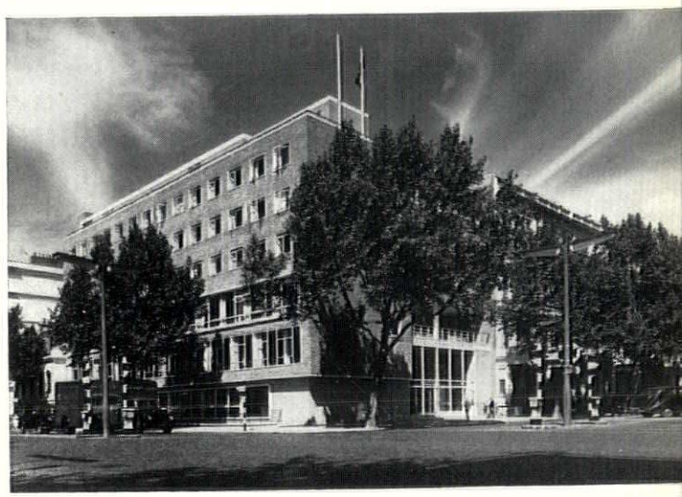
7



Boy Scouts' Hostel, Kensington, London

ARCHITECT: RALPH TUBBS

1, the hostel from Cromwell Road, with Queen's Gate on the right.

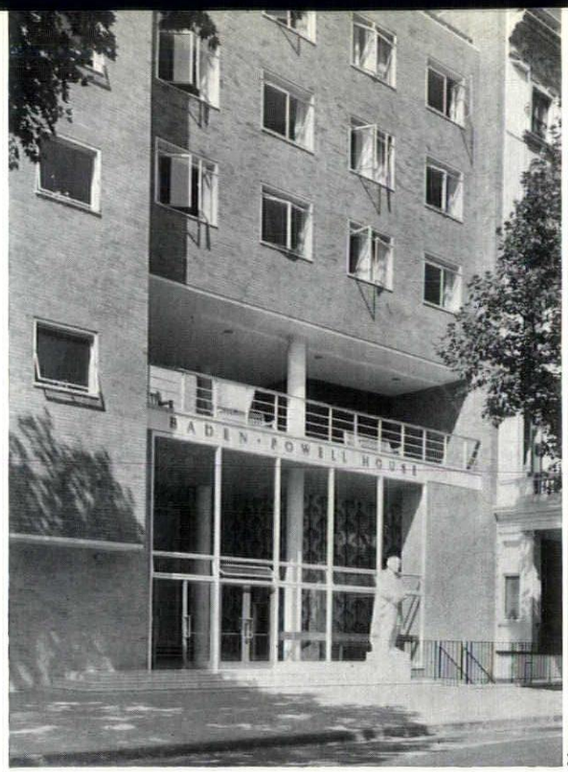


This building is called Baden-Powell House after the founder of the Scout movement (to whom it is a memorial) and provides hostel accommodation for scout visitors and facilities for scouts to meet socially. The site is at the corner of Queen's Gate and Cromwell Road.

There are two floors of dormitories for scouts, giving sleeping accommodation for ninety-five and, on the floor above, bedrooms for thirty-one scouters and four resident staff. A common-room, games room, library and quiet room and a dining-room to seat one hundred provide for social life in the building, and a room with an altar provides for small religious services. An auditorium, which takes an audience of 337 and which has a properly equipped stage, will make it possible to give theatrical performances and hold receptions. Pent-house flats are provided on the sixth floor for the warden and the resident engineer and in the basement there is a garage for 20 cars entered from the mews at the back.

Externally the building is designed to provide a sufficiently powerful junction between Queen's Gate and Cromwell Road, the scale of Queen's Gate being considerable. Its general height has been picked up on the Queen's Gate frontage, and the effective sight-line of the wing to Cromwell Road has been reduced to be in sympathy with the lesser scale of this road. The first floor of the wing to Queen's Gate is void, so that the roof terrace on top of the hall has a view through the wing on to the gardens and trees of the Natural History Museum.

Internally the treatment is free and open, the whole of



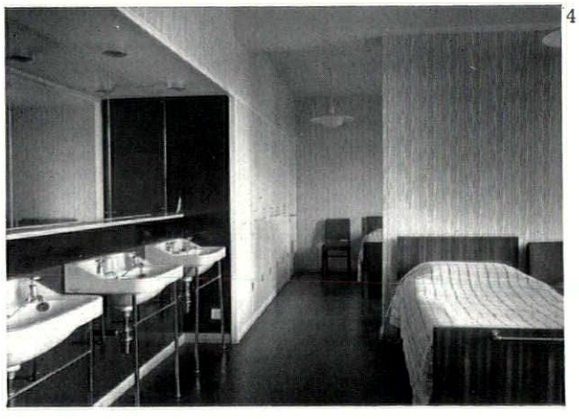
2

Boy Scouts' Hostel, Kensington

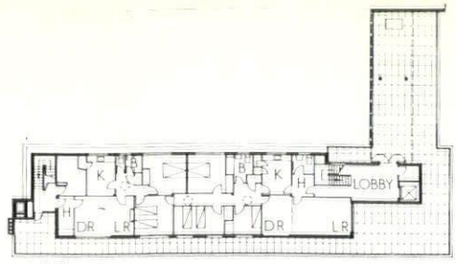
2, the main entrance. 3, the dining room on the first floor. 4, typical dormitory. Opposite page: 5, the entrance hall. 6, the garden court from the entrance hall.



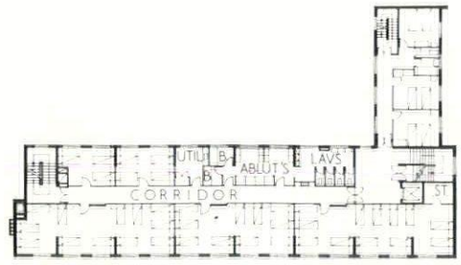
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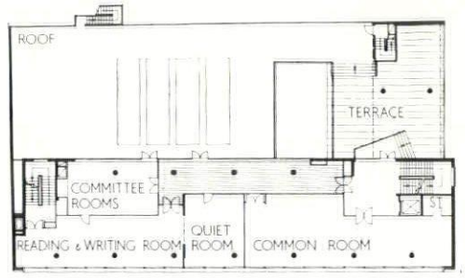
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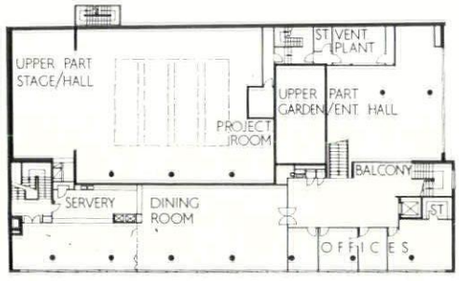
sixth floor plan



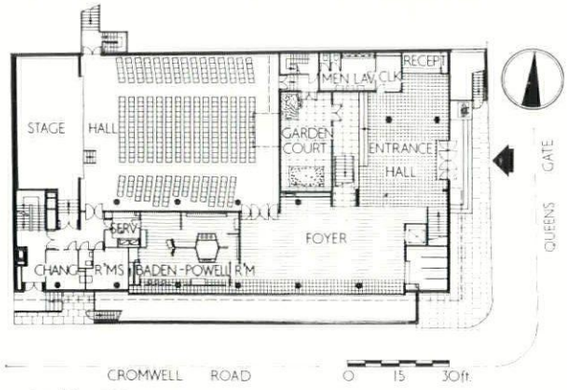
third floor plan



second floor plan



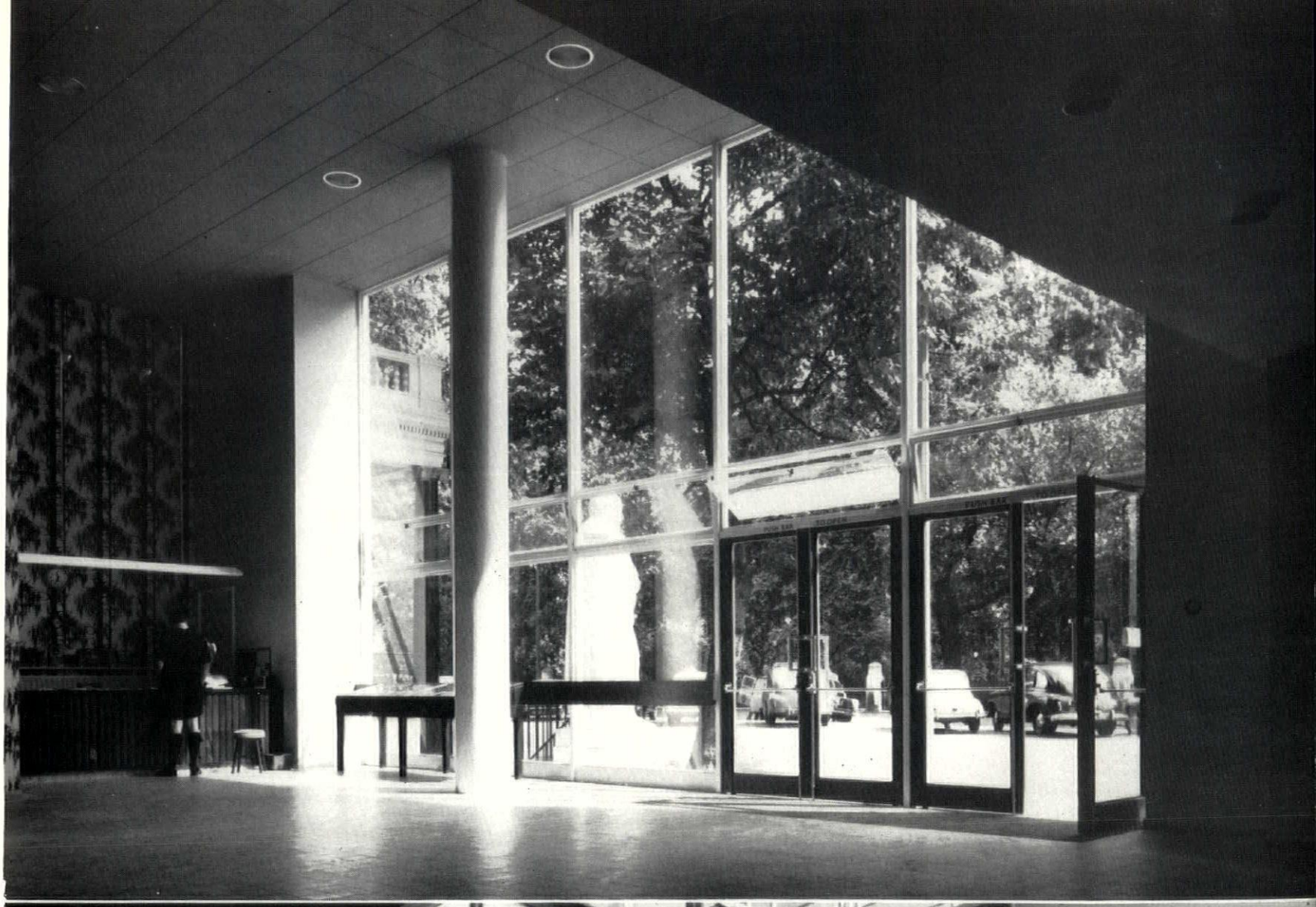
first floor plan



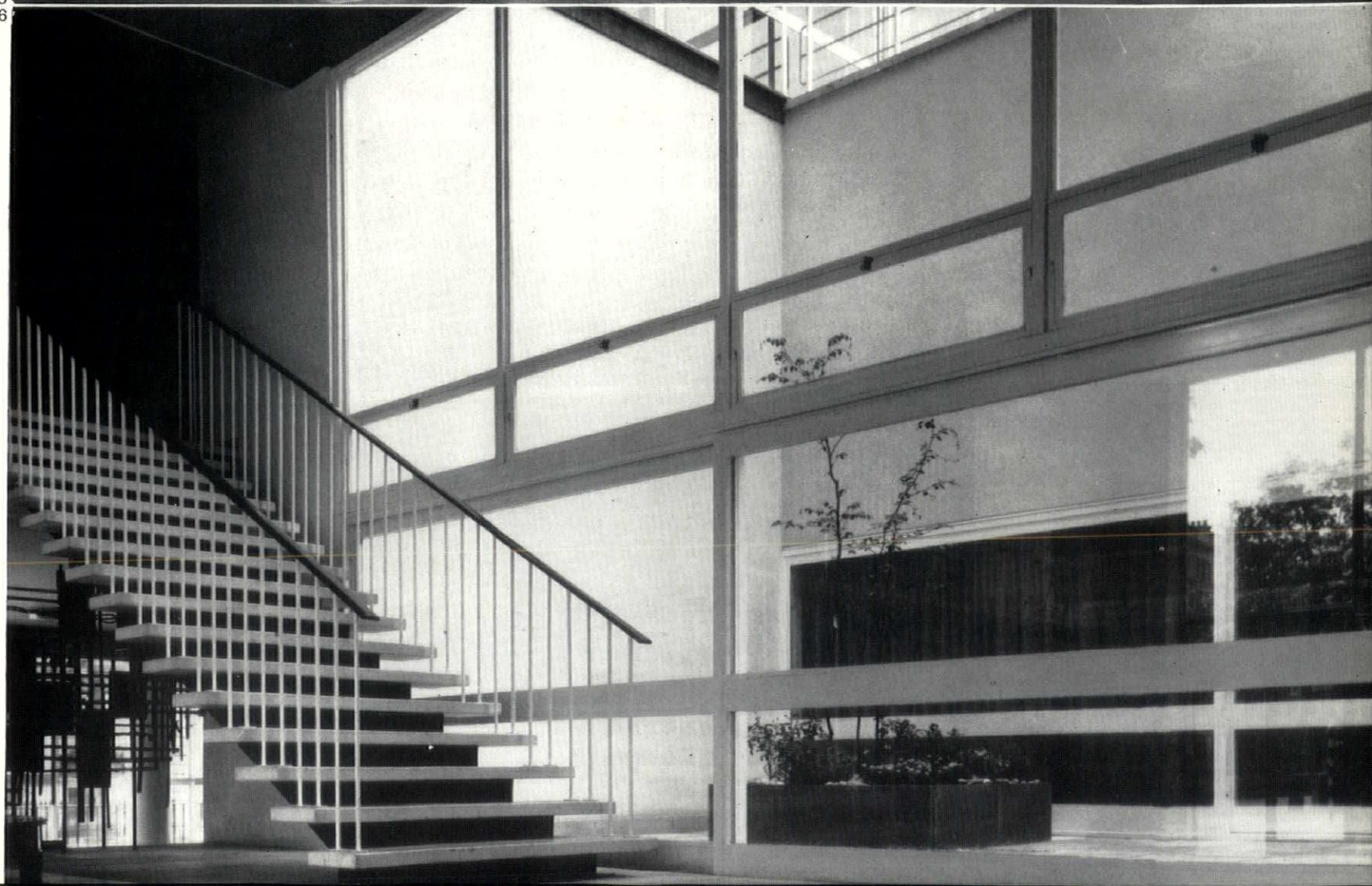
ground floor plan

the ground floor, apart from the auditorium, being subdivided with either glazed screens or sliding partitions. Part of this free open space is used as a memorial exhibition to Lord Baden-Powell. The entrance hall is two storeys high, with the first floor landing overlooking it in the form of a balcony. The glazed screen immediately opposite the main entrance doors gives a view on to a small garden court. The building has a reinforced concrete frame, using high-tensile steel, the main wings being supported on two rows of columns only. The cladding is 11 in. brickwork.

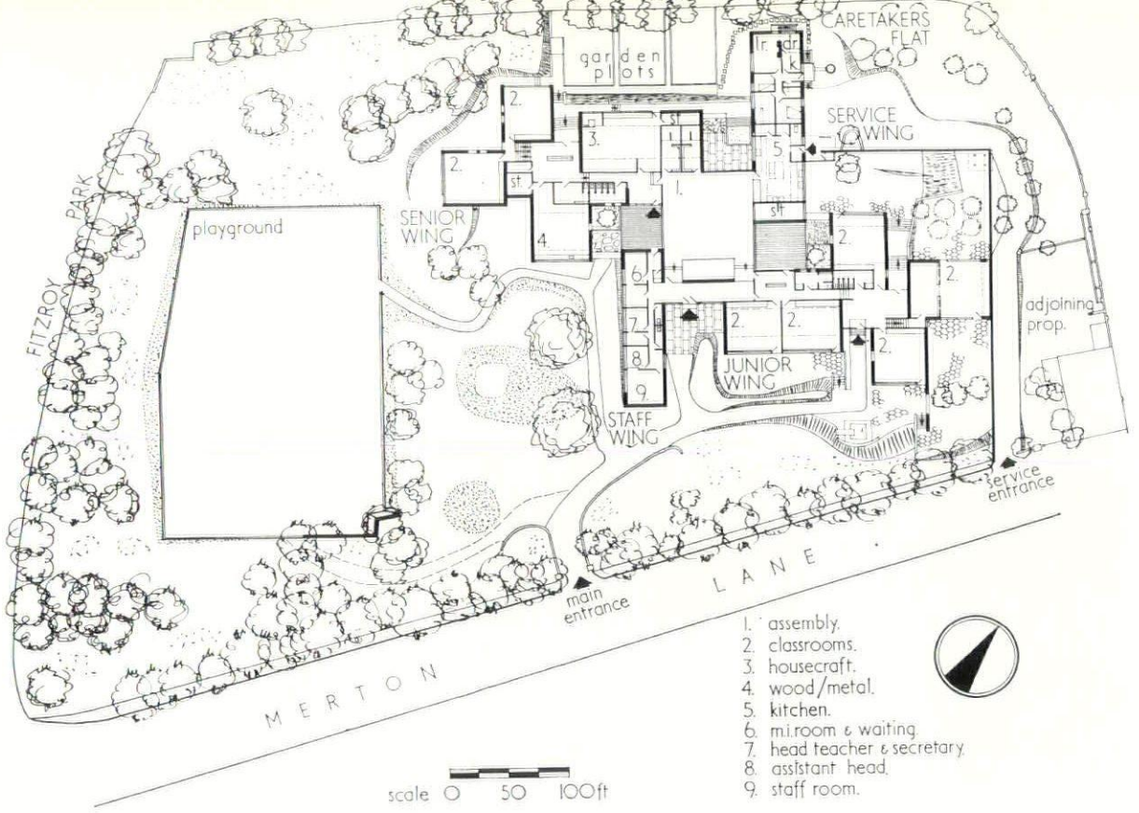
Consulting engineers, Frederick S. Snow & Partners. Quantity surveyors, B. G. Coffin & Partners.



5



6

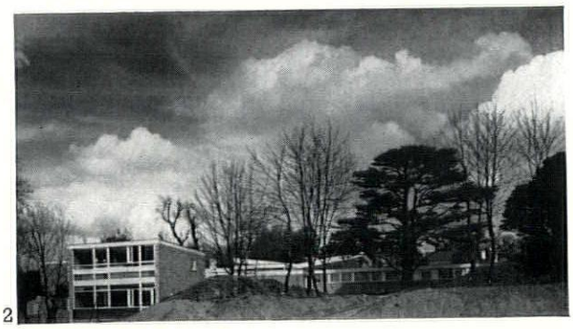


plan

School at Highgate, London

ARCHITECT: STEPHEN GARDINER

Holly Court school is a London County Council mixed school for 180 educationally sub-normal children between the ages of 5 and 15. Nine classrooms were asked for, two specialist rooms (for metalwork and homecraft), an assembly-hall which could also be used for dining and as a gymnasium, administrative offices and a caretaker's flat. The LCC made two specific educational conditions. One was that the junior and senior schools should be clearly separate so that those in the junior school should have an ambition to reach the senior school. The other was that the admission classroom—with its own lavatories, etc.—

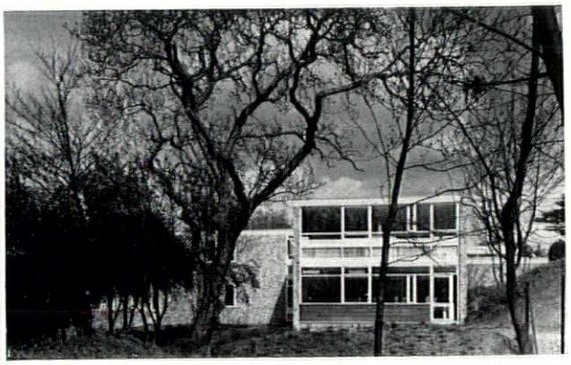


2

should be, if possible, somewhat isolated and with its own play-space, encouraging new children to settle down more easily.

The site is on the boundary of St. Pancras North and Fitzroy Park. In a southerly direction it overlooks Hampstead Heath and has a considerable slope. The ground is well planted, having been the garden of a house demolished many years ago.

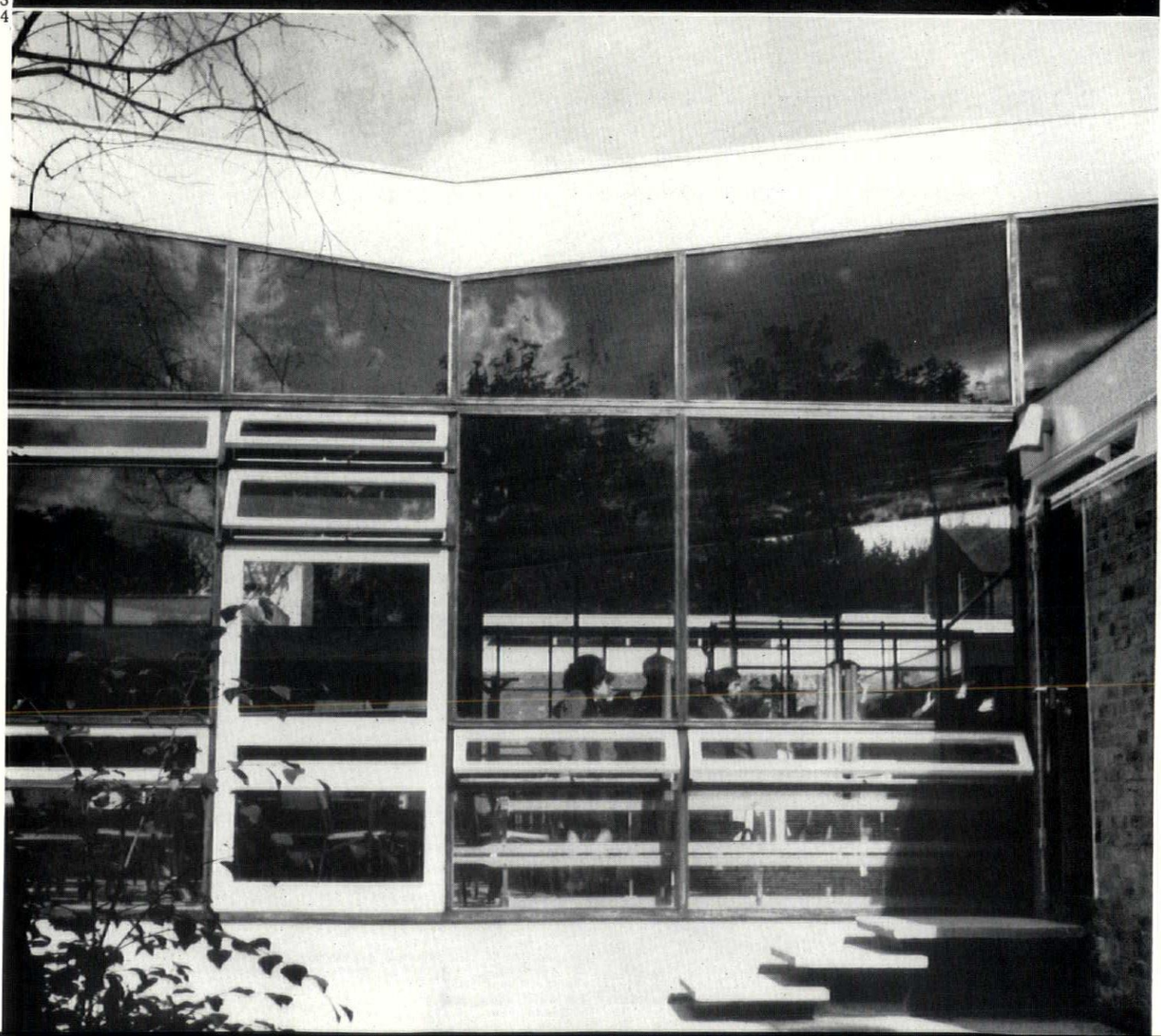
The school is planned in four wings, arranged round the assembly-hall. In order to preserve the landscape and retain the garden character, it is designed as a single-storey building although the various classrooms, etc., step up and down to suit the contours. The building is dug into the upper part of the site (where the original house stood) to preserve the trees and give the best views over the



1

1, the two-storey senior wing from the south-west. 2, from the south with the senior wing on the left and the staff wing in the centre.



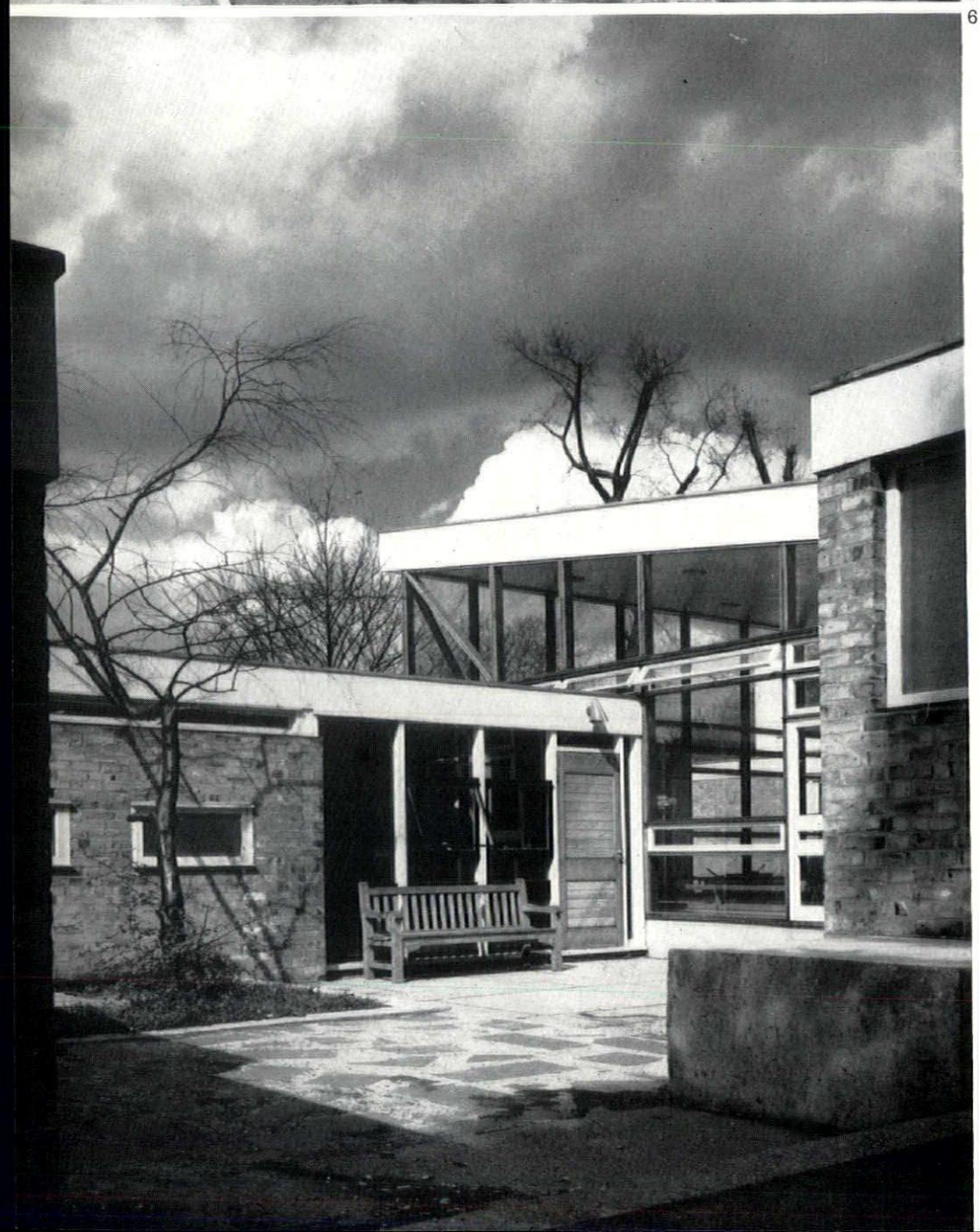


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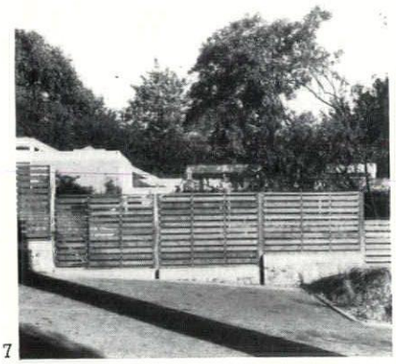
3, looking down on the school from the north with the assembly hall behind the service wing. 4, close-up of the assembly hall.



5



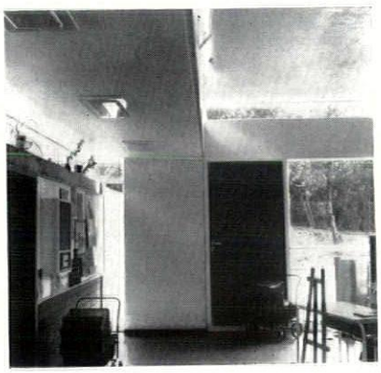
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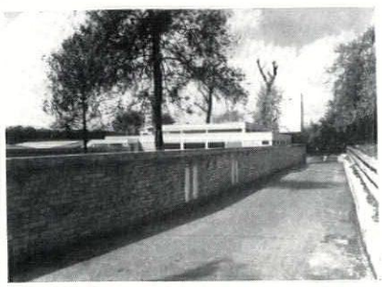
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heath. To avoid over-enclosure and lack of light in this situation, the classrooms have clerestory windows that give a continuous view of the sky in the centre of the room.

The school is of cross-wall brick construction with facing bricks of a hard yellow London stock. The assembly-hall roof is carried on mahogany window-mullions.



8



9

School at Highgate

5, looking towards the assembly hall courtyard, with the senior wing on the left and the staff wing on the right. 6, inside the assembly hall courtyard. 7, screens in front of the classroom blocks. 8, classroom interior showing clerestory windows. 9, the service road looking north.

EXHIBITIONS

SCULPTURE AND PAINTING

The exhibition of Italian bronze statuettes at the Victoria and Albert Museum which was organized by the Arts Council in collaboration with the Italian Ministry of Public Instruction and the Rijksmuseum, Amsterdam, included some of the most famous small sculptures in the world. Apart from one small thirteenth-century head from the workshop of Nicola Pisano, the period covered was from the fifteenth to the mid-eighteenth centuries. The one thing which I found beautiful and arresting at first sight was the thirteenth-century head, made before the Renaissance got into its stride: it was the only one which did not make mute signals and the only one which seemed to beckon to me.

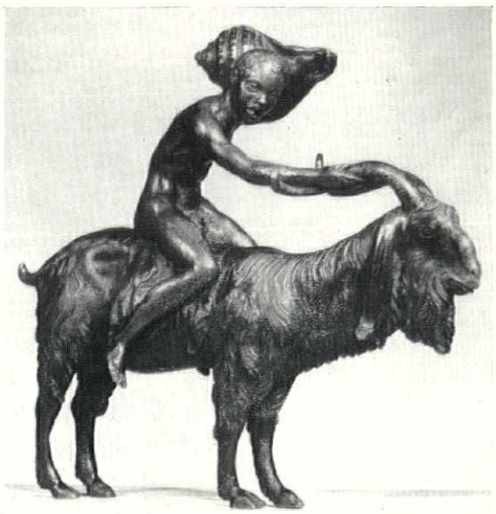
The organizers stated with absolute confidence that the exhibition included some of the 'most individual, inventive and eloquent small sculptures that have ever been produced,' but they belong to a convention that Henry Moore once called 'a digression from the main world tradition of sculpture,' and although it is possible that Moore himself no longer adheres 'without reserve' to this view, his greatest works—and in particular the small pre-war carvings—make no concessions.



1

These Italian bronzes reflect the more obvious aspects of a classical revival, and bring the cult of the nude into a somewhat theatrical alliance with scientific enquiry. As demonstrations of anatomical knowledge and studies of the body in action they have immense virtuosity, and some of the single figures have a deliciously light-treading elegance. This is a demonstrative virtue in some of the Mercury figures, and is at its most poetic in the Arion, 1, by the fifteenth-century Florentine sculptor Bertoldo. Arion was a semi-mythical poet who was supposed to have created the dithyramb as a literary form, and Bertoldo's figure splendidly exemplifies a measured ecstasy. When there is more than one figure—the statuette of a negro boy holding a shell and mounted on a goat, 2, by Severo da Ravenna (active in Padua c. 1500) is a comparatively simple instance—the quality of elegance has to be read bit by bit, for it is missing from the general effect. The subject of this particular piece has a 'made-up' look, but nearly all of them have their literary side, and the catalogue, which was not ready on press day, may have revealed an iconographical significance of which I am unaware.

But even the finest of these statuettes seem singularly lacking in the quality we call 'presence.' It isn't due to their size: some of the most compelling sculpture in the world can be held in the palm of the hand. I think it's because all the figures are giving performances—holding their poses like dancers or demonstrating their vitality like athletes—and it's not really surprising that by the end of the seventeenth century the figures were engaged in farcical balancing acts and serving rather sickening feats of craftsmanship. One such 'infinitely ingenious group,' a 'Homage to Sculpture' by the Venetian artist Francesco Bertos, included an amusing example of the iconographical confusion that can arise from an uncritical regard for anatomical science: at the foot of this curious pile, a naked sculptor is completing an effigy of a naked woman, and since the only difference between them is that of gender, we are confronted by a representation of a grave case of assault—man knocks down woman and beats her to death with a hammer. All the same, the sculptor's contemporaries were not affected by such anachronisms, and it was a little discomforting to be told that his work was especially admired by foreign visitors, for I, too, can perhaps be written off as just another foreign visitor, deprived of enthusiasm by a change in the current of taste.

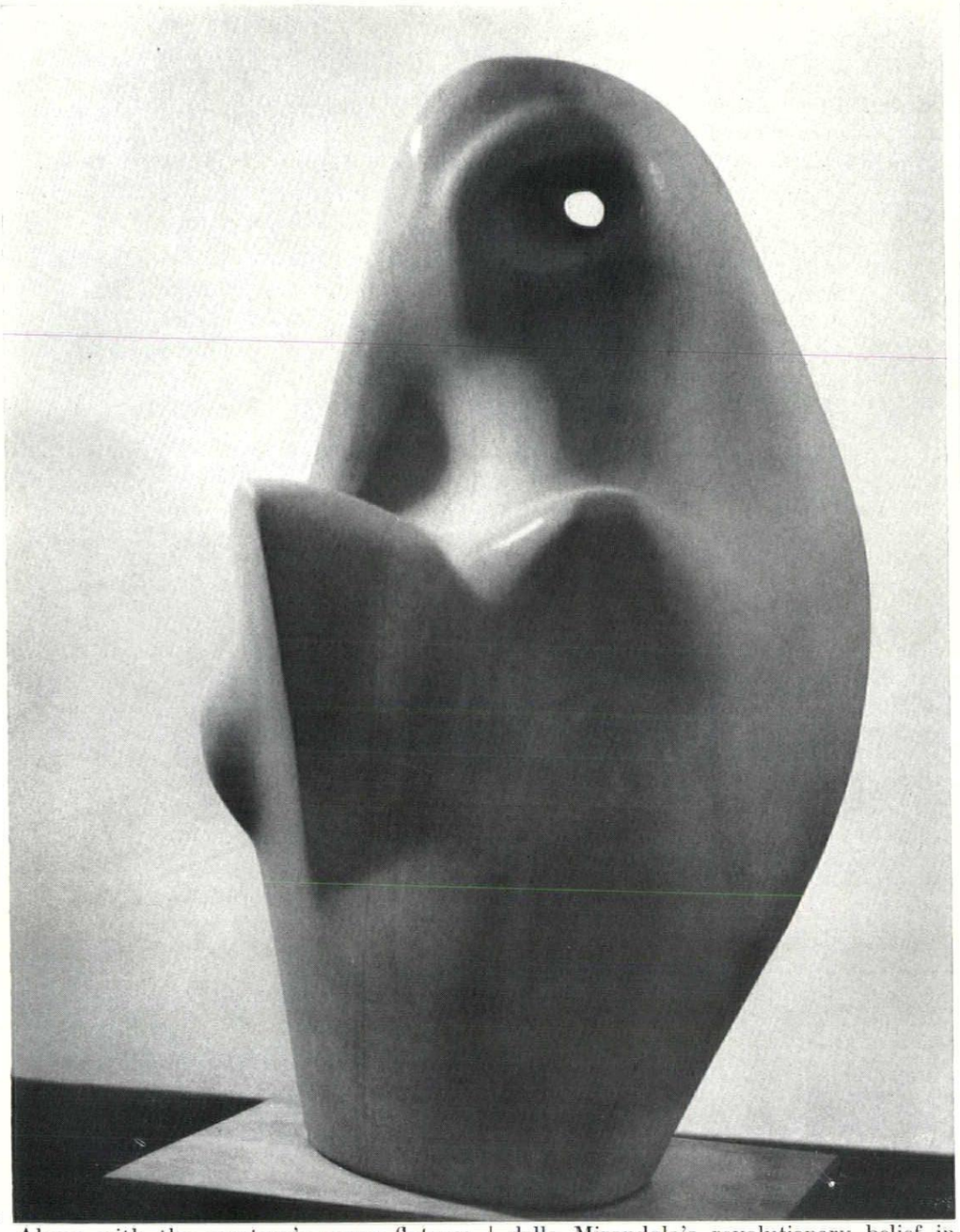


2



3

Certainly my particular interest in two of the bronzes reproduced here can be attributed to a mere change of taste, for it was aroused by variations in their surface textures which provided a relief from the glitter of the approved standard finish. In the case of Bertoldo's 'Arion,' already mentioned, the rough surface of the top half of the figure appears to have been caused by fire damage and is evidently unintended, but it lends the figure a pathos of which one would not approve if it were conveyed by a deliberately contrived facial expression or bodily stance but which becomes satisfactory when it is produced by a knocked-about look. In the case of Giovanni Bologna's 'The Dwarf Morgante mounted on a Dragon,' 3, which was originally part of a small fountain, the contrast between the high glitter of the dwarf and the unpolished surface of the dragon is a deliberately dramatic effect, and here again the rougher surface of the dragon seems to work on one's sympathies.



4

Along with the creature's queer flatness and its distraught air, its rough texture gives it a gentle, harmless look, and compels one to take sides against the plump, shiny bully of a dwarf; this is probably the direct opposite of its effect on Giovanni Bologna's contemporaries.

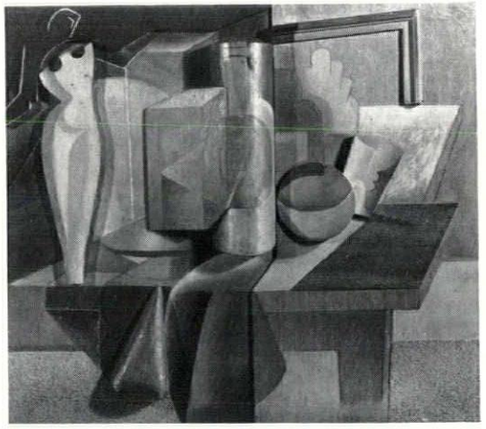
In the fifteenth and sixteenth centuries, the private collectors who bought these bronzes were also collectors of Roman antiquities. Today, the people who buy modern sculpture usually have some primitive and archaic pieces to put beside them. But neither the Renaissance bronzes nor the modern works can be confused with the things that influenced them, and although aesthetically the classicizing sculptors of the Renaissance and the archaizing sculptors of the twentieth century have little in common, they share a general concept of freedom and in their narrow open-mindedness testify to Pico della Mirandola's revolutionary belief in the right of every man to grow and develop in his own way.

The exhibition of Henry Moore's pre-war carvings in wood and stone recently held at the New London Gallery contained some of the finest and most imaginative sculpture that has been created in our century. It was mounted with a due sense of the importance of the occasion, and modern sculpture has never been more beautifully displayed in a London gallery.

In a graceful and well-illustrated essay which accompanied the exhibition, John Russell recalled that these are the carvings that once seemed to many people to be 'barbarous, repugnant and unintelligible,' but his own tendency to play down the influence of pre-Columbian art is a swing to the other extreme, and I think that he could have chosen a more appropriate occasion on which to insist on Moore's 'love and sympathy' for Italian art. The fact that he has found the very words in one of Moore's own texts is neither here nor there, for the exhibition was devoted to a period in which his work was intransigently opposed to the realistic anatomies of the Renaissance and profoundly influenced by pre-Columbian and West African sculpture. The finest of these carvings are without precedent, but it's obvious that the powerful stillness and inexhaustible presence of a work like 'Figure,' 4, carved out of Corsehill stone in 1933–34, could never have arisen from the example of Italian sculpture.

The exhibition at the Grosvenor Gallery of sculpture and sculpto-paintings made by Alexander Archipenko between 1909 and 1921 was supported and at the same time put firmly in its place by the presence of some first-rate paintings by other early contributors to the modern movement such as Malevich, Chirico and Severini.

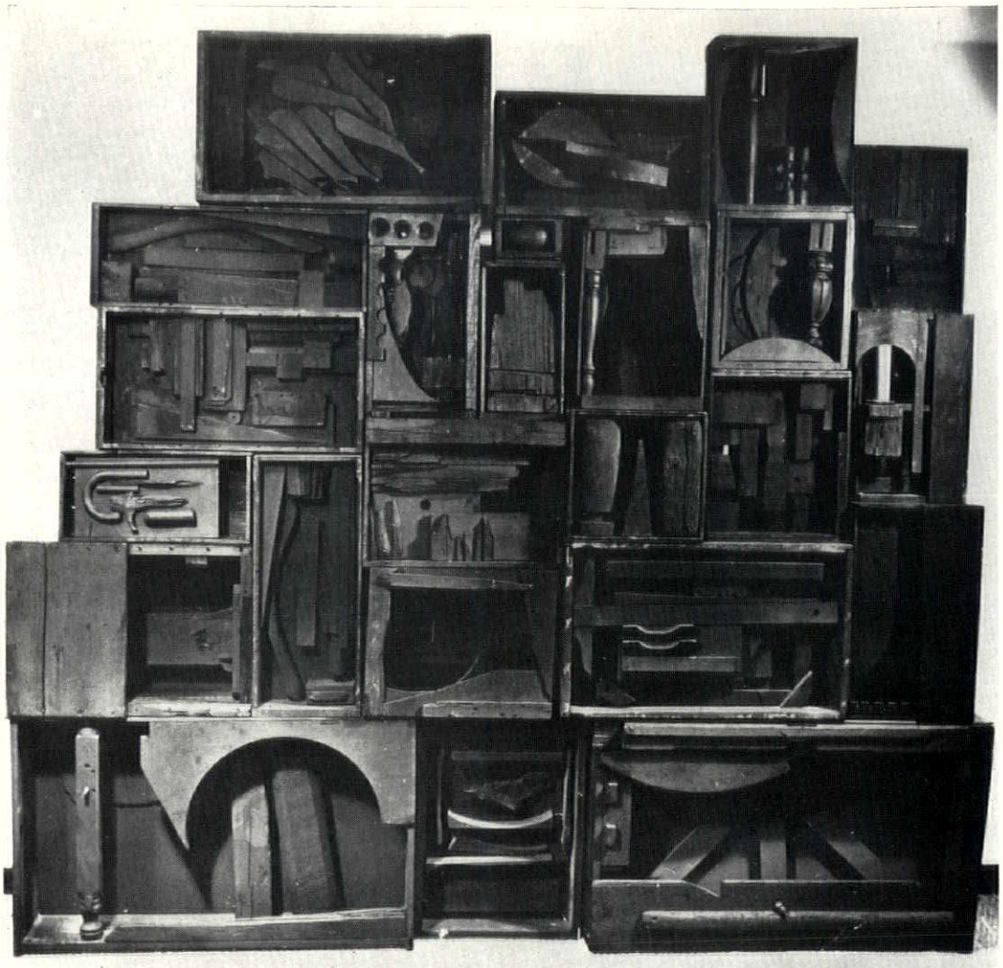
Archipenko's prim cubo-purist approach to the still life in his sculpto-paintings, 5, has left them with no more than a period charm. He was one of the first sculptors to construct stand-ins for the human figure out of purely geometrical elements, but



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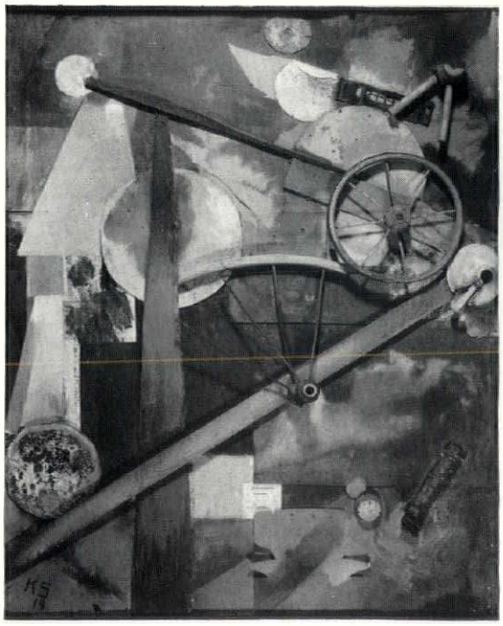


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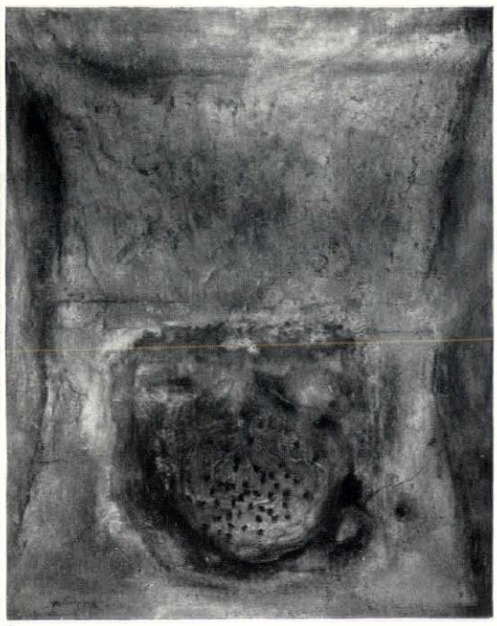
these too are now among the lavender and old lace of the movement. His best works are in closer contact with the human figure, but either his imagination was not powerful enough to free him from his academic training or he was at heart an anatomical realist, for although a characteristic example like the bronze of a pregnant woman made in 1911, 6, has grace and refinement, the mannered cubist faceting is a kind of light veil cast over a perfectly straightforward study of the model.

A notable miscellany of twentieth-century sculpture and drawings was recently on view at the Hanover Gallery, and a formidable group of twentieth-century paintings at Marlborough Fine Art. The Hanover selection included an elaborate, soot-black relief, 7, by the American sculptor Louise Nevelson, whose work has not previously been seen in London. It comprises a number of wooden units which can be assembled in various ways. It looks rather like a Welsh dresser for a wizard's kitchen, but there are compensations for the lack of distinction in its overall shape. Nevelson makes remarkably effective compositions, with a wide range of expressiveness, out of the simple elements which she fastens into her boxes, and makes subtle and fascinating play with interior depth by bringing some of the compositions close to the surface and leaving others in an obscurity which one hesitates to investigate. One hopes that this solitary example heralds a one-man show of her work.

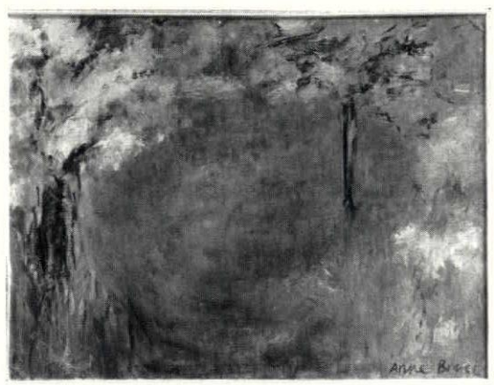
The Marlborough exhibition included one of the most impressive of Kurt Schwitters's 'merz' compositions, constructed in 1919, 8. The bits of junk and rubbish of which it is composed are painted in unusually rich and sombre colours; they give the picture spaciousness and dignity and lend the rubbish a kind of sumptuousness. It's as magical in its way as the story of Cinderella. There was also a macabrely sensual 'Peinture gris,' 9, by Antonio Tapies, executed four years ago. The grey paste adumbrates an elementary male torso, and a fearsome lump of the same grey matter which has coagulated in the lower half of the picture has seemingly broken through the wall of the stomach.



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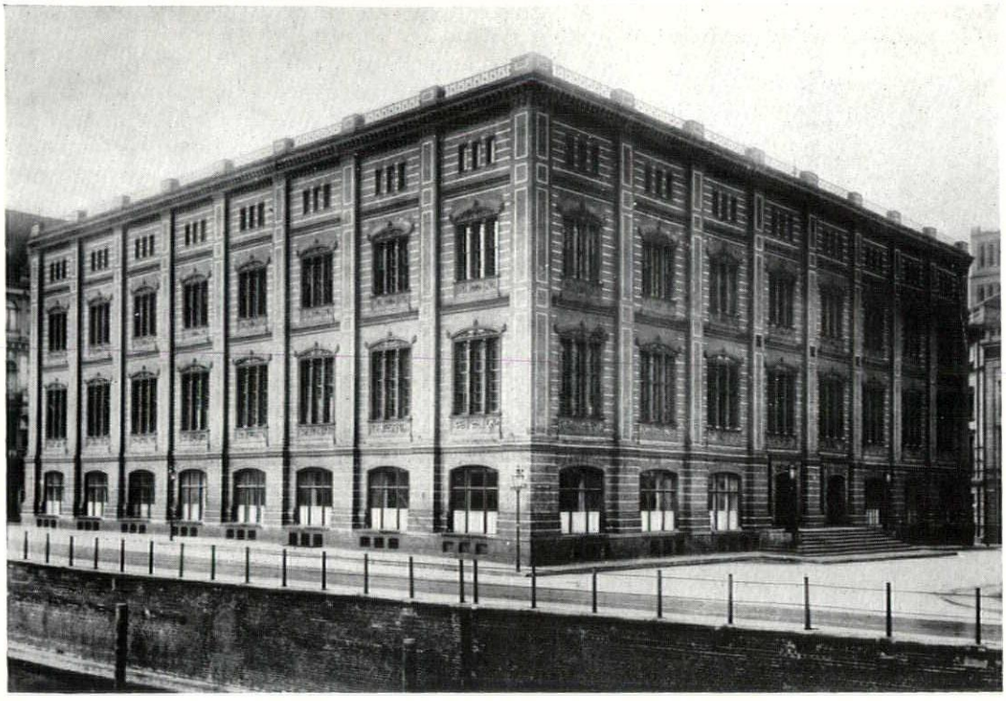


10

One has the impression that an alien organism has been using the torso as a place of hibernation and is now making its catastrophic exit.

A recent exhibition at Reading Museum and Art Gallery of paintings and sculpture by professional artists living in the vicinity included a remarkable series of paintings by Anne Bruce, devoted to a single subject. The subject is a cherry orchard in blossom, 10, but is often no more than a phantasmal ingredient of the paint. Her feeling for paint as a substance is quite exceptional. It's not that she splashes it around or lays it on thick; it's simply that she has the means, rare enough in this country, of covering the canvas with a softly glowing integument, and of giving large, almost featureless areas of colour a life of their own.

Robert Melville



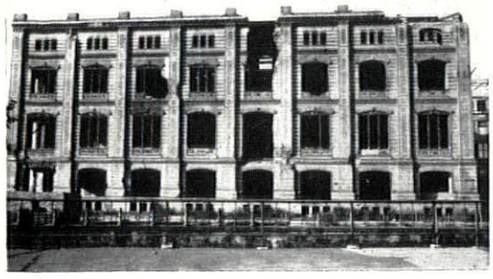
1

HISTORY

SCHINKEL

Schinkel is the only Neo-Grecian architect on the Continent whose name is familiar in this country, and rightly so; for he is the greatest. A measure of his greatness is the far less familiar fact that towards the end of his life, in the 1830's, for certain types of task, he turned away from Grecian inspiration towards a functionalism essentially independent of the past. His designs for a warehouse and public library were never executed, but his Bauakademie, 1, was and remains the most important example in the Europe of his age of monumental, officially accepted, functionalism.

If one says it remains, it must be added that it remains severely damaged towards the end of the war and never repaired, 2.



2

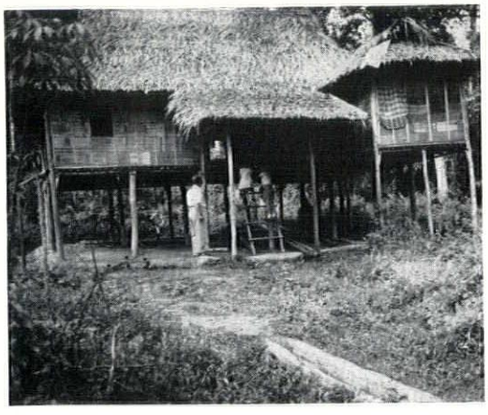
That it could be repaired has never been denied, but the East German authorities have decided not to repair it. Their argument, as put forward in a letter from the City Architect to Professor Pevsner, which Professor Pevsner published in *The Guardian* of June 1, 1961, is that the building in its present position would be a nuisance to the replanning of the centre of Berlin. No more is promised than to re-erect the façade in another place. That would be something; for the façade with its brick pilaster strips, its even fenestration of tripartite windows with a little North Italian Quattrocento trim, and its flat roof, is impressive enough. But can we trust the promise? The Royal Palace of about 1700 with all its splendid work by Schlüter—the other greatest Prussian architect—was razed to the ground for no good reason. So was the Stadtschloss at Potsdam and, also at Potsdam, parts of Rauch's celebrated monument to Frederick the Great are stored somewhere against re-erection at an unspecified moment. The finest square of Berlin, the one with Schinkel's theatre and the two identical domed churches by Gontard, stands in as ruinous a state as fifteen years ago and may soon, if nothing happens, be past salvation. Besides, it is surely an admission of defeat on the part of twentieth-century planners if they have to clear away key monuments of the past because they need a *tabula rasa* to do well. It may be too much to hope that the East German authorities will re-think their decision. So nothing remains to be done than to record it with dismay.

HOUSE TRADITIONS IN MALAYA

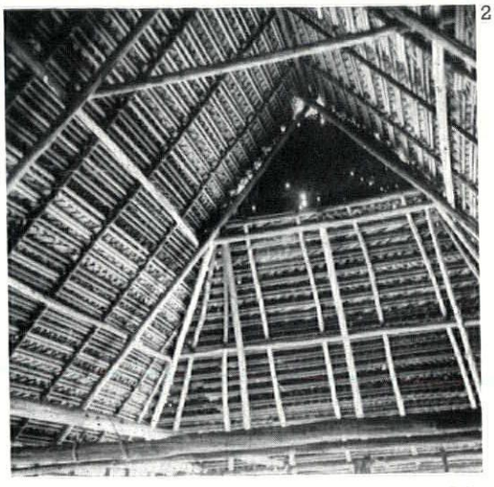
One can enumerate, in Malaya, several successive traditions in dwelling and house building. In historical order they are the tribal house, the Malay house, the Dutch house, the Chinese house, and the British colonial house. The Malay house itself appears in different forms, having been subjected to influences from Sumatra in the region of Malacca and from Siam in the north and east. One may discount the Portuguese influence; the Portuguese have left only one monument witnessing to their time of occupation, a small city gate in Malacca.

Tribal houses

The long-house is rare, and does not reach the large size of Borneo long-houses. The type most frequently seen in the country is a one-family house forming the Sakkai villages of tourist fame, which stand so conveniently near the road leading into the hills of Perak. In the best examples, the structure is entirely of bamboo, but mostly, now, one sees a bamboo structure with an admixture of timber. The bamboo members are lashed together with bamboo slings, or a thinner pole is passed through an opening made in a bigger one. The wall is made of panels of split bamboo often woven into a pattern, 1. The steep roof is covered with 'attap'—mats made of interwoven palm-leaves fixed to thin bamboo poles. These mats are rolled and placed on the ridge when the carcase of the house is finished. The roll is then opened, and the attap mat thunders down the rafters. It is tied from inside to the rafters with bamboo slings. The roof shown in 2 is a good example, though it is partly built of timber. It also shows the gable triangle above the truncated hip, a feature common throughout East Asia. Often these gable triangles are made of several tilted planes,



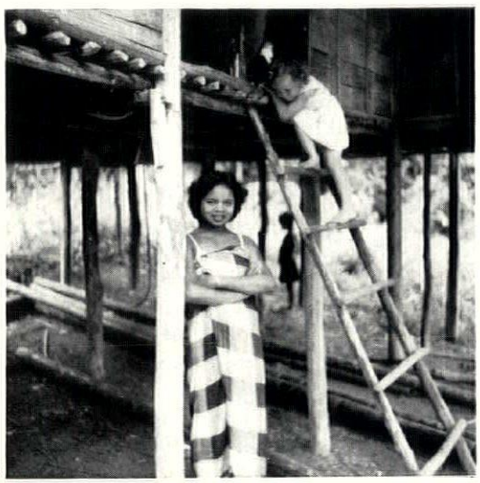
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like large louvres, and in this form they help to ventilate the house. The roof is always open; there is no ceiling.

The attap roof breathes, though, if well made, it is also waterproof, being so steeply pitched. The panelled wall also breathes. The floor itself, invariably raised above the ground on stilts and made of split bamboo, lets in air from below. Windows are possibly a comparatively modern feature in this kind of house. It is possible to read in the light filtering through the slots in the walls, and this subdued light is very agreeable. In houses in Trengganu quite delicate weaving is done in rooms whose walls are made of the same material. 3 shows the floor-construction. The timber post with a bracket supporting the cross-beam is certainly not of traditional construction, however. In every good Eastern



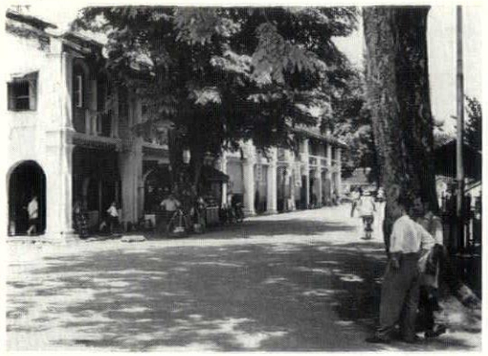
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structure, the crossbeam passes through a slot in the post. All members are remarkably thin, the floor in particular being quite springy, yet the houses are structurally enduring.

Malay houses

There is a multitude of types. Two only are illustrated here: a type showing influence from Sumatra, found in the region of Malacca, and a type common on the east coast. The Malacca house is most convincing in its clear articulation of the different parts of the plan. These are: a verandah-like entrance, often projecting beyond both ends of the house, the main room or rooms—there may be two—standing on a slightly higher level, and at the back, reached by a connecting passage which has its own back ladder, the kitchen.

Approaching Malacca from the north, along the coastal road, one passes through rice-growing village after village with houses of this type. Here is one of the rare parts of the Federation which is peasant country—very different from the large and regular rubber forest or the shapeless jungle. The road passes over rough, shrubby hills and again and again dips into these narrow rice-valleys. The core of the rice-village is frequently a short street of

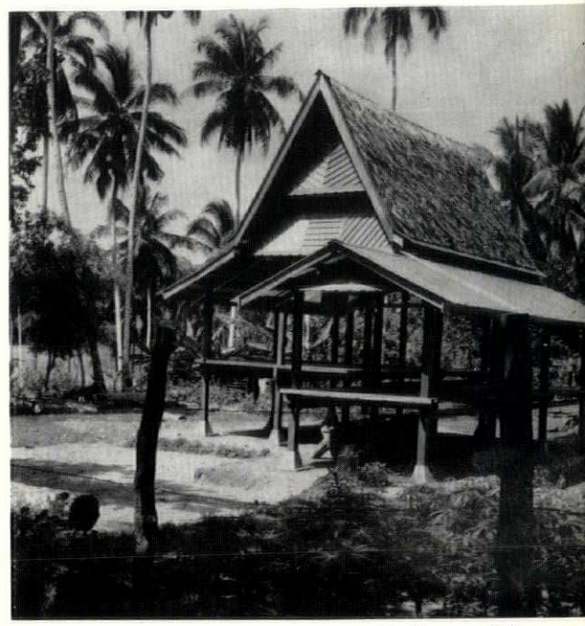


4

Chinese shop-houses, 4. The Malay peasants' houses form long ribbons along the road, or skirting the hills at the edge of the valley, stretch between one Chinese shopping-centre and the next, which is sometimes ten miles away.

Each house stands in a neat plot or garden, with a water-buffalo or two tethered to a tree in a little dip, with a grass plot and, quite often, an array of plants in flower-pots all round the verandah, and chickens, goats and some tools and stores in the space underneath the raised floor. Entering, one finds the main part of the house, which is often quite large, subdivided by differences of level and also by low partitions or by shelves forming partition. The light is subdued and cool, and these freely-planned rooms under their steep, dark roofs have a quality that appeals to the architects of our generation. Equally convincing are the thin, widely spaced members framing these houses, in particular the elegant verandahs, whose proportions—strictly modular, by the way—are often very pleasing.

Some of these houses are as much as 150 years old; on the other hand, they are still being built, though in the new houses the less steep parts of the roof are no longer covered with attap, but with corrugated iron or asbestos as in 5. 6 is a typical house standing just outside Malacca. The floor construction is clearly shown in the verandah: the posts stand on stone blocks, or blocks of a traditional kind of concrete

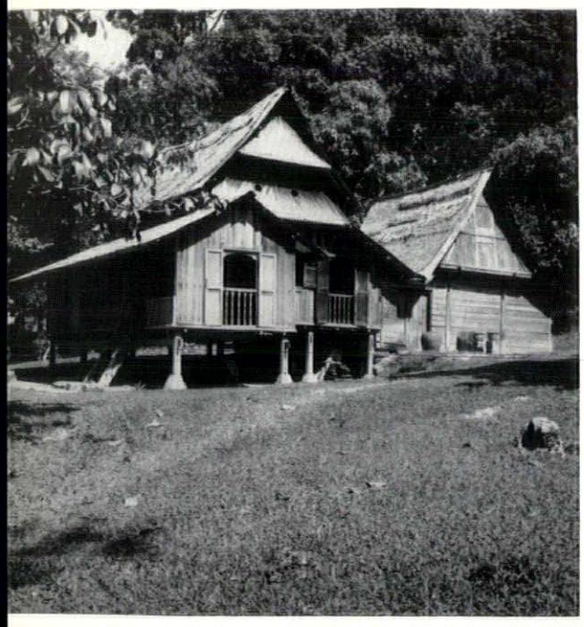


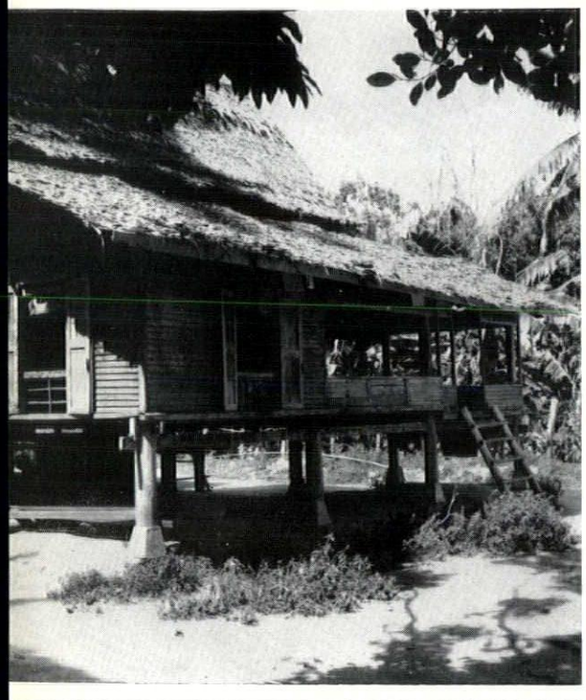
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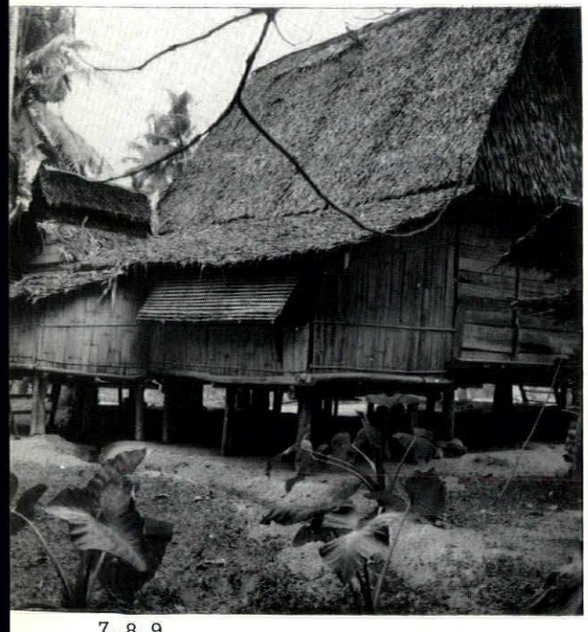
made of honey, crushed egg-shells and limestone; a long lintol-piece is passed through the posts at about 3 ft. above the



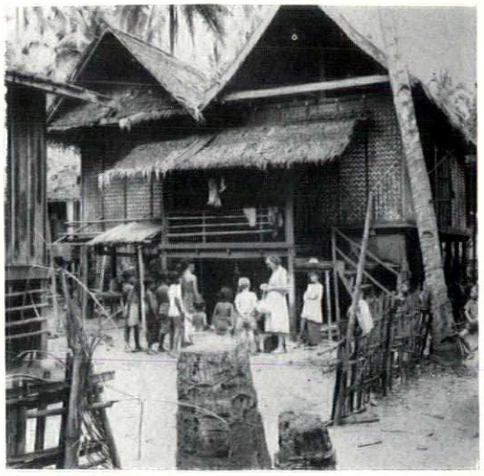
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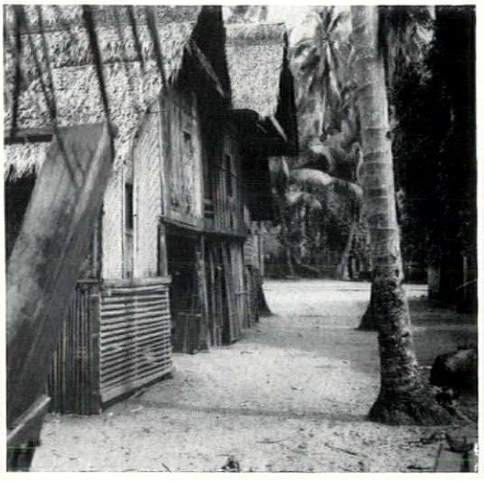


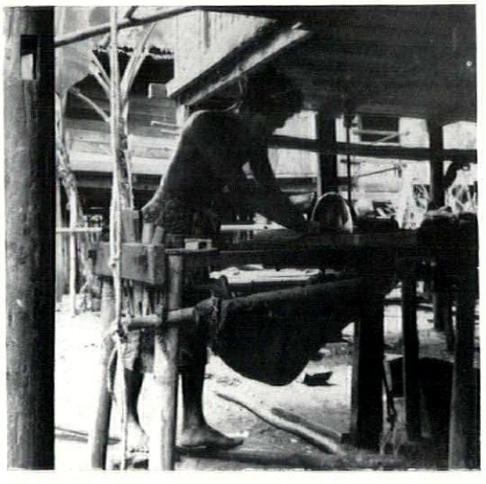


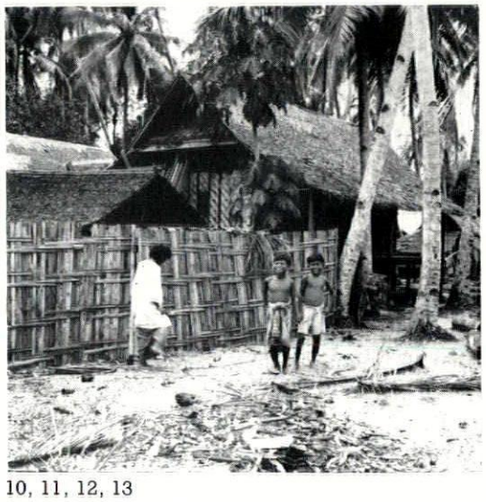


7, 8, 9









10, 11, 12, 13

stone pads, and the crossbeam also passes through the posts but does not rest on these lintols. These crossbeams support the actual floor framing. The differences of level are sometimes obtained by placing the joists of the verandah floor directly on the lintol.

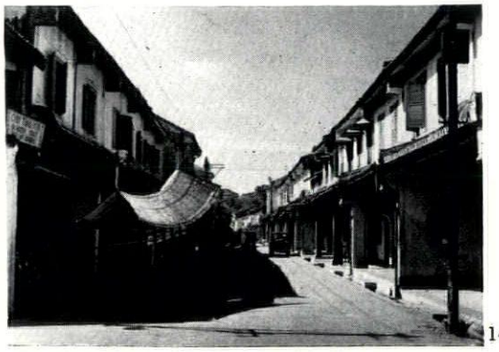
7 shows quite a large and new house from the northern end of the coast road, 50 miles from Malacca. The three parts of the house are clearly shown, as are the inclined breathing 'louvres' in the main gable. 8 and 9 show a house at Lubbok China, about 25 miles north of Malacca. The verandah here is particularly well proportioned, and it is interesting that in this house the out-buildings under the lean-too roof behind the kitchen are clad with split bamboo and built of unsquared timbers. The projection under the lean-to eaves is a kitchen shelf.

The type of house built on the east coast (Kuala Trengganu) is very different. It has a small, open entrance-porch at a considerably lower level than the house itself, 10, which is lifted high above the ground with the undercroft partly closed in and used as a workshop, 11 and 12. The walls, hardly interrupted by openings, are made of bamboo woven into coloured patterns. The plan is less clearly articulated than in the Malacca house, but the pattern of the walls is often fascinating. Such a pattern is shown in 13 in the bamboo fence in the foreground.

Malay houses are often dismantled and re-erected somewhere else. Peter Morley, in his writings about Malay houses, mentions quite an old house which has shifted place twice.

Chinese houses

Malay houses are typically tropical. Chinese houses, on the other hand, have been imported from a different region. They stand on the ground, and their plan develops in depth from the street around a series of courtyards. They are essentially



14

town houses, a type which neither the aborigines nor the Malays had developed. Those earlier intruders, the Dutch, had developed a town house, a few surviving specimens of which can be seen in Malacca. Significantly this is also a courtyard house.



15

It is in Malacca, 14, that one finds the best surviving Chinese town houses in the true tradition. Everywhere else, one has to visit temples in order to see houses in the Chinese courtyard tradition, the Buddhist Chinese temple being essentially a courtyard house. 15 shows three temples in a row in Malacca.

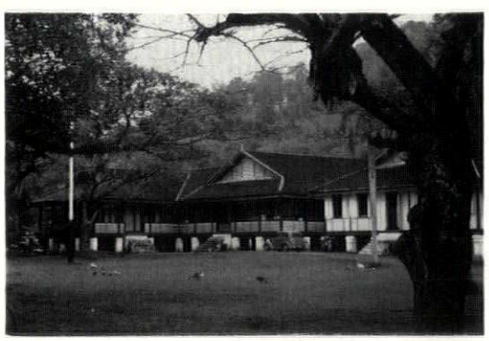
Perhaps the only point of contact between these Chinese structures and the native houses of the country is that in the Chinese house, also, timber predominates, though it is combined with brick walls. But the very heavy structure of Chinese timber roofs is no counterpart to the light roofs built by the earlier inhabitants. The Chinese shop-house, already illustrated in 4, is an abbreviation of the courtyard house. In its normal two-storey form the ground floor is occupied by a deep shop behind an arcade, with stores at the back, and the first floor forms an equally deep caravanserai, under the large Chinese roof with the ventilating lantern over the ridge. Any number of cubicles are partitioned off underneath this common roof, and any number of people are found living there. The court is reduced to a backyard.

The shop-houses are built of brick, with roofs covered with the fine Chinese pantiles. Their decoration, such as it is, is frankly European, with pilasters marking the party walls. They are plastered and painted light green, ochre, yellow—colours somehow too light for the glare of Malaya. The native timber, bamboo and attap provide a more fitting colour-scheme.

British colonial houses

This last tradition is international: a colonial house in Malaya hardly differs from one in Ceylon or in British Africa. But it is a *tropical* type, and is therefore more akin to the aborigine and Malay house than to the Chinese. It is lifted off the ground and it makes extensive use of timber, though structurally mainly in the verandahs which, wherever possible, surround the house on all sides. The core is of brick. It has a wide roof overhang. 16, a resthouse, shows these verandahs, of generous depth (8 ft. is normal) which are themselves protected by 'shiks' or bamboo roller-shutters. 17 also shows widely projecting eaves supported by struts and the open, airy structure of the verandah and the verandah-room projecting over the drive. 18 is another Government resthouse and 19 a large block of early flats in Kuala Lumpur, with a front wholly without glass. If anything, these colonial houses are too well protected against sun and glare. Often a truly Victorian gloom pervades their vast and wasteful spaces.

J. Posener

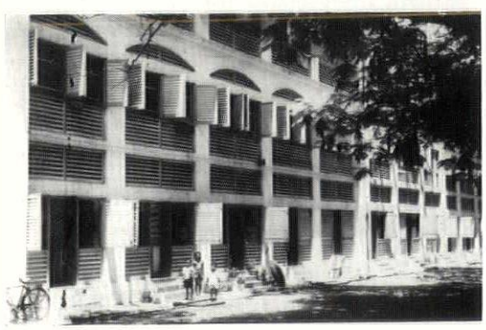


16, 18



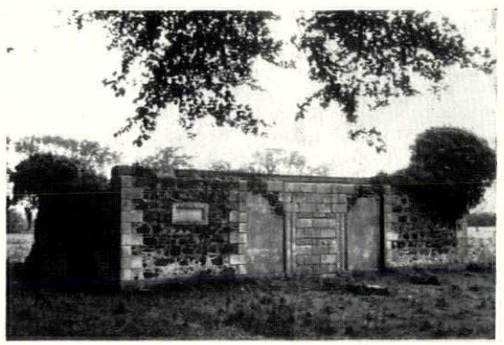


17, 19



ULSTER ECCENTRIC

John Cary designed and built his Temple of Liberty, Learning and Select Amusement at Toomebridge in Northern Ireland in the nineteenth century, and he filled it with stained glass



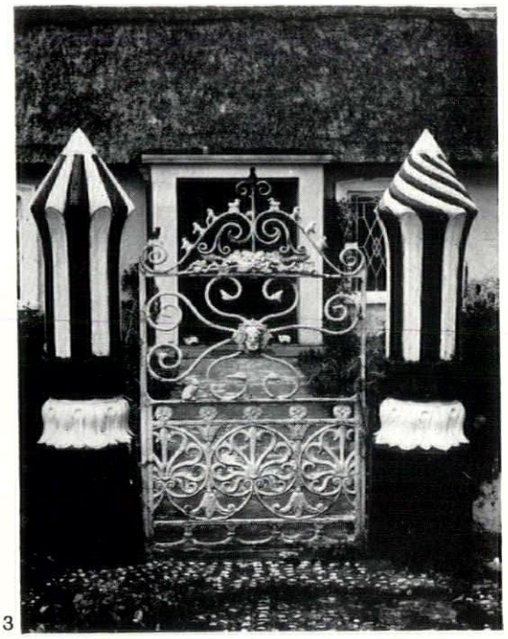
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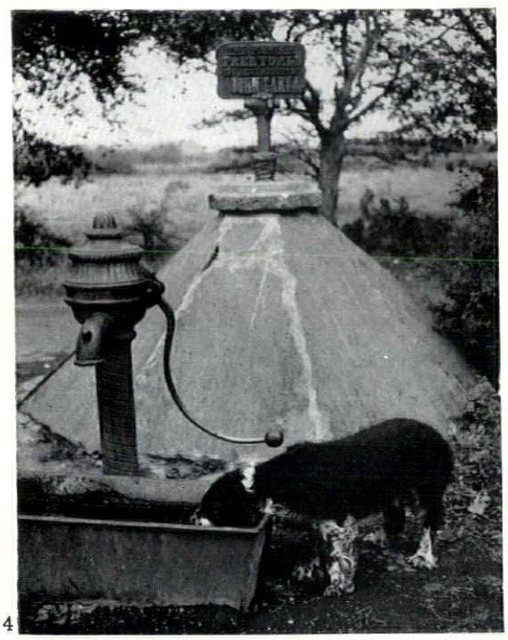


and busts of 'men of the world.' It was a free-thinking temple and a bold gesture in a country which feels so bitterly about religious schisms. The place, in fact, was deliberately allowed to fall into ruin, 1, after its architect's death.

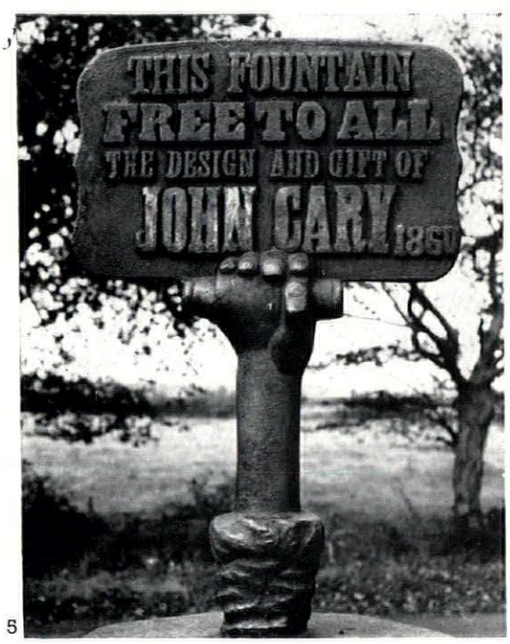
However, additions Cary made to his neighbouring residence still stand, the whorled candy gateposts he patterned to make the eyes spin and his fancy ironwork with lions' heads and serpent hair and cats, 2,3. One can, alas, only faintly trace some of the thaumaturgic sigils which he pressed into the ground with pebbles. The village also still displays his 'Fountain of Liberty: 1860,' an eight-sided pyramid with a hand on top holding a dedication plate 4, 5.



3



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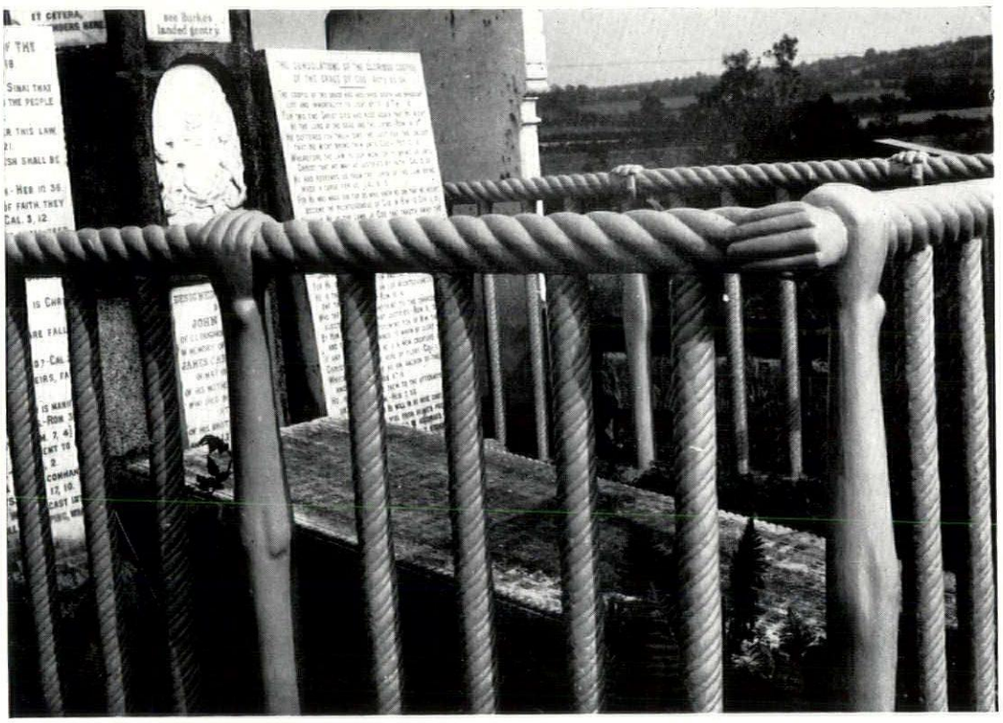
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Then there is the fabulous apparition of the tomb Cary designed as a library of tablets relating doubtful stories about himself and including an advertisement for *Burke's Landed Gentry*, and all surmounted with a stone vesicle supporting cabalistic insignia and surrounded by railings composed of hands clasping arms which grasp hands, etc., 6.

The tomb alone is sufficient reward for any lover of the curious who cares to make a pilgrimage to Toomebridge, a splendid invitation to suspend rational criticism; and certainly the social historian will find it worth his while to analyse the confliction of legends which are told locally about the creator and inhabitant of the tomb, for the stories vary significantly at different social levels.

It seems to be generally held, however, that Cary was over life-size. For instance, most people admit that he blew up with dynamite the shelter of a watchman who reported the eccentric for walking unlawfully on the railway lines. The watchman had to shiver for many nights in the winter cold.

Oswell Blakeston



6

PLANTS

WEEDS: 1, SPREADERS*

From the architect's point of view most herbaceous plants are no good because they diminish rather than increase with the neglect they get. Many 'garden' plants are kicked about before they have a chance to establish or just pine for lack of cultivation on verges, in courtyards, planting areas, spaces between buildings. (Gardens proper don't come into it, gardens implying the presence of a gardener.) What architects should be looking for are plants that flourish by neglect.

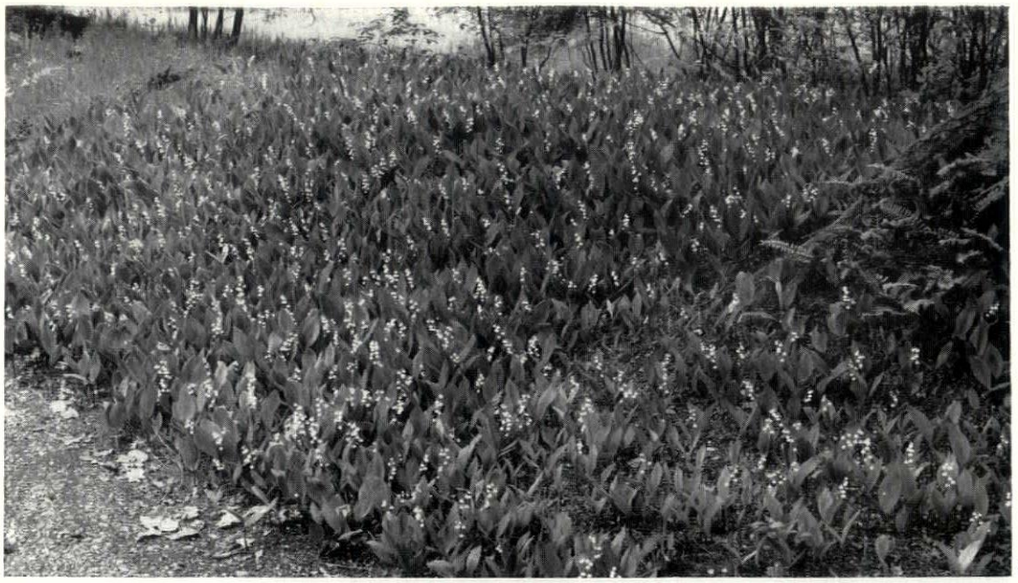
Oughtn't they to be thinking more about the irrepressible virtues of weeds, and picking out the plants with a weedy habit? I don't want to enter into a discussion about what does or does not constitute a weed. This is a purely subjective matter. (They aren't just plants that normally grow wild; they are plants which manifest a wild and disorderly habit; cf. 'widow's weeds' and Ophelia's 'weedy trophies.') Weeds are simply trying to take over, natural improvisers, enterprising colonists. They do this mainly in two ways: one by root invasion (nettles, couch-grass, convolvulus) and the other by self-seeding (poppies, willowherb, thistles, river balsam, forget-me-nots.) Also, less often, by surface runners (periwinkle).

What about entertaining more weeds? Some plants have such close-knit root systems that they overwhelm everything else. If a specific limit is set to their intruding habit (confined by man-made paths or brickwork), their pernicious quality becomes a virtue. The common herbaceous perennial white daisy, *Chrysanthemum maximum*, 1, of Pyrenean origin, is an example. It allows no space for rival weeds. It thrives in poor and shallow soil. It spreads, but it doesn't jump about much.

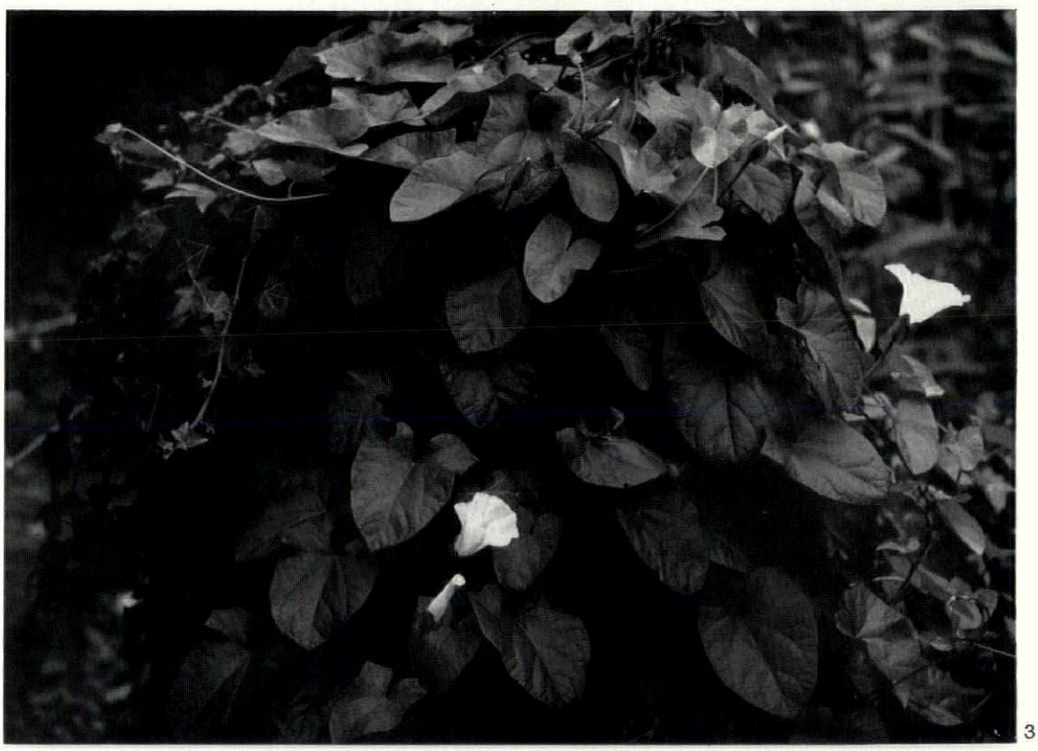
*A second category of weeds—peripatetic—will be dealt with next month. The series of articles, of which this is the eighth, describe outdoor plants of interest to architects for use in close relation to buildings.

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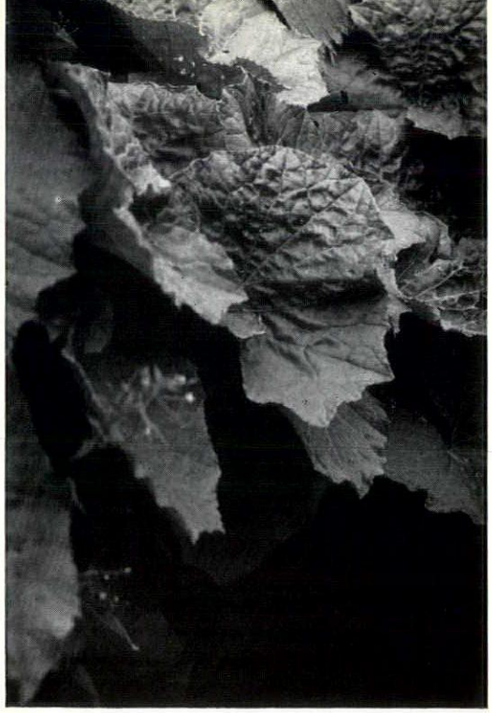


Its lovely 3 ft. July daisy flowers sprawl elegantly when no one stakes them.

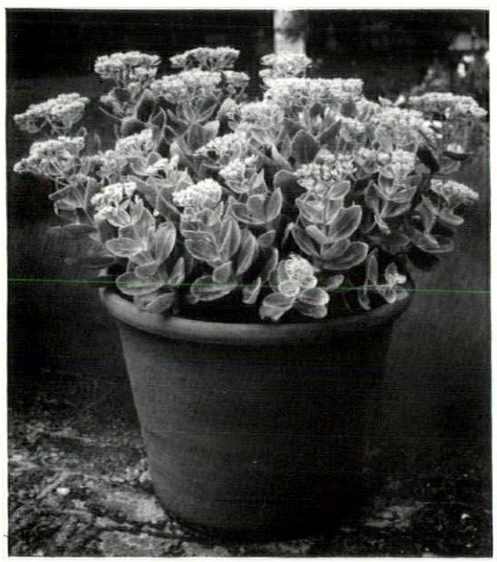
Lilies of the valley (*Convallaria majalis*), 2, have a similar invasive habit, a creeping rootstock. They have entirely colonized the damp woods round Chantilly. In this country they make a dense ground cover in semi-woodland even on light sand. A good leafy moist loam suits them better. Where there are no trees, they need north or north-east wall-shade. They are best planted in early autumn, the divided crowns being set an inch below ground, four or five inches apart. Fortin's Giant is the best flowering variety.

A beautiful pernicious plant is the common bindweed *Calystegia sylvestris* ('Convolvulus'), 3. Its roots are as persistent as ground elder. In the deserts of East London going out to dockland the bindweed laces up the chainlink fencing on new housing estates where no other plant attempts to grow. The white bell-flowers in July, August, the heart shaped leaves, the rampant spiral growth are a burst of song in the tarmac wilderness. This of course is not listed in catalogues. To keep bindweed within bounds one might sink some kind of vertical defence, two feet deep, say close-meshed sheets of expanded metal or a large tin drum.

A less obvious but rampant sprawler above and below ground is the common hop, 4. It is quite as beautiful in its way as the vine, but doesn't need oxblood or elaborate soil conditions. Provide it with a fence, paling, wires or metal trellis to twist up. Officially called *Humulus Lupulus* (syn. H. *luteus*), seed can be had from Thompson & Morgan, Ipswich, and roots from



5



6

Hillier. The twining shoots appear in early spring, it dies down in autumn. The hop-flowers dry on the plant in a delicate desiccated way. If it spreads too much, haul it up by its long ropelike roots.

There is a 'genuine' weed I notice on railway cuttings, often in stiff soils, a kind of giant's coltsfoot, called *Tussilago farfara*, 5. It is a powerful runner with creeping rhizomes, and in moist positions the leaves attain gigantic size, sage coloured, cobwebby, silvery and downy underneath. *T. farfara variegata* is blotched and margined with creamy white. It occurs a lot on roadsides in County Wicklow along with mats of ivy, hogweed and meadow rue. It is very fine associated with common ferns.

I would like also to draw attention to what I suspect must be a Japanese weed, *Sedum spectabile*, 6. Its urge to survive is abnormal. A fleshy plant of glaucous hue, it endures extremes of drought, flowers pink in late summer and is an excellent plant for absentee pot cultivation.

Patience Gray

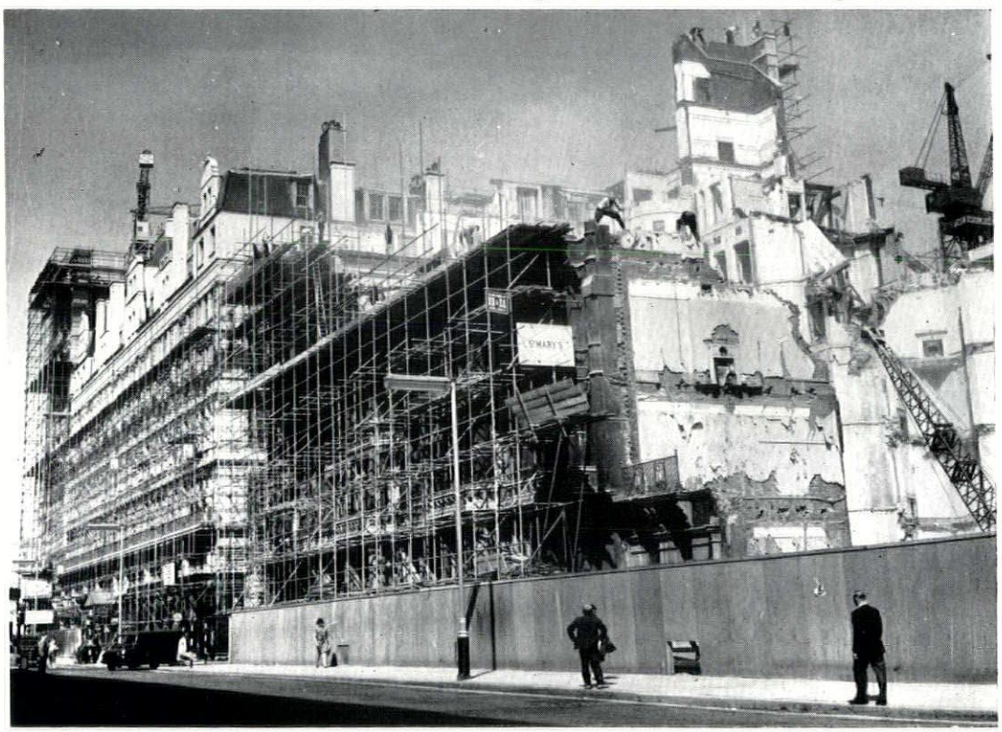
OUTRAGE

NO PLAN FOR VICTORIA

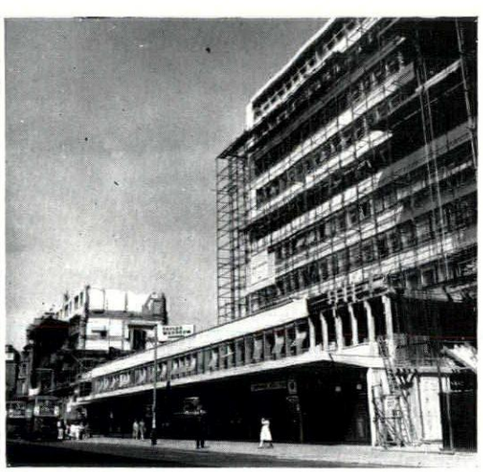
What sort of a picture of Westminster Abbey or the Houses of Parliament do all the tourists, perched precariously with their cameras on a traffic island, show on their home screens back in the New World? 'Those lovely London buses—and that's a taxi-cab, room for everything except a hat . . . the big tower you can just see is the Abbey . . . and that's a building site, everywhere's still being rebuilt after war damage.'

Everywhere is certainly being rebuilt—but not after bomb damage. For now that the City is virtually replete, Victoria has become, even more noticeably than the West End, the happy hunting ground of the developers. Watney's old brewery is being replaced by offices; there seems to be hardly a block in Victoria Street that is not the subject of a planning application; and at Queen Anne's Mansions and along Petty France the buildings may soon topple. On Millbank, too, no distance away, the new Vickers tower looks across at the serried ranks of the Albert Embankment and two large empty spaces on either side of the southern end of Vauxhall Bridge await the pile-drivers. A new City—dead after dark—is being born at the opposite end of the historic axis running between the City and the Court, between Commerce and Parliament.

The planning authority—the London County Council—seem to have been caught by surprise. The relatively new and large buildings in Victoria Street were not supposedly ready for profitable redevelopment yet, and their zoning as offices in the 1951 Plan was only meant to be a recognition of this fact. Now the somewhat dubious use of 3rd Schedule Rights is enabling developers to build, almost as a right, modern office buildings with much



1





2
3

1, *old offices being demolished in Victoria Street and,* 2, *new offices going up.* 3, *development on the old Watney's brewery site behind Victoria Street.*

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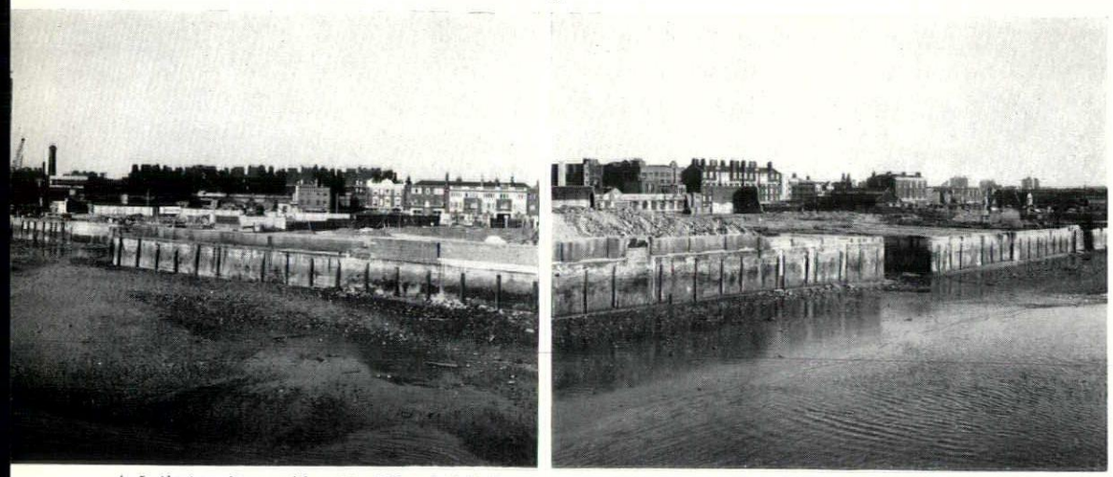
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4 5



4, 5, *the two sites on either side of Vauxhall Bridge.*

more floor space than those they are replacing. The Council have no bargaining position and are consequently unable to impose any compliance with a genuine long-term plan. Victoria Street, Parliament Square and Victoria Station are likely to remain basically as they are at present—a terror for both pedestrians and drivers, a compromise suiting neither. The influx of new offices will not only accentuate this traffic problem, it will also devitalize the social life of the area.

The present policy of the planning authority, which is strengthened in the first five-yearly review of the County of London Plan, is aimed at restricting office accommodation in Central London, but the battle for Victoria seems already to have been lost.* The Watney's brewery site is zoned for industry and could hardly have claimed office use-rights, but presumably in return for a road which may be of dubious value in the long run, and for a block of flats which will doubtless become only '*pieds-à-terre*,' permission has been granted for a vast amount of new office space. It should have been obvious some years ago, even if not when the present Plan was prepared, that Victoria Street was ripe for redevelopment—or at least for the speculators—but no overall plan for the separation of pedestrians and motor-traffic along this important artery has been put forward by the planning authority, neither has any plan been proposed for either the Abbey precinct or for any radical solution of the road traffic problems at Victoria Station, even though this is a key junction on London's inner ring road. Buildings are already being put up which could effectively prevent the solution of these problems for another 70 or 80 years. Will we be able to wait that long?

Mauled and seemingly defeated in the battle of Victoria Street, the London County Council could still be firm about three other major sites in the area, where office development would finally prevent a socially alive, twentieth-century Westminster from coming into being. First there are the two sites by Vauxhall Bridge already mentioned. Zoned for commerce and industry, one fears that they too are to be used for more offices: it is reported that on one site is to be a 400 ft. high office slab. Yet here could be the chance to create a really imaginative scheme for a riverside community, close to its place of work, with a high density because it faces the finest open space in London, which could be combined with both a multi-level intersection at Vauxhall Cross and a pedestrian walk along the river. The land must be almost all in the ownership of two firms, one of them a nationalized industry.

Secondly, another smaller community but with equally enviable views and amenity, could be created next to St. James's Park by combining the sites of Queen Anne's Mansions and Wellington Barracks. Flats above urban squares and a parade ground, with vehicular access underneath them, would cater for both civilian and military needs. The War Office, of course, owns most of this site. The replacement of the present bulk of the Mansions, and the retention of the present Barracks layout, would be nothing short of disastrous.

Finally, soon after proudly announcing that they have just finished in Southwark the largest block of offices in Europe, the Government is proposing to build on the large vacant site to the south of Westminster Abbey bounded by Horseferry Road, Marsham Street, Great Peter Street and Monck Street, another massive office building. In doing this the Government would be, in fact, flouting the Council's planning policy, presumably with the excuse that it must have offices in Central London for key Civil Servants who must be close to the House. Yet if other business firms can decentralize their head offices at the suggestion of the Council, cannot the Government do the same—indeed go further and set a good example? On this particular development the planning authority may be under pressure from the Government; there is no need for them to give in. For the site in question is surrounded by other undeveloped land and to the north by a Peabody Estate crying to be rebuilt, and here is the chance to provide a Barbican scheme in Westminster, with an existing social nucleus and a rich character flowing from its association with Parliament and Church. A comprehensive development would still allow offices for MPs, social clubs, possibly a House of Commons reference library or special flats for visiting dignitaries.

6, *the site off Horseferry Road.*



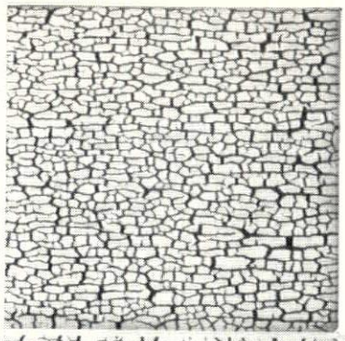
If these three sites were developed primarily as new residential communities, each with its own special character, then the other sites *could* be used for offices, for there would be a guarantee of a genuine mixed community with variety, vigour and life, whilst the profitable office development could be incorporated into, and made to pay for, a traffic pattern which would produce both efficient vehicular circulation and real freedom for the pedestrian.

A policy such as this would still, of course, cost a lot of money, but would it not be more economical in the long run than being saddled with a city both inefficient and inhuman? That the tourists cannot see the Abbey except through exhaust fumes is not merely something the British Travel Association should regret. Westminster is above all *our* heritage; it is our birthright that is being sold. Tourists may expect this: but should we become tourists in our own land?

The London County Council has proclaimed its policy of restricting office development in central London and of encouraging residential development; let us see it put into real practice. If the Government, who own some of the key sites in the area, refuse to co-operate, the Council will at least have shown where any blame lies. Unless they have the courage to act first themselves, however, public opinion must assume that the blame rests with them.

Rex Touchstone

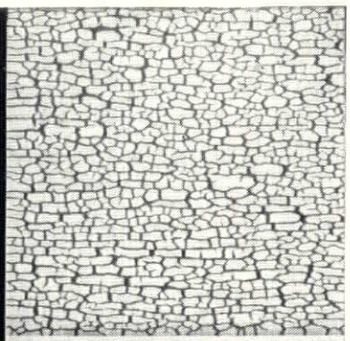
* See the complaint about the LCC's failure to plan this site comprehensively in this year's report of the Royal Fine Art Commission.



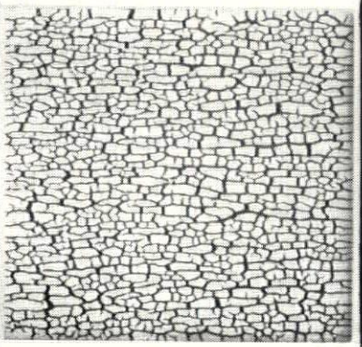
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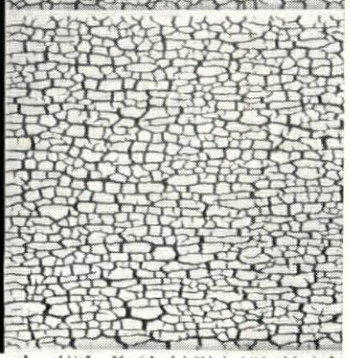
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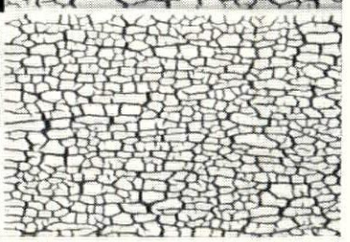












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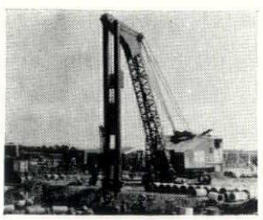
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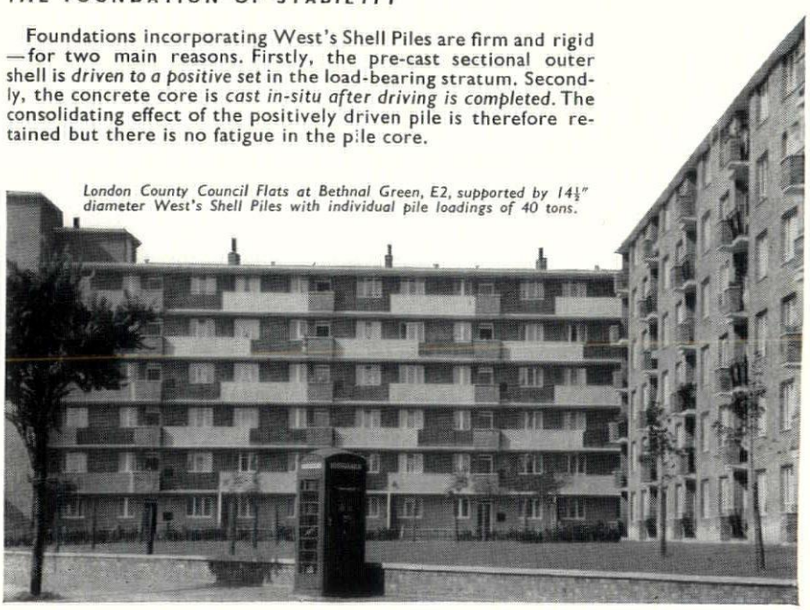
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THE NEW IES CODE

The new Illuminating Engineering Society Code has caused some dismay by its acceptance of the principle that it is not possible to obtain enough light in places of work from daylight alone. In this article Dr. R. G. Hopkinson of the Building Research Station discusses the ideas behind the Code and the situation it seeks to remedy. This article is published by permission of the Director of the Building Research Station.

Great changes have taken place in lighting technology during quite a brief space of time, as a comparison of the lighting provided in buildings of the last two or three years with those of the immediate post-war period will reveal. While the worst lighting of to-day is quite as bad as the worst lighting of the late 1940's, the best shows a remarkable improvement, particularly in freedom from glare and visual discomfort. The overbright opal spheres of the earlier period were tolerated because they gave high levels of light, but they were uncomfortable to look at. Good modern lighting, shielded from direct view, is a considerable advance in the right direction. In daylighting, improvements have also been made, but the fully glazed unscreened curtain wall is a retrograde step as everyone who has experienced working in fully glazed rooms on bright days knows to his acute discomfort. Just over two years ago the Illuminating Engineering Society set itself the task of studying new lighting methods with the purpose of recommending the best of good modern practice and condemning the worst.

The result of this two years' work is embodied in the new edition of the well-known IES Code. This edition goes further than ever before to express in figures just those subjective factors, such as glare, which the architect has so often accused the engineer of neglecting, while it still continues to give detailed guidance on levels of lighting for specific tasks. This new edition has received a warm welcome from the lighting profession, both in the engineering and architectural fields, but the welcome has often been coupled with requests for further guidance on what it all means.

Higher lighting levels

The really big change which has come over the lighting situation in work places is that there are now demands for much higher rates of production which in turn demand rapid and accurate visual work. These demands have led to the need for lighting levels much higher than those which were considered adequate even just 15 years ago. These levels cannot normally be provided by daylight alone, and this awkward fact must be faced. In all work places of the future, lighting will be achieved by a combination of good daylighting and proper supplementary artificial lighting. It would be a disaster for good building if architects failed to realize this quickly and instead left the problem of the lighting of the environment to others who had less visual imagination and sensitivity.

Those who were responsible for drafting the present edition of the IES Code faced the fact that there have been changes in our outlook and social structure during the past 10 years which have been echoed in developments in lighting technology. Not only are work people asked to produce more, but they in turn are used to a higher standard of living at home and they therefore demand a much higher standard of comfort and well-being in their surroundings at work than they have had hitherto. People will not work in a dull or dingy factory or office. Even if they as individuals may be prepared to do so, their Trade Unions will see to it that proper amenities are provided. We have therefore a changed situation. Management demands good lighting to speed production, and staff demand good lighting for amenity and visual comfort.

The IES Code deals essentially with the lighting of work places, and does not attempt for the moment to advise on the lighting of places of entertainment, of exhibitions, and of other environments where aesthetic or social factors are of greater importance. When lighting a work place, the first thing that needs to be considered is the work and the worker. This is quite obvious, but it is so often forgotten. The worker must be able to see his work easily without visual strain at the moment and without liability to visual fatigue in the long run. He also needs to feel that the lighting is good, and not merely to be told that it is good simply because the pointer of an 'electric meter' goes up to a given mark. If he is able to express himself clearly, his requirements should be taken into account. If he says that he needs individual light on his work he should be given it provided there is good reason to believe on fundamental grounds that he is right. He should not be fobbed off with a general lighting scheme simply because this is easier for the engineer to install. The new edition of the IES Code has recognized this and much greater emphasis is now put on the quality aspect of lighting than ever before. These quality aspects have, however, been so expressed that figures can be put on them so that an engineer and architect working together know precisely what to do in order to achieve the lighting demands put upon them.

During the past few years there have been advances in lighting technology which have come in time to match the demands of our changed social structure. In the first place the development of more efficient light sources, particularly the fluorescent lamp (and now a new type of filament lamp, the 'iodine-cycle' lamp of long life and high efficiency is coming along) has enabled high levels of illumination to be provided at a considerably less cost than was possible a few years ago. In the second place, research work has led to means of prescribing ways of eliminating glare from lighting installations without increasing their cost. The third and possibly the most important development is the study of adaptation and brightness balance which has led to recommendations for the supplementing of inadequate daylight by artificial light of satisfactory quantity and quality so that work can go on at high levels of illumination with freedom from visual discomfort throughout the working day.

The visual field

In essence, then, the new IES Code develops its thesis by considering the whole visual field as 'a pleasing environment conducive to interest and a sense of well-being.' This visual field is divided up into four main components, the work itself, the immediate surround to the work, the general environment, and the sources of light, whether these are artificial lighting fittings or windows. Each of these separate components is treated individually and then together as a whole.

The work must be illuminated to a level which permits the worker to operate at a high degree of visual efficiency. The Code does not specify lighting levels which would result in an all-round hundred per cent visual efficiency, for the simple reason that the economic situation of the country at the moment cannot support levels of this order. There may also be very good reasons why levels of this order will never be prescribed, because there is evidence that visual discomfort from excessive brightness of the task itself may then intervene. Our eyes are not made for perfect vision without some degree of discomfort. We are indeed capable of a very high degree of visual performance for short periods at a time but

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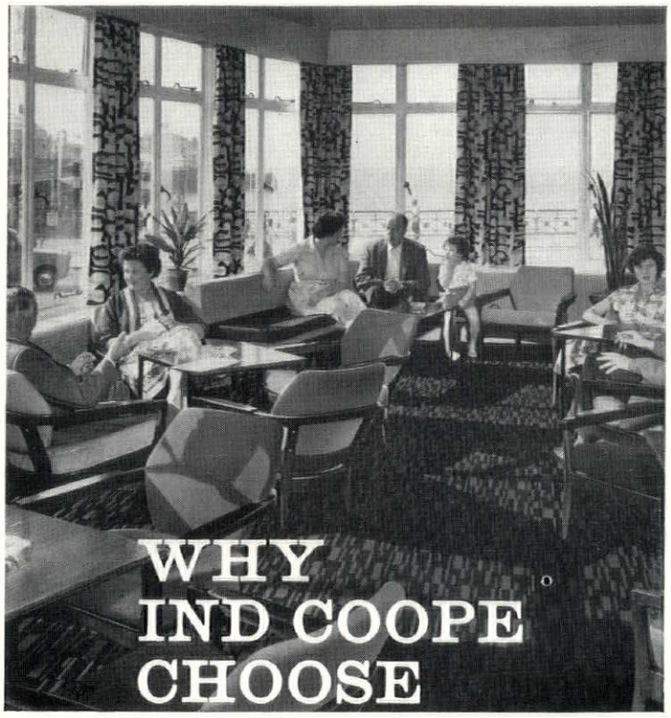
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not necessarily throughout the whole of a working day. This is a fact which has not generally been realized but it is one which the IES Code has taken into account in its recommendations, and this itself is a major step forward. It may not be relevant, but it is instructive to point out that some of us can run at 25 miles per hour for a very short sprint, but even the best of us has to slow down to 15 miles per hour on a mile run.

P.S.A.L.I. a necessity

As in the previous Code, the levels of lighting necessary for different visual tasks are tabulated in a list of different occupations. These levels of illumination apply equally to daylight as to artificial light, for they are computed as before from a knowledge of the critical size of detail and the critical contrast in the visual task. A rather different basis of computation has been used in this new edition. The level of visual performance which is now aimed at is higher than before, to contend with the new demands for higher visual efficiency. For this reason the levels of illumination are in some cases substantially greater than those in the previous edition of the Code. The net result, however, is that these levels of illumination are no longer easily attainable by daylight without introducing excessive sky glare.

We, therefore, have to face the situation that it is no longer possible to relate the prescribed levels of illumination with corresponding daylight factors as was done in previous editions. It is this apparent divorce from daylight factor which seems to have occasioned so much dismay on the part of some architects, including the *Architects' Journal* reviewer*. This is surprising. One would have expected a real architect to welcome the freedom which he now has to think of the lighting of a building as a co-ordinated whole, rather than as something tied up entirely with the windows. The windows have, after all, to function for other purposes, particularly for ventilation, and consideration of these other functions is often inimical to good lighting.

What has now been done is to point out that good lighting demands a certain basic level of daylight for amenity and character, as well as for basic illumination, and that this level of daylight is determined by the kind of environment rather than by the specific visual tasks which are going to be done in the building. A simple table giving these basic daylight factors in terms of typical environments is all that the Code gives as regards specific recommendations on daylight *level*. On the other hand, a great part of the Code is now concerned with quality of lighting. While not setting out to be a text-book, the Code shows that qualitative factors such as freedom from excessive glare, the play of light in a room and its effect on modelling, and the colour rendering of light sources, can all be handled quantitatively by the engineer working in collaboration with the architect. Techniques exist and are at the architect's disposal.

The Code now suggests that the working illumination inside a building will generally be a combination of good daylight together with supplementary artificial light, the amount of which being determined by the nature of the work and by the visible daylight as seen from the working area. The principles of permanent supplementary lighting laid down at the Building Research Station are followed in the IES Code where it is pointed out that the design of lighting integrated in this way is a job for the architect working in collaboration with a qualified lighting engineer. This means that the architect is now expected to give as much care and thought to the artificial lighting as he has previously done to the daylighting. It offers scope and opportunity to the good architect which he has never had before. This is progress.

The Glare Index

The section of the Code dealing with the control of glare is entirely new, and differs from all previous attempts to handle this difficult subject. Previous recommendations have always set upper limits to the brightness of the light sources as seen from the position of the worker, but the disadvantage of this is that small sources of high brightness which, when used properly, can offer stimulation and lend interest to a building are automatically excluded by the upper brightness limitations. The present method avoids this by controlling glare directly in terms of a function called the *Glare Index*.

Methods are given for computing the Glare Index for symmetrical arrays of artificial lighting fittings. Tables are at present under preparation at the Building Research Station for symmetrical layouts of glazed windows. The great majority of lighting installations, whether of daylight, or artificial light, or a combination of both, can be considered as symmetrical for purposes of glare calculation. Where this is not possible the Glare Index can be computed directly from the BRS Glare Formula as before. Architects will certainly find the tables difficult to handle without tuition, for they are intended for use by the specialist engineer, but there is in fact nothing basically difficult about them. Work is being done at the Building Research Station at the moment on protractors of similar construction to the well-known BRS Daylight Factor Protractors which will enable the architect to derive the Glare Index for daylight situations from his working drawings.

Tabulated lists of permissible Glare Index are given in the Code for every type of visual task, but it is emphasized that it is the environment in which these tasks are done, rather than the specific task itself which governs the limiting Glare Index. The principle behind these tabulated values is obvious when we think about it. A surgeon engaged on a delicate operation in an operating theatre cannot tolerate any glare, and so the limiting Glare Index in an operating theatre must be low. On the other hand a warehouseman making an occasional trip into a store to locate some material may not be bothered during his brief visit by quite a high degree of glare. Consequently the limiting Glare Index here can be high. The permissible glare in a hospital ward must be low, whereas in a rough machine shop it can be much higher. A careful appraisal by a trained team of observers who examined about 150 different lighting installations of a wide range of types gave the basic data from which have been derived all these recommended levels of limiting Glare Index.

A summing up

The new IES Code is an attempt to put some quantitative sense into those factors of lighting which the architect has always considered to be the most important, factors which he has often accused the pedestrian lighting engineer for neglecting. As a result lighting has been made more precise, but it has not been made easier. The lighting engineer can now realize the architect's demands for play of light and for modelling, but he must apply time and skill in the process and cannot offer a cheap 'package deal.' The architect in turn is given much greater freedom over the control of the lighting environment because he is no longer constrained by limits on his daylight design, but he is also given much more responsibility for ensuring that the artificial lighting and the daylighting are properly integrated in a co-ordinated whole. It is up to the architect to rise to the occasion, because he can no longer blame the engineer for mistakes which are now partly his own responsibility. The challenge is not one that he need fear. It has already been met by the Ministry of Education, for example, in the lighting of schools, who have shown that a complex lighting problem can be solved by a sound knowledge of architectural, engineering, and fundamental visual principles.

* 13 April, 1961

THE INDUSTRY

Amalgamation in the timber industry

It was announced earlier this year that the English Joinery Manufacturers' Association and the Timber Development Association were getting together to consider how assistance could best be given by the two bodies to architects and engineers. EJMA had already put forward a proposal for amalgamating with the Scottish Joinery and Door Manufacturers' Association and the TDA's approved manufacturers. The proposal was for setting up within the new association five separate groups (doors, window and door frames, built-in units, general joinery and timber structures). The Council for the new body, which it was suggested should be called the British Woodwork Manufacturers' Association, would include the chairman of each of the five groups.

Any move to reduce the number of independent trade associations within any one industry is welcome. It is to be hoped, though, that none of the very many separate parts that go to make up the timber and joinery industries is neglected in any regrouping. Subjects in which there is an obvious current interest, timber engineering for example, duly receive the attention of the trade and development associations; but, at the same time, there is plenty that can be done in other less spectacular directions such as the field of wood windows, in particular double glazing and ironmongery.

The English Joinery Manufacturers' Association, 40 *Piccadilly*, *London*, *W.1*.
Timber Development Association Limited, 21 *College Hill*, *London*, *E.C.4*.

Multi-outlet box

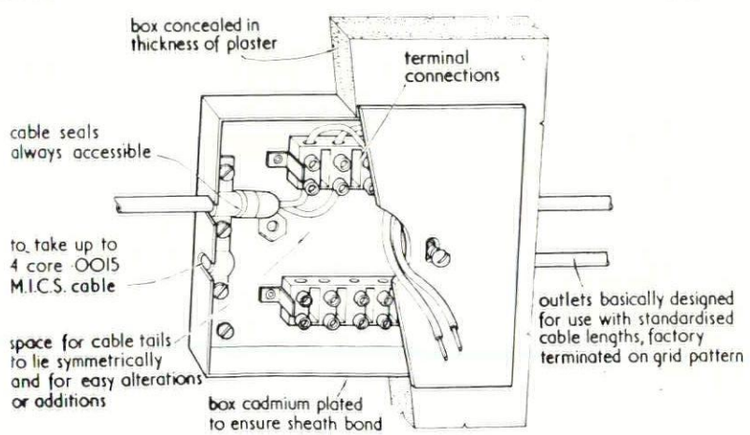
This new multi-outlet box, 1, is 4 in. square by $\frac{5}{8}$ in. deep and is manufactured in sheet steel and cadmium plated. It contains two 4-way removable 5-amp. shrouded connector units and two twin cable clamps. Provision is made for the cable sealing glands to be accessible at all times without interfering with the ceiling finish. Various cover plates are available. Amongst the advantages claimed for the outlet box are a reduction in screed thickness on floor slabs due to having the box on the underside of the slab within the plaster finish, elimination of holes through the slab for the same reason and a considerable degree of flexibility in the event of last minute changes of mind by the client concerning switches or partitions. This is achieved by using spare cores in the cables and connector block assemblies. The box was designed primarily to be used with mineral insulated copper covered cables which can, of course, be clipped to the underside of slabs by any of the several semi-automatic tools now on the market. The manufacturers consider that the new outlet box will result in 'prefabricated' lighting installations in new commercial buildings.

Rashleigh Phipps and Company Limited, *Thackeray Street*, *Kensington Square*, *London*, *W.8*.

Wall cladding tiles

Brickbond wall cladding tiles have been designed and produced by Redland to simulate the appearance of a brick wall. Mortar is not used, the tiles being secret nailed to battens direct to lightweight block as will be

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1. *cut-away section of multi-outlet box by Rashleigh Phipps.*

AIR CONDITIONING

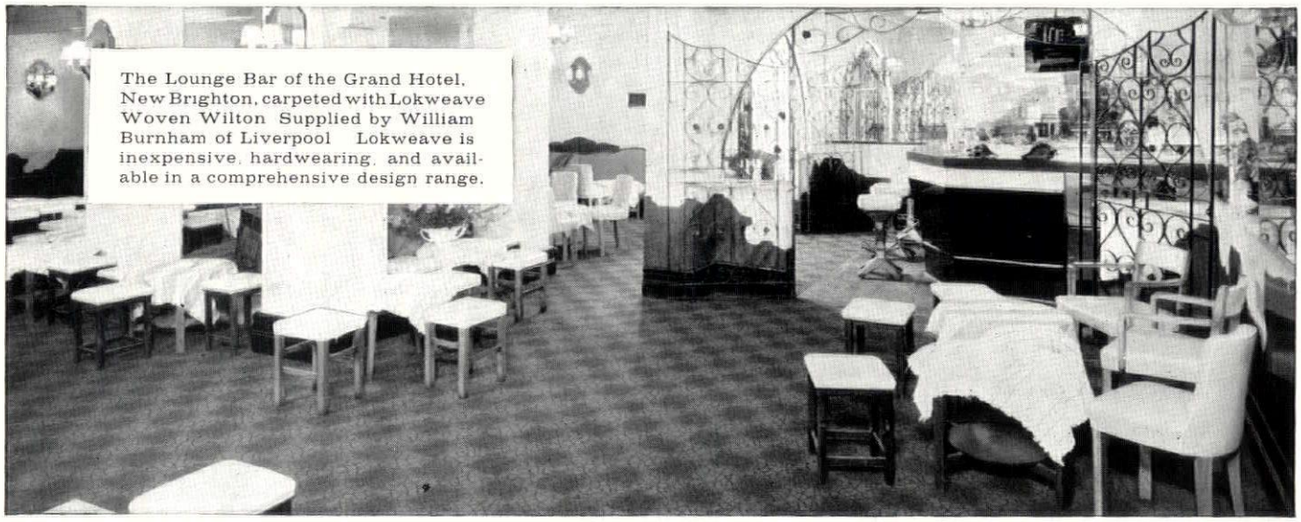
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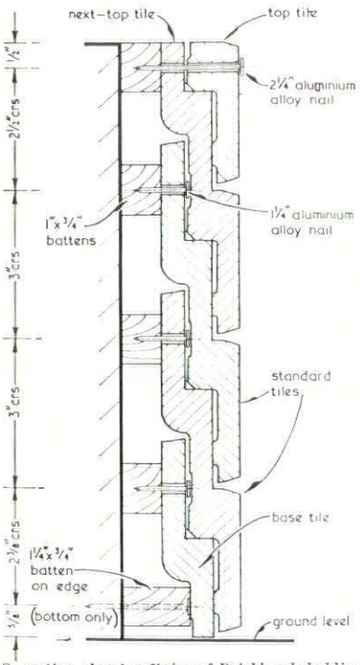


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2, *section showing fixing of Brickbond cladding tiles.*

[continued from page 292

seen from the cross-section drawing, 2. The cladding can be used not only for new work but also for fixing to existing damp walls.

The system has been extremely well worked out and one wonders why on earth so much time and effort has been spent on producing an article to look like something else. Undoubtedly there may be instances where it is necessary to imitate brickwork—to match existing work for example; but one gains the impression that here is a sound product with a sensible fixing system which is being misused. Why do not the manufacturers exploit the possibilities of this product as a cladding material?

Brickbond tiles are guaranteed for 50 years against lamination and decay. They comply with the requirements of B.S. 473 *Concrete Plain Tiles* and the method of fixing with C.P. 142 *Slating and Tiling*. Colours are slate grey, lichen green and moorland stone and price per sq. yd. is approximately 16s. The leaflet describing the tiles is very well done, is to A4 size and has its SfB number on the top right-hand corner of the cover.
Redland Tiles Ltd., Castle Gate, Reigate, Surrey.

Urinal Stall

The urinal stall, 3, is made entirely from ICI acrylic sheet from a one-piece moulding. Size is 6 ft. 4 in. long, 3 ft. 9 in. high and 1 ft. 4 in. deep overall, and it is available in a range of colours. This represents a relatively new departure in the sanitary ware field and one which could lead to interesting developments. Will Thermo Plastics Limited, who were responsible for this, turn their attention to lavatory basins and w.c. pans? There is a considerable potential in this material, but it is to be hoped that the designers improve the appearance of the unit in further developments. They appear to be at the stage where the solution of production problems takes precedence over visual considerations.
Thermo Plastics Limited, Luton Road Works, Dunstable, Beds.

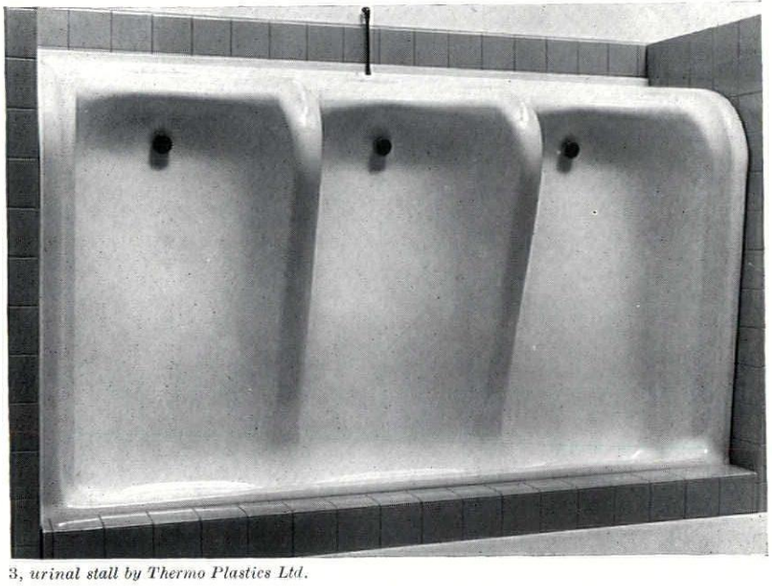
Refuse disposal units

Tayco Boilers Limited have brought on to the market two refuse disposal units. The units are designed for fitting under the sink and grind household refuse which is then washed away through the waste pipe. The units are electrically operated, each type having a ⅓ h.p. motor.

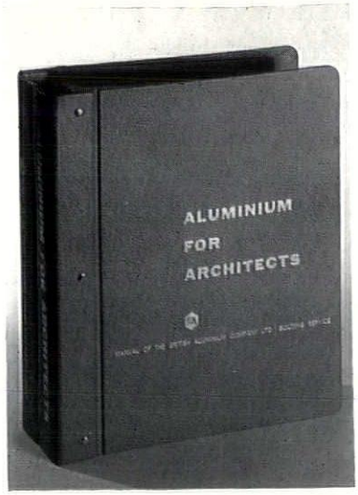


4, *the Super 244-B refuse disposal unit.*

The Super 244-B, 4, is a continuous feed type, that is to say refuse is fed continuously into the unit during operation. It includes a reverse power surge which enables blockages to be cleared easily. The retail price of this unit is £36 plus £5 12s. 6d. purchase tax. The unit projects 12 13/16 in. below the sink bowl.



3, *urinal stall by Thermo Plastics Ltd.*



5, *manual by the British Aluminium Co.*

The Custom 304-AC operates by a special locktop device. This can be set to 'seal,' 'drain' or 'grind' and the unit only operates in the 'grind' position. Price is £40 plus £6 8s. 3d. purchase tax. The unit projects 14¼ in. below the sink bowl.
Tayco Boilers Limited, 170/172 Victoria Street, London, S.W.1.

Aluminium handbook

The dissemination of information has never been particularly efficient in the building industry. A few years ago *The Architects' Journal* awarded one of its Research Fellowships to Dargan Bullivant to study the subject of information for the architect. Since then the interest of architects (the largest 'user' group involved) has been aroused and the RIBA itself is beginning to give a lead not only on classification (the publication of its manual on the SfB system is imminent), but also on reasonable standards of presentation and content for manufacturers' trade literature. Needless to say, manufacturers' PROs and advertising agents have leapt on to the bandwagon for reform (as if they were not amongst the villains of the piece) and a general and heartening raising of the standards of trade literature is evident.

The British Aluminium Company's manual *Aluminium for Architects*, 5, appears to be a useful contribution to the information available to architects. It aims to provide general technical information about aluminium as a material as well as details about aluminium products and names and addresses of manufacturers. The company says that the information in the manual has been 'planned and executed to a large extent by architects for architects' (they were advised by Bruce Martin) and they hope to distribute copies of the manual to every architectural practice (presumably both public and private) in the country.
The British Aluminium Company Limited, Norfolk House, St. James' Square, London, S.W.1.

Paints

Keystone Paint and Varnish Company Limited recently announced that they are now manufacturing a chlorinated rubber paint. Primers and finishes are compounded from plasticized rubber and specially selected pigments. The ingredients are said to be chemically inert and unaffected by a wide range of acids and alkalis. The rubber paint can be used on most materials—iron, steel, copper, zinc, aluminium, timber, concrete, plaster and brick—its chief characteristic being a high degree of impermeability to water and water vapour. It is, therefore, suitable for protecting these materials when exposed to conditions of constant high humidity, steam, condensation and the like.
Keystone Paint and Varnish Company Limited, Hindley, Lancashire.

Copper tube for radiant heating

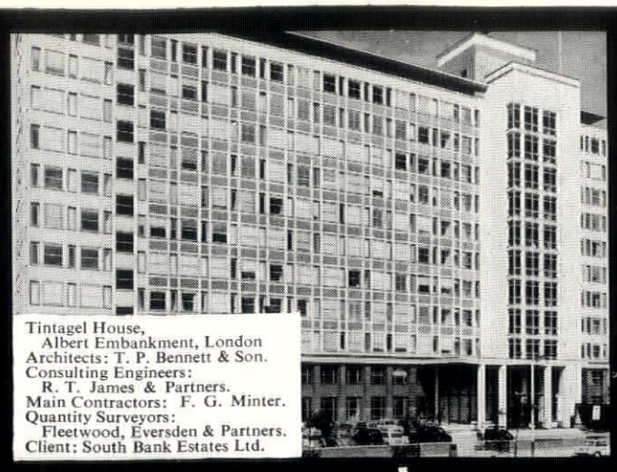
The Copper Development Association has just published a useful handbook entitled *Copper for Radiant Heating*. It is, in fact, a textbook on the subject of radiant panel heating and the following chapter headings give some idea of the useful information it contains: 'Copper Tubes and Jointing,' 'Panel Design: Heat Loss Calculations,' 'Circulated Hot Water Systems: Panel Design and Location,' 'Electric Floor Warming: Panel Design and Location,' 'Floor and Ceiling Construction.'
Copper Development Association, 55 South Audley Street, London, W.1.

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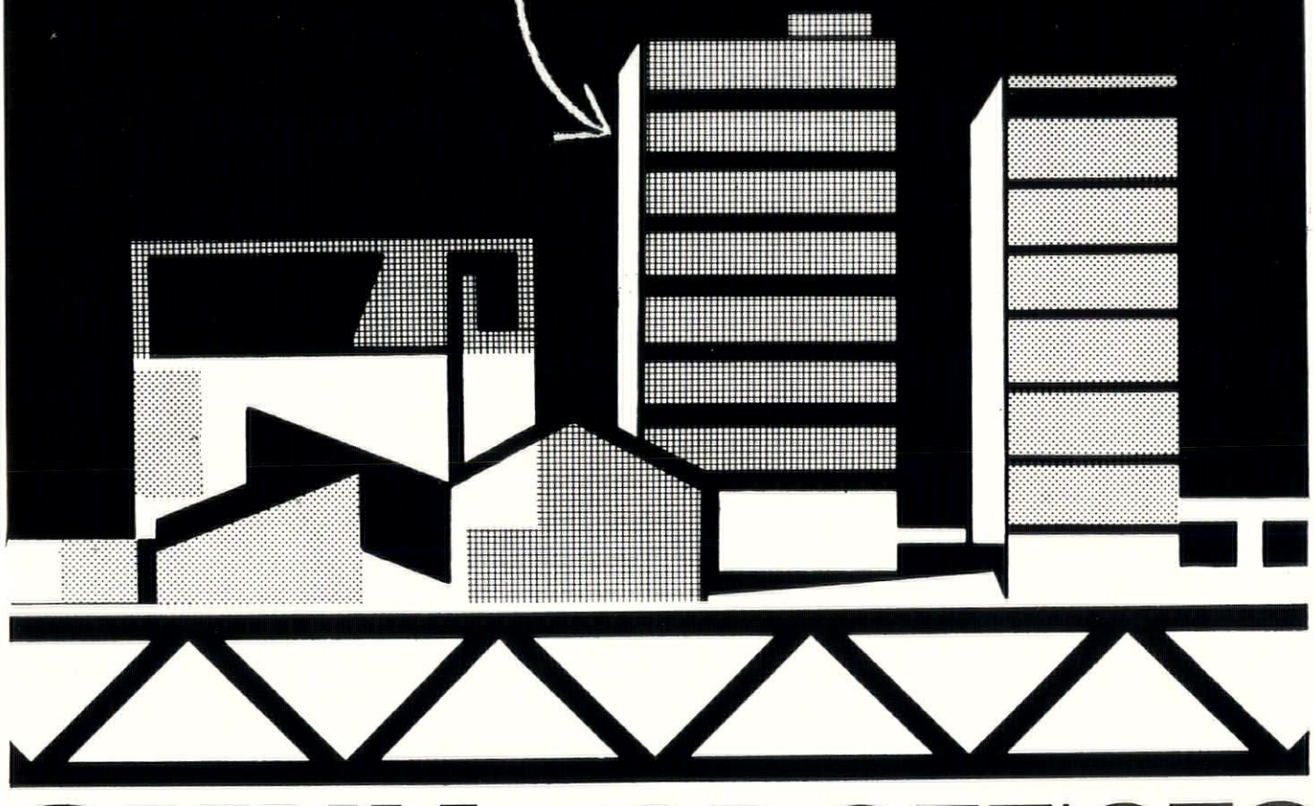
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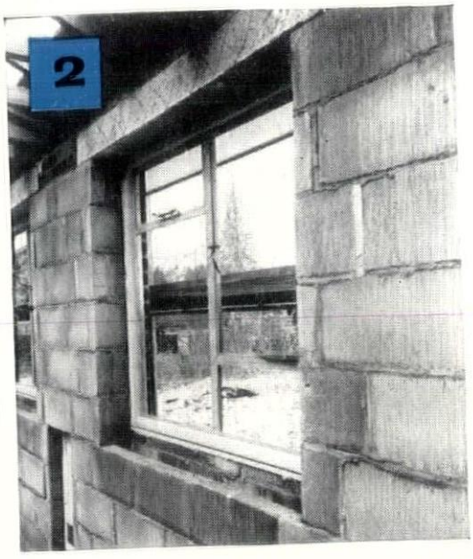
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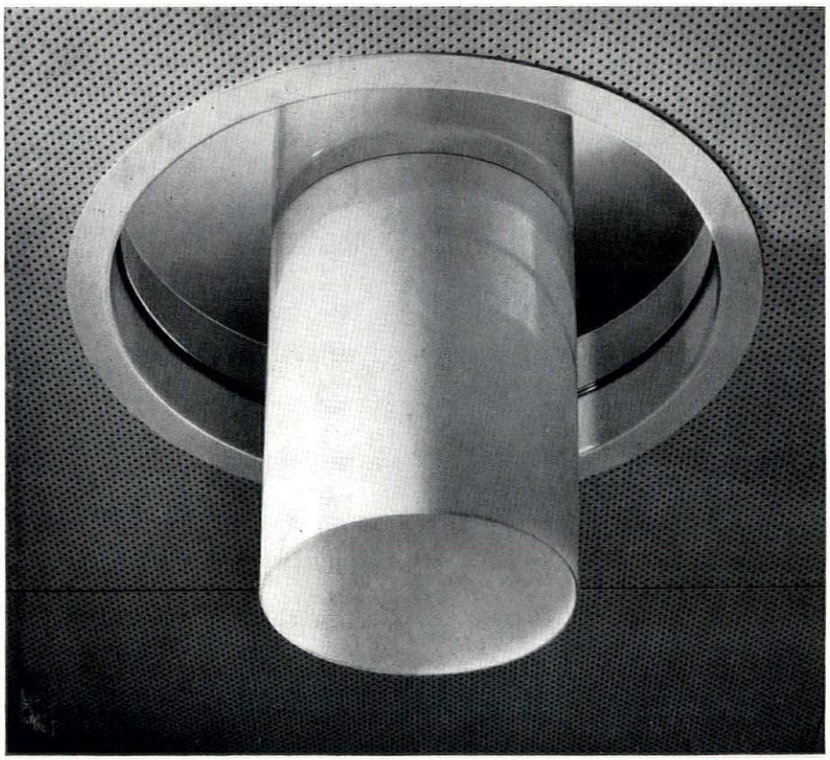


THE ARCHITECTURAL REVIEW VOLUME CXXX NUMBER 777 NOVEMBER 1961 FIVE SHILLINGS

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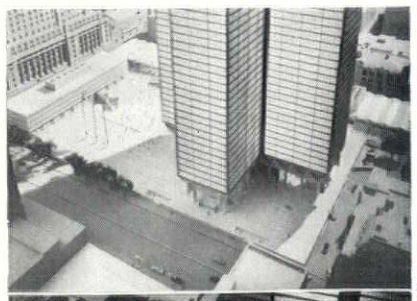
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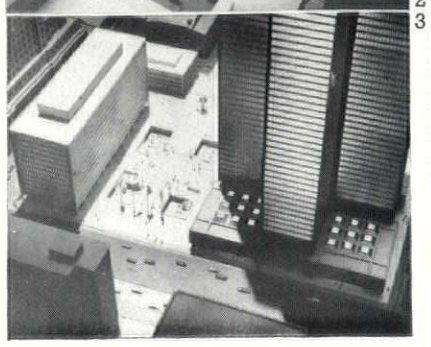


1

PLACE VILLE-MARIE



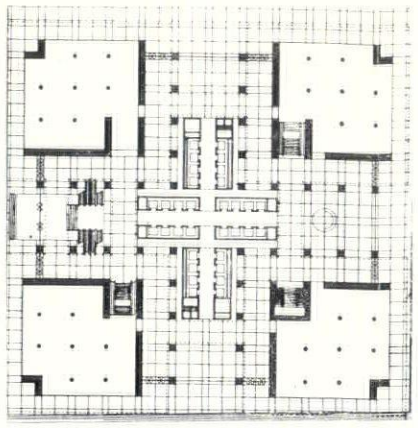
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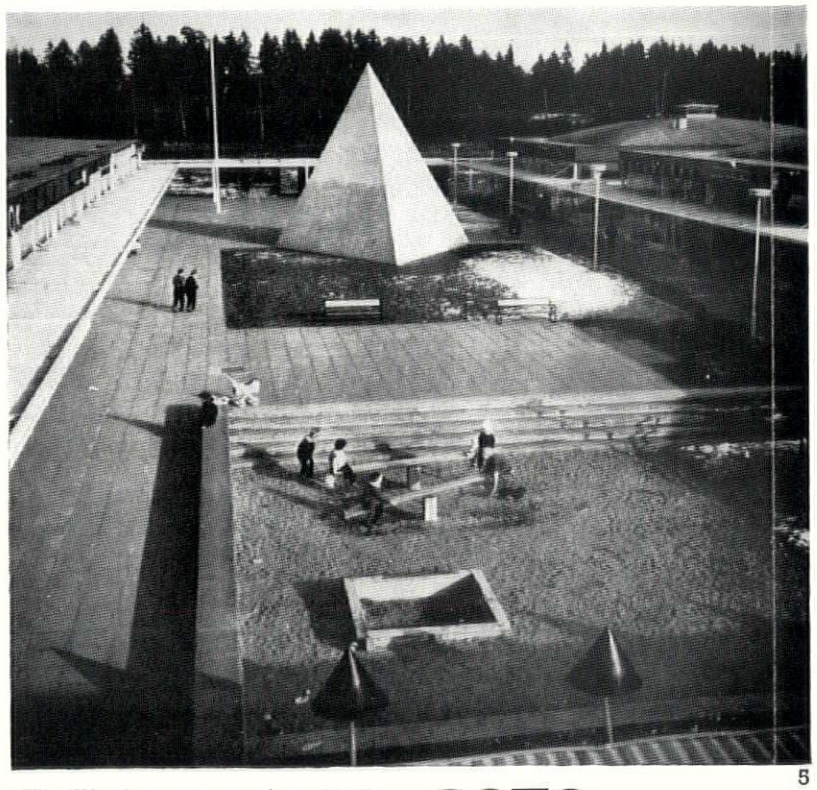
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Although it has attracted most attention from being the first major enterprise of Webb and Knapp (Canada) Limited, the Place Ville Marie development in Montreal, now nearing the completion of its first stage, 1, should prove to be of more durable interest than that, because in Canada, as in the USA, Webb and Knapp means, in practice, William Zeckendorf for the finance and I. M. Pei for the architecture. Although the Place Ville Marie scheme is an enterprise in the grandest North American manner—effectively it is Grand Central Station plus Rockefeller Centre times two—it is interesting to see that the same client and rental pressures operate as on the projects of lesser mortals; the two comparative views, 2 and 3, of early and late models of the Plaza, show how much extra accommodation had to be packed into the site, and how an originally wide-open scheme became a fairly solidly built up one (though possibly to its advantage as townscape?).

The main feature of the scheme, of course, is Pei's forty-two storey office tower with its cruciform plan, 4, which is reckoned to offer nearly an acre of rentable floor-space per floor, while the relatively thin arms of the cross will assure better daylighting than would a square plan (or the various thick polygons now going up in London). Lacking from the information issued about the scheme so far is a good composite photograph or even optimistic drawn perspective showing what the tower will do to the skyline of down-town Montreal, but it is clear that, from the Campus of McGill University, it will *be* the skyline, since it is only two-and-a-half blocks away.



4



5

OSTO-KESKUS

Finnish shopping centres

6

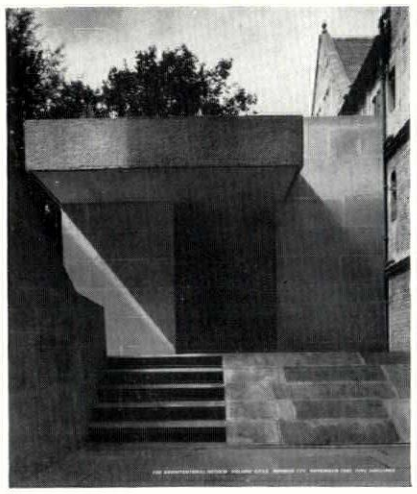
The West's most easterly outpost, Finland, has tended to be very restrained in its handling of one of the West's most characteristic activities, competitive commerce, and seems to be equally restrained in its handling of Western Commerce's newest outlet, the shopping centre, if the examples in *Ark* (12, 1960) are at all representative. At Munkshojden, outside Helsinki, the solution is a simple pedestrian square, 5, with a children's playground and a pyramidal central display feature. Although the shops on one side are housed in a single long structure, the architects —Pernaja, Pernaja, Kivikoski and Sandell—have grouped those on the other side in three large square units, to which there is direct access by car, 6.



Erkki Karvinen's solution at Kulo-

ACKNOWLEDGMENTS

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The Cover *shows the beginning of the low block of Powell and Moya's extensions to Brasenose College, Oxford, as seen from the underpass below the five-storey block. As will be seen, this is a complex solution to an unusually complex problem, in which the architects have sought less to conserve a collegiate yard under glass, so to speak, by raising all the accommodation above it on stilts, than to transform it into something that seems larger by means of stopped views and veiled vistas, as revealed in the plans and further illustrations on pages* 306-312.

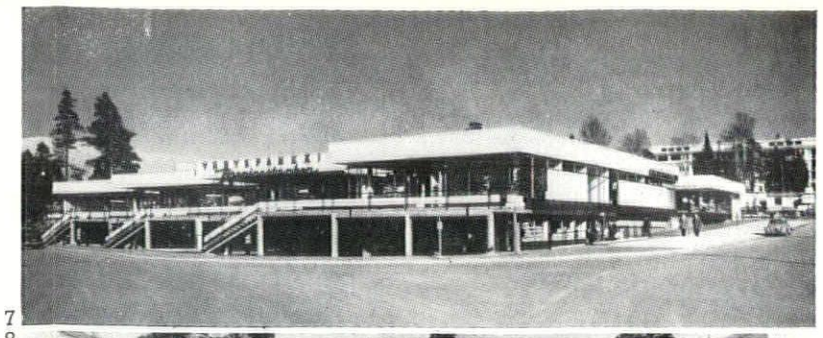
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NOVEMBER 1961

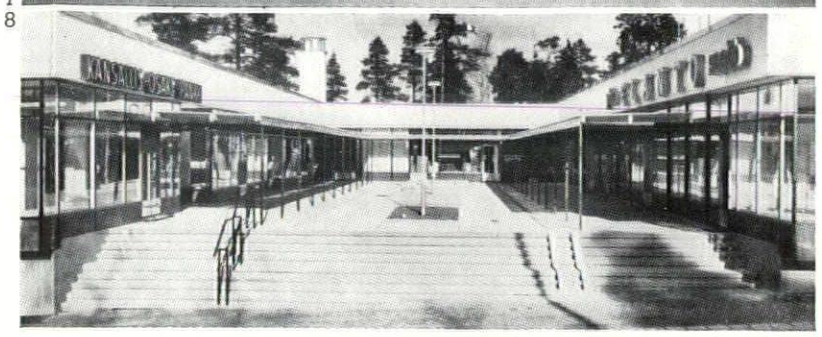
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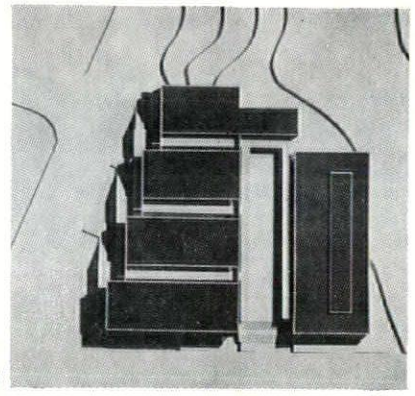
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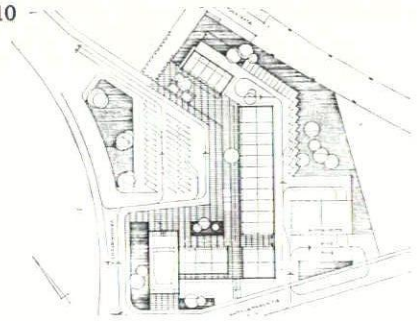
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Ostokeskus

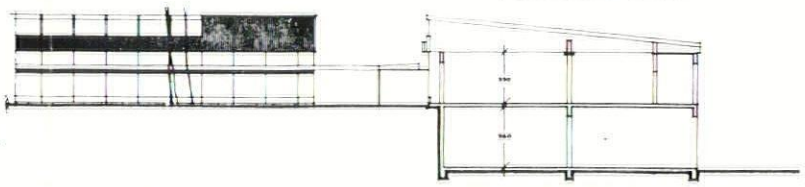
saari, is more complex, because a sloping site enables him to raise the main shopping floor above direct basement access from the street for servicing, 7. A separate staircase on this side serves each of the three covered shopping arcades that run back to the main concourse, 8, which has a more ceremonial flight of steps rising from the street at the right in 7. The resulting plan, 9, gives plenty of display-window footage within a relatively small site, and nearly all of it under-cover, while the architecture is, in detail, refreshingly straightforward and bold. Karvinen's other *Ostokeskus* (the Finnish term for such a centre) at Gamlas, also has a split section for basement servicing, 11, but the plan, 10, is simpler, the shops being grouped around an open piazza cum parking lot, giving something of the aspect of an English New-Town market-place, 12, an effect enhanced by the less forceful architecture and detailing.



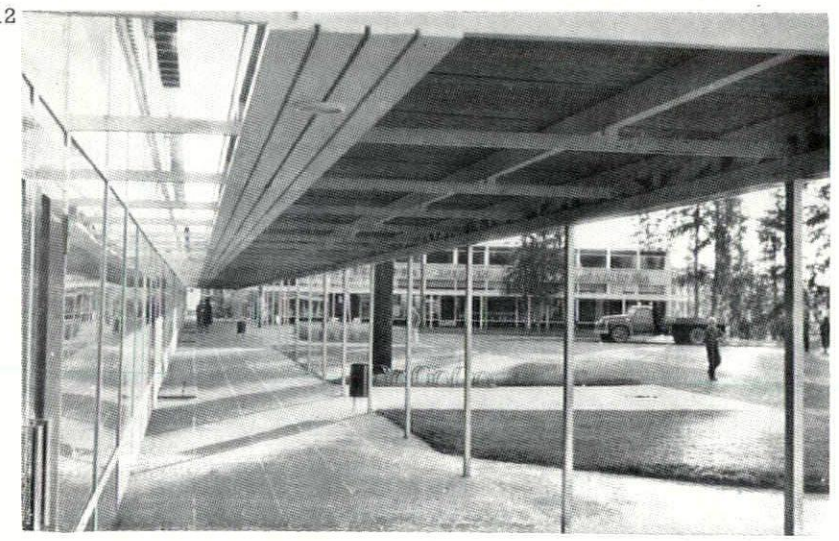
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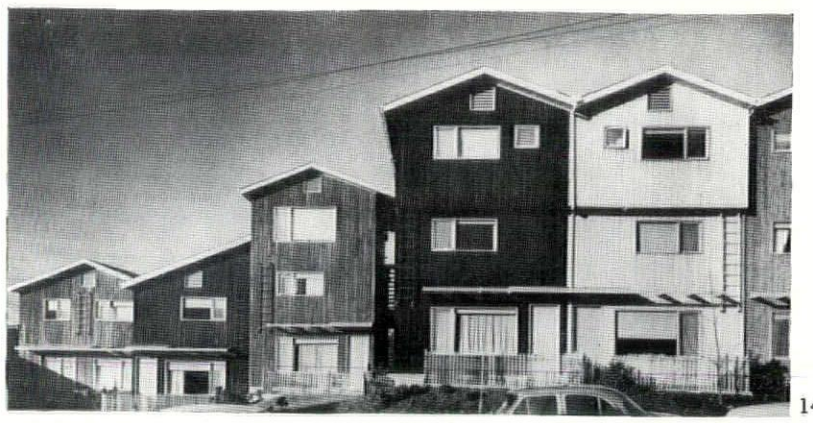


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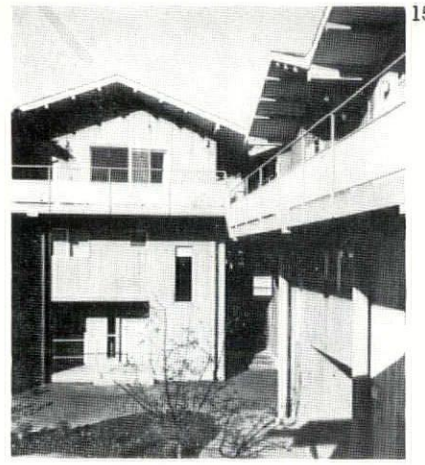
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THE STREET-DECKS OF SEATTLE

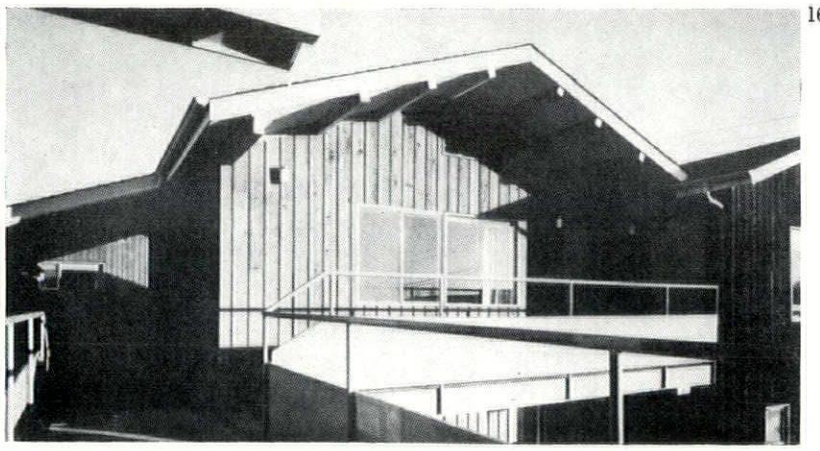


14

The Bay Region Style, which seems to have been lying doggo since Eastern America began to monopolize the headlines, has made a sort of collateral comeback in Bassetti and Morse's staff housing, 14, for the University of Washington Hospital in Seattle. Built on a fairly sloping site, these wood-frame houses are in some cases plain two-storey cottages, but in others they have three storeys with a separate apartment in the loft, reached by a simplified street-deck on the back or courtyard side, 15. These upper rooms and their approaches have an airy aspect that one might be tempted to compare, 16, with Picasso's old Bateau-Lavoir, had not *Progressive Architecture*, in publishing the scheme (June, 1961) used the term 'fishing village' and compared the general feeling to a houseboat community with its inter-connecting gangplanks. English readers will have no difficulty in making mental comparisons with the net-houses at Hastings (cf. AR September, 1957) but a more instructive comparison might be with Tayler and Green's village housing. Not only is a similar use made of different colours to reinforce and diversify the architectural composition, but a similar sophisticated exercise in the creation of a quasi-vernacular is clearly in hand.



15

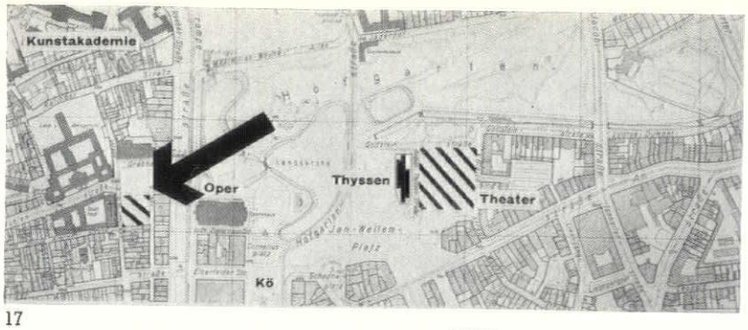


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GERMAN MOBILITY

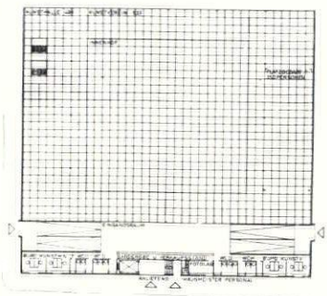
Man and motor in Dusseldorf and Lünen

We are building a parking garage with art centre attached—thus *Bauwelt*, rudely, on the subject of the competition for a new *Kunsthaus* in Düsseldorf. Many of those who entered the competition seem to have felt that the jibe was justified. The site, next to the Andreaskirche (arrowed in *Bauwelt's* plan, 17), is already a parking lot, and the terms of the

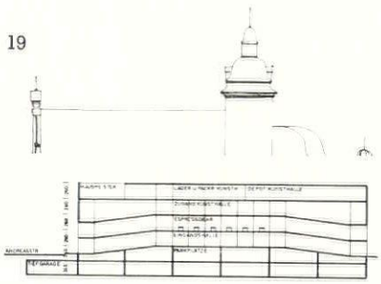


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mobility

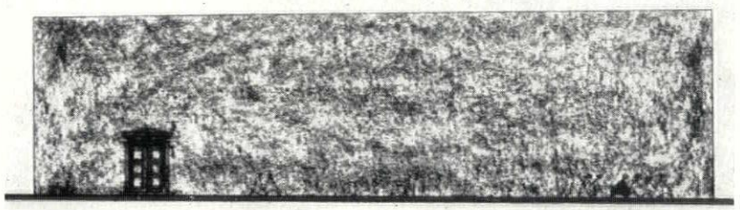


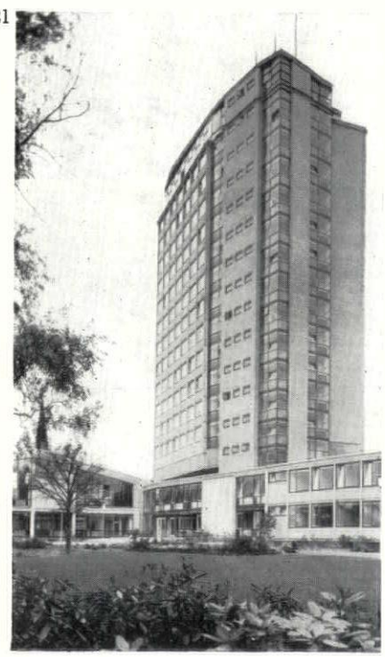
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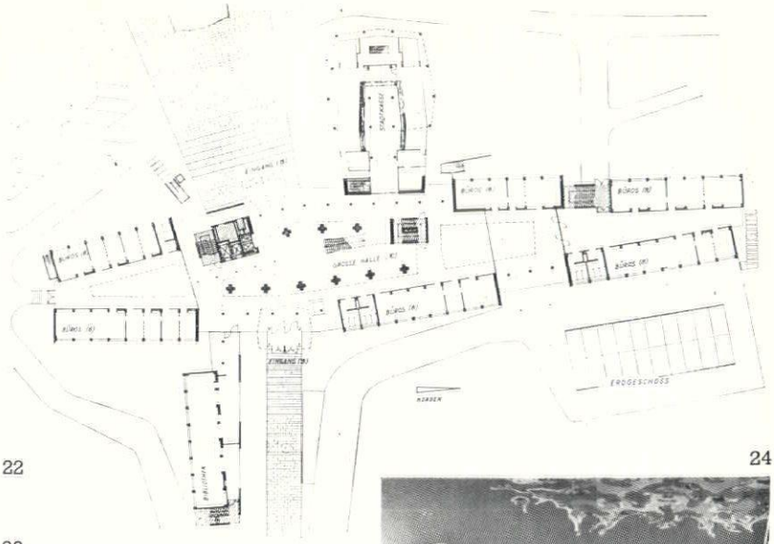


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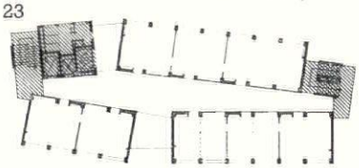
competition made it clear that it was to remain so—'now we know,' cracked *Bauwelt*, 'what an art centre is: two floors at least 4 m. high, over a garage and parking-lot.' *Bauwelt* also did a rough breakdown of the entries into three major categories—eighteen square boxes with annexes, twenty-nine square boxes with central courts, thirty L-plans and a handful of irregular shapes.

The winning scheme, designed by Bruno Dammann, is an almost literal rendering of the two-floors-over-parking theme, but expressed as a completely dead-pan rectangular package, 20, relieved only by a pair of classicizing doorways (and some inconsequential windows on the side away from the church). This almost monolithic exterior is achieved by the use of a courtyard plan, with most of the public areas lit from the central court, 18, and vertical circulation by ramps, 19, which—if well detailed—could add an air of humanity and grandeur to a building that otherwise is (through no fault of the architect) a monument to the murder of civic design by the automobile.

Although *Bauwelt* has seen fit (and not suprisingly) to treat the operation as something of a joke, this is no laughing matter. The great Rhine-Ruhr conurbation of which Düsseldorf forms part is already so heavily motorized that it faces, before the rest of Europe, complete Los Angelization. Parking-space is already at a premium, and the determination of the city fathers to keep their *Parkplatz* is as inevitable as it is praiseworthy, however ineptly this requirement has been expressed in the competition regulations. Nevertheless, as was shown by such previous exercises as the *Hauptstadt-Berlin* competition, we can look to Germany for imaginative solutions of the problems of mobility and civic design. While the new town-hall for the expanding town of Lunen, 21, does not tackle the automobile problem directly, its approach to pedestrian circulation suggests that some of the ideas stirred up by the Berlin competition are already ripe for incorporation in real buildings. The plan, 22, shows that the central office tower, 23, stands above an open hall which extends in various directions, making a kind of interior street which gives access to the offices of different municipal departments, and the interior view, 24, shows how well the architects (Werner Rausch and Siegfried Stein) have kept the street character of an otherwise ambiguous interior space—chiefly by the use of granite setts as the flooring material. Lunen, it will be remembered, is also the location of a typically 'a-formal' school by Hans Scharoun (*World*, December, 1960) and this town hall being clearly a work of the same persuasion, the town should soon present a fairly concentrated 'walking-seminar' on whether a-formalism works.



22



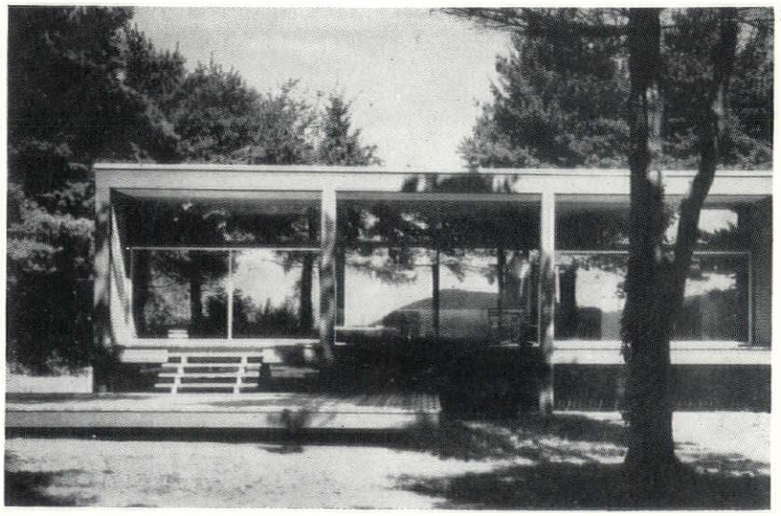
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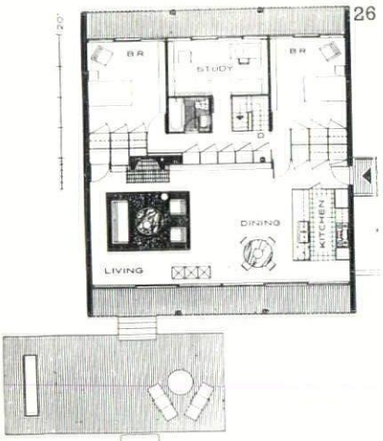
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DECENT SQUARE HOUSES

There seems to be a fair chance that the example of Mies and Philip Johnson may have established a kind of decent middle style in US domestic architecture. It is not always easy to spot from outside the country, because it tends to get pushed out of the magazines by houses that are more obviously plastic, frantic or manic-depressive. Nevertheless, *Progressive Architecture* (May, 1961) produced a text-book example by Ulrich Franzen, with glazed ends, 25, and the almost mandatory near-symmetrical plan, 26,



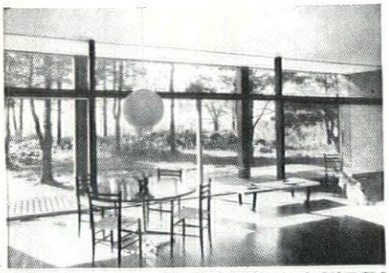
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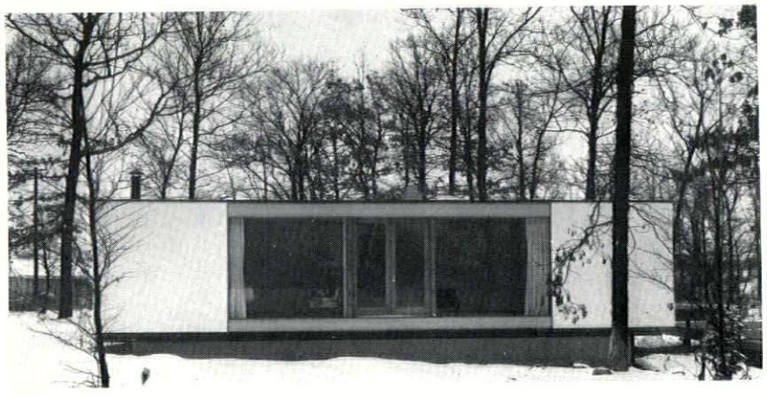
Decent houses


28


29

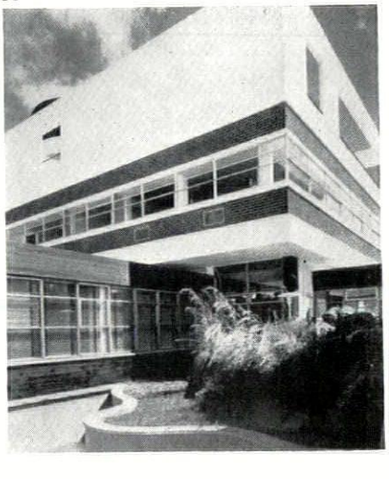
with off-lying 'Farnsworth' sitting-deck. The interior, looking out, 28, shows not only how text-book the spatial quality of the house is, but also a very good reason for having all-glazed ends—the New England landscape seems to have been created especially as a domestic view.

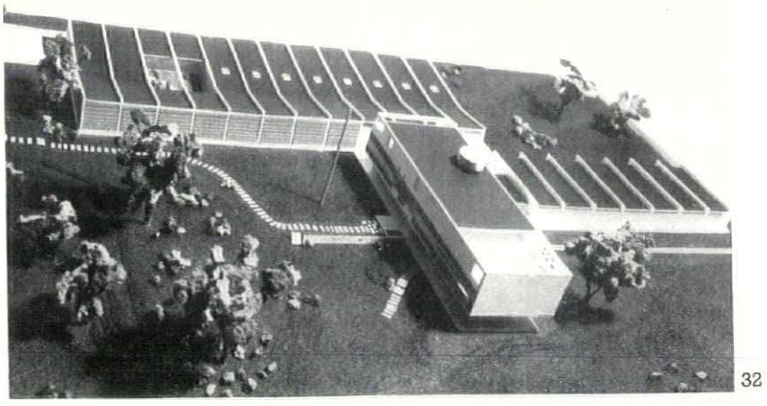
Farther inland the Michigan architect Joseph Savin has recently constructed for himself an equally simple prism, 29, with an even more symmetrical plan and Farnsworth deck, 27. If the symmetrical façades are a little less simple, 30, than Franzen's all-solid-one-way-and-all-glazed-the-other, it is because the house has a larger and more complex functional programme, but one which this same style can express equally well.

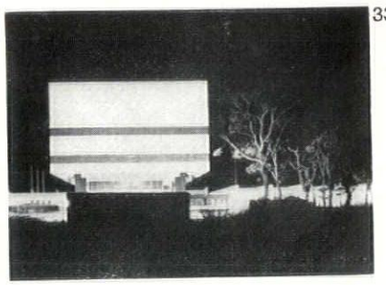

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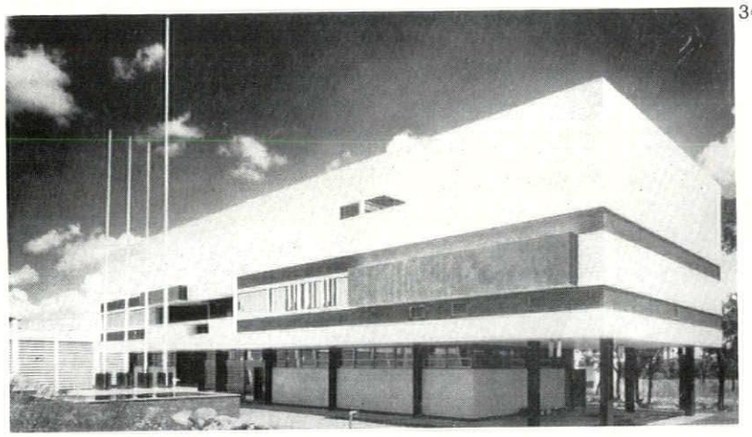
RHODESIAN ARCHIVE

A client's brief that calls for traditional local character in an area that has practically no old architecture asks a lot of an architect: contrariwise, a client's brief that has worked out in detailed and diagrammatic form the functional and circulatory needs of a building that has hardly any specifically-designed ancestors, is almost more than an architect dare expect. Hawke and Pereira got both when they took on the design of the National Archives Building, 31, for Rhodesia and Nyasaland. The traditional character they approximated (via some justifiable casuistry) by equating *beton brut* with the famous rough masonry of the great walls at Zimbabwe. The functional brief resulted in the simple distribution of blocks seen in the model photo, 32, with the main administrative building in the centre, the library proper to its right and the record stores at the back. Undoubtedly the greatest architectural success of the scheme is the main block, which—traditional or not—will strike European eyes as having an unmistakably Anglo-African quality with its bands of concrete and brick, 34, a façade pattern that stands up brilliantly to the acid test of floodlighting, 33.


31

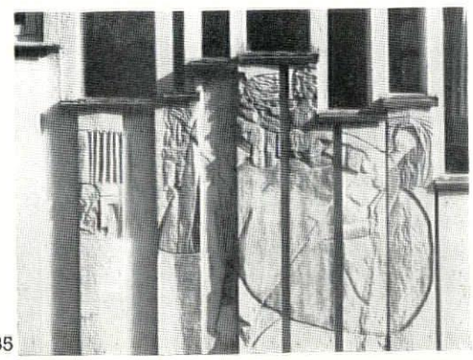

32


33


34

and now—

neo-viking?


35

The Swedish magazine *Form* has a status and function similar to that of the CoID's *Design*, but occasionally strays from consumer goods and problems of public taste into less taxing fields. In May (5, 1961) it illustrated the summer retreats of three Swedish architects. Although two of these were of the converted-farm or simple-wooden box type that might be expected, the other, by an architect bearing the respected name of Ahlsen (not Tore, his brother Erik) offered some surprises, most notably in that its outside loggia appears to have the earliest example of the up-and-down window, since done to death by minor Corbusiasts and followers of Ignazio Gardella. Whether the stave-church-type carvings below the windows, 35, represent a Neo-Viking trend comparable with Neo-liberty is not, at present, a subject for alarm—for even an architect, like anybody else, has a right to private fantasies in such private places.

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MARGINALIA

BREEDS PLACE

The name of Joseph Kay can hardly be said to resound in the annals of British architecture, yet he deserves to be remembered; he was a founder of the Institute of British Architects, he laid out Camden Town and Mecklenburgh Square, of which he designed the East range. And he designed Pelham Crescent, Hastings, his masterpiece and one of the chief ornaments of British sea-side architecture. Had he been famous, there is no doubt that his name would have attached, by association, to Pelham Crescent's two flanking wings, Pelham Place and Breeds Place, and there would have been no nonsense about pulling either of them down.

As it is, however, Pelham Crescent is being shorn of its supporters. Pelham Place is gone, and now the surviving houses of Breeds Place (Nos. 1-6) are under threat as well, 1.



1

Whether by Joseph Kay or not, they follow the style of the Crescent in a simplified way (compare 2, from Breeds Place, with 3, from the Crescent) and form a coherent and dignified composition in themselves, 4, above the bijou inanities of the municipal foreground. But without these supporting wings the Crescent shrinks back from being a town-planning triumph to a quaint olde-worlde incident in an undistinguished street, and the preservation of the Crescent (now in hand) becomes little more than an exercise in historical embalming.

Yet the future for Breeds Place is not bright—the houses are listed under Section 30 of the 1947 Act, but no longer represent an economical investment for a modern property operator. Notice of intention to demolish has not been followed by a Preservation Order, although the condition of the houses is not beyond repair and modernisation, and the local authority are not interested (apparently) in adding responsibility for Breeds Place to their responsibilities in connection with the restoration of Pelham Crescent. The intentions of the developers remain obscure, and it is not known whether their proposed re-development will be submitted to the RFAC. The whole sorry story is yet another example of the inability of our rulers and governors to see and cherish towns, or even parts of towns, as a whole—or even to see, in the narrow context of local economics, that the piecemeal destruction of the Pelham complex is another step in the piecemeal destruction of Hastings' tourist trade.



4

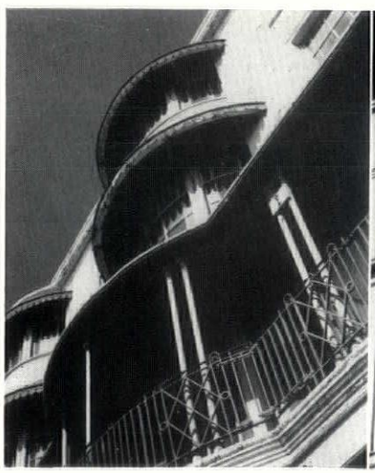
FARM BUILDINGS PANEL AT CoID

Readers of John Voelcker's article on farm buildings in the REVIEW for September 1960 will be reassured to find him among the members of the CoID's new Farm Buildings Advisory Panel. The other members include two more architects—Michael Shepherd and Edward D. Mills—F. J. Stratton, chairman of the Fatstock Marketing Corporation, Sir Gordon Russell, and two members of the CoID staff—J. Noel White and Peter Whitworth. The panel seems a little thin on practising farmers and particularly so on those specialized agro-industrialists, such as broiler operators, who constitute the worst landscape problems at present. No doubt, when the panel has discharged its immediate task of surveying the products and structures already on the market, and turns to positive recommendations, it will avail itself of specialized advice or even co-opt more members.

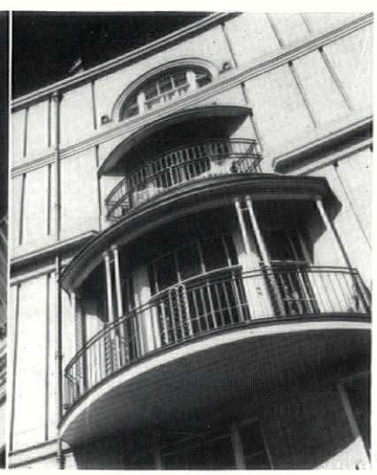
BATSFORD PAPERBACKS

The arrival of packaging and impulse-outlets in the book trade has tended to bully the art of re-issuing into one standard format, the paperback—a format in which works on architecture tend to suffer from excess compression of the illustrations unless

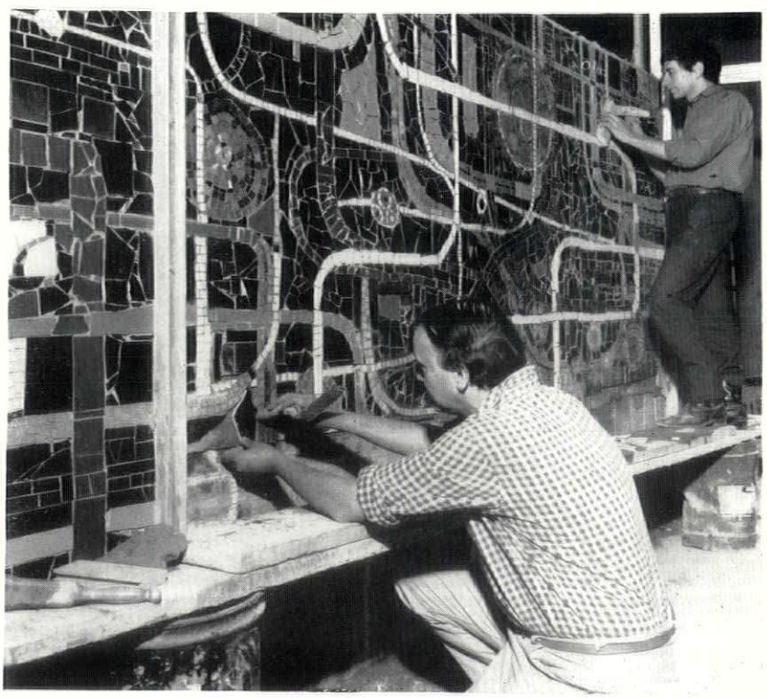
5, Fred Millett (foreground), co-author of the article on New Mural Techniques (*AR, August,* 1961), *working with an assistant on a mosaic panel (one of a pair) in the entrance hall of the new Abbey post office, Westminster (architect, W. S. Frost, of the Ministry of Works).*

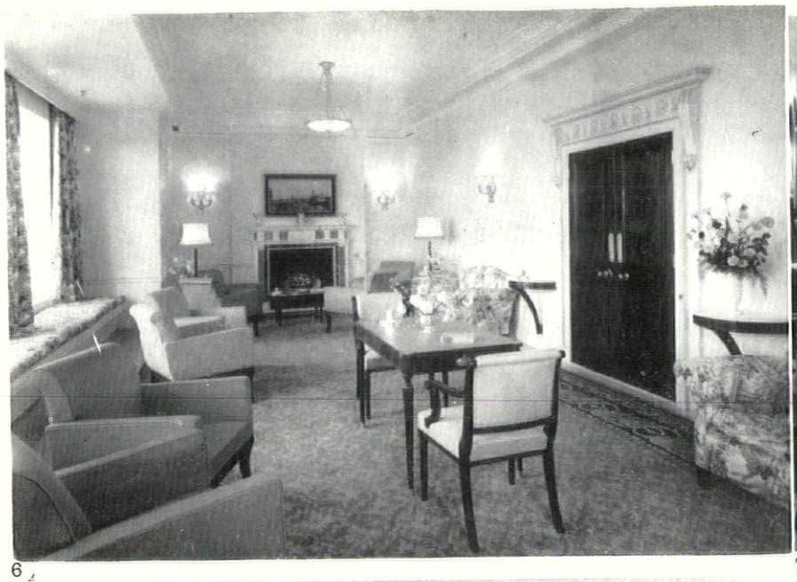


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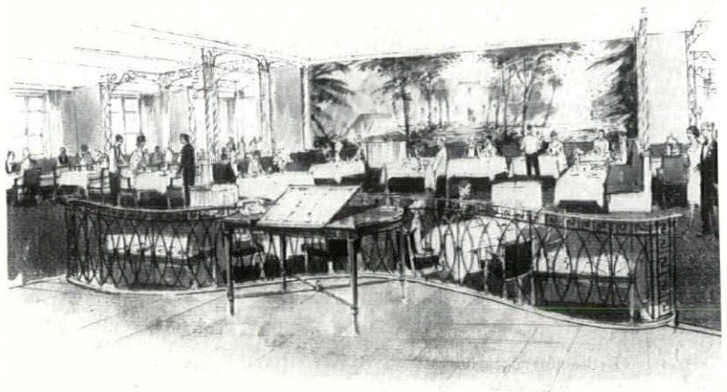
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9

THE CASTLES ON THE SEA

It is clear that the excellence of Canberra *and* Oriana (*AR Sept., Oct.,* 1961) *gives no grounds for complacency about the rest of the new and projected ships for British lines, and that the lessons learned by P & O-Orient Line still need urgently to be learned by the rest of the business. The newest Union Castle liners in particular are enough to drive those who mind about Britain's reputation for good design to despair. A more absolute piece of visual escapism than the neo-Classical style drawing-room shown in* 6 *would be hard to find; it is doubtful whether the anti-nautical trend in British ship interiors have ever gone further than in this tired furnishing of RMS* Windsor Castle—*unless it will be in the Union Castle Line's other new mail boat, the* Transvaal Castle.
7, *the dining room of the* Windsor Castle, *in a Grand Hotel style that even Grand Hotels have abandoned.*
8, *artist's impression of the* Transvaal Castle. *The smart, modern and businesslike lines of the exterior can only heighten dismay over the gutless design of the interior.*
9, *a sketch of the dining room of the* Transvaal Castle, *due to be put in service in* 1962. *Escapism has indeed gone further, as the dining room 'is in the nature of a garden surrounding the house' visible in the mural on the back wall.*

views and reviews

specifically conceived for this form, as was *An Outline of European Architecture* for Penguin. Batsford's two reliable old war-horses, *English Cathedrals* and *Parish Churches*, however, have survived reduction to pony format remarkably well in a new five-shilling series that also includes 'landscape' works like Sacheverell Sitwell's *Spain* and books on veteran and vintage motor-cars.

Cox and Ford's *Parish Churches* is not quite such an old war-horse as some might remember it—this is Bryan Little's revision of the original text, completed in 1960, and notices and even approves such post-Gothic manifestations as Baroque tombs and St. Chad's, Shrewsbury, though it eschews any discussion of churches built after 1840. Thus it is really a visitor's introduction to traditional parish churches, rather than an architectural study. John Harvey's *English Cathedrals* is a horse of a different colour with a very definite view of what is and what is not an *English* cathedral: the last and shortest chapter is entitled *Renaissance and Conclusion*, and St. Paul's, while acknowledged as a masterpiece *sui generis*, is discussed as an example of a surviving Gothic tradition in all save its decoration, and no later cathedral is discussed or illustrated. On the Gothic cathedrals *pur sang*, Mr. Harvey is at his best, and these chapters make stirring reading.

EUSTON ARCH

At the time of going to press, the fate of the propylaeum of Euston Station appeared to be sealed. The Cabinet remained firm in its decision to support the British Transport Commission's intention to demolish it to make way for an extension of the terminal station (AR November, 1960). Last minute appeals in the closing days of September were made by the Royal Fine Art Commission, The Victorian Society, Peers and Members of Parliament, but to no avail. Although no architect raised his voice in favour of its destruction, it is interesting to note that in the USA, where the celebrated classical hall of McKim, Meade and White's Pennsylvania Station is also under threat, determined modernists did support demolition—in Britain, only the *New Scientist*, depressingly enough, publicly supported the Minister's decision.

OBITUARY

EERO SAARINEN

The death of Eero Saarinen at the shockingly early age of 51 seems to have caught the mouthpieces of architectural opinion in attitudes of acute embarrassment, for his reputation was passing through a phase of hostility and suspicion, both of which were being even more freely voiced in the US than in Britain, where the cool reception of his Embassy building in Grosvenor Square was beginning to thaw. His achievement had been difficult enough for anybody, anywhere, to digest, if only for the way in which he combined a stunning professionalism in detailing with an apparent changeability of style that defied all attempts at analysis. The story of his transformation from a Miesian Machine-Aesthete at General Motors Technical Centre at the beginning of the fifties (the effective beginning of his career as a major figure) to a free-form sculpturalist at their end, is so much in the public domain that it hardly needs to be pursued here, but as it has remained more or less in step with a corresponding change of fashion among the younger elements of the profession all over the world, Saarinen has had to shoulder (like Socrates) unjust blame for the 'corruption of youth.'

If anything, youth found his changes of style even more incomprehensible than did his elders—young Miesians never forgave him for abandoning the hypnotic repetitions and fine drawn detailing of GM Tech Centre, while students at Yale would take visitors to see the Ingall's Hockey Rink as an example of a Yale alumnus who had gone astray. But Saarinen would have defended these unique solutions (which so flattered commercial patrons in search of a distinctive brand image) as the necessary consequence of unique problems, and by the end of his career the apparently unending supply of unprecedented building forms began to make it look as if he really might be judging every situation on its unique merits and evolving genuinely original solutions by going back to first principles and avoiding aesthetic prejudice.

Unfortunately, the wave of corporate and academic affluence that made these original solutions possible, also cushioned him—to some extent—from hard financial pressure, and his work from the middle fifties onward exhibits a manifest want of economy that seems to draw attention to every instance, however minor, of lack of absolute resolution in detail or in plan (shall we ever know how much modern architecture's ability to maintain its own standards of integrity owes to economic stringency?) and it should be noted that British proponents of 'the style for the job' were as vigorous in their criticism as were US advocates of stylistic purity. Nevertheless, the growing wave of recognition that

absolute functional honesty, and the exact service of human needs, will both militate against stylistic consistency may yet find in Eero Saarinen a patron saint or father figure whose inconsistencies could guarantee his legend a lively survival even when the memory of the great grey eminences has become a gallery of lifeless statues.

WALTER GODFREY

Walter H. Godfrey, historian and antiquarian, author and editor, restorer of ancient buildings, died in September in his 81st year. Of his multiple and scholarly activities, the two for which he will perhaps best be remembered are his editorship of the London Survey Committee's volumes and his directorship of the National Buildings Record.

He himself wrote several of the Survey volumes (for it was as an historian of London that he was outstanding) as well as editing them, carrying on for many years the work begun at the end of last century by C. R. Ashbee. He only gave up the work when ill-health made it impossible to continue, and the Survey became the LCC Survey of London since the London County Council then took on the whole responsibility.

It was also ill-health that compelled Godfrey to give up, in 1960, the National Buildings Record of which he had been director since it was founded in 1941. His is the credit therefore for building it up so successfully during the difficult initial war years. He made of it a unique and invaluable photographic library, which would be more valuable still if the Government would allocate more money to it.

Notable among Godfrey's many books were his *History of Architecture in London* (1911) and his *Our Building Inheritance* (1944) which was a plea for the preservation and conversion to modern use of the thousands of small buildings in villages and elsewhere that give much of its character to the established British architectural scene.

Godfrey was in charge of the transfer of Crosby Hall from the City to Chelsea and showed skill and knowledge in restoring many old buildings. These included, after the war, two famous churches that had been almost destroyed by bombing: Chelsea Old Church (of which he was also the historian) and the Temple Church.

J.M.R.

BOOK REVIEWS

WHAT THE CAMERA SEES

PHOTOGRAPHY AND ARCHITECTURE. *By Eric de Maré. Architectural Press.* 50*s.*

In discussing the relationship of photography and architecture de Maré takes his stand on the words of Blake, 'I see through my eyes, not with them' and in this excellent book he goes forward to explain the part the camera has played and can play in building up a climate of opinion wherein modern architecture is understood. This is the very antithesis of the use of the camera as a 'seeing eye' in the reporting, recording sense; 'Dull useful work with which this book is not greatly concerned.' If the camera is to serve truly the cause of architecture, then it is not the perfection of a reporting technique that is required; instead, the photographer must cultivate his sensibility.

'Why complain,' he asks, 'that architectural photographs are sometimes contrived; that they do not reveal the true aspect of a building . . . an undistinguished structure can sometimes be made to appear like a masterpiece in a dream world.' The vision is real enough and its importance is in the stimulus and inspiration it supplies. If the photographer has captured, to quote T. S. Eliot, 'such a vision of a street as the street hardly understands' then this, maintains de Maré, is true architectural photography. It is not a record of the cracks but a print of the vision we need.

The title of the book is typical of him; it is laconic but, when the text has been studied, its peculiar appropriateness is revealed. He is an original thinker and under the section 'Ends' he explores, with telling extracts, what others have thought and adds with acuteness his own conclusions. He reveals the possibilities of photography as a medium of expression, setting against them its limitations, and in a brilliant chapter stakes its claim as an art. Thence he goes on, 'Until you have done your own processing you will not have tasted the full flavour of photography' and, under 'Means,' there follows in a comparatively short clear-cut section a description of equipment and technique backed up with practical data of the most useful kind. Tiresome jargon and bogus expertise are avoided, but everything essential, including much that it quite difficult to come by, is there. At the end of this section is a homily which, taken to heart, would remove the boredom from the normal photographic exhibition 'technique is the means, not the end; expression is the end.'

These two sections are followed by 130 photographs selected from sources all over the world to illustrate a series of points arising from the text. They constitute the most beautiful and informative series I have seen. His own photographs stand out clearly among the masters as examples of irreproachable technique and great artistic merit. Like others of his calibre he not only knows what he sees, but also knows what his camera sees. The book is a close integration of theory and practice and, at the same time, an unmatched exemplar. It is a joy to look at and to *read*. In its pages the means become deceptively simple; the end exciting.

Bryan Westwood

DANISH PUZZLE

ARKITEKTEN KAY FISKER. *By Hans Langkilde. Arkitektens Forlag.* 48*Crs.*

Those who look at architecture of the last fifty years detachedly will always tend to focus their interest on what is progressive rather than what is good. This is the reason why the achievements of architects not out of sympathy with tradition and of architects believing in certain classical principles, are being undervalued. The critic in England might be forgiven for this lack of judgment; for our Neo-Georgians have in fact been weaker and less exacting than our Moderns. But that has not been so everywhere, and the principal exception is Scandinavia and Denmark. How elegantly Östberg and Tengbom handled their traditional materials, how easily Asplund could move from his style of the twenties to his style of the 1930 Exhibition, and finally to the style of the Crematorium.

But the most engaging and also in some ways the most puzzling case, is Kay Fisker's, and so a book on him is a welcome opportunity to think of his buildings again. The book, by Hans Langkilde, is in Danish and has less than twenty pages of English summary. It is illustrated largely by drawings, sketches, plans and elevations, and that in itself is characteristic. Fisker's drawings are done with a loving care, a delight in the intimate detail and the gentle tones of water-colour which does not even cease when he presents blocks of flats of quite formidable size.

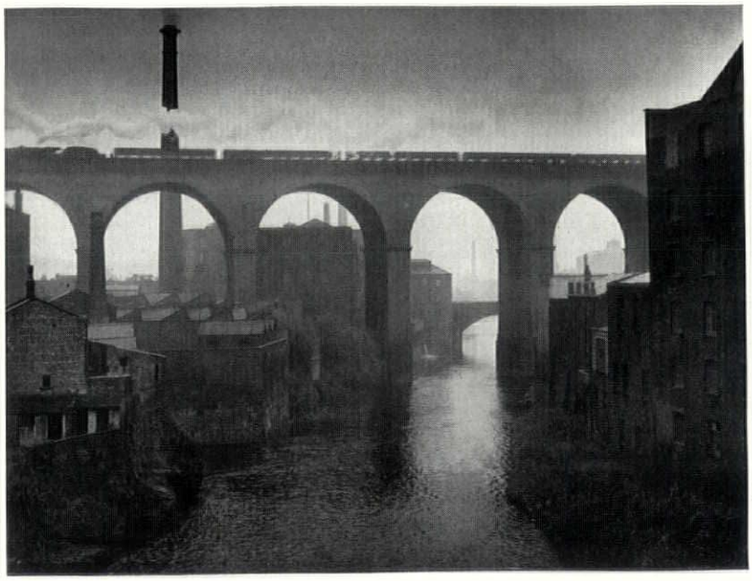
These housing jobs of the early 'twenties are perhaps Fisker's best-known contribution. He had started with houses in the country, cottages and country railway-stations influenced by Baillie Scott and, though Mr. Langkilde does not say so, probably by Tessenow too. Then in 1919 he seems to have turned resolutely Georgian. The turn is called one towards classicism, but is really what we would call Georgian without any hesitation. Kay Fisker indeed knew and admired Bloomsbury. It must be remembered that his fellow-countryman, Steen Eiler Rasmussen, wrote his classic on London in 1937. The long terraces of Georgian London are what come immediately to mind when one looks at Kay Fisker's work of the 'twenties and at that done at the same moment by some other slightly earlier Danes. The most familiar example is Kampmann's police headquarters at Copenhagen of 1918-1924. The first of the big housing jobs on which Fisker was now to specialize for a while, was Povl Bauman's in the Struenseegade of 1919-1920. Fisker's own most impressive block of flats was the Hornbackhus of 1922, eighty-six bays long, five storeys high, with a hipped roof and completely without accents. Its sources are the Berlin housing done at at the beginning of the twentieth century, its parallel the Vienna of the 'twenties, but neither Berlin nor Vienna nor, of course, Holland, knew anything like the fascinating, if alarming, combination of dainty detail with the merciless whole. The Hornbackhus has a closed inner court, a doubtful element even if the size is as enormous as it is here. Kay Fisker was soon to move to opener planning, as indeed to opener solutions altogether.

The Danish Pavilion at the 1925 Exhibition at Paris was an almost windowless cruciform, strictly symmetrical group of cubes, much more in the Central European idiom of the 'twenties. In 1928 Kay Fisker's changed from the Georgian shape of windows to square and horizontal shapes, and his characteristic low-pitched gables begin to appear, and in 1930, the year of Asplund's change of heart, Fisker produced a block of flats (with C. F. Moller) essentially in the International Style, and an extremely good one at that, well-grouped and with the use of split levels. But that was an interlude. The low-pitched gables remained but the rigidity of the International Style was shed. The result is Kay Fisker's most memorable job, Aarhus University of 1931-1939 (with C. F. Moller and P. Stegmann), the free grouping of clear-cut brick buildings of various shapes on a hillside, done with perfect ease and never demonstrative in a single detail. The extent of the influence of Aarhus on planning in England has not yet been fully evaluated.

Brick is the local Danish material. There is no steel and there is indeed little industry. Also the total population of the country is under five million. So the industrialization of the building industry is not a pressing need. There are plenty of excellent craftsmen and artisans. Architects' offices are small and personal. These conditions go a long way to explain Kay Fisker, Finn Juhl, Preben Hansen and the others. Moreover, it explains how Kay Fisker can have managed to remain a teacher all the time while being a successful architect, and not only a teacher of design, but also of history. His summary of the history of functional architecture, (*Praefunktionalismen*, 1950) remains to this day of outstanding value.

N. Pevsner

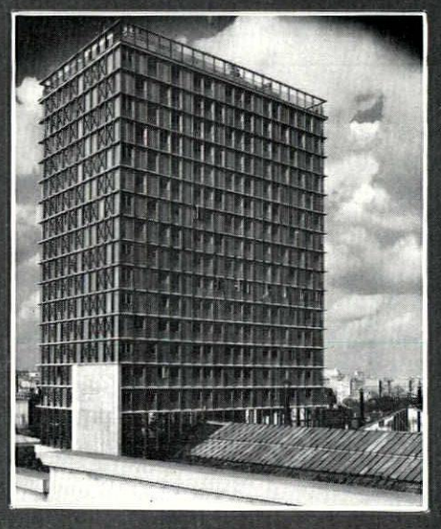
10, *Eric de Maré's justly-celebrated view of Stockport in the rain, from Photography and Architecture.*



BOOKS RECEIVED

TERMITES (THEIR RECOGNITION AND CONTROL). *By W. Victor Harris. Longmans, Green & Co. Ltd. (Tropical Agriculture Series).* 40*s.*

THE DESIGN OF RESEARCH LABORATORIES. *Nuffield Foundation Division for Architectural Studies. O.U.P.* 45*s*



33 Rue Croulebarbe, rising above the roofs of the Thirteenth Arrondissement, shows that Paris too has the problem of absorbing new towers into traditional skylines. In this case, however, its location means that no ancient monument is threatened, while its architecture (Edouard Albert, with Boileau and Labourdette) and pioneering exposed steel-tube frame, would be no disgrace anywhere. In addition, its placing at the rear of a deep site, well back from the road, represents a real break-away from the facade-on-street prejudices of Paris zoning laws. Such quality and ingenuity in design are the marks of the current reawakening of French housing architecture, and further examples are illustrated on pages 318-323.

Reyner Banham

URBANISM: USA

The literature of American urbanism has recently attained a certain age. This is not to say that it has matured—its maturity was as early as the time of Lewis Mumford's *Culture of Cities*. But with the appearance of a special issue of *Daedalus**, devoted to 'The Future Metropolis,' town planning finally entered the main arena of intellectual debate, along with such subjects as International Arms Control, the Russian Intelligentsia, the Mass Media, and other neuroses-of-state which have also been the subject of recent special issues of *Daedalus*. Town planning is thus a part of the White Man's Burden of US Liberalism, one of the many things that have been dumped on the desks of the whizz-kids of the Kennedy administration 'for immediate attention.'

But one may doubt that it is really a live issue in the sense that colour prejudice is a live issue. One of the reasons for saying that US planning literature was mature at the time of the *Culture of Cities* is that it has produced very few new ideas since. Mumford was preoccupied with the pathology of Metropolis, so are the contributors to *Daedalus* a generation later. They remain obsessed with the geriatrics of urban senescence, and their doubtful reward is to have fathered the rough-hewn branch of surgery known (hopefully) as urban renewal, by which whole organs of metropolis are lopped off and made over new.

But what is an American Metropolis? What Mumford had in mind was a city with a distinct corporate history and personality, expressed in economic and political power, and monumentalized in some massive units of capital investment—palaces, bourses, railway termini, law courts, cathedrals and the like. But when Starch Consumer Magazine Report assures prospective advertisers in *Playboy* that 72.4 per cent of its readers 'live in 168 metropolitan areas' of the USA it clearly does not mean what Mumford meant by *metropolis*, and neither do the contributors to *Daedalus*.

The North American continent abounds in striking proofs that a pile of king-size statistics do not add up to a metropolis, and while making all due regard to local pride,

* Winter 1961, also available in hard covers, published by Praeger, New York, $5.

and local munificence, it is difficult to see what specifically metropolitan functions are performed by most of the large towns of the US. The 168 canonized by Daniel Starch may have as many head of population, as large a rate-roll, as many square feet of gallery space and as many chamber music concerts as the traditional metropolises of the Old World, and they may be distributed across the face of the continent at about the same rate of incidence as Amsterdam, Cologne, Munich, Vienna, Budapest, Warsaw, Berlin. But each of these was (and sometimes still is) the heart and life of a distinct political, cultural and ethnic unit. Is this true of any American City? Washington is the metropolis of only one aspect of the US, the bureaucracy; New York of the communications industry; even Los Angeles and San Francisco have not yet decided which of them is the metropolis of the West Coast: St. Louis, Chicago, New Orleans, appear to exhibit some of the traits of a metropolis. That leaves another 161, whose elevation to metropolitan status by Mr. Starch and *Daedalus* merely creates problems that need not exist.

To say this is not European snobbery, but—rather—to see if America cannot do better than Europe in this respect. Behind Mumford's anguished prognosis of the metropolitan disease (Megalopolitan tendencies and General Paralysis of the Insane) lies the proposition that a metropolis, while healthy, is worth having. It sets the tone of a culture, regulates its commercial metabolism, rallies its political talents, fixes its corporate image among the commonwealth of human societies. Where a city is more or less doing this—a very rare circumstance nowadays—there may be good sense in the heart-grafts of Urban Renewal, or, at least, in holding up its arms, like those of the aged Moses, so that its children may prevail.

But the rest are pretty certainly expendable: in terms of relative scale and ratio of resources to problem, the US is, in this field, about where Europe was in the Thirteenth Century, able not only to found new towns, but to abandon old ones. How about putting Pittsburgh somewhere else, as the English once did with Sarum? America has the space, the resources and, for a little while yet, the time. The problem of the American Metropolis lies, in most cases, in taking seriously cities that don't deserve it, and in trying to operate ill-designed conurbations that would be better scrapped. America could become the first major culture to shed its pseudo-metropolitan encumbrances without losing any significant part of its cultural life in the process.

The alternative to Metropolis exists already, and has long been recognized as the other great problem of US urbanism—the suburb. This is a form of urban organization to which the nation is clearly committed, as Alistair Cooke explained at length and with lingering distaste in his Discourse* to the RIBA. But the sane study of the problem is all-but-paralysed by a failure to recognize its successes, and by an equal failure to recognize that the European name, *suburb*, involves an assessment that is false.

False because, as Mr. Cooke also observed—though without appearing to notice the import of what he had said—the US suburb does not need to be a satellite of a metropolis. It is not a subordinate nor a sub-standard limb of a city, but an independent urban unit with a character of its own. It blights the fringes of great cities because it does not need those cities and has no organic relation with them; it is at its best, one of the major successes of the American Way of Life, where it is allowed to exist on its own, as it does in every county of the Middle West.

There, too, it reveals its history. For it is not a new invention; towns that have stood since before 1900, towns with populations going on for 20,000, are found to be laid out entirely at suburban densities. They are not overgrown villages and no earlier street-pattern underlies the regular grid-iron. They were created, by accident or (rarely) design, in the suburban image. Main Street may present a conventionally urban façade of plate glass and neon, and directly behind it there is indeed (as we have been indoctrinated to expect) a squalid wilderness of parking lots and gas stations. But two blocks back from Main—one block back in some cases—the standard pattern of trim grass verges, roadside shrubs, white boarded gables and parked Chevrolets in every car-port has begun, and you are in suburbia without ever having been convincingly in town.

What is more, the 'suburb' is better than the 'town.' Against all the probabilities that a European will have assessed (balancing heavily wire-scaped views of Levittown against the idyllic scenery of the Andy Hardy films of his youth) grid-plan low-density housing can be a convincing image of urbanity—a point that has been obscured by excessive concentration on the social and cultural horrors of the raw new suburbs in the *No Down Payment* belt. Older and well shaken-down suburbs have grown out of this hire-purchased Hell; they also have trees and a better basic plan, for the grid-iron is—at these densities—a far better plan than the serpentining roads and closes that descend (one supposes) from Radburn, and are *de rigueur* now, even with cut-price tract-developers. Europeans are justifiably suspicious of grid-iron plans, since their main experience of them is in by-law housing or its Continental equivalents, smothering both urbanity and the *genius loci* under an abstract, land-valuer's geometry.

But the prairie can be so flat and featureless that the only genius of the place is the regular rectangular

*RIBA Journal, May 1961.

pattern of land-holding, with the roads running north-south or east-west along its boundaries, a system of map-co-ordinates made real by the cross-roads—far more real than the odd knoll or tuft of trees that may occasionally break the dead level of the ploughed land or standing corn. Within this landscape, the grid-iron plan of Prairie-ville is an accentuation of the *genius loci*. More unexpectedly, it also accentuates the land-form, instead of smothering it. The streets of Prairie-ville, plunging up and down over changes of level that are sometimes as big as seven feet, draw attention to every accident of the terrain; the town creek, trailing a meander of unkempt greenery through the grid, becomes an obtrusive landscape feature. But in a 'sympathetic,' landscape-architect's design, the changes of level would be smudged by contour-chasing roads and the creek lost at the bottom of the back gardens.

Beyond this, the function of the straight streets of the grid is subtly ambiguous. By implying, as Ian Nairn pointed out, a means of escape from the town, they threaten its urbanity, but at the same time they introduce an element of largeness into a townscape otherwise composed of small-scale elements, and this duality is heightened by the absence of visible fences that makes the land-surface of every block within the grid a continuous lawn on which the little houses sit lightly, barely engaged with the ground and the landscape. If the roads are narrow enough not to interrupt this lawn too much, and the tree-cover heavy enough (as it often is) the townscape becomes an idealized and intensified prairiescape whose reality as an ecological fact, rather than real-estate fiction, is guaranteed by the squirrels on the lawn. They are real flesh and fur, not—as in equivalent English settlements—plaster.

For a people that emphatically believes that the 'Outdoors' is beneficial to Man, yet may only be a generation away from farming, the result is a kind of permissive, do-it-yourself Utopia whose outstanding virtue is to have freed its inhabitants from the curse of Adam. Throughout the history of American Utopianism, down to and including the most praised of recent Utopias, that of the Goodman Brothers in their book *Communitas*,* runs a vengeful determination that those who live in sight of greenery shall till the soil, even though they also work in factory or office. But those who enjoy the green prospects of Prairie-ville from the seat of a motor lawn-mower look on scenes that are 'Nature, still, but Nature methodiz'd' to quote Alexander Pope, and their 'agricultural' pursuits are, to quote Humphrey Repton, 'less the reality of penury than . . . industry with an affectation.'

* Vintage Paperback, 10s. (Mayflower Publishing Co.).

As in the landscape gardens of Pope and Repton, the scenery and the way of life are inextricably related. Restore the curse of Adam, cultivate the land between the houses because penury is real, as in the Negro quarter of Prairie-ville, and the broken land-surface with its concomitant fences reveals at once how high the densities really are, how small the scale. But on this wrong side of the tracks, other limiting factors of Prairie-ville become manifest, because the houses of second-class citizens do not receive the regular painting that a wooden structure needs, nor have they the sanitary accommodation their high occupancy requires, and the municipality that leaves them to soakaways and cess-pits also tends not to bother with the upkeep of their roads.

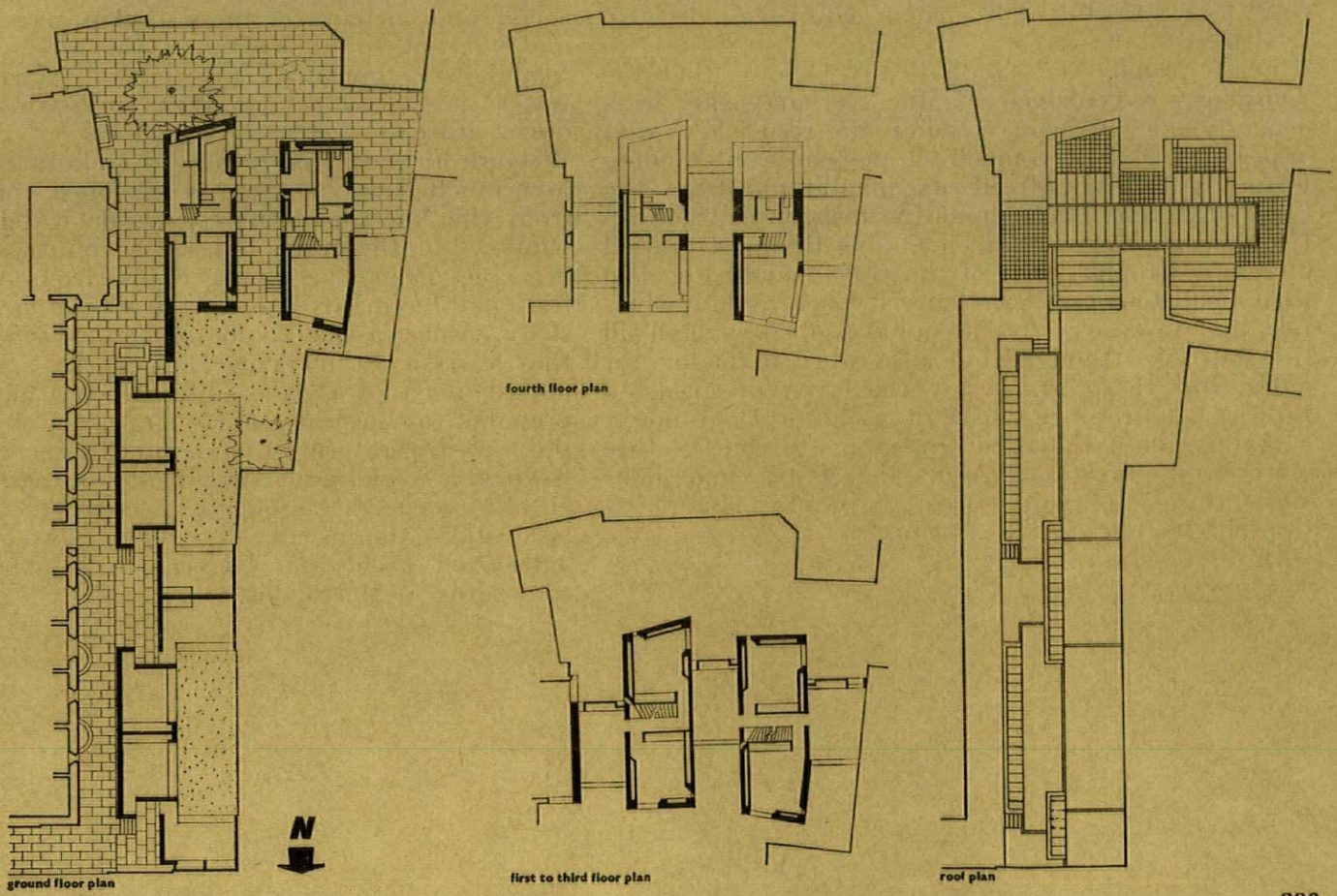
But what makes all this so sickening to see is that the margin between squalor on one side of the tracks and Arcadia on the other is so slight, a margin that most Prairie-villes could easily erase without municipal bankruptcy overtaking them. Most of the limits of Prairie-ville are as slight and precise as this. The grid-iron of twenty-foot developer's roads is almost perfect for ambling neighbourhood traffic, useless for anything heavier, hence the slummy chaos of Main Street. But the solution is not to screw up the grid into a tangle of twists and closes, in which the motorist is reduced to the status of a frantic rat in a laboratory maze-test. The solution is to get shopping and main highways out of the grid—a process already in hand with the move of shops from Main Street to free-standing shopping-centres, though the solution of the interconnection between grid and highway still seems a long way off.

Prairie-ville is not perfect, but neither is it the social and urbanistic mess that interested parties make it out to be. Certainly the air-view of Long Island as 'a housing estate entirely surrounded by water' is alarming, but that isn't America. Look down instead from the windows of some Mid-Western airline's well-preserved Dakota and see just how much America there is left once you get away from the 'metropolitan' coasts, or watch from the windows of the train and see a countryside that is invisible from the main roads from which professional Jeremiahs like Alistair Cooke never seem to stray. America has room for Prairie-ville, provided that it is a Prairie-ville that works and gives an honest image of a way of life. Given a nation that is prepared to consume a fairly large part of its national product in the form of communications, this form of town is a workable environment for the good life of all but a small percentage of its citizens. And for that percentage there will, of course, always be those half-dozen or so cities that can make a fair boast to the status of Metropolis.

Undergraduate Rooms at Brasenose College, Oxford

ARCHITECTS: POWELL AND MOYA

By far the most complex and sophisticated example of college infill to appear in the present wave of enlargements and extensions, Powell and Moya's new work for Brasenose College, Oxford, poses once more the problem of the right kind of architecture for such a task and such a setting. The problem has been admirably solved—as the next six pages show—but once more the solution has shown that there is no simple rule, no one right answer to the problem. The need to consult the genii of some very awkward places has driven the architects of college infills to develop ingenious variations on the standard themes of collegiate architecture, particularly in planning, and it is to be hoped that the lessons they have learned will also be studied by those who are called upon to design new colleges and new universities on less constricted sites—nothing could be more inimical to a developing University architecture than the premature crystallization of a diagrammatic formula for collegiate planning.



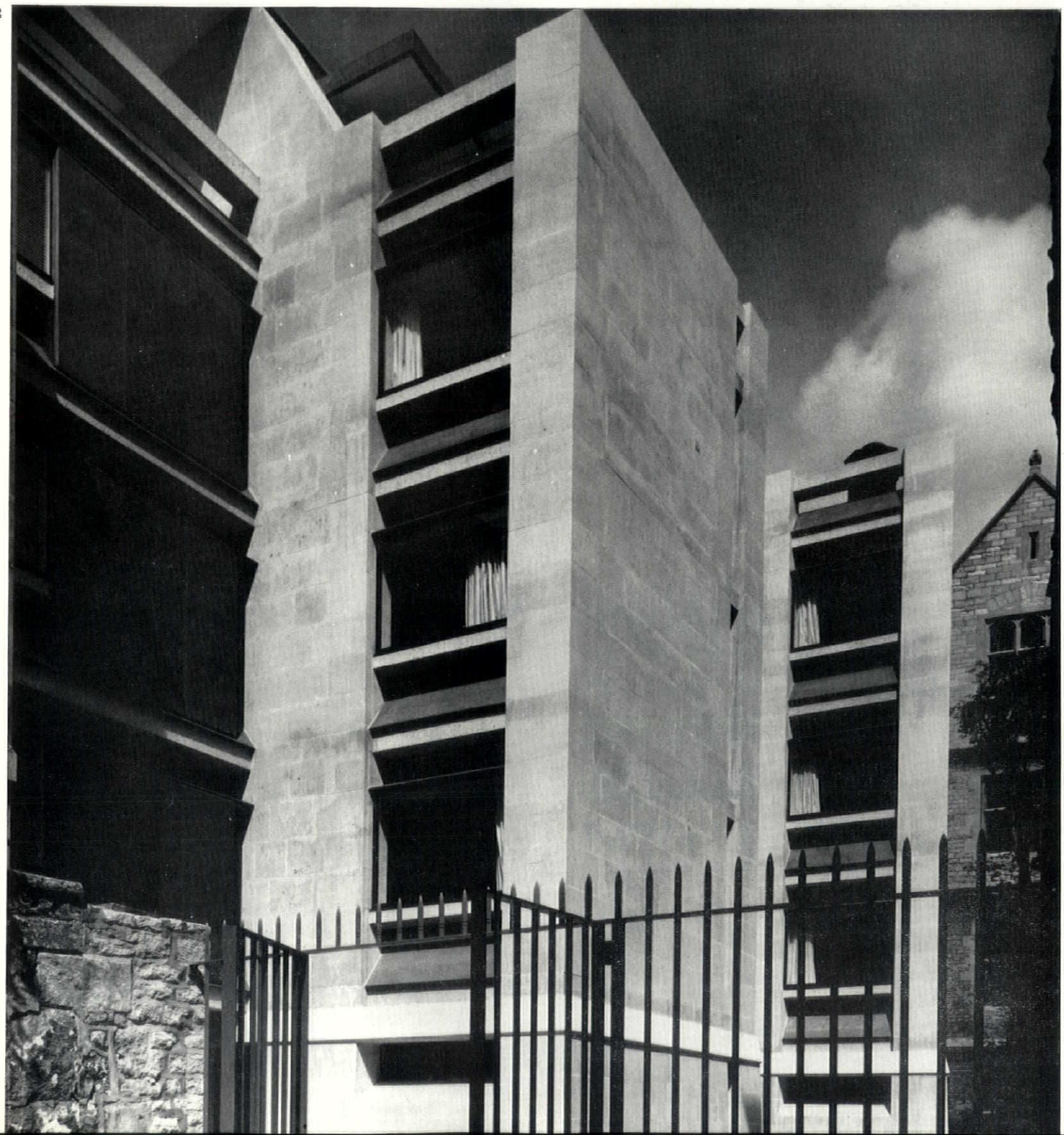
OXFORD INFILL

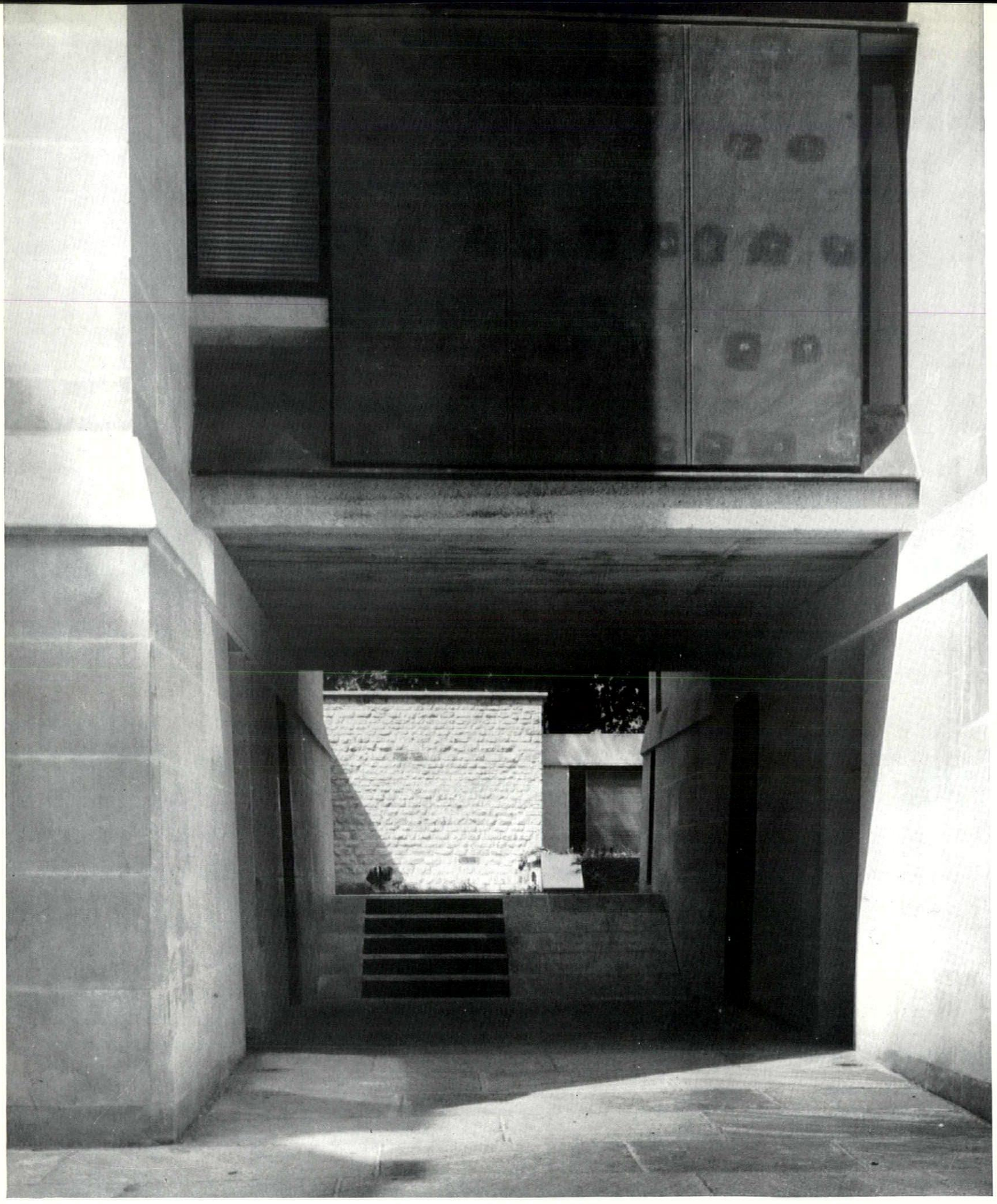
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1, the new building from the tower of All Saints' Church. 2, the four-storey block from the south-west.

2

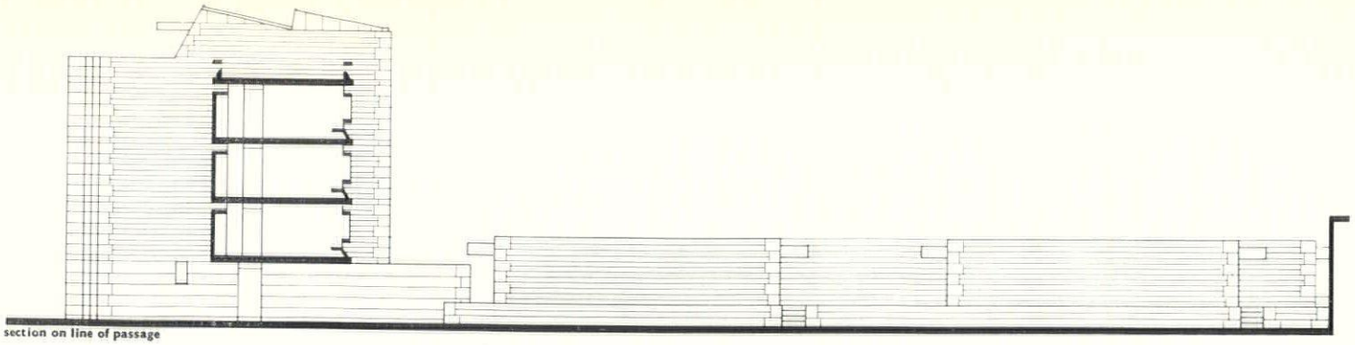




3

UNDERGRADUATE ROOMS, BRASENOSE COLLEGE, OXFORD

3, looking under the tall building into the first of the internal courtyards containing the single-storey blocks, seen in 4 on the facing page. 5, entrance to the single-storey buildings, with the four-storey block behind.



section on line of passage

The site was the ' backyard ' of the College on its western boundary adjacent to Lincoln College. It consists of a ' square ' about 60 ft. by 60 ft. and a ' passage ' about 110 ft. by 35 ft. The surrounding buildings are either 1900 Gothic, stone-faced, or stuccoed Georgian. They are about 35 ft. high. Rather than giving detailed schedules of requirements, the College asked the architects to provide as much accommodation as possible, in the form of bed-sitting rooms, on this very restricted site.

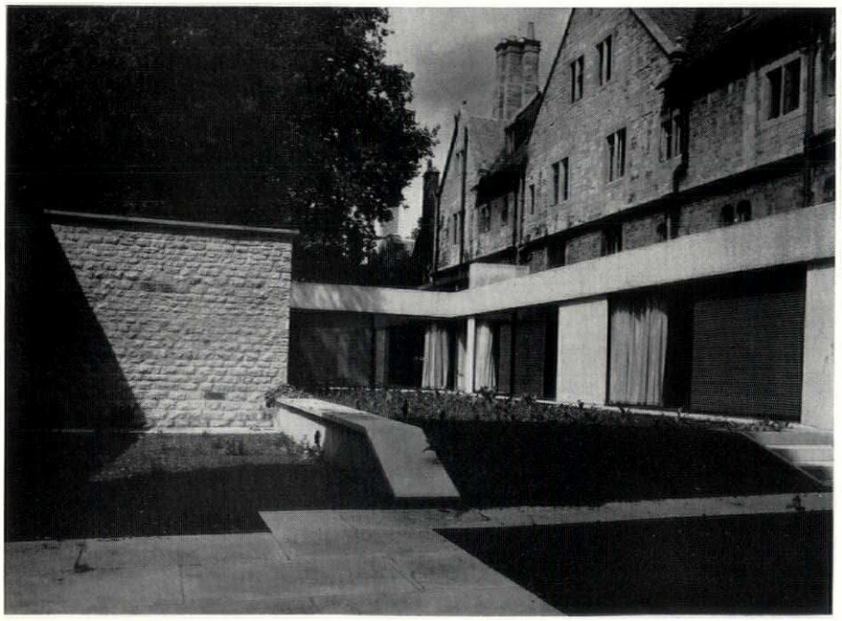
In the square has been placed a 4-storey building containing 23 rooms, with two additional rooms in a penthouse. Some of the best views are oblique, towards the nearby church spire. Other good views from the first floor up are to the north over one of the gardens of Lincoln College. These sometimes charming, but restricted and oblique, views and the irregular outline of the surrounding buildings influenced the shape of the new building, the rooms being individually designed to make the most of the views. Windows are arranged in more than one wall of a room so that, for example, one window can face north to the best view, whilst the other lets in the sunlight. This treatment of the rooms has produced a building of irregular and informal outline.

As the 4-storey building is placed in the most open part of the site, the ground floor has been designed to maintain as far as possible a feeling of space. This was done not by raising the block on columns but by building solidly down to the ground and giving tunnels and passages through the stonework. This gives an indoor scale to the area and so seems to increase the dimensions of the site.

In the ' passage ' tall buildings were not possible.



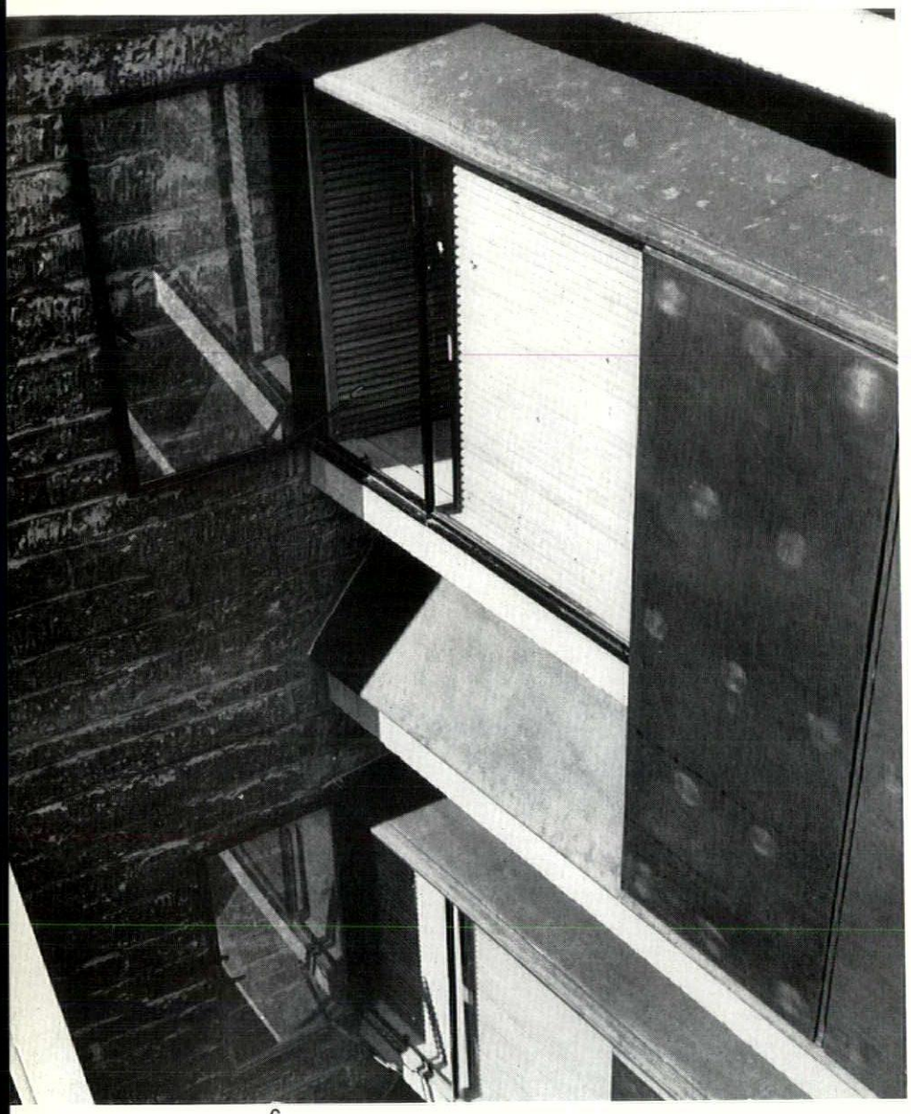
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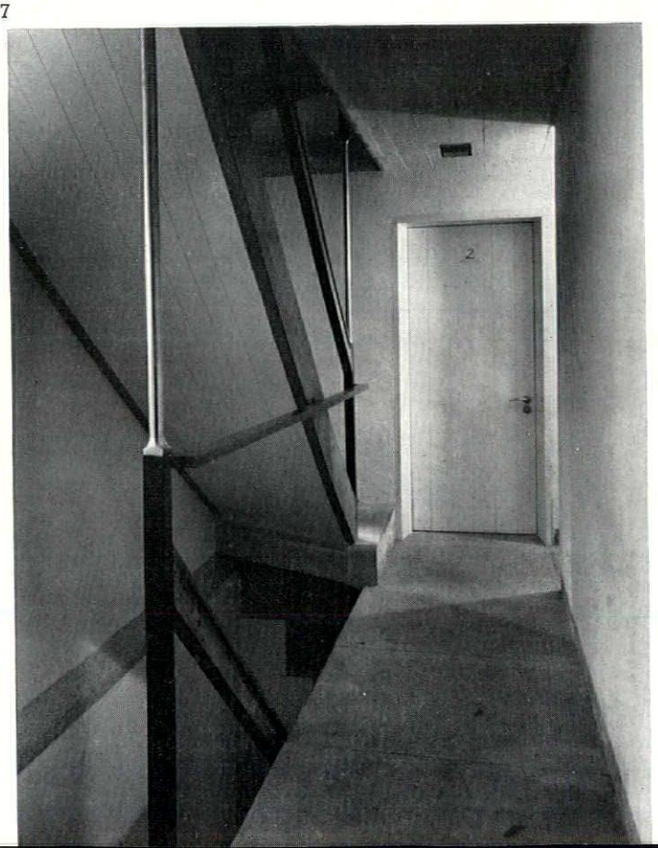
Instead there is a group of single-storey ' pavilions,' each containing one or two bed-sitting rooms. The rooms are approached from small entrance courts and are arranged to open on to small private courts or gardens. There are seven such rooms.

The load-bearing walls, of Portland stone, are expressed as such, not as an applied veneer or infilling. They clearly carry the weight of the building. The quoins are of smooth Whitbed and the infilling between them is of Roach, which has a slightly pitted surface. None of the stone has been ground smooth. In the higher building the main walls are carried on ground beams supported by reinforced concrete columns, resting on high-pressure reinforced concrete pads on mass concrete bases. They consist of 9 in. load-bearing brickwork faced with 2 in. Portland stone, but with solid load-bearing stone quoins bonded in with the brickwork. The inner non-structural skin is of clinker

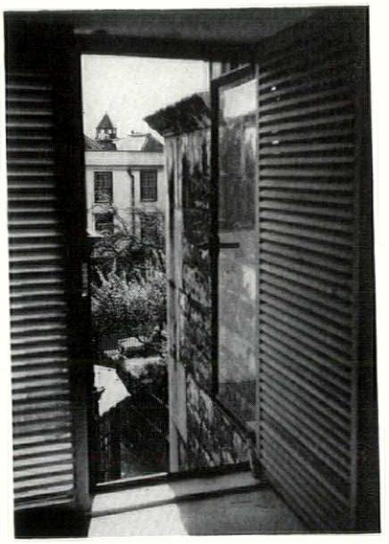


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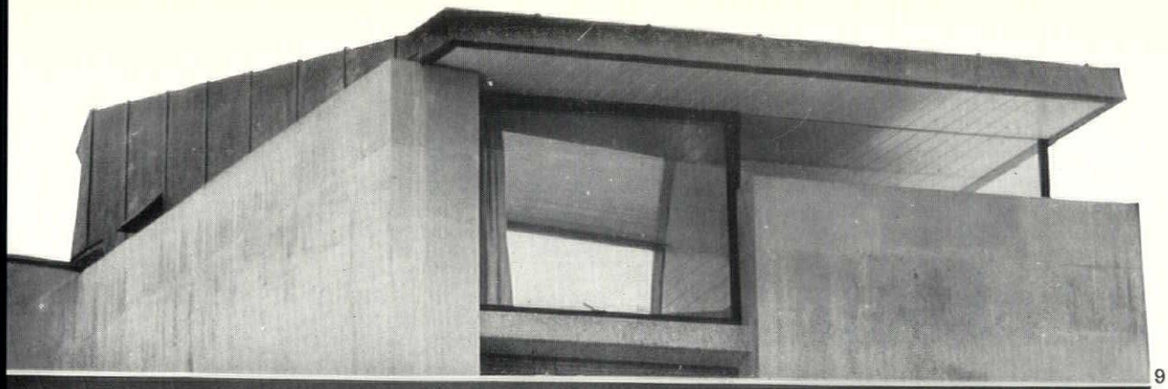
6, detail of the lead facing on the south wall of the tall building. 7, staircase landing in the tall building. 8, view of the High Street from the tall block.



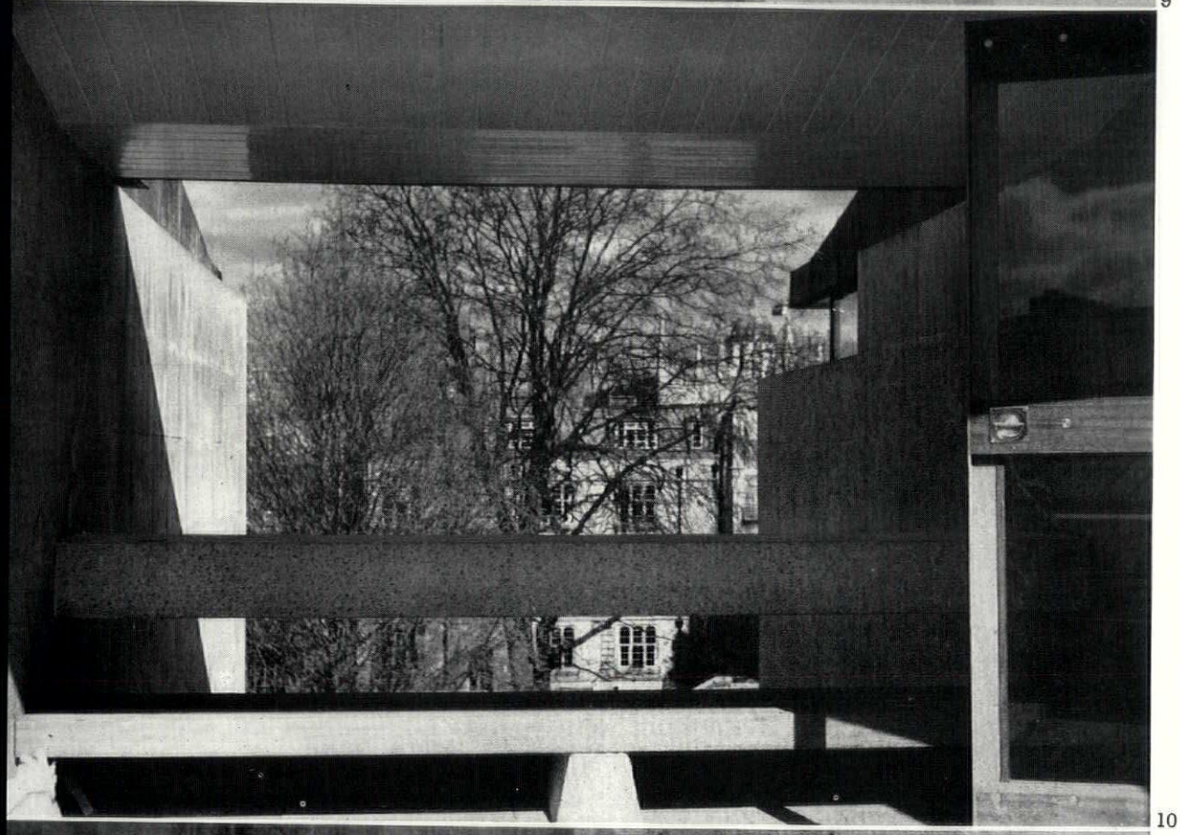
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blocks, plastered. The floors in this building are of in-situ reinforced concrete, with glass silk insulating quilt on top, cement screeded and finished with hardwood block. Skirtings are flush with the slightly textured plaster wall finish and are of Portland stone. Ceilings are plastered. Exposed edges of floor slabs under windows are of bush-hammered concrete with Norwegian quartzite aggregate. The roofs are similar to the floors, but with 1 in. cork insulation with roofing felt, finished with paving slabs. The roof of the penthouse is of timber, lead covered ; the underside is of boarding, painted. The windows have precast concrete transomes and cills with similar finish to the exposed edges of the in-situ concrete floor slabs, but with polished surfaces inside the rooms and with the sloping external faces sheathed in lead. Window frames are of black polished anodized aluminium. Staircases have English elm flights, Portland stone bottom step and York stone paving on landings.

The construction of the low buildings is generally similar to that of the higher building, except that the foundations consist of a reinforced concrete raft on top of existing walls which rest on piers and vaults. The external load-bearing walls are of cavity construction, with stone-facing and quoins as for the higher building. The roofs, which can be seen from the surrounding buildings, are covered in part with cobbles ; in part with earth and grass. The raised clerestoreys are lead covered. The rooms are centrally heated from an existing boiler house, and have low radiators below the window seats. They also have built-in infra red panel electric fires.



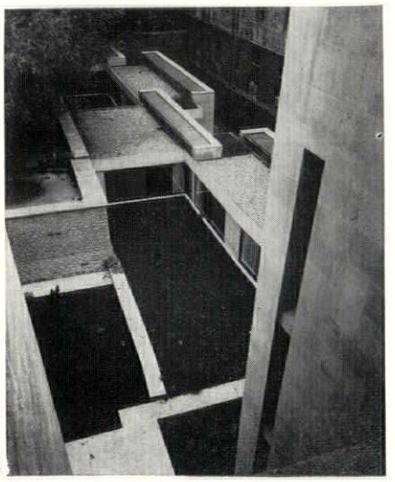
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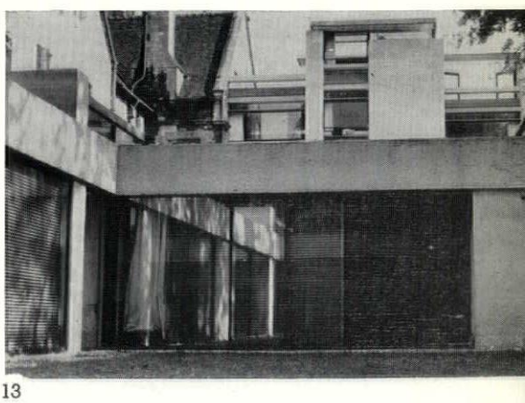


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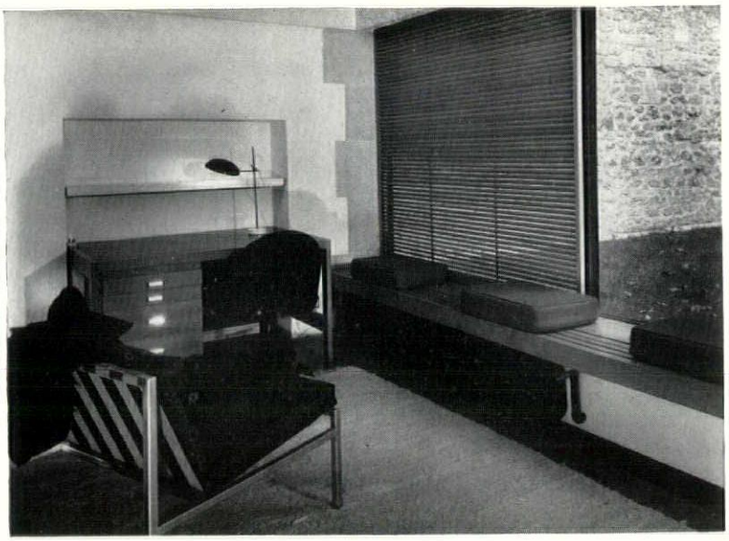


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9, one of the penthouse rooms on the tall block. 10, looking north from the penthouse. 11, looking down from the tall block to the steps into the internal courtyard. 12, the single-storey sets from the roof of the tall building. 13, looking back from the courtyard to the tall building.



13



14

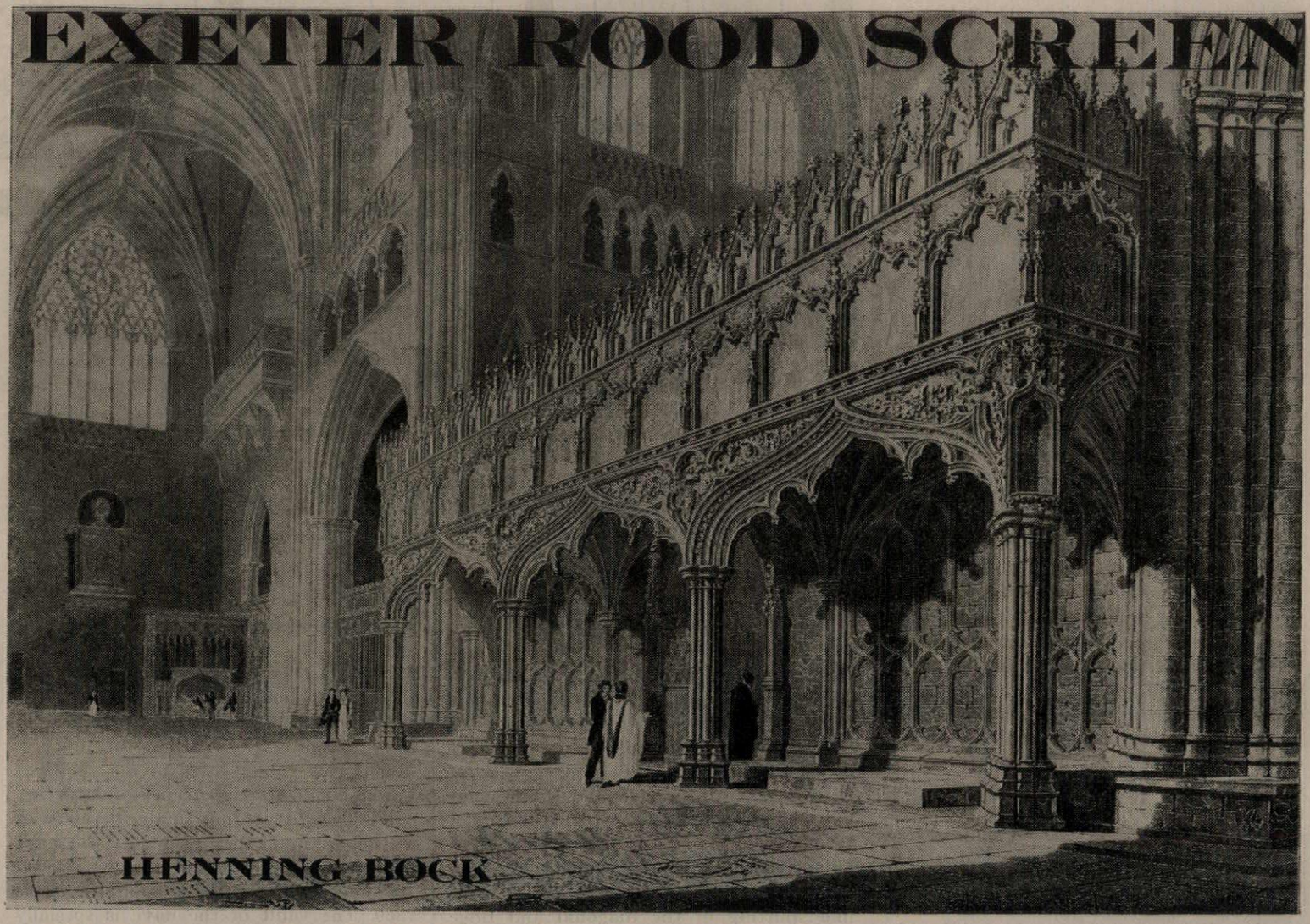
14, interior of one of the single-storey sets, showing the afrormosia sliding screen. 15, looking into the courtyard from the single-storey block.



15

UNDERGRADUATE ROOMS, BRASENOSE COLLEGE, OXFORD

EXETER ROOD SCREEN



HENNING BOCK

1

No problem connected with Gothic architecture in England has been studied as consistently in the last ten years as that of the origins of the Perpendicular style and with it the origin of the fourteenth century style of Gloucester Cathedral. Dr. Bock in a forthcoming volume of the Heidelberger Kunstgeschichtliche Abhandlungen *deals with the Decorated Style in England in all its aspects. In this article he singles out one key monument and proves its crucial importance for the historical position of the transept and choir of Gloucester.*

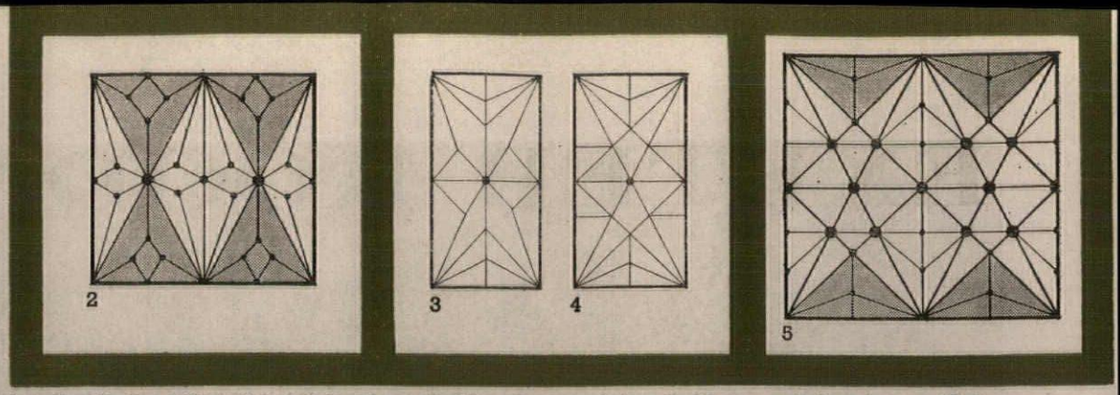
In discussions of the origin and development of the Perpendicular Style[1] the decoration of the choir at Gloucester has so far been the centre-piece. The aim was to find out, whether the Perpendicular derives from the Court Style in London, that is the Chapel of St. Stephen's or from the Chapter House of Old St. Paul's or from the cathedral of Bristol. In these discussions, however, the vaults of the south transept and of the choir of Gloucester have not been paid enough attention to. All that has been pointed out unanimously is a rather vague resemblance with the vaults at Tewkesbury and Wells. A closer examination of these vaults will corroborate the assumption, expressed by Professor Pevsner,[2] of the dependence of Gloucester on the West and South-west. The truth is that the new buildings at Gloucester, Bristol, Tewkesbury, Wells and also Exeter belong to one regional style, but that only at Gloucester in addition elements of the Court Style and of contemporary French architecture have been added. It is this brilliant synthesis, which gives Gloucester its unique importance.

The development of the Decorated Style in west and south-west England was concentrated in a few centres. As early as the last quarter of the thirteenth century elements of the new style can be traced in the rebuilding of Exeter Cathedral; especially in the decoration, such as the foliage on corbels, keystones and capitals. Here the change from naturalism to a highly stylized and decorative manner can be followed.[3] The complicated and intricate forms of the vaults and recesses for abbots' monuments in the choir of Bristol Cathedral (begun 1298) and also the hexagonal north porch of St. Mary Redcliffe reveal the artistic possibilities of the Decorated Style. Finally, in the rebuilding of the eastern part of Wells, the development of the style can be traced step by step to the turning point, when a rigidly perpendicular tendency replaced the flowing vagaries of the Decorated. That far the story is familiar. But there is another building or rather part of a building which comes into it and which has not yet been sufficiently appreciated.

[1] For the latest contributions cf. Pevsner, Bristol, Gloucester and Troyes, ARCHITECTURAL REVIEW, 1953, p. 89 ff.; Harvey, *English Mediaeval Architects*, London, 1954, Hastings, *St. Stephen's Chapel*, Cambridge, 1955, Webb, *Architecture in Britain: the Middle Ages*, Pelican History of Art, London, 1956, p. 138 ff. This article is part of a forthcoming volume on the Decorated Style in the 'Heidelberger Kunstgeschichtliche Abhandlungen,' where a more detailed discussion of other aspects of the Decorated Style will be undertaken.

[2] ARCHITECTURAL REVIEW, *loc. cit.*

[3] Cave, *Mediaeval Carvings in Exeter Cathedral*, King Penguin Books, 1953.



2, vaults of the chancel, Bristol Cathedral. 3, western vault of the rood screen and, 4, vault of the passage in the rood screen at Exeter Cathedral. 5, vault of the nave at Tewkesbury Abbey.

The furnishings and fitments of the new choir of Exeter were installed between 1300 and 1326. They ought to be compared, not only with the tomb of Edward II at Gloucester (which goes without saying), but also with the architecture of Gloucester. The important fact is that the Exeter rood screen has the earliest vault of the type which later was used at Gloucester and Tewkesbury, the type which may be called a net-vault.

The Exeter rood screen is not in its original state. Restorations and alterations have changed it but the surviving fabric rolls and a view by Britton (1826) (1)[4] allow a fairly accurate reconstruction. In the fabric rolls the first payments for the rood screen occur in 1317-18.[5] Stone was bought from William Canon of Corfe during the following years. In 1323-24 '45 images in 11 panels with a Doom and one image for the corner' are mentioned, and in 1324-25 '12 images in the 2 end panels and 10 small images near la pulpytte.' These figures had been carved by a London 'imaginator.' In the same year the great rood is mentioned, and this was painted in 1326 and put into its place above the rood screen. On the west side of the rood screen under the three arches, there were altars on either side of the central doorway, the one on the north dedicated to St. Nicholas, the one on the south to the Virgin. In addition there the two patron saints of the cathedral were represented, 'an image of St. Peter . . . at the choir entrance on the north side' and 'an image of the Blessed Virgin Mary at the choir entrance on the south side between the altars of St. Nicholas and St. John Baptist.' Above the rood-screen, an organ was fixed. In the seventeenth century (probably in 1648) the carved reliefs were replaced by paintings, and in 1819 an old wooden cresting was exchanged for a stone one. Britton's plate shows the screen in this state. In 1869 a lively controversy arose on account of a new restoration carried out by Gilbert Scott. The issue was, whether the screen should be kept or whether it was unsuitable for nineteenth century liturgical needs. Scott stood against removal, but had finally to give in to a compromise and take out the back wall so as to make the screen transparent and allow the congregation in the nave to see the choir.[6]

The original screen is of a usual type, the type which exists still at St. David's, at Southwell and elsewhere. The blind tracery on the former back wall helps to recognize sources. It consisted of a series of long shafts, and between them a frieze of pointed arches standing upside down on normal arches, thus forming ogee intersections. This motif corresponds to that of the canopies of the sedilia in the Bristol Lady Chapel of some years before, 6. They are, it is true, a remodelling of the nineteenth century, but are said to be based on reliable evidence. The same motif was used again in the great strainer arches in the crossing of Wells (about 1338), 7. So, although a London 'imaginator' did the reliefs at Exeter, the designer of the screen must have known the new building of Bristol.

Now for the vaults of the Exeter screen. They do not take up the pattern of the choir vault at Exeter, which in addition to ridge ribs and diagonal ribs, has four pairs of tiercerons, and rises palm-like from the springers, 3. It seems that instead once more the new chancel of Bristol gave the model, and it does not matter in this context whether the Bristol vaults were already finished by 1317 or only planned. They introduce into the rib vault liernes in the shape of a scissor-like splitting of the diagonal and ridge ribs, and create thereby, in the middle, at the keystone, a cross-like pattern. The little western vaults of the Exeter screen are designed on the same principle, but the ridge ribs are kept intact and only the diagonal ribs split.

The little vault over the passage is laid out on quite different lines, 4. An analysis of its rib-pattern reveals the fact that this single bay comprises the patterns of two bays, the one, as it were, overlaid on the other. Diagonals and ridge ribs give the basic design, but over it small crosses are placed on either side of the ridge rib. Furthermore, there are three central longitudinal ribs of which the two outer ones are not continuous. If one imagines this one-bay-pattern prolonged by yet another bay, these two little crosses turn out to be parts of diagonal ribs, which run across two bays instead of only one. This is a very important feature, since the two-bay-diagonals would, if further continued, result in a net vault. Such a rib net was actually executed in the choir of Wells (ca. 1325-40) and a little later at Ottery St. Mary (ca. 1337-50), the latter church had been added, in 1335, to the diocese of Exeter. In spite of this, its architectural style depended mainly on the remodelled choir of Wells. Both vaults have taken over the still somewhat primitive form of the two-bay diagonals of the little Exeter vault. The diagonals start not only from the springers, but also from the tops of the penetrations. The number of diagonals is doubled, and so a very close net is achieved. Two-bay diagonals can be called the *leitmotif* of the vaults of the west and the south-west. They do not split up the vault surface into a number of independent little compartments, but stretch along a continuous plane. The effect, though in two dimensions instead of three, can be compared to that of the wide-spreading space of the Bristol hall-choir.

At the same time, that is, some time in the first half of the fourteenth century, a similar pattern was used in the vaults of Tewkesbury Abbey. Accurate dates are not known. According to the heraldry of the bosses[7] and other evidence, the nave was begun after 1321, the choir remodelled about 1330-40, and the crossing as late as 1350. The vault of the nave is specially important, since it is the first pointed tunnel vault on a grand scale with a continuous rib net, not only in England but anywhere. The date comes for instance well before Peter Parler's work at Prague which only begins after 1350.

This historical position of the Tewkesbury nave vault, 5, makes it even more important to emphasize that it consists of transverse ribs and one-bay diagonals, accentuating the division into bays, and in addition two-bay-diagonals contradicting this division. It is the two-bay-diagonals which convert the vault into a rib net. As in the screen at Exeter, the ridge rib is accompanied by two longitudinal ribs, which run through the points where the one- and the two-bay-diagonals cross. Primary and secondary ribs are not only distinguished in size of profiles but also by different kinds of bosses. What at Exeter had been tried cautiously on a small scale, was demonstrated at Tewkesbury on the grand scale. Tewkesbury cannot be imagined without Exeter.

The vault of the choir at Tewkesbury,

[4] Britton, *Cathedral Antiquities: Exeter*, 1826, pl. IX.

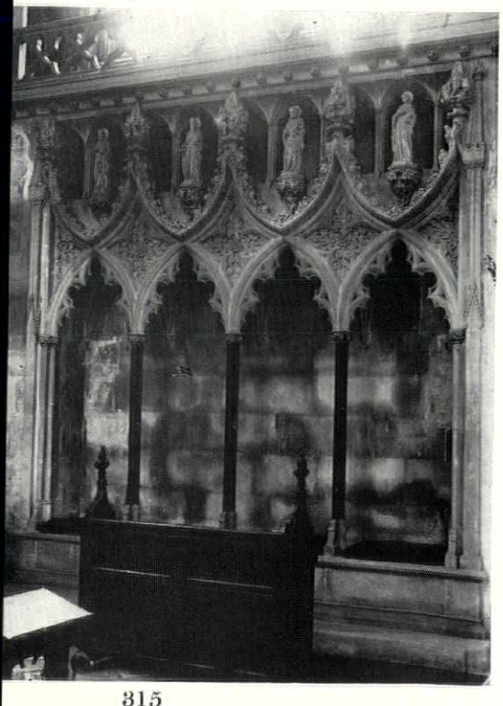
[5] The following data are taken from Bishop and Prideaux, *The Buildings of Exeter Cathedral*, 1922, p. 62 ff. and Vallance, *Greater English Church Screens*, 1947, p. 65 ff.

[6] Scott's notes explicitly say that the vault of the passage remained in its original form. Britton's view is incorrect in that it shows twelve instead of eleven panels.

[7] Blunt, *Tewkesbury Abbey*, 1898, p. 115 ff., Cave, 'Roof Bosses in the Nave of Tewkesbury Abbey,' *Archaeologia*, 1929, p. 71 ff.

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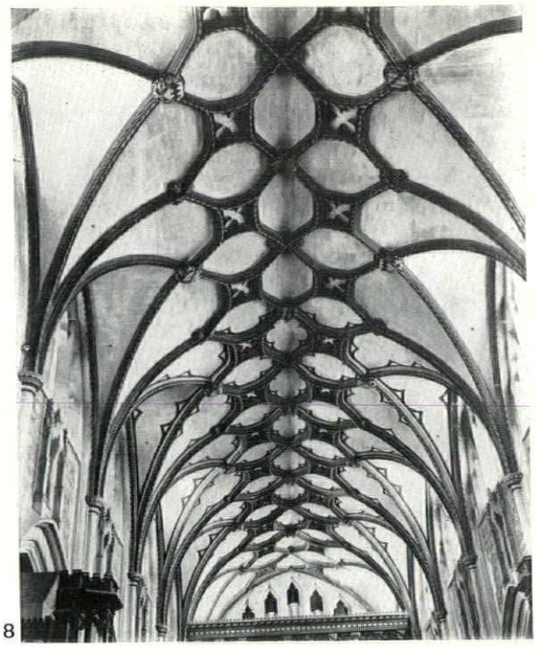
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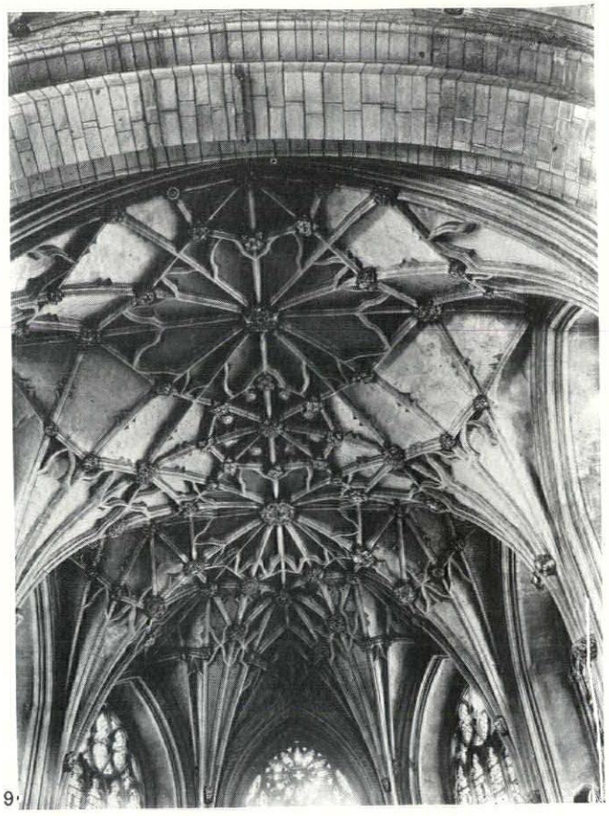
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6, the sedilia in the Lady Chapel of Bristol Cathedral. 7, strainer arches in the Crossing at Wells Cathedral.

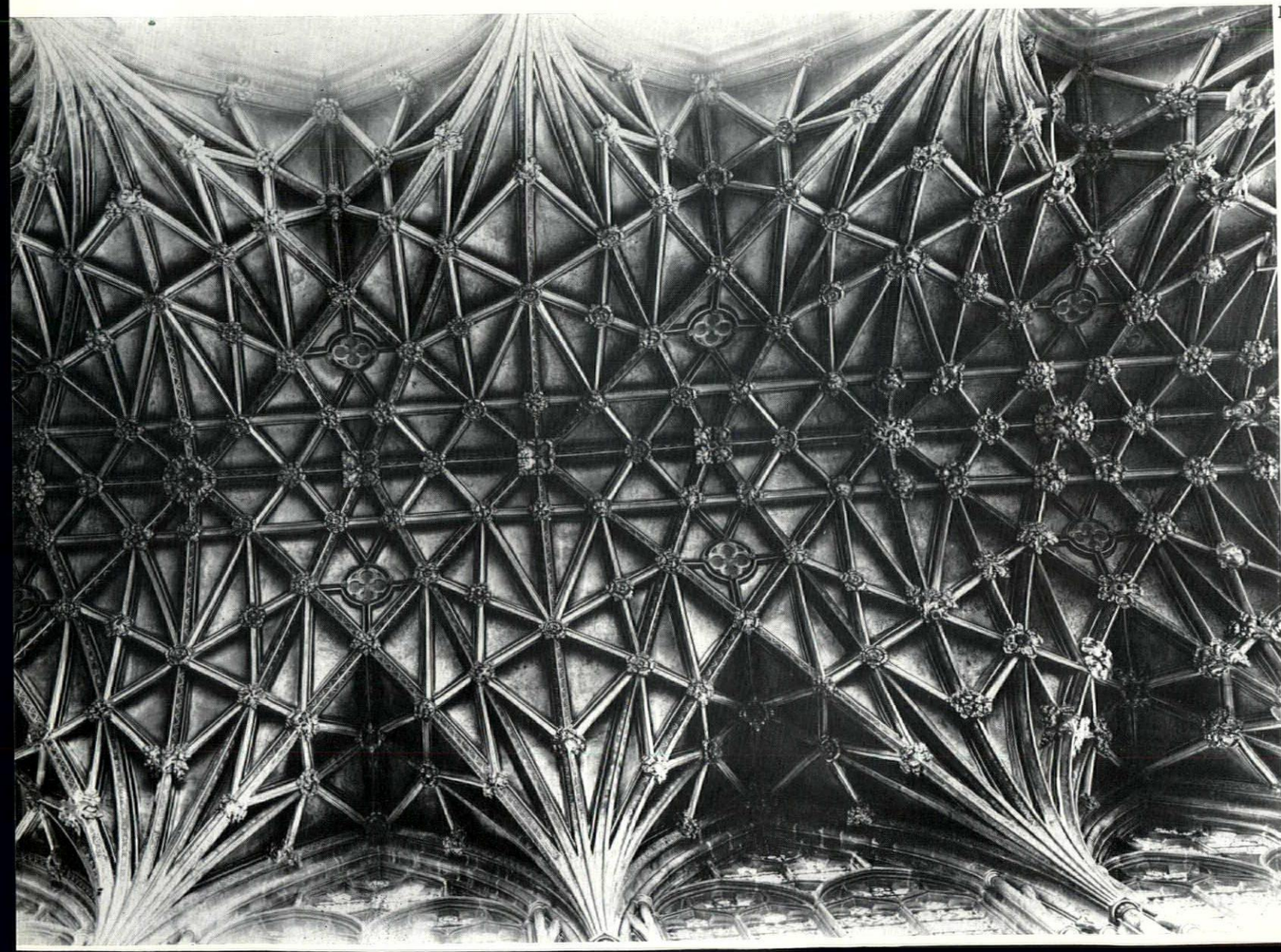


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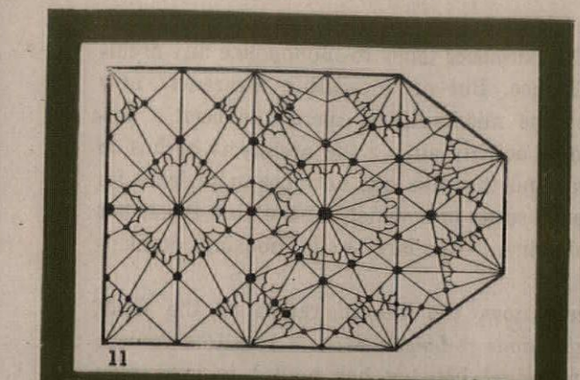
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Choir vaults at Ottery St. Mary (8), *Tewkesbury Abbey* (9), *and Gloucester Cathedral* (10).

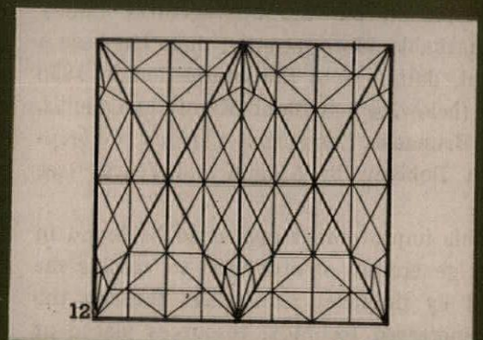


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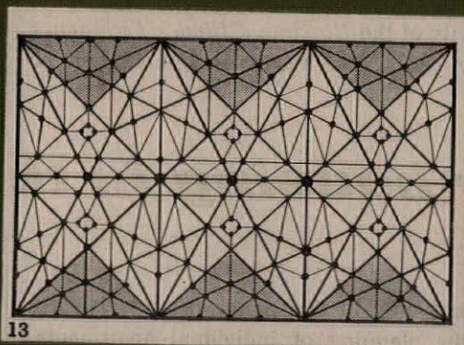
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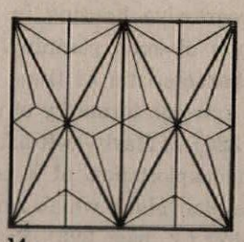
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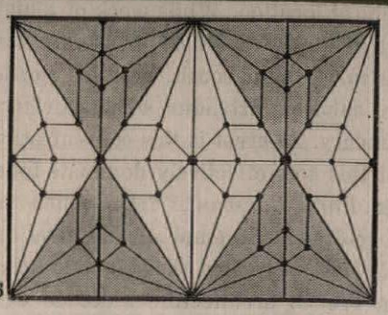
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14



15

11, *choir vault at Tewkesbury Abbey.* 12, *vault of the south transept and,* 13, *choir vault at Gloucester Cathedral.* 14, *vault of crypt at St. Stephen's, London.* 15, *vault of the nave at Canterbury Cathedral.*

9, 11, is designed on the same principles, although at first sight nave and choir vaults seem to have nothing in common. There is no pointed tunnel vault in the choir, nor a comparable clarity of design. There are, however, apart from the normal one-bay diagonals, transverse arches and ridge ribs, a net of two-bay-diagonals, ruthlessly drawn, and rising not only from the springers but also from the ends of the transverse ridge ribs. In strict consistence they are continued all round the apse and into the first choir bay. The irregular surface of the vault blends both systems to such a degree that they are difficult to disentangle. The designer ingeniously made use of the Norman polygonal apse, and achieved a maximum of intricacy, which is of course what all the best designers of the Decorated Style in the west and south-west of England wanted to achieve.

We can now turn to Gloucester; for clearly the same ingenuity has been applied to the remodelling of the south transept and the choir vault. The remodelling took place a little later than the rebuilding at Tewkesbury, in the south transept between 1331 and 1337, in the choir between 1337 and c. 1350. The three-bay vault of the south transept, 12, combines a net with one-bay diagonals, but in a way different from Tewkesbury. There are no two-bay diagonals, but in the middle a close-knit net with a ridge rib creates almost the appearance of a tunnel vault. The springers are rounded, and foreshadow in this respect fan vaults, although the first real fan vault, that of the cloisters of Gloucester, was built only in the 1360's. The choir vault is far harder on the eye. The old Norman chevet had been eliminated, whereas Tewkesbury had kept it. A new square end was substituted on the English tradition of Lincoln, Ely or Beverley. In this respect, during the fourteenth century, French and English traditions stood irreconcilably against each other, and it is significant that St. Stephen's, the Chapel Royal, in London, while built on French models (Sainte Chapelle in Paris), changed the French polygonal east end into a square one.

At Gloucester the square east end made it easy to provide a pointed tunnel vault, 10, 13. Exactly as at Tewkesbury, the basic design consists of one- and two-bay diagonals with three longitudinal ribs. A new feature is a rib leading from the springer of one bay to the point where the one- and two-bay diagonals of the adjoining bay cross one another. It takes some ingenuity to make it out in the vault but is quite clear in a drawing. These are the main ribs accentuated by heavy profiles in contrast to the thin lierne ribs. Most of these serve as connections between the crossing points of the main ribs. Their great number is confusing but the basic design has a perfectly logical order. This indeed is a characteristic feature of the Decorated Style: to disguise an underlying order by abundant decoration.

All the vaults so far mentioned are designed on the same principle of one- and two-bay diagonals. In some cases the pattern is applied to traditional cross vaults, in others to pointed tunnel vaults. The vaults in question succeeded one another very rapidly: 1317 the rood screen at Exeter, after 1321 the nave at Tewkesbury, between 1330 and 1340 the choir; about 1331-37 the south transept at Gloucester, after 1337 the choir. At Exeter the principle seems to have been conceived in close connection with Bristol, in the nave vault of Tewkesbury it was transferred to a great vault, and in the choir vaults of Tewkesbury and Gloucester it was—according to the now fully developed Decorated Style—complicated beyond any easily recognizable order. The vaults show the consistent development of one idea, and so one may perhaps even assume that they were all designed by a single master. Documentary evidence is lacking, but the single-mindedness of conception of the group carries conviction.

This West English development does not seem to have been very much influenced by other regional styles. Nowhere else this faith in the one- and two-bay diagonal system with a tunnel vault can be found. Only the nave of York Minster received in about 1345-70 (that is, somewhat later), a wooden vault with a fairly comparable rib-net, but the net is developed from the duplication of one-bay diagonals and in this remarkably similar to the slightly later vaults in the chancel of Prague Cathedral.[8] The evidence we have of vaults done by architects of the court at London is rather slight, but reveals a very great difference. The undercroft of St. Stephen's (begun 1292), 14, proves that the aim was not a continuous rib-net but a combination of a strict bay division with star-like configurations. This aim found its perfect achievement in the vaults of the nave of Canterbury (begun ca. 1370, the vaults ca. 1400), 15.

Professor Pevsner in *The Architectural Review* in 1953 pointed out connections of Bristol with Gloucester. He drew attention to the fact that at Gloucester, side by side with motifs drawn from the court style at London, and from St. Urbain at Troyes, other forms occur. The analysis of vaults now attempted confirms in addition the assumption that Gloucester must have been designed by a master who came from the tradition of Southwest English architecture and not from anywhere else.

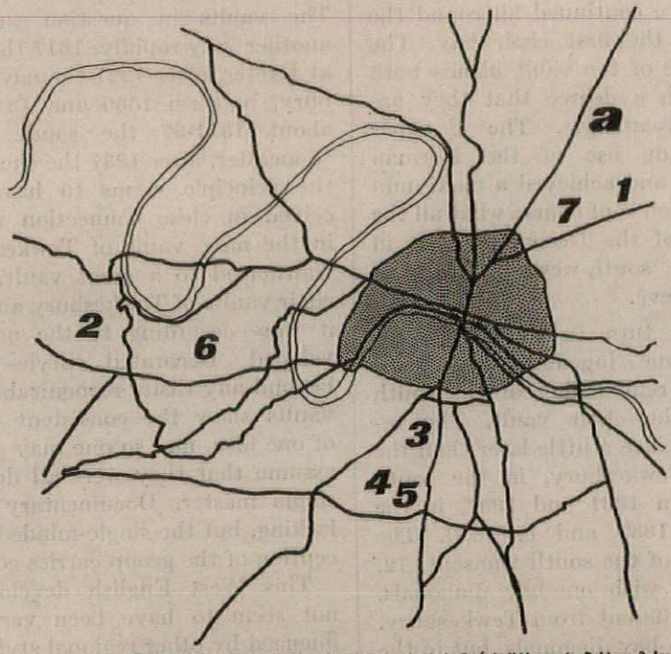
[8] cf. Clasen, *Deutsche Gewölbe der Spätgotik*, 1958, p. 56 ff. and the review by Pevsner, in *Art Bulletin*, 1959, p. 333 ff.

new housing in the

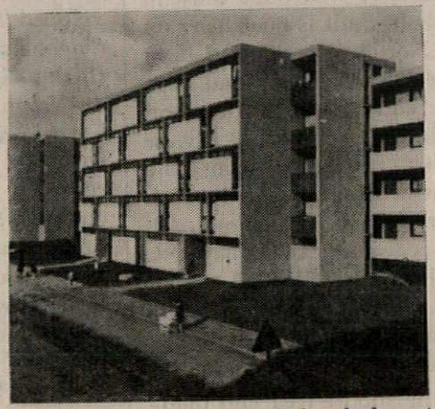
Justifiably, since there is no one else like him, and may never be again, Le Corbusier tends to monopolize any architect's view of France. But an increasing awareness now exists that, since the middle fifties, there has been a tremendous ferment of activity among the architects he has so far overshadowed, and that this has now begun to leave its mark on the French scene in a variety of building types, but one of which is dominant—the large-scale housing development.

For some years now, the administration of the HLM programme (*Habitations à Loyers Modérés*) of Government loans for medium-rental housing has tended to encourage large units of development, but the architectural quality was not, at first, remarkable. More recently, there has been a striking improvement, dating from the completion in 1956 of the *Cité Emmäus* (below, **a**) at Blanc-Mesnil, by Candilis, Woods, Josic and Brunache, and the *Cité de l'Abreuvoir* development at Bobigny by Aillaud and Vedrès (see **1**, page 319).

The reasons for this improvement appear to be found in the ability of a new generation of architects to resolve the stringencies imposed by financial regulations through the exploitation of the increased technical resources placed at their disposal by enterprising contractors, and the mechanical and structural ingenuity of the *Bureaux d'Etudes Techniques* (cf. AR *World*, July 1961). The resultant combination of



Paris and its suburbs: a, Blanc-Mesnil (see below). 1, Cité de l'Abreuvoir, Bobigny. 2, les Grandes Terres, Marly. 3, les Buffets, Fontenay. 4, 5, les Blagis, les Bas Coudrais, Sceaux. 6, Domaine de Beauregard, St. Cloud. 7, les Courtillieres, Pantin.



a, Blanc-Mesnil, the pioneer suburban development by the Candilis-Woods team—as far as Paris is concerned, the beginning of better housing architecture; as far as the architects are concerned, the beginning of a train of development leading to their new town at Bagnols-sur-Cèze.

talent reveals itself not only in the structure and cladding of the blocks and the planning of individual apartments, but also in the layout of the sites, which differ conspicuously from the picturesque exploitation of landscape features that distinguishes the most progressive housing in Britain and Scandinavia. While examples of such planning can be found, the most conspicuous characteristic of these French developments tends either to be extreme formality of plan, as in *les Grandes Terres* (**2**, page 320) at Marly-le-Roi, by Lods, Honneger and Beufé, or by the exploitation of a powerful formal concept, as in the snake-plan block which surrounds most of the site at *Les Courtillières* (**7**, page 323), Pantin, by Emile Aillaud.

The other outstanding characteristic of these developments tends to be their geographical location. While work of a high order can now be found in most *Departements*, the greatest concentration of talent is to be found south, west and north-east of Paris in a belt of suburbia extending about ten kilometres from the city boundary. So great is this concentration that housing schemes of this sort effectively dominate Ionel Schein's new guide-book, *Paris Construit*,* from which the adjoining map has been re-drawn. So emphatically have the architects of *logements de banlieu* broken the stagnation that seemed to be settling on French architecture a decade ago, that the bulk of the modern architecture of the Paris area can now be laid to their credit.

*Vincent, Fréal, price (in England) 12s. 6d.

Paris Suburbs

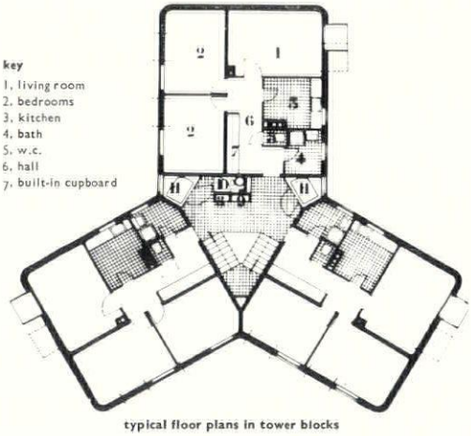
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1. Cité de l'Abreuvoir, Bobigny

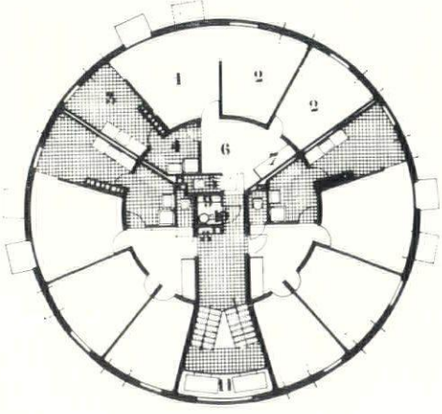
architects : Aillaud and Vedrès

1, the complete scheme from the air, showing the kind of subtopian environment into which it had to be fitted, and against which the architects revolted, intending to create instead a place endowed with 'un visage particulier et frappant.' The 1,500 flats are disposed in six towers and lower serpentine blocks, and the carefully landscaped grounds linked by a traditional *allèe* of trees.

2, eleven-storey towers from the south-east.



typical floor plans in tower blocks

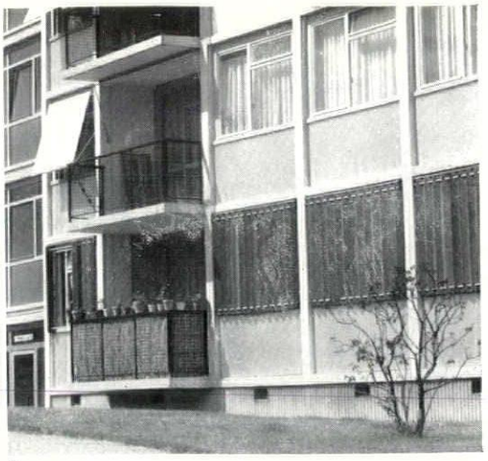


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3



4

2. les Grandes Terres, Marly-le-Roi

architects: Lods, Honneger and Beufé.

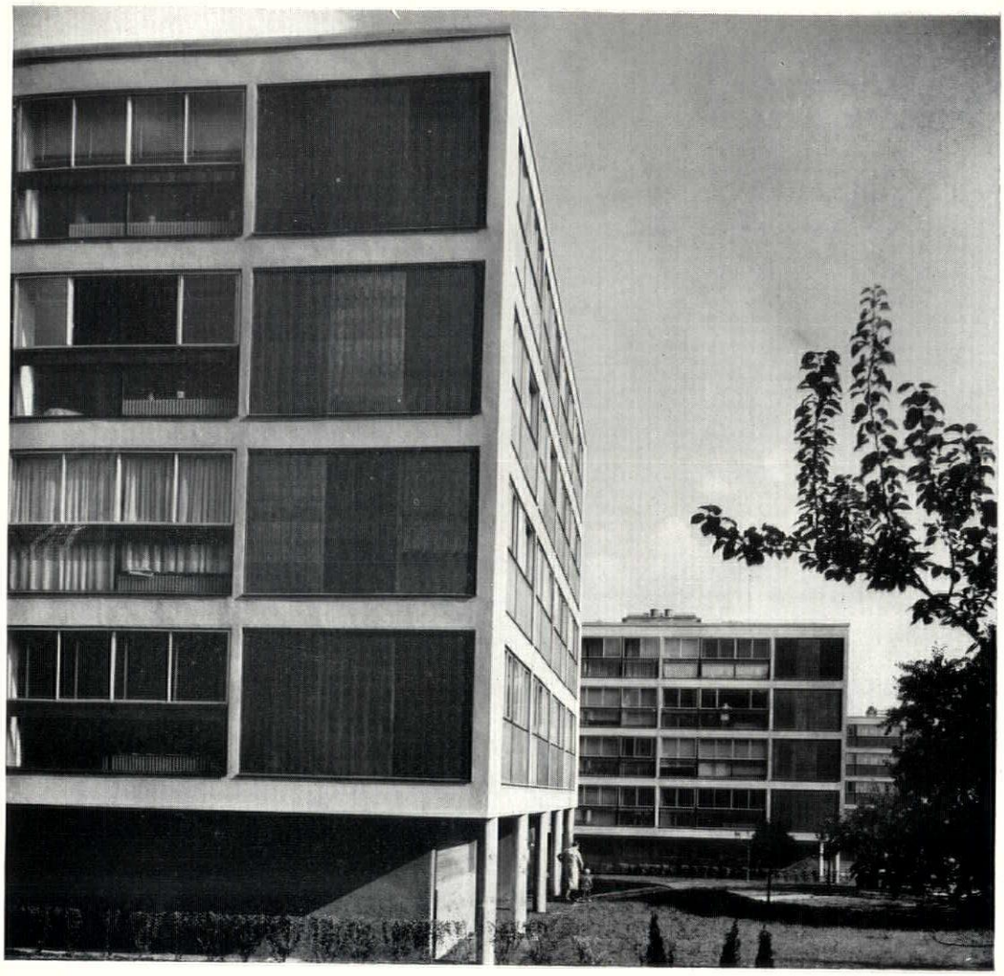
3, the air view shows the striking formality of the plan, which organizes the heart-shaped site into an almost symmetrical composition, along whose axis the ground falls slightly towards the north (top left of picture). Socially, the scheme is intended as a complete small town of 1,500 apartments, equipped with everything needed for human life—'sauf le travail.'

4, close-up of part of one block, showing the standardized prefabricated façade elements used throughout the scheme.

5, general view inside one of the 'courts'—in spite of the anathema pronounced against parallel planning by some architects (such as Aillaud) *les Grandes Terres*, with its staggered main blocks and the use of small blocks to stop off the vistas, is by no means monotonous or lacking in sense of place.

5





6

3.

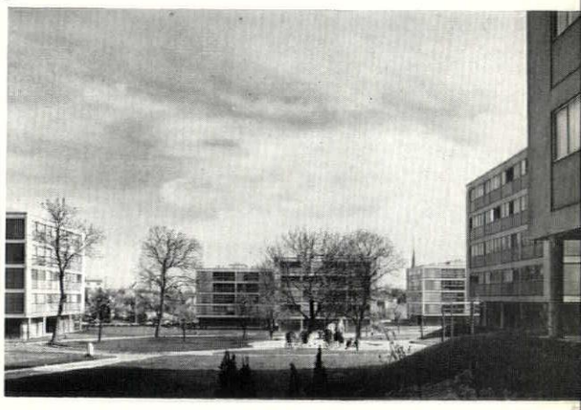
les Buffets, Fontenay-aux-Roses

architects : Lagneau, Weill, Dimitrievic and Perrotet

6, each of the residential blocks at *les Buffets* is a four-storey cube, with normally four flats per floor ; the construction is orthodox reinforced concrete framing, but the striking in-fill panels are of bakelised wood.

7, although each of the eleven blocks which contain the 261 apartments has its sides parallel to all the other blocks, they are not ranged in rows, and their siting on the irregular terrain comes nearer than any comparable French example to the free and informal siting favoured in northern countries (the planning of this development was discussed in AR, May, 1961, page 325).

7

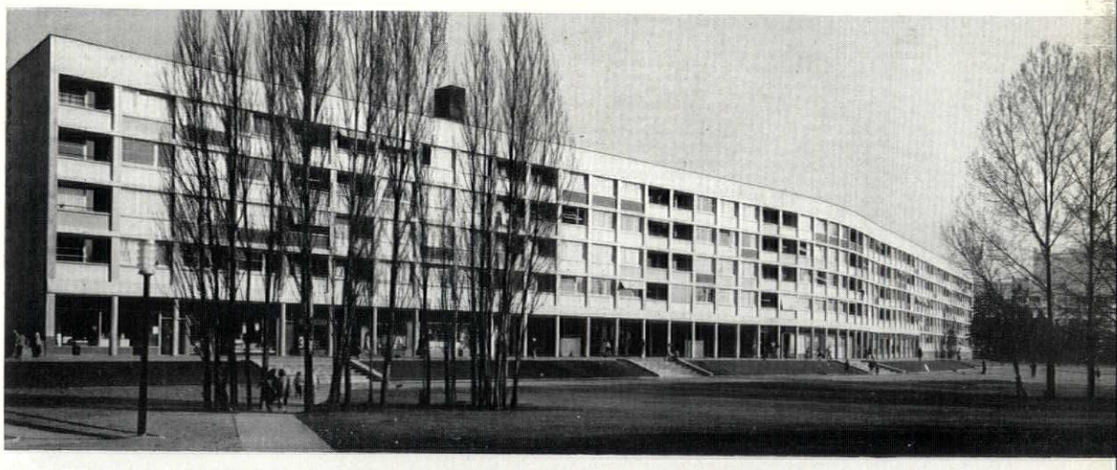


4.

les Blagis, Sceaux

architects : Beaudouin, Chaillier, Fournier and associates

8, this enormous block with a façade some fifty bays long, at *Sceaux-les Blagis*, emphasizes the willingness of French housing architects to allow some single powerful form to dominate a scheme even when there is no overall formality of plan. Nearby, on the other side of the Avenue Jean Perrin, is a remarkable free-form shopping centre designed by Andrault and Parat, who were associated with Beaudouin in the design of both housing schemes at Sceaux.



8

9



5.

les Bas Coudrais, Sceaux

architects : as above

9, *les Bas Coudrais* also exhibits the same giant scale in plan, but the blocks, though long, are of more conventional form. The 766 flats are housed in a mixed development of high and low blocks, with façade treatments that are very consistent in character in spite of variations in details as large as balconies.



10

6.

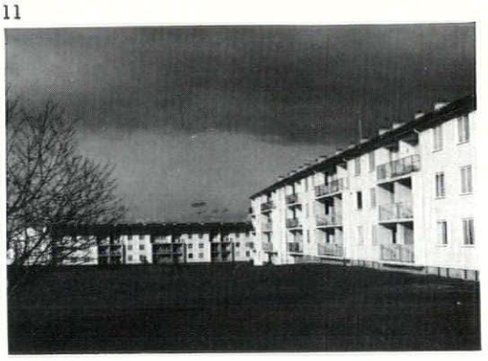
Domaine de Beauregard, la Celle de Saint-Cloud

architects : Warnèry and Gravereaux

10, conspicuously unlike other Paris housing in architectural character, and much closer to North European models, this scheme's three to five storey blocks (according to the fall of the land) are traditional in conception and construction.

11, where they are comparable to other French work is in their large-scale grasp of the landscaping possibilities presented by the site, a piece of handsome parkland that lends itself to confrontations of house and lawn in the grand manner.

11



7. les Courtillieres, Pantin

architect : Emile Aillaud

12, the sheer size of the serpentine block which—with only three breaks—encircles the main part of the site, shows that the propositions about the creation of distinctive and striking places, made by Aillaud in connection with *l'Abreuvoir* (**1,** page 319) have

12



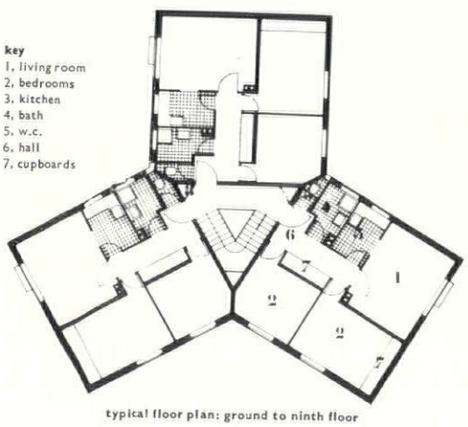


13

here been carried to a point of complete resolution. As a demonstration of a style of urbanism, the plan is definitive and the forms of the buildings inseparable from it.
13, air view, showing the basic *parti* of the plan, a vast central close walled in by the serpentine block, and clusters of off-lying towers, of which those in the foreground are still under construction.
14, the thirteen-storey towers ; the external cladding is of complete factory-made panels (on the Camus system, related panels are used for the schools which serve this 1,200 flat scheme). It will be noted that the subtle precision of these panels has been enlivened in places by the efforts of lace-obsessed French housewives to re-establish older norms of domestic privacy while travellers from Le Bourget will remember the striking blue façades.



14



typical floor plan: ground to ninth floor



Jurgen Joedicke

Parliament Building, Stuttgart

Architect: Erwin Heinle, in collaboration with A. Kiessling, H. Schmidberger and B. Winkler (chief architect to the Baden-Wuerttemberg Ministry of Finance, Horst Linde)

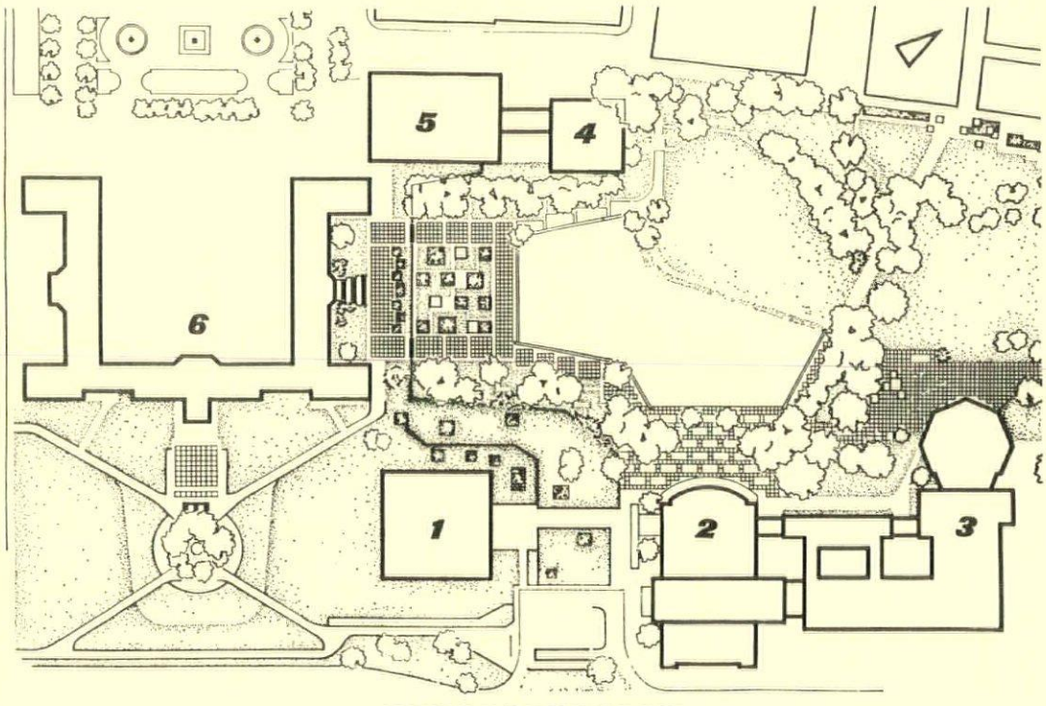
Stuttgart, the capital of the German *Land* Baden-Wuerttemberg, lies in a narrow valley, surrounded on three sides by steep hills, open only to the north-east towards the river Neckar. From the north-east a long strip of green parkland stretches into the centre of the city, where it ends in front of the New Palace, a baroque building designed in 1744 by Leopold Retti. The recently-completed Parliament of Baden-Wuerttemberg—the subject of this article—stands in this park, next to the palace.

The decision to erect a new building for the Parliament was the outcome of long discussion. It was originally intended to rebuild the New Palace, which had been partly destroyed during the war, as a new home for the *Land* Parliament. A competition was therefore held in 1953 to determine whether a reconstruction of the ruined palace could provide the necessary accommodation, but as an alternative competitors were also allowed to submit projects for a new building. The result of the competition was surprising: the first three prizes were awarded to designs for a new building next to the Palace. P. von Seidlein and Ulrich von Altenstadt were awarded the first prize; their project containing essential ideas which the later plans for the building are based on. As a result the prizewinners were invited to enter a second competition for a new building to stand in the park near the New Palace. In October, 1957, the jury awarded the first prize to the Mainz architect K. Viertel, but insisted on a number of major changes. The final design was worked out by Erwin Heinle of the Architect's Department of the Baden-Wuerttemberg Ministry of Finance under the direction of Horst Linde as chief architect, in collaboration with A. Kiessling, H. Schmidberger and B. Winkler. The New Palace was not pulled down, but was restored and now contains ministries and the *Land's* official entertainment rooms.

The problem of building a parliament is a new one for modern architects. The only possible comparison in Germany is with the Federal Parliament in Bonn, but that is a modified building of the 1920's, not a new one. Oscar Niemeyer's Parliament in Brasilia was built at the same time as that in Stuttgart, and Le Corbusier's design for Chandigarh is now nearing completion.

The function of a parliament demands that it contain a chamber, committee-rooms large and small, rooms for party groups and Deputies, and a large number of subsidiary rooms. Basically it is therefore an office block made up of a number of separate rooms. But this purely utilitarian interpretation of its function cannot do justice to the real nature of a parliament. The architect must seek beyond pure function to find the essence of his problem. A parliament is a meeting-place for the representatives of different opinions, a place where men talk and search for accommodation between legitimate interests. The architects and the members of the Parliamentary Building Commission

1, *opposite, the baroque statuary of an earlier concept of government and patronage—the Staatstheater—reflected in the sober, glazed facade of a building intended to express the inner nature of a free and open democracy, the new Parliament House of the* Land *of Baden-Wuerttemberg, in Stuttgart. In the article that begins on this page, Dr. Joedicke assesses the degree of success with which the architects have created a democratic building in a setting of unusual historical and architectural character.*



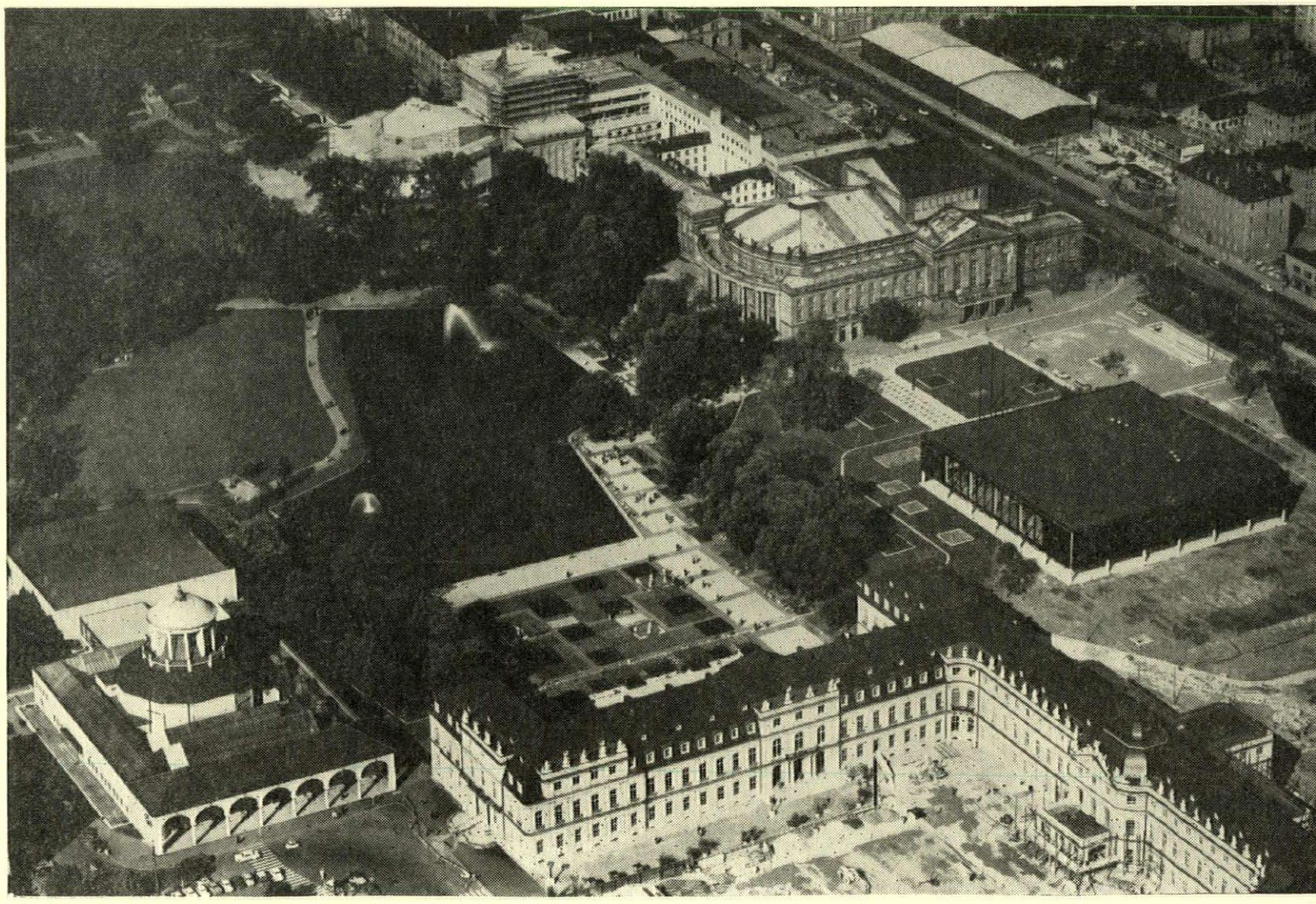
site plan
1, parliament building.
2, theatre.
3, little auditorium.
4, extension to art gallery.
5, art gallery.
6, New Palace.

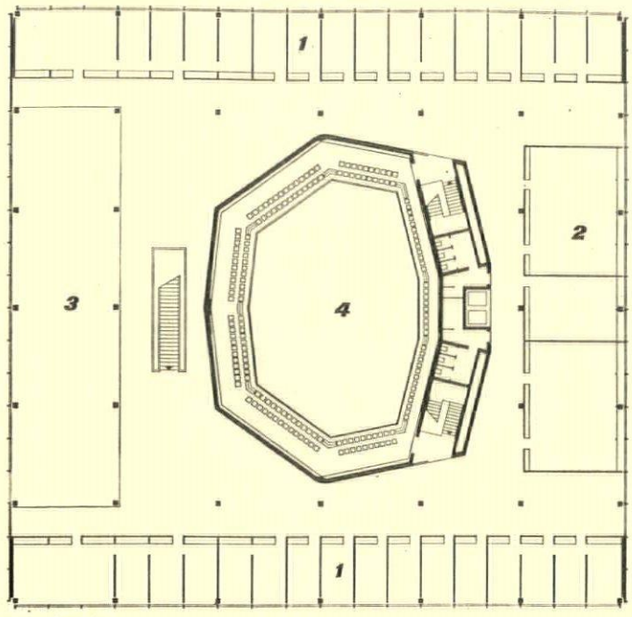
felt that of all possible ground plans, square one would best express this aspe of a democratic system.

However, a parliament is not only place where compromises are made b tween different groups who have sent the representatives to sit in the assembly, bu also a permanent meeting-place betwee elected representatives and their elector Because of this the building was also to l a concrete expression of openness and fr accessibility. Finally it has to radiate th dignity due to the assembly of a people freely elected representatives.

In addition to the general consider tions there were also some special on dictated by the position of this buildin It stands in a newly laid-out park, ne to the New Palace and the Wuerttembe State Theatre, which was completed 1912; directly opposite the Art Galler built from 1902 by Theodor Fischer, th Grand Old Man of the Stuttgart schoo and Paul Bonatz's teacher; and diagonal opposite the tower of Paul Bonatz railway station (1911–1928). This is collection of varied but distinguishe buildings, almost a museum of recen architectural history. Meanwhile Guent Wilhelm has built an addition to the A Gallery, and Hans Volkart's Little Aud

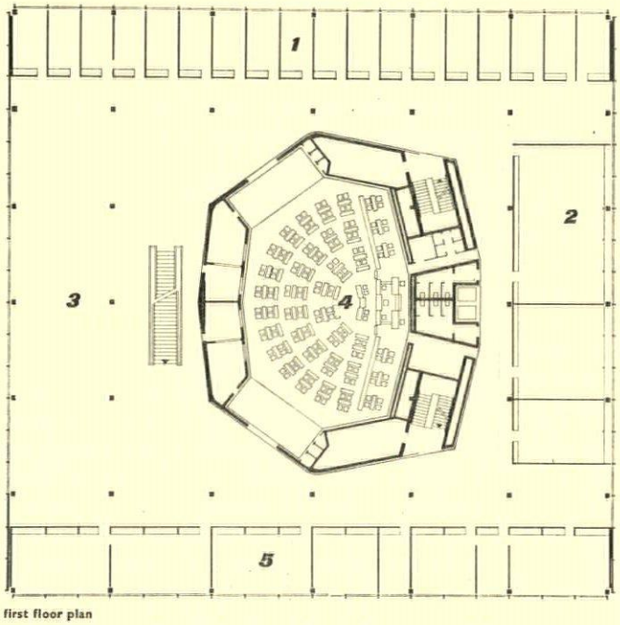
2, the setting of the new parliament building, right, with the Neue Schloss in the foreground and the Theatre beyond (cf. *site plan above*) *and the new landscaping of the lake and park.*





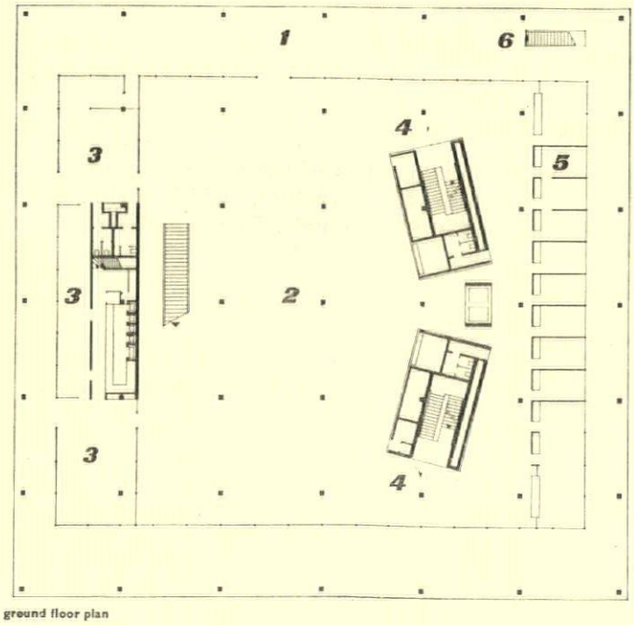
1, Deputies' rooms.
2, small committee rooms.
3, upper part of lobby.
4, gallery of Parliament Chamber.

second floor plan



1, Deputies' rooms.
2, small committee rooms.
3, two-storey lobby.
4, main floor of Parliament Chamber.
5, Government offices.

first floor plan



1, entrance
2, hall.
3, restaurant.
4, visitors' stair to gallery.
5, offices.
6, stairs from underground garage.

ground floor plan

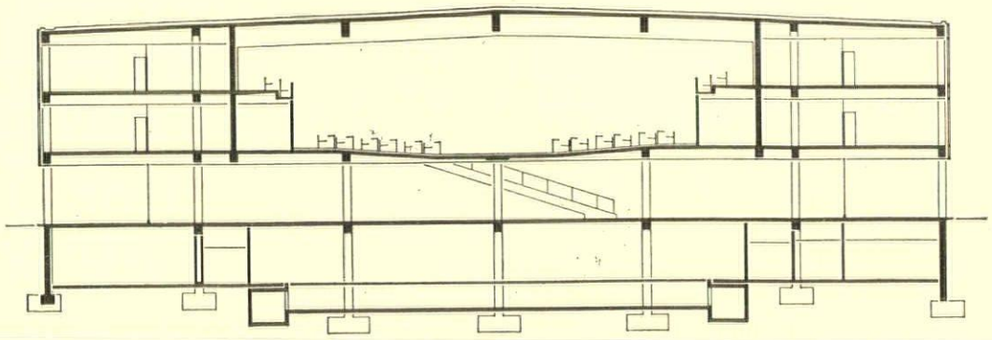
torium for the Wuerttemberg State Theatre is almost complete. To design a building that would enjoy a satisfactory relationship with the existing buildings round it, and yet radiate sufficient strength of its own to do justice to the concept of the *Land* Parliament, was an exceptionally difficult task.

The architects approached their task in the same way as the architects and master masons of earlier ages. They fitted their new building into its surroundings, not by imitating the form of other periods, but by an uncompromising use of contemporary forms, in which, however, the proportions and the arrangement of masses of the new building were determined by the scale and measurements of the structures round it. This method has been used successfully throughout the centuries: a fact which must weaken the position of the exponents of the Neo-Liberty style, who have justified their retreat from the principles of Modern Architecture by pointing to precisely this need to fit buildings into their surroundings.

The ground floor is recessed, is entirely open, and is intended as a meeting-hall between deputies and citizens. Only the restaurant and a few offices have been set along two sides of this storey. The chamber, the heart of the building, is on the first floor, with a two-storeyed lobby in front of it, the interior of the chamber rising into the second floor. The party groups' rooms, the smaller committee rooms, and the offices of the parliamentary administration are on the first and second floors, round three sides of the chamber, and only the deputies have access to these two floors. Visitors to debates go straight into the public gallery of the chamber up two diagonally-set staircases.

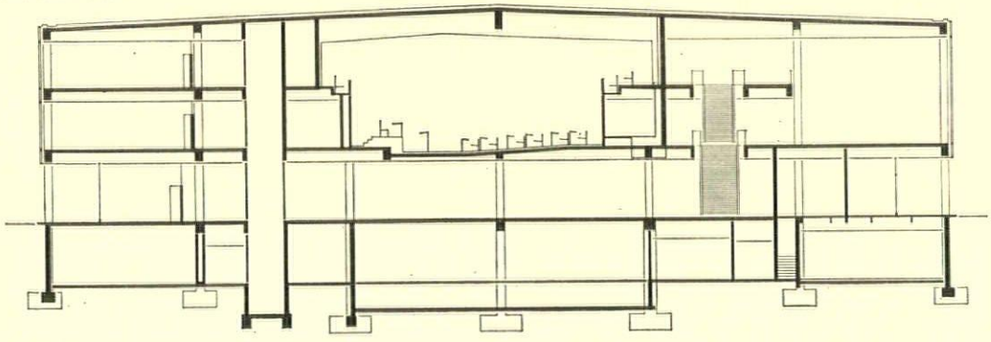
The building is a reinforced concrete skeleton with cross-reinforced slabs. The distance between the piers in both directions is 9 metres. The façades are of bronze curtain-walling. The windows are fixed, so as to keep out the noise of the traffic in the Neckarstrasse which passes close by, and the interior is air-conditioned. All the horizontal air-conditioning ducts lie within the depth of the beams. This solution allowed the volume of the building to be kept lower than would have been possible with suspended ceilings, but it raised structural complications, as all the load-bearing members had to have large cavities.

It is quite obvious that the form of the building and the choice of materials were influenced by the work and the ideas of Mies van der Rohe; but the important thing for the critic is not so much this dependence on the work of Mies as what has been achieved by the use of his forms. This is because his forms have such inherent strength that they can satisfactorily com-



0 10 m

longitudinal section



cross section

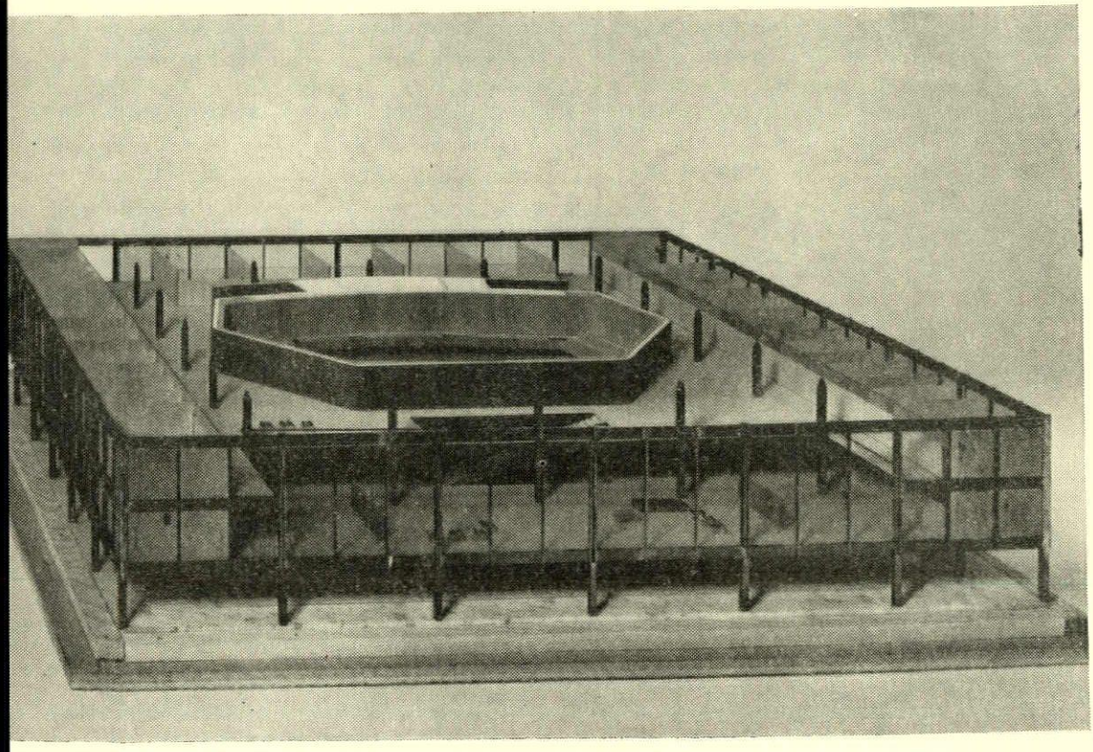
bine with other heterogeneous forms. It would be difficult to imagine a greater contrast than that between the cheerful capriciousness of the baroque and the severity, yet absolute clarity, of the new Parliament. Yet they achieve harmony, both because the proportions of the Parliament have been related to those of the New Palace and because the Parliament is free of any element of obtrusiveness or emotionally exaggerated individualism. Its forms are objective, with something of the modesty of a man aware of his own strength. The emotional reserve for which one can often criticize Mies van der Rohe's forms are here both apposite and necessary. The building lives by its cohesion with its surroundings. The large windows lay open the view into the park, with its wide spaces and old trees. The green of the trees and the colours of the flowers shine into the rooms and are reflected on their walls and ceilings. The whole building has been spatially formed and set with an exceptionally sure touch into its surroundings.

The raising of the body of the building off the ground and the completely glazed ground floor are not—as they so often are—mere gimmick, but a solution which is both necessary and meaningful. Nor does the building separate the different parts of the park, but rather connects them. Inside and outside the care which has been applied to every detail is striking. The colour-scheme is quiet, and the materials used have been limited to a few carefully selected ones. Outside, the dominant shades are the bronze colour of the curtain-walling and the white of the reinforced concrete piers; inside, the warm colour of the oak partitions and panellings. The ceilings are made of white plaster slabs and the piers are of white concrete inside, as they are outside. This moderation in forms, colours and materials is in pleasing contrast to the vivacity and the bright colours of the surroundings.

The Parliament is a typical example of rectangular architecture. The basic plan unit is a square of 9 by 9 metres. The piers divide the whole ground plan into 36 (6 by 6) basic squares. This is a harmonious solution as long as all the interior rooms and spaces are either multiples or fractions of the basic unit, but it can produce problems if there have to be rooms or spaces which cannot be fitted into a rectangular system. In planning the chamber, the intention was to arrange the Deputies' benches in a semicircle, and to make sure that the acoustics would allow Deputies to speak from their own seats and be heard without microphones and loudspeakers. This semicircular arrangement had been a success in the old Parliament, which had been destroyed during the war. The acoustics expert laid down that the outer wall of the chamber should have a broken shape, and it is quite obvious that the many corners of the chamber are at odds with the structure, which follows the square basic unit. The load of the roof structure over the chamber is led down through the massive outer walls of the chamber on to the ceiling of the ground floor but, as the ground-floor piers strictly follow the grid of basic units and cannot therefore all be placed at the points where the load is led down by the shape of the chamber, it was necessary to build complicated buttressing into the ceiling of the ground floor and the walls.

Of course it is not difficult for a good structural engineer to solve such problems,

3, the architects' model, reproduced to illustrate the basic planning problem of fitting a form adapted to the acoustics and sight-lines of a semicircular chamber into regular rectangular grid structure.



[*continued on page* 333

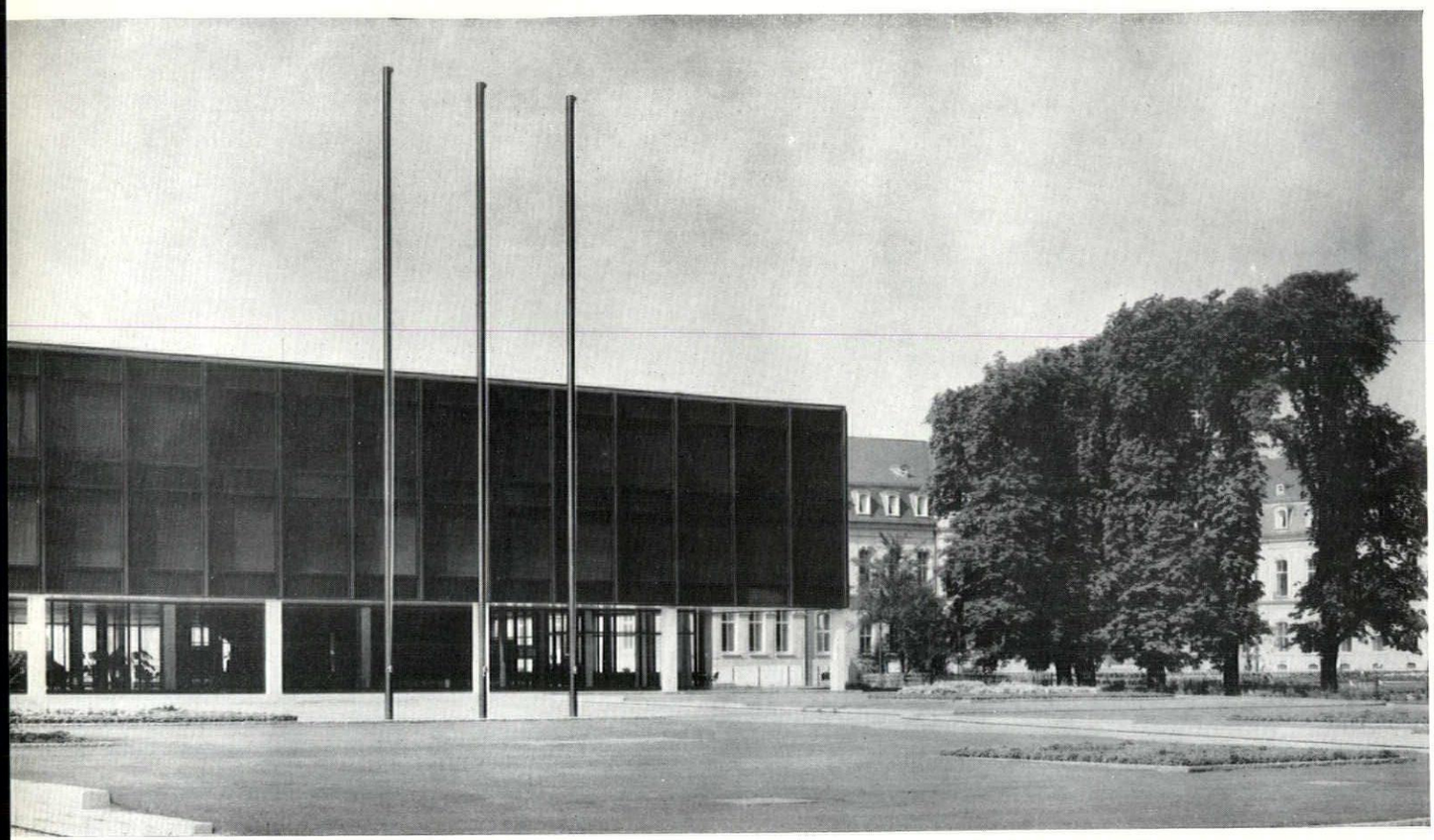




4
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4, *the Parliament building and the Neue Schloss seen across the lake.* 5, *night view of the Parliament building looking into the entrance, with the double range of Deputies' rooms above.*

Parliament Building, Stuttgart

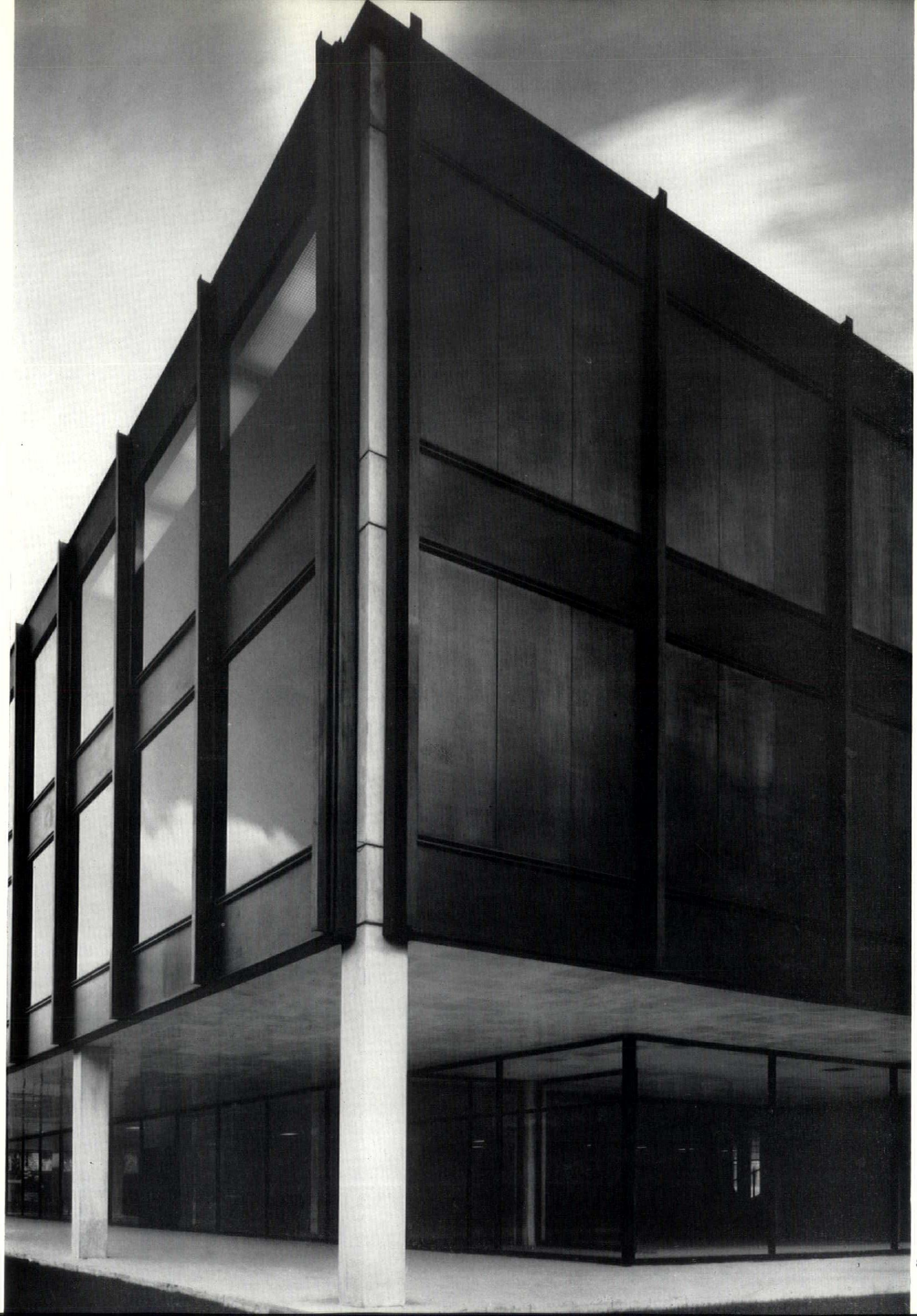


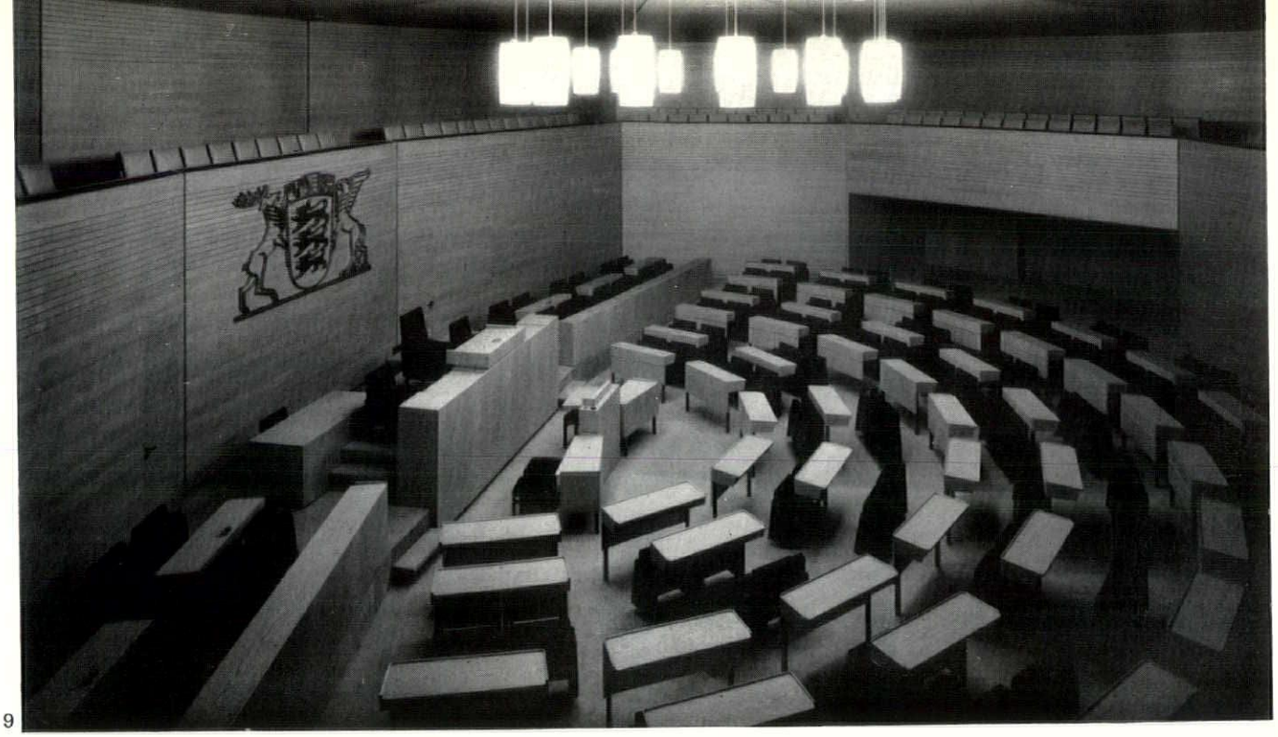
6

6, *a daylight view of the entrance side, showing the transparency of the ground floor.* 7, *view into the park from the hall, with the portico of the theatre on right.* 8 (*opposite*), *a corner of the building, making clear both the comparison and the contrast (exposed concrete column) with the work of Mies van der Rohe.*

7







9

9, *the interior of the chamber, with its simple furnishings and entrances under the gallery.* 10, *view into the park from the lobby, showing the scale of the fenestration.*

Parliament Building, Stuttgart

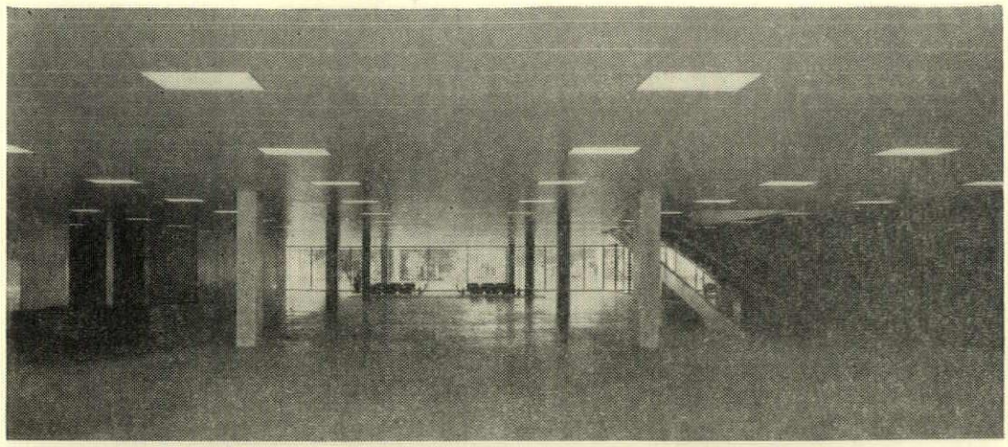
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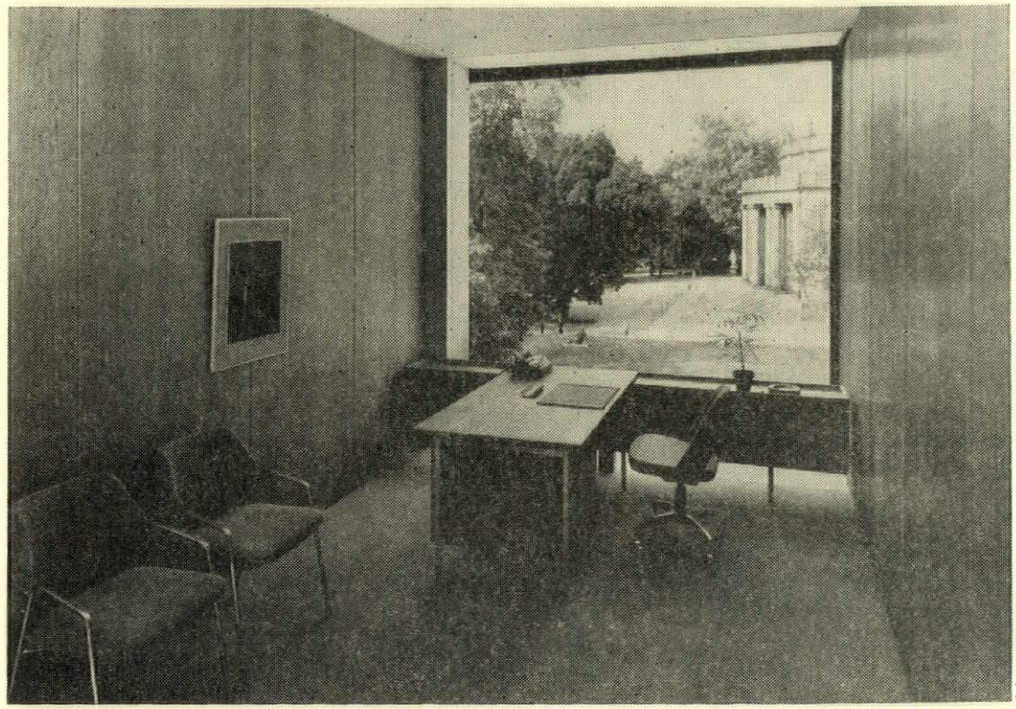
but any solution can only be made at the expense of overall clarity. If one accepts the principle that simplicity of form should be reflected in simplicity and logic of structure, then the solution chosen is a questionable one. There was a sequence of earlier designs in which the chamber stood free in the building, detached from the ranges of offices round it, and only connected to them by corridors like bridges; but this solution, which follows logically from the structure of the interior, was later rejected.

The square basic plan chosen for the Parliament emphasizes the equal orientation of the building towards all four sides. This basic formal principle is given expression in the placing of the building. It stands on a small but appreciable hump, where it can be apprehended from all four sides, and its solid part seems to float free in space as a plastic mass. The logic of its form demands that the building should be accessible from all four sides, and the recessed ground floor emphasizes this possibility, but for practical reasons (to keep control of visitors) it was finally decided not to open the building from all four sides. The entrance is now along a quite explicit main axis, which is taken up inside by the layout of the entrance hall. The offices on the upper storeys are also set on an axis, but this is at right angles to the entrance axis.

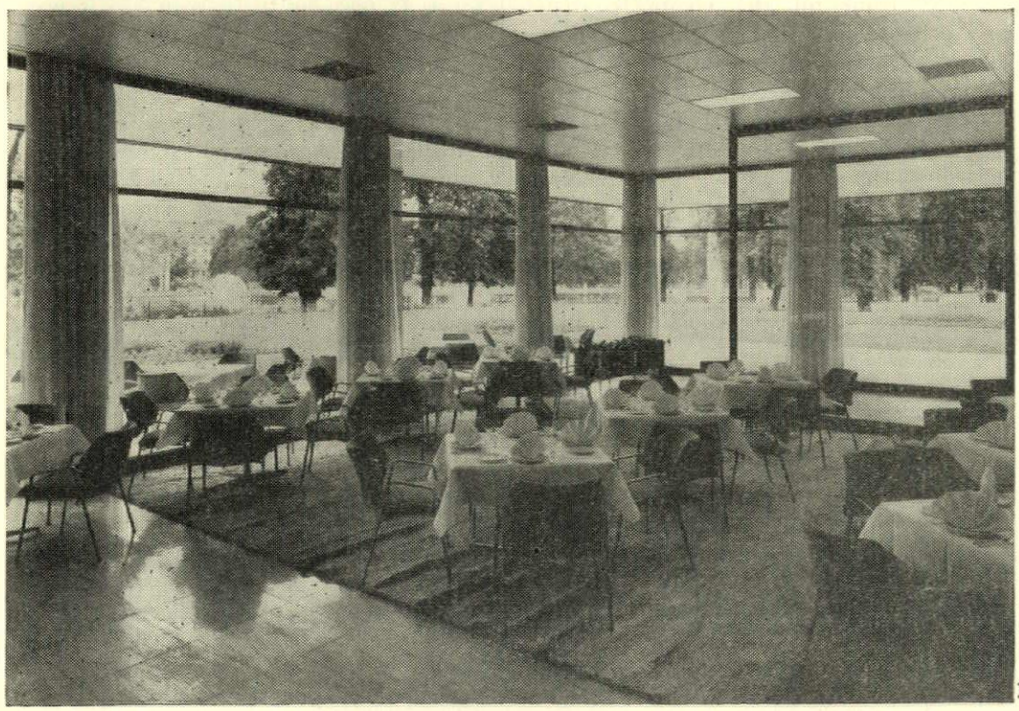
The way in which the façades are hung in front of the structural framework poses a number of further questions. The four corner piers run in full view from ground level to the roof line and are quite clearly separated in the exterior elevation from the curtain-wall, whereas all the other outside piers are only visible on the ground floor, after which they disappear behind the curtain-wall. From outside they cannot be seen behind the dark glass of the upper storeys, nor can they be inferred from the external articulation of the façades. Moreover the aesthetic emphasis on the corner piers is a contradiction of their function, for each corner pier bears only about half the load carried by any of the other piers. If visual uniformity is a criterion of Modern Architecture, then there is a choice between two main possibilities: either the curtain-wall can be laid over the whole structural skeleton like a skin (no structural member being visible from outside), or the whole structure can be shown directly or indirectly by a specific articulation of the façade hanging in front of it. To return to the Parliament, it must be added, however, that at night, when the whole interior is illuminated, the corner piers diminish in emphasis, the remaining outer piers come into view and the curtain-wall becomes clearly



11

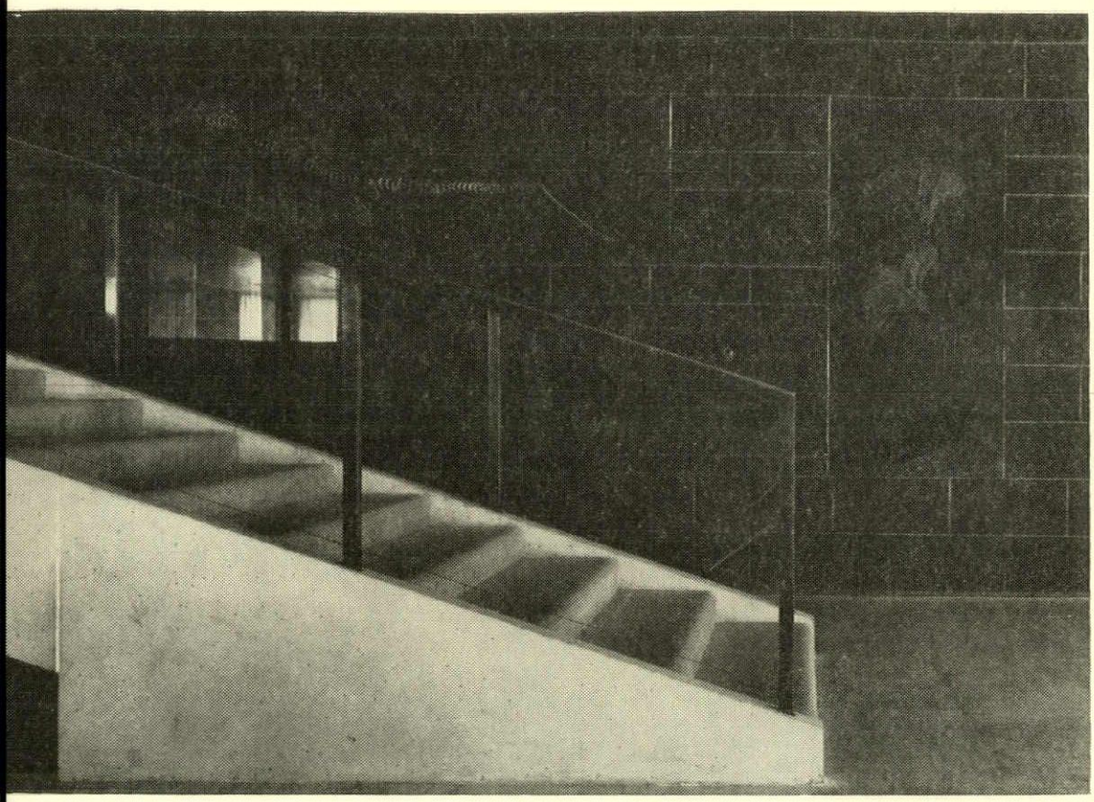


12



13

11, view through the hall, with Deputies' stair at the right, visitors' stairs and lifts at left. 12, *one of the Deputies' rooms.* 13, *the restaurant on the ground floor.*



14, *the foot of the Deputies' stair, with sculptured wall behind—the relative absence of works of applied art in the Parliament building is a conspicuous abstinence in representative buildings in Western Germany.*

recognizable as a skin hung in front of a visible structural framework.

Another possible criticism is of the way in which the chamber has been incorporated in the building, if the solution is considered visually. The chamber, which is the heart of the building, has been quite logically placed in the centre. This not only underlines its significance, but also has the functional advantage that it is easily reached from all the committee-rooms and other offices. The trouble is that the chamber cannot be seen to exist. The only thing that the unbriefed visitor sees from outside is rows of offices, for the chamber lies hidden in the building. Even if he goes into the great entrance hall, there is nothing to suggest the existence of the chamber on the floor above. Indeed the regular grid of the piers on the ground floor seems rather to suggest that the same rectangular system is continued in the upper storeys. The shape of the chamber only appears on the first floor—where only the Deputies may go. Of course this criticism is easily answered: for example by arguing that it was not necessary to continue the shape of the chamber above the roof-line because the height of the two floors available was perfectly sufficient. But this argument is irrelevant, for here economy is not the determining factor, just as it was not in the choice of the square as the basic form of the plan. The question is whether or not the essential nature of a building should determine its basic form. In Brasilia Niemeyer has exhibited the two chambers as three-dimensional masses. What makes his solution questionable is the lack of congruence between the outer visible form and the reality of the arrangement inside; the shapes of the chambers and rooms inside bear no relationship to the grandiose simplicity and plasticity of the exterior form. It remains to be seen how successfully Le Corbusier solves this problem at Chandigarh.

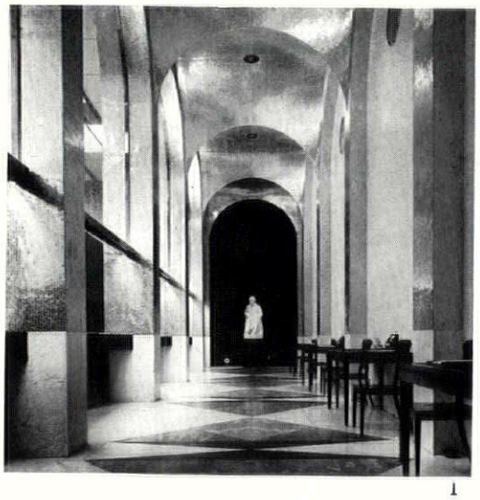
This comparison of the Parliament in Stuttgart with the solutions proposed at Brasilia and Chandigarh shows that the problems are related and that they turn up regardless of location. This is because the underlying question is how, granted that function is satisfactorily fulfilled, to express what is essential in a parliament and its position in a democratic society. The basic plan at Stuttgart, and the way in which the chamber and the Deputies' rooms are related to one another, is one of the possible solutions. And in spite of criticisms, it is an impressive piece of Modern Architecture, for it demonstrates two facts: that Modern Architecture has the means to solve the problems posed by representative buildings with simplicity and dignity; and that it is possible to fit a building into an environment rich in tradition without sacrificing any of the essential principles of Modern Architecture.

ID
a monthly review of interior design

Bank in Lombard Street

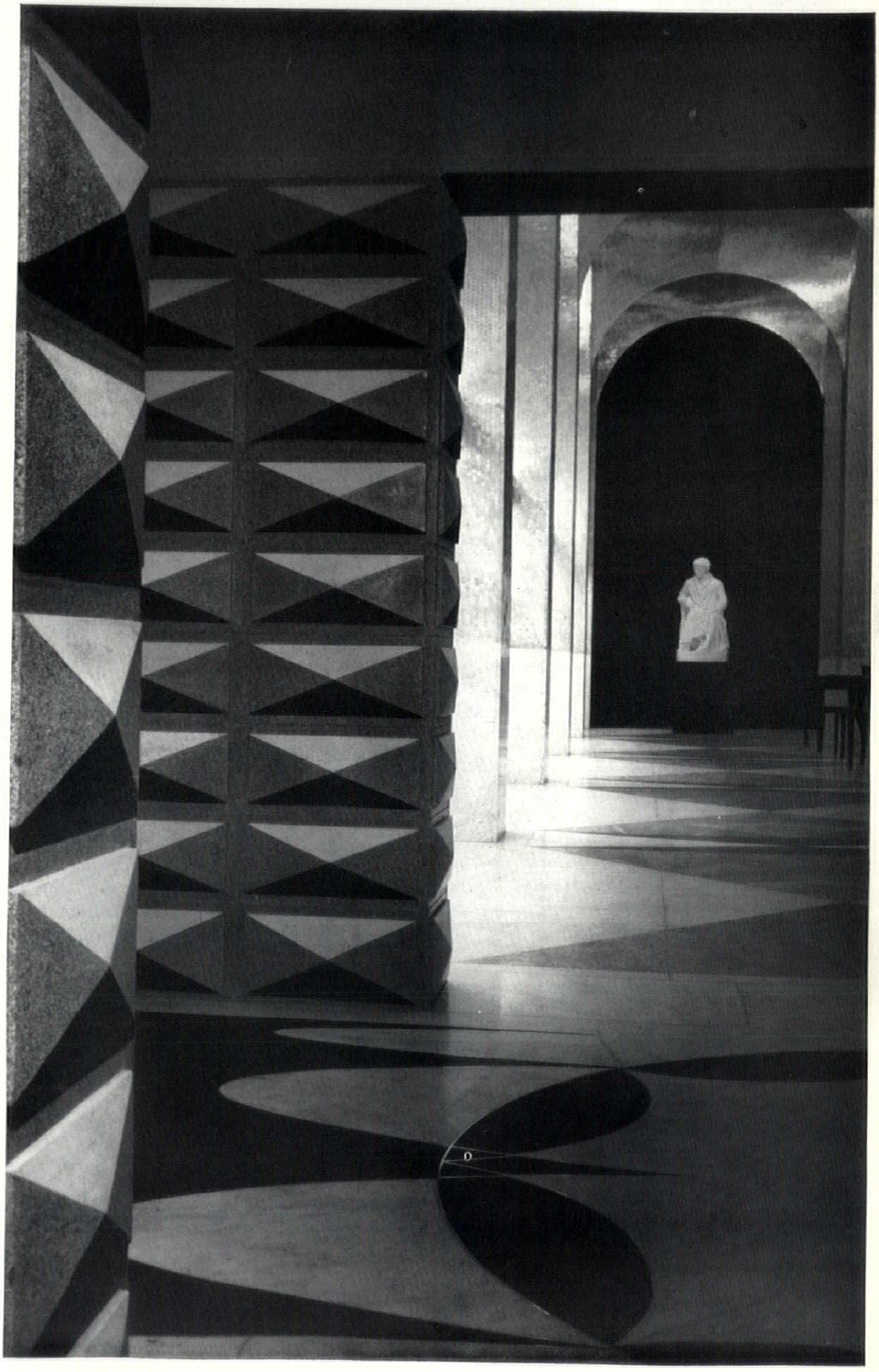
architects : Brett, Boyd and Bosanquet.
architect in charge : Francis Pollen.

Designed for Coutts's, the most tradition-hallowed of British bankers, in the heart of the City of London's banking zone, this consciously classicising interior is an attempt to give an apt setting to a client whose continuing traditions are expressed in such terms as tail-coats and superb neo-Classical furniture that survives from the last century. Unlike the architects whose banking architecture did so much to de-value classicism in England, the designers have returned to the fountain-head of Banker's Classical—the freedom, erudition and formal austerity of Sir John Soane's Bank of England.

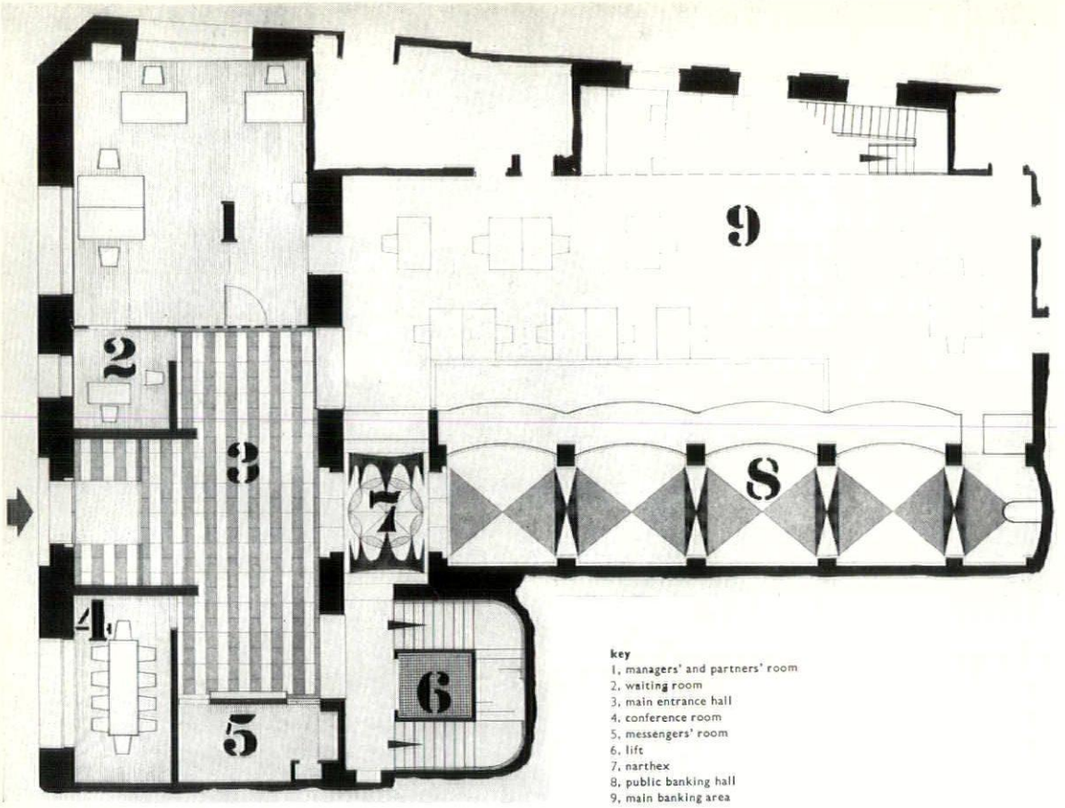


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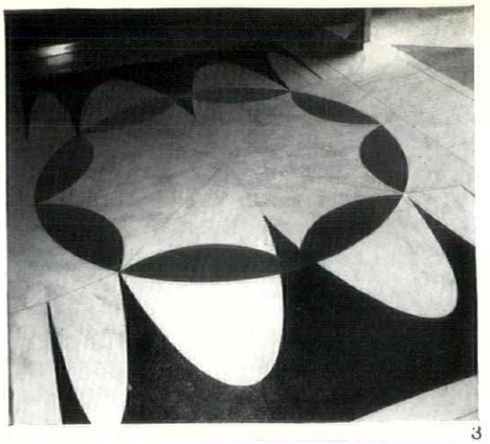
1, general view of the public banking hall, with counters on left and original Coutts's furniture at right.
2, looking through the narthex at the head of the banking hall towards the cast of Chantrey's statue of Thomas Coutts at the far end of the axis. The combination of illusionistic quoin-painting (here, in fact, coloured terrazzo) with physical projection, ensures the rustication a strong visual presence even in subdued lights.



2



key
1, managers' and partners' room
2, waiting room
3, main entrance hall
4, conference room
5, messengers' room
6, lift
7, narthex
8, public banking hall
9, main banking area

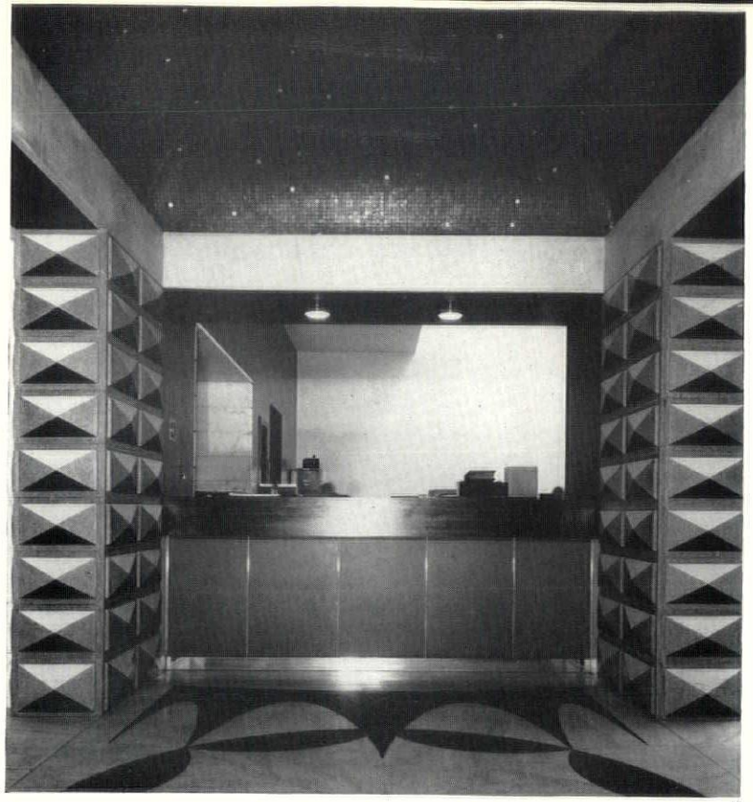


3

3, the three crowns of Coutts's emblem inlaid in the narthex floor.
4, main entrance hall, looking toward the messenger's room—the glass panel in the wall is the only sign of a gib door concealed by the pattern of vertical teak boarding. Floor and flank wall of entrance are in marble.
5 (opposite), the narthex, looking into the corner of the main banking hall. The vaulted ceiling is in dark blue mosaic with random gold tesseræ.
6, the main public banking hall, looking back toward the main entrance. The pattern of the marble flooring reflects the bay-rhythm of the gold-mosaic saucer domes above.
7, brass umbrella stand, secured to the Sicilian marble wall of the entrance hall.

4





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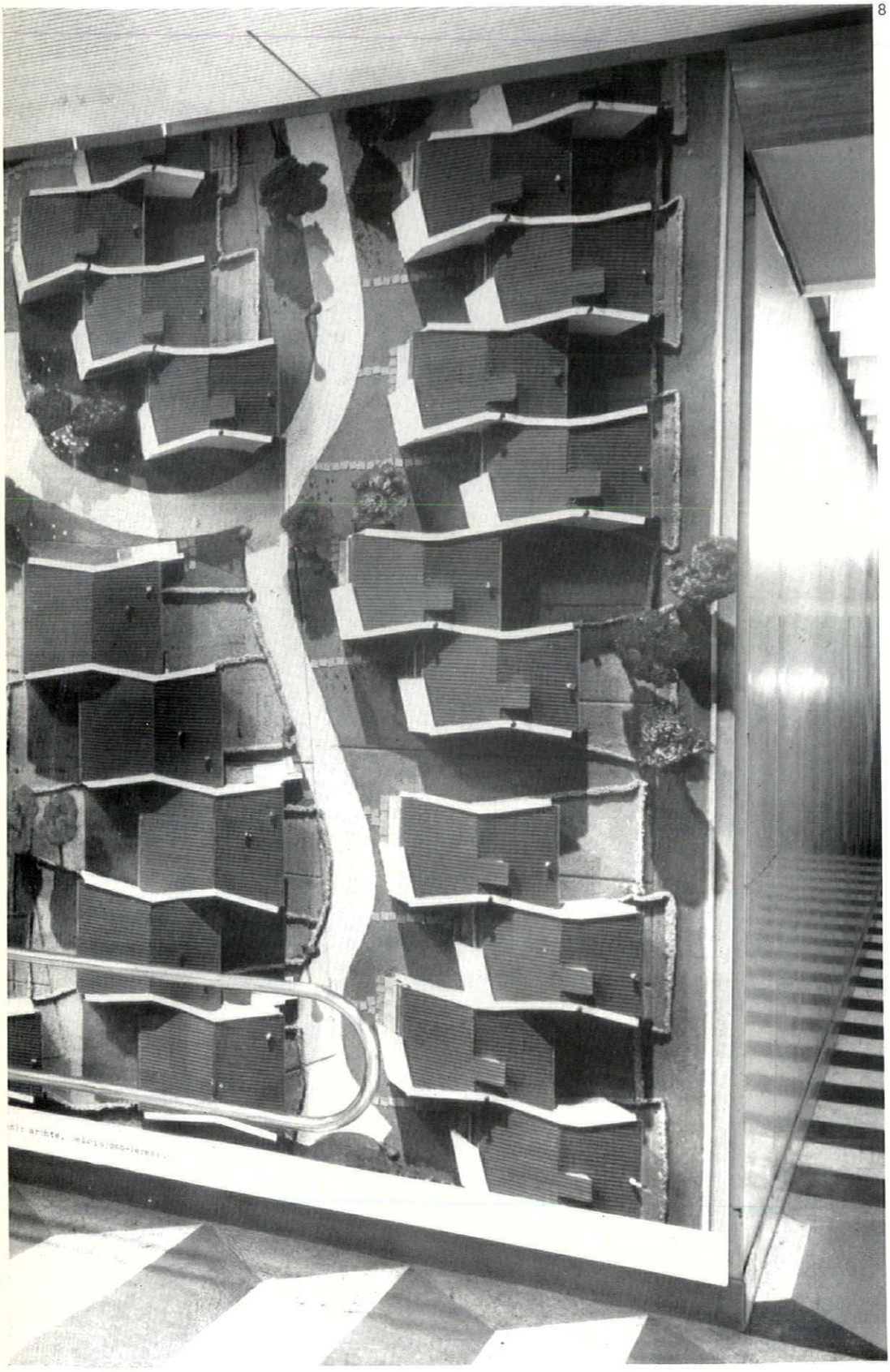


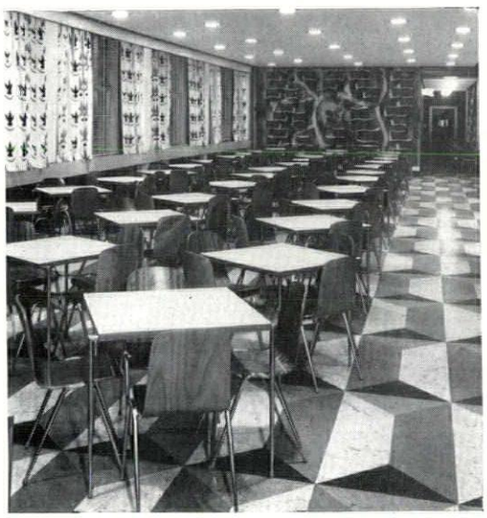
Three Restaurants for Bank Staff in the City

architects : Everson and Searles.

The architectural improvement of the public areas of banks is a movement that has now passed beyond the pioneering stage, but it should be remembered that it is part of a general overhaul of banking methods and staff accommodation. The use of computers and other progressive accounting techniques is bringing about redistributions of staff and increasing the importance of headquarters offices and specialised departments mostly located in the City of London. Hence the need to create new staff amenities such as the cafeterias and luncheon-rooms in three City branches of Westminster Bank illustrated here.

8





9

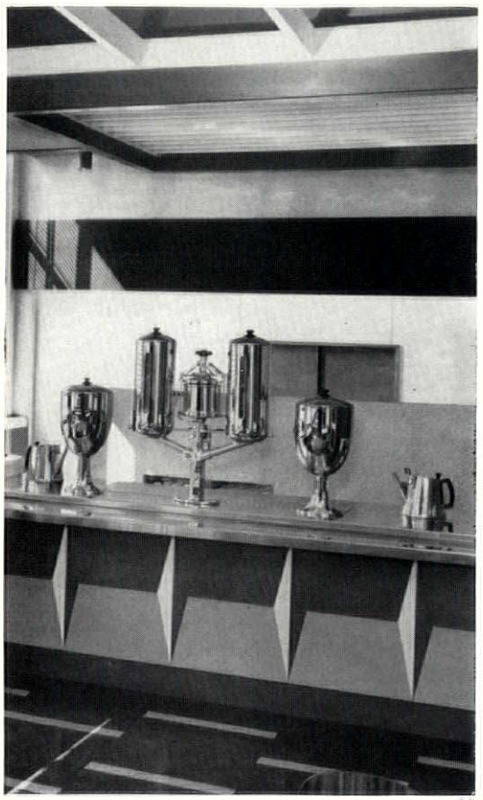
8, photomural—a view of the model of a housing development at Sesto San Giovanni, Milan, by the BBPR office—in the Threadneedle Street cafeteria. The architects have made extensive use of such murals (see facing page) to introduce illusions of depth, or elements of alien scale into interiors whose scale and form is (for structural reasons beyond their control) often over-large and all-too-predictable.

9, a general view of the Threadneedle Street cafeteria, with the photomural at the far end. The giant pattern of the inlaid line on the floor also helps to reduce this immense perspective to a comprehensible visual scale.

10



10, officers' luncheon room, Threadneedle Street branch, on the floor above the cafeteria shown opposite. A less emphatic floor-treatment, in keeping with a smaller floor area, and the walls treated as shallow abstract reliefs of coloured, plastic-faced boards. This form of wall treatment is a developed version of a similar technique employed in earlier schemes (see 11, below) as a means of absorbing cupboard doors, rubbing rails, etc., into the design of the wall.



11

11 traditional coffee-machine installation and plastic laminate bar-front in the Lothbury branch cafeteria.

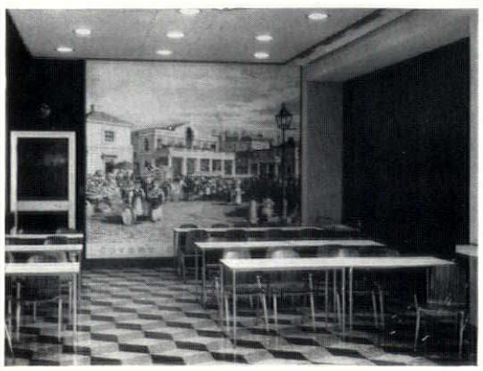
12, extension to the Lothbury cafeteria, with a photomural enlargement of one of Gordon Cullen's *New Marlow* drawings (AR, July, 1950). Here, where the scale of foreground objects in the mural is almost that of real objects in front of it, the illusionistic extension of a small space is marked.

13, a familiar print of Covent Garden used as a photomural on the end wall of the Lothbury cafeteria; on the right, electrically-operated folding doors to the extension.

12



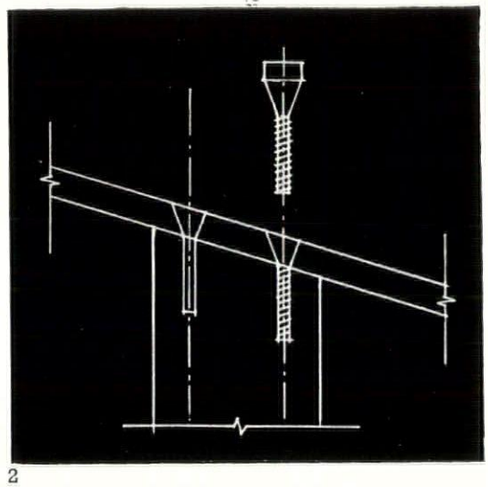
13



Furniture by James Howell

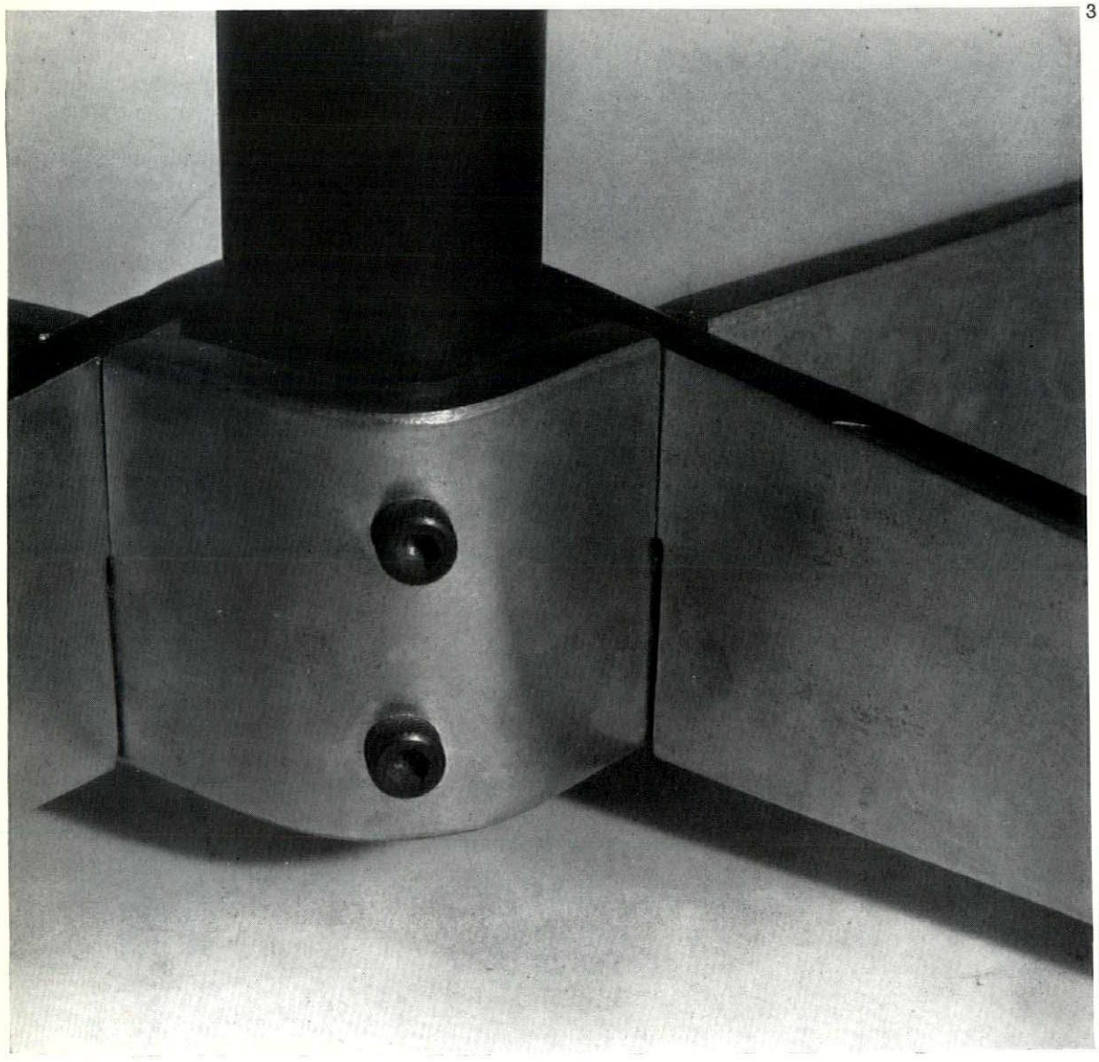


Perhaps as a hangover from wooden construction, in which screwing into end-grain is bad practice, the use of screwed construction (set-screws into tapped holes) is rare in metal furniture. These elegant pieces by James Howell of Cicchelli-Howell Associates (of Providence, RI), suggest that there is a large field of possibilities to be explored.



1

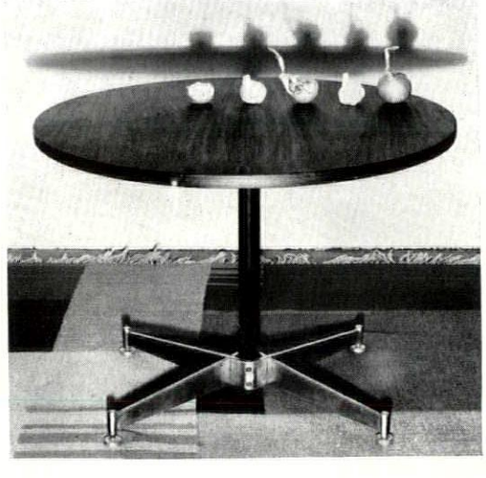
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3

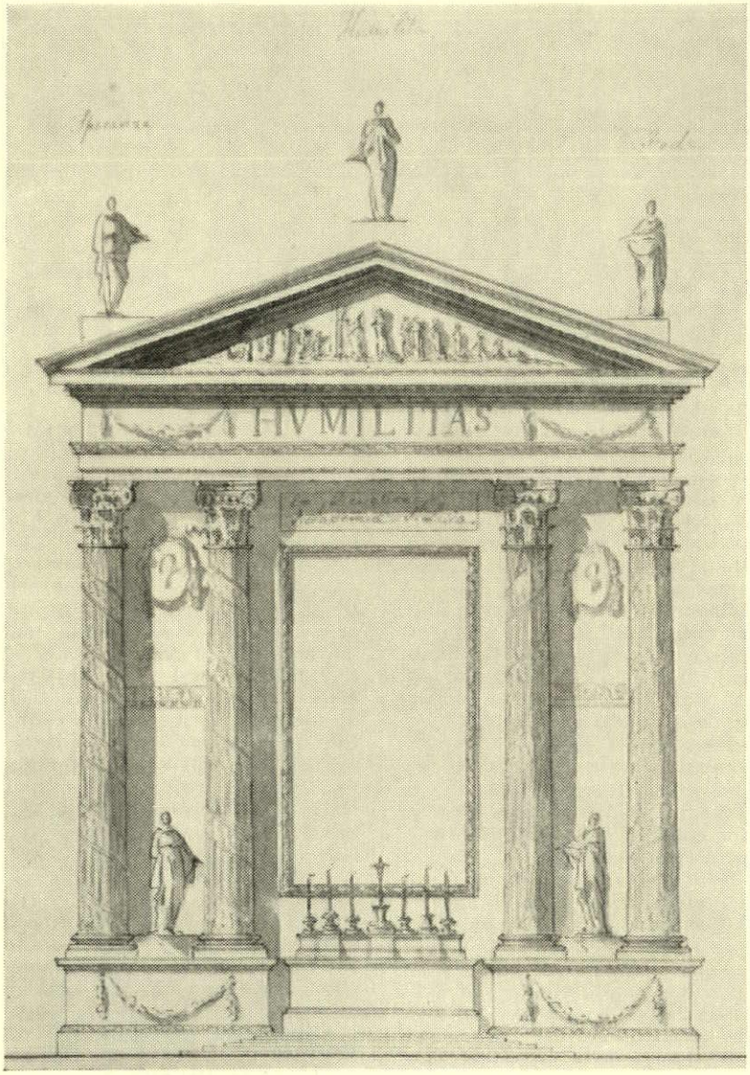
1, lounge chair—each side frame, as well as the sub-frame which carries the seat and back, is a separate piece of satin-chrome steel. The whole is assembled by two key-head screws into each end of the centre stretcher.
2, typical screwed fixing in Cicchelli-Howell furniture.
3, fixing of crossed leg units at base of occasional table—for domestic use the key head screw has the child-proof advantage of needing the correct key to unscrew it, unlike the slotted screw which is susceptible to pennies and table-knives.
4, occasional table with crossed and slotted legs.

4



JOHN HARRIS

ROBERT MYLNE AT THE ACADEMY OF ST. LUKE



1

1, *altar-piece designed by Robert Mylne as his trial piece at the Academy of St. Luke.* 2, *design for a 'Public Building with a Memorial Gallery to exhibit Busts of Eminent Men' for which Mylne was awarded a silver medal.*

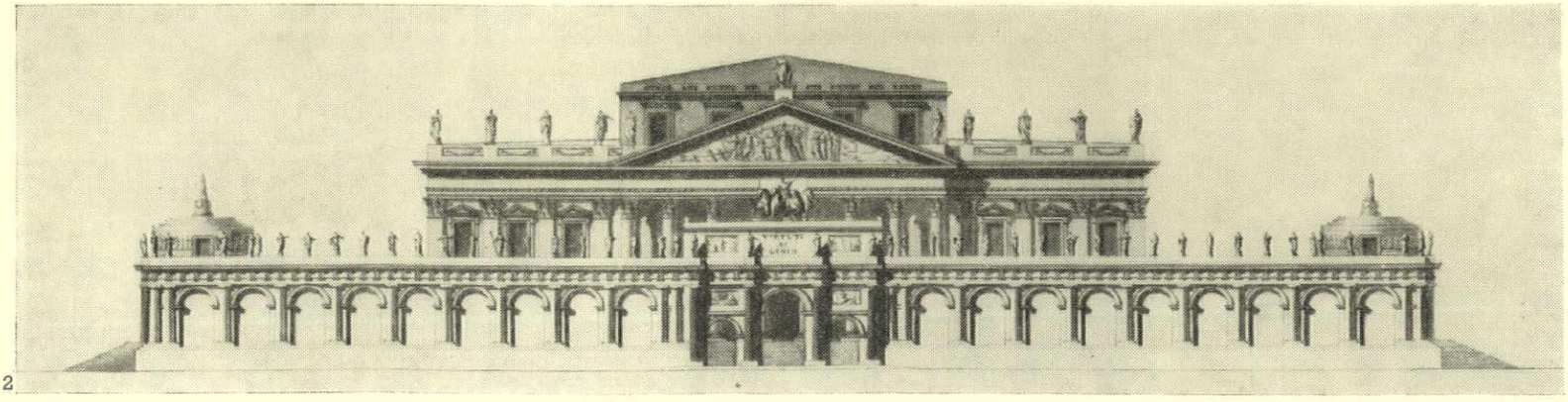
The year 1750 conveniently marks a moment in the history of neo-classicism when archaeological enquiry began to enrich the academic disciplines of the architectural student. The past was emerging as a source-book in which style was an historic entity capable of being discovered in the antique, in the medieval, and in the renaissance worlds. Soufflot was in Rome at this time and was one of the earliest architects to draw the ruins of Paestum. His importance as a neo-classicist need not be stressed here. Seven years later he was to build the church of St. Geneviève in Paris. His studio was undoubtedly influential and his tenets must have been felt in Rome through the French Academy there and its *pensionners* such as J. M. Peyre, a student of 1753. Peyre was also a member of the Academy of St. Luke, that hotbed of the conservative faction, yet a *sine qua non* for most artists. Belonging to this Academy from 1757 was Piranesi, already way out in the forefront of the movement towards the publication and dissemination of ancient and modern Rome. Just at about the same time, Piranesi's friend Robert Mylne also entered the Academy; for on September 6, 1758, he sat the examination for the *Concorso Clementino.*

Mr. C. Gotch's article* on Mylne's Italian tour and Mylne's winning design for the silver medal of the *Concorso* contains a relevant letter from Mylne to his brother William, written after the examination, saying, 'the concourse was put off on account of the pope's death. However on the 6th of this month the drawings were put in. On the 7th we made our Provas in the space of two hours before the Academicians when an altar adorned with composite columns fell to our lot in the First Class to be done.' Mylne's *Prova*, together with Gandy's of 1797, is now in the Cooper Union Museum for the Arts of Decoration, New York, where it forms part of the Brandegee Collection bought in 1938. This originally belonged to Giovanni Piancastelli, a curator of the Borghese Gallery, whose collection had been subdivided in 1901, when one half went to the Cooper Union and the other half to Mr. Brandegee. Thus in 1938 the Roman Piancastelli Collection was reunited in New York.

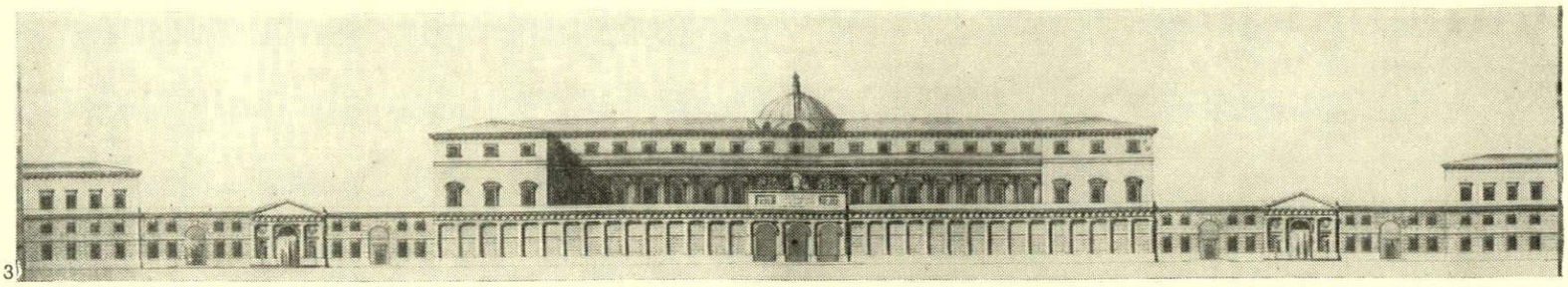
The *Provas* or trial pieces were no rigorous affairs. They were made by the artists and approved by the examiners verbally. Mylne's altar-piece, 1, is of a conventional eighteenth-century type and carries the dedication of Humility with the inscription, 'ex Devotione Accademia St Luca.' Mylne inscribed below the drawing, 'Li Bassorelievo sopra la colonne representano la storia della Sacra Scrittura.' Above the pediment are the figures of Humility, Hope and Faith.

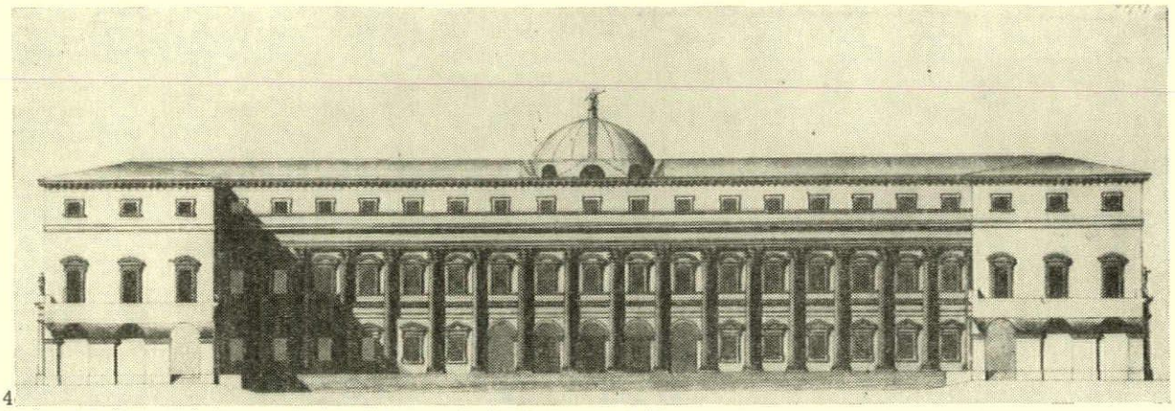
Mylne's winning design, 2, for the silver medal (an elevation in the Royal Institute of British Architects) was not analysed by Mr. Gotch. It was for a 'Public Building with a Memorial Gallery to exhibit Busts of Eminent Men.' Its sources, although somewhat unoriginal, are based upon certain antique elements. It is the earliest concordance by an English architect as such and it stands near the beginning of a long line of 'Grand

* 'The Missing Years of Robert Mylne,' THE ARCHITECTURAL REVIEW, Sept. 1951.



2





3, *Mylne's preliminary design for the* Concorso *of* 1758. 4, *detail of the inner courtyard.*

Prix' drawings that culminate in the published volumes of Allais and Detournelle early in the nineteenth century. The core of Mylne's main block has the rhythm and proportions of Michelangelo's Palazzo dei Conservatori. This is split apart, and the portico of the Pantheon is placed in between. Breaking the long Doric arcade is the Arch of Constantine. To set the neo-classical touch upon this design Mylne introduces circular stepped pavilions with a classical frieze of draped figures and surmounts them with a statue. Peyre had already designed such elements in 1753 (cf. below) and in precisely 1758 Neufforge was beginning to follow these themes in his *Receuil Élémentaire d'Architecture.*

The Accademia di San Luca archives contain Mylne's plan, side elevation, and sections to which the RIBA elevation undoubtedly belongs (and in fact completes the set). The section exhibits neo-classical tendencies also: a courtyard adorned with wall tombs; a basso-relievo frieze of figures in the vestibule (Peyre had used such friezes in 1753); and a main hall with garlanded busts as decoration and a neo-classic form of chimney piece.

It has been hitherto unnoticed that the RIBA possesses Mylne's rejected or preliminary design for this *Concorso.* In some ways these, 3 and 4, are even more startling than his final scheme. The antique elements are less apparent and there is a deliberate choice of renaissance motives. The main body of the palace has the proportions and character of a Roman building such as the Lateran. For the articulation of the inner courtyard, 4, Bernini's final Louvre design is drawn upon. Again there is the hint of Bernini in the rectangular projection on Mylne's garden front where the Louvre is also the source. It may not be a coincidence that Mylne spans his facade with an open colonnade just as Perrault did in Paris. Mylne's treatment of the rest of the facade belongs, however, in spirit to the very early years of French neo-classicism. From out of the main plane of the basement he forms flights of stairs with terraces containing fountain groups each side of a semi-circular arched motive. Below each terrace is a fountain with a circular stepped base. In front of the main elevation is a long screen of Doric columns against a rusticated stone wall. This is broken in the centre by a tripartite motive that may owe its inspiration either to an arched loggia of the Pincio Gardens (which also breaks a long wall) or to the Fontana Acqua Paola. There is a link between the latter and the fountains in Mylne's lateral wings.

The award of the prizes for the *Concorso* seems not originally to have included Mylne as a first prize winner (was it because as a heretic he had not obtained Papal permission to sit for the examination?) But the examiners Orlandi, di Marchi, Derizet, Rauzzini and Mauro Fontana thought so highly of Mylne's design that they awarded him a special first prize. Why such a neo-classic design should have merited such a response from a conservative Academy is enigmatic. It may lie with the examiners, for the second prize by Giuseppe Marvoglia was also slightly neo-classic. In any case, for the next decade, conservatism again descended upon the prize winners.

The ceremony of the prize giving was held in the Capitoline Palace attended by 20 Cardinals and 'Le Roi d'Angleterre ou Pretendent.' This was witnessed by Grosley who says, in his *Observations sur L'Italie* (1777), 'les Romains applaudissoient avec les plus grand fracas, a l'appel des Romains et les Italiens.' Mylne was consoled by 'les Applaudissements tres marques.'

For several years Mylne's design aroused interest in Rome and Robert and James Adam (their eyes always open to the danger of possible competition) knew of it. In a letter to Robert (March 7, 1761) James says he has been to the Academy to see the design, but 'was indeed extremely surprised to see it fall so much short of those ideas I had formed of it: not that my expectations were high originally but people of some taste had been puffing it extremely to me and citing Blackfriars (Mylne's nickname) as a great man. But take my word for it, if the English have eyes you have nothing to fear from that quarter.'

Peyre's project for a cathedral was presented to the Academy in 1753 but was not published until 1765 in his *Oeuvres d'Architecture.* As it anticipates Mylne it may be the direct link between these two neo-classicists if a personal one did not exist. Typifying many of the later Grand Prix designs, Mylne's scheme illustrates that disintegration of the close-knit Baroque composition. Yet it remained an isolated contribution to Academic neo-classicism and when Mylne returned to England he lined himself up with the current practice of Adam, Chambers and Wyatt.

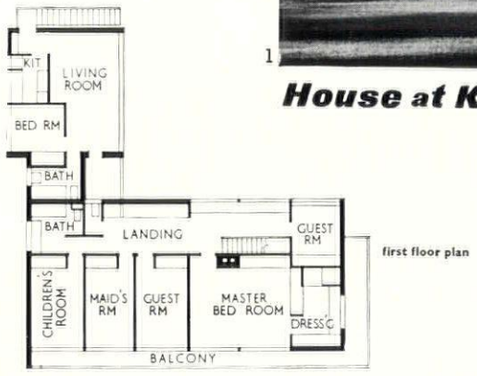
Note: I am indebted to Dr. Pirotta, of the Accademia di San Luca, for allowing me access to his archives; to Dr. Anthony Clark for supplying me with an abstract from the *Decreti Delle Congregazione Accademiche* (Vol. 51); to John Fleming for his kindness in letting me use his unpublished Adam material; and to Dr. Richard Wunder, of the Cooper Union, who so kindly allowed me to examine all their drawings (and thus to discover the *Provas*).

THREE SUBURBAN HOUSES

1, *the garden front, from the south-west.*
2, *corner of the master dressing-room.*



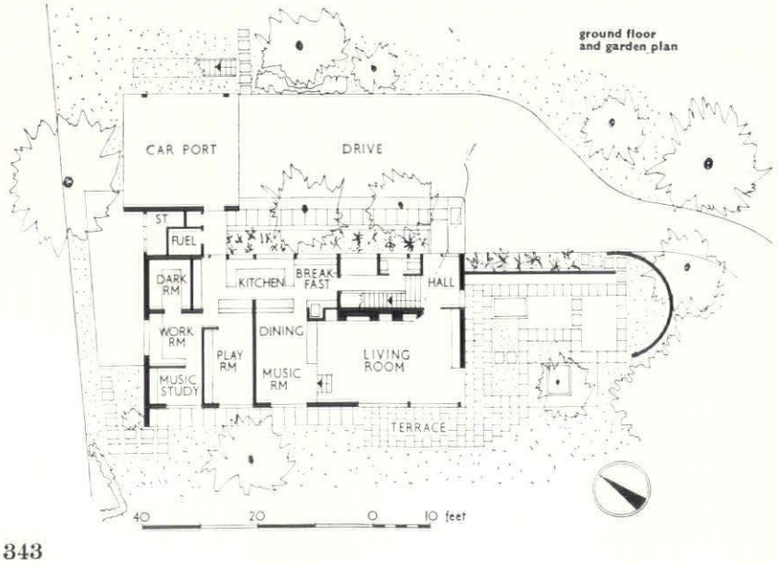
1



first floor plan

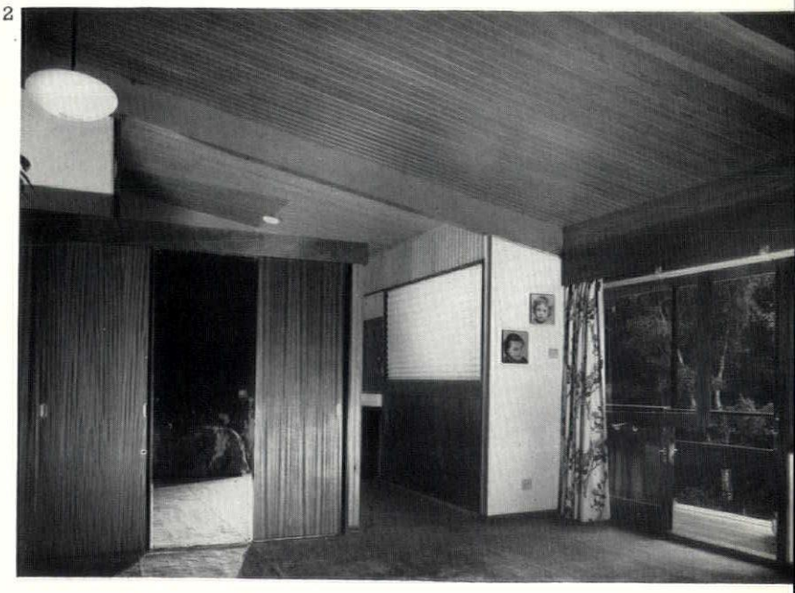
House at Kingston Hill, Surrey: ARCHITECT: KENNETH WOOD

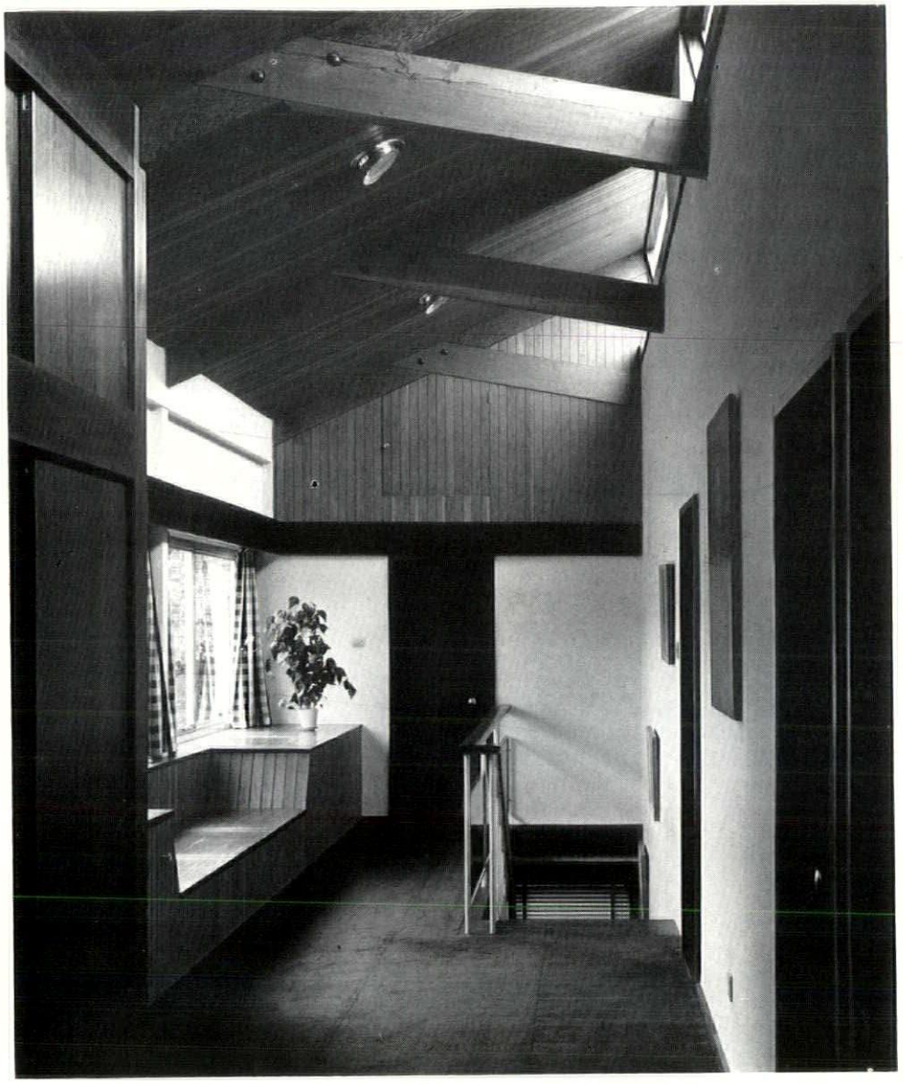
The site of this house is just under an acre and was originally part of the grounds of a large mansion. The many fine trees it contained have been preserved. It has been designed as a more compact modern equivalent of the manor-house that has been in the client's family for centuries but had become uneconomic to run. In addition



ground floor and garden plan

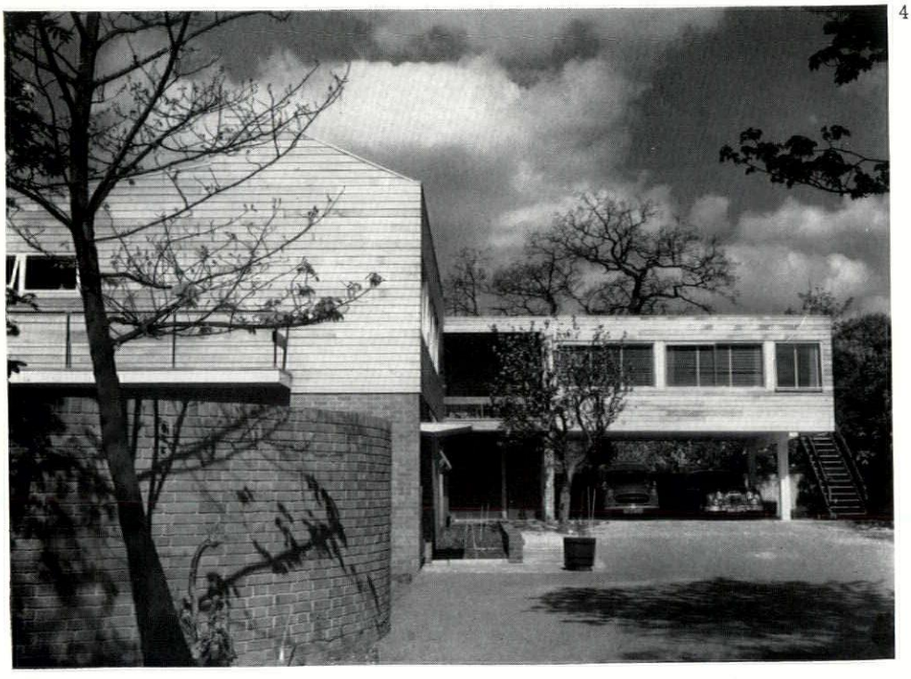
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3

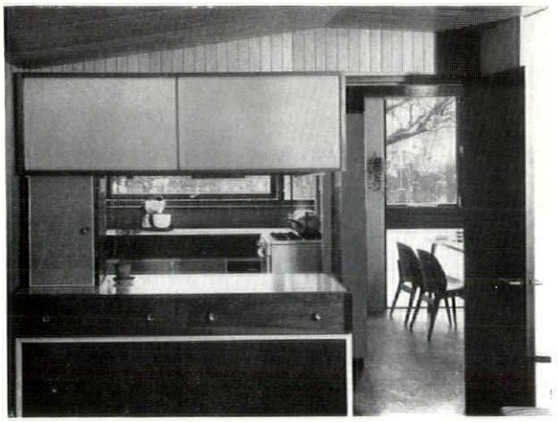
House at Kingston Hill



4

to the family's own accommodation, a private wing was required for a grandparent, communicating with the main house at first floor level. Special provision was required for live and recorded music, for small recitals of chamber-music and for art exhibitions, but without losing the domestic character.

It is a two-storey building with an L-shaped plan to give minimum exposure to the north and maximum sun, and it has been sited so as to preserve existing apple trees on the east and a large prunus on the west and to give living-rooms a south and south-west aspect with a view of open lawn. The private wing is over a car-port and is connected by a covered balcony to the first-floor landing of the main house. A change of ground level is used to create a raised dining area which serves also as a dais

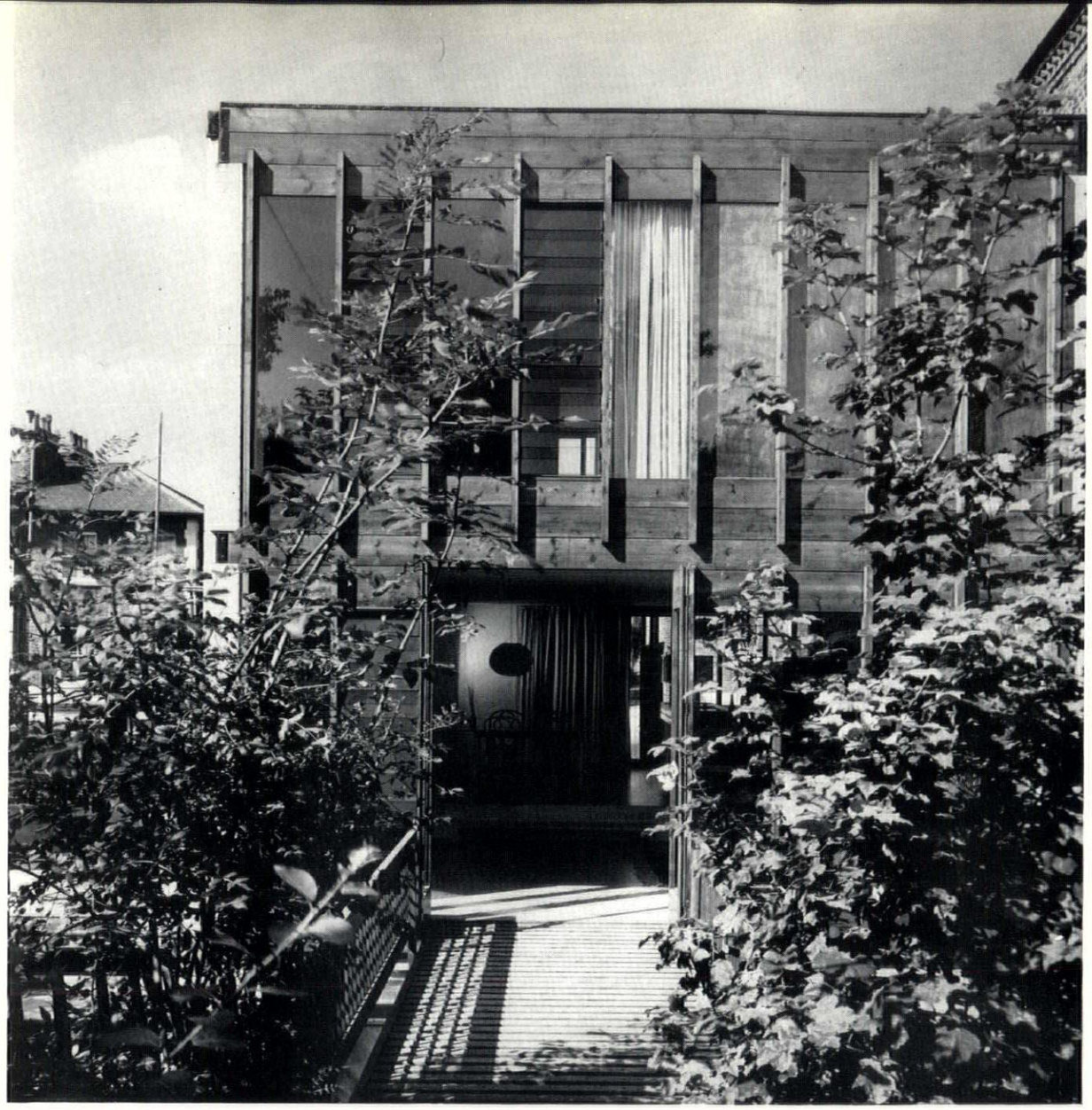


5

during music recitals. This area has a raked pine ceiling to act as a reflector and a cedar rear wall. This, together with a slatted pine ceiling in the living area and full-length curtains, provides the necessary acoustic absorbents. A first-floor landing, reached by a mahogany staircase with bronze and plate-glass balustrade, is designed for the display of pictures, with clerestory lighting, rough-textured white walls and an exposed scissor-type timber roof and pine ceiling.

The structure of the house is basically a precast reinforced concrete frame with panel walls of 11 in. cavity brick, glazed hardwood screens on the ground floor and insulation block panels on the first floor, faced with cedar boarding. A central spine wall braces the whole structure. Floors and roofs are timber and the low-pitched roof is covered with aluminium. Window cills are black slate. Large windows are double-glazed in mahogany frames. The private living-room, main bedroom and landing have sliding aluminium sashes. Heating is gas-fired from concealed convector units.

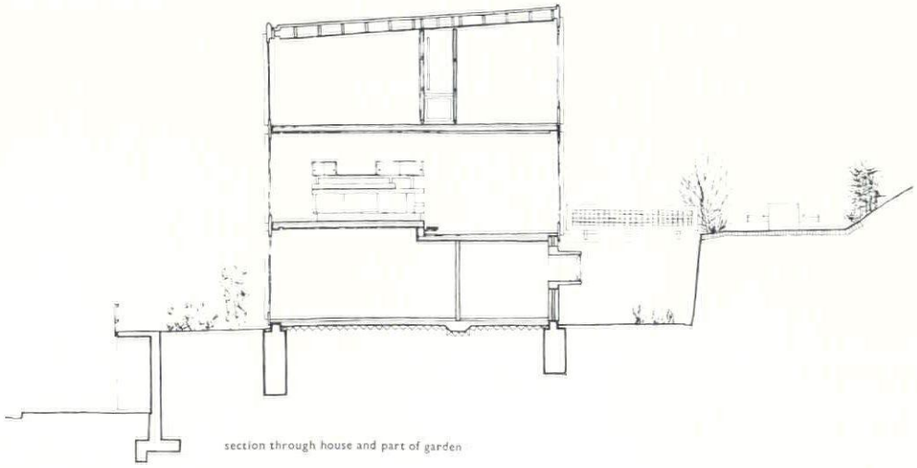
3, *landing and window-seat at the head of the stairs.*
4, *the approach side with car-port under private wing.*
5, *looking across the kitchen to the breakfast recess.*



6, the back of the house, looking over the bridge from the garden.

Architect's own House, Hampstead Heath

ARCHITECT: MICHAEL BRAWNE

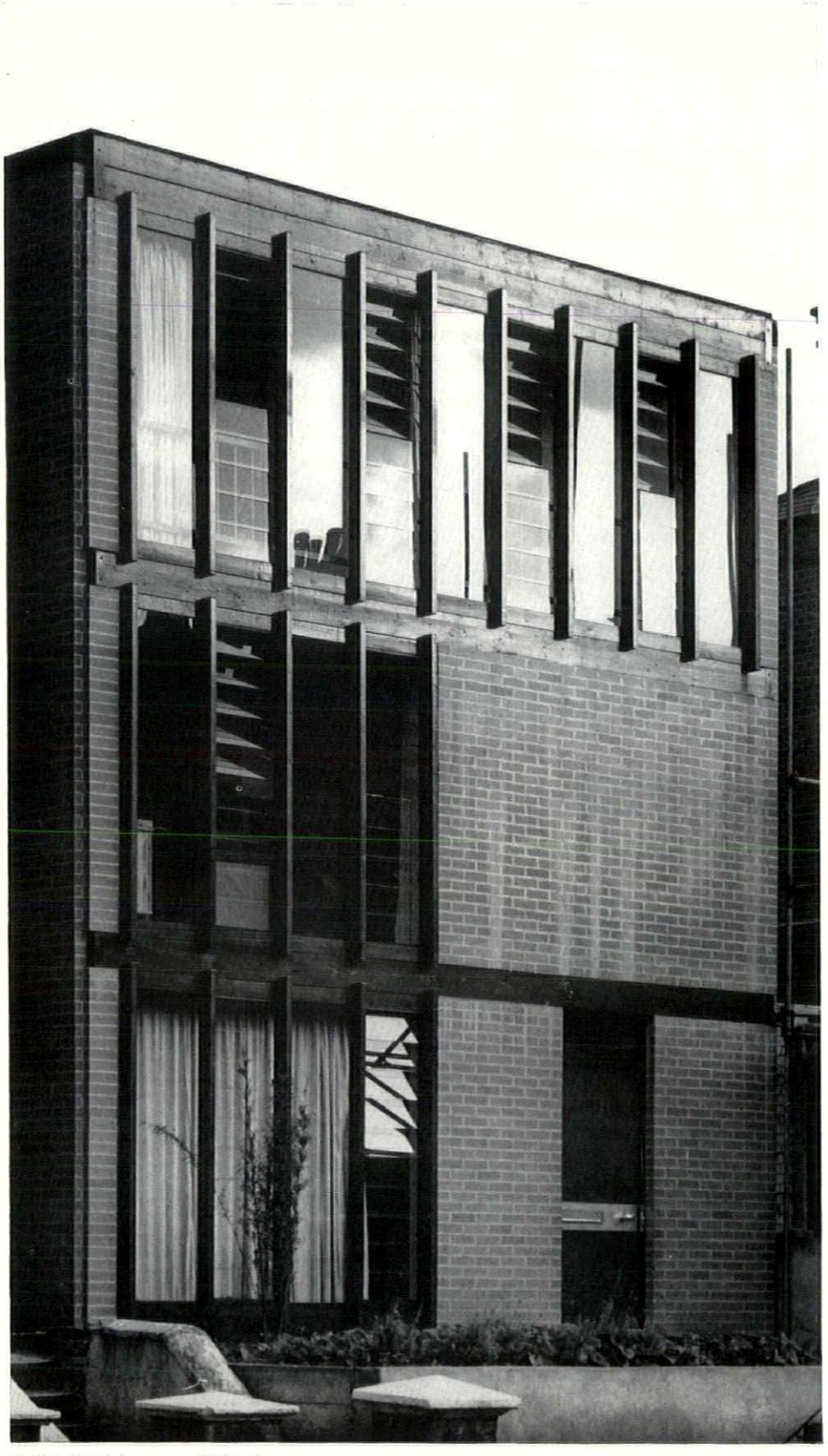


section through house and part of garden

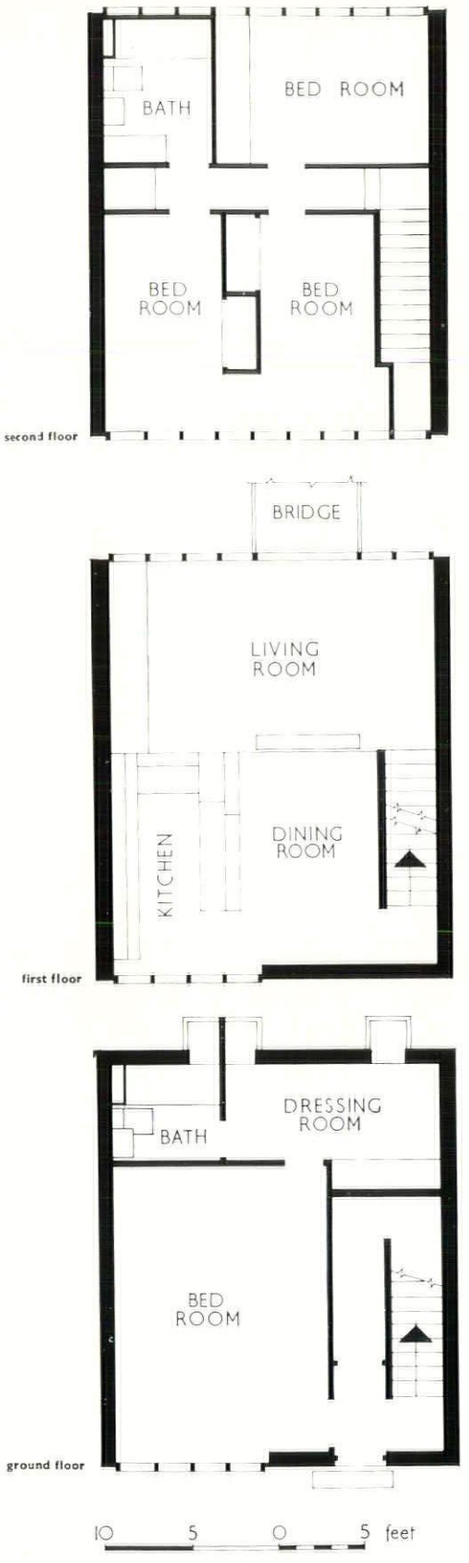
Although South Hill Park is a Victorian cul-de-sac between Hampstead Heath and Parliament Hill, the street is urban in character and the house (on a bombed site) is intended to be unmistakably a town house in its form and proportion. It is a vertical structure helping to restore the street pattern.

Within the tight envelope which was economically necessary, the design exploits the levels of the site and the change in ceiling heights possible because of different uses. The middle floor is the main living area and is level with the garden at the rear. This floor is split by two steps into a lower sitting portion, over a bathroom-dressing room area on the floor below, and an upper dining and kitchen part. The visible space is equal to the plan area of the house with additional visual outlets up and down stairs in order to extract the greatest possible effect from a site 20 ft. wide and a house 24 ft. deep. The change in level also makes possible a partial screening of the open kitchen from the sitting space without a person in the kitchen experiencing any loss of contact with the garden and without obstructions to the supervision of children's play on the bridge or terrace beyond.

On the top floor the roof has a one-way slope parallel to the slope of the ground and the children's rooms occur



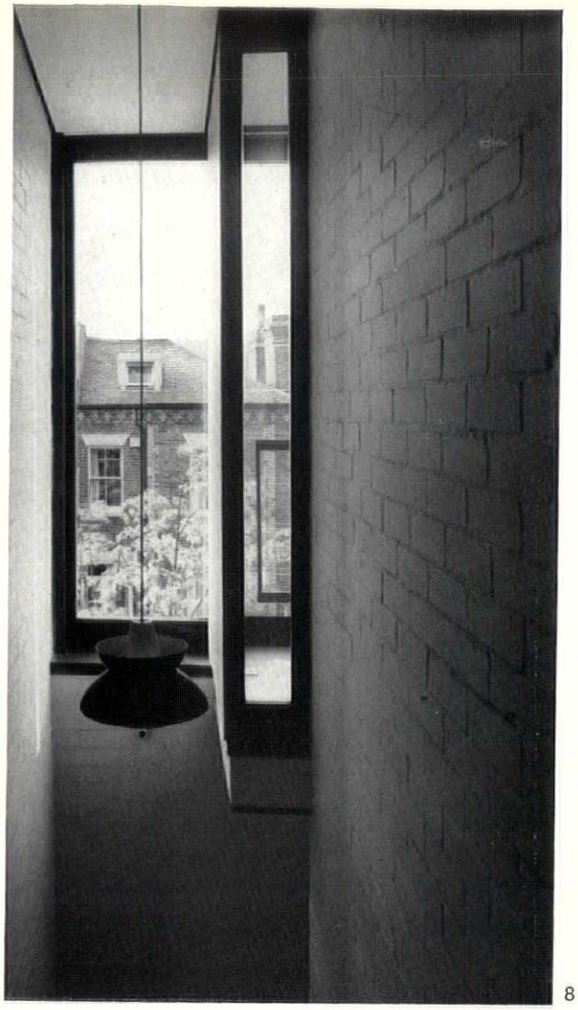
7, the street front—a flight of steps (not shown) leads down from the right to pavement level (see section on previous page).



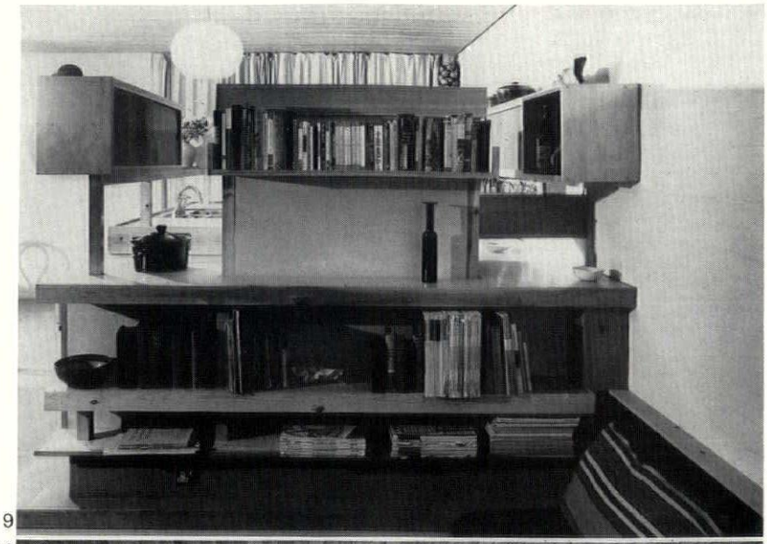
Architect's House, Hampstead Heath

under the low portion, the adults' bedroom under the high. This latter part also includes the bathroom so that the hot and cold water tanks are within the building envelope. This apparently simple house required waivers from fourteen byelaws of the London Building Acts. The structure, finishes and detailing of the house are deliberately the simplest possible. The form and materials of the building are intended to give a calm and sufficiently varied background and enhancement to the activities going on within the house. The landscaping and planting of garden will continue this feeling and consist of a brick terrace, a sand pit, trees and shrubs and rough grass on undulating ground blurring the limit of the site.

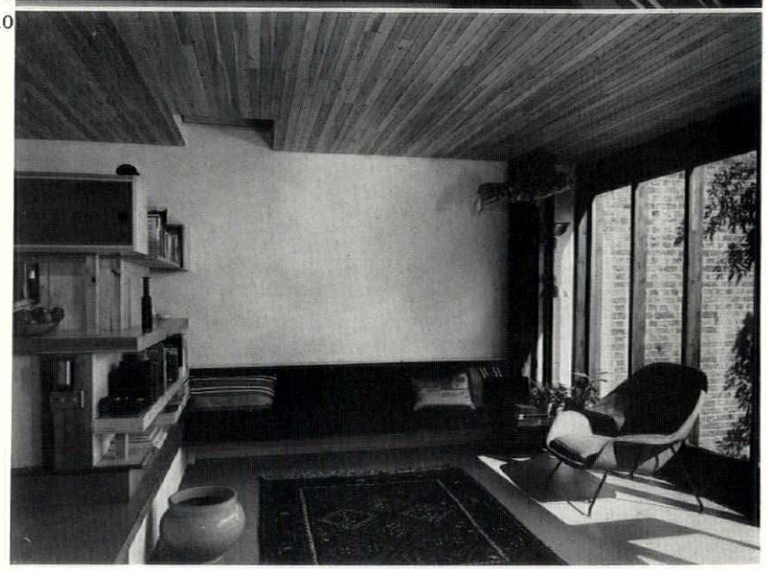
Walls are 11 in. cavity brickwork filled with loose fibreglass and left unplastered; floors are precast concrete beams and screed; the roof consists of 11 in. by 2 in. joists and woodwool covered with asbestos roofing board; windows are 32 oz. glass in softwood framing treated with a staining wood preservative and varnish: opening lights are 9 in. wide ¼ in. plate glass louvre blades. Finishes are, wherever possible, natural and, in tone value, within a strictly limited range.



8



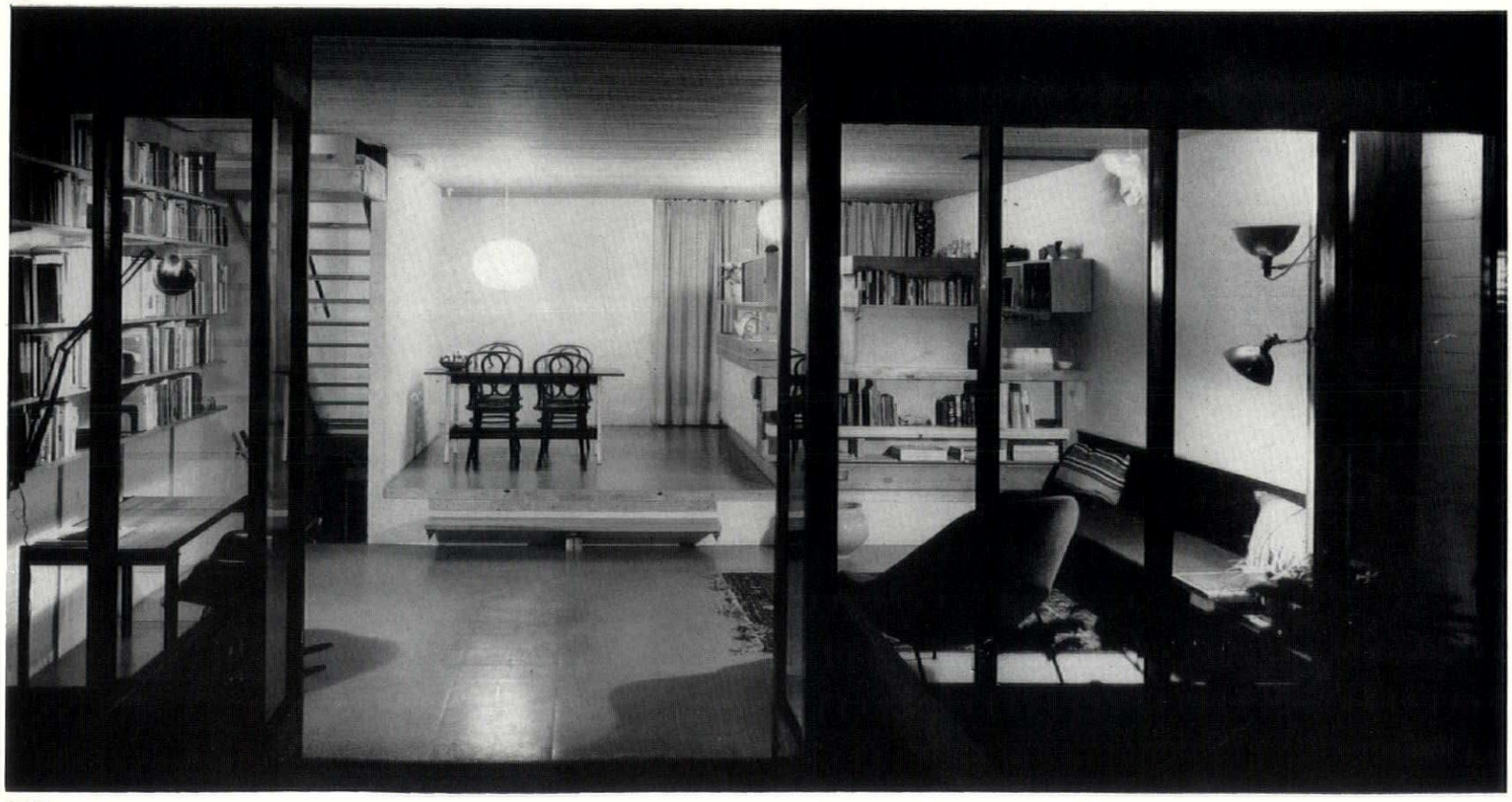
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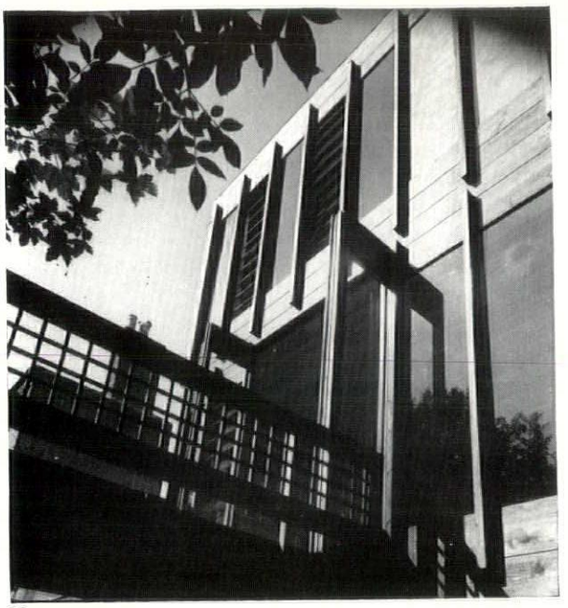
8, the stairwell. The need to accommodate the difference between the width of the stairs and the module of the external glazing created the opportunity for an unusual internal window to the children's room.
9, the kitchen from the sitting area.
10, view across the sitting area.
11, the main living floor from the bridge, at night.

11





12



13

12, *rear window-bays of the ground floor.*
13, *the rear façade and bridge from below.*

Architect's House, Hampstead Heath

House in Hampstead

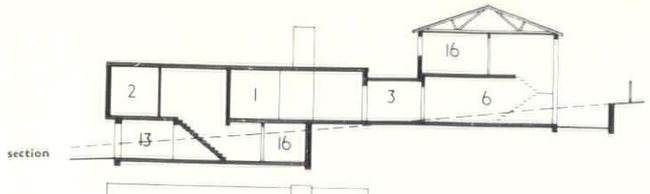
ARCHITECTS: JELLICOE, BALLANTYNE AND COLERIDGE
PARTNER-IN-CHARGE: F. G. COLERIDGE

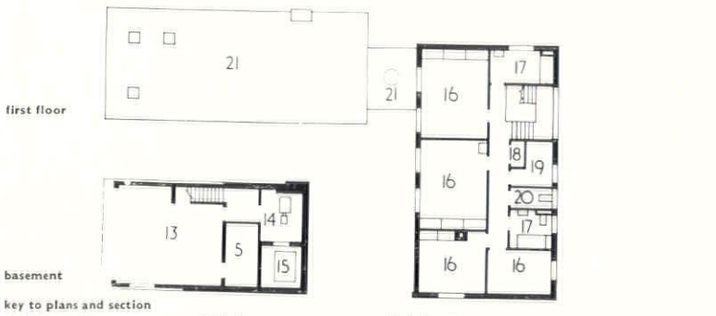
The house is in West Heath Avenue and has been designed for two bachelor brothers with a resident housekeeper. In addition to the normal living accommodation they wanted a dark-room and a workshop; also a reasonable amount of wall-space on which to hang a collection of pictures, but not in a way that treated the house as a picture-gallery.

A steeply sloping site enabled a split-level plan to be used, with the garage and heating-chamber placed beneath

14

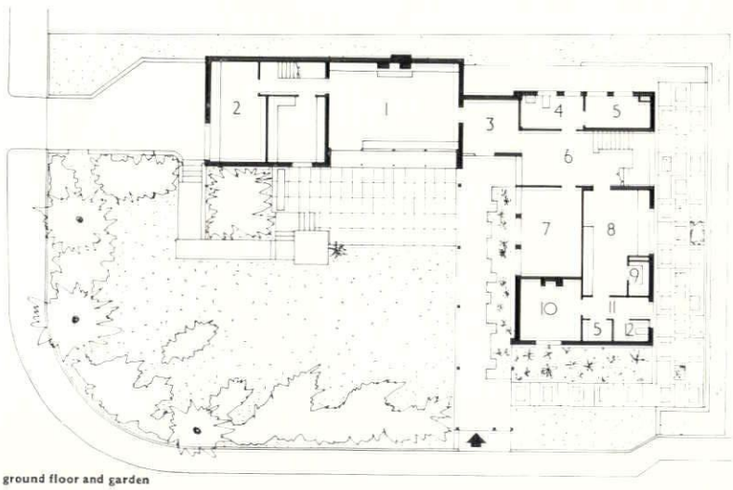






key to plans and section

1. living room.
2. workshop.
3. entrance.
4. cloakroom.
5. stores.
6. stair hall.
7. dining room.
8. kitchen.
9. larder.
10. maid's room.
11. back entrance.
12. w.c.
13. garage.
14. boiler room.
15. fuel tank.
16. bedrooms.
17. bathrooms.
18. linen store.
19. boxroom.
20. w.c.
21. flat roof over lower wing.



ground floor and garden



15

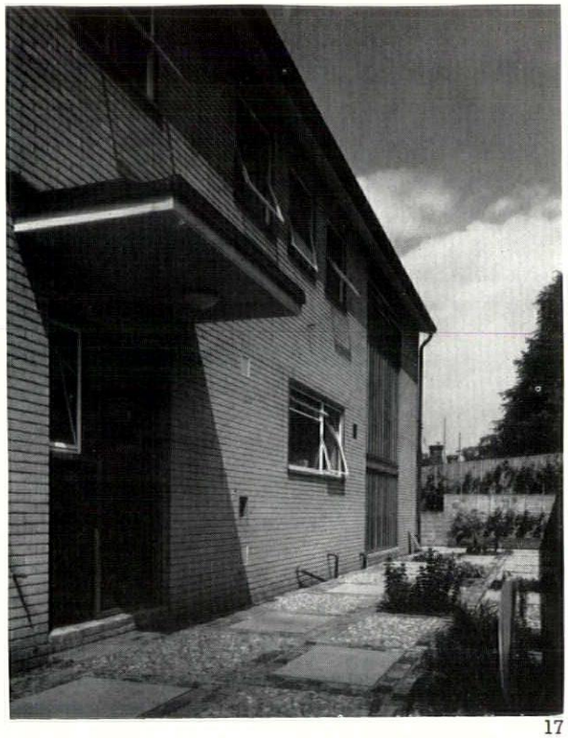


16

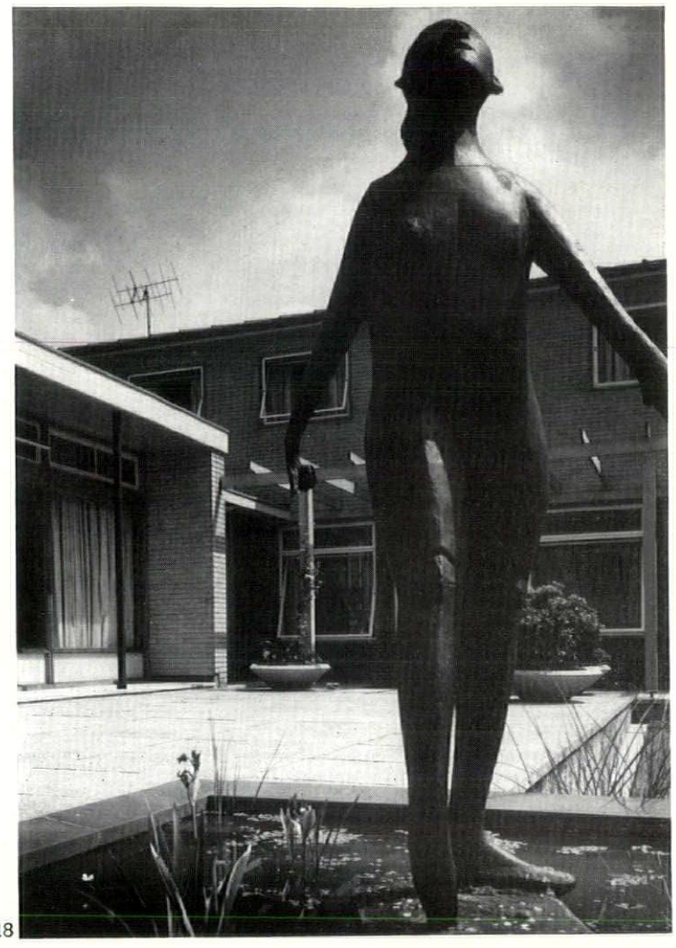
14 (opposite) the house from the garden side, living room and workshop wing on left.
15, looking down the main staircase to the sculpture by Zadkine.
16, the pergola outside the dining room window, looking toward the lower wing.

the living-room and workshop wing, to which they have direct access by an internal stair. The L-shaped main floor plan with a linking entrance-hall provides different outlooks from the living-room (which opens on to a terrace overlooking the garden) and the dining-room.

Construction is mainly cavity brickwork, with a reinforced concrete first floor and reinforced concrete mullions to the living-room and dining-room windows. A soft clay subsoil necessitated short bored piles for the foundations. The facing bricks, which have raked-out horizontal joints, are of yellow colour and were imported from Holland. Teak is used for the staircase, window-frames and pergola. Floors are either teak, oak or mahogany. Staircase handrails and brackets are stainless steel. The entrance hall is panelled in satinwood. Heating is from radiators served by an oil-fired boiler.



17



18

House in Hampstead



19

17, *the back entrance, with slatted stair-hall window.*
18, *statue by Marini in pool on living room terrace.*
19, *floor-scaping and planting of back entrance yard.*

EXHIBITIONS

PAINTING

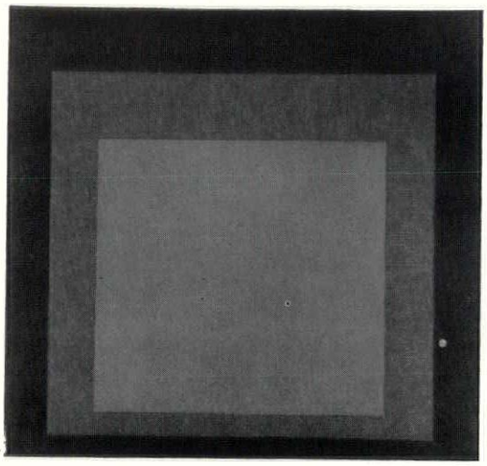
Gimpel fils recently organized an exhibition of paintings by Josef Albers, one of the great schoolmasters of the modern movement. A useful catalogue was issued for the occasion and included statements by the artist and tributes from Grohmann and Arp. Simon Nicholson's excruciatingly arty lay-out made every article and list look like the free verse of a long forgotten avant garde, but it may have been an example of 'absolute' typography, in which case it may also have been an act of homage, for Albers has been one of the VIPs of 'absolute' painting for over thirty years.

He studied at the Bauhaus in Weimer, became a Bauhaus master when it transferred to Dessau and since 1933 has been teaching in America, first at Black Mountain College and for the last eleven years at Yale. Grohmann says that his basic design class at Dessau was the one that had the most students and the greatest influence. In America his influence has been even more striking. He is one of the backroom boys who taught young Americans to value a clean, uncomplicated application of paint to canvas.

His paintings at Gimpel fils looked like very handsome charts for a course in paint application and colour interaction, but they arrived here too late to be a revelation to young English painters: the painters they might have helped have learnt how to do this kind of thing from some of the Americans who have already benefited, and who do it with rather more zip than Albers.

Albers teaches and practises an extreme purity and simplicity of means. He works on a prepared ground of the 'whitest white' and applies his colour directly from the tube, spreading it as thinly and evenly as possible. He applies only one coat of colour and there are no other additions. The cleanliness and brightness of the result seems to support his claim that 'such homogeneous thin and primary films will dry evenly to a healthy, durable paint surface of increasing luminosity.'

These healthy paint surfaces are also demonstrations of 'colour autonomy,' and the colour areas are governed by a basic design of concentric squares, 1, which is used so persistently that the rare deviation —in two pictures a couple of symmetrical right-angled let-ins break up a couple of squares, and in another, two squares are joined together by diagonal lines—looked



1

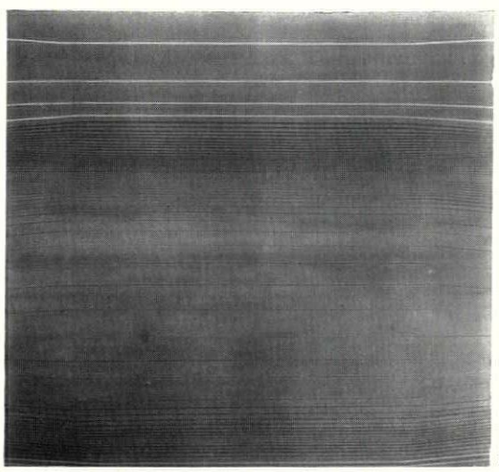
positively confused and hysterical, as if for one mad moment he were harbouring dreams of escape.

The ones in which he exploits variations of a single colour seem more active than the others, and in an all-yellow picture called 'Sounding' the huge stare of colour is suddenly larger than the picture. It takes one by surprise, like the unexpected opening of a furnace door. In one of his statements, he refers to 'the exciting discrepancy between physical fact and psychic effect of colour,' and his yellow painting communicated the excitement.

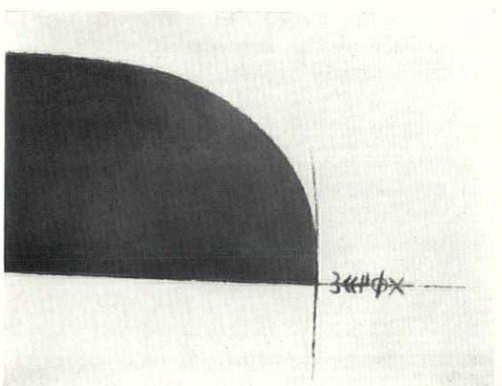
Like Albers, most of the painters in the English 'situation' group, which had the privilege of holding its second exhibition at the New London Gallery, are probably anxious to exploit this 'exciting discrepancy,' and if they've not yet managed to do so it's no doubt because they're concentrating for the moment on the problem of identity. Apart from Henry Mundy and Gillian Ayres, who were included in the show but are not part of the 'situation,' each of these painters seems to be concerned with establishing for himself a more or less repeatable basic design which the public will recognize as a unique characteristic of his work. This is understandable enough. It's a direct consequence of ICA investigations into the artist's 'situation' in modern society. They've accepted the notion that there's no fundamental difference between 'fine' and 'pop' art, have listened eagerly to talks about ergonomics, motivation research, build-up techniques and brand images, and are now engaged in styling their work for a prestige market. (Architects please note.)

The atmosphere of their first exhibition was somewhat different. For one thing the pictures were then somewhat larger, and Roger Coleman explained that the artists were adherents of a new conception of space in which the illusion of recession was replaced by an enlargement of the picture's actual dimensions to the point at which it temporarily constituted the spectator's total environment. They didn't manage to make these pictures interesting enough to persuade people that it would be a good thing to be enveloped by them, and now seem to have dropped Coleman as their 'front' man. The organization of their second show was put into the efficient hands of Lawrence Alloway, leading spirit of the ICA investigations mentioned above, and David Gibbs, European representative of the Jackson Pollock Foundation.

Each of the painters succeeded in inventing a distinctive basic design and a set of colour relations to go with it, and so, within the context of the exhibition managed to convey the impression that they had 'found themselves'—always a useful thing in an 'investment' market. The three works from the exhibition reproduced here—John Hoyland's design of bent grey lines on an all-over reddish brown, 2, Robert Law's large pale blue 'shape' and pea-green signs on white, 3,

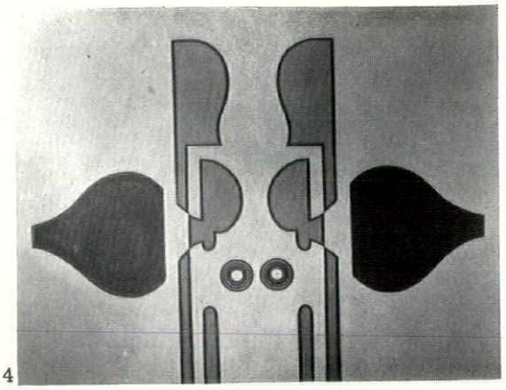


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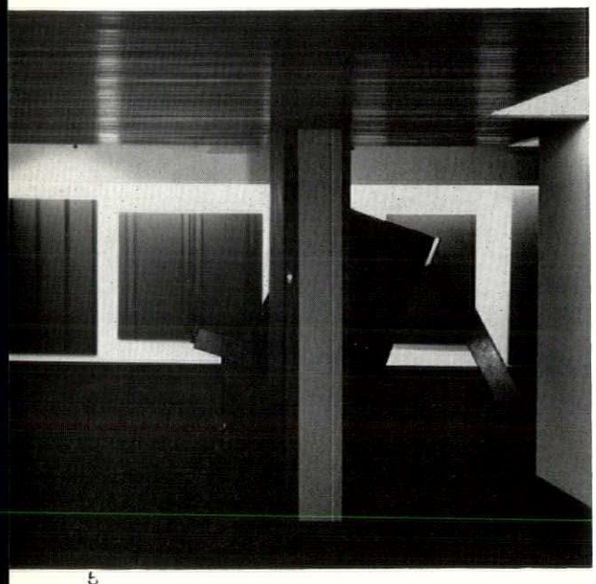


3

and Bernard Cohen's pale blue and moss green pieces arranged on a light green ground like a do-it-yourself *art nouveau* set, 4, have been picked at random, to indicate the success with which they avoid each other's territory. There was a noticeable rise in the general standard of paint application, and the show as a whole was very tasteful. But the exhibitors are operating



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5

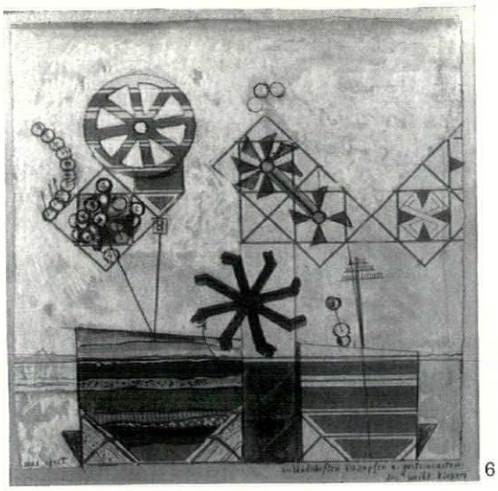
far below the level of compulsion and vitality at which a memorable image might be expected to occur.

A photograph of part of the New London Gallery is reproduced here, 5, because it affords a glimpse of the only piece of sculpture included in the 'situation' show. Part of it can be seen lurking behind the pillar; the rest of it extends into an alcove. The artist, Anthony Caro, has come to the conclusion that sculpture is too tangible, and this is probably why a more informative photograph is not available.

Caro, who carried off an important Paris prize with one of his bronzes of pot-bellied women, is now trying to apply to his new constructions the environmental concept which his fellow exhibitors have dropped. The example on view was constructed of large pieces of scrap girder and sheet iron and is really two objects linked by a metal lead. It is covered all over in brown gloss paint. In an interview printed in a new four-page *avant-garde* periodical called 'Gazette,' he says that he made it indoors in a restricted space so that he couldn't stand back and make compositional decisions. Since his 'decisions don't bear on the thing's all round appearance,' he doesn't want us to see it all at once. At the New London Gallery, one couldn't avoid seeing it all at once, although it wasn't right out in the open. The only way in which he might have prevented us from observing that the absence of compositional decisions had resulted in something wretchedly ugly and forlorn would have been to add two more trailers and put a bend in it so that one end of it could have disappeared into the private office. As it is, he seems to me to have started something that he can't finish. It's so dependent upon a setting in which it isn't properly visible and in which it might acquire scandal value, that it looked more pathetic in the gallery than a tortoise without its shell. It would have to be dumped in the middle of a small eighteenth-century drawing room before it could have a chance of becoming what he intends it to be—an irrational, overbearing confrontation.

In sharp contrast to Josef Albers, Max Ernst uses extremely impure and complicated technical devices to achieve again and again pictures which are pure magic. There was such a plethora of memorable images in his retrospective at the Tate Gallery that I can only try to say something about one of the many thematic threads that weave their way like serpents through the jungle of his haunted and haunting imagination.

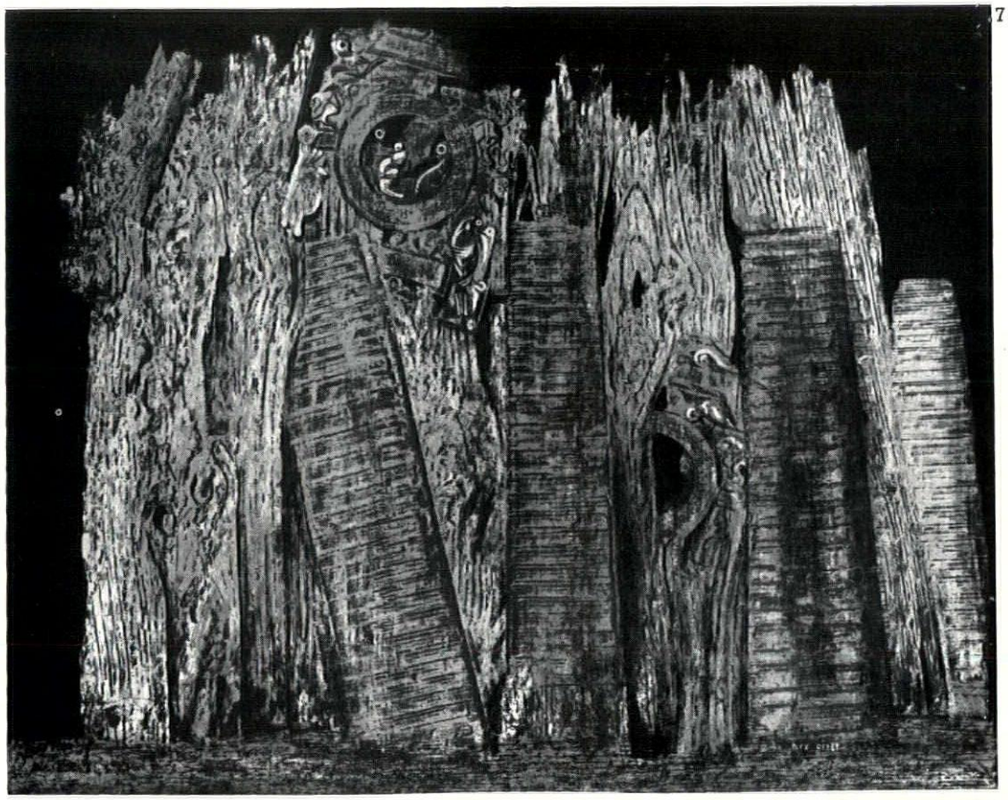
The one which I find the most haunting of all is the landscape theme, which he handles in a way so strange and perverse and yet compulsive that one of the many titles by which he deserves to be known is 'master of the landscape of sexual enticement.' It began to emerge at the start of his career, on pieces of wallpaper altered and transformed by gouache and pencil.



6

The title of the one reproduced, 'Glacial landscapes icicles and rocks like feminine bodies,' 6, provides identities for the signs to be found there, but does not refer to the signalling activity of the 'standing' signs which, once it has been noticed, gives one the peculiar impression that one's been observed by the picture and that it's giving one an ambiguous but somehow feminine welcome.

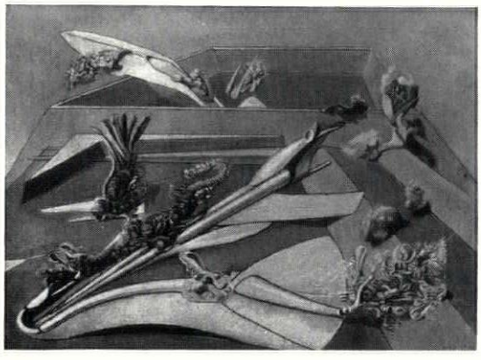
Perhaps the most important of his automatic procedures was 'frottage,' which was first used to take pencil rubbings from various textured surfaces. They led to a beautiful series of drawings, known as L'Histoire Naturelle, which might almost be described as meticulous studies of nature specimens collected in a land that doesn't exist. The subsequent application of the process to oil painting yielded some of his finest works, including a series of



7

forests, well represented in his retrospective, which are among the most poetic evocations of the terrors and enchantments of the forest in the history of painting. They derive, appropriately enough, from impressions of various wood grains, and the element of interpretation, considered as an end activity, is astonishingly small. The one called 'Vision provoked by the Nocturnal Aspect of the Porte St. Denis,' 7, comes fairly late in the series and the title is an indication of the visionary complexity which the theme gathers as it proceeds. Things in the exterior world begin to take on the appearance of his pictures and unfold a kind of myth: the narcissistic element in man demands the destruction of the object, and the object is reconstructed as an image of desire.

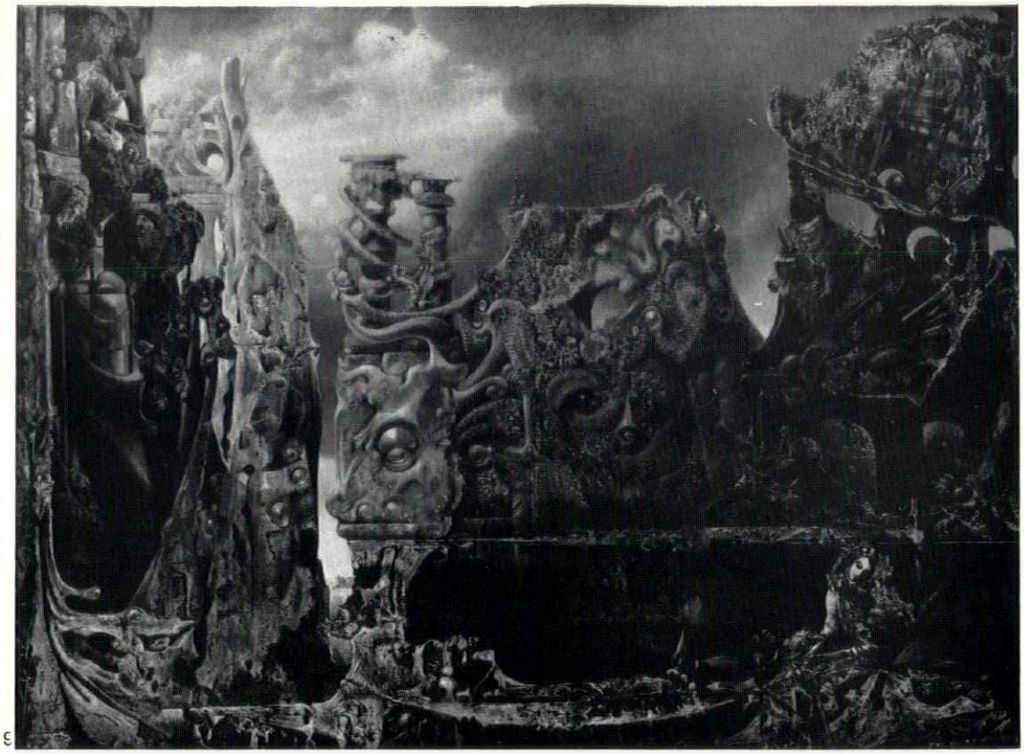
The painting called 'Garden Aeroplane Trap,' 8, one of the earliest examples of a series, is achieved by a mingling of



8

different approaches. In the autobiographical essay printed in the Arts Council's catalogue, Ernst describes the series as 'voracious gardens in turn devoured by a vegetation which springs from the debris of trapped aeroplanes.' But this is not a good description of the present picture. For one thing, the forms bear only a remote and suggestive resemblance to aeroplane parts, and it seems probable that they began to look more like fragments of aeroplanes in later works because they were influenced by the title given to earlier examples. I have the impression that the first picture in this series started as a free improvisation based on the curious coffin-like forms in early Chiricos and that this coffin form brought up associations with necrophilia which Ernst dealt with, so to speak, from a distance. The coarse plant form with a thick stem spread out like a letter 'V' is a substitute for a reclining figure and the intricate fuzzes of automatic texture like intestinal creeper are substitutes for scattered clothing, so that in relation to the image, the title carries the implication of sexual magnetism.

The 'Garden Aeroplane Trap' is a picture which has been subjected to interpretation at every step but in the picture entitled 'The Eye of Silence,' 9, the control



9

of automatic procedures has become so adept that it is impossible to attempt an estimate of the ratio of chance to choice. This picture is not made by the frottage process, but by the process known as decalcomania, discovered by the surrealist painter Oscar Dominguez, but only fully developed by Ernst. It gathers its title from the eye-like coloured stones set in the rocks, and the whole fearsome landscape is now almost literally watching us. It is a temptation, but there's no St. Anthony because the spectator replaces him.

Robert Melville

CREDIT

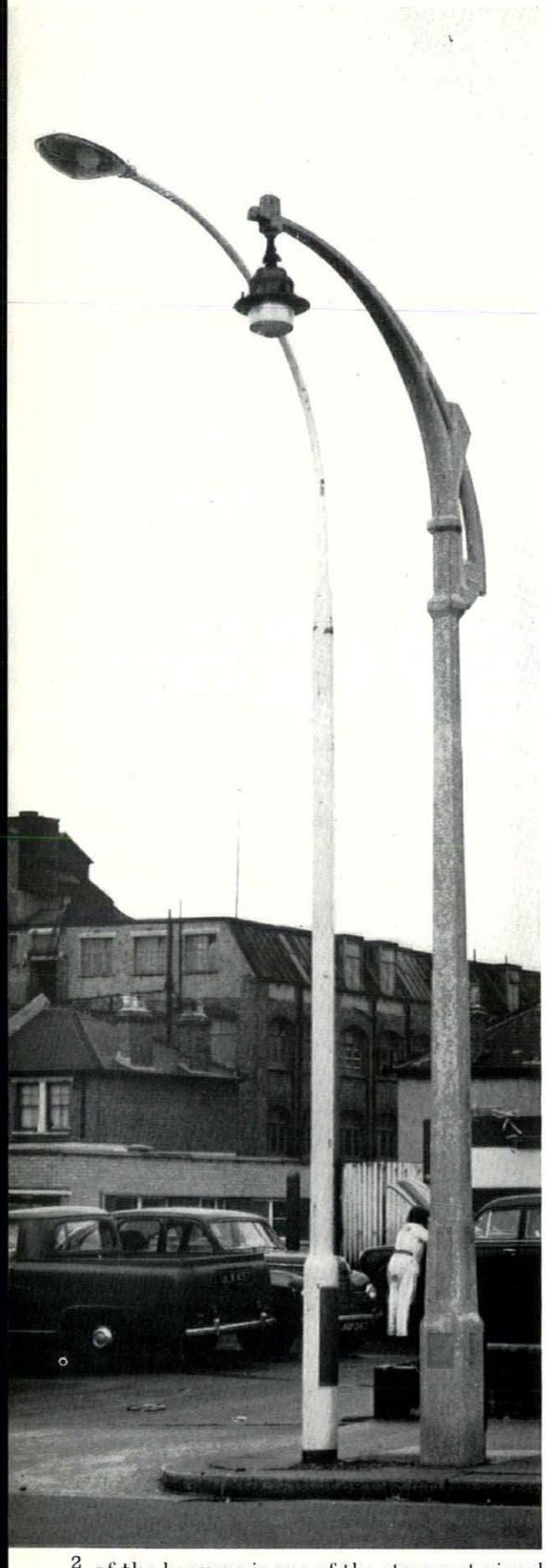
NEW LAMP-POSTS FOR OLD

When the REVIEW *publishes a picture of two lamp-posts side-by-side, it is usually to praise the old and damn the new, but at Wandsworth Bridge,* 1, *the situation is reversed,* and the Fulham Borough Engineer's Department is to be congratulated on a substitution that is welcome in itself, and as a symbolic gesture that shows that the inadequacy of the dying-swan type of lamp standard (a national eyesore ever since the war) is now beginning to be recognized.

But not only are the new standards an intrinsically better design, they are also here much more sympathetic to the *genius loci*. A sudden confrontation with the dome



1



2 of the heavens is one of the strongest visual impressions received on emerging on to such a bridge from a closely built-up area, a vertical and panoramic experience at the same time, and the slender new standards trace a lighter arabesque on the sky, 2, than does the gross, jazz-modern neck of the older type, while the thinner column fences out less of the horizontal panorama.

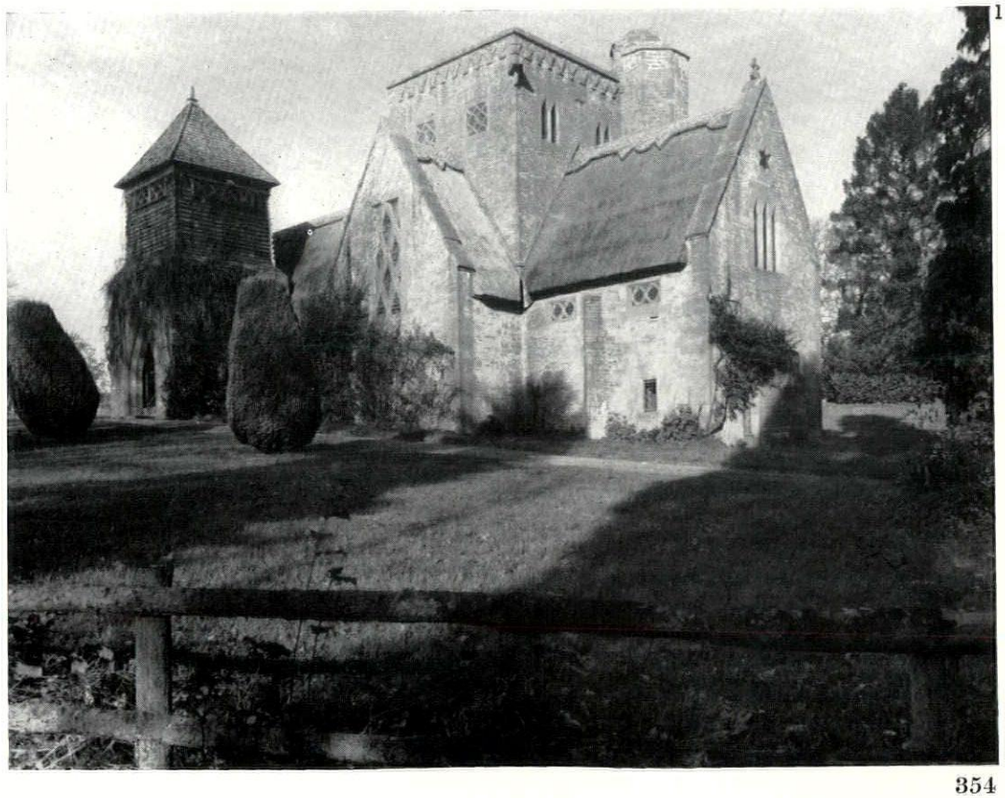
HISTORY

LETHABY'S LAST

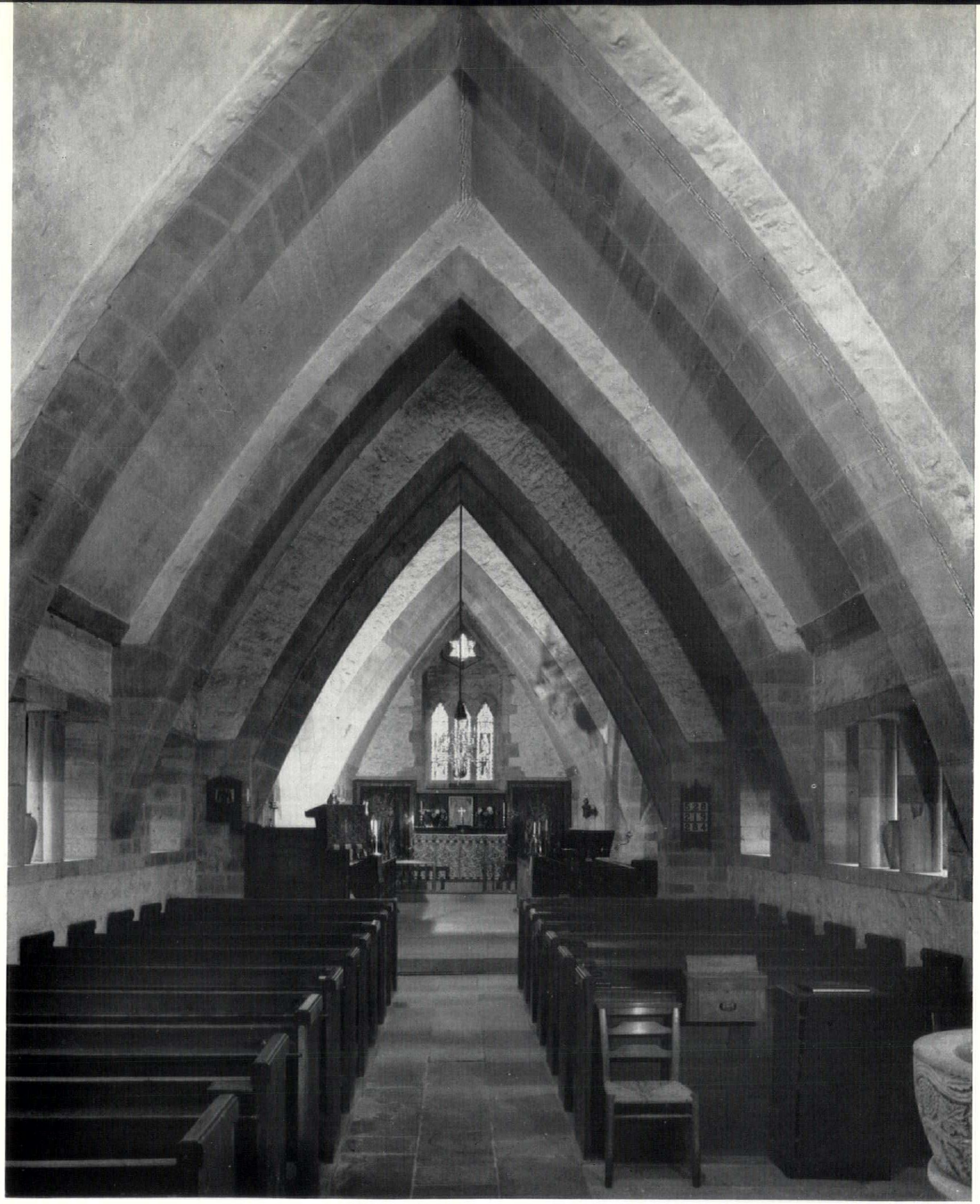
Lethaby needs no introduction. His development from the Arts and Crafts to the DIA, his principalship of the Central School of Arts and Crafts, his surveyorship of Westminster Abbey, his learned books on the Abbey and, earlier on St. Sophia are well-enough known. His *Form in Civilization* was reprinted only four years ago (1957). His definition of art as 'the well-doing of what needs doing,' dates from 1896. In 1907 he wrote to Sydney Cockerell that if he were to start again he would 'eschew taste and design and all that stuff, and learn engineering and hard building experience. Hardness, facts, experiments—that should be architecture, not taste.' And in 1912 he pleaded that 'a new science of building morphology was needed, a new type of classification by essential differences of structure,' and that 'great building types should be investigated as structural problems.' There are plenty more quotogenic sayings, for instance the wise and resigned 'Ye olde modernist style—we must have a style to copy.'

But with all that respect for Lethaby the teacher, his most impressive work of architecture has never been properly photographed or published. It was also his last. It is the church at Brockhampton in Herefordshire, designed in 1900 and completed in 1902. It was built on behalf of Alice Madeline Foster, of Brockhampton Court, wife of Arthur Foster, lord of the manor, in commemoration of her parents, Eben D. and Julia M. Jordan. Eben Dyer Jordan was the son of a farmer, opened a dry-goods store in Boston at the age of nineteen, sold 8,000 dollars-worth in the first year, 100,000 in the fifth. The firm, later called Jordan, Marsh and Co., has now the largest department-store in New England. Eben Jordan died in 1895. Madeline met Arthur Foster on a cruise. He came from a Halifax mill-owning family. The Jordans built them Brockhampton Court as a wedding present. He died about 1932. It is not known how she came to approach Lethaby.

Externally the general impression of Brockhampton church, 1, is that of a traditional Herefordshire church with a south-porch tower. The crossing tower in addition was not a usual motif, but there are crossing towers in Herefordshire, for instance at Bromyard. The stone is local, the thatching local too. Lethaby clearly wanted to be rough and rustic—see the weatherboarded tower, the rubble of the buttresses, the random top of the stair-turret and the chunky water-spout of the crossing tower. But while at first sight the tourist might accept the church as Gothic, the details are surprisingly original, especially the diaper-grid of the south transept window—did Lethaby know the one mediaeval precedent, the east window of Barsham in Suffolk?—the triangle-heads of the lights of the east window, the lozenge and ogee tracery of the windows of the crossing tower and so on. The only comparable church in Europe in these externals is Baudot's St. Jean-de-Montmartre, and



1



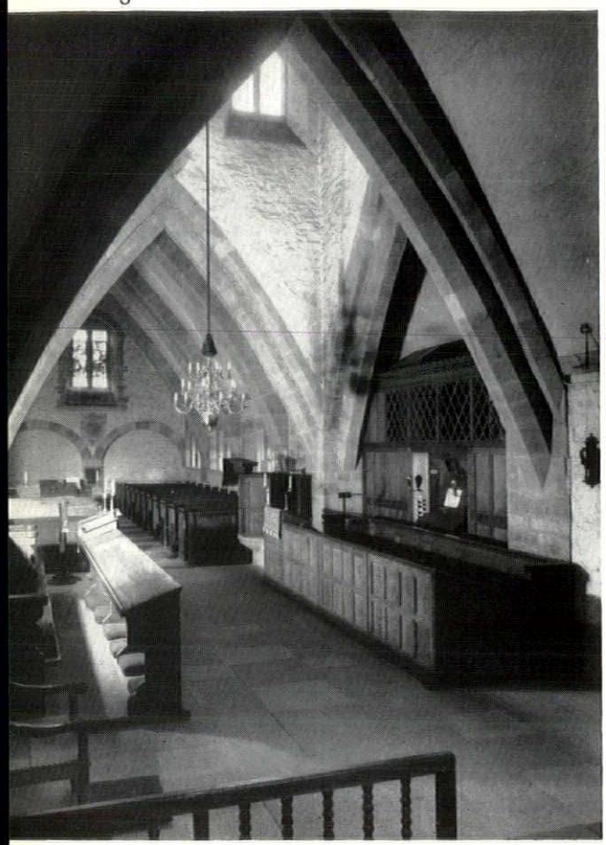
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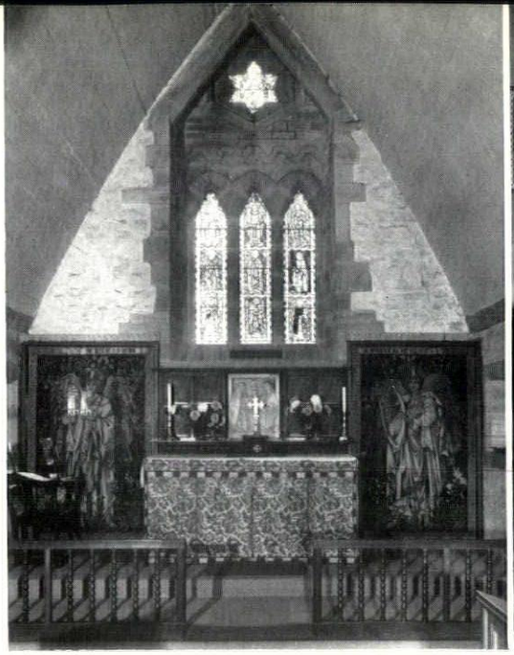
that was still under construction in 1900.

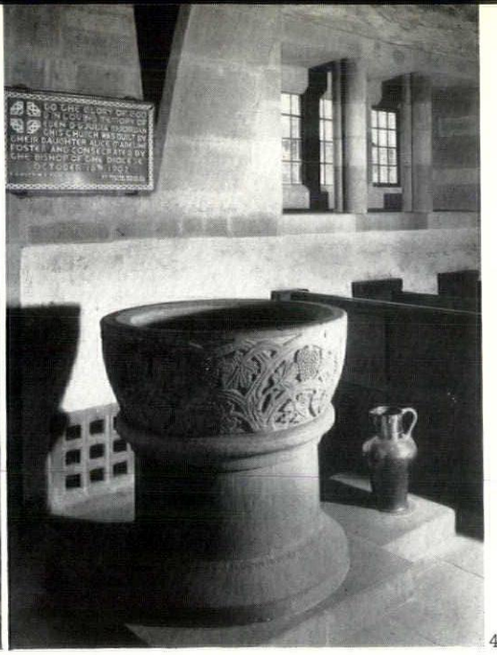
But the great impact is the interior, 2 and 3, with low walls, and steep, strong, closely-set, single chamfered arches rising straight out of the walls. The tunnel-vault they support Lethaby made of slabs of concrete.

Lethaby was articled to Alexander Lauder, of Barnstaple, and joined Norman Shaw in 1877, became his senior assistant, and stayed for twelve years. He left with the job to design Avon Tyrell in his pocket, a job offered to Shaw and by him passed on to Lethaby. Shaw was a generous man. He is supposed to have said: 'It is I who am

3

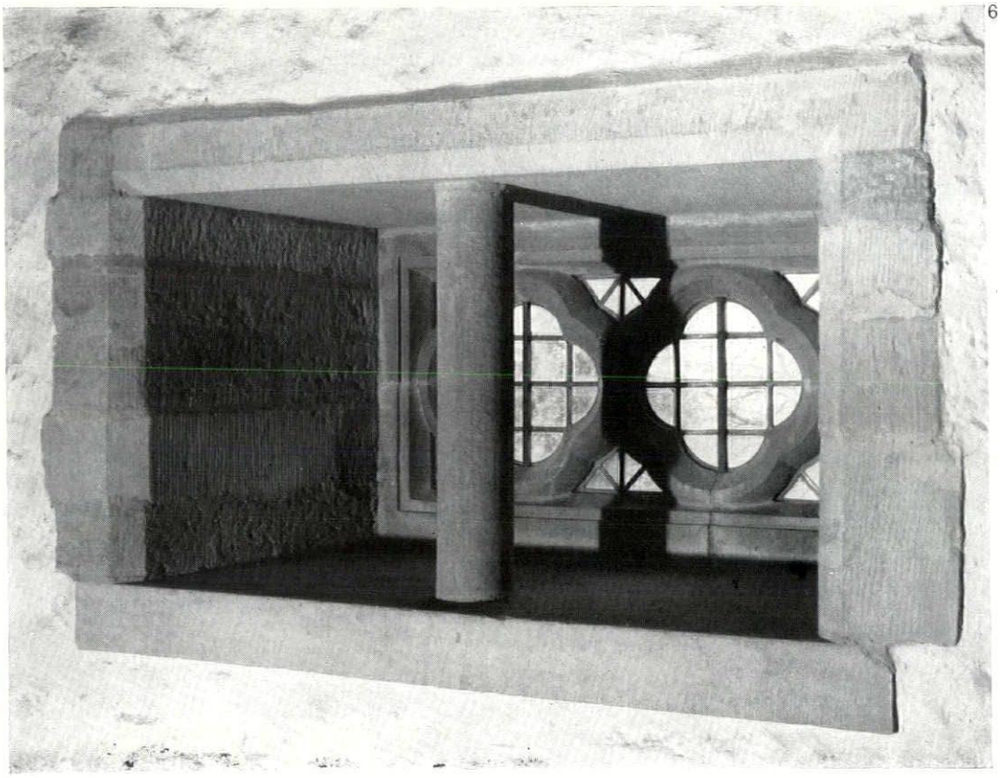






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6



Lethaby's pupil.' Lethaby was an inspired draughtsman, and he detailed such buildings of Shaw's as Dawpool and the church in Latimer Road. Shaw had been made aware of concrete by the commission which W. H. Lascelles gave him to design concrete houses on the Lascelles patent.

The Builder was rightly critical of the result. Shaw had given the slabs an appearance of tiling, i.e. missed 'the chance for doing something new with a new material and method' (*The Builder*, XXXVI, 1878, p. 909). Later, however, Shaw wrote to Lethaby: 'Reinforced concrete should do a lot for us' and Lethaby praised 'armoured concrete' at the end of his *Architecture*, the book which came out in the Home University Library in 1912. But the slabs in Brockhampton Church are not reinforced. Their use was probably suggested by the wish to have a safe and lasting ground-work for the thatched roof. So in this technological respect Baudot's all-concrete church scores over Lethaby's.

Lethaby worried a great deal over the building. He had decided to have it done by direct labour. Randall Wells was the clerk of works, the same who later worked on E. S. Prior's church at Roker, so patently inspired by Brockhampton, and in 1937–39 designed the entirely non-period church of St. Wilfred off Halton Hill, Leeds.

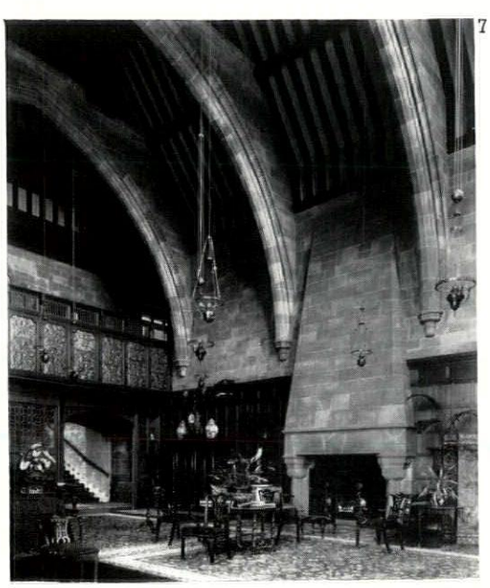
To the left and right of the altar, 4, are Morris tapestries. The two ample angels were designed for stained glass at Salisbury Cathedral between 1875 and 1880 and woven as tapestries various times

Right: Norman Shaw's church at Adcote, compared in this article with Lethaby's at Brockhampton (above.)

(e.g. Eton College Chapel). The font, 5, is in a free Byzantine style, familiar to Lethaby from his work at Constantinople. His book on St. Sophia came out in 1894. In the same year Bentley went in for the competition for Westminster Cathedral, and even before then Sydney Barnsley, Lethaby's friend, had built the church of Lower Kingswood in Surrey in the Byzantine style (with original Byzantine pieces inside). But the font is only a detail. Another notable detail is the double quatrefoil window, 6, with its absolute geometrical simplicity.

What might have inspired Lethaby to the mighty arches and their continuous mouldings, unbroken by capitals or abaci? The answer is not easy. The tunnel-vaulted secular buildings of Catalonia with their

7





8

transverse arches (Barcelona: Tinell and Atarazanas) and the strikingly similar monastic halls of Southern France (Senanque, Le Thoronet, Aiguebelle) he can hardly have known. The Hall in Norman Shaw's Adcote of 1879, 7, is a more likely source, though the arches are round, and one might also feel reminded of the crossing arches of Shaw's church at Leek of 1880, 8. But neither can have provided more than stimulus and encouragement. Essentially, for all *I* know, Brockhampton is original.

N. Pevsner

NOTE: *My thanks are due to John Brandon Jones, who knows more about Lethaby than anyone else, to Ronald Briggs, for information on the Morris angels, and to Mrs. Sarah W. Flannery, of the Boston Library, for information on Eben D. Jordan. The photographs, except the last two, were taken by Eric de Maré.*

PLANTS

WEEDS: 2, PERIPATETIC PLANTS

The landscape architect is naturally concerned with establishing the basic pattern of a planting scheme in terms of trees, imperishable shrubs, structural hedging, paved and grassed areas. He often fails to introduce the subsidiary but important unpredictable element which from month to month provides flashes of interest for New Town denizens, factory hands or institution inmates. (There are of course exceptions, viz. Powell and Moya's sensitive and imaginative planting at Swindon hospital).

This is a plea for introducing more peripatetic plants on new sites, plants which march of their own accord or set up majestic colonies by naturalizing. Mostly annual or biennial, anti the fixed plan, after the initial planting they resow themselves in situ or start to wander.

Forget-me-nots recur in my neglected garden in April-May, an annually forgotten element, producing a blue haze which underpins the white narcissi, pear blossom, quince, white sweetbriar. *Myositis palustris* (*syn. scorpioides*) grows like a weed, dies off, seeds, is pulled up and thrown on the compost heap. Borage, same family, performs a similar self-sown service later in the summer, as do opium poppies.



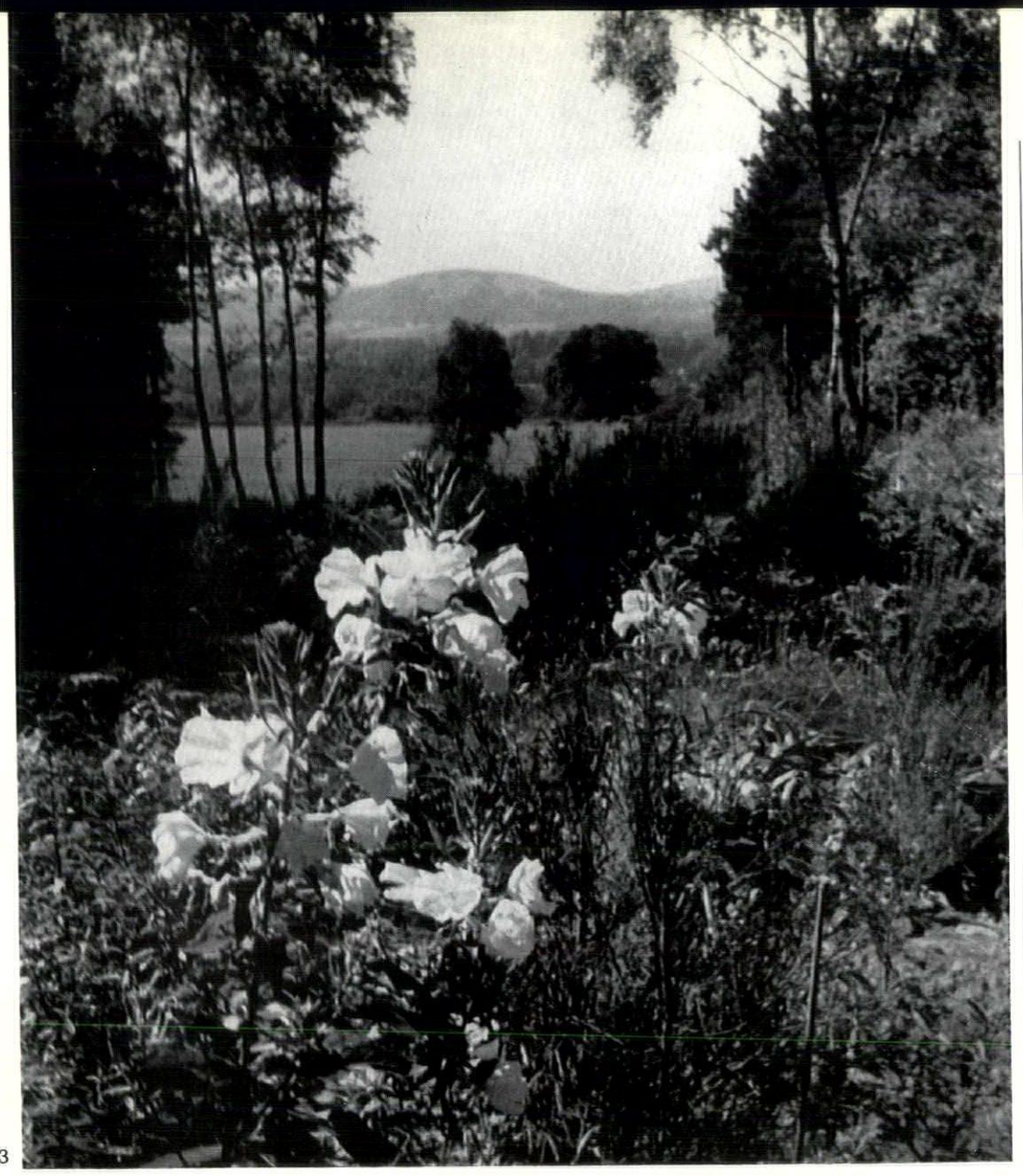
1

The itinerant weeds which architects might favour are those with stately form to offset the ordinariness of many shrubs when not in flower. Foxgloves for instance. Large-flowered strains of the common foxglove *Digitalis purpurea*, 1, have been developed, some of them white and yellow, though these do not necessarily reproduce white or yellow flowering seedlings. Often they revert to pink, red, spotted-throated purple. No matter. Foxgloves thrive in shade, seem to require a minimum of soil, sow themselves for instance in cracked paving. Flowers in June, July; the pointed-leaved tussocks start up in March. Plant or sow in groups to redeem the rhododendrons, or punctuate sad shrubs. Sutton has the seed.

I am strongly in favour of establishing self-perpetuating colonies of stately single hollyhocks, strains of *Althæa rosea*, 2. Thompson & Morgan, Ipswich, offer a wide variety of seed, though these don't necessarily re-seed themselves true to parent form. Specialists used to insist that they need a rich loam, potions of liquid manure and four-foot staking. This is because hollyhocks once were 'florists' flowers' and



2



3

subjects for careful propagation. Treated as monumental weeds they select odd spots like gravel paths, one forgets to stake them; some do, of course, lie down in storms. The crowns are susceptible to rotting from damp in winter. Their flower stems should not be severed too close to the soil after flowering. They are more or less perennial, but one gets better flower spikes from young plants. As they are prolific self-seeders the ageing plants can be rooted out. Part of their interest is the colour hazard. One year they may produce a range of strange coffee bistre tones, another may see white, lemon and rust red. Bees and bumbles are responsible for this cross fertilized colour variability. Self-seeded plants are, however, less liable to the bugbear rust.

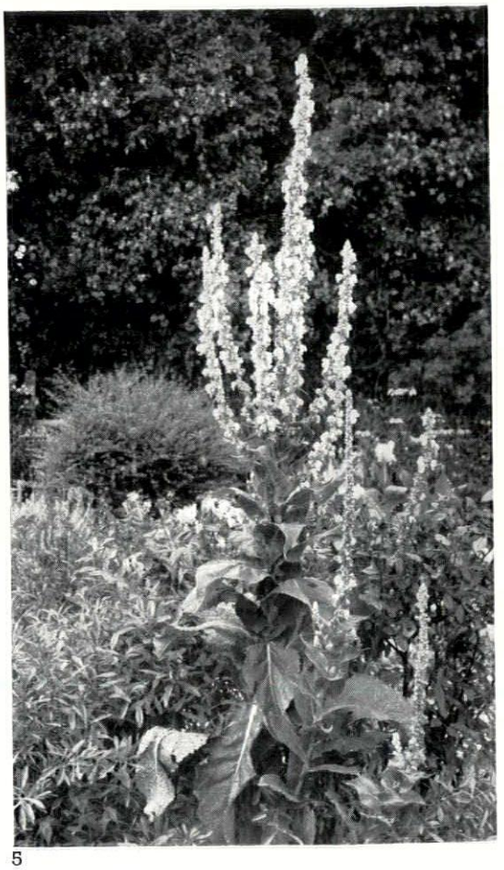
A more predictable infiltrator as far as colour goes is the evening primrose, biennial, with mostly yellow and some white prolific flowers. The tall kinds are free seeders, varieties of *Oenothera biennis* such as large-flowered *Lamarckiana*,3. These thrive in poor soil, even in pure sand, and grow to 5 and 6 feet. Flowers July and onwards. Drawbacks: need dead-heading and somewhat straggly form. This last is minimized if adequately grouped.

The best weed I boast at present is the mullein,4. The native forms are *Verbascum nigrum*, a relative 3-foot dwarf, and *V. thapsus* (Aaron's rod) common on the chalk like the related mallows. The rest of the enormous family spring from Europe, North Africa, Siberia, the Caucasus. Their names alone, *olympicum*, *pyramidatum*, *phœniceum*, *giganteum*, *bombyciferum* proclaim nobility of form. Some of these mainly biennial plants make a splendid rosette of sage, grey or silvery velvet leaves in winter, in late spring develop their magnificent pyramidal forms, in June, July produce branched spikes of sulphur yellow flowers, 5. They are ideal for siting among medium-sized shrubs. There are various sterile hybrids with off-beat rust, dust and apricot colours, one of whose parents is usually the variable purple mullein, *V. phœniceum*. These doubtful perennials need more careful cultivation and reproduction from 2-inch root cuttings taken in early spring or autumn. They also need staking. 'Cotswold Gem,' 'Cotswold Beauty,' 'Cotswold Queen' (3-foot), 'Gainsborough' (sulphur) and 'Pink Domino' (4-foot) all sterile, set no seed. But one should go for the fine strong free-seeding species like *V. olympicum*, *V. Chaixii*, *V. phlomoides* for self-perpetuation. V. 'Harkness Hybrid' and V. 'Miss Willmott,' one rich yellow, the other creamy white, are free-seeding biennials standing 5-foot high. *V. nigrum album* grows to 3 foot, has dark centres to its white flowers, perennial.

Patience Gray

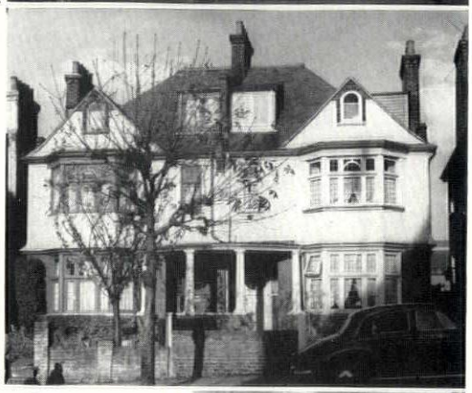


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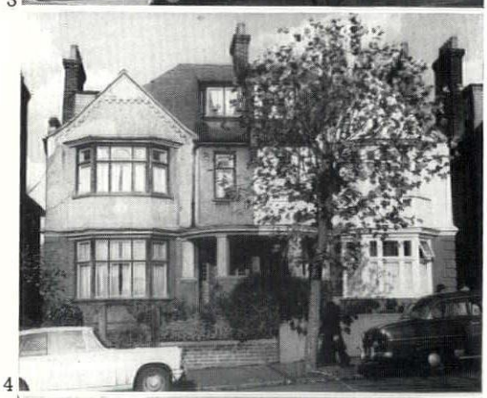


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TOWNSCAPE

VARIETY IN IDENTITY

The saving grace of spec-builder's housing is variety. Where there is none, spec-building becomes unbearable, whether of 1870 and Gothic, of 1930 and Voyseyish or of to-day—for the simple reason that uniformity must be well built and well detailed to satisfy. How easily the maximum of variety can be achieved without the slightest change of plan is demonstrated by the sequence of eleven adjoining pairs of houses in Golders Green Road, London, illustrated herewith.

With remarkable ingenuity they ring the changes on almost every wall-treatment and facing material—to say nothing of shape and style of window and gable—known to the domestic builder. 1, Brick below and rough-cast or stucco above. 2, the same, but gables introduced above the bay-windows. 3, a more high-waisted brick and rough-cast treatment, and back to the sloping roof. 4, gables again, but without the windows set into them. 5, all brick this time, except for rough-cast on the bays; no gables. 6, rough-cast in the centre too, and the gables—with windows—are back but in brick. 7, something quite new: barge-boarded gable, tile-hung; projecting half-timbered upper storey with corner columns; rough-cast below. 8, back to the bay-window, but with brick-striped walling either side; one gable plain stucco, the other half-timbered. 9, the most complicated of them all: a half-timbered upper storey again, but projecting on brackets at cill level with tile-hanging below, and a queer half-hip, half-gable. 10, more sober, with brick and tile-hanging and stuccoed timbered gables. 11, stucco all over, but the gable wall set back in shadow behind the barge-boards.

A second look at this bewildering variety of treatment is needed to reassure oneself that the basic design does in fact remain quite unchanged. And the desire to be different is no less today than it was when the houses were built, judging by the variety of colours that occur.

SKILL

INTERNAL FINISHES

The change in emphasis from heavy to light construction in the post-war years has brought with it a corresponding change in internal finishes. Some of these must be classed as 'new,' but most represent rather a modification of a traditional finish. In this article John Winter gathers the main variants together and discusses their technical background, their uses and effects.

Most structural materials are cold and liable to pick up dirt; most insulating materials are soft and easily damaged: so the inside face of a building needs protection. It needs a wearing surface.

The wearing surface must be able to cope with dirt as well as wear and tear; it must be either resistant to these (tiles, marble), or continually renewable (paint, wallpaper) and between these two extremes an increasing number of materials are on the market.

Plaster

Plaster is the traditional and still the most common wall finish; its great advantages are its low cost (approximately 6s. per yard applied) and the ease with which it can be patched when damaged or when new service runs are cut. But its disadvantages are the tendency to crack and the slow drying out time, which means that finishes such as paint and wallpaper should not be applied for six months and new houses are invariably damp and humid. In an effort to overcome these disadvantages the 'Dry Lining' technique is being increasingly employed in this country. It has been successfully used for fifty years in the United States where the warping of wood studs presents serious cracking problems with plaster. The dry lining has a cavity behind, which increases the U value of the wall and may be filled with insulation; further, it acts as a low capacity lining which is an advantage in intermittently heated rooms. Dry lined walls are ready for decorating almost immediately: wallpaper, plastic sheeting, paint, tiles, any of the finishes associated with traditional plastering can also be applied to plasterboard. It is not so good for distemper as the shiny plaster joints contrast with the paper-face of the plasterboard. Feather-edged cover strips of the same paper as that covering the plasterboard have been used but this has not proved too successful, so lining paper should preferably be used. If the surface of the plasterboard is sealed before papering it can readily be stripped for redecoration.

There are various methods of fixing.

1. BRS method. The plasterboard is stuck to the wall with ribbons of plaster applied to the back of the plasterboard, 3. The BRS have also evolved special pouches which enable the joints between boards to be neatly filled by relatively unskilled workmen.

2. Plaster dot system, 1. Pieces of millboard 3 in. by 2 in. are stuck to the wall with plaster, eight pieces to a 3 ft. by 8 ft. area corresponding in position to the corners and halfway along the sides of the sheet of plasterboard to be fixed to the wall. The faces of the millboard dots are brought to a true plane. (They thus perform the function of a floating coat in normal plasterwork.) When these have set, plaster dabs are applied to the wall between the dots and the sheet of plasterboard pressed home and nailed through the dots. Round-edged plasterboard is used with $\frac{1}{4}$ in. joints filled with plaster and smoothed off. The overall thickness is $\frac{5}{8}$ in.

3. Plasterboard screed system. Similar to 2 above but 3 in. wide plasterboard strips are stuck to the wall as screeds; they are levelled and the plasterboard sheet is nailed to the wall through the screeds. Overall thickness is $1\frac{1}{8}$ in.

4. Timber batten system. Where the wall is damp, liable to efflorescence, or has been previously decorated, pressure impregnated timber battens can be nailed direct to the wall and plasterboard nailed to the battens.

5. Direct nailing system. Where the wall is of blocks which permit direct nailing, plasterboard can be nailed direct to a fair face wall.

Dry lining does not have a high reputation among architects, possibly because its widest application is by speculative builders who often apply richly textured surfaces to hide bad jointing. If the system is considered on its own merits and not as a substitute for wet plastering, it should be possible to produce very neat details, eliminating architraves and cover strips, etc., 2. The cost varies between 7s. and 9s. 6d. per yard depending on the system employed. This is considerably more than traditional wet plastering.

Tiles

Ceramic tiles are a traditional finish in rooms where an impervious finish is required. It is claimed that modern methods of manufacture reduce the risk of crazing which has been a common cause of failure in old tiles. The present tendency is towards fixing tiles with adhesive and this should lead to a more even surface. The bituminous nature of the adhesive gives a further waterproof layer which is an advantage so long as the backing is absolutely dry before application; when the adhesive is dry the joints are grouted with cement in the same way as tiles on a cement sand bedding. No grouting has yet been evolved to go with the bituminous adhesive; this would seem a likely next step in development as cracking at the joint is a frequent cause of failure in tiling. In order to minimize cracking at the joint due to slight movement of the tile or its backing, the joints should not be less than $\frac{1}{16}$ in. wide. Spacer lug tiles are now available which have $\frac{1}{32}$ in. lugs which automatically produce even joints. The lugs are made so thin that they crush under pressure of movement so that the joint takes the movement and not the tile.

Plastic

There is a wide range of patent plastic wall finishes but all have certain features in common. They are impervious to water and so cannot be applied to a backing which still has to dry out. If, for example, a new concrete wall was sprayed on both sides with plastic, it would cause the coating to blister, but the vapourproof nature is an advantage where insulation is faced with plastic, as most insulation materials are only efficient when dry. A disadvantage with plastic finishes is that they collect static charges when rubbed and this means that they attract dust. This problem is worse with the denser plastics, but the manufacturers of some flecked sprays claim that the last layer of flecks disperse the charge, otherwise anti-static wax may have to be used periodically.

The main alternatives under this head are as follows:

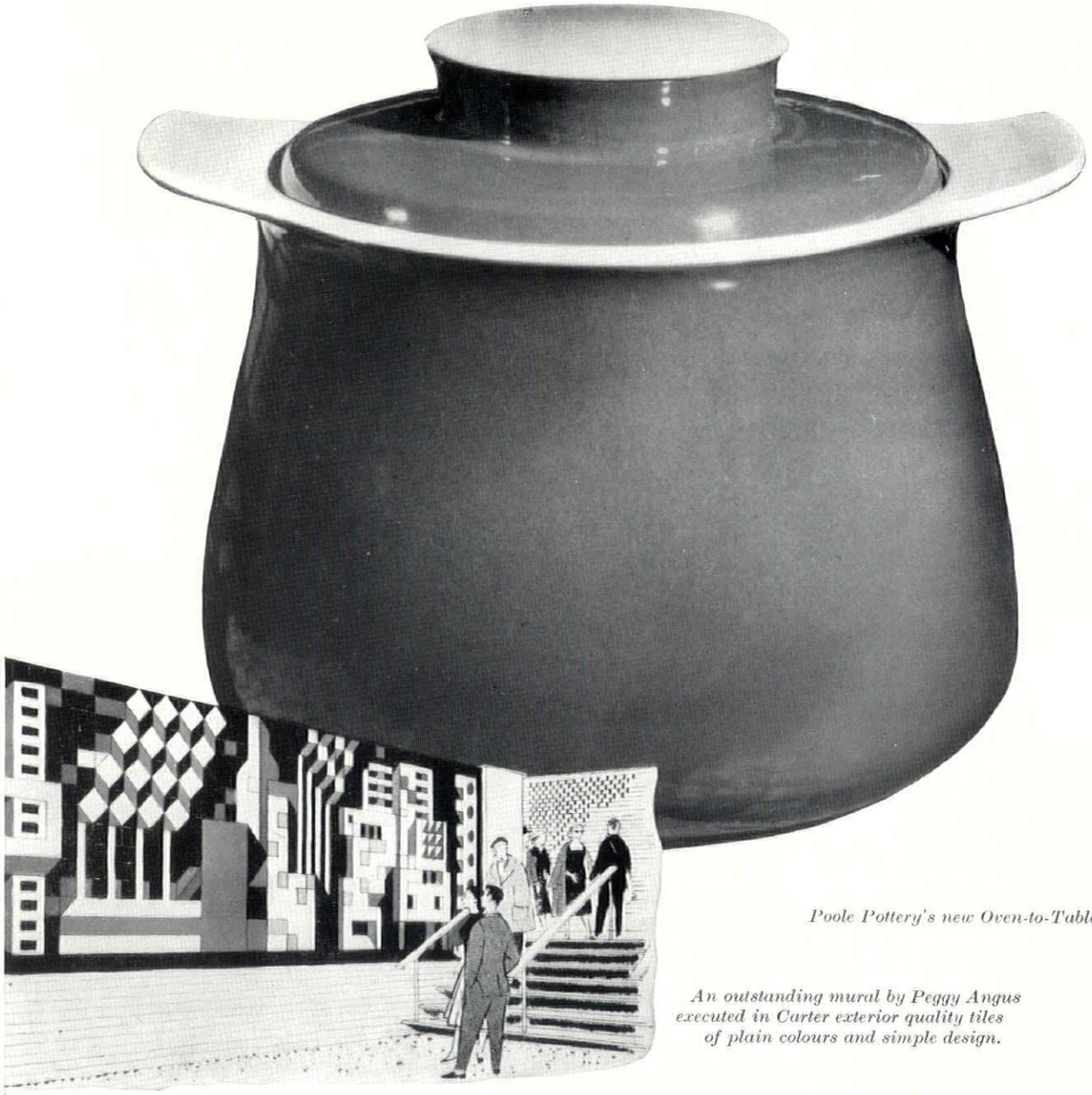
1. Plastics sheets. Apart from plastic laminates which can be glued on site, numerous other materials can be supplied with a plastic face. Plasterboard and plasterboard partitions are available with p.v.c. facing, but for economical production the p.v.c. does not return round the edges of the board so that cover strips are needed. These produce re-entrant corners which catch dirt and, since the p.v.c. facing was probably chosen to provide a clean surface, the original object is defeated. A more expensive plasterboard is made with the p.v.c. returning round the edges allowing flush or recessed joints. By this means door jambs, etc., can be neatly detailed without architraves.

Plastic is also manufactured in rolls which can be applied in the same way as butt jointed wallpaper and some brands are sold with adhesive on the back ready for application. Its use is widespread in the United States where vinyl coverings have for some time been used in institutions and service areas where durability is important; and these are now being

[continued on page 362

Craftsmanship in Clay

Deeply glazed, rich in colour and design, durable Poole Pottery oven-to-tableware is able to withstand extremes of temperature through long, practical service . . . competitively priced too . . . qualities which also characterize Carter Tiles, giving them their outstanding position in architecture of distinction.



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continued from page 360]

styled for the 'House Beautiful' market. Designs may simulate wood, leather, marble, etc. Most are unsympathetic, but the possibilities are unlimited. Vinyl wall coverings have been available in this country for some years and have largely replaced Rexine, a nitro-cellulose material. Vinyl coverings are made from a woven cotton fabric with a compound of vinyl resin, pigment and a plasticizer electronically fused to one side of the fabric. Heavy textures should be avoided as they require constant washing. Most stains can be wiped off but asphalt, iodine, lipstick, mustard and ballpoint ink may give trouble. Vinyl is affected by alkali, so new lime plaster cannot be covered. A paper backed vinyl is also produced and can be obtained factory bonded to hardboard: it can then be applied to walls and ceilings as panels, but its properties are similar to the cotton back vinyl.

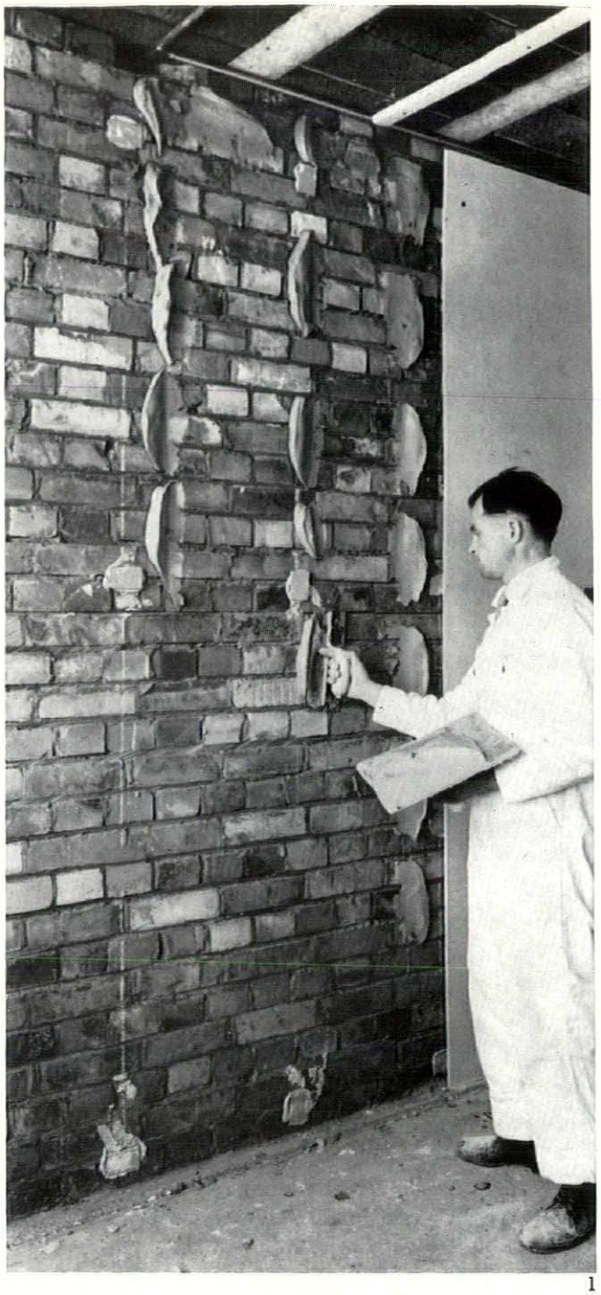
2. Plastic tiles. Vinyl asbestos wall tiles are made which can be glued to any smooth surface such as plaster or plywood and, because of their accurate manufacture and ability to deform slightly under pressure caused by movement, they do not have to have their joints filled. If joints are required for decorative reasons, the tiles can be fixed with open joints to be filled with a white cellulose based filling material. These tiles can stand a certain amount of water but are not completely waterproof and, unlike most other plastic finishes, would not be suitable for a shower cubicle. Vinyl asbestos tiles are available in different qualities, in sizes of 6 in. by 6 in., 4½ in. by 4½ in., and 12 in. by 6 in., and in plain colours, flecked or marbled. The application of these tiles requires little skill and is largely aimed at the 'Do it yourself' market. They can be bent when warmed for fixing to curved surfaces.

3. Plastic spray. A jointless waterproof finish can be sprayed on to most building materials in the form of a p.v.c. film about 30/1,000 in. thick, 4, 5, 6. This is a development of the 'moth balling' technique for preserving equipment at the end of the war which was developed for use in atomic energy plants where building surfaces and equipment are sprayed with film. This permits decontamination of radioactivity by stripping the film. Where hygiene is of a great importance p.v.c. sprayed film would seem to be the ideal material. It covers cracks and joints in the backing; it is flexible so does not crack even if the backing moves, and it slightly rounds corners so there are no places for dust or bacteria. Repairs can be made by spraying a piece of hardboard, by peeling the film off and cutting it to form a patch and letting this patch into the original surface. P.v.c. spray may also be used for tanking basements.

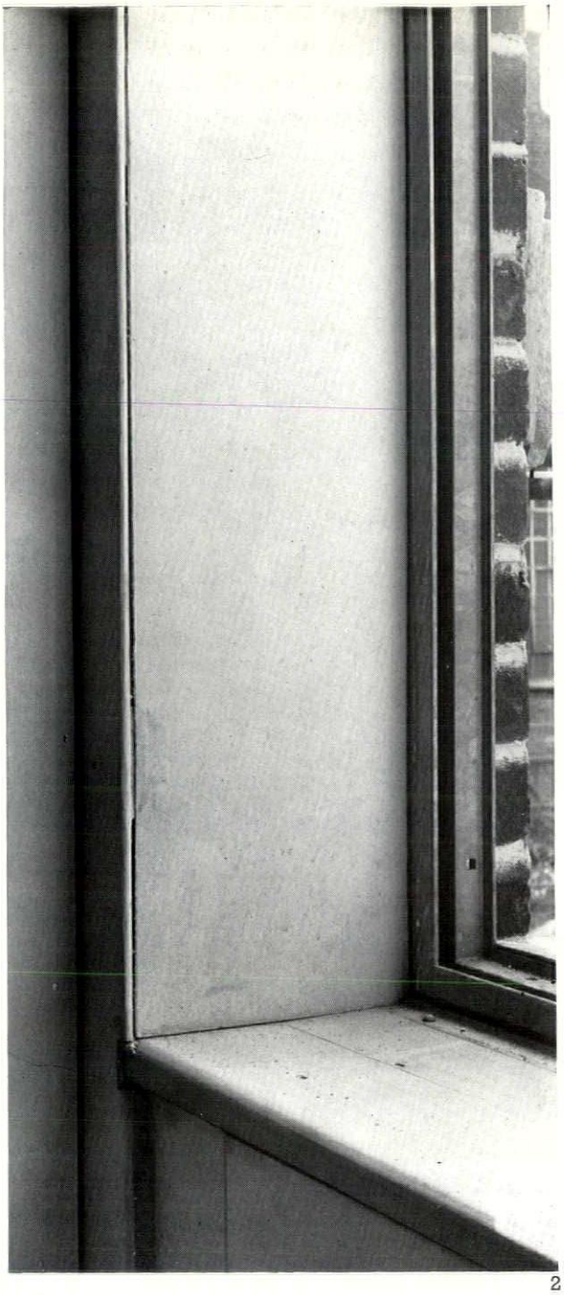
Plywood

WBP (weather and boilproof) plywood is suitable for most internal uses but, although the glues do not deteriorate under wet conditions, the wood may still be subject to the normal forms of timber decay. Therefore in places where the plywood is likely to be wetted fairly often as in bathrooms, it should be lacquered or, alternatively, a brand should be chosen in which each laminate is impregnated and bonded with a waterproof glue. Plywood can be faced with most sheet materials plastic, aluminium, stainless steel, galvanized steel, etc. This means that thin sheets of materials such as bronze

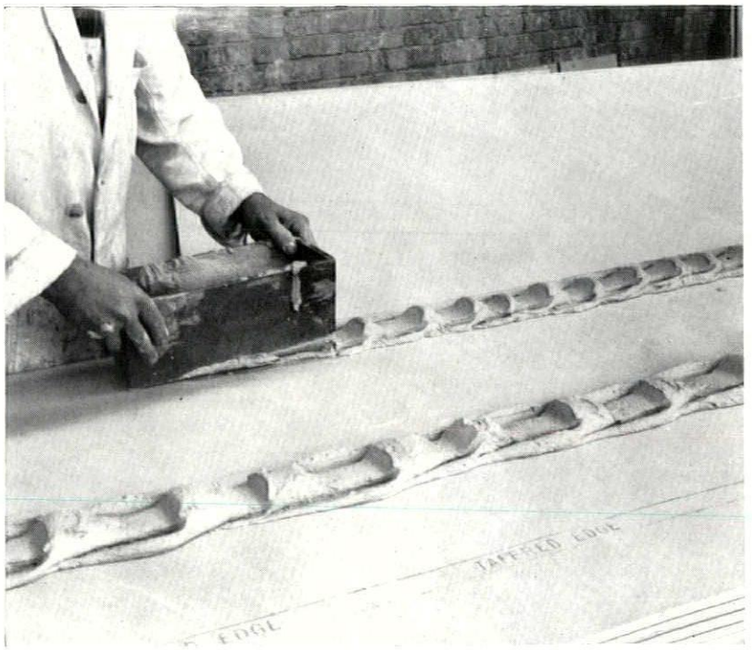
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1, *dry lining using the plaster dot system. The 'dots' are the small rectangular light coloured patches: the larger dabs which the workman is putting on are for securing the plasterboard.*

2, *detail of dry lining at window reveal.*

3, *the BRS method of dry lining, showing the use of a 'spreading box' for applying plaster ribbons to the back of the plasterboard. This photograph from BRS Digest No. 9 (second series) is published by permission of the Controller of HM Stationery Office.*

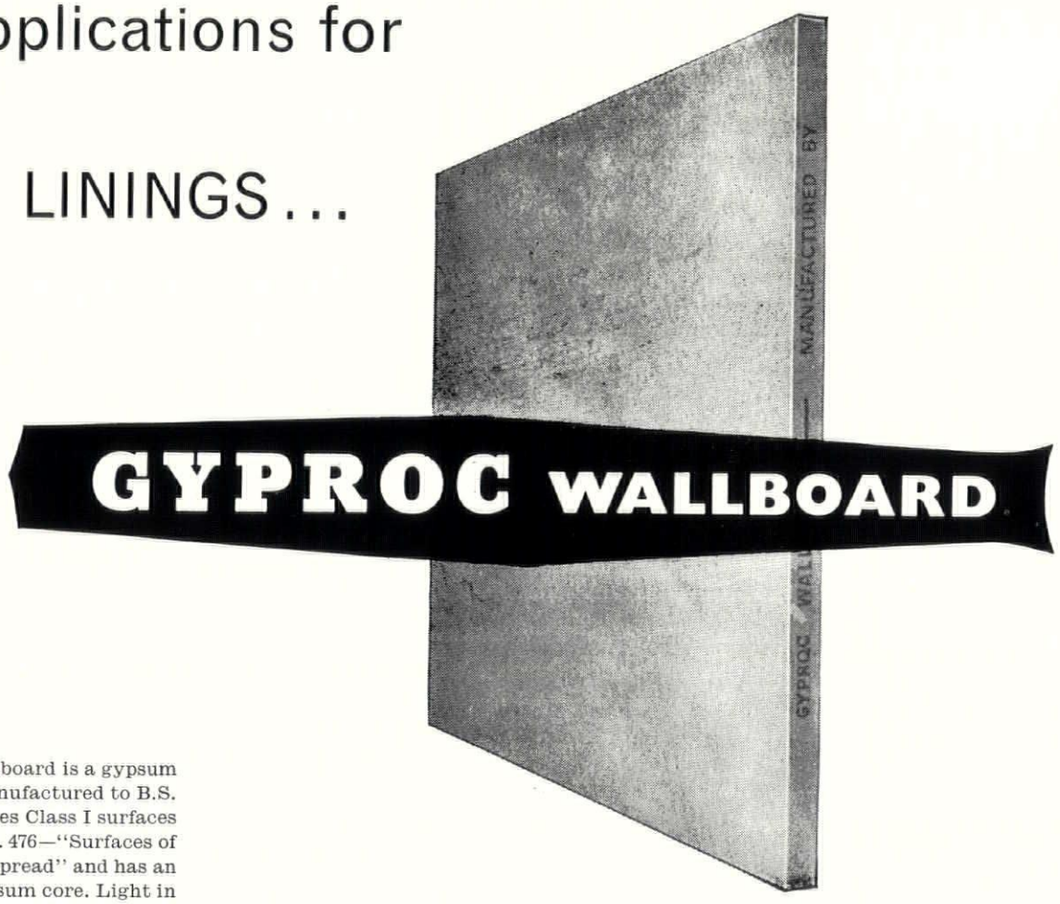
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continued from page 362]

or stainless steel, which are too expensive to use as solid panels, can be held rigid by the plywood backing to which they are bonded. Because differentials in moisture or thermal movement make composite sheets bend, it is good practice to face the plywood on both sides with the same material or cheaper material with similar properties. For example, if a sheet of plywood is faced with melamine, it should be backed with a cheap industrial plastic laminate.

Cement Glaze

Cement glaze is an alternative finish to tiling and initial cost is cheaper except on very small contracts. It consists of two brushed coats of white cement mixed with a patent hardener. A stipple coat is added in the same material; then two coats of cellulose are applied by spray. These are usually mottled to cover the rough stippled surface. This process is not as permanent as tiles, but the original (1934) application of this type of finish in the basement of the RIBA building is still serviceable. To-day a similar stipple cement glaze finish costs from 9s. per sq. yd. A smooth cement glaze finish is twice as expensive but gives a perfectly smooth finish.

Lacquers

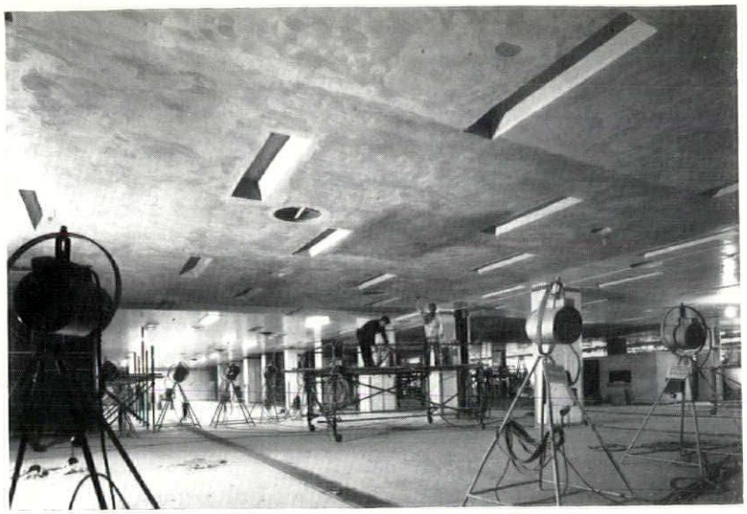
Plywood and timber internal finishes collect dirt and absorb moisture, but synthetic lacquers are now available to seal them. Urea-formaldehyde base lacquers give a waterproof finish of sufficient quality to be used for laboratory benches; the base and catalyst are mixed on site and have a pot life of about 20 hours. It is applied in three coats to give a gloss or satin finish at a price comparable with paint. Urea-formaldehyde lacquers break down under ultra-violet light. For this reason polyurethene based lacquers should be used in sunny positions and clear epoxy lacquers where there is risk of damage from alkalis. A disadvantage of synthetic lacquers is that, if left too long without redecorating, they craze and then have to be stripped before the application of a new coat.

Paint

The technology of paint is becoming increasingly complex and, if an unusual problem crops up, the architect must seek advice from the manufacturers. However, two new materials have recently arrived on the British market.

1. Multicolour. In the United States 'Zolotone' is a household word for a patent process of spraying paint so that a thick flecked coat is applied. Its chemical make up is not published but it presumably keeps the different coloured flecks from intermingling by including paints of different bases in the same spray. Since it is relatively thick it is often used to cover poorly made joinery and its spotty effect is usually brash; but its durability is undeniable. It is now made under licence in this country by a number of firms. These paints are similar in appearance to other flecked paints, but in these others the flecks are added to a dry background colour.

2. Tylex, a Tretol product, applied in three coats is a hard high gloss paint with a mixed synthetic base which can be applied direct to brick, concrete, plaster, etc. It is alkali resisting and is therefore not affected by lime in plaster or brickwork. Its finish is much harder than ordinary gloss paints so it soils less easily and the gloss survives frequent washing.



4

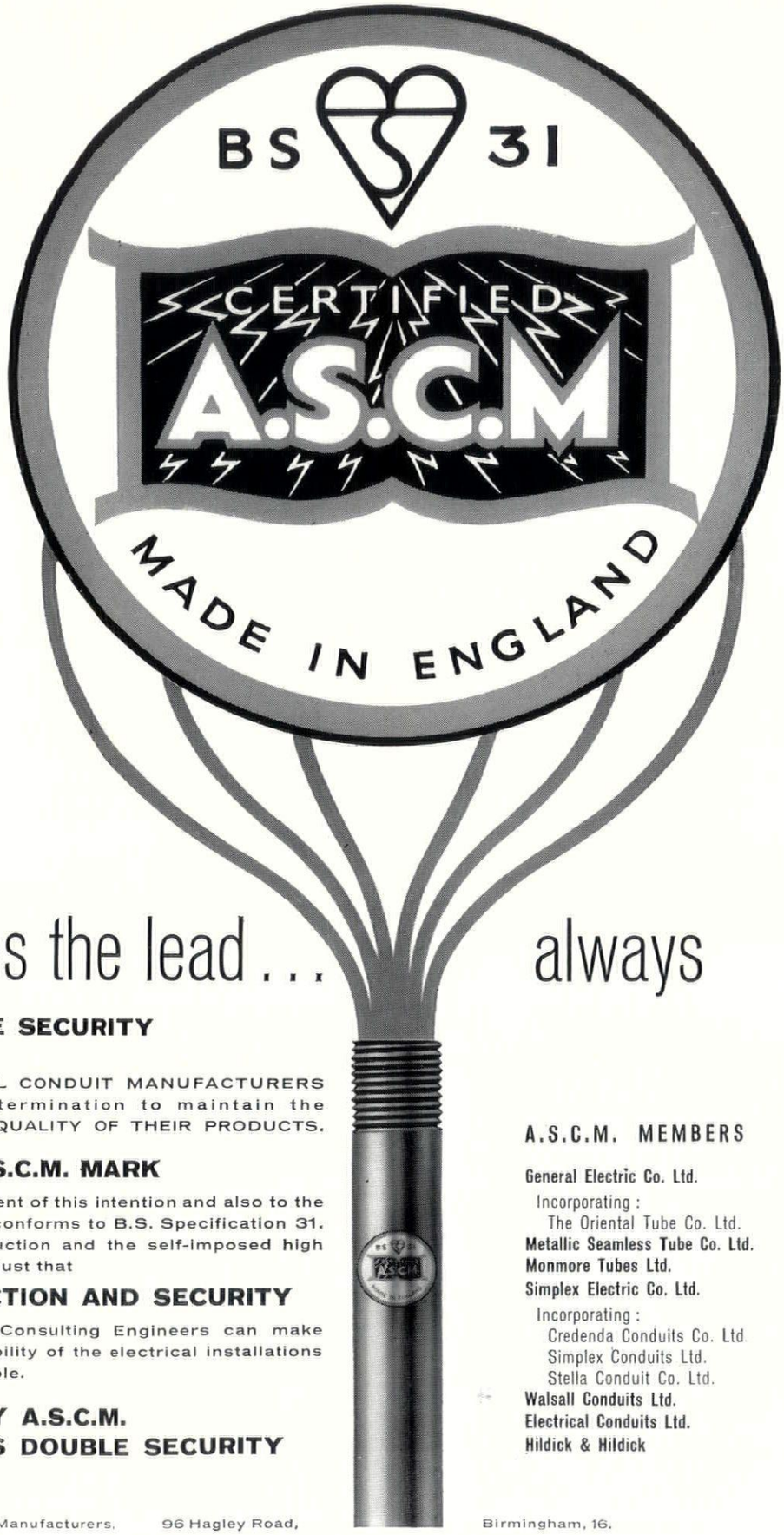
4, drying out a vermiculite plaster ceiling preparatory to applying a p.v.c. spray in the Heinz Factory at Wigan (architects, J. Douglass Mathews and Partners).
5, removing the masking at windows after applying the p.v.c. spray to the ceiling shown in 4. 6, the finished ceiling.



5



6



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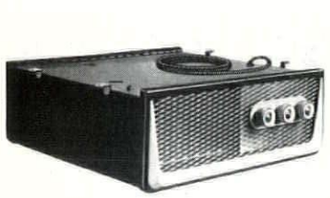
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THE INDUSTRY

Electric fan heater

The 'Tabulair,' 1, is a new electric fan room heater. It is thermostatically controlled, has low temperature heating elements and close mesh guards to protect all openings. This particular model, which has been much used in hotels, is for fitting to a piece of furniture such as a low table. It has four fixing lugs for screw fixing to the underside of the table. The unit has a two-heat control (1 kw and 2 kw) and a two-speed fan. The heater complies with BS 1670 : 1956. Retail price, including purchase tax, is £16 12s. 6d.
Tabulair Division, The Spiral Tube and Components Company Limited, Osmaston Park Road, Derby.



1

Pliable flue lining

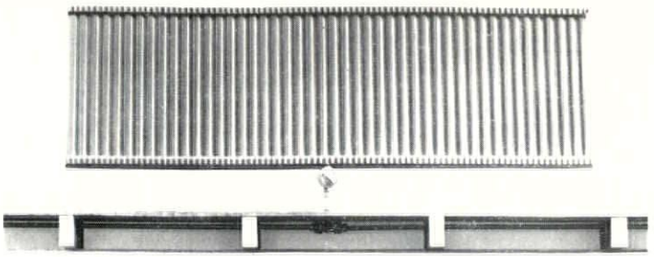
The lead lined pliable flue lining tube, 2, has the obvious advantage of being able to be inserted into an existing chimney stack with a minimum disturbance. Procedure for installation is to remove the terminal from the chimney and, if necessary, open the flue at the appliance position. A wooden plug (shown in the illustration) is inserted into one end of the lining tube to avoid excessive disturbance of soot, and a light rope attached. The rope is passed down the flue and the tube gently drawn downwards from below. At the same time it should be fed into the flue from above without the use of force. The tube is anchored by means of a clamp at the top and the gap which remains between tube and brickwork at each end sealed by means of plates before the terminal is replaced. The tube has been approved for flue lining by the Gas Council. To give an idea of cost, a 25 ft. long flue could be lined with a 5 in. diameter tube for around £35. Coils of up to 100 ft. are available in 3 in., 3½ in., 4 in., 5 in., 6 in., and 7½ in. diameters. Bending radius = 2½ times the diameter of the tube (taken at the centre line of the tube). Clamps and sealing plates, suitable for the whole range of Kopex flue lining tubes, are available in sizes to fit flues 12 in. by 12 in., 15 in. by 15 in., or 18 in. by 18 in. The wooden plugs are supplied with an axial hole for ease of attaching a rope.
Uni-Tubes Limited, 197, Knightsbridge, S.W.7.

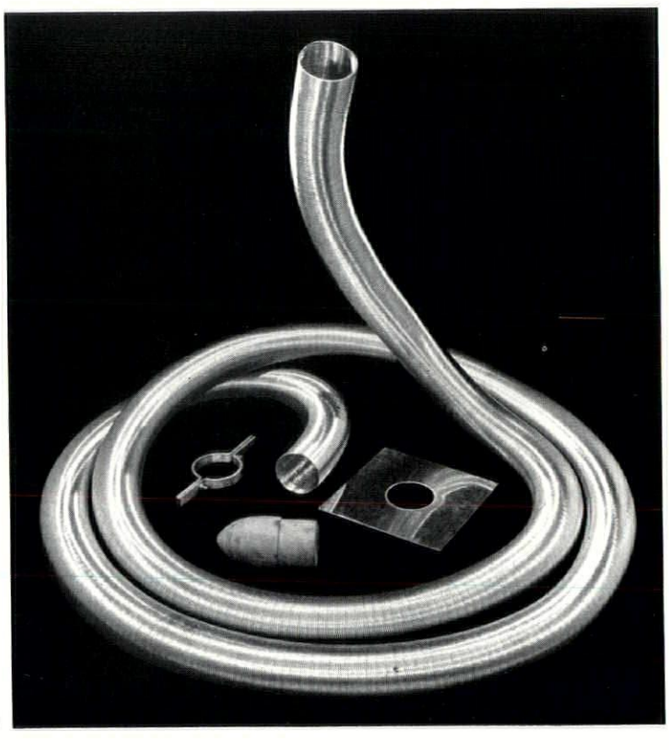
Specifying wallpaper

A technical booklet which is likely to appeal to architects not only for the amount of useful information contained but also for the standard of presentation is a new publication by the Wall Paper Manufacturers Limited, entitled *Specifications for Wallpaper*. It contains interesting background information on modern methods of production and definitions of wallpaper types. It includes tables for estimating the number of pieces required. Most important of all, however, is the technical section which deals with the preparation of surfaces, notes on common faults—mould growth, pattern staining, slow drying, etc.—and a set of specifications. The booklet should be invaluable to architects and interior designers. It is a pity it is not to one of the accepted A sizes of paper.
The Wall Paper Manufacturers Limited, 19-21, Mortimer Street, London, W.1.

'One-pipe' radiators

A welcome development in small bore heating is the new one pipe radiator system, 3, whereby there is only one connection to each radiator. This consists of a special tee piece and a variable control valve together with union and spacing piece, supplied complete and assembled with each pressed steel radiator. The plumber has only to install the ring main. The patented connector handles both the flow and the return of the radiator, the control valve giving variable control of the radiator temperature. The connector is supplied suitable for either surface or underfloor pipe runs. The manufacturers claim that the simplicity of installation reduces on site labour costs by as much as 40 per cent. Heat requirement and pipe size calculations are basically those used for conventional systems; surface area calculations are made in the normal way, flow to return temperature drop being of the order of 20 degrees F; circulating pump calculations are as standard practice, the connector having a resistance factor of 4.
Bekon Supplies Limited, Beaconsfield, Buckinghamshire.





2

Veneered chipboard

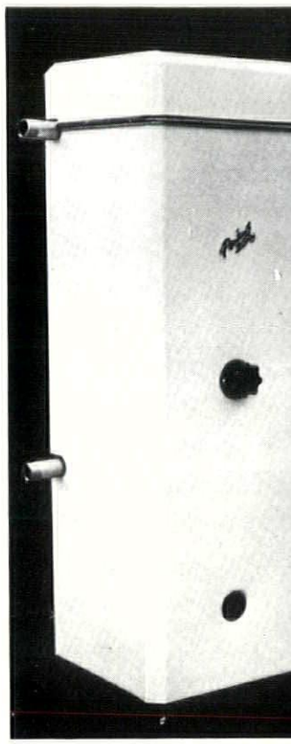
Corven veneered chipboard is available in a wide range of veneers, including afrormosia, gaboon, iroko, limba (white), limba (bariole), makore, oak (figured), sapele, sycamore, red agba, teak and African walnut. Details are as follows. Standard sizes (except for teak and sycamore) are 11 ft. 6 in. by 5 ft. 9 in. by 15, 18, and 24 mm. Teak and sycamore are available in 7 ft. by 5 ft. 9 in. by 20 mm., 5 ft. 9 in. by 4 ft. 4¾ in. by 20 mm. and 5 ft. 9 in. square by 10 and 12 mm. Density is 37.5 lb. per cu. ft. Moisture content 8-10 per cent. Fire spread is class 3 for the untreated material, but the manufacturers say that many surface applications (varnishes and paints) will provide class 1 protection. The manufacturers supply an edging strip which they describe as Woodtape Natural Veneer with adhesive backing. The following is a guide to cost: 11 ft. 6 in. by 5 ft. 9 in. by 18 mm. board having limba white face and first quality African mahogany reverse face 3s. 2d. per sq. ft. for a crate of six.
Williamson and Kay Limited, Holme Street, Liverpool, 20.

Packaged central heating

Baxi-Pak is a packaged small bore central heating system costing approximately £150 including complete insulation and a Baxi underfloor draught fire. The system is for whole house heating, designed to operate with a Baxi fire and back boiler of the tubeless type which does not require cleaning. The Baxi-Pak itself consists of a radiator boiler, radiators (with bracket blanking piece), towel rail and circulating pump. The cost Baxi-Pak for a 16 in. fire size four radiators is £70 retail. 18 in. fire size, which includ extra radiator, the cost is £7 The Baxi patent underfloor d fire costs between £10 14s. 6 £18 18s. 3d. according to siz type of ash disposal unit. Ap mately £70 is estimated as th of piping and installation. The Pak heating system can be use the Baxi Burnall fire with li ash box which needs emptyin or twice a week, or any of the continuous burning model Rotary Ashbox, outside ashb deep ash-pit where ash remov be carried out while the fire is
Baxi, Bamber Bridge, Lancs.

Small boiler

Perkins make two small called the Mini-Boiler 25 a Mini-Boiler 50, having outpu



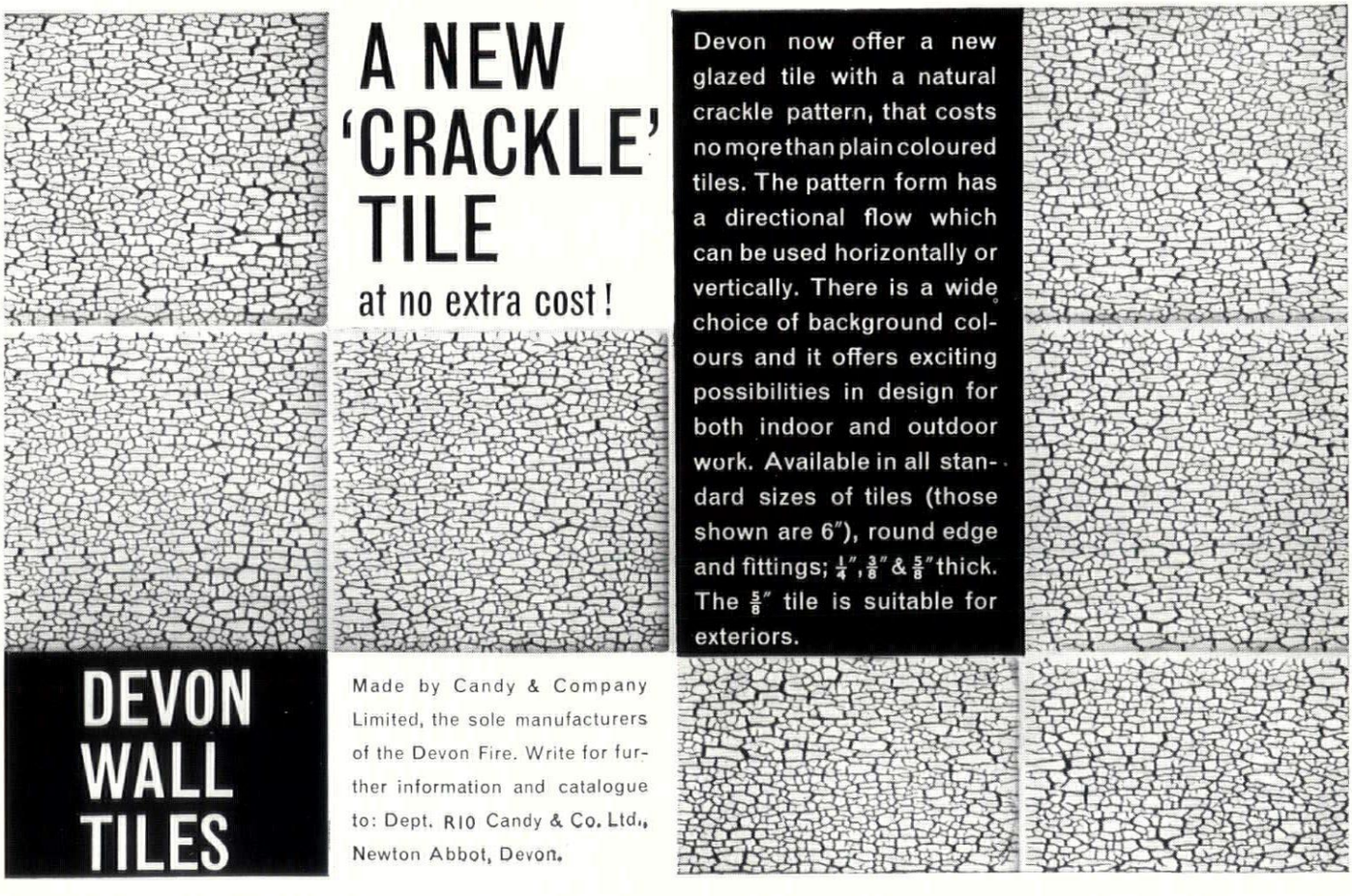
spectively, of 25,000 and Btu/hr.

The Mini-Boiler 50, 4, is high by 11 in. wide by 11 i and is intended for wall mo The boiler is secured to an accessible sealed burner, whic

the A P bathroom went for a burton . .

pity, it was a useful place to have for changing into one's
gladrags for an evening do in town. The room's working
harder now though - it houses the electronic machinery
dealing with the readers' enquiry service. Works well too.
Architects needing more information on products
advertised in the Review simply complete the enquiry form
at the back of each issue. Saves letter writing and
telephone calls, secretaries, stamps.
Forms slipped into the post go into the A P bathroom
where females press buttons and things, machines mutter and
punch and the sorted enquiries are sent off to advertisers.
All so quick and competent. No soap!
Use it?

Got a party on next Thursday - no time to go home and change.
Anyone in Westminster having spare bathroom, please communicate . .



A NEW 'CRACKLE' TILE
at no extra cost!

Devon now offer a new glazed tile with a natural crackle pattern, that costs no more than plain coloured tiles. The pattern form has a directional flow which can be used horizontally or vertically. There is a wide choice of background colours and it offers exciting possibilities in design for both indoor and outdoor work. Available in all standard sizes of tiles (those shown are 6"), round edge and fittings; ¼", ⅜" & ⅝" thick. The ⅝" tile is suitable for exteriors.

DEVON WALL TILES

Made by Candy & Company Limited, the sole manufacturers of the Devon Fire. Write for further information and catalogue to: Dept. R10 Candy & Co. Ltd., Newton Abbot, Devon.

sealed, eliminates the risk of fumes within the room in which the unit is installed. The cabinet is intended to be built into the brickwork of an outside wall. A hinged, slotted cover on the outside wall allows easy access to the whole of the interior. When operating, fresh air for combustion is drawn into the pressure chamber through the louvres in the back cover by an electric fan. An adjuster maintains the correct flow of air to the sealed burner. Used air is driven out through an exhaust outlet. The unit is obtainable with either a white or bronze stove enamelled cover and price is £63 10s. *Perkins Boilers Limited, Mansfield Road, Derby.*

Electric clocks

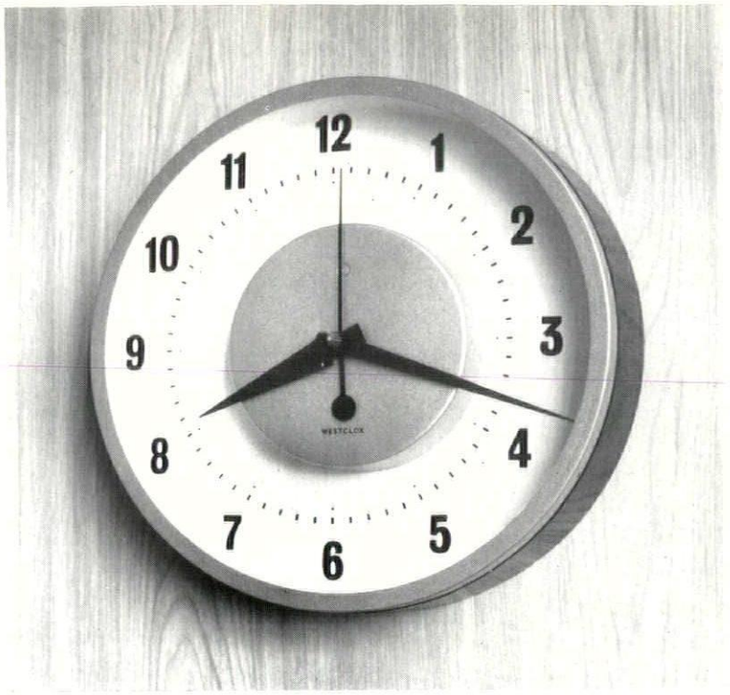
Westclox have recently introduced a range of self-starting commercial electric wall clocks of 10 in. and 12 in. diameters suitable for offices, factories, banks, schools, hospitals, hotels, etc. The Executive 10, 5, is a competent design which is available with either black dial and white hands and numerals or white dial and black hands and numerals. It has a black plastic case which fits flush to the wall and is recessed at the back to take cord and plug. The movement is self-starting with a 210-250 volt AC 50 cycle, 3 watt motor. Price is £6 12s.
Westclox Limited, Strathleven, Dumbarton, Scotland.

Swiss boiler

Hoval Boilers, which are Swiss designed, are now to be manufactured in this country. The model now available, is the Hoval TKS which is a combination oil-fired boiler (providing also domestic hot water) and incinerator for dry refuse. It is possible to change from oil-fired to solid fuel fired without modification. The unit is available in sizes ranging from 80,000 to 1,600,000 Btu/hr. output.
Hoval Boilers (UK) Limited, Kirkman House, 54a, Tottenham Court Road, London, W.1.

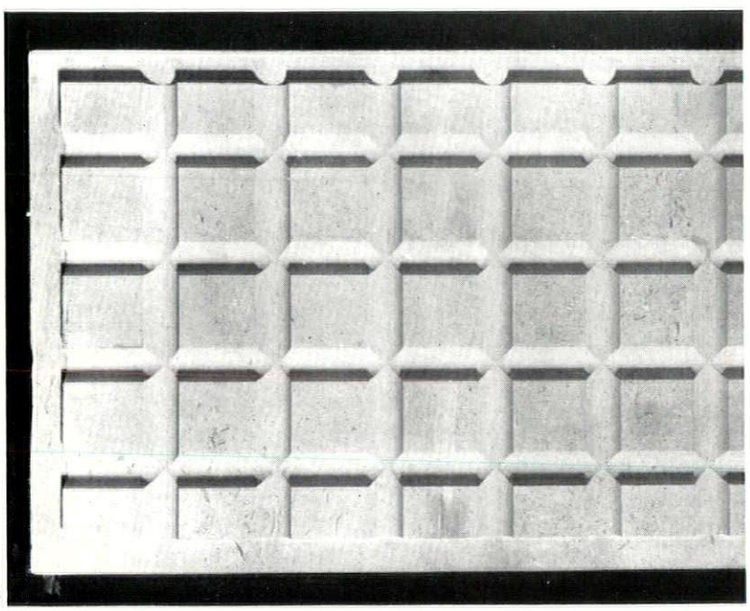
Textured stone

One feels that the manufacturers of natural building stone have only themselves to blame for the neglect



5

of this material by the younger generation of architects. An exception is the Stone Firms Limited (formerly the Bath and Portland Stone Firms Limited) who have done a good deal recently to put forward the design potential of this traditional material. The illustration, 6, is an example of machine patterning of natural stone (in this case Portland). This sort of thing can be carried out in Roach, Whilbed and Basebed in their various grades, although stones from particularly shelly tiers are liable to have rough arrises due to shell or voids. Single slabs 4 in. or 5 in. thick can be machined to 6 ft. by 4 ft. maximum size; where only 3 ft. square panels or smaller are required 3 in. thick stone may be used. Various basic patterns can be produced and these can be adapted for the most part to architects' individual requirements.
The Stone Firms Limited, Vincent House, Vincent Square, London, S.W.1.


6

CONTRACTORS etc

Undergraduate Rooms, Brasenose College, Oxford. *Architects:* Powell and Moya. *General contractors:* Norman Collisson (Contractors) Ltd. *Subcontractors: Stonework:* The Bath & Portland Stone Firms Ltd. *Pre-cast concrete:* Woolaway Concrete Products Ltd. *Windows:* Williams & Williams Ltd., Quicktho Engineering, Wessex Guild Ltd. *Staircases:* Victoria Joinery Ltd. *Balustrading, railings and ironwork:* Wessex Guild Ltd. *Felt roofing:* The Prater Asphalte Co. *Sanitary fittings:* Alfred Goslett & Co. *Ironmongery:* Alfred G. Roberts Ltd. *Electrical installation:* Duncan Watson (Electrical Engineers) Ltd. *Heating and hot water installation:* Norbeth Building Services Ltd.

Bank in Lombard Street. *Architects:* Brett, Boyd & Bosanquet. *General contractor:* Trollope & Colls Ltd. *Sub-contractors: Stainless steel entrance doors:* Morris Singer Ltd. *Marble and polished teak:* J. Whitehead and Sons Ltd. *Lift cage:* Evans Turner Ltd. *Lift interior:* Otis Elevators Ltd. *Narthex floor and walls:* Art Pavements & Decorations Ltd. *Narthex dome and Colonnade columns, vaults and walls:* W. B. Simpson & Sons Ltd. *Statue plinth:* Bow Slate & Enamel Co. *Laylight over banking hall:* Courtney Pope (Electrical) Ltd. *Manager's room:* Heal's Contracts. *Manager's dining room:* Cole & Son (Wallpapers) Ltd.

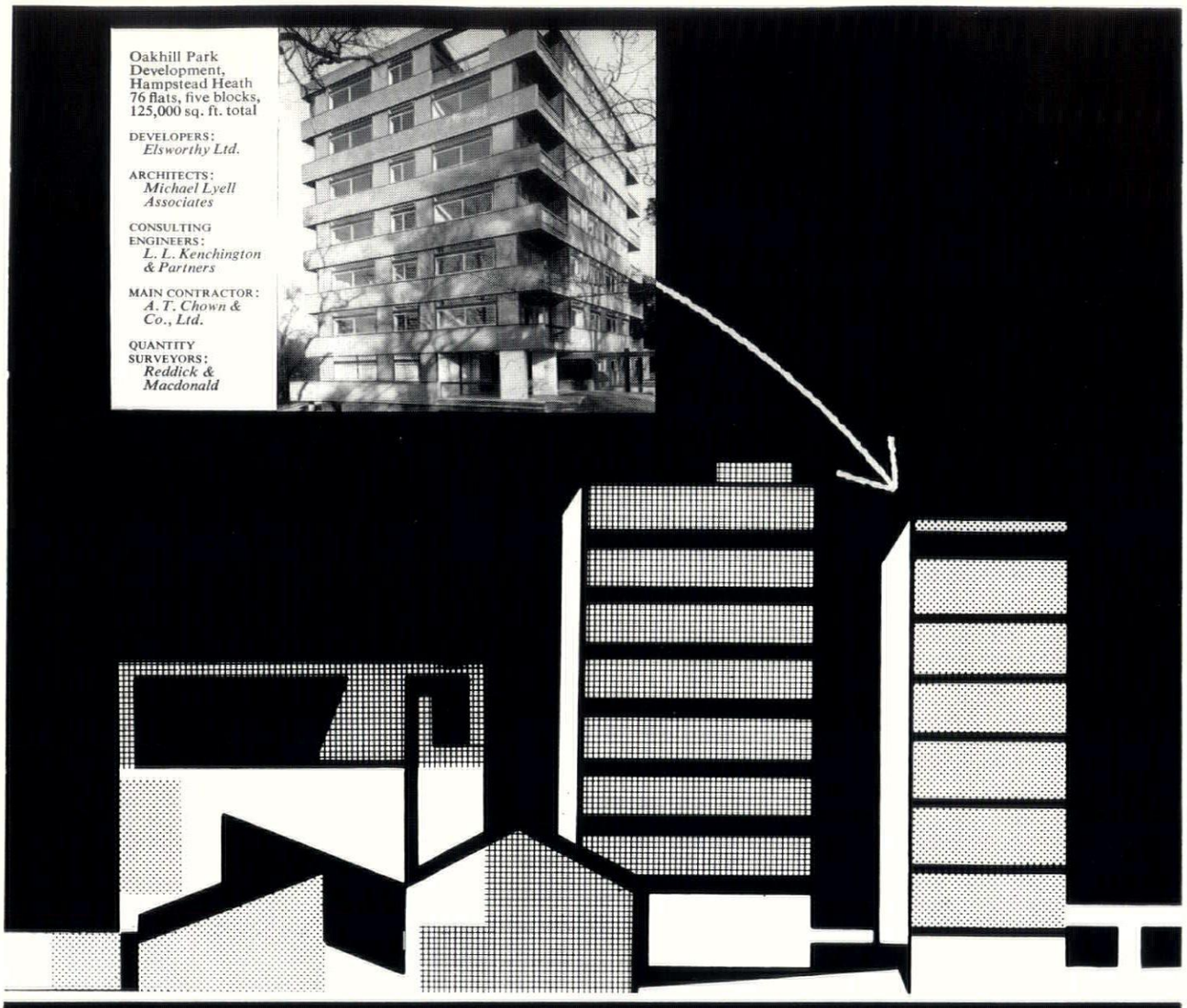
Three Restaurants for Bank Staff in the City. *Architects:* Everson and Searles, in conjunction with the Bank's assistant controller, premises department and maintenance staff (director, J. Raphael). *Threadneedle Street canteens. Joinery:* Holloway Bros. Ltd.; T. Rider & Son Ltd.; Westminster Bank Ltd. *Electrical installation, painting and plumbing:* Westminster Bank maintenance staff. *Acoustic ceiling:* Hermeseal Acoustics Ltd. *Main tungsten lighting:* Courtney Pope Ltd. *Cafeteria furniture:* Morris of Glasgow. *Other furniture:* Ernest Race Ltd.; Pel Ltd. *Curtains:* Heals Contracts Ltd. *Linoleum:* Linoleum Manufacturing Co. *Photographic murals:* Minerva Art and Photographic. *Venetian blinds:* John Hull & Sons.

Head Office, Lothbury. Joinery: T. Rider & Son Ltd. *Electrical installation, painting and plumbing:* Westminster Bank maintenance staff, Head Office, Lothbury. *Acoustic ceiling:* Hermeseal Acoustics Ltd. *Main tungsten lighting:* Courtney Pope Ltd. *Special tungsten lights over kitchen area:* Atlas Lighting Ltd. *Cafeteria furniture:* Morris of Glasgow. *Curtains:* Heals Contracts Ltd. *Linoleum:* Linoleum Manufacturing Co. *Plastic worktops and wall surfaces:* Formica Ltd. *Photo murals:* Enlargement by Minerva Art and Photographic Service Ltd. *Venetian blinds:* John Hull & Sons. *Electrically operated folding screen:* E. Pollard & Co.

House at Kingston Hill, Surrey. *Architect:* Kenneth Wood. *General contractor:* Thorogood & Sons Ltd. *Subcontractors: Structural frame:* Wadcrete Ltd. *Roofing:* Roberts Adlard Ltd. *Timber facings:* Hazelby Ltd. *Bricks:* Ibstock Brick & Tile Co. *Insulation blocks:* Thermalite Y-Tong Ltd. *Pressure impregnation:* Hickson's Timber Impregnation Co. *Flooring (hardwood strip):* Horsley Smith Ltd.; *(mosaic & tiling):* Denis Williams Ltd.; *(linoleum):* Thames Flooring Co. *Olive green stone hearth:* Broughton Moor Stone Co. *Terrazzo benchtops:* Kendellstone Co. *Sanitary fittings:* Adamsez Ltd., Shanks Ltd., Fisholow Ltd. *Door and window furniture:* Alfred G. Roberts Ltd. *Double glazing:* Hollowseal Glass Co. *Lighting fittings:* Frederick Thomas Ltd., G. B. Forrest, Atlas Lighting. *Paints:* Hadfields Ltd. *Timber sealers:* Floor Treatments Ltd., Mander Bros. Ltd. *Joinery, windows:* Thorogood & Sons Ltd.

House at South Hill Park, Hampstead *Architect:* Michael Brawne. *Quantity surveyor:* G. A. Hanscomb. *General contractor:* Broadlands (Builders) Ltd. *Precast floor units:* Concrete (Southern) Ltd. *Nuralite roofing:* J. J. Ettridge Jnr. Ltd. *Electrical:* D. G. Pamplin. *Louvres:* N. V. Appleton Pty. Ltd. *Linoleum flooring:* The Limmer & Trinidad Lake Asphalt Co. *Paint:* Hadfields. *Varnish:* I.C.I. Paints Ltd. *Wood preservative:* Xylamon Stay-Brown. *Ironmongery:* Alfred G. Roberts Ltd. *Sanitary fittings:* Stitsons Sanitary Fittings Ltd. *Bricks:* Henry J. Greenham Ltd.

House in Hampstead. *Architects:* Jellicoe, Ballantyne & Coleridge. *General contractor:* James Carmichael (Contractors) Ltd. *Sub-contractors: Heating:* Young, Austen & Young Ltd. *Copper roof, plumbing:* Arthur Scull & Son Ltd. *Slate facing:* Bow Slate and Enamel Co. *Flat roof structure:* H. Newsum Sons & Co. *Felt roofing:* D. Anderson & Son Ltd. *Pile foundations:* Cementation Co. *Metal windows:* The Morris Singer Co. *Garage doors:* Bolton Gate Co. *Terrazzo and mosaic:* Malacarp Terrazzo Co., Diespeker & Co. *Marble fireplace and shelving:* Art Marbles, Stone & Mosaic Co. *Ironmongery and metal work:* A. J. Binns Ltd. *Lighting fittings:* Frederick Thomas Ltd. *Kitchen fittings:* Heal's Contracts Ltd. *Flush doors:* W. W. Howard Bros. Ltd. *Gardens:* William Wood & Son Ltd.



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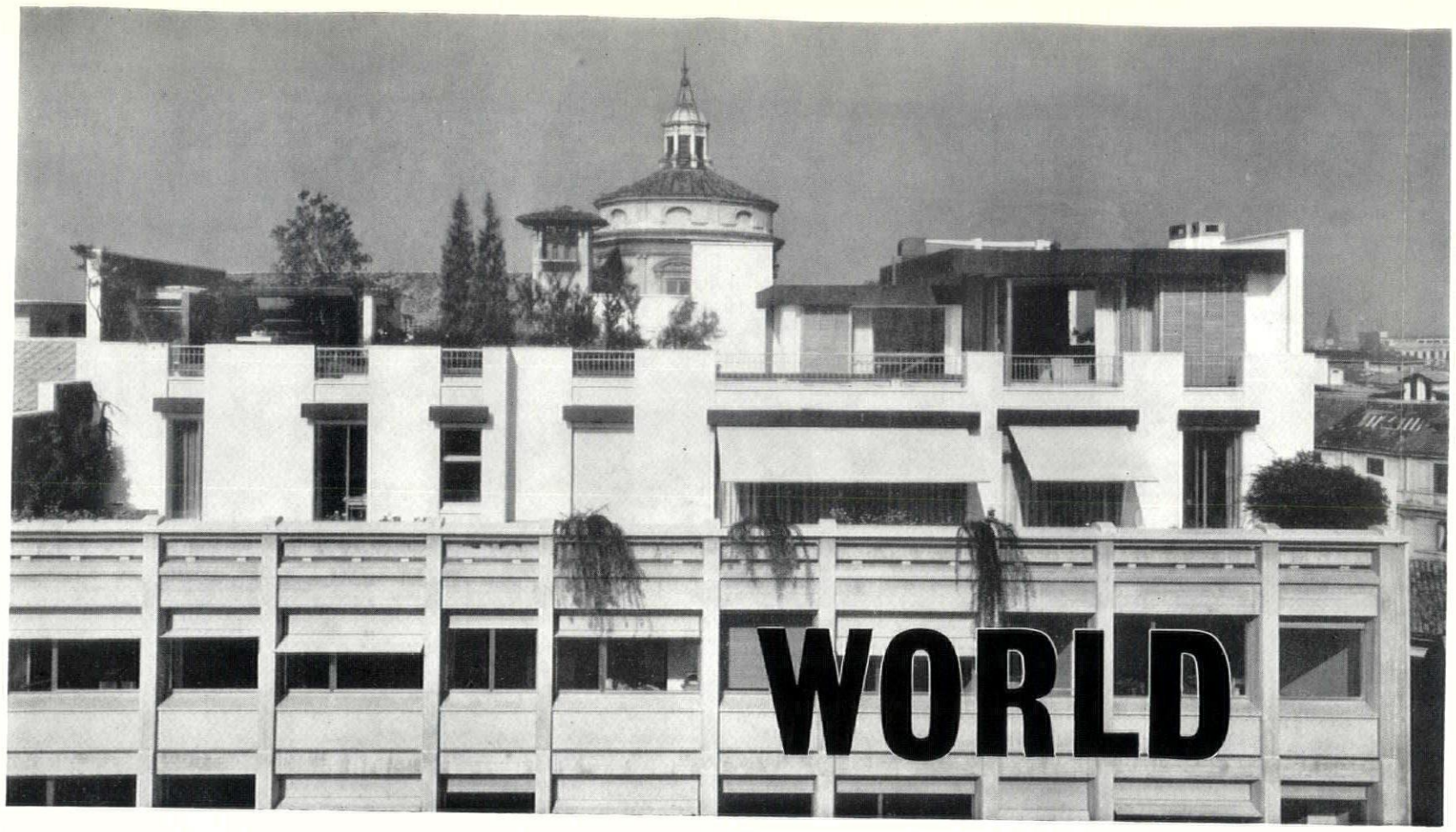
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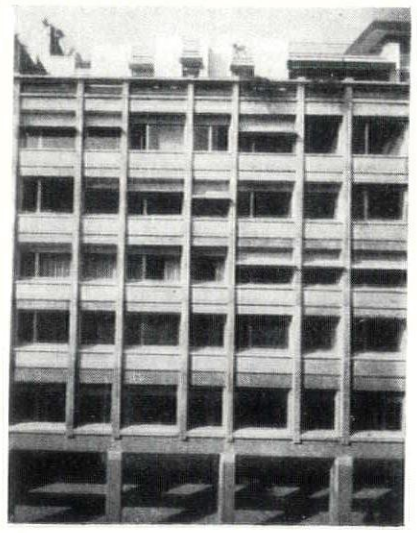


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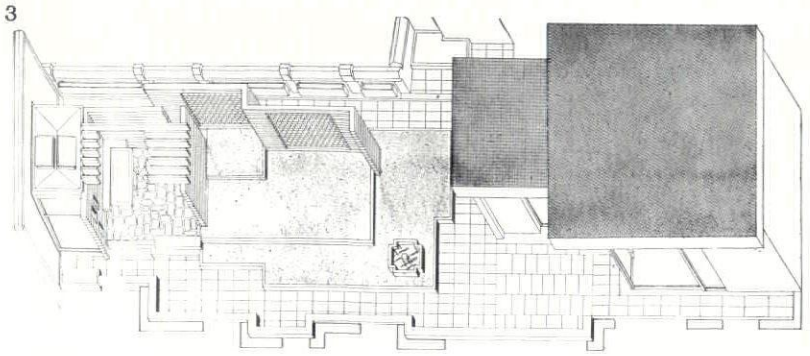
ROOMS AT THE TOP

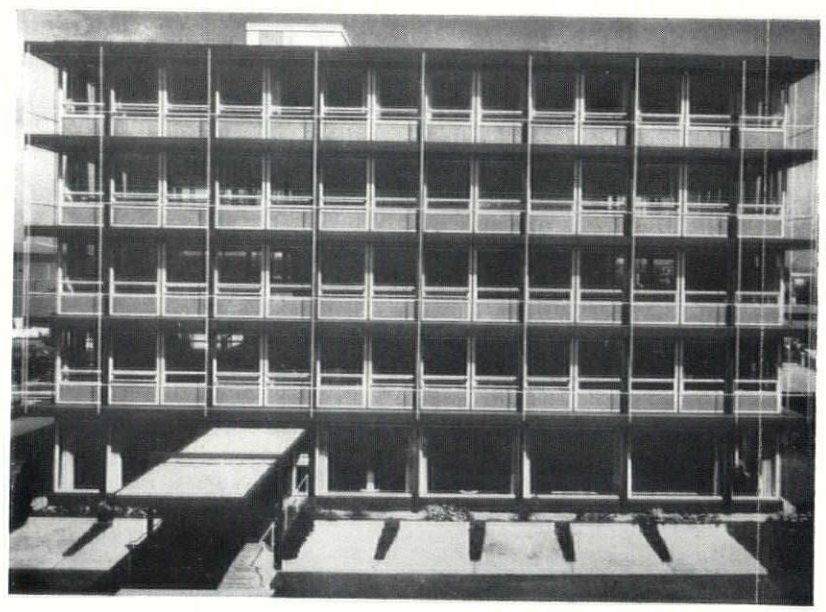
Penthouse Milan should be one of the holy places of affluent Europe, a network of fabulous rooms at the top (with sun-terraces, of course) on the summits of forty years of high-rise development. By now, there must be enough of them to make the subject of one of Hoepli's *Esempi* books—indeed, Hoepli have something of a duty in the field, since one of the most recent and distinguished, 1, designed by Figini and Pollini, crowns the top of the Hoepli office block, 2. The rather surprising dome is, needless to say, no part of the penthouse, but is an essential part of that roofscape of spires, trees, *campanili* and baroque extravaganzas whose existence is one of the prime justifications of the penthouse world, much as the scenery of the Alps justifies the villas on the lakes. In this case, as will be seen, the penthouse makes its own contribution to *Milano verde*, with an extensive programme of planting on the upper terrace, 3, the seasonal variations of the greenery having been carefully studied by the architects to avoid blank months, and their detailed planting programme can be found in *Domus* 362, September, 1961.

2



3



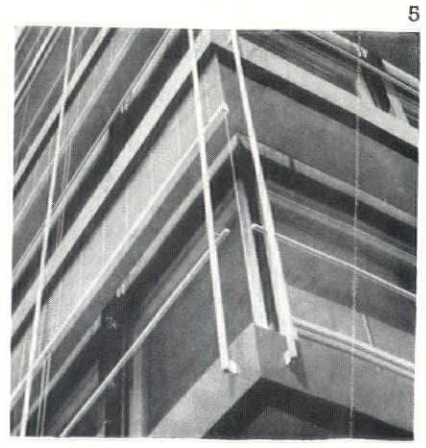


4

EIERMANN TODAY

Egon Eiermann's place as a legend of post-war European architecture seems assured, *but what is he doing*? Apart from his much-argued memorial church in West Berlin, which will be illustrated in due course, Eiermann is still doing what might be expected—*Deutsche Bauzeitung* (9, 1961) and *Bauwelt* (39, 1961) illustrate new office blocks for industrial concerns, and chain stores for *Merkur*. But there are some surprises among this recent output. Not in the office-block he has recently completed in Oldenburg, 4, with its serene two-over-one rhythm of façade panels, and its fine-drawn detailing, 5, for hand-rails and sun-

5



ACKNOWLEDGMENTS

COVER: Ara Güler. WORLD, pages 369–372: 1–3, *Domus*; 4, 5, *Bauwelt*; 6–9, *Deutsche Bauzeitung*; 10, Maris/Ezra Stoller Associates; 16, 17, *Zodiac*. VIEWS AND REVIEWS, pages 373–375: 1, Galwey Arphot. FRONTISPIECE, page 376: James Mortimer. THE FARMHOUSE, VERNACULAR AND AFTER, pages 377–379: 1, 2, M. W. Barley. CHEMISTRY BUILDINGS, LEICESTER UNIVERSITY, pages 380–386: 1, Toomey Arphot; 2–15, Galwey Arphot. GENTLE, NOT GENTEEL, pages 387–393: 1–18, 20, 25–28, 33–35, Nairn Arphot; 19, Peter Pitt; 22, John R. Pantlin; 23, A. C. K. Ware; 24, 29, Toomey Arphot; 30, 32, Galwey Arphot; 31 Fox Photos. EXPLORING EYE, pages 399–401: Ara Güler. CRITICISM, pages 402–410: 4, 6, 8, 15, 16, Galwey Arphot; 1, Toomey Arphot; 2, 13, Arthur Winter; 3, John Piper; 5, 7, 10–12, 14, Banham Arphot. ID, pages 411–415: 5–10, John Maltby. DR, page 416: Banham Arphot. GARAGE AT LONGBRIDGE, pages 419–420: Toomey Arphot. GARAGE AT ALDERSGATE, pages 420-421: 1,3, Toomey Arphot; 2, Herbert K. Nolan. GARAGE AT SOUTHWARK BRIDGE, pages 422–423: 1, 3, 4, Hodgkinson Partners; 2, 5, Banham Arphot. GARAGE AT LEYTON, page 424: John Maltby. MISCELLANY, pages 425–433: Exhibitions, 5–8, R. B. Fleming. Townscape, 1, Toomey Arphot; 2–10, Nairn Arphot. Plants, 1, Toomey Arphot; 2, 3, J. E. Downward; 4, Tania Stanham. Credit, Galwey Arphot. SKILL, pages 434–440: 4, 8, Cement and Concrete Association; 12–15, 18, Rural Industries Bureau.



On the cover, *Ara Güler's striking evocation of the Romantic agony of a great classical ruin calls attention to the uncertain future of a little known archaeological site of the greatest interest, Aphrodisias in Asia Minor. For centuries it has lain in picturesque disarray, but now a US archaeological team is to undertake a major excavation there. Just what will be lost in the process of excavating and tidying-up is forcefully brought out in further photographs by Ara Güler on pages* 399-401.

THE ARCHITECTURAL REVIEW

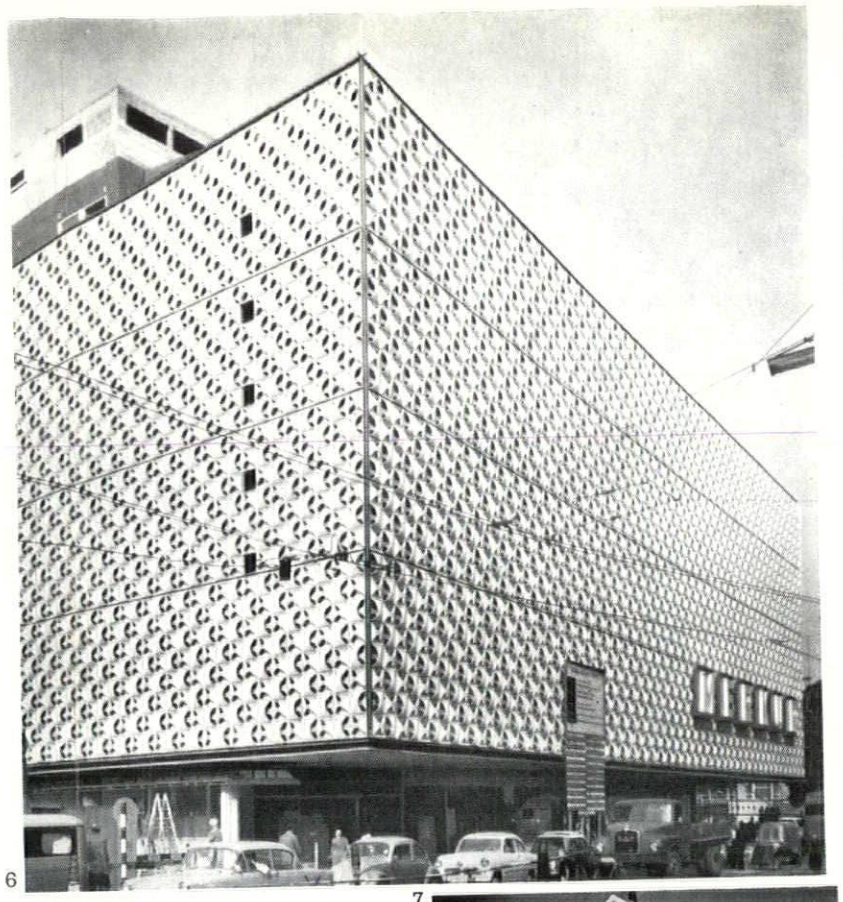
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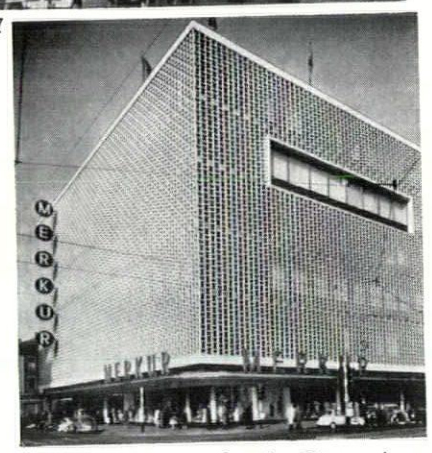


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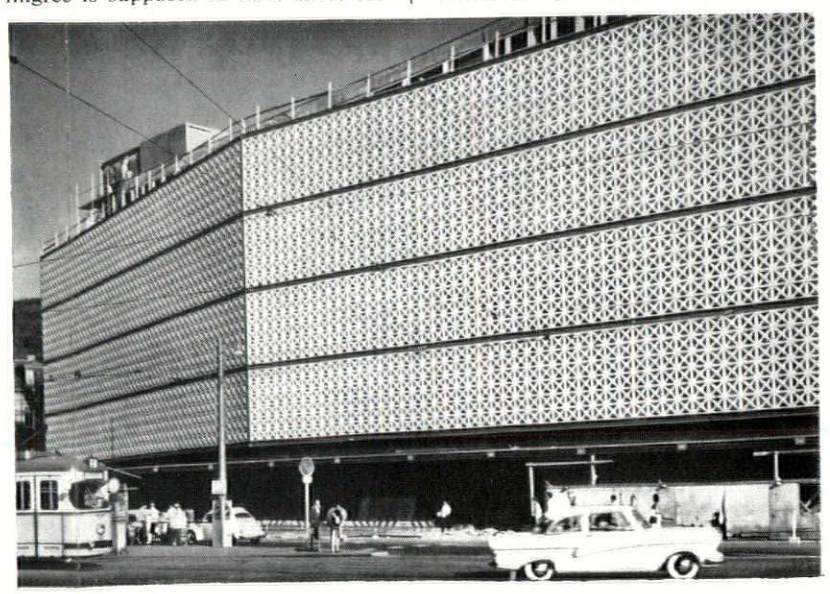
Eiermann

blind steadies—this is the Eiermann of the Blumberg factory and the early work for *Kaufhaus Merkur*, the Eiermann of the legend.

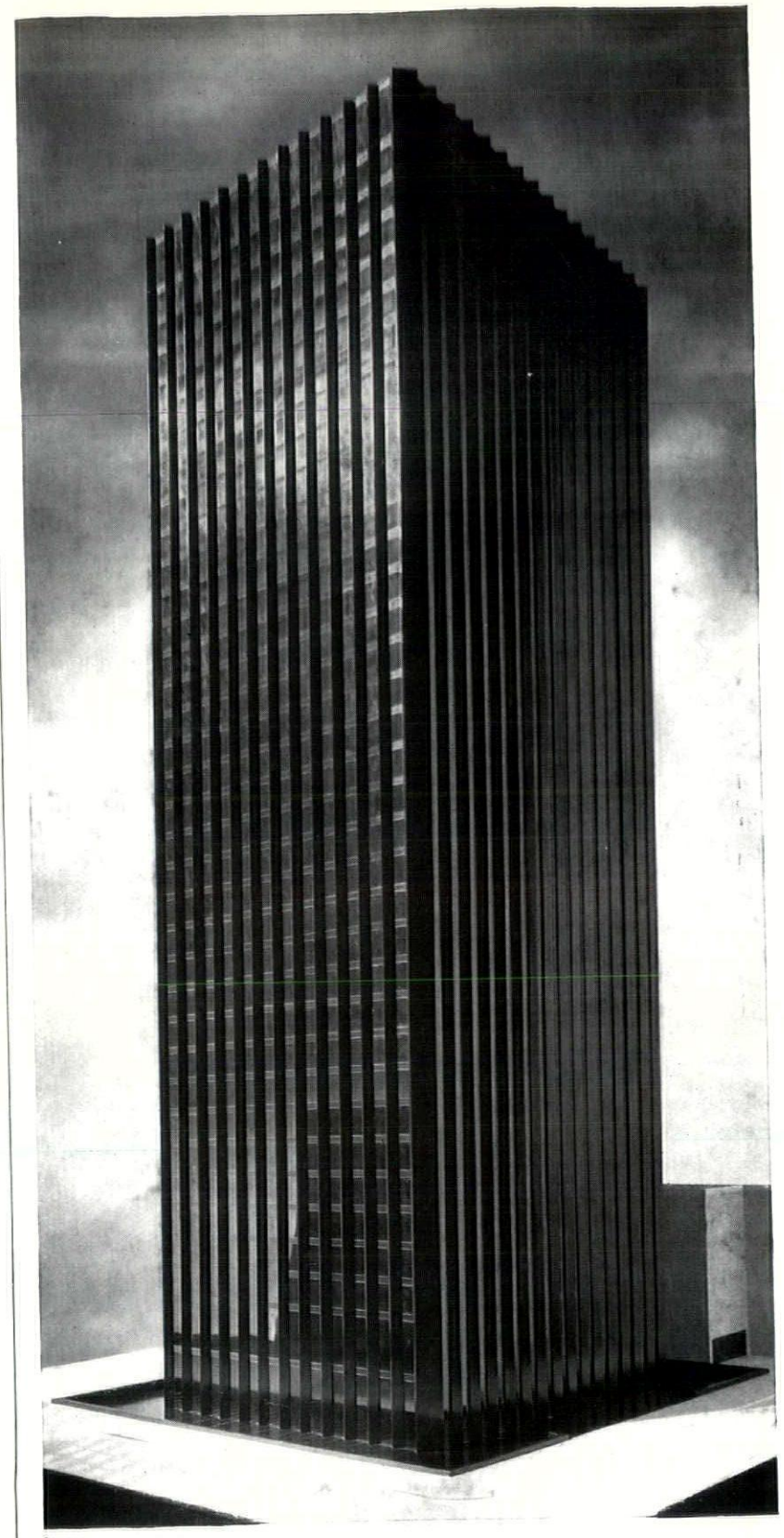
But his recent work for *Merkur* may well startle his admirers. At Stuttgart, for instance, not only does Eiermann's shop enjoy the invidious prominence of occupying the site of Mendelsohn's Schocken store, but its exterior, 6, is entirely clothed in what appears to be Ed Stone-work. Eiermann's attitude to the *Schocken-Skandal* is not known, though many of his supporters feel that he should have declined to build on the site, but in the matter of the external grille-work he is the victim of the new *Merkur* house style. Rumour traces the origins of this laced-over brand-image to a desperate visual rescue operation (not by Eiermann or any of his partners) on the Kaufhaus Merkur in Duisburg, 7, where the filigree is supposed to be a cover for an unsatisfactory façade. Comparison of the two buildings will at least show that a great architect can make more of a poor brand-image than anyone else, and in Heidelberg, 8, using a different grille-unit more frankly expressed as a screen, Eiermann shows that given time he may even be able to make major architecture out of it.



7



8



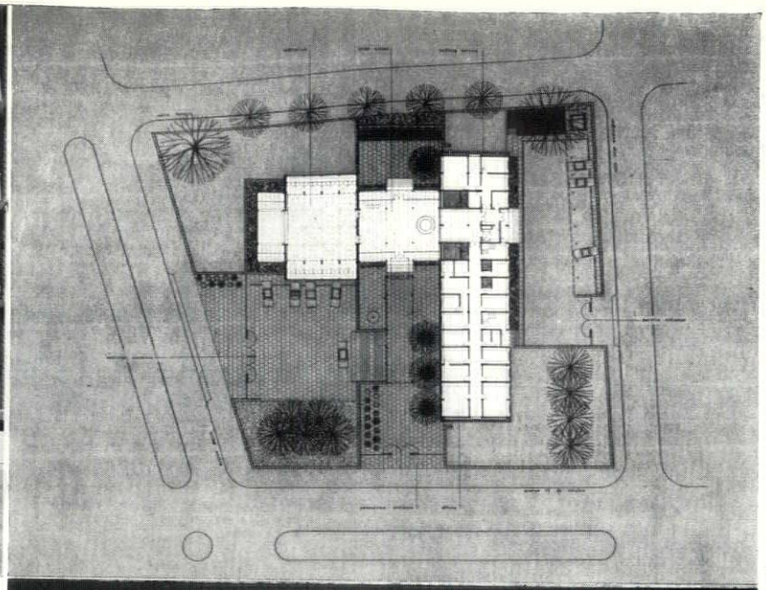
9

THE LAST SAARINEN

The CBS Building, 9, to the north of Rockefeller Centre, will be the answer to 'Now let's see what he does to a skyscraper' (much heard in New York this year) for this will be Eero Saarinen's first essay at a tall office block, as well as his last completed design. The tower will have four identical faces, sheer for thirty-eight storeys (one need hardly point out that Lever, Seagram and Union Carbide are only sheer on the sides that are exposed to public gaze—if that). The facing material will be dark grey granite which suggests an aspect even more monumental than that of the Seagram, and this effect should be heightened by the fact that the building stands back from the property line on all four sides, and is sunk slightly below the level of the vast piazza that will result. Perhaps the most sensational statement in the preliminary handout from CBS is that the frame is to be of reinforced concrete.



10



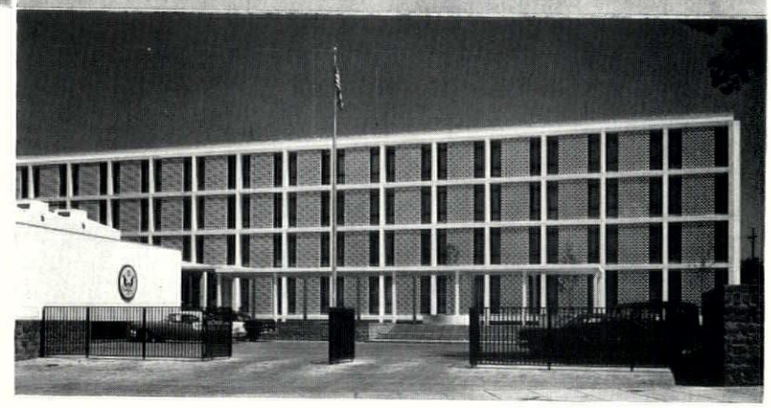
11

KLING AT QUITO

Notwithstanding superficial impressions to the contrary, the Foreign Buildings Operations of the US State Department is not entirely committed to the famous name and the knock-out gesture. Vincent Kling's new embassy in Quito, Ecuador, 10, recalls the modest and entirely praiseworthy beginnings of that programme, in its ability to be suitably ceremonial without being pretentious, and its air of undistracted functionalism. For once, the State Department neurosis about respecting local traditions seems to have come to the architect's assistance, not hindrance—earthquake protection is the primary consideration, perimeter walls around sites are more or less mandatory, and in this case have absorbed most of the 'local materials' on which FBO policy seems so fixed.

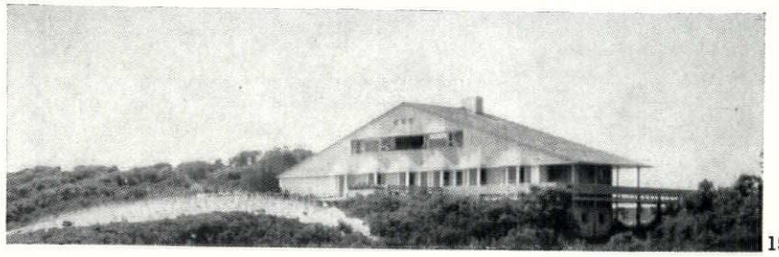
The embassy consists of three parts, clearly identifiable in 10; a portico or covered entrance-way, connecting a small lecture-auditorium on one side, and an office block on the other, and the plan shows, 11, a modicum of bi-axial symmetry governing the composition of the three elements. The auditorium, under its cluster of sixteen concrete 'monitors' (echoing the forms of local housing) is a gratifying simple room, 12, which makes effective use of natural side-lighting to illuminate the stage. The office block, which is of quake-proof reinforced concrete frame construction, has the kind of cellular interior planning that might be expected, clearly expressed on the façade, 13, where the windows are partly screened by pot-tile lattices, the opening lights at either side being left unscreened. The interiors are businesslike, as exemplified by the library, 14 (in which readers will observe Sweet's catalogue prominently shelved). The city council of Quito have recognized the merit of Kling's design by awarding it their Gold Medal as the 'best private building for public service' erected in 1960, but the embassy is a work of such distinction that it deserves wider recognition.

13



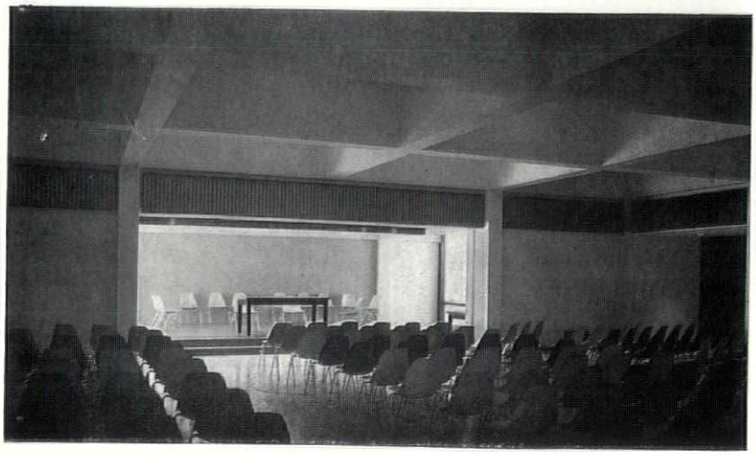
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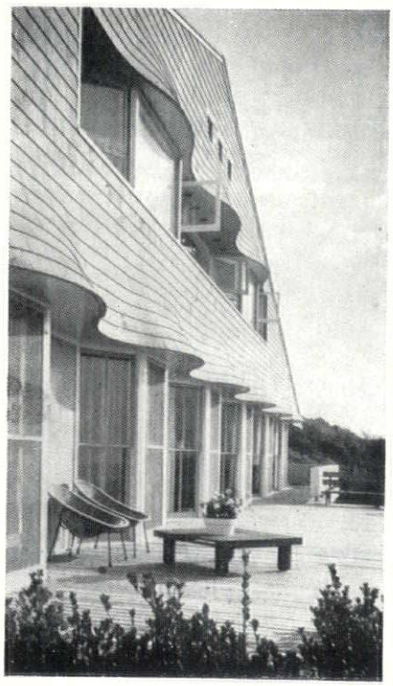


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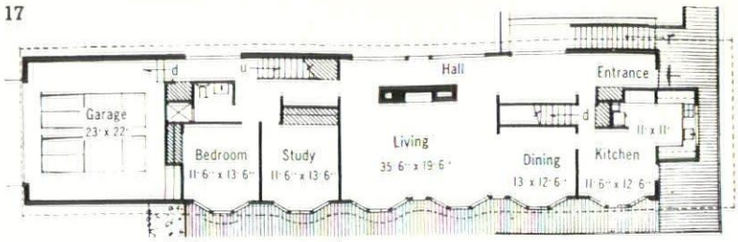
16



SPAETH HOUSE

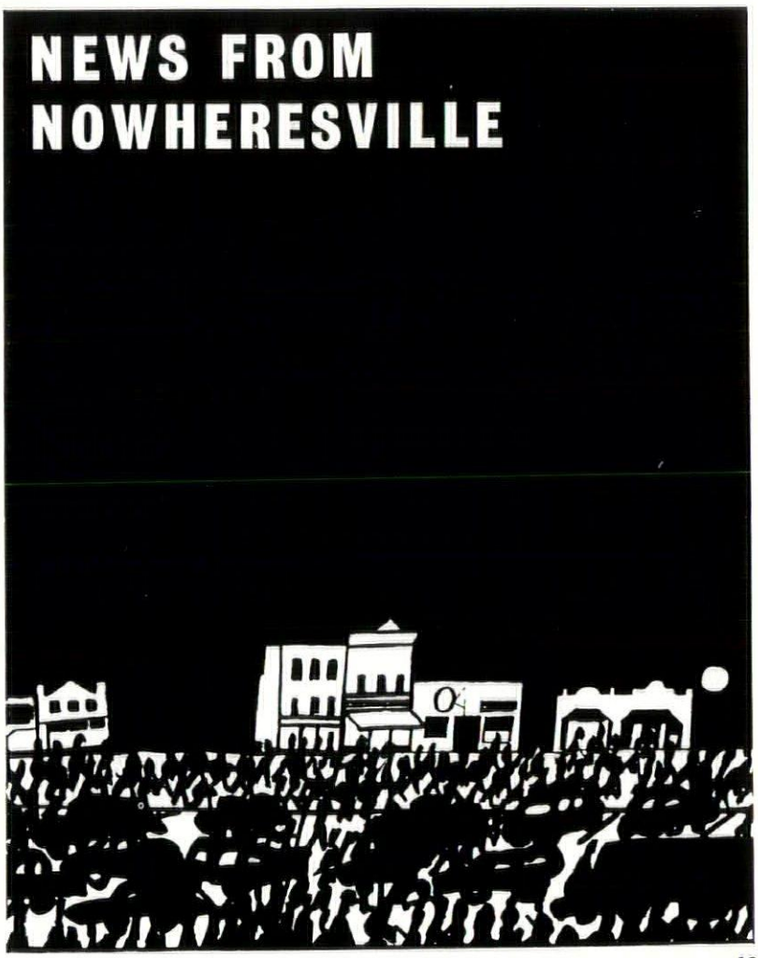
The occasional round-ups of the architectural situation in a particular nation undertaken by *Zodiac* have a knack of turning up odd buildings (literally odd) that everybody else seems to have missed. *Zodiac* 8 did precisely this thing in its survey of America for there, among the better-known designs of George Nelson, was a startling piece of Stanford White revival. Not only does Nelson's Spaeth House, 15, on Long Island have the wide-span gable of White's Low House at Bristol, R.I., but the wavy eyebrows over the windows of the tile hung façade, 16, keep alive a dormer tradition that was the common stock in trade of romantic Anglo-Saxon architecture around the turn of the century. Whether the same sort of

17

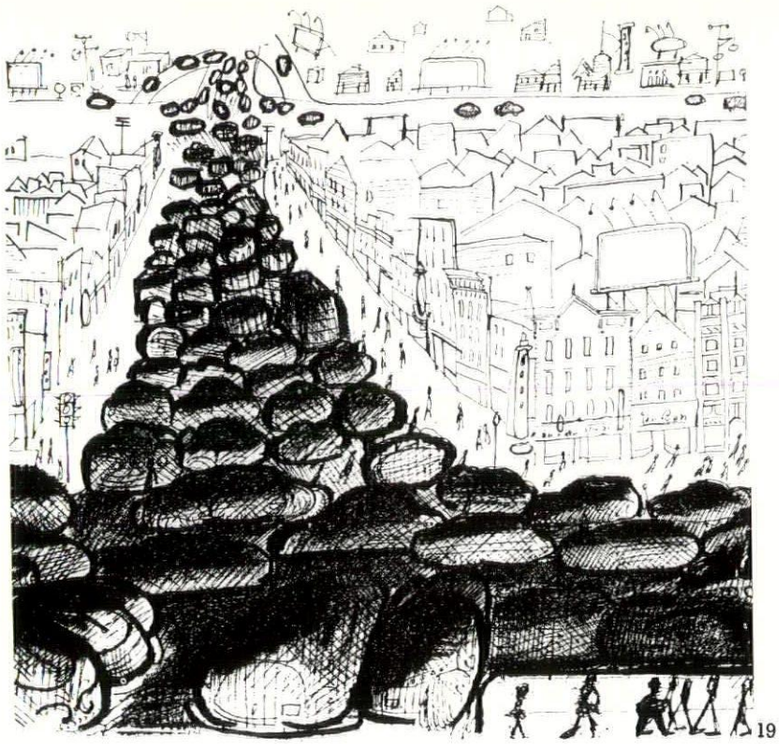


Spaeth

thing could be said of the plan, 17, is another question—while the outward trappings of picturesque architecture have changed or been abandoned, its planning tradition, the open plan, goes straight from Edward Prior's Home Place to Amyas Connell's High and Over, from The Robie House to the Gropius and Breuer cottage at Wayland, Mass. Italian critics have often insisted that all that is wrong Neoliberty is that it revives the forms of Art Nouveau without its structural sense—could it be that it's real trouble is that it stifles a planning tradition that never needed revival?

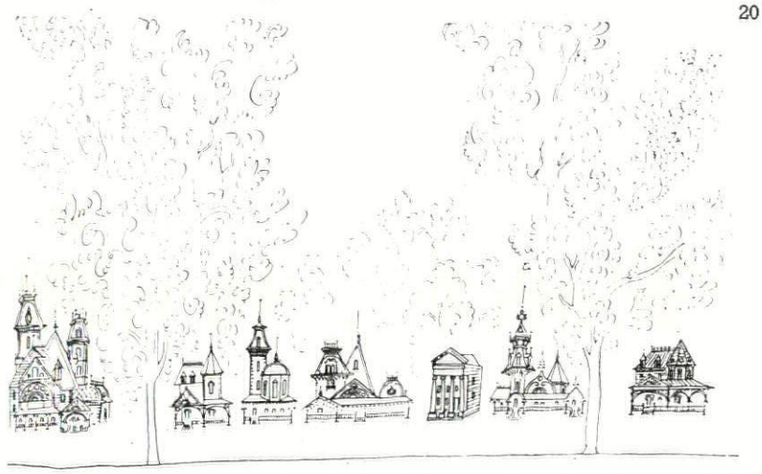


18



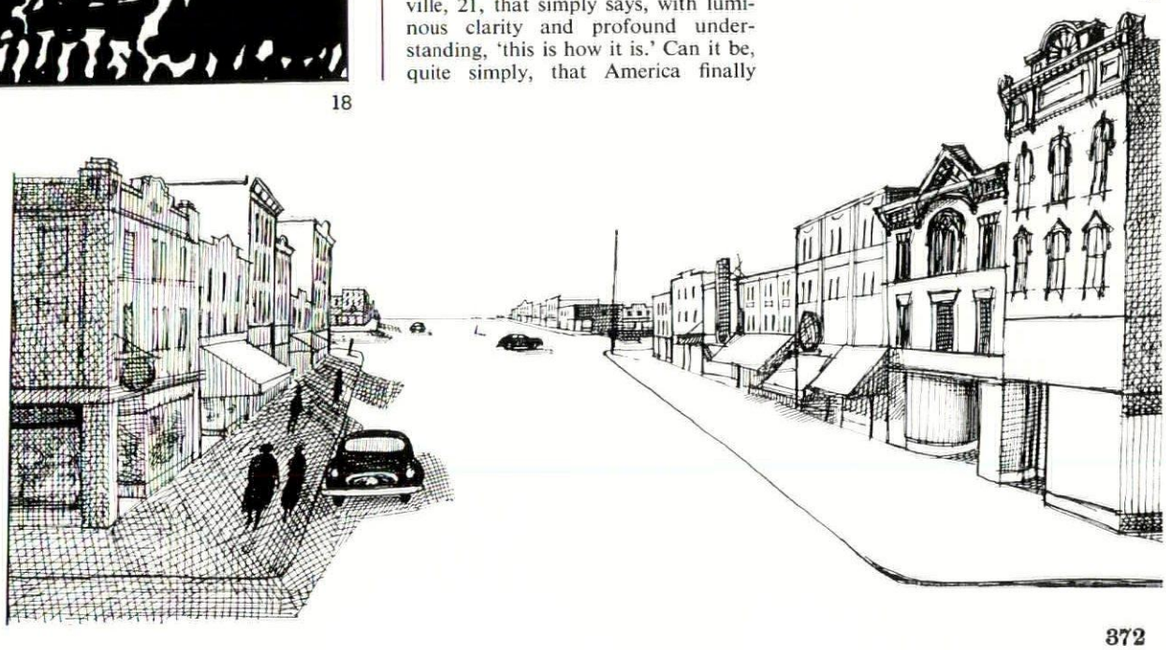
19

20



vectives on suburbia as a tundra of industrial swarf, television aerials and the backsides of neon signs, there is also the ideal suburbia of Victorian America, taken straight, 20, and one view of the main drag of Nowheresville, 21, that simply says, with luminous clarity and profound understanding, 'this is how it is.' Can it be, quite simply, that America finally subdues even her adopted sons, or is it that the world in general is discovering virtues in the American scene where only vices could be discerned before?

21



The text of the two-part publication of 'Steinberg on the City' in *Journal of the American Institute of Planners*, brackets him with Reismann, Veblen and Mencken as a 'voice of our collective conscience,' but what one notices about many of the drawings published in this issue (August, 1961) is that, among familiar ruderies at the expense of the American scene, are a number of drawings, such as 18, that suggest he is moving almost into the affectionate, if not respectful, mood of illuminated description that marks Edward Hopper's paintings or Ben Shahn's topographical pieces. The old savagery still flashes out, cars are seen as a beetling plague, 19, their fumes as a personal affront, and public transport as a descent into a hell of mannerist perspective. But in addition to the conventional in-

views and reviews

MARGINALIA

SIXTH BIENAL, SAO PAULO

Britain's first official architectural representation at the Sao Paulo Bienal was rewarded with three honourable mentions, awarded to: Sheffield University Library, by Gollins, Melvin, Ward and Partners; Stevenage Town Centre, by L. G. Vincent; and Alton Estate, Roehampton, by the LCC Architect's Department.

The grand prize in architecture was awarded to the Brazilian architects Paulo Mendes da Rocha and Joao de Gennaro, and the second prize to Jacques Schader.

A HOLE IN THE TOWNSCAPE

London Transport's experimental *Routemaster* bus, naked in its unpainted aluminium panelling, is an innovation that can hardly be welcomed. At present it is only a solitary grey ghost, a hole in the townscape where a red bus ought to be, but the prospect of a general changeover to unpainted buses would be a sad change in the London scene. Irrespective of whether or not the bus looks all right in itself (it does not; either the material, or the method of manufacture, results in an unpleasant and scratchy surface) it does *not* look all right in the London scene—the traditional red of the buses is as much part of the tourists' London as the lights of Piccadilly or Buckingham Palace, and as much part of the Townscapers' London as the Regency bollards or Edward Johnston's 'UndergrounD' sanserif lettering. To lose these splendid blocks of strong colour would be an irreplaceable visual loss, whose compensation in terms of money saved by London Transport is extremely uncertain. Indeed, the cost of applying the paint of the buses is only £40 per vehicle, while it is not yet known how much extra maintenance the unprotected aluminium will require. Even if it required none at all the extra forty pounds would still be money well spent on London's morale and *esprit de ville*.

DOVER FORTIFICATIONS

The slow-motion saga of the spoliation of the Western Heights fortifications, Dover (AR, March, 1959, *Marginalia*, February, 1960), seems likely to move a little nearer to ultimate banality if plans currently being hatched by Dover Corporation and the War Office are allowed to come to anything. Some of the reclamation proposals of the Corporation seem entirely praiseworthy, such as the provision of flats and space for light industry—the views should be of benefit to the former, while there is plenty of cover for the latter if intelligently sited.

But it is also proposed to gut the Grand Shaft, 1, and replace its famous spiral staircase with a lift—a piece of twisted pseudo-humanitarianism if ever there was. It is essential that the Western Heights be redeveloped in such a way that the Grand Shaft remain a tourist attraction, since it is doubtful if it could ever provide enough vertical transportation to serve a 'huge block of flats,' and it should be relieved of this function completely. If it is not to remain, suitably restored, as a monument of early nineteenth-century military engineering, there is little point in keeping it at all. The present proposal sounds like 'improvement' for improvement's sake.

But another proposal is so thoughtless as to defy belief—to use the moats as public rubbish tips! Not only would this proposal render the area unsavoury to the proposed flat-dwellers and destroy all conceivable attractions of the ninety-six acres of hillside intended to be preserved as open spaces, but it would effectively obliterate the *genius loci*, and the eventual disappearance of the moats would destroy the little surviving visual evidence of what was once the greatest fortress in Europe. It is depressing to note that local mouthpieces, while observing with satisfaction that in acquiring the site they would acquire two ancient monuments—the Bredenstone *pharos* and the ruins of the Templar church—seem to have completely failed to observe that the site itself is a monument in its entirety, and deserves to be treated as such.

THE BALANCE OF SCIENCE

It is not often that an entire mental discipline, a whole world-wide body of thought and action has cause to feel that, like a walk-on player in a play, it has not had its fair share of the reviews. Nevertheless, building science may well feel that it has ground to complain of the treatment it receives in the new UN/UNESCO publication *Current Trends in Scientific Research* (HMSO, 33s.). The attempt, by Pierre Auger, to survey the direction and pace of science today, in one volume of less than 250 pages, must command our basic respect, but leaves the reader at liberty to ask what sort of balance between the various parts of science (including the higher technology) one man can ever hope to strike. First of all, this survey only covers the 'natural sciences,' and therefore (?) excludes psychology, sociology and the human sciences generally, except medicine. Its view of building research consistently follows this line and excludes all architectural and planning considerations except those that are directly derived from physiology (acoustics and comfort-level studies). This may be fair enough, given the narrow approach, but prefabrication, for instance, gets three lines, stunningly un-informative and rather misleading, thus 'A great deal of work is being done in various countries on the prefabrication of industrial buildings, i.e. buildings comprising components of a very large size.' (This must be the most meaningless *id est* in recent literature.)

In view of the massive importance of prefabrication research in most of the major building countries of the world, it is interesting to compare this three-line entry with fourteen lines on *Externally Perturbed Atoms*, or—to take an example from a field more directly comparable with building—seventeen on automobile braking. One observes that the Building Research Station was among the authorities consulted in compiling the book—they cannot have given a very forceful account of themselves for such a disproportion to have resulted. Or, alternatively, Professor Auger (described in the UNESCO handout as 'a very un-Herculean figure, a slender and almost frail scientist, whose shyness belies his world renown') may have had to make hurried value judgments out of an unmanageable welter of information, and allowed himself to be somewhat influenced by the fact that he is a physicist. At all events, it is no excuse for UNESCO to say that the book is 'neither a panorama nor an encyclopaedia' . . . When a book is as unique in its field as this, it will be used as an encyclopaedia in default of a more balanced work.



1, *the Grand Shaft at Dover.*

REISSUES AND PREISSUES

The spate of paperback issues of architectural books continues—but not all are re-issues of established hard-cover classics. J. M. Richards, for example, has followed Dr. Pevsner in moving in the opposite direction, and his *Introduction to Modern Architecture*, as well as being available as a paperback in English, Spanish, Portuguese, Serbo-Croat, Italian, Dutch and Japanese, is now available also as a hard-cover volume in English (one of Cassells' new Belle Sauvage Library, 21s.). Again, Jean Gimpel's *The Cathedral Builders* is available in English (in Carl F. Barnes's translation) *only* as a paperback (Evergreen/Profile Books, 6s.). It is an extremely useful addition to the available literature on Gothic architecture, since its scholarship is tempered by a degree of readability that should attract, not dismay, the general reader, its illustrations are adequate for the price, and its selected subject—the men who financed, organized, designed and constructed the great mediaeval cathedrals—is not one that has been covered in a compact tome before.

A paperback re-issue in (literally) the classic mould, is Geoffrey Scott's *The Architecture of Humanism*, now available in a facsimile reprint (or possibly a stereo from the original type) at 8s. 6d. (Methuen/University Paperback). The academic ethics of such facsimile reprints are always dubious when they offer a work that is not of our own time—uneasiness has been expressed, in these columns and elsewhere, at reprints of Vitruvius, Viollet-le-Duc, and others, without the benefit of modern notes, glosses, or introduction. Geoffrey Scott totters on the brink of history—to two generations he is an authority, but to another he is already a fuddy-duddy. 'Who *was* Cecil Pinsent?' they demand, glaring at the dedication, and little expecting to hear that their question should have been phrased in the present tense. To have put Geoffrey Scott in his historical context, somewhere between the Ritz and I Tatti, so to speak, would have been a public service by the publishers, and would have put present arguments about 'the last of the old-style classicists' on a firmer foundation.

CORRESPONDENCE

RUSSELL SQUARE

To the Editors.

SIRS,—I have read with interest the letter from Mr. P. G. Hall in your October issue, suggesting that this Council has been responsible for the 'desecration' of Russell Square garden. Mr. Hall contends that Repton's original eighteenth-century scheme was designed to 'bring the country into the heart of the town.' Repton himself in writing specifically about Russell Square says that 'It is possible that some fanciful advocates for natural gardening will object to this dis-

position of the trees as too formal. . . . In the due attention to the training and trimming such trees by art, consists the difference between a garden and a park, or forest; and no one will, I trust, contend that a public square should affect to imitate the latter.' Incidentally, Repton also expresses a principle in describing his design that it was '. . . founded on a due consideration of utility as well as beauty, without bigoted adherence to forms and lines, whether straight, or crooked, or serpentine.'

Whilst appreciating Mr. Hall's feelings for the preservation of links with the past, I would suggest that the treatment of a garden presents special problems, consisting as it does mainly of growing natural elements, and it would be difficult to sustain the argument that for over a century and a half the 'character' of the garden had not changed. Changes have been brought about by quite unpredictable forces; for instance, during the last war when the perimeter railings were removed, the garden became truly public for the first time, although the original intention was for a square primarily for the benefit of the residents occupying the houses round it.

Holborn Borough Council, as administrator of the garden since the war, has seen its duty as one of adapting the character of the garden to the wider needs of the whole residential and working population of the area, not forgetting the numerous visitors, and although the final phase of the scheme has yet to be completed, it will be seen that there is at least an equivalent area of grass. Mr. Hall is anxious to preserve what he describes as a lost spaciousness, loneliness, freedom, but maybe these characteristics could only be equated with the use of the square by the few as against the great numbers of the general public that have shown their appreciation of the present scheme in the most practical way—by its use.

Yours, etc.,
C. F. BURGE
(Chairman, Highways and Works Committee, Holborn Borough Council).

PORTSDOWN HILL, HAMPSHIRE

To the Editors.

SIRS,—In spite of the fact that a green belt area has now been approved for Hampshire, much of what Mr. Ian Nairn predicted in his excellent article 'Green Mantle' printed in THE ARCHITECTURAL REVIEW for November, 1959, seems unfortunately to be coming to pass. He referred to the Portsdown Hill Area and Southwick, and I would like to suggest for the following reasons the formation of a Trust or Society not only with the object of preserving the landscape of this important area but also to help reinstate those areas which have become neglected and are now largely overgrown with scrub. Some pleasant northern slopes have already been officially omitted from the green belt area and those between Bedhampton and Waterlooville have been suggested for possible residential development as this part of the hill has been termed 'uneconomic' by the local authority concerned.

The Portsmouth City Council are still pressing for their boundary extension, and although Southwick has been included in the green belt pressure is being brought on the Ministry of Housing and Local Government to release this pleasant village for residential and industrial development. The logical solution to the Portsmouth overspill problem, the construction of a bridge across the Langstone Channel to South Hayling and the creation of a new community with both residential and industrial development in that area, has been turned down by the local powers that be, because of the cost of the bridge, between four and five million pounds. This sum is not seen as an investment in what could be a new resort to form an incentive for someone to restore the decaying areas of Southsea. Although many of the southern slopes of Portsdown Hill have largely been ruined by local authority housing, and the crest has been invaded by the Admiralty, sufficient remains of this large open space accessible to well over 200,000 persons to enable the environments to be improved.

Not only could the northern slopes, in constant pressure from the Waterlooville 'sprawl,' be preserved, but much of the land on the southern slopes could be restored. A Society or Trust could for example be empowered to buy land, plant trees, to form shelter belts, spinnies or screens and help to clear scrub and suggest where necessary landscaping could be improved.

It may be argued that such a problem is a local one and therefore of little concern to REVIEW readers, but surely a hill of this nature is as important as the Lickey Hills, Hampstead Heath, the South Downs near Brighton or the Solent area. I would be grateful therefore of readers' views concerning this area and would like to know if it is thought that a stand could be made for its preservation at national level.

Yours, etc.,
DONALD S. DAWSON.
Portsmouth, Hants.

BOOK REVIEWS

EXHIBITIONS SURVEY

EXHIBITIONS. *By Klaus Franck. Architectural Press. 73s. 6d.*

This can only be described as a really posh job. It is a survey of international designs for exhibitions, large and small, fixed and mobile. There are 130 examples gathered from 16 countries. There are 250 pictures, a text in two languages, an introductory article on problems and principles and a list of designers' addresses at the end.

Conscientiously selected, elegantly laid out, primly printed, precisely described—only the sourest reader could ask for more. Yet note, if you will, those adverbs. Is the throat caught? Does the eyelid prick or the heart leap? Frankly no. (Whose mouth, after all, ever waters over an immaculately turned-out and frozen-faced fashion-plate?) Yet facts—however glossily presented—must be faced and it is sadly symptomatic of the elegantly tailored *culotte-de-sac* into which exhibition design has inserted itself during the last ten years that the reader's first reaction to this handsome compendium may be that he has seen it all before.*

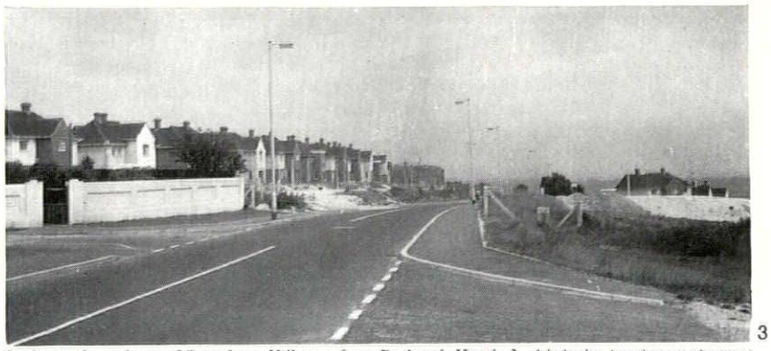
He hasn't, of course; yet here, still gamely at it on page after page, are the spindly metal legs tittupping rigidly across the polished floors, the enlarged photographs of micro-cells, the 'grot' captions, the space-frames, the multiplicity of light-fittings, the empty silent rooms. (True to formula no live person is ever permitted to disturb by his presence in the photograph the clarity of the designer's conception.) How sinister, in repetition, are these icy rooms—each one, as it were, holding its breath. How one longs to make a mess or a loud noise or write something on the wall. This is exhibition design for exhibition designers' sake. Is it fanciful or professionally disloyal to detect beneath it all the built-in dislike of every architect for the object he is supposed to display, his inborn lifelong never-to-be-admitted irritation with People? Perhaps it's time now that the painters had a go. They are no less arrogant, but some of them have hearts as well as heads. Think of a furniture-stand by, say, William Scott or Rothko, a chemical display by Kokoschka or Ceri Richards or Roger Hilton—all photographed, in working order, by Roger Mayne. We badly need, in the face of such dead-pan and ingenious architectural competence a 'nouvelle vague.' Meanwhile it would be ungenerous to look this gift-horse in its shining well-brushed teeth. Here, unquestionably, are the best designs of the last decade—(a few quite outstanding examples by Max Bill, Wirkala, Girard and Castiglioni)—with every one of which any architect anywhere would be proud to have been associated . . . and that's something you could seldom say of any architectural picture-book.

Hugh Casson

* e.g. Lohse's 'New Exhibition Designs,' 1953, Erlenbach, Zurich, same size, typography and layout, 260 pictures and 3 languages.



2



3

2, the northern slopes of Portsdown Hill seen from Parbrook Heath. 3, Admiralty housing on the crest of Portsdown. See the letter from Mr. Donald S. Dawson.

ABSTINENT FRIENDS

THE FRIENDS MEETING HOUSE. *By Hubert Lidbetter. The Ebor Press. 35s.*

The interior furnishing of an early Friends Meeting House in England approximates as closely as anything on this side of the Atlantic to the famous Shaker furniture of America. Not in type, for it consists mostly of permanent seating, galleries and the like, but in a quality of direct functional simplicity that expresses a spiritual aspiration in material substance better than most of the religious 'art' that has silted up the altars of Europe in the last five centuries. For a reasonable parallel one must go back to pre-Quaker and pre-Renaissance comparisons—the flap-up partitions of the closed galleries at the back of Brant Broughton in Lincolnshire suggest nothing so much as the flap-down work-bench of St. Joseph in van Eyck's Ghent altarpiece, painted some three centuries before Brant Broughton was completed in 1701.

Such discoveries as these (and they will be discoveries to most readers) can only make us regret that Mr. Lidbetter's book should be so inordinately expensive, and so dully illustrated. The under-inked half-tone blocks of uniform half-page format do less than justice to a group of buildings that clearly deserve the love and labour that the author has lavished on them—and none better qualified than he to do so, for he was appointed Surveyor to the Six Weeks Meeting in 1935, designed the present Friends House in the Euston Road, and established his expertise as the historian of Quaker Architecture with an article in the AR for April 1946. Fortunately his devotion shines through the inadequacies of production, and should give many readers an illuminating insight into an

'architecture' that seems to anticipate the aims of Lethaby, and lays fair claim to being the spiritual father of the Functional Tradition.

Hugh Wykeham

AESTHETIC OR TECHNIC?

KATSURA. *Introduction by Walter Gropius, text by Kenzo Tange, photography by Yasuhiro Ishimoto. Yale University Press (London, OUP).* £6.

STORIA DELL'ARCHITETTURA MODERNA. *By Leonardo Benevolo, Editori Laterza, two vols.,* 16,000 *lire.*

A confrontation of a part of the wall of the Katsura detached palace, and a Mondriaan—victorious confirmation of the eternal beauties reawakened by modern architecture, or simply another proof that the Modern Movement cannot tell a technic from an aesthetic? The persistent misreading of the Japanese Sukiya tradition in Mies-Mondriaan terms has been a worrying feature of architectural 'thought' (sic) ever since the war, and Professor Benevolo, who makes the confrontation in the second volume of his compendious history, does himself less than justice in doing so. But has he done an injustice to the Movement whose history he writes? To judge from Walter Gropius's introduction to Ishimoto's rather dim pictures of the Katsura palace (the fault may be in the inking, not the original photographs) Benevolo does no injustice at all, for Gropius, with that complete absence of historical perspective that is at once so exhilarating and so terrifying, is quite happy to read Katsura as a justification of the Werkbund ambitions of 1911. He is 'impressed' by the Zen maxim: 'Develop an infallible technique, and then place yourself at the mercy of inspiration' (cf. 'So much for technique!—now what about Beauty?' in *The New Architecture and the Bauhaus*), by means of which the Japanese have developed 'complete flexibility of exterior and interior walls, changeability and multi-use of spaces, modular co-ordination of all the building parts, and prefabrication. One can still buy . . . standardized component parts of a wooden house and assemble them on the site . . . can satisfy the seemingly self-contradictory requirement of providing unity and diversity' (pure Berlage!) and of course 'The builder subordinated himself to the supra-individual idea of a unified environment . . .' and so on. I suppose it is *just* possible to imagine a Japanese using a comparable European building (the Petit-Trianon, or Royal Lodge, Windsor) to justify twentieth-century ideas about self-expression, or something. . . .

Benevolo's book, on the other hand, never really raises the problem of aesthetic/technic confusion in as fundamental and generalized a manner as his subject requires, though there are some passages where he generalizes very acutely from what must have originally been purely visual observations—e.g. his parallel drawn between the repetitious composition of Durand's ideal projects and the repetitious assembly of engineering works such as the Crystal Palace. Benevolo, in short, belongs to that tradition that sees the evolution of modern architecture as primarily dependent on social, legislative and industrial causes, rather than on aesthetic (though the general visual culture of successive epochs is briefly sketched in). Where he improves and extends this traditional view is in a literal extension, backwards into time. While most such studies take off from the mid-nineteenth century, Benevolo, in line with a general current interest in Italy in Illuminism, takes off from the French Revolution and casts a backward glance at 1750.

In this, clearly, he follows the logic of the technico-social approach, and I suppose it is only a matter of time before we have histories of modern architecture that take off from the Council of Trent, the Black Death, the Coronation of Charlemagne or the Battle of the Mauriac Plain. Benevolo himself raises the problem of the limits of the subject, but it seems to me that he, like the intense young radical ladies who write for *Superfici*, has already lost the sense of the modernity of modern architecture, a loss which makes it possible to reflect the past forward on to the present almost as indiscriminately as Gropius reflects the present on to the exotic past.

In saying this, I am probably being unfair to Professor Benevolo, whose choice of take-off point is well argued, and his book as eruditely written as its bulk and scope require. Nevertheless, this current tendency in Italian historiography serves a salutary need in making us ask what we mean by *modern*, and requiring us to sharpen up our historical definitions. Where, on points of definition, I hold my own basic quarrel with Benevolo is that in the two-hundred year span of his narrative he has only *one* industrial revolution. English technical and social historians have already abandoned this over-simple position. For a start, the industrial chaos criticized by utopians like William Morris was the product of over a century of mechanization, containing a number of major upheavals, and imparting a social and economic dynamic far more violent than any of the political revolutions of the period. Again, there is—as I have argued elsewhere—a major change in the sense, quality and effects of mechanization in the first fourteen years of the present century. Even if Professor Benevolo is prepared to leave Cubism, de Stijl and other purely formal influences almost completely on one side (twelve pages out of over a thousand) his silence about the revolution wrought by Benz, Diesel, Marconi, Edison, Hertz, Fleming, Pulitzer, Lasker, Ford, the Brothers Wright, and the rest of the makers of the twentieth century, seems doubly inexcusable. Firstly, because one would suppose that his basic position would require him to notice *all* major socio-economic upheavals: secondly, because this particular upheaval is the one that accompanied the emergence of 'modern architecture,' as the term used to be understood before expansionist historians began stretching it backwards. Einstein alone (not even Minkowski) gets a showing in Benevolo, out of this whole army of technical and scientific revolutionaries.

The trouble seems to be that the effect of this later socio-economic upheaval was to focus attention more particularly on the individual and his motivations than on the masses and their movements, and this is a field that most historians of modern architecture are extremely reluctant to enter. Nevertheless, it is a field that must be entered, because it seems to hold more keys to what has been happening to architecture in the last forty years than all the history of the previous hundred-and-sixty, whether interpreted in Marxist, paleo-Marxist, neo-Capitalist, pseudo-Positivistic or any of the other terms with which Italian historical philosophers make so free, Benevolo's *Storia dell'Architettura* may yet prove to be the last, as well as the most comprehensive, of the socially diffuse histories of Modern Architecture.

Reyner Banham

SWEDISH INTEGRITY

NEW ARCHITECTURE IN SWEDEN. *Compiled by the Association of Swedish Architects. Stockholm: Almqvist and Wiksell. No price given.*

With one reservation one can acclaim this anthology of Swedish buildings of the ten years between 1950 and 1960 as a model of its kind. The 160 or so buildings, grouped according to category, are well chosen—as far as an outsider can judge—beautifully photographed and spaciously laid out, and each has a clearly drawn plan. The reservation is that there is no information whatever beyond the name of the building, its date and the name of the architect. Even a few words of description, giving essential information that cannot be deduced from the photographs—on such subjects as siting, purpose, accommodation, materials and colours—would have made the book ten times more interesting.

Nevertheless, it is an impressive volume and bears out the claim made in a useful introductory text (printed in English as well as Swedish) that although Swedish architecture may not now have the impact internationally it had in the 1930s, that is not because standards have deteriorated. There is still no place like Sweden for consistency and integrity of design, for serious, workmanlike solutions to all kinds of problems and for the craftsmanlike use of materials. In no other place is architecture so clearly one of the guardians of the public conscience.

J.M.R.

THE BUSINESS OF DESIGN

PROFESSIONAL PRACTICE FOR DESIGNERS. *By Dorothy Goslett. Published by Batsford.* 30*s.*

One should treat this book like a dose of salts—get it before you need it, read the instructions carefully and then keep it on an office shelf in case of emergency. While being most effective when taken early it can be self-administered with benefit at all times by those anxious to maintain a healthy practice.

Miss Goslett, one of the partners and business manager of Design Research Unit (the biggest industrial design organization outside the United States) writes with fourteen years experience of making the practice of design function as a normal paying business. And it is the merit of this book, very well written in simple and practical terms, that it gives precise advice on how such a practice can be achieved, and what to do if things go wrong.

The book traces the *business* of industrial design through all its stages. It starts with elementary problems of setting up an office—a section of particular value to anyone commencing his own practice. Small details are not considered to be too unimportant to mention—how to get a telephone installed, registering a business name, having decent tea-cups for clients, and so on. This is followed by a careful assessment of the budget that should be allowed for the first year in practice if there is to be a reasonable chance of remaining solvent at the end of it. The section on 'Finding Clients' is the only one not relevant to the architect—though the ingenious bait-and-tackle advice has a special fascination for anyone fenced in by the Code of Professional Practice.

After a section on taking the client's brief there is sound advice on letter writing with examples of wording appropriate to the most tentative or concrete proposal. There follow chapters dealing with the costing of the job, checking progress, and running the office generally. The book is by far the most practical one of its kind available. The fact that it is written mainly for industrial designers does not detract from its very real value to any architect who may be concerned that his ability as a designer should be helped, not hindered, by his office organization.

Stephen Garrett

ROYAL HALL

THE CASTLE OF BERGEN AND THE BISHOP'S PALACE AT KIRKWALL. *By W. Douglas Simpson: Aberdeen University Studies. No.* 142. *Published by Oliver and Boyd* 1961. 13*s.* 6*d.*

Dr. Simpson, who knows more about castles in Scotland and Germany than anyone else in Britain, has now swept down on Norway, and to good purpose. He introduces to English readers King Haakon's Hall at Bergen, a grand royal hall of the mid-thirteenth century, describes it in detail and compares it with English, French and German halls. His suggestion is that it was built by a mason from the King's Works in England, and vaulted a little later by a mason with French experience. Dr. Simpson fights the stupid idea that a Norwegian King in the thirteenth century was a kind of belated Viking barbarian. King Haakon had personal as well as diplomatic relations with Henry III, Louis IX, the Emperor Frederick II.

Added to the account of King Haakon's Hall is one of the adjoining Rosenkrantz Tower which also contains a fine thirteenth-century hall and one of the Bishop's Hall at Kirkwall on the Orkneys. A good deal of this he dates convincingly to the mid-twelfth century, largely by comparison with the oldest parts of Kirkwall Cathedral, the parts which patently depend on Durham. What Dr. Simpson is anxious to prove is that the Royal Commission on Historic Monuments, here and also, for instance, at Cobbin Row's Castle, is wrong in presupposing long time-lags between metropolitan developments and those on the Western Isles.

N. Pevsner

BOOKS RECEIVED

LANDSCAPE ARCHITECTURE. *By John Ormsbee Simonds. Dodge Corporation.* $12.75.
EINFAMILIENHAUSER IN STAHLBAUWEISE. *By Helmuth Odenhausen. Verlag Stahleisen M.B.H. (Dusseldorf).* DM.58.
SIX HUNDRED NEW CHURCHES. *By M. H. Port. S.P.C.K.* 50*s.*
BUILDING FOR THE AGED. *Edited by F. H. J. Nierstrasz. Elsevier Publishing Co.* 85*s.*
ARCHITECTURE IN ITALY. *By Martin Briggs. Dent.* 15*s.*
ELEMENTARY STATICS OF SHELLS. *By Alf Pfluger. Dodge Corporation.* $8.75.



Sheffield has become a city of violent architectural contrasts, with some of the best recent British buildings outside London rising above a rusty black wilderness of nineteenth-century stone and brick. Such townscape demands the hand of a John Piper to record it, and opposite are two of his recent drawings of the new Sheffield among the old: above, tower blocks on either side of Bond Street; below, tower blocks between Crookesmoore and the Royal Infirmary. Across on the other side of Sheffield stands Park Hill, the most remarkable of Sheffield's new buildings, and the subject of a critical assessment by Reyner Banham on pages 402-410.

Eileen Harris

THE FARMHOUSE: VERNACULAR AND AFTER

Regardless of its long history, its utility and universality, the farmhouse is one of the least noticed of all buildings. Too tenacious in the face of a changing scene, it has failed to receive the publicity enjoyed by more rapidly disappearing commonplaces. Too simple and ignoble in character, it has failed to merit the scrutiny of the architectural historian. Too popular as a synonym of the picturesque landscape, and as a nostalgic reminder of the quaint simplicities of rustic life, it has failed to assert itself as a building in its own right.

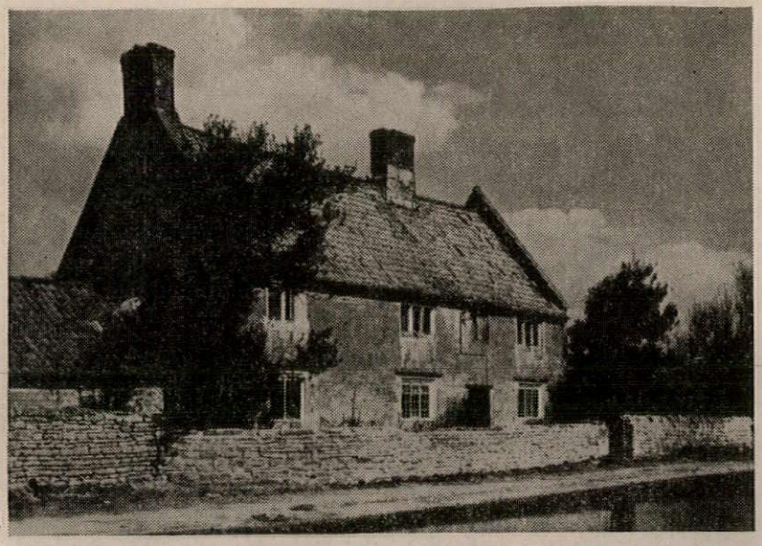
If slighted as a subject of scholarly investigation, the farmhouse has always been a favourite pictorial theme. As such, however, it has been subject to an overdose of romanticism prohibiting an understanding of its form. The hazy views of thatched and timber-framed houses which filled the picture-books of the nineteen-twenties and 'thirties have been technically improved by modern photography. But the sentimental and picturesque image remains unaltered, and very much alive. The only exception is the pictorial survey* compiled seven years ago by Olive Cook and Edwin Smith. Here, for the first time, the farmhouse was brought into the foreground and given the kind of photographic treatment normally reserved for grander buildings. Unfortunately, this example has, as yet, failed to set the standard for the illustration of all rural buildings, the farmhouse and cottage in particular.

The first hints of an historical awareness of the farmhouse emerged out of the post-war surge of activity in the fields of social and economic history. With the concentration on narrowly defined areas, and the increased application of documentary information, the farmhouse assumed importance as an essential factor in the assessment of cultural conditions. Data referring to the size and contents of the house has been methodically extracted and often published; but it is generally divorced from the building and used in other contexts.

With the recent publication of Maurice Barley's *The English Farmhouse and Cottage*† we have, at long last, the first truly systematic history of these previously neglected or over-sentimentalized buildings. It is significant, and in many ways fortunate, that Mr. Barley is not an architectural historian, but a local and economic one. As such, he is as much interested in the functions and inhabitants of the farmhouse as in its structure. He is, furthermore, better qualified than most architectural historians to select, interpret, and evaluate the descriptive evidence contained in probate inventories, wills, leases, and other contemporary records, and to combine such material with a broad and careful study of existing buildings, and archaeological investigation of buried

* *English Cottages and Farmhouses.* By Olive Cook and Edwin Smith. London: Thames and Hudson, 1954.

† Routledge and Kegan Paul, London, 55s.



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2

1, *Manor Farm, Clipsham, Rutland, built in* 1639. 2, *a Kersteven three-unit stone house of c.* 1660, *at Kelby, Lincs. Both these pictures are reproduced from Maurice Barley's* The English Farmhouse and Cottage.

ones. Although highly specialized, his information is admirably presented in a lucid and readable manner, better illustrated by diagrams and documents, however, than by photographs.

Prefaced by a survey of the medieval and Tudor house, Mr. Barley's study is focused on the late sixteenth and seventeenth centuries. Within this period he is able fully to relate the development of the farmhouse to the local traditions, and the geographical and economic factors which determined its function, and hence its form. To his dismay, the weakening of vernacular traditions after the Restoration make it impossible for him to continue studying the farmhouse as a cultural artifact. His concluding chapters mourn the rapid ascendance of generalized patterns in place of the individual features which distinguished the old houses of such different areas as Kent and Yorkshire. The farmhouse, becoming conscious of its appearance, ceases to be a vernacular building and approaches 'architecture.' At this point, Mr. Barley's work as a local and economic historian comes to an end. Nevertheless, the history of the farmhouse is far from complete.

As 'architecture' the farmhouse has two beginnings: first, by default of no longer being a building in the vernacular sense; and second, by being recognized as a valid task for the professional architect. The latter event is of special consequence not only to the development of the farmhouse, but also to the meaning and scope of architecture. In effect, it marks the dissolution of traditional Renaissance concepts, and the beginning of the more expansive modern approach.

To Renaissance thinking the farmhouse was not 'architecture.' It was nothing more than a utilitarian structure designed for profit rather than pleasure. As such, it was relegated to the lowest position in the ascending hierarchy of building. Its form was determined by its function, leaving little to the imagination; and its sole requirements were convenience and health. In short, it had neither art nor profit to recommend itself to the architect. The latter, interested in displaying his skill and enhancing the dignity of his profession, was better advised to limit his services to lovers of art and persons of rank and means.

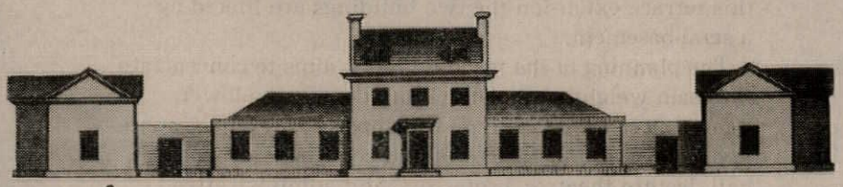
Nevertheless, visual improvement was not entirely out of the question. Vitruvius suggests the possibility of adding a touch of elegance to the farmhouse by the introduction of a symmetrical plan like that applied to town houses. But the only architectural theorist to actually provide designs for such inelegant buildings was Serlio. His unpublished treatise on domestic architecture begins with the barest one-cell cottage, and advances to the farmhouse, the artisan's house, and so on up the scale. Serlio includes these small dwellings, however, only as a logical point of departure in what he intended to be an all-inclusive survey of the habitations of man. He does not consider them legitimate architectural forms.

Full acceptance of the farmhouse was clearly impossible without some change in the Renaissance definition of architecture. This was ultimately achieved, not by an overthrow of traditional theories but by various shifts of emphasis within them. The justification of the farmhouse is contained in two peculiarly French views: first, academic acclaim for the absolute beauty of form divorced from ornament; and secondly, rationalist stress on the primitive beginnings of architecture as the models for the more perfected stages. As a result of these interpretations, the simple, unadorned house emerged as a valid and desirable goal. It was recommended not only as the purest architectural expression, but also as the easiest. Since it required no rules other than those of proportion, it promised a wider margin of success for the mediocre architect and greater freedom of invention for the genius. This was the first step towards the admission of the farmhouse. The final opening came with the translation of proportions into feet and inches. Once that was accomplished it was possible for anyone to erect a building of any size or description in accordance with the standards set down by the great architects of the past. This extension of architectural principles was one of the major characteristics of eighteenth-century English Palladianism.

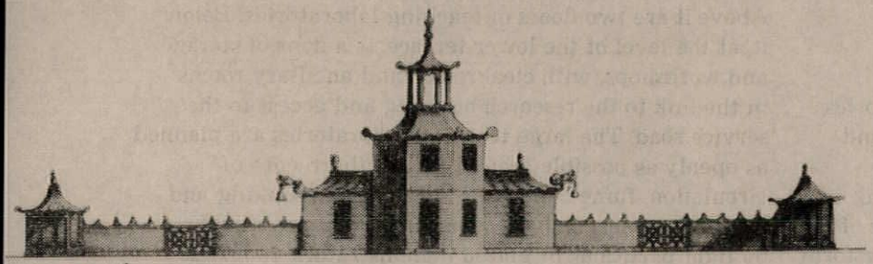
Although architecture was at last made available to the farmhouse, the architect was still to be introduced to the subject. This was effected by the gentleman-landowner who was, in turn, prompted by the development of the English landscape garden. Earlier, the mansion had been surrounded by a knot

of formality, prohibiting a vision of the rough pastures beyond. When Kent 'leapt the fence and saw that all Nature was a Garden,' the landowner for the first time saw his unkempt farmhouse. The advantages of hiring an architect at this point are succinctly expressed by Isaac Ware in his *Complete Body of Architecture* (1756): '. . . the barns, stables, and cow houses will rise like so many pavilions; and the very sheds will assist in the design. . . . In this manner every part will join; and nothing will obstruct the intention of mixing utility with great elegance.' The employment of a professional architect of the first rank to design a farmhouse was, however, an extravagance in which only the wealthy could indulge. The other, and more common, alternative was the pattern-book, which provided a broad selection of designs in the latest styles, complete with measurements and estimated costs.

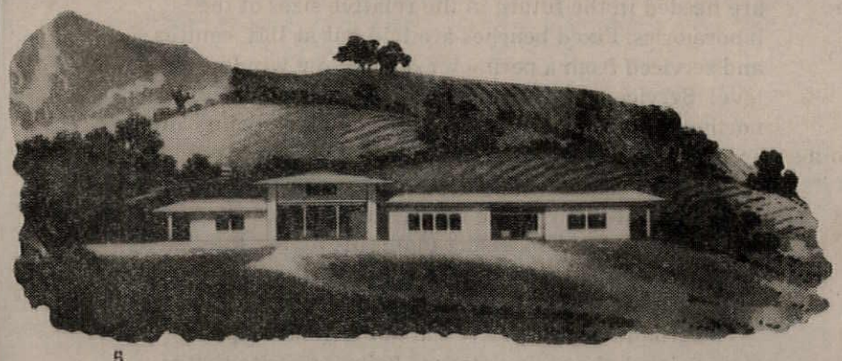
3, *design for a farmhouse, from Robert Morris's* Select Architecture, 1755. 4, *lodge house and farm 'in the Chinese taste' from T. Lightoler's* The Gentleman and Farmer's Architect, 1762. 5, *design for four cottages, from Joseph Sandy's* The Rural Architect, 1805.



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These books, which appeared in unprecedented numbers, were a unique eighteenth-century English phenomenon. Written by architects and addressed to a wide audience, mainly of artisans and gentleman amateurs, they were cheap, portable and easy to comprehend. The enormous vogue which they enjoyed must be seen as a corollary to the Palladian dissemination of architectural gospel. It is certainly significant that the first book of designs for farmhouses, appearing in 1747, was the work of Lord Burlington's personal draughtsman and clerk of works, Daniel Garret. No sooner had the idea of the architectural farmhouse appeared in print, than it was taken up by William Halfpenny, who cleverly saw in it a profitable subject for popular publications. Having no formal precedents dictating its appearance, and seeming to require a disguise for its functional character, the farmhouse became a ready receptacle for all the fashionable styles from the Palladian to the Chinese. Most of these eclectic designs are purely paper architecture, hardly suitable for execution. Nevertheless, the general influence of the pattern-book is visible in the high standard of building throughout the country.

In contrast to the rather long and rambling buildings of the seventeenth century, the eighteenth-century farmhouse is characteristically neat, symmetrical and box-like. This appearance did not require the assistance of an architect, but could be attained by imitating more ambitious buildings. As a rule, however, the symmetry and order applied to the house were not extended to the appearance and placement of the adjacent offices. A compact and orderly relationship between the living and service quarters entailed a preconceived picture of the farm as a complete unit—in short, planning. It is here that architecture made its most significant contribution to the farmhouse.

Later eighteenth-century improvers found the regular facade of the farmhouse unpalatable to their taste for the Picturesque. Seeking the effects of time, weather, and accident, they turned for their models to the vernacular buildings of the past. To complete the circle, one may see in the Picturesque revival of the vernacular the seeds of sentiment which have so long obscured the farmhouse.

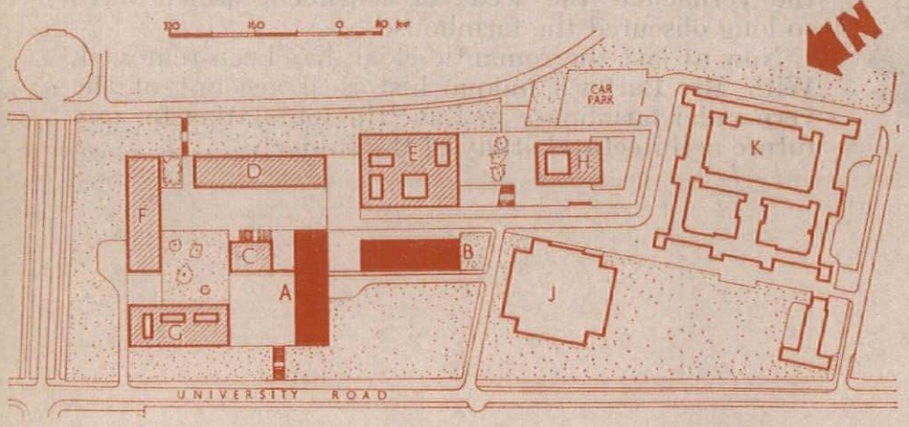
Now at last the romantic cloak has been removed. With Mr. Barley's unique historical account of the vernacular farmhouse we have the foundation for any future architectural study of the subject.

Chemistry Buildings, Leicester University

THE ARCHITECTS' CO-PARTNERSHIP

The Department of Chemistry required teaching laboratories of 40, 60 and 100 places accommodating altogether about 360 undergraduates; research laboratories and offices for about 70, including readers, lecturers, research fellows and research students; two lecture-theatres seating 80 each and two seating 50; administrative offices, storage, workshops, ancillary rooms, and a departmental library; and a boiler house with sufficient capacity to heat other projected buildings on the site.

This accommodation has been arranged in two separate blocks: one contains the teaching laboratories and lecture-theatres, administration, bulk storage and boiler house, and the other the research rooms. The teaching block is of four storeys, its long axis cutting across the contours of the site; the research block is of two storeys and lies parallel to the contours. They form part of the site layout designed for the University by Sir Leslie Martin, which uses the fall of the ground to create, in principle, two terraces, the upper separated from the lower by a retaining wall about 10ft. high. One end of the teaching block is moored to the upper terrace, which is extended along part of one side of the block so that the main entrances of both teaching and research buildings are approached from it. Below this terrace extension the two buildings are linked by a semi-basement.



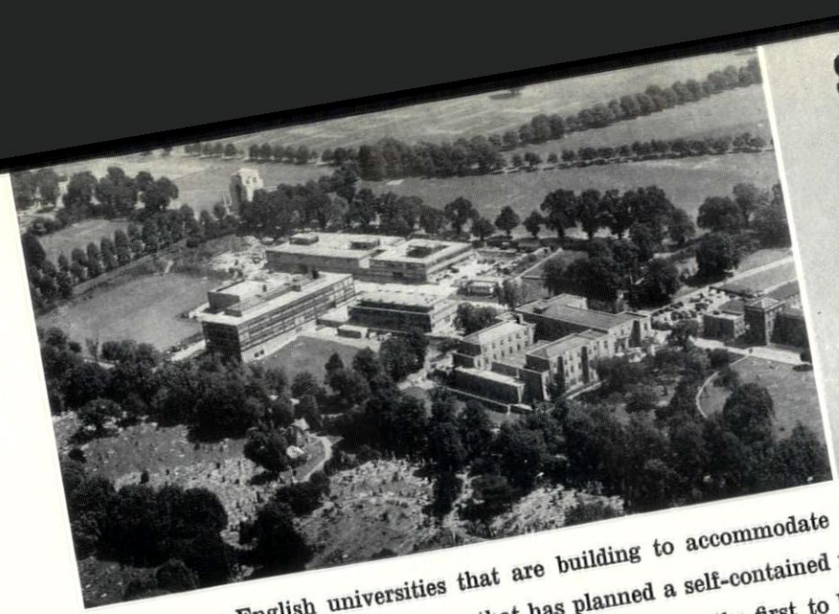
Site plan of the new science area, laid out by Sir Leslie Martin for the University of Leicester. The two chemistry buildings, designed by the Architects' Co-Partnership, are the first to be completed and are illustrated on the following pages. They are marked A *and* B *on the plan. The other new buildings are:* C, *lecture theatre;* D *and* E, *physical buildings;* F *and* G, *biology buildings;* H, *senate.* J *and* K, *are the existing buildings.* C, D *and* E *are now under construction (architects, J. Leslie Martin and H. St. John Wilson)—see air photograph opposite.*

The planning of the teaching block aims to concentrate the main weight of student circulation on the lower floors and to minimize it on the upper floors. The ground floor is at upper terrace level and contains entrance hall, lecture theatres, professors' and administrative offices and library, and also a radio chemistry laboratory. Above it are two floors of teaching laboratories. Below it, at the level of the lower terrace, is a floor of storage and workshops, with cloakrooms and ancillary rooms in the link to the research building and access to the service road. The large teaching laboratories are planned as openly as possible around the northern core of circulation, fume-cupboards, ventilation trunking and ancillary rooms, and are separated from one another by light partitions or glazed demonstrators' rooms, so that there is a fair degree of flexibility if adjustments are needed in the future in the relative sizes of the laboratories. Fixed benches are laid out at 10ft. centres, and serviced from a perimeter duct below window-cill level. Service pipes to this perimeter duct from the northern core are gathered together at three points and are slung exposed below the ceiling. Ventilation trunking, etc., is in the void above corridor false ceilings. A large plant-room on the roof accommodates water storage tanks and processing plant, lift motor, inlet air plant and extract ventilating fans, the latter discharging through louvred openings in the walls.

The ground floor of the research block is at upper terrace level, the main entrance being opposite that of the teaching block. Both floors contain similar laboratories and are planned round a central core of stores, lavatories, ancillary service rooms and staircases. One of the stairs and a goods lift descend to the semi-basement level of the link. The planning module for partitions between laboratories is 10ft., giving a minimum-sized laboratory of about 150 sq. ft., and provision is made in the floor slabs for vertical ducts at 20ft. centres adjacent to corridor walls, so that fume-cupboards can be fitted in any rooms whatever rearrangement of partitions is made in the future. Benches in the research block take the form of tables with loose underbench storage units. These tables are

[*continued on page* 383

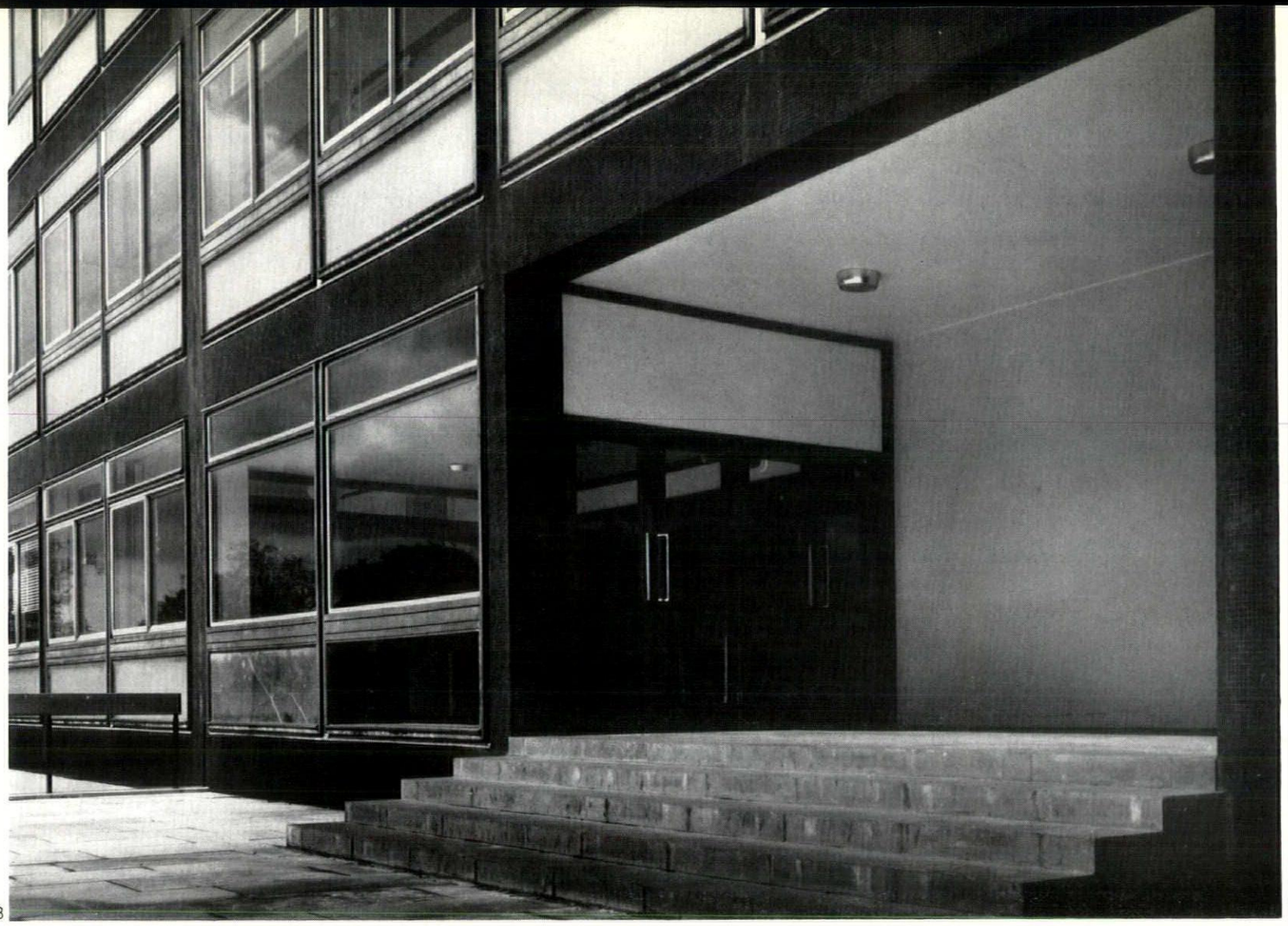
SCIENCE EXPANDS THE UNIVER-SITIES



Of the many English universities that are building to accommodate the expanding requirements of scientific education, Leicester is one that has planned a self-contained new science area—see site-plan opposite. The two chemistry buildings illustrated here are the first to be completed. Others are under construction as the air view above, 1, shows. The main university buildings are on the right of the picture.

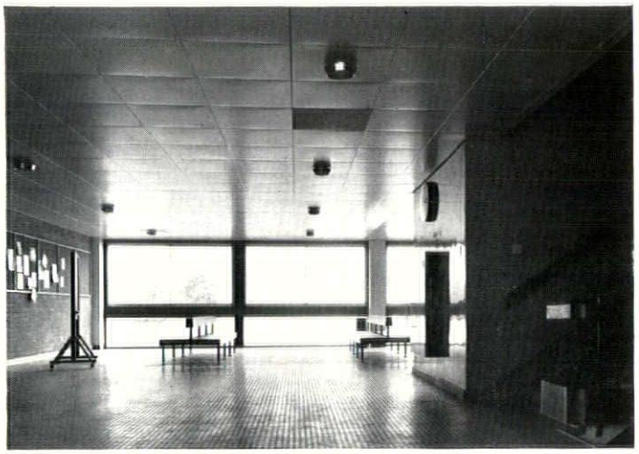


left, and the research block, right.

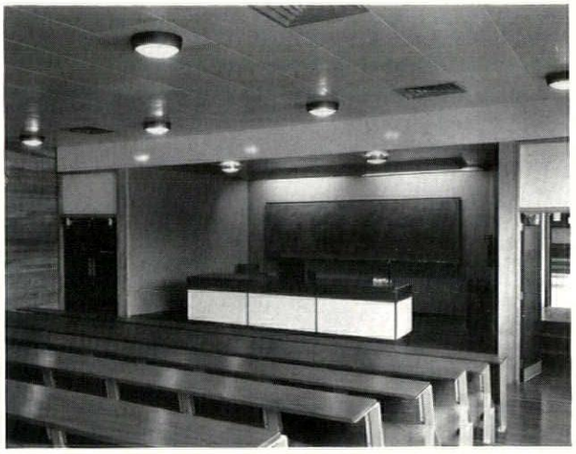


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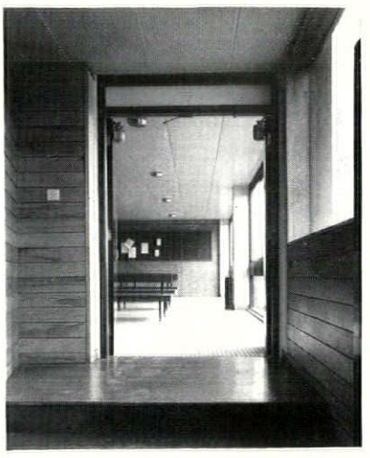
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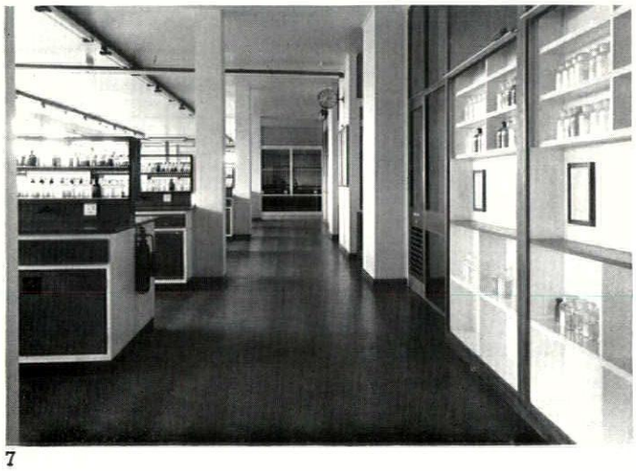


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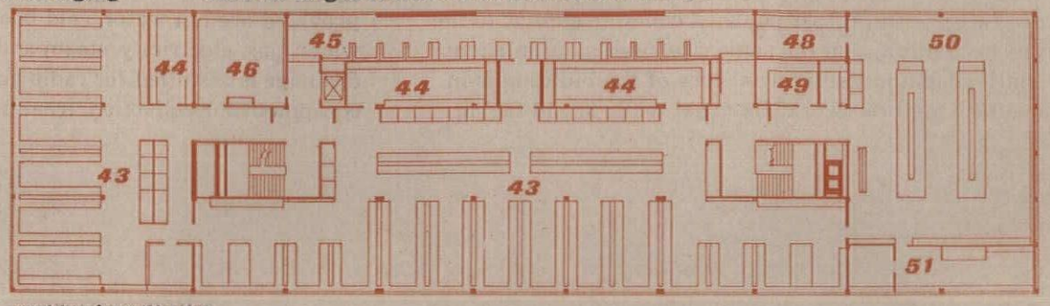
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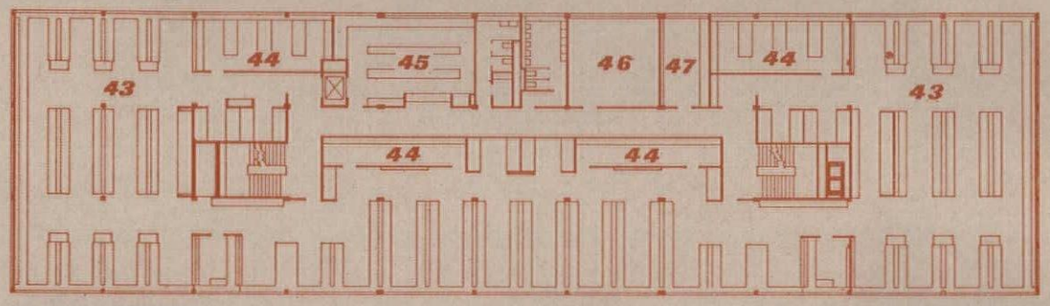
clamped to permanent service strips along walls and under windows and can be arranged in a variety of positions. Each fume-cupboard in the research block is served by an individual fan mounted in the open on the roof directly over a vertical duct and discharging above plant room canopy level. Inlet air to the plant room is drawn from below canopy level through louvred openings in the plant room walls.

The construction of the teaching block is in-situ concrete with columns at 20ft. centres, except over the two larger lecture-theatres where the span is

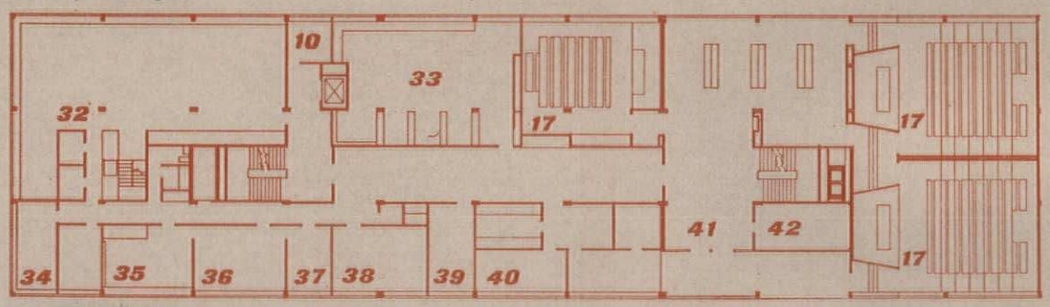
The photographs on the facing page all show the teaching block. 3, close-up of the main entrance facing the research block (see also 2 overleaf). The structural frame is faced with black unglazed ceramic mosaic. Window-frames are teak; sliding windows and top-hung ventilators are aluminium. Steps are precast concrete. Back wall of porch is also faced with unglazed ceramic mosaic.
4, the entrance hall, looking outwards. The perforated ceiling panels screen hot water heating coils.
5, a lecture-room seating 80—heating in ceiling (see above); maple boarding on walls; iroko flooring and furniture; chalk-board of glass; projection screen and charts pull down from a recess on either side. Warmed air is introduced through ceiling and extracted through risers of step.
6, lecture-room lobby, with entrance-hall beyond.
7, first floor teaching laboratory. Shelving for reagents is on the right, with chalk-board sliding in front of the upper shelves.
8, second-floor teaching laboratory (for 92 students). The benches have teak tops, painted framing and drawer and cupboard fronts of West African mahogany — shelving for reagents is painted with top surfaces of glass; service boxes faced with plastic laminate.
9, fume-cupboards in a teaching laboratory.



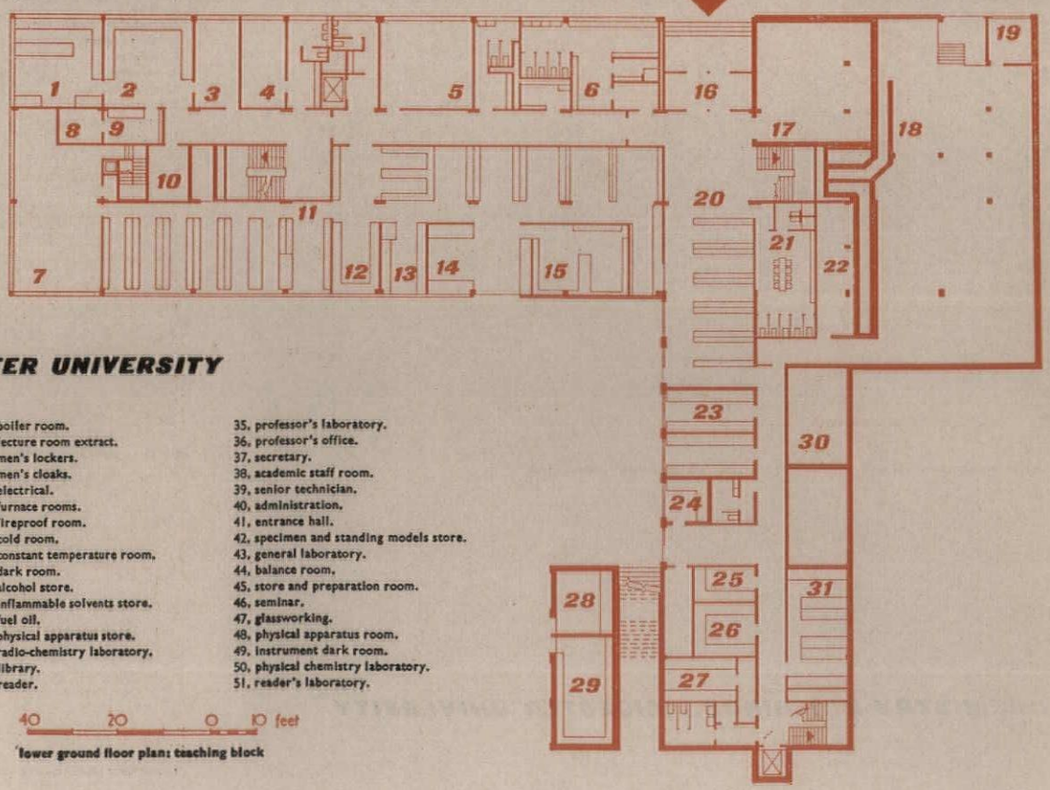
second floor plan: teaching block



first floor plan: teaching block



ground floor plan: teaching block



CHEMISTRY BUILDINGS, LEICESTER UNIVERSITY

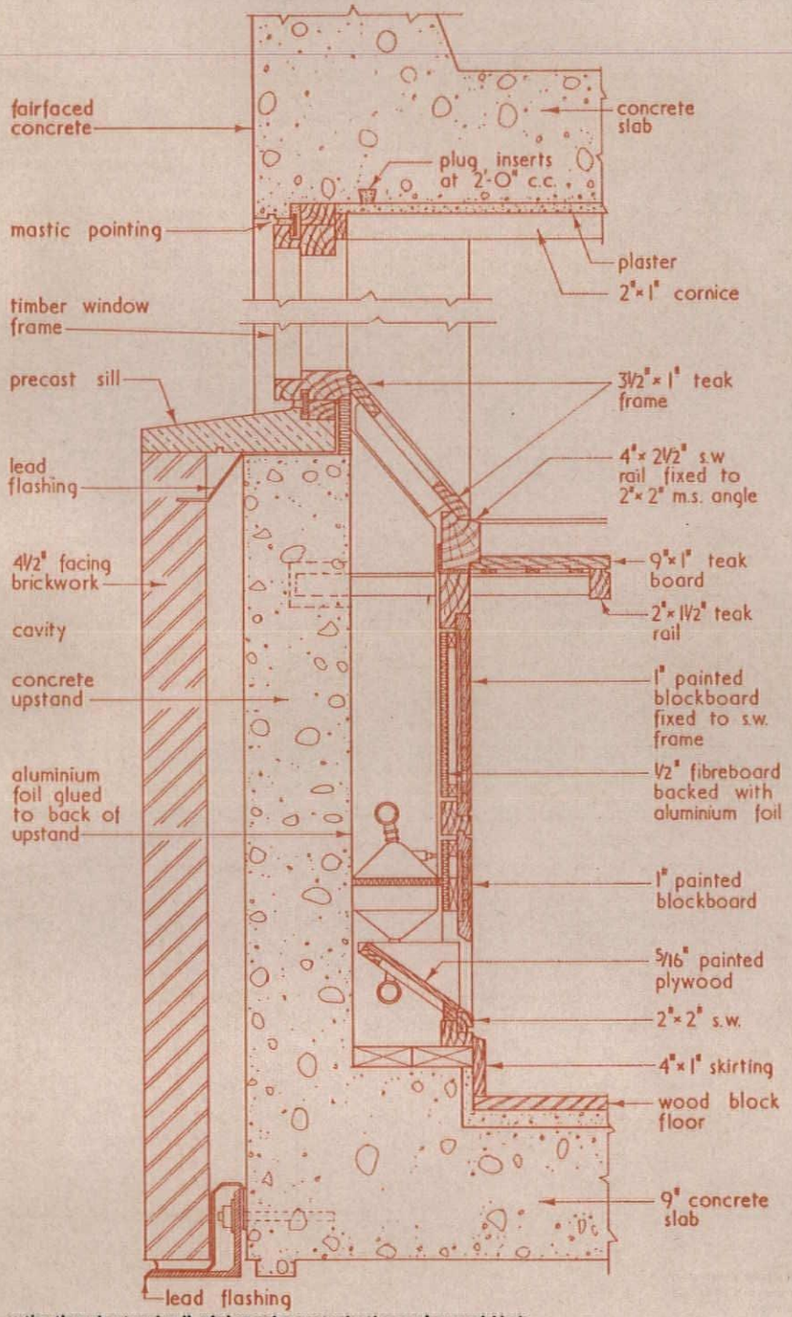
key

1, glassworking.
2, workshops.
3, senior technician.
4, cleaners.
5, technical staff room.
6, women's cloaks.
7, radioactive source store.
8, inlet ventilation chamber.
9, store.
10, first-aid.
11, chemical and main store.
12, wash-up bay.
13, analysis bay.
14, unpacking room and package store.
15, corrosive acids store.
16, draught lobby.
17, lecture room.
18, boiler room.
19, lecture room extract.
20, men's lockers.
21, men's cloaks.
22, electrical.
23, furnace rooms.
24, fireproof room.
25, cold room.
26, constant temperature room.
27, dark room.
28, alcohol store.
29, inflammable solvents store.
30, fuel oil.
31, physical apparatus store.
32, radio-chemistry laboratory.
33, library.
34, reader.
35, professor's laboratory.
36, professor's office.
37, secretary.
38, academic staff room.
39, senior technician.
40, administration.
41, entrance hall.
42, specimen and standing models store.
43, general laboratory.
44, balance room.
45, store and preparation room.
46, seminar.
47, glassworking.
48, physical apparatus room.
49, instrument dark room.
50, physical chemistry laboratory.
51, reader's laboratory.

40 20 0 10 feet

lower ground floor plan: teaching block

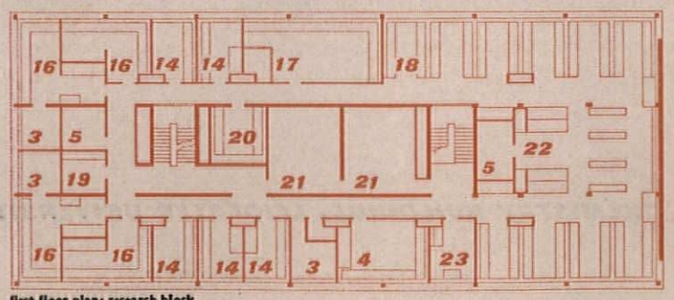
increased to 40ft. Floors are flat in-situ slabs 12in. thick. The structural frame is faced externally with matt black mosaic, and infilled with aluminium windows in teak subframes. The louvred walls of the roof plant room are in cedar. Similar in-situ construction is used for the research block, except that the external columns are faced with precast polished concrete similar to the physics building on the same site, used as permanent shuttering, and the internal core of the building is in loadbearing brickwork. External walls are in facing brickwork, and windows in teak. Heating in the teaching block is principally from radiant panels (hot water) cast in the soffit of floor slabs. In the research block convectors are used below windows to give simpler control in individual rooms. Tempered inlet air is provided to laboratories and lecture-theatres. Services provided are hot water, cold boosted water, de-ionized water, gas, electricity, steam and drainage. Independent drainage is installed for radio active wastes, with equipment for collection, treatment and disposal.



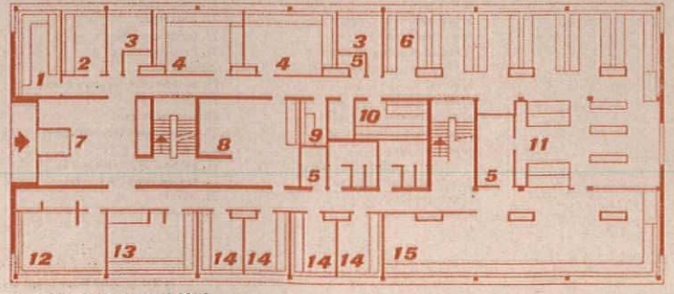
section through external wall, window and convector heating panel: research block

On the facing page: 10, the teaching block from University Road, which runs along the lowest edge of the site—see plan on page 380. On the right is the paved platform linking this block with the research block. Beneath the platform are furnace-rooms, fireproof room, cold room, etc. The lower floor of the teaching block is faced with London stock bricks—for materials of super-structure see caption on page 383. 11, the western side of the research block looking towards the teaching block—paving of precast concrete and granite setts; plinth of bush-hammered concrete; brickwork, London stocks; columns of reinforced concrete frame are faced with polished precast concrete units used as permanent shuttering; windows, teak with precast concrete cills with aluminium drips.

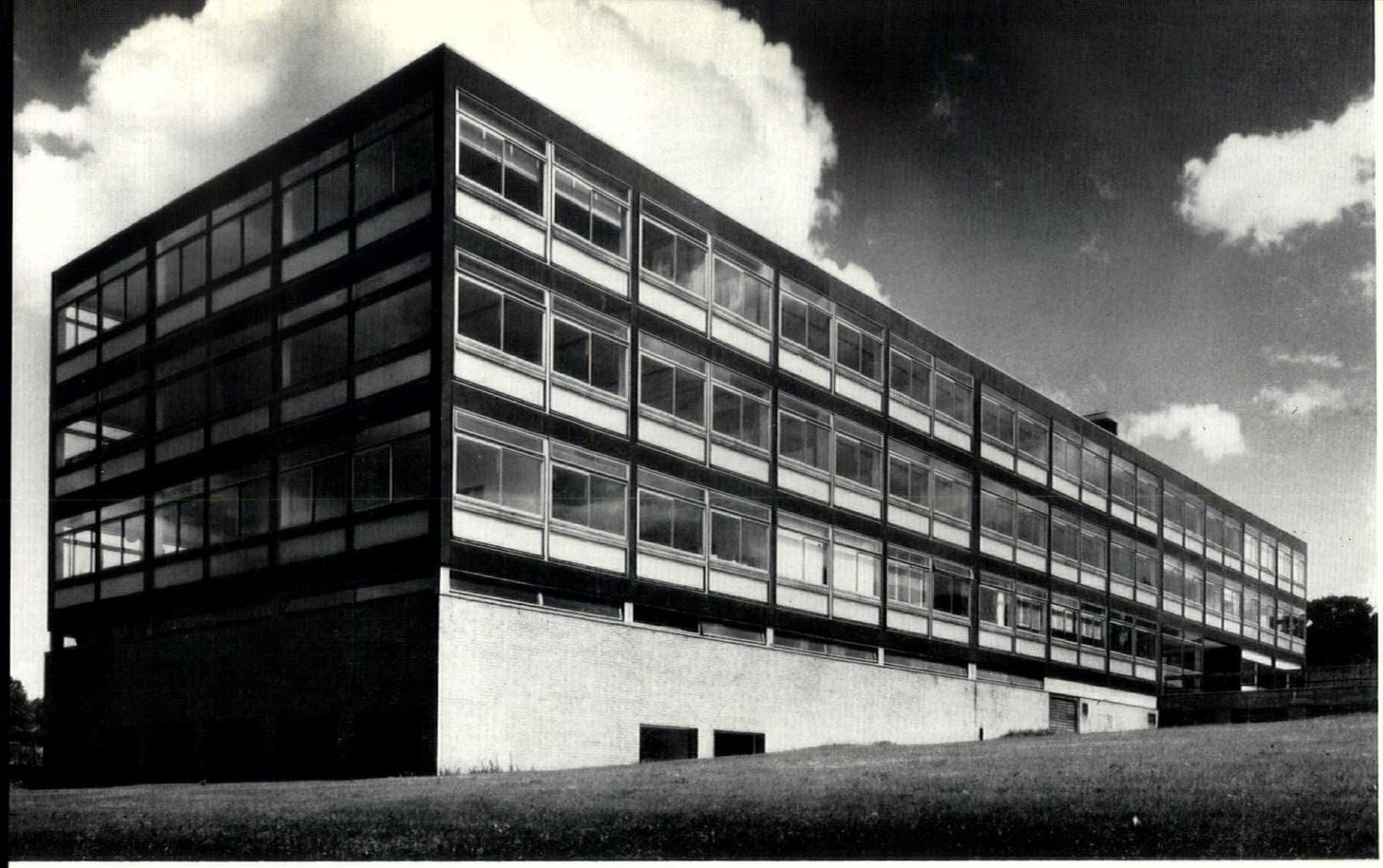
key
1, physical apparatus.
2, senior technician.
3, office.
4, two-fellow laboratories.
5, balance rooms.
6, students.
7, entrance.
8, store.
9, polarimeter.
10, instrument dark room.
11, students.
12, professor's office.
13, professor's laboratory.
14, fellow.
15, students' physical chemistry.
16, reader.
17, special operations.
18, students.
19, glassworking.
20, physical apparatus.
21, seminar.
22, students.
23, distillation.



first floor plan: research block



ground floor plan: research block



10



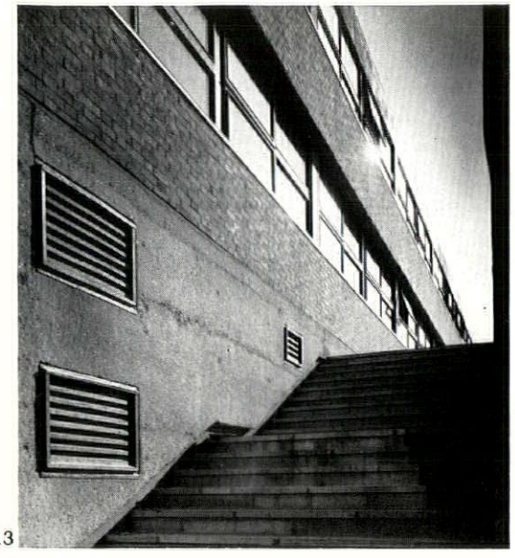
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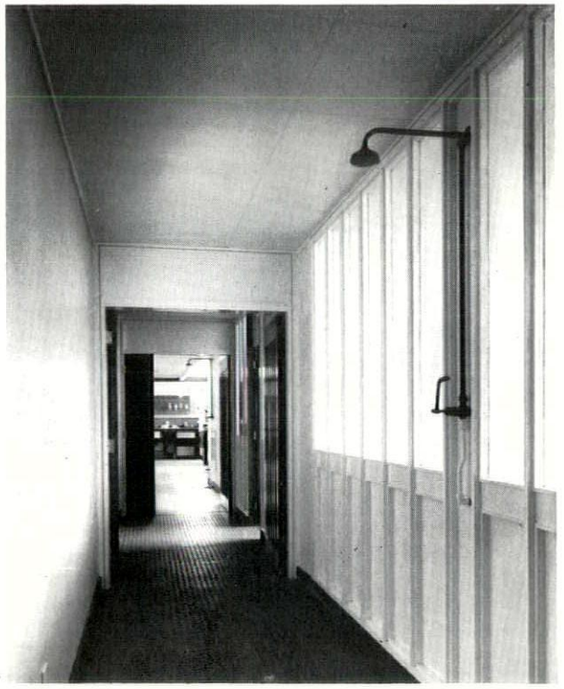
12

CHEMISTRY BUILDINGS
LEICESTER UNIVERSITY

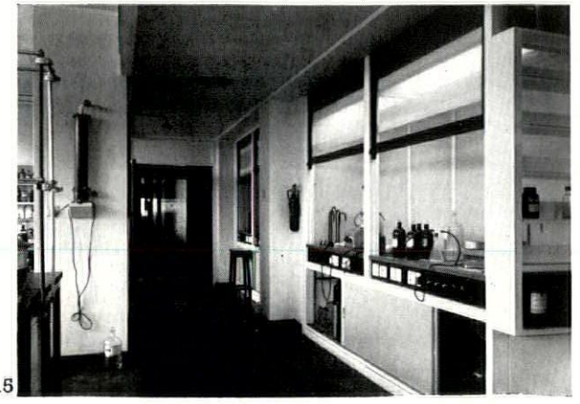
photographs by H. de Burgh Galwey



13



14



15

The photographs on this page show the research block, 12, from the west, with the service road below the ground-floor platform and, at road level on the extreme left, the entrance to an independent inflammable solvent and alcohol store.
13, steps from service yard between research block and the store referred to above.
14, corridor with solid wall of central core on left and glazed screens of small research laboratories on right; in the distance, a large students' laboratory.
15, looking the opposite way to above; from within a large laboratory; group of fume-cupboards on right.

Ian Nairn

GENTLE, NOT GENTEEL

Not many words can have changed their meaning so decisively as gentility. To the eighteenth century it meant being fashionable and elegant: to us it means the futile aping of what is thought to be fashionable and elegant. It is second-hand living which thinks it is first-hand, always mistaking the illusion for the real thing. This kind of abdication from life will always happen, and in the abstract is not connected with any particular style—I would call a person genteel who was not prepared to see the virtues of Carl Orff or Sir Reginald Blomfield because they are not now fashionable: equally genteel are those AR readers who now affect to like only Egyptian lettering.

In fact, the particular pressure which changed the meaning of gentility was connected very closely with a particular set of styles, and a particular way of applying them. Neo-Tudor, neo-Georgian and a kind of lowest common denominator of the lot which is best called neo-Nothing burst on us like a flood at the beginning of the century. The motive power was the ability of a huge mass of people to think they could move upwards socially and outwards physically. Both directions, of movement, upwards and outwards, were really illusions, genteel illusions done not for their own sakes but for the social cachet which they brought. To move out in the hope of finding green fields is one thing: to move out because it is supposed to carry some social amelioration is quite another—and equally, to move to Chelsea because it carries an artistic cachet, or even to move to Lambeth because it carries a cachet of inverted-snobbery.

Things must be done for themselves: and the 'must' is a law of nature, because the falseness will surely show. If a house is built for the wrong reasons it will always look wrong. A *nouveau riche* Elizabethan building still rings false after four hundred years: Wollaton was built for social aggrandisement and looks like it, Hardwick was built for its own sake. Hence to say that it is impossible to build properly for gentility is not to be dictatorial, it is simply stating a fact of life.

But building for gentility is not the same thing as building for illusion. It is a tragedy that the genteel flood overtook an older and nobler tradition of suburban building, one that was 'genteel' in its original meaning. The difference is between illusion done for the sake of the illusion, and illusion done for an extraneous second-hand reason. And illusion done for its own sake must know it is illusion—something which may sound like a quibble but which in fact is crucial.

The archetypes of this true tradition of illusion are Watteau's shepherds and shepherdesses, playing pretty games with tragedy and longing in their eyes: after us the deluge. But it is just as evident, and much more relevant, in Jane Austen's fearless quietness. What she is saying in her novels is: 'there are some segments of life which I do not wish to consider. I know this; it is a deliberate decision, and does not affect the validity and depth of my observations on what remains.' An equivalent bad-genteel novelist would refuse to consider X and Y and Z, and allow the refusal to poison the rest of the book. Equally wrong, of course, is a writer who only considers X, Y and Z. *The Naked and the Dead*, brilliant and moving as it was, perhaps did this. The inverted-genteel imitations of it, such as *Battle Cry*, certainly did. The architectural consequences of acting like this will appear later.

The exact architectural equivalent in time and feeling to Jane Austen is the cosy thatched Regency seafront at Sidmouth. This says: 'there are things about marine life I do not wish to consider, though I know about them—storms, violence and shipwreck. But the sunny happy seasidy things I can and will express perfectly.' It is precisely the spirit of Nash's Blaize Hamlet, of all the other Picturesque suburbs, of 'arcadia.' Blaize Hamlet was violently different from Blake's belching Albion, but it was not designed without cognisance of it. Nash in fact was a genius broad enough to be able to design for illusion and reality simultaneously. Regent's Park, that triumph of illusion, was originally built with utterly Cockney streets and squares behind it.

The tradition continued through a century which, in spite of its sexual and religious attitudes, was not really genteel. Suburbs like Rock Park near Birkenhead or Albert Park at Abingdon are as down-to-earth as a Victorian dinner, the Victorian Town Hall at Birkenhead or the Victorian Corn Exchange at Abingdon. They may not have chosen to see all of life (I think this is a fair comment on arcadia as a whole) but what they saw, they saw straight. The same is true of the early garden suburbs like Letchworth and Hampstead, and particularly of Port Sunlight* a splendidly beefy exposition of

* A place incidentally where the housing and the Lever factories butt up against one another *tout court*. Very well they look together, too.

the perennial truth that in the end the important thing is not what you do but how you do it. Every time the suburb was done for itself, not second-hand, the golden thread continued: the outstanding place to see it between the wars is Welwyn. It persisted in a direct line to those New Towns which frankly realized that they were creating a new generation of garden cities—and nothing wrong in that, as long as it is not the only alternative. In this sense, Crawley and parts of Bracknell are more successful than New Towns such as Harlow which tried to be towns. There's not much real point in the pedestrian centre of Stevenage if it is surrounded—as it is—by a howling wilderness of lamp-standards, traffic and non-relationship. Better by far to try to make the whole lot leafy, as Crawley does.

The nicest of the new garden neighbourhoods in the unbroken tradition could happily link hands with Span, in the rediscovered tradition. Thank goodness. But meanwhile, a particularly sad social and historical accident had overtaken a very charming way of building. What was originally a recherché alternative for Top People became, by the end of the century, a possibility for millions—or, at least, the illusion of a possibility, marked exactly by the moment at which the Pooters set out for Holloway in that brilliant exposition of gentility, *The Diary of a Nobody*. Most of the new mass suburbs were built wrong from the start, and it always shows: after sixty years, bow-fronted Upper Holloway and East Dulwich are as mean and spiritless as when they were built.

Inevitably the false suburbs, built from the wrong place in man, and for the wrong reason, came to stand for the true. And once created, they became horribly self-sufficient, not even concerned with the wish to cross social layers, which is at least understandable human frailty. In terms of poetry, Herrick's

'The soft sweet moss shall be thy bed,
With crawling woodbine overspread:
By which the silver-shedding streams
Shall gently melt thee into dreams'

—which can stand for the shepherds and shepherdesses—has become John Betjeman's famous

'Phone for the fish knives, Norman,
As Cook seems a little unnerved
You kiddies have crumpled the serviettes
And I must have things daintily served.'

The architectural consequences are familiar enough. Architects began to build neo-Tudor or neo-Georgian neither as a game nor out of Puginesque conviction, but second-hand, for the sake of conforming to a false ideal. Builders and building societies multiplied the falseness because it paid off, and then proffered the bogus ideal, for the sake of the mortgages, in front of people desperately wanting somewhere to live.

No hope, there, for a change of heart. The change is coming, slowly—and no thanks to the building societies, no thanks to the majority of architects—through the removal of the original urge to gentility. Social movement, except at the very top, has become meaningless—what class is Slough or Harlow New Town? However amorphous and however undistinguished, we have at last got 'just people.' Whatever can be built on this can be real; if we wish to build an illusion, it will be illusion for illusion's sake.

And, obviously, millions of people do wish to build illusion. I don't, as I think will be clear from the way I am writing. I am delighted by Welwyn and Span, I love to go and see them, but after three weeks in them I would be desperate. That is just the way I happen to be: perhaps because of it, I will bend over backwards to insist that anyone who wishes to enjoy illusion ought to have it. And we now have the architectural style to meet the need (we didn't in the 1930's: the result of Wells Coates or Connell, Ward & Lucas building for illusion would have been bizarre. In a decade when the living style was so uncompromising, a flight to half-timbering was perhaps the only possibility). In the Festival of Britain style and its descendants we have something as perfectly suited to arcadia as was the original Picturesque cosiness. And, very slowly, and very largely thanks to the pioneering work of Span, the dinosaur of British business and finance is lumbering along afterwards.

Span has popped in and out of the text like a punctuation mark. Justifiably, for it is as good an exemplar of the revived arcadian tradition as Nash was of the original. Eric Lyons's landscaping is as good as Nash's, and like Nash he builds for illusion without having illusions himself. He frankly calls himself a suburban architect, and so he is: a superb one. As the illustrations on page 391 show, many more architects are first-rate suburban or arcadian designers also. Tayler and Green are, Llewelyn Davies at Rushbrooke is, the Nottinghamshire schools are, the DRU pubs are, the Civic Trust repainting schemes are.

This is a splendid thing, as long as it is a servant, not a master. And before it can be a servant to the environment at large, it must be master in its own house, i.e. arcadia, its proper place. Around London, it may well be. But in the provinces the old, bad, genteel style is still in charge. And, alas, the further in spirit from London and the less and less places ought to be

[continued on page 393

The tradition of building gently but not genteelly begins on a large scale in the early nineteenth century with Nash at Blaize Hamlet, **1**, *and groups like the front at Sidmouth,* **2**. *The eighteenth century, except for a few dilettanti, would in such circumstances have used the current classical style.*

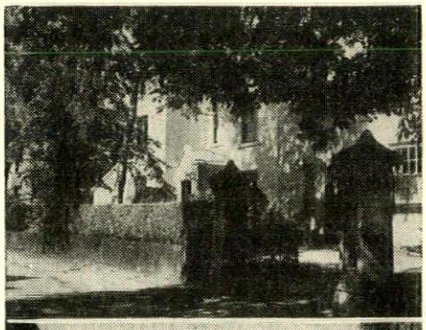


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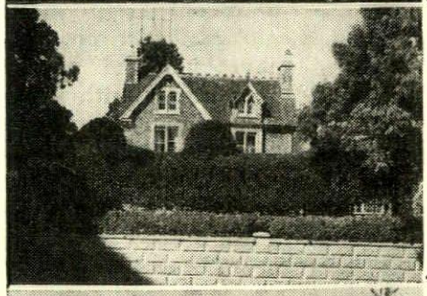


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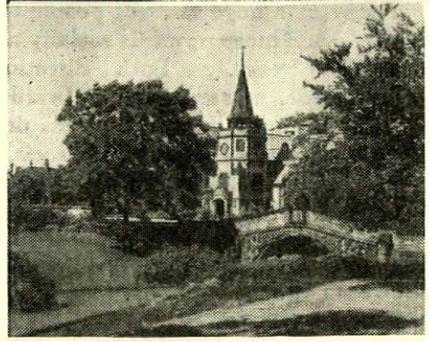
The same standards were kept up in the Victorian suburbs, whether Early (Rock Park, Birkenhead, c. 1840, **3**) *or High (Albert Park, Abingdon, 1865,* **4**), *and were carried on in the earliest garden suburbs—such as Bournville and Port Sunlight,* **5**.



3



4



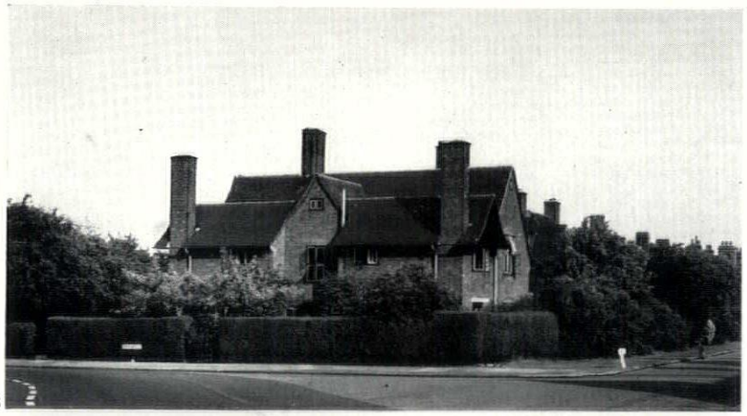
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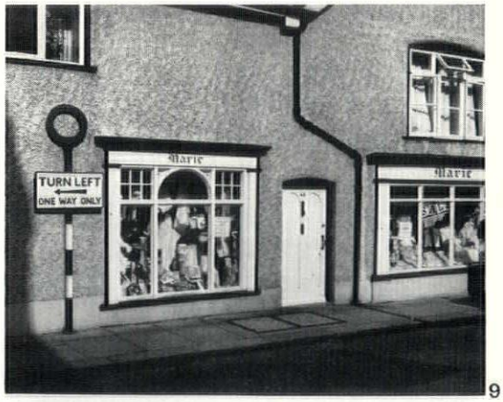
7

the arcadian tradition

In the present century the thread becomes thinner, but it is evident in every real suburb—Hampstead, of 1910, **6;** *Welwyn, of* 1930, **7;** *Crawley New Town, of* 1950, **8.** *At the same time a genuinely fresh and dainty pattern of small-scale lettering and decoration has persisted in most suburbs or near-suburbs along with the olde and the blowsy.* **9** *is from Knutsford,* **10** *from Pinner; both were photographed in the last few weeks.*



6



9



8



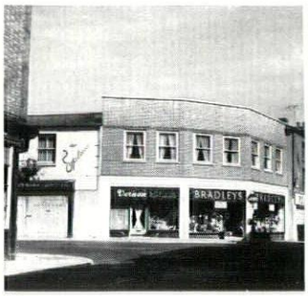
10

the tradition broken

When the suburban ideal became second-hand, not done for its own sake, gentility crept in, and with it the architectural gentility of styles used without any conviction. Pre-war examples abound, but this selection is all newly built. ***11-14*** *(right) show Queen's Head Court, an astonishing performance recently built into a corner of one of the best and least genteel market-places in Britain, at Newark. For a complete repertoire of false cosiness, Tudor and Georgian, it would be hard to beat.* ***15*** *is a pub near Ilford, with every motif used half-heartedly;* ***16*** *is a brand new building on one of the most important sites in Leominster, which is a complete abdication from any aesthetic decisions whatever. It could well be called neo-Nothing. By comparison (but only by comparison) the patent absurdity of Woolworth's new front in Chester,* ***17****, is almost a relief. And when a thing is obviously done as a devoted labour of love, even the most outrageous half-timbering is not genteel;* ***18****, the Grasshopper near Westerham, has old bits and pieces from everywhere, collected and assembled by the owner. You may like it or detest it, but at least it is building a deeply felt illusion.*



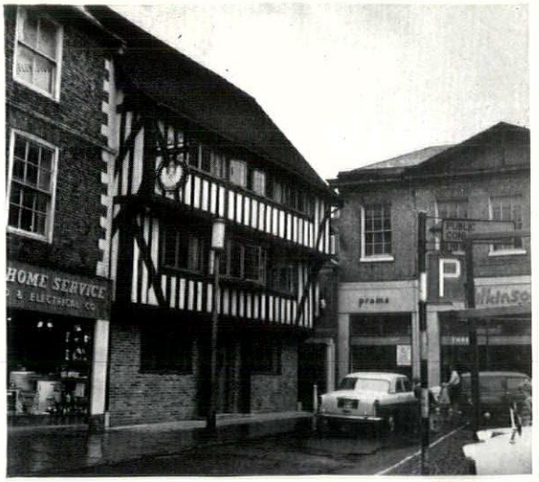
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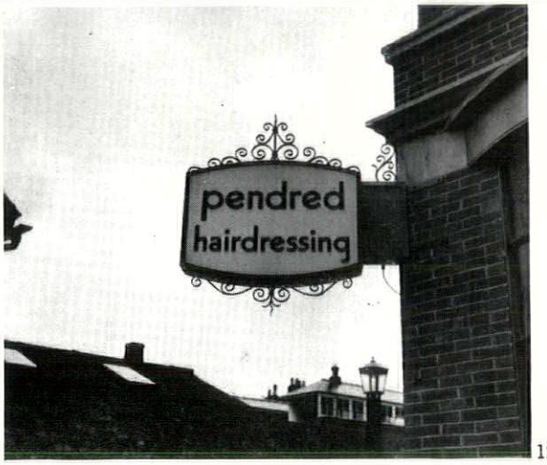
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17



11



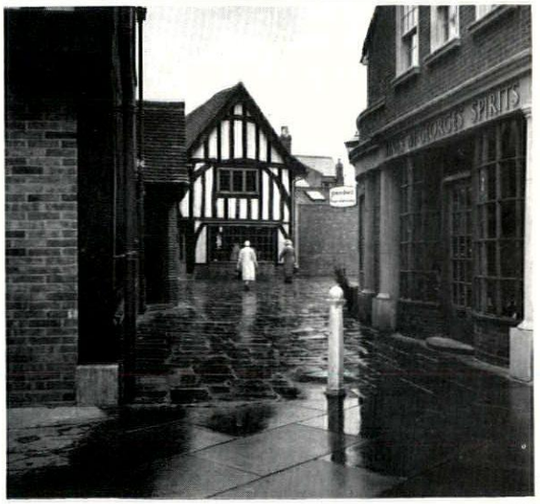
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18



13



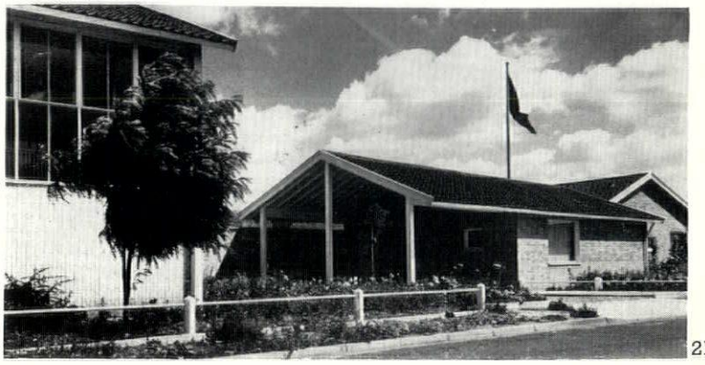
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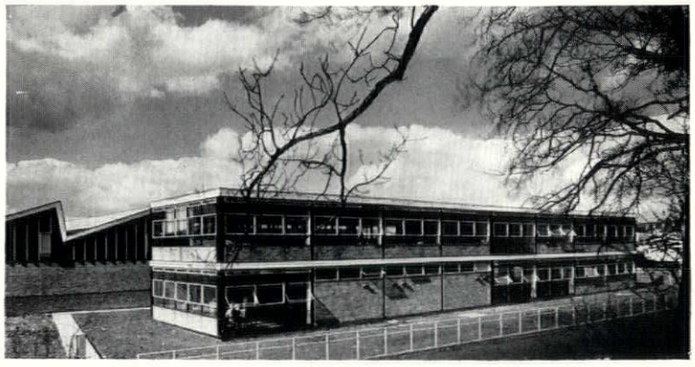
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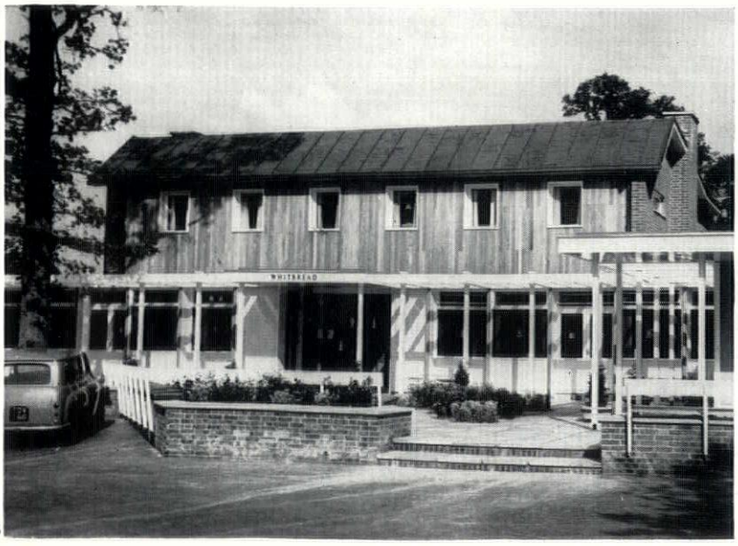
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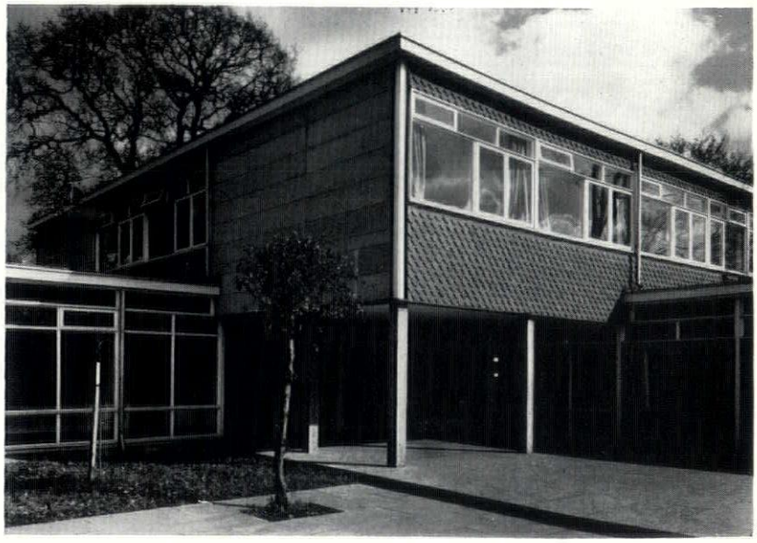
22

the tradition maintained

*Only when photographs are juxtaposed is it clear how much of English architecture is arcadian, and how similar in essence are the pubs, factories and housing, however diverse they may seem when seen by themselves. The collection on this page includes not only Span, **19**, which is the natural leader of suburban building in England, but housing by Grenfell Baines, **20**, factories by Tayler and Green, **21**, and Austin-Smith and Partners, **22**, a new pub by Musman & Cousens, **23**, and a Nottinghamshire school, **24**, which is just about indistinguishable from the Span housing illustrated. With a vocabulary like this, all of which is fresh, not genteel, there is no need to look to any past style to satisfy the needs of arcadia.*



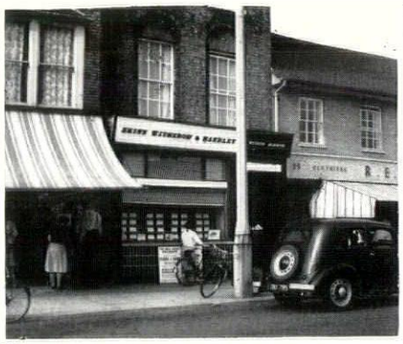
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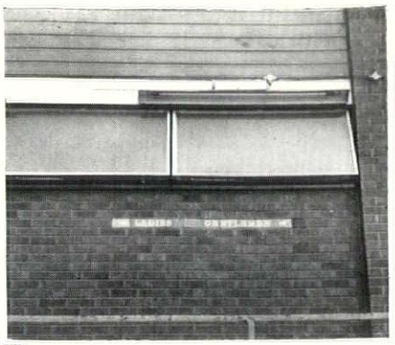


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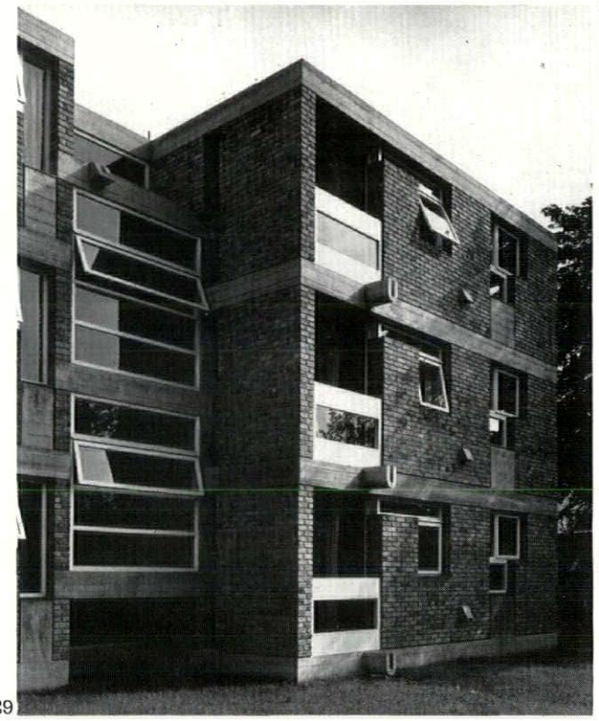

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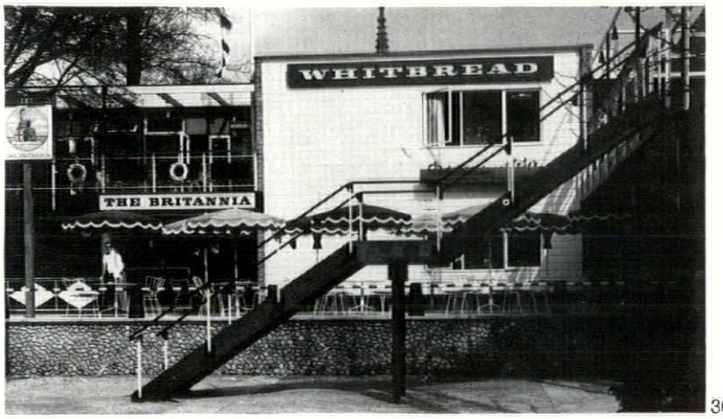

27



28

arcadian misused

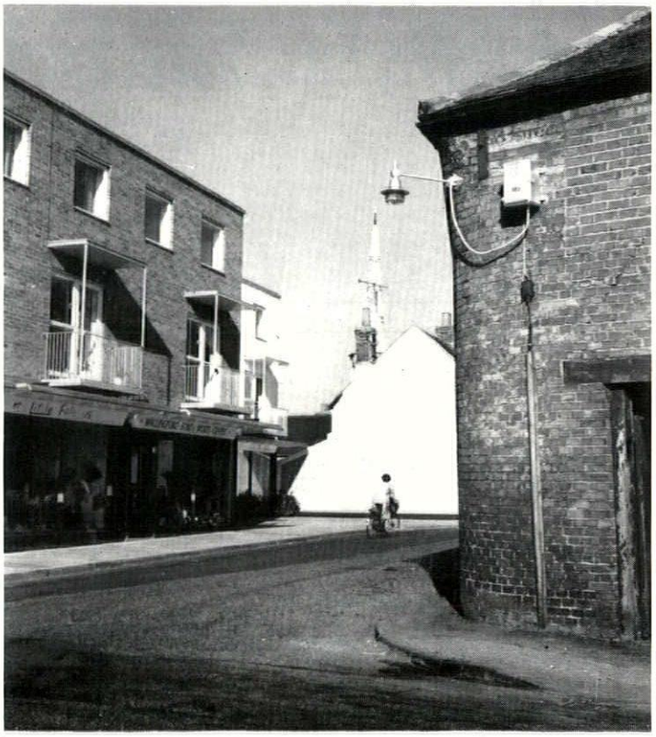

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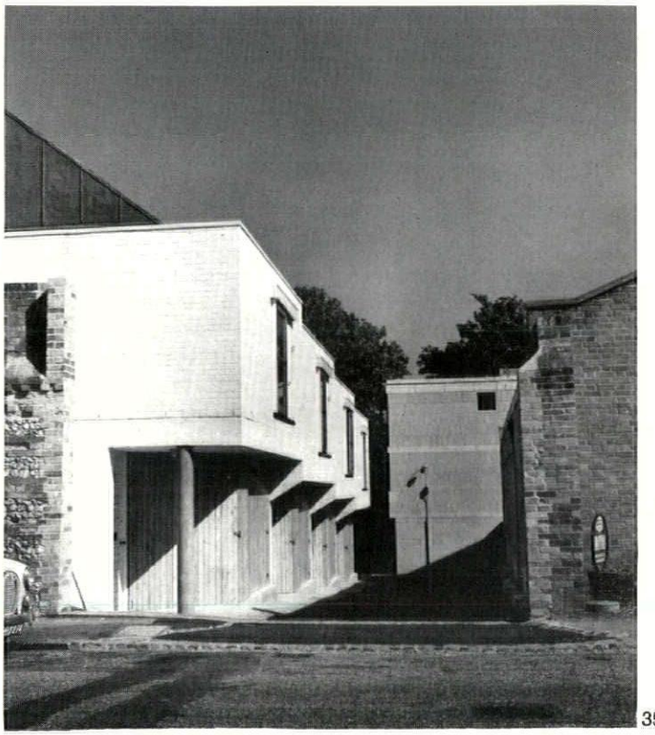


30


31

building
rough

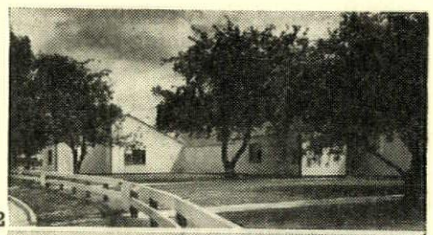

34


35

continued from page 388

The arcadian style is easy to look at, easy to design. It must not become a norm to be applied regardless of circumstances. There are signs that this is happening. The use of lettering is the harbinger: a Watneys pub uses the admirable DRU manual to ridiculous effect in a Cockney shopping street, ***25****; estate agents in Huntingdonshire employ fascia lettering as underscaled and out of place as a monster old-style Burtons would have been,* ***26****. Nor is it always a matter of unwise imitation by local designers. A real no-illusion place like Burslem, when it was done up by the Civic Trust, got—among much good design—ridiculously twee signs for its Ladies and Gents,* ***27****, and Ind Coope, whose pubs are usually among the best in the business, made an inelegant pre-war front much worse by timid and rule-bound lettering,* ***28****. If this goes much further our last state may be worse than our first.*

As the arcadian style takes hold, unself-consciously rough design becomes harder and harder. These first three examples all tried to be rough and ended by being another very nice kind of arcadia. ***29****, Stirling and Gowan's flats at Ham Common;* ***30****, the pub at the Brussels exhibition;* ***31****, LCC housing at Haverhill, Suffolk. This last is very near the borderline, far more unaffected than, for*



32



33

example, the much admired Rushbrooke housing, ***32*** *(compared in the accompanying article with Blaize Hamlet), but it still has some way to go before it reaches the spontaneity of these post-war cottages in Wiltshire,* ***33****, by an unknown architect. At the other end of the scale is Lasdun's block of flats in St. James's (AR July, 1961) which shows a natural freedom from self-consciousness. For most designers this must be a long and arduous job of self-understanding, of unlearning the clichés and stock ways of thought loaded on in architectural training. Just as in life, the hardest thing to do is to relax. Yet it can be done, a point made by two different recent schemes by Morton and Lupton at Wallingford. In the first,* ***34****, architectural niceties were still getting in the way of a straightforward wall-with-holes-in. In the second, Priory Mews,* ***35****, a way of building has been reached which is genuinely urban, genuinely unselfconscious, and (apart from anything else) very cheap. This does not inhibit prettier design where it is needed, nor is it an artificial roughness. It is simply common-sense building.*

exposed to gentility, the more likely they are to be inflicted with it. 'Amenity' near London now usually means something which is at least pretty and decent: 'amenity' in the best provincial towns means something to be feared. The brand new Queen's Head Court inserted into the Market Square at Newark is a desperate proof of that. And a lovely truly-rural town like Leominster can find nothing better than illustration 16 to put at its main road junction. Woolworth's new front at Chester is more absurd but perhaps more comprehensible; and, even now, it is possible to build half-timbered houses for the joy of it, in an ungenteel way. They may be misguided, but they are not false. So the Grasshopper near Westerham, still being enlarged to the amazement of travellers along A25, may look wrong but feels right. At a higher level, Raymond Erith's neo-Georgian both looks and feels right because it comes from the right place. It can't be said too often that gentility is not 'what' but 'how.' It has become attached to a particular kind of 'what,' which tends to have half-timbering or pediments; but each case must be judged by itself.

Perhaps I am leaning over backwards again. It is easier, simpler, prettier, to build in the style of the time, a style which seems set to rival Nash at his own game. It is a style we can be proud of, as long as we realize its limitations . . .

. . . and now, having seen the last page of the illustrations, you may realize what the limitations are. The trouble is that we are beginning to be able to build for nothing else but illusion. In the land of bitter beer and roast beef, everything, everywhere, is becoming pretty and refined. There is a terrible danger, just because these arcadian forms are so beguiling and crisp, that they will become a new norm rather than a specific solution for a specialized need. Then illusion will again be taken for reality, and we will have the gentility all over again, in a much more insidious form. Good Taste has ceased to be ghastly, but applied universally it can be just as suffocating.

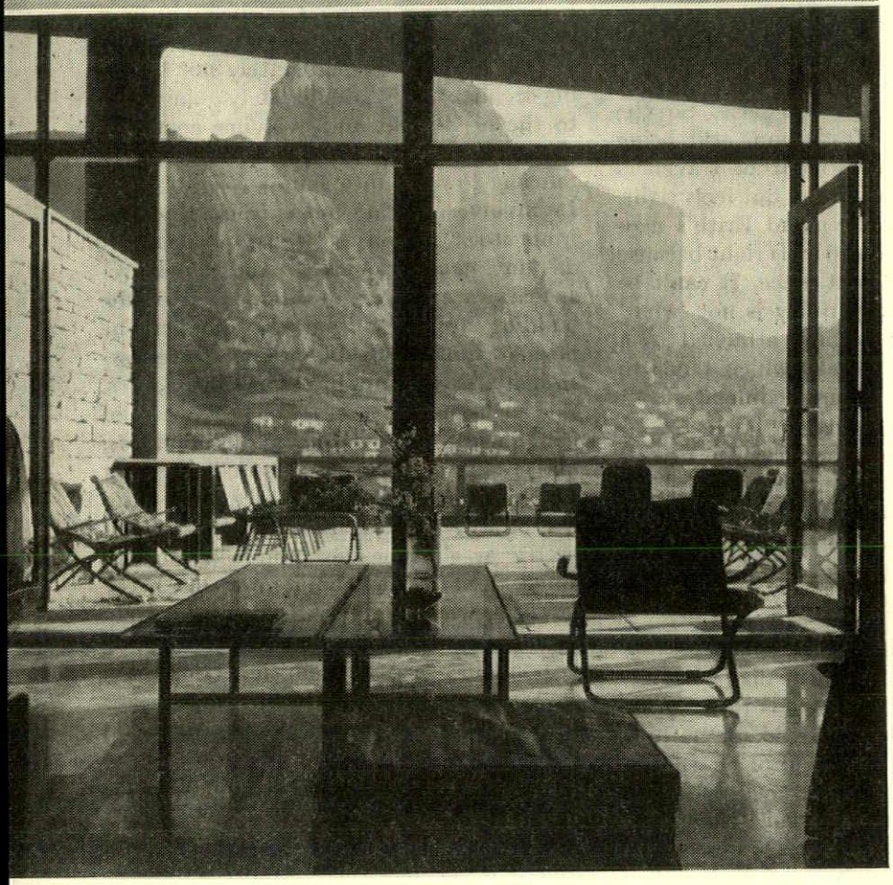
This puts a terrifying responsibility on the architects. It is so easy to be universally pretty, and every bit of an over-precious over-selfconscious five year training tends to make it easier. The lucky few, genuinely unselfconscious, have enough personality in them to come through it unscathed—and enough ability and sensitivity to make good architects. But it is a rare combination: there are plenty of unselfconscious architects, but they tend to be unconscious as well.

The second course is to react against prettiness artificially, as an alcoholic might have to refuse even one drink. This produces the kind of inverted gentility I was talking about in novels like *The Naked and the Dead*. The result is understandable, but a bit ludicrous: everything is rough for the hell of it, not rough from its needs. Prettiness will out: at best you get—as at Stirling and Gowan's Ham Common flats—a kind of brutal elegance which is exactly the same in spirit as Span at Ham Common, however much the details differ. At worst, the result is just a weary joke.

The third way, and a hard enough one, is equivalent to a religious purification or a searching self-analysis, according to your beliefs. It involves deliberately not thinking architecturally, deliberately going back to the needs first and evolving common-sense solutions, and yet just as deliberately refusing to react into skin-deep brutalism. It involves freeing man from reaction, from stock responses, whilst not cutting off any true responses. And stock responses are what is pumped into the budding architect from the moment he begins training—by the school, by fellow-students, by the architectural magazines, God help us. It takes about a year of hard work and perhaps unhappiness: but it can be done, and it is magnificently worth doing. At the end you are a free man, free of styles and 'isms—still free to build pretty or slick or how you will: but no longer does the style build you. One of the few firms which have done this deliberately is to be found not amongst the *avant-garde* in London, but away from the mainstream at Wallingford—Morton and Lupton, or Townmaker. To build Priory Mews in Wallingford took them almost a year of re-thinking. To produce common-sense buildings like this seems to be, for English architects, the hardest job of all. By an irony, it is not susceptible to glossy photography—but it is good to live in and to be with. Many of the buildings illustrated, in the AR and elsewhere, are just the opposite.

There must be more firms than this. There had better be. Millions of people do want to live arcadian, but millions more do not. Who is to speak for them—and for me?—and not, please, in terms of intellectually conceived roughnesses. My own private version of hell is a town with everything in Civic Trust colours, all the housing done by Span, all the pubs done by DRU (except, perhaps, for a rough corner done by Stirling & Gowan and the Smithsons). It could happen, and it is not the answer any more than the awful old-gentility of Queen's Head Court in Newark. As part of an environment it is marvellous: as the *whole* environment it is those old fish-knives of John Betjeman's coming out again, to deal with an elaborate Continental dish instead of poached cod.

THE MOTEL COMES TO GREECE



1

The Greek national tourist organization has a large programme of hotel building both on the mainland and on the islands. A number of recently completed projects have been of the motel type, of which four are illustrated here. 1, above, shows the terrace of the motel at Kalambaka (see also pages 396-397).

1, at Igoumenitsa

ARCHITECT: ARIS KONSTANTINIDIS

This is the terminal point of the ferry that has been running since the summer of 1960 from Brindisi, Italy, to the north-western coast of Greece opposite Corfu. The motel has a central building with restaurant, bar and kitchen planned round a courtyard, a reception area and a manager's flat, and four two-storey pavilions each with six double rooms on the upper level and a car-port below. Four additional pavilions are planned. All planning is on a 13ft. square grid. Construction is a reinforced concrete frame, proof against earthquakes, with infill walls of brick in several bright colours. All rooms are air-conditioned.

2, at Larissa

ARCHITECT: ARIS KONSTANTINIDIS

The motel is two miles outside the town, on the express highway between Athens and Salonika. The layout is similar to that at Igoumenitsa except that the small offices where visitors check in and out are incorporated in the central building instead of being separate structures. At Larissa eight six-room pavilions have already been built, providing altogether 48 double rooms, which have a wide view over the plain. Construction and materials are as at Igoumenitsa. A swimming-pool is planned.

3, at Kalambaka

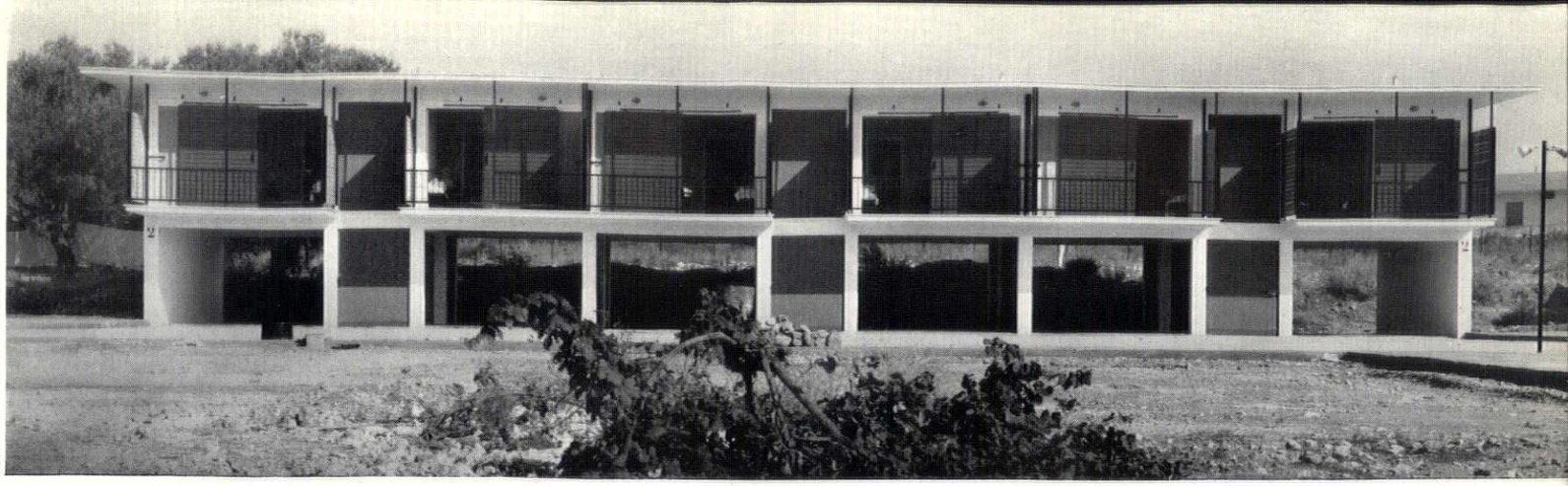
ARCHITECT: ARIS KONSTANTINIDIS

This is on a steeply sloping site just outside the town with a mountain background. The 22 double rooms are in one three-storey building (again with car-ports occupying the ground floor), parallel with the central building higher up the slope and linked to it by an extension of its roof. This roof provides a sheltered drive-in and also covers the reception office. Construction is again in reinforced concrete but with infill walls mostly of local stone.

4, at Mesolongi

ARCHITECT: YANI TRIANDAFILIDIS

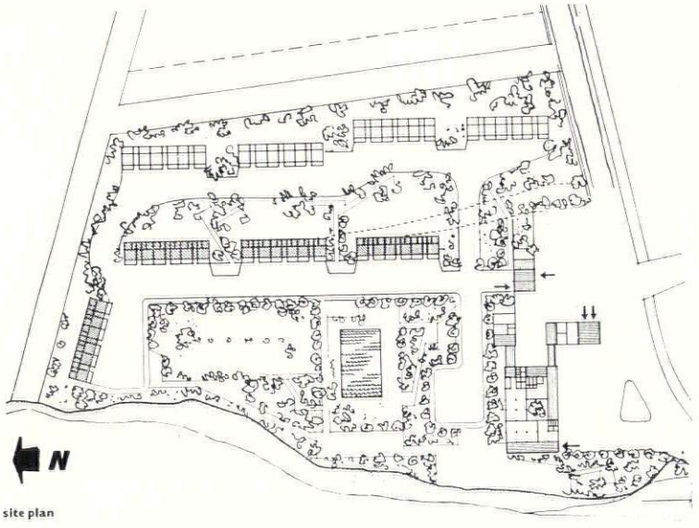
The motel faces south over the lake, and is built on a flat, featureless site. It is raised 4ft. above the ground on timber piles. In this case the six double bedrooms (again raised above their car-ports) are not in separate pavilions but are attached to the main building on the side nearest the lake and are reached by a staircase from it. An extension of another 14 rooms is planned. The building has a reinforced concrete frame planned on a 13ft. square grid, with infill of rough plaster and local stone. The public rooms are heated by warm air, the bedrooms by hot-water radiators. Furniture and fittings were designed by the architect.



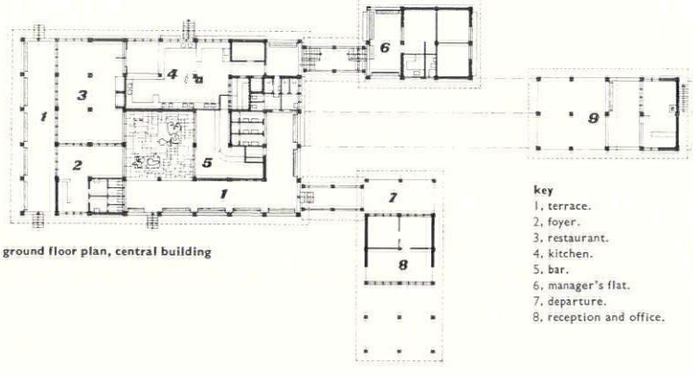
2

MOTEL AT IGOUMENITSA

2, balcony elevation of one of the two-storey pavilions. 3, the restaurant in the central building.



site plan



ground floor plan, central building

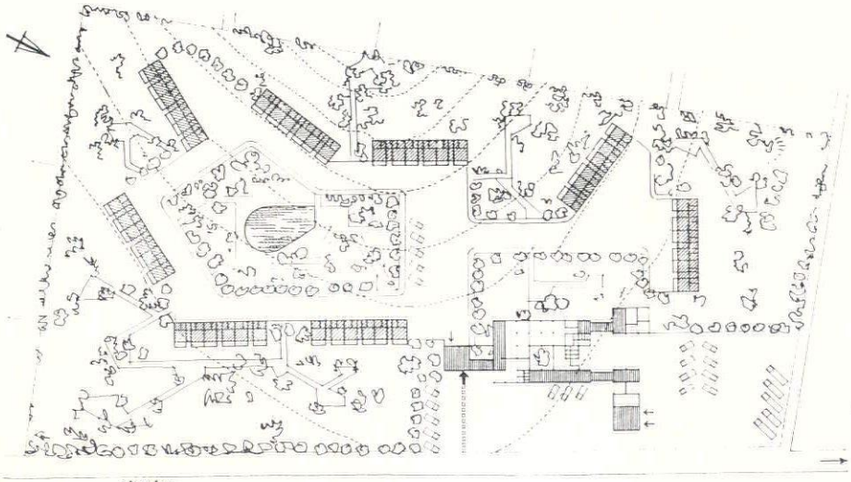
key
1, terrace.
2, foyer.
3, restaurant.
4, kitchen.
5, bar.
6, manager's flat.
7, departure.
8, reception and office.



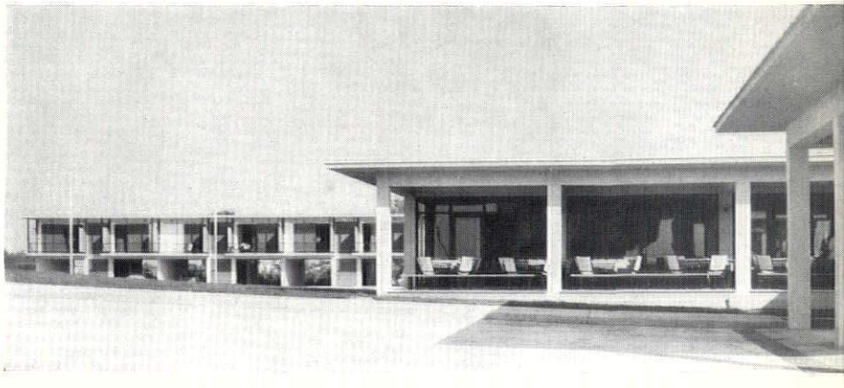
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MOTEL AT LARISSA

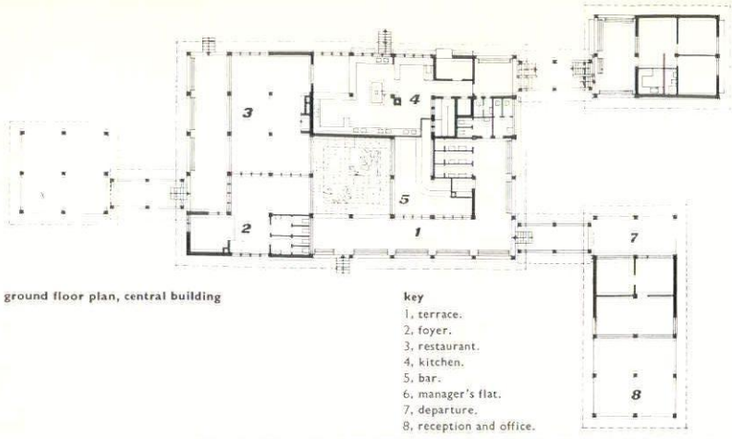
4, looking past the restaurant to one of the pavilions.



site plan



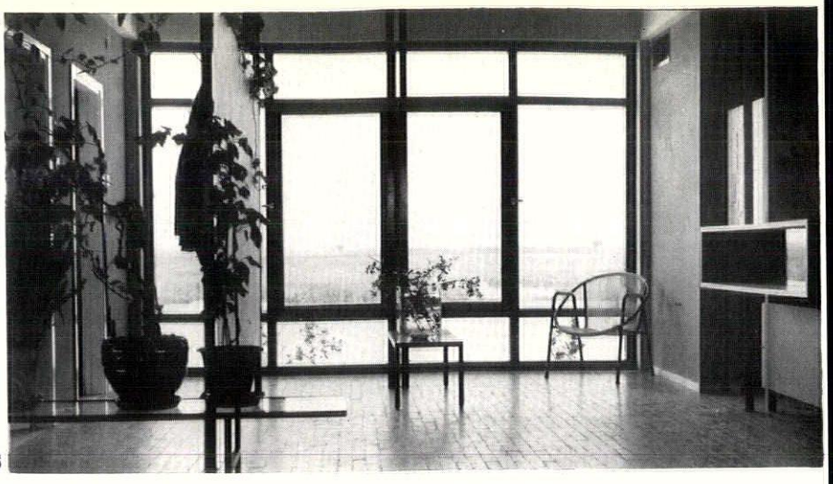
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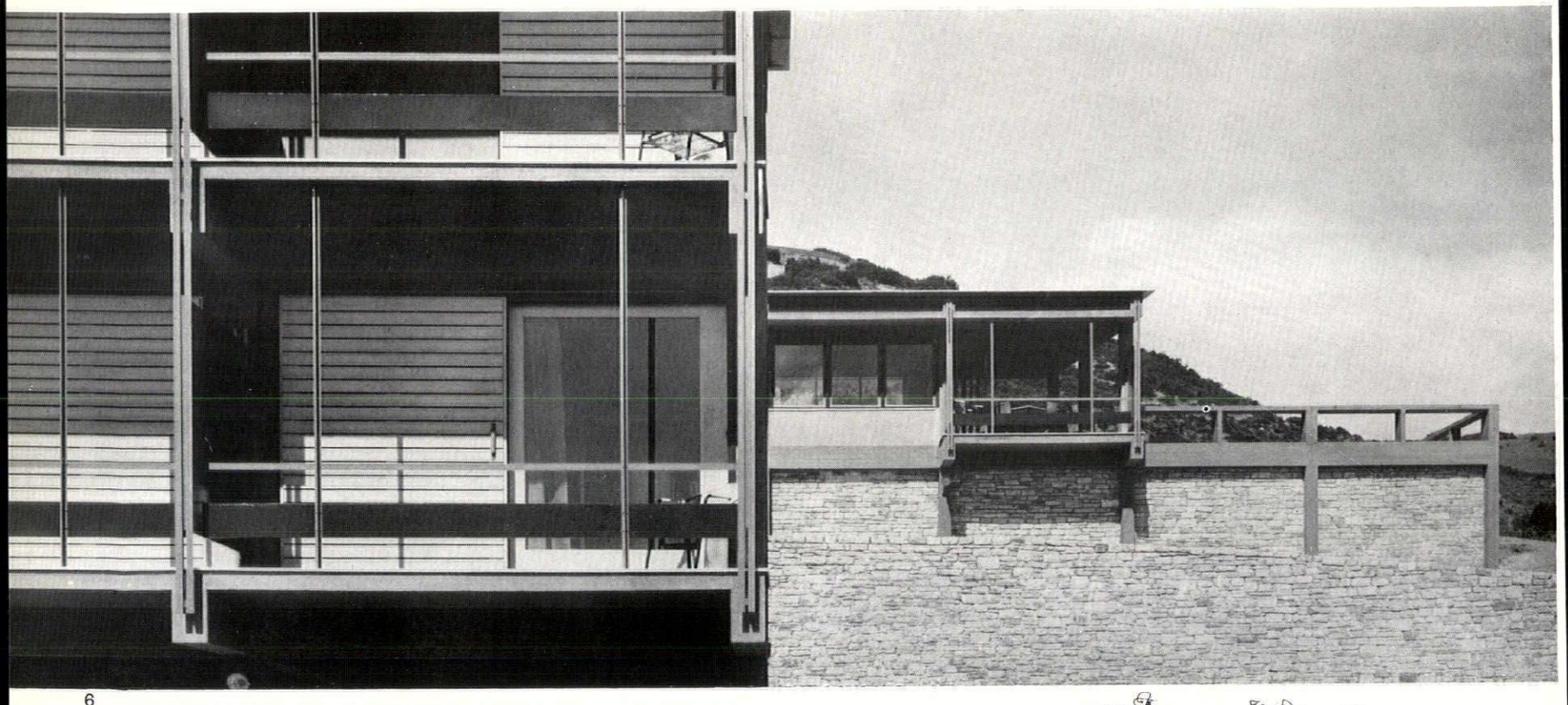
ground floor plan, central building

key
1, terrace.
2, foyer.
3, restaurant.
4, kitchen.
5, bar.
6, manager's flat.
7, departure.
8, reception and office.

5. reception area in the central building at Larissa.



5

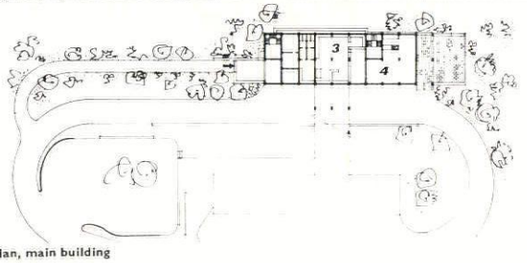


6

MOTEL AT KALAMBAKA

key
1, reception.
2, bedroom block.
3, kitchen.
4, restaurant.

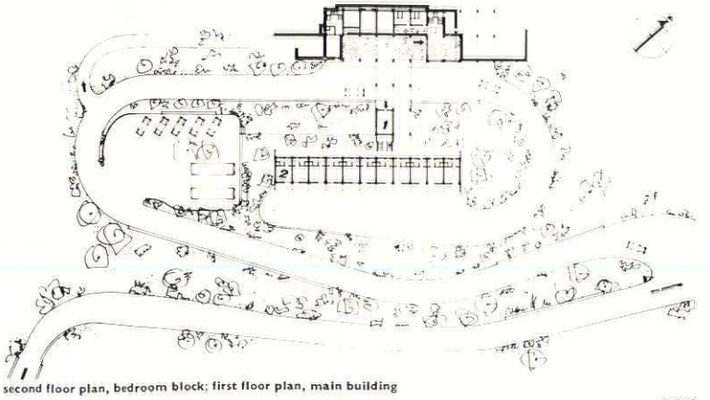
6 (above), looking past the bedroom block to the restaurant in the main building. 7, general view from the east. 8 (facing page), looking along the balcony elevation of the three-storey bedroom block.



second floor plan, main building



7



second floor plan, bedroom block; first floor plan, main building



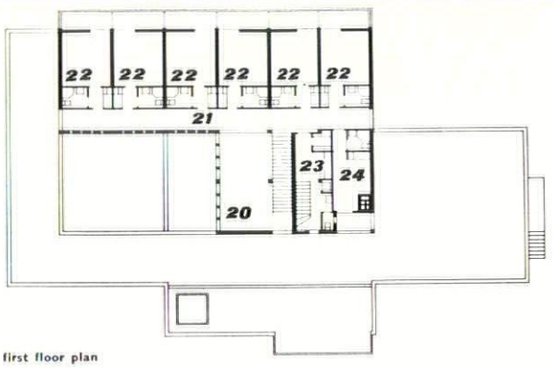


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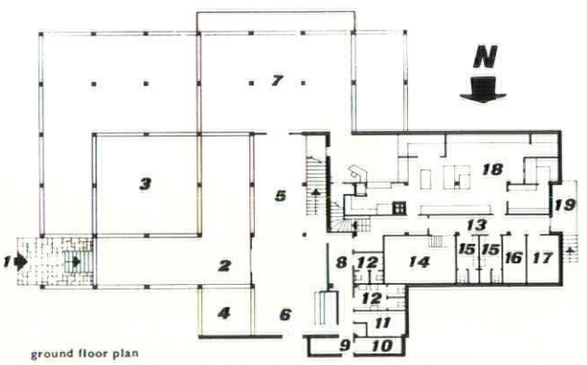
MOTEL AT MESOLONGI

key

1. entrance.
2. covered porch.
3. large patio.
4. small patio.
5. hall.
6. reception.
7. restaurant.
8. service corridor.
9. to future extension.
10. baggage.
11. office.
12. w.c.
13. service entrance corridor.
14. boiler room.
15. staff w.c.
16. storage.
17. staff restaurant.
18. kitchen.
19. service entrance platform.
20. upper part of hall.
21. corridor.
22. bedroom.
23. service.
24. manager's bedroom.

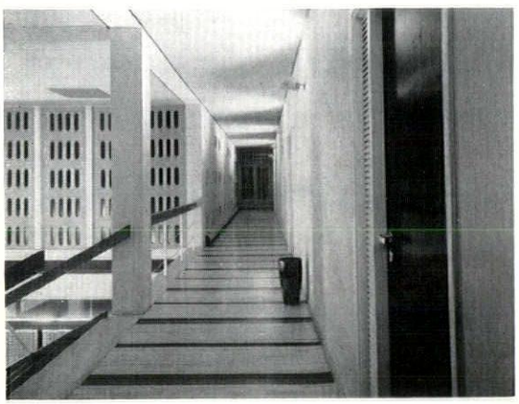


first floor plan



ground floor plan

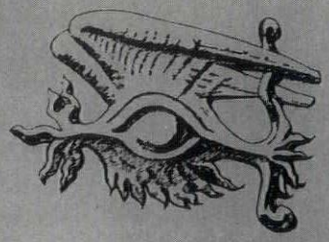
9, from the south. 10, first floor corridor with bedrooms off. 11, ground floor reception area.



10

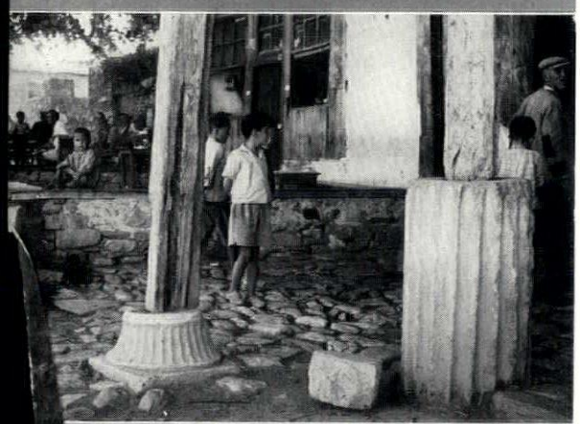


11



The ancient city of Aphrodisias, in the Meander valley of Anatolia, seems to have been neither founded nor sacked by any God or General of particular note, and its name is therefore known only to specialist scholars. Yet it contributed to the Roman world at least two items of interest—a cult of the Aphrodite of Aphrodisias, whose temple is datable to about AD 135, and whose image, in replica, has been found well beyond the confines of Asia Minor, even in the Forum of Rome; and a school of sculptors who flourished in the reigns of Caracalla and Septimius Severus, who worked as far afield as Lepcis Magna, and who possessed the habit, rare and praiseworthy in the ancient world, of signing their works.

As the seat of a Bishopric from AD 395,



1



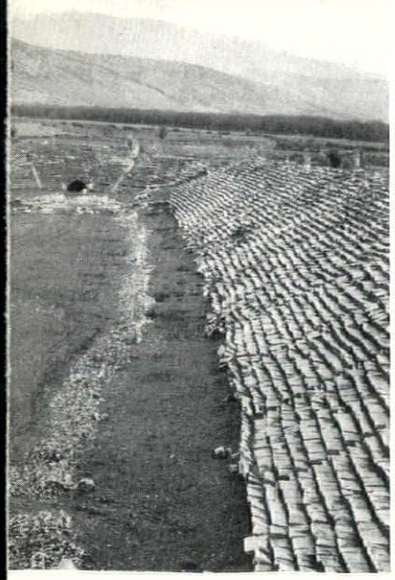
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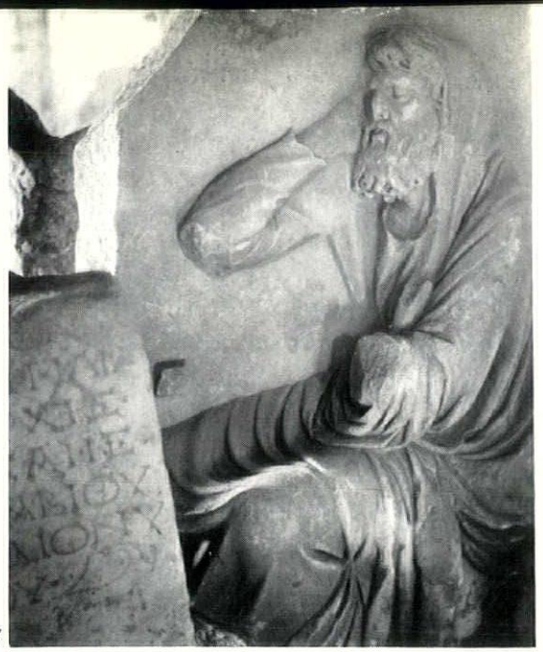
3



hrodisias was a place of some substance in the ristian Empire, but subsequently faded from the rld's view, and its site is now occupied by the age of Geyre, which squats among the remains eroic and expressive architecture, much as the gers of Greece populate the ruins of Athens in eenth-century engravings. Indeed, Aphrodisias, y touched by archaeologists, is the last of the picturesque classical sites that can still be n the condition in which time and nature ft it. Now, however, a team from New York sity is to excavate there and develop a field g centre for archaeologists and classicists us hope that they will do everything to preserve the unique and dreamlike e that is recorded here in Ara Güler's phs.

1, *tea house in the village square at Geyre, the wooden supports of which are built on columns from Aphrodisias.* 2, *head of a statue at the ancient palace.* 3, *derelict columns litter a path between two fields.*



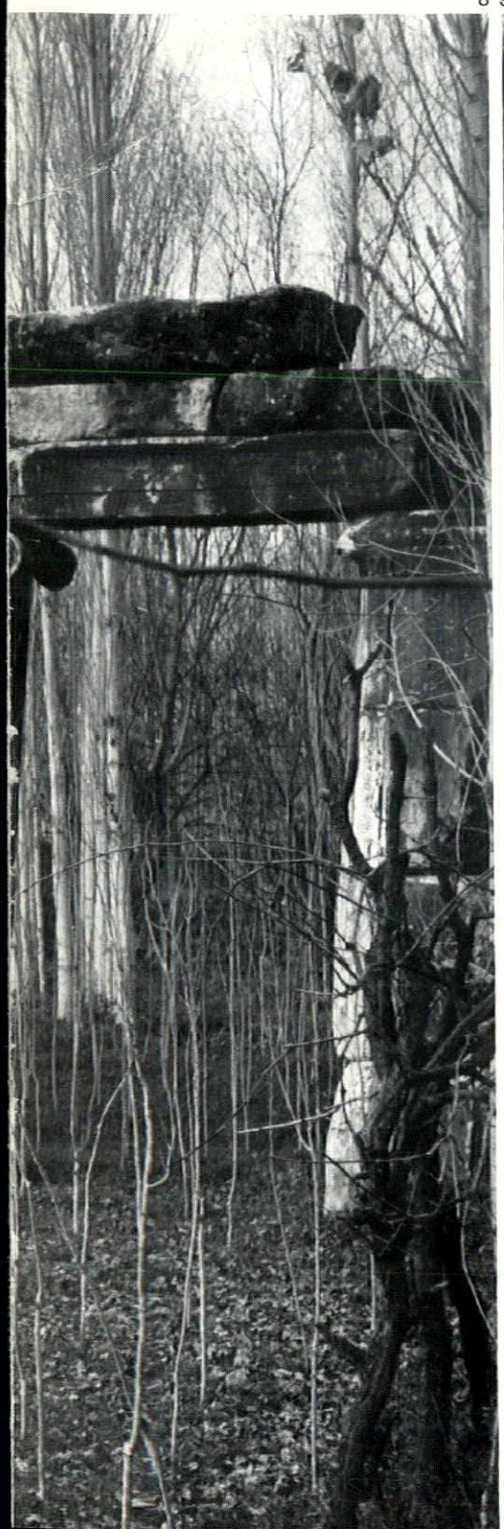


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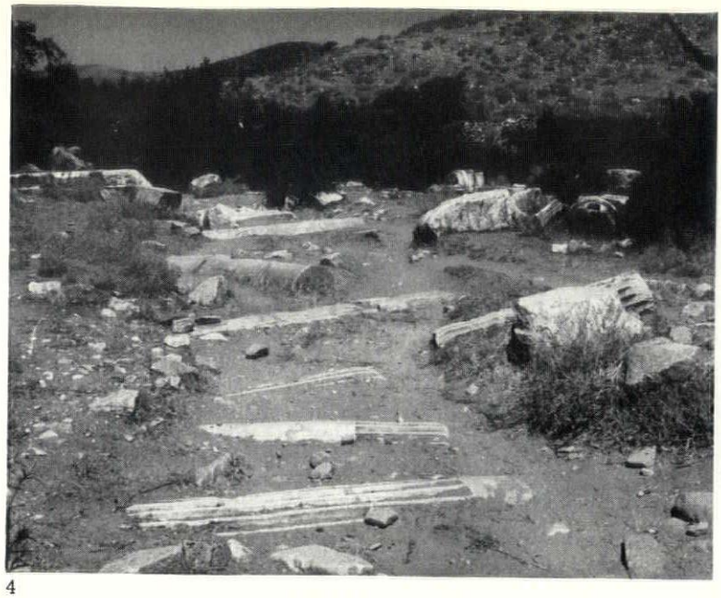
aphrodisias

4, half-buried columns on an old road to the city. 5, remains of the temple. 6, the practically intact stadium, which is over 750 feet long and gives an indication of the size of the population of the old city. 7, sculpture used to decorate a village house. 8, a colonnade rising from a cultivated field. 9, relics of marble columns, some of which villagers have used to build a canal—see also the cover of this issue. Photographs by Ara Güler

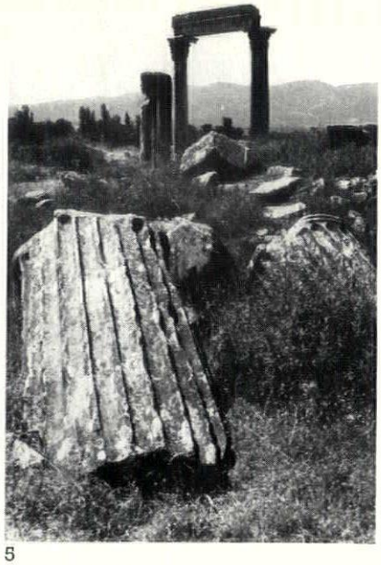
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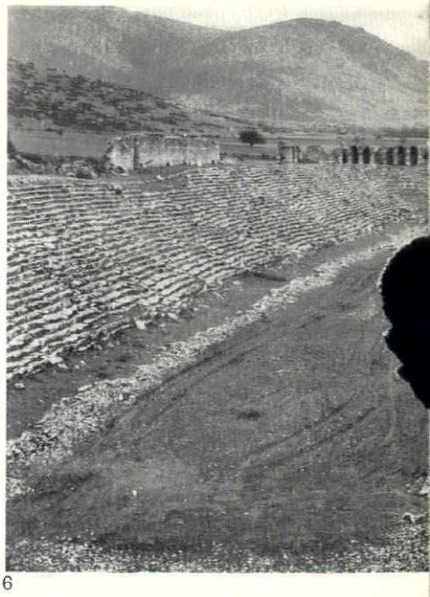




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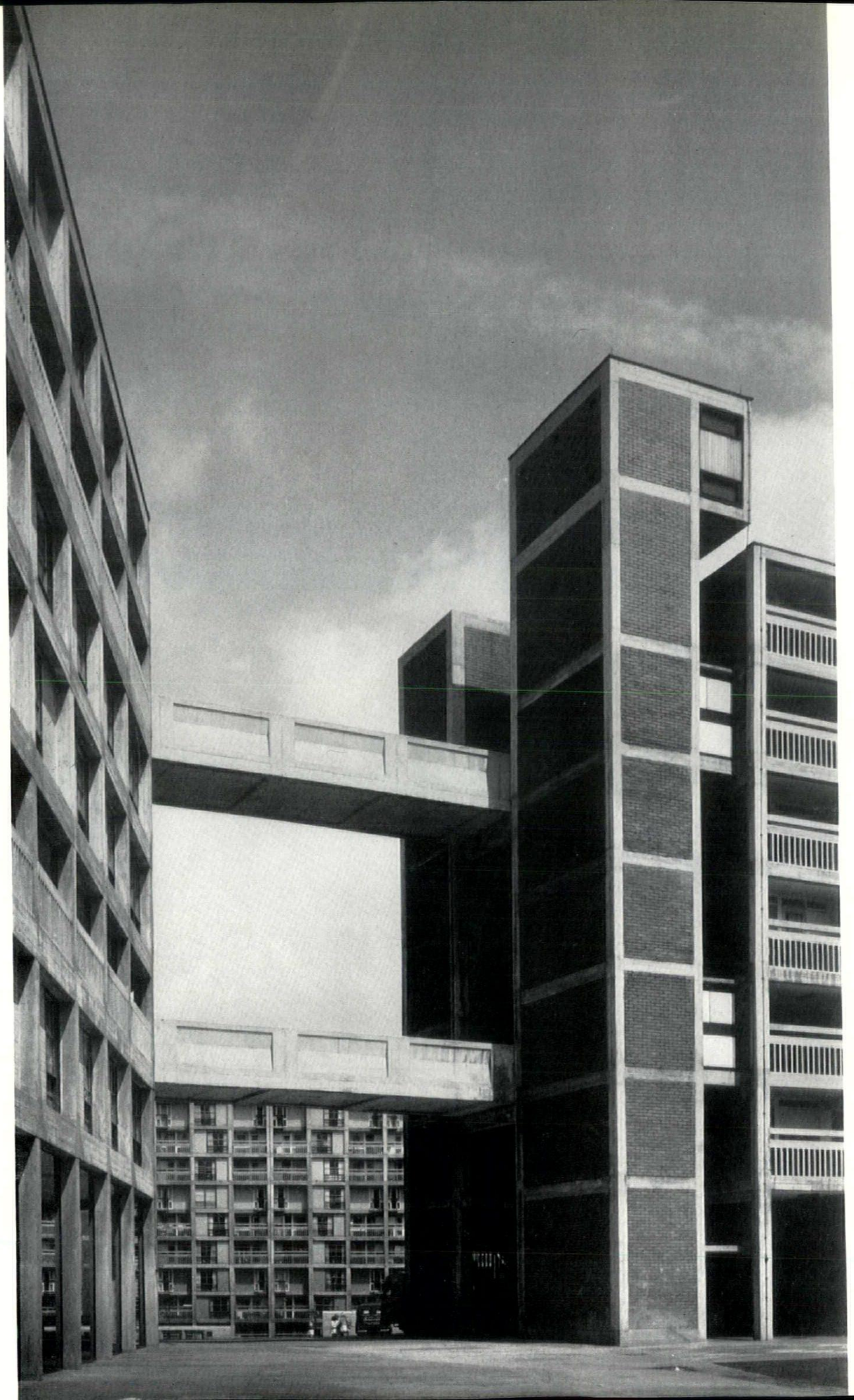


5



6





criticism

Reyner Banham

Architects: Sheffield Corporation
City Architect's Department
City Architect, J. L. Womersley
Project Architects, Jack Lynn,
Ivor Smith, Frederick Nicklin.

Park Hill housing, Sheffield

Park Hill, Sheffield, is a singular edifice—and its singularity must not be blurred by the use of vaguely plural terms such as 'scheme,' 'group' or 'complex'. The vast size of the building, and the fact that it has more ends than the customary two, may give the impression in some photographs that a number of blocks of flats can be seen. But this is not so—two steps on the site will at once show that this is a single block of dwellings, however complicated in plan form. Nevertheless, it emphatically reverses the current orthodoxy that conceives a 'block' in terms of a classical *insula*, an elementary form that can be seen and appreciated from a single viewpoint—as can Le Corbusier's various *Unités*, or Reidy's serpentine block in the Pedregulho development, whose wavy form merely demonstrates that a Brazilian can do the Samba without ceasing to be as much a classicist as Corb.

But if Park Hill, a building with two main façades which are not always on the same side of the building, and five ends, one of which is in the middle of the site—if it diverges so far from the Aristotelian unity of the classical *insula*, is it an 'anti-classical' building, in the sense in which that term began to be bandied about by the more talkative junior segments of the profession at the time it was being designed? It would be tempting to suppose that it was a programmatic building of this sort, because the project team was certainly in touch with talkative metropolitan circles in architecture, as well as very sophisticated aestheticians of what someone will one day call 'The West Riding School,' based on the universities of Sheffield and Leeds.

And yet, the critic must remember that against Wittkower's 'explanation' of the Villa Rotonda's four porticoes in terms of Renaissance theories of symmetry and proportion, there is André Lurçat's equally cogent functionalist 'explanation' in terms of the four views the porticoes had to command. It often happens that a building that is formally striking has achieved that form for functional reasons that are as convincing as the formal ones, and it is better to err on the side of function than jump at formalist explanations for what can be seen on the site.

In Sheffield, the site itself makes a good beginning to critical examination. It is a crop-pointed triangle, with its two long sides extending up a fairly steep hill from the blunted point which stands just above the railway cuttings in the bottom of the Sheaf Valley, and the whole site is very much in view from all other elevated ground in Sheffield. Along the less visible side of the site fitful earlier attempts to redevelop this notorious slum area reveal only too clearly how inadequate are small-scale, piecemeal reconstructions on such a slope, and it was clearly good architecture as well as good economics to take one really big bite at the job rather than several small nibbles. It was also remarkably sound townscaping to so arrange the folded plan of Park Hill that it presents

A system of vertical and horizontal communication, articulating and lending giant scale to continuous bands of repetitive domestic units, gives the key to the basic design conception of the Park Hill block, Sheffield. Designed by the Sheffield City Architect's Department, this most imaginative and advanced community-building gesture is the subject of this month's critical article.

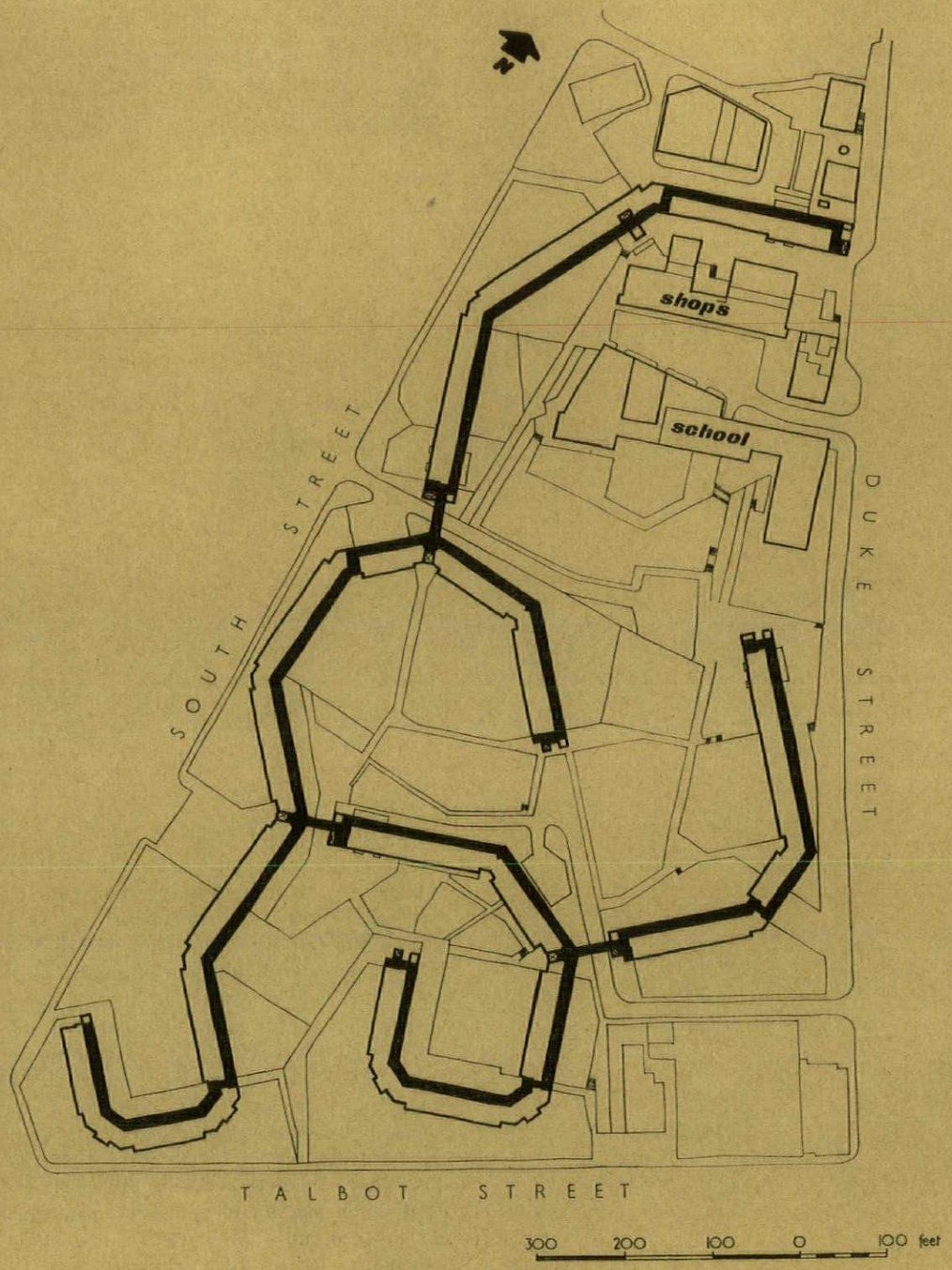
a continuous wall of building on the more visible side, and thus create a big single dominant form over an area that is visually irresolute when seen in long views across the valley—one of a number of points on which Park Hill seems able to challenge comparison with the well-known Cerro Piloto housing outside Caracas (cf. AR November 1958, page 338).

The decision to make the whole scheme one building (barring some shops and a small school) gives, obviously, a unity to the design, but 'unity' is a word that has taken a terrible beating of late, and it is worth while to see what lies behind this obviousness. Firstly, there is the unity of place, such as any large construction bestows on the area it dominates, but reinforced by the fact that quite a lot of ground is practically surrounded by the arms of Park Hill. Secondly, there is the unity of performance—at all points within the main building, the same kind of structural frame supports the same kind of residential function. This does not mean that there are no expansion joints or other structural variations where needed, nor does it mean that all the apartments are identical in accommodation and aspect. But it does mean that the general nature of the building is everywhere sufficiently alike for the visitor or inhabitant to notice it, so that at points ten minutes' walking time apart one is conscious of being in the same building.

The project team at some early stage in the design decided to let this general identity of use and structure set the pattern for the exterior, and this brings up the third unity, that of detailing. The regularity of external treatment was very heavily criticized in some quarters when the designs were first published because it failed to express the individual dwellings within the block*—from outside one can distinguish which floors are flats and which are maisonettes, but not how many bays a large or small apartment occupies along that floor. In front of the finished building this objection seems trifling, since the identity of dwellings is effectively established by the grouping of their front doors on the access side, and the project team were clearly right to go for unity and continuity of bay treatments, and for regularity of detailing throughout.

The detailing, too, has been attacked, though not in print. One must say, frankly, that some of it seems under-designed, and some of the junctions seem ill-considered—particularly where some non-repeating functional element, such as the additional external staircase in the corner of the shopping centre, has to be butted against the façade. But this, again, is a trifling objection because the scale of the detailing is trifling when compared with the scale of the block, which could clearly absorb downright bad detailing (which this emphatically is not) and survive. Furthermore, those who denounced the façade treatment as a compendium of current clichés when the design was first published must eat their words now, for the finished result seems remarkably free from fashiony touches, and is curiously dateless in its detailing. Again, some of these details seem entirely praiseworthy, notably the standard pre-cast balustrading in bay-wide units which, with its double top rail, is strong enough visually to stand up as a unit in the façade pattern, massive enough when viewed from inside the block to give a sense of security, yet not so lumpish as to block the view outwards too much.

[*continued on page* 409



Diagrammatic plan of the Park Hill layout—north is at the top of the page, and the ground falls in that direction (see 1, opposite). In this plan, the block itself is seen only in outline, and the very thick black line on one side of the block represents (to correct width to scale) a typical street deck, threading its way through all the arms of the block. The three junction points with their bridges are shown and the lifts and stairs at the block-ends and points of junction.

* *Cf. Architectural Design*, June, 1955, page 192.



1

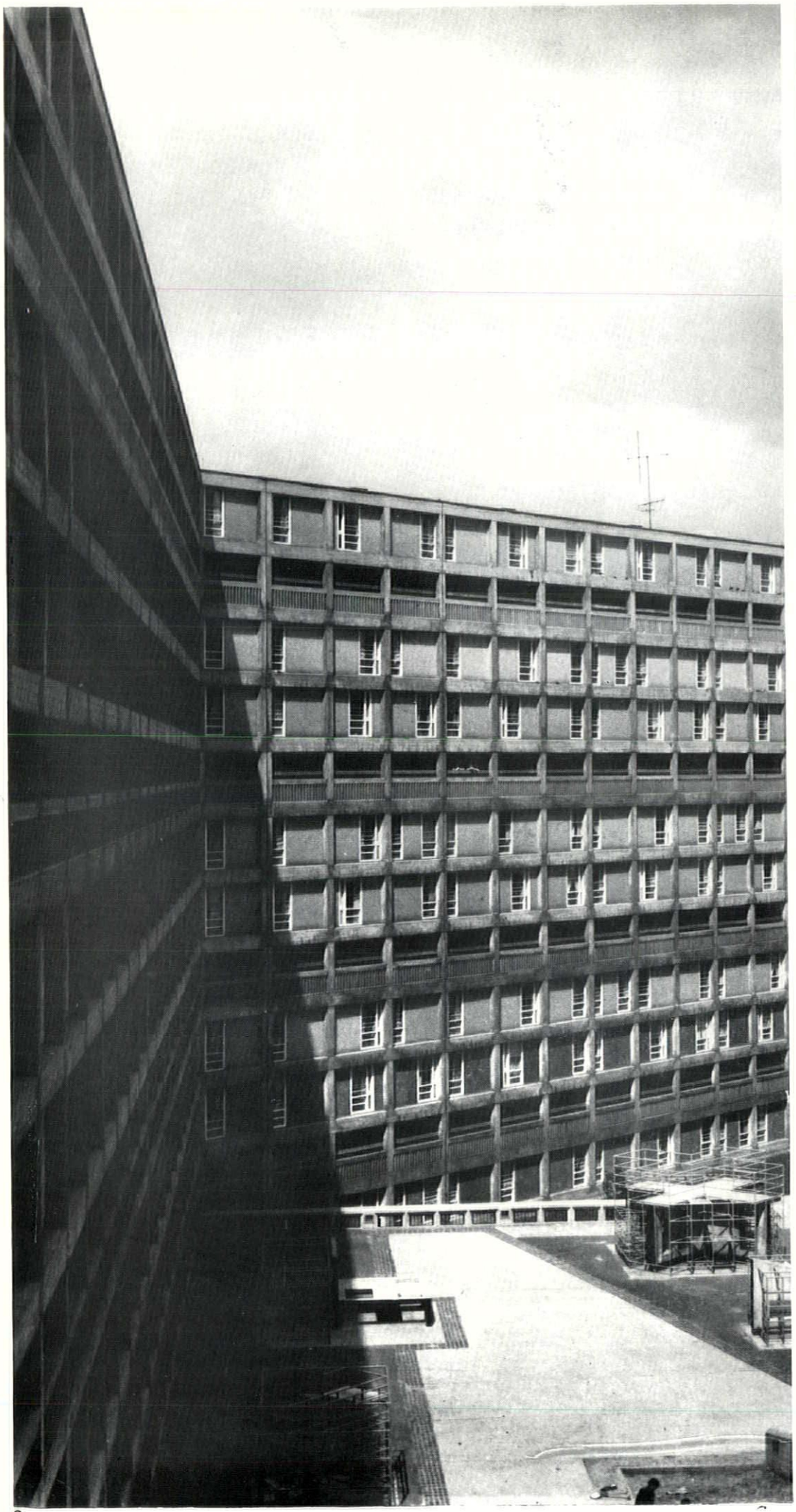
1, *Park Hill from the air, looking north-east toward the Sheaf Valley. The nearest limb of the building is of only four storeys—at the top left-hand corner of the picture it is fourteen.*

2, *a view, during construction, of the block as seen from the other side of the valley, showing its wall-like presentation toward the town.*

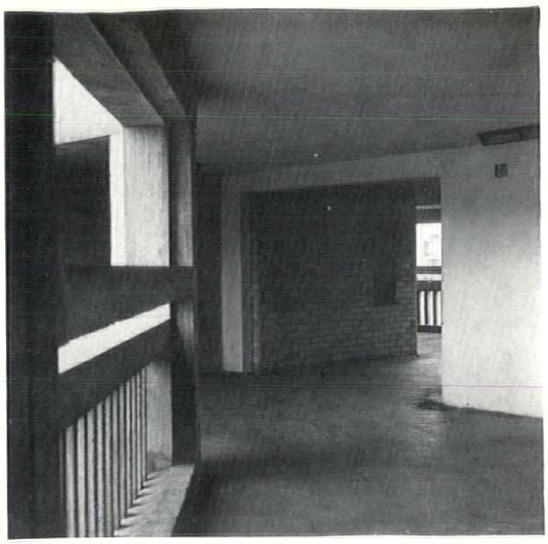
Park Hill housing, Sheffield

2





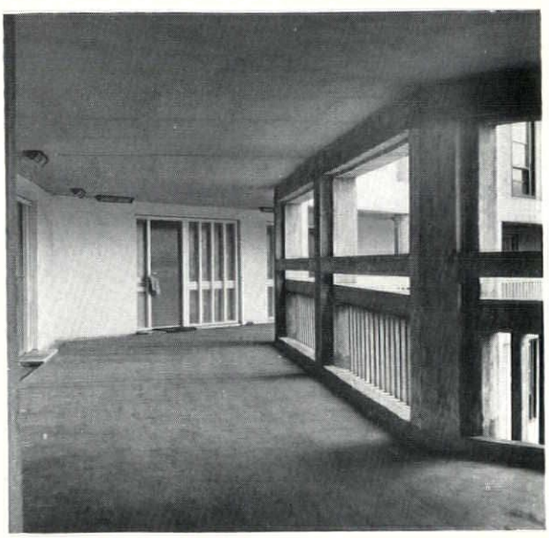
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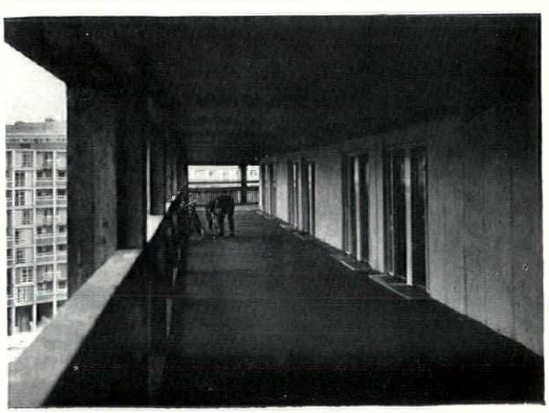


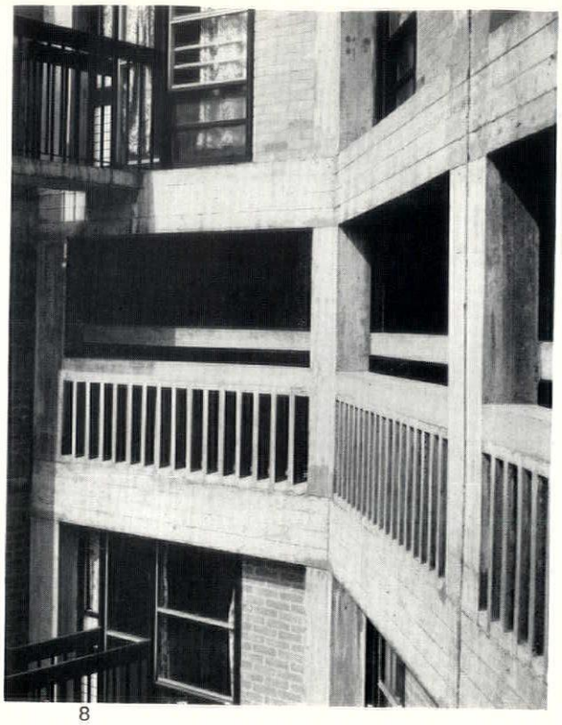
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9

3 (opposite), internal or 'courtyard' view of the deck side of the block—the small windows on this side serve the bedrooms of the apartments. In the foreground, one of the children's playgrounds at ground-level.

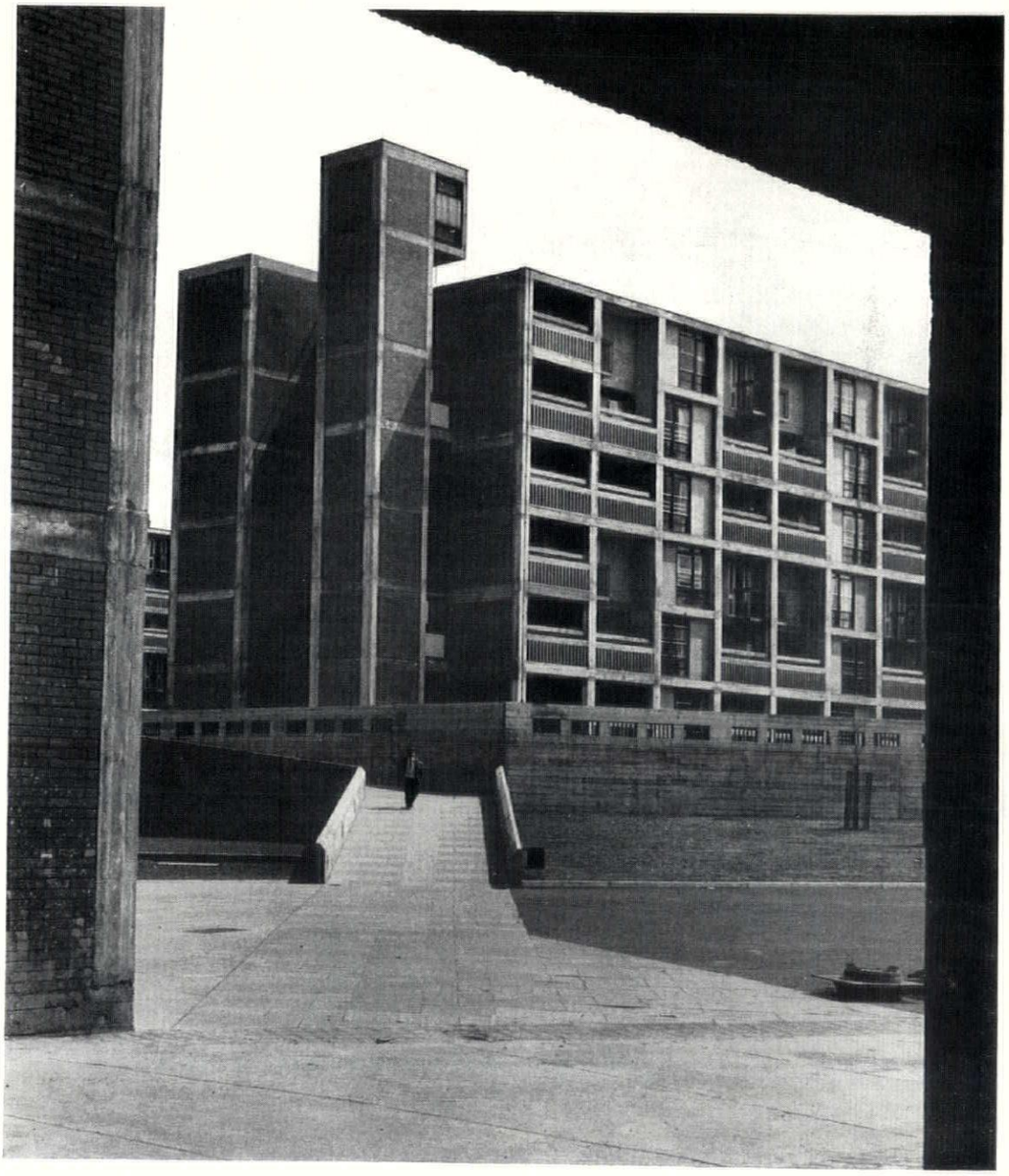
4, 5, 6, 7, four deckscapes at Park Hill: 4 is a point of transference, where the street-deck penetrates through to the other side of the block; the others show front-door details, the manner of handling bends, and typical uses (and users) of the decks.

8, exterior view at 4, showing typical external details in pre-cast and insitu concrete, metal and brick. The seemingly 'under-designed' quality of some elements is in contrast with the unassuming vigour of the concrete work.

9, external, or 'town' view of the block near the middle of the site—on this face at this point are living rooms and kitchens and their balconies as well as bedrooms on the upper floors of maisonettes.

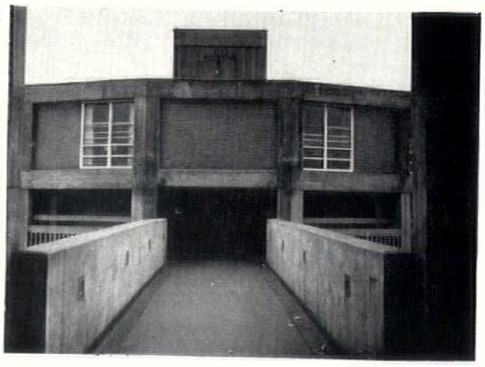
10, internal townscape, looking towards one end of the block, from the portico underneath another part of the building—a view entirely framed in elements of Park Hill.

11, view over a deck bridge toward the vehicle lift in the facing block—the treatment is identically symmetrical at all three bridges.



10

11

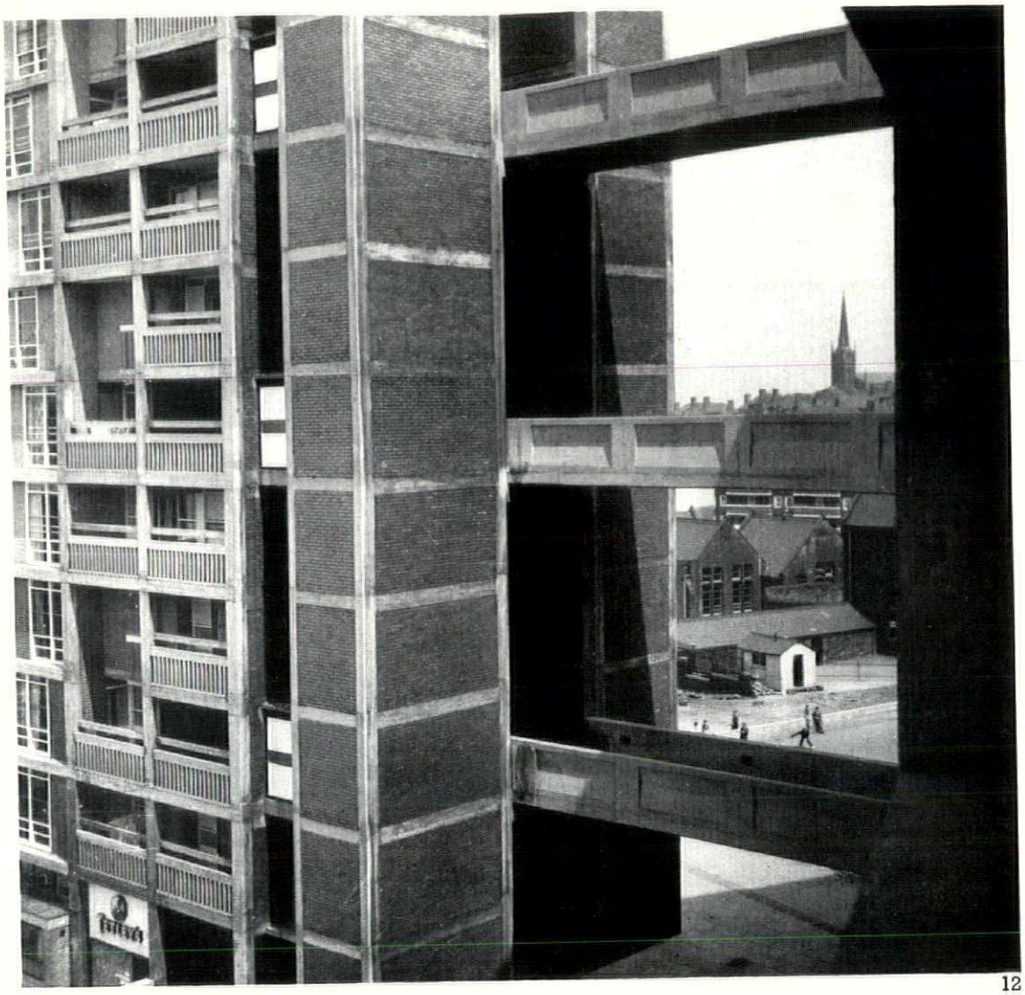


Park Hill housing, Sheffield

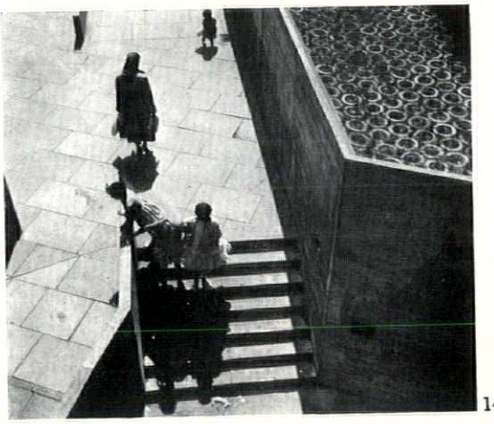
12, *the most elaborate, and most northerly, bridging point, with three levels of decks spanning the interruption in the block. The Mondriaanesque windscreens by the lifts are conspicuous in this view, as is the old school in the background, which is to be replaced by a new school on the same site.*

13, *the shopping centre at the north end of the site—some of the shops are under the block, others in the independent pavilions seen here.*

14, 15, 16, *Park Hill floorscapes*: 14, *steps down to shopping-centre, with grass reinforced by concrete units at right, to accept the weight of fire-engines, etc.*; 15, *the main central path, which makes its way up the site from north to south*; 16, *the portico where a street-deck runs out to ground-level.*



12



14

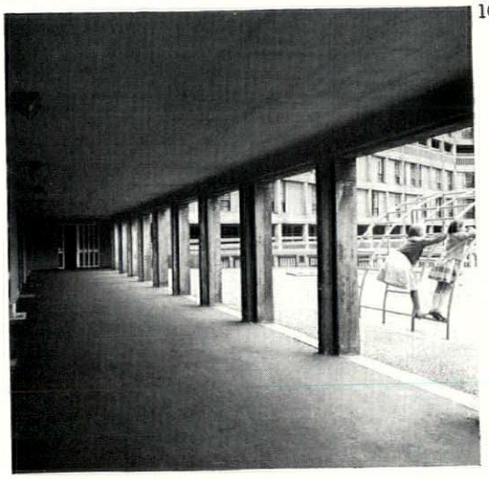
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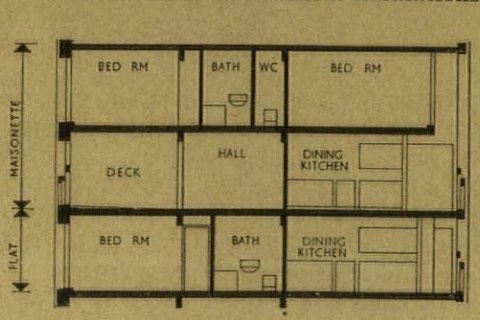
But to return to the three unities (which, to say it again, are hardly those of Aristotle). Their effect together is more than the sum of the three. They combine in the specific unity of a particular building, Park Hill, so that when one looks out from some part of it and sees another of its limbs swinging across the view, the effect is like that of suddenly realizing that the railway lines on the other side of some valley in Switzerland are the same that one's own train has just traversed a few moments before. But the simile cuts closer; the chances are that the vantage point from which the other limb is viewed will be on one of Park Hill's much discussed street-decks, and that what one recognizes on the other side of the site is not merely another street-deck, but another part of the *same* street-deck, another part of the same built volume as the viewer himself occupies.

For the ultimate unity of Park Hill depends on the inviolate continuity of horizontal communications; the street-decks make it possible to walk to any other point on the same floor level without ever having to go down to ground and come up again. But these decks are more than glorified access balconies. Their width is sufficient to accommodate children's games and small wheeled vehicles for deliveries and furniture removals, they gather up all the entrances to flats and maisonettes, and tenants' addresses are quoted by a number on a particular named deck. Functionally and socially they are streets without the menace of through vehicular traffic, and a lively argument is developing, and will continue, about the social function in particular—whether it works, whether it is worth having—because here the scheme is certainly programmatic. It set out to create a certain kind of social relationship, snobbishly decried by the *TCPA Journal** as 'Matiness,' and this is one of the points by which it must ultimately be judged.

But by qualified social scientists, not by me. The business in hand here is to discuss its architectural qualities—qualities which have been somewhat obscured by the tendency of critics and polemicists to concentrate, so far, on the question of who invented street-decks in the first place. This matter (which will be discussed later) seems to be of marginal significance when compared to the feat of *building* them first, on this very grand scale, and with complete success and conviction—and not as a clipped-on gimmick but as something integrally part of the whole architectural conception.

As an access system, each deck serves a storey of flats below deck, and maisonettes at deck-level rising into the storey above, and each deck, except the highest, runs out to ground level at some point up the rise of the site—the roof-line is at the same level throughout the building, but the rise of the ground reduces the number of storeys from fourteen at the low end of the site to four at the top. But the deck system is more profoundly involved with the design of the apartments than this, since it is a rule, throughout the building, that living rooms shall have the preferred, sunward aspect, and the deck be on the other, bedroom side. Since the building changes direction several times, the deck, on almost as many occasions, has to change from one side of the block to the other—hence the observation that the building has two façades (public and private, so to speak) not always on the same side. But the logic of the situation also requires that the deck will change sides mainly at points where the regular rectilinear structure of the block has to be deformed to accommodate the bend, and thus the penetrations of the deck through the building are usually associated with a split-open version of the H-plan stair-duct that forms the main internal load-bearing member throughout the structure. As a result these penetrations are not just rectangular passages, but polygonal public places interrupting the regular run of the decks, and preparing the street-deck stroller for a change from an 'outside' view over the city to an 'inside' view into one of the interior green spaces of Park Hill, or vice versa. Thus, while the deck never offers grandiose perspectives, but keeps down to a domestic scale of views along its length, the act of walking along one is a serial scenic experience, punctuated by irregular spatial constrictions, that is continuously fascinating.

This system of minor architectural punctuations is itself interrupted by more emphatic punctuations—full stops and semi-colons, so to speak, among the commas. The full stops are clear and straightforward enough; at each of the five ends of the block the street-decks expand into small public places running the full width of the structure, serving as a landing for the escape stair and a 'bus-stop' for the lifts. These two vertical circulations



Section through one three-storey layer of Park Hill, showing the maisonette, above, and the flat, below, wrapped round on street-deck which serves the front halls of both. e

are each housed in what appear from most ground-level views to be uninterrupted brick ducts standing side by side and effectively terminating the pattern of the façade. The semi-colons, however, are a different matter. At three points on each deck, the pedestrian, finding himself at an apparent full stop, will discover that a bridge leaps away between the two vertical ducts and connects to further extensions of the street-deck running to left and right beyond. Furthermore, he finds himself facing an exactly symmetrical composition, with a large service lift (for vehicles, etc.) exactly on the axis of the bridge.

These three points of intersection are identical on plan, all perfectly symmetrical with the three limbs meeting at angles of 112½°/135°/112½°. They arise so naturally from the general planning that their formality is not noticed at first, and I cannot see personally that the aesthetics of the whole scheme would be noticeably impaired if the three limbs met at any other combination of angles, provided they were obtuse. But symmetrical they are, and they make it clear that there must always have been some quantum of formalist intention from the very inception of the design.

Indeed, this intention was institutionally and administratively recognized in the retention of the Constructionist sculptor, John Forrester, as a kind of aesthetic consultant to the project team in the early stages, and many details, particularly of the façade treatment (relationship of planes of brick, concrete, etc.) were resolved with his advice. Purists will doubtless wince at the thought of an aesthetic consultant guiding the architect's hands in moments of indecision, but Forrester's presence on the project team at all reflects a most extraordinary broad-mindedness on the part of the city authorities who budgeted for him, and remarkable enterprise on the part of the city architect who employed him. After which it may seem both captious and ungracious to suggest that his presence was not everywhere beneficial, even though one also says that the most obvious evidences of his contribution — the Mondriaanesque windscreens by the lift entrances—do less than justice to his capacities as a designer.

Nevertheless, at these three crucial points of intersection, I cannot help feeling that Forrester's presence may have involved the project team in rather *passé* Constructionist programmes of 'Integration of the Arts,' when they had much more creative and exciting possibilities at hand, arising from their own architectural intentions. The touch of formality at the intersections suggests that the crucial importance of these passages to the whole design was felt by the project team, but it is

* August, 1961, page 338.

expressed by something else, by the bridges themselves. Viewed from the ground, or from other parts of the building, their visual importance is overwhelming. Surprising as it may seem, they assume complete architectural dominance over the vertical ducts of lifts and stairs, however powerful these may appear when they are not in visual competition with the bridges, and their dominance makes clear, as nothing else does, the horizontal continuity of the whole building. The functional reason for these bridges is to make clearance for service roads entering the site, but the effect is not of connections between independent blocks of flats; rather, one sees and feels a continuous building which at these points has been pared down to its bare essentials, to communications that are more basic to the whole design than even the structural skeleton.

Now the strength of this effect comes largely from the starkness of its expression —the first model had weather canopies over each bridge, with intermediate supports, and this, I am sure, would have muffed the whole effect. The reason why these plain concrete trough-beams are so immediately effective in conveying the idea of communicative continuity lies, in some way, in their visual relationship to the well-known photographs of the breakdown model of the Unité at Marseilles,* in which blocks representing the duplex apartments are shown being threaded *into* the frame, and *around* a cardboard duct, representing the *rue intérieure*, which projects from the end of the assembly in much the same way as do the deck bridges at Park Hill.

It seems unlikely that the project team simply took over a visual effect from this photograph, but the fact remains that they are members of a generation that has never recovered from the impact of the *Unité*, and, furthermore, the *idea* of the *rue intérieure*, borrowed from Corb, is one of the few influences that was admitted by Park Hill's defenders during the early disputes about who thought of it first.† These street-decks are *rues intérieures* in so far as they are within the frame of the block and partly wrapped round by the maisonettes, but in being at the side of the building and open to the air, they approximate to an English tradition that runs from the Chester Rows to the Stirling and Gowan housing in Preston, by way of many spec-built terraces of shops which have access decks at first floor level, over the sales area.

More immediately to the point, however, is a development visible among student designs in the very early Fifties, in which some form of continuous horizontal circulation at high levels, with public spaces at intersections, was more or less *de rigueur* in all projects for high-density housing, and was finally summed up in two of the unsuccessful entries in the Golden Lane competition: one by the Smithsons, by whom the term *street-deck* may have been coined, and another by Ivor Smith and Jack Lynn, which was instrumental in their being invited to join J. L. Womersley's then very young team at Sheffield to develop a street-deck scheme for a site there (not, originally, Park Hill).

Now, the desire to revise Corb, visible in all these projects, was part of a loosely anti-classicist movement that was to produce its most extreme manifestation in the Smithson's 'topological' project for Sheffield University as early as 1953, in which even more dramatic emphasis is laid on the exposition of circulation as the uniting factor of the design.* But it must be remembered that the existence of this movement only appears by hindsight from a decade later, that the terms 'un-classical' or 'anti-classical' were equally retrospective, and applied by some critics and some of the architects involved to explain what they thought had been done, rather than as slogans or tenets of faith while the designing was in progress. The Smithsons did not set out to be topological, though they seemed pleased enough to discover later that this was what they had been. It is to be doubted if the Park Hill project team set out to be anti-classical (the author can testify from first-hand, or first-ear, experience, that they were much more concerned with Constructionist Integration), and their design is not to be regarded as programmatic on that subject.

But against this, it must be noted that it is very conspicuously a child of its time—the hammer-headed lift towers standing away from the main structure are as much the indicator of a specific mental climate as was the Venetian window in its day. It represents a kind of building that a great many young architects in Britain in the early Fifties wanted to put up, and very few succeeded—the Market building in Sheffield, by Andrew Derbyshire, represents the same mood on a smaller scale, and Derbyshire, too, was in on the birth of the street-deck. Park Hill seems to represent one of those rare occasions when the intention to create a certain kind of architecture happens to encounter a programme and a site that can hardly be dealt with in any other way, and the result has the clarity that only arises when—as in the Villa Rotonda—aesthetic programme and functional opportunity meet and are instantly fused. But what Park Hill abundantly demonstrates is that there are other kinds of architectural clarity besides the Classical.

* *Le Corbusier 1910-1960*, page 154.

† *Architectural Design*, August 1955, page 7.

* Cf. THE ARCHITECTURAL REVIEW, December 1955, page 360.

Lecture Hall in Oxford Museum

designer : J. R. Lankester, Surveyor to the University.

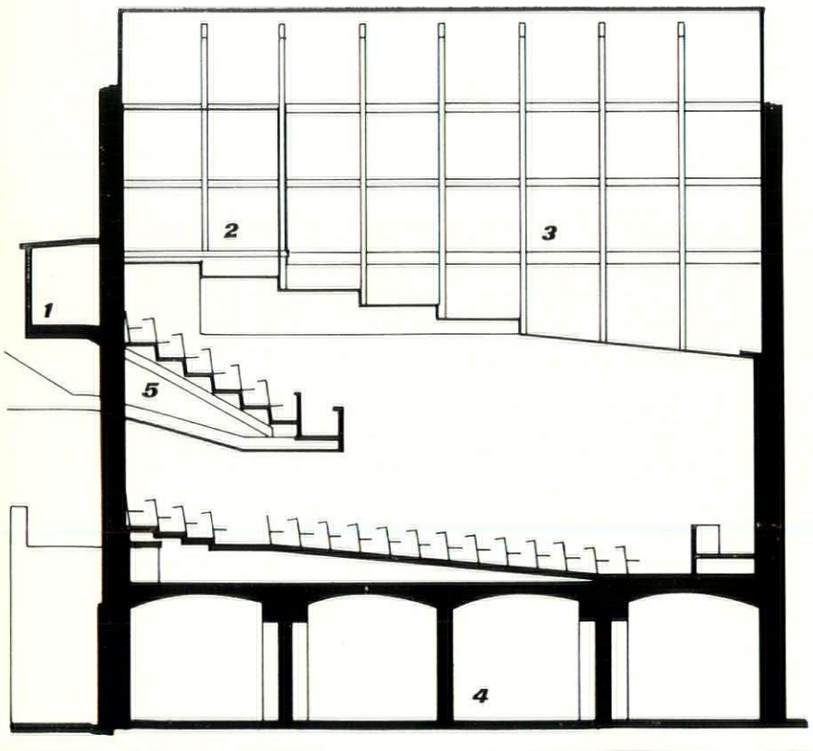
The need for expanding lecture accommodation is common to most British Universities at present, but extra space is not often made, as here, by rearranging an existing lecture theatre. Even more rarely is it made by altering a building that has some claims to being a monument in the history of taste, even if it is no great masterpiece of architecture. Nevertheless, the name of John Ruskin, as the guiding genius behind the original architects of the Oxford Museum, Deane and Woodward, has not deterred the University Surveyor's Office from undertaking a complete gutting, re-orientation and redesign of the Museum's lecture theatre in a style that is closely related to their admirable Functional Traditional manner, previously seen in their Malthouse conversion (AR, April 1960). As the illustrations show, the result fully justifies their temerity.

1, looking towards the new entrance, and steps to the balcony inserted across one end of the original theatre. The walls are finished in white cement paint and the seats are upholstered in blue plastic hide.



2

Lecture Hall, Oxford



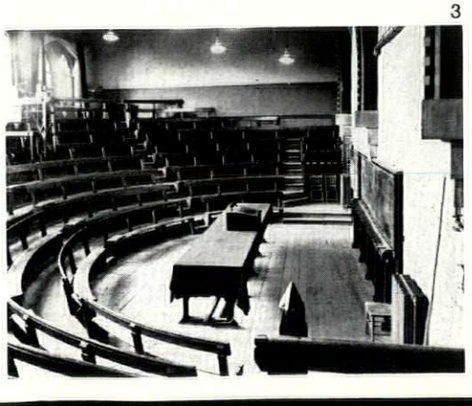
longitudinal section through the converted hall

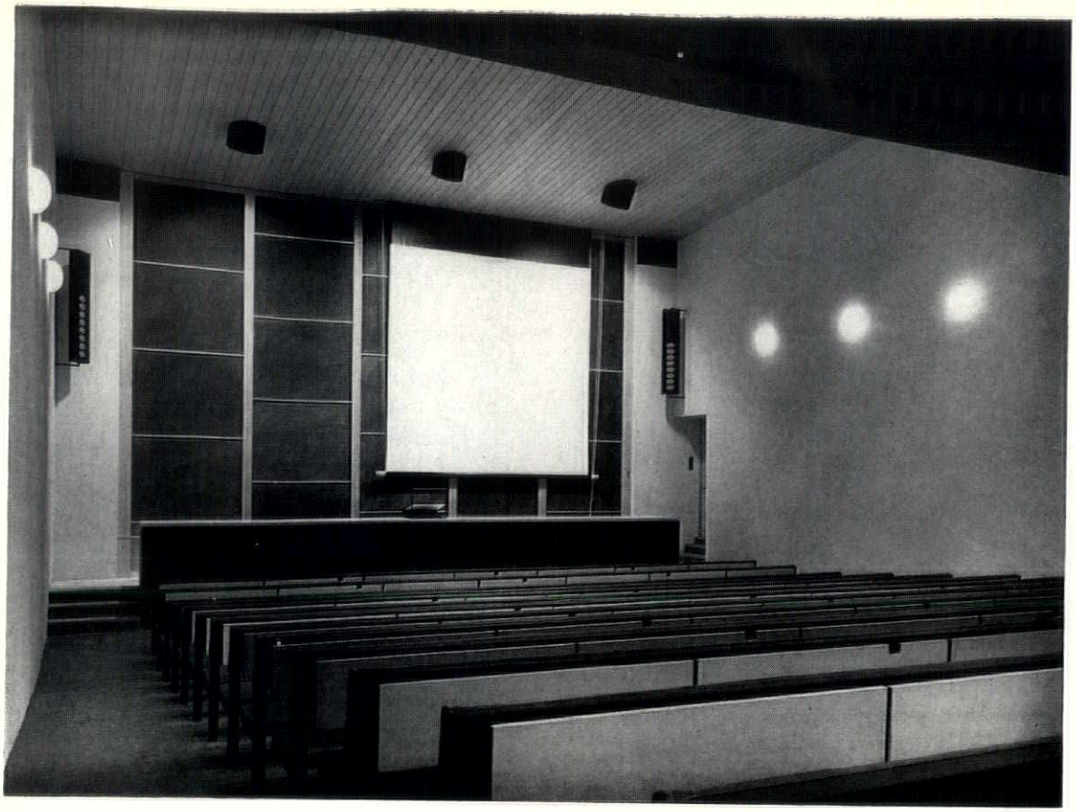
key
1. new projection booth
2. ventilating plant above new ceiling
3. void of original roof
4. original cellars (structurally reinforced)
5. new balcony

2, looking toward the rear of the hall, showing the stepped-up ceiling and the rake of the seats on the balcony. The provision of seats in straight rows, plus the addition of the balcony, instead of the amphitheatre arrangement of the old hall (3, below) has increased the seating capacity from 300 to 400. The balcony structure is in steel, with a front of quarter-sawn Columbian pine, and the ceiling is planked in the same material.

3, the appearance of the hall before conversion, looking in the same direction as 2, but from a high standpoint that no longer exists.

3





4, the demonstrator's end of the new hall. The end wall is completely covered by a large revolving blackboard, while the demonstration bench is built of two-inch engineering bricks and is fitted with basic equipment suitable for use by lecturers in a number of subjects. No special surfacing materials, such as absorbents, have been applied to the walls for acoustical reasons, and, although the occupancy varies from maximum capacity down to about forty students, no acoustic difficulties have been encountered.

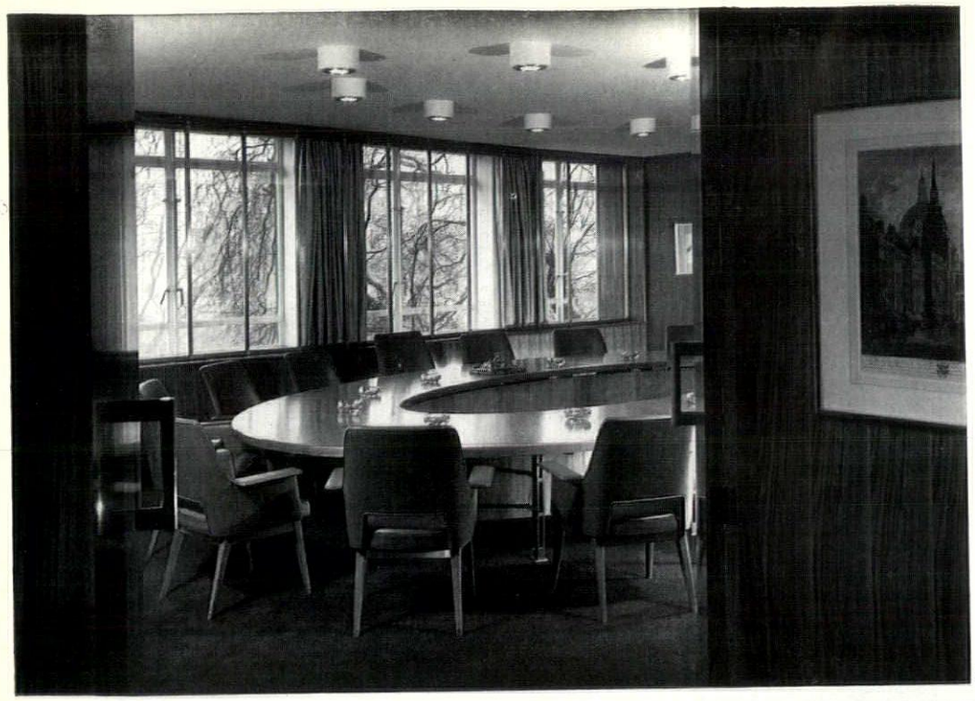
Boardroom Suite in Knightsbridge

designer : Misha Black
associated architect : Christine Durrell
(both of Design Research Unit).

Executive accommodation in structures originally designed as bulk office space requires, in most cases, improvements in all aspects of the given environment, however satisfactory it may be as general office accommodation. In this suite for British Nylon Spinners in Bowater House, one of the best post-war office buildings in London, not only have standards of finish and furnishing been raised, but also those of environmental controls such as sound-proofing, lighting and air-conditioning equipment.

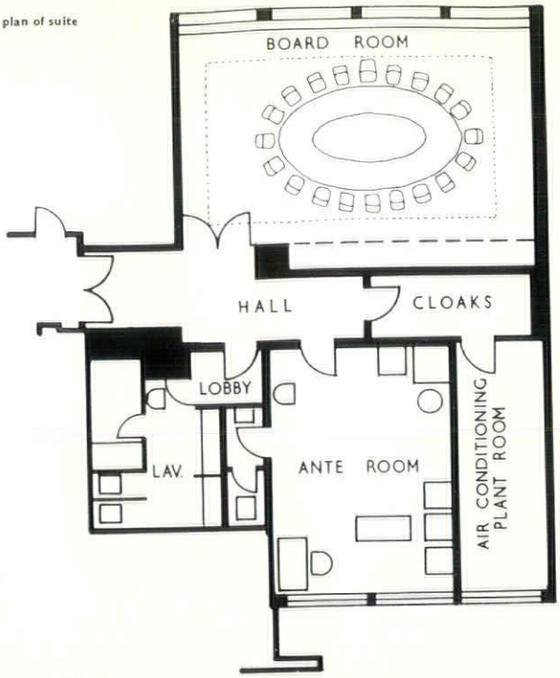


5, view into the suite from the entrance ; the walls, panelled in French walnut, and a sea-weed green carpet, anticipate the colours and character of the board-room proper. Door into the ante-room on the right, into cloak-room at the end of this 'executive corridor.'

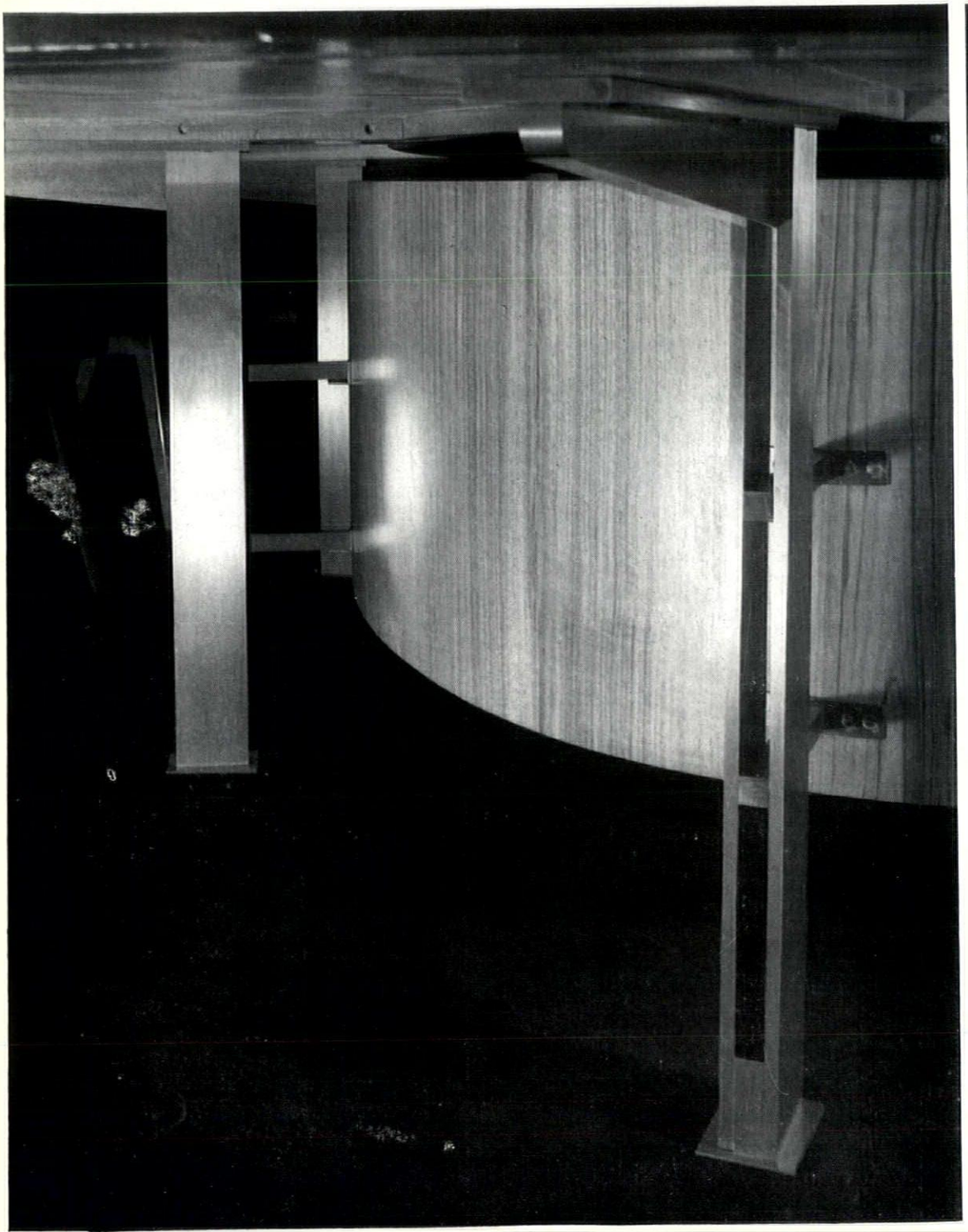


6

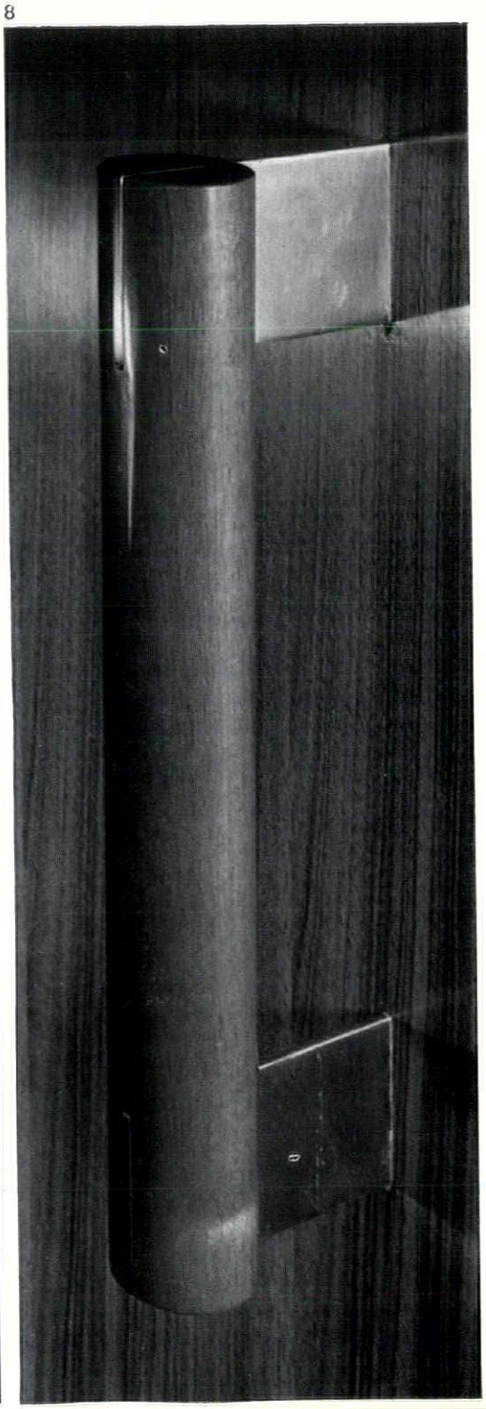
plan of suite

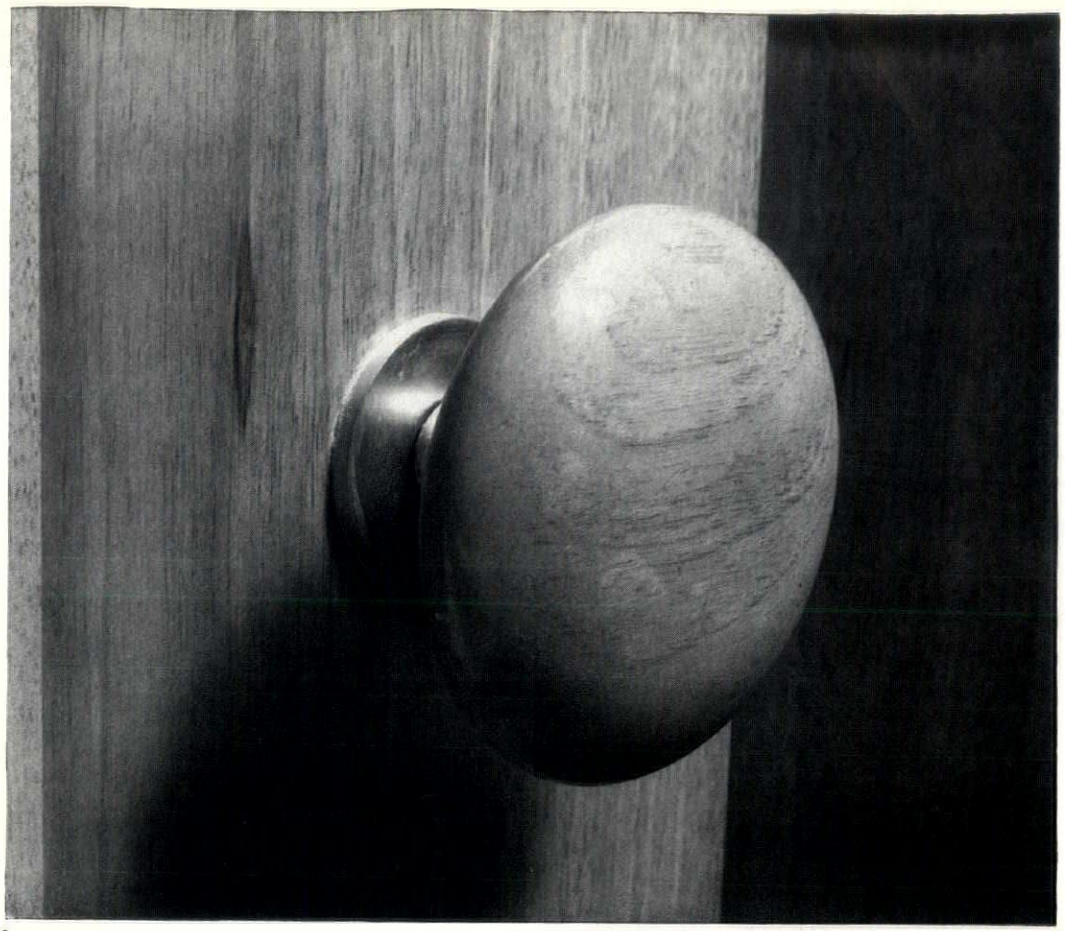


7 8



9





9

Boardroom Suite

10



6 (opposite), a view into the board-room from the corridor. The glass screen over the windows provides effective double-glazing for improved sound-proofing. The directional light-fittings in the ceiling follow the elliptical plan of the table which they illuminate. Curtains of blue Thai silk.

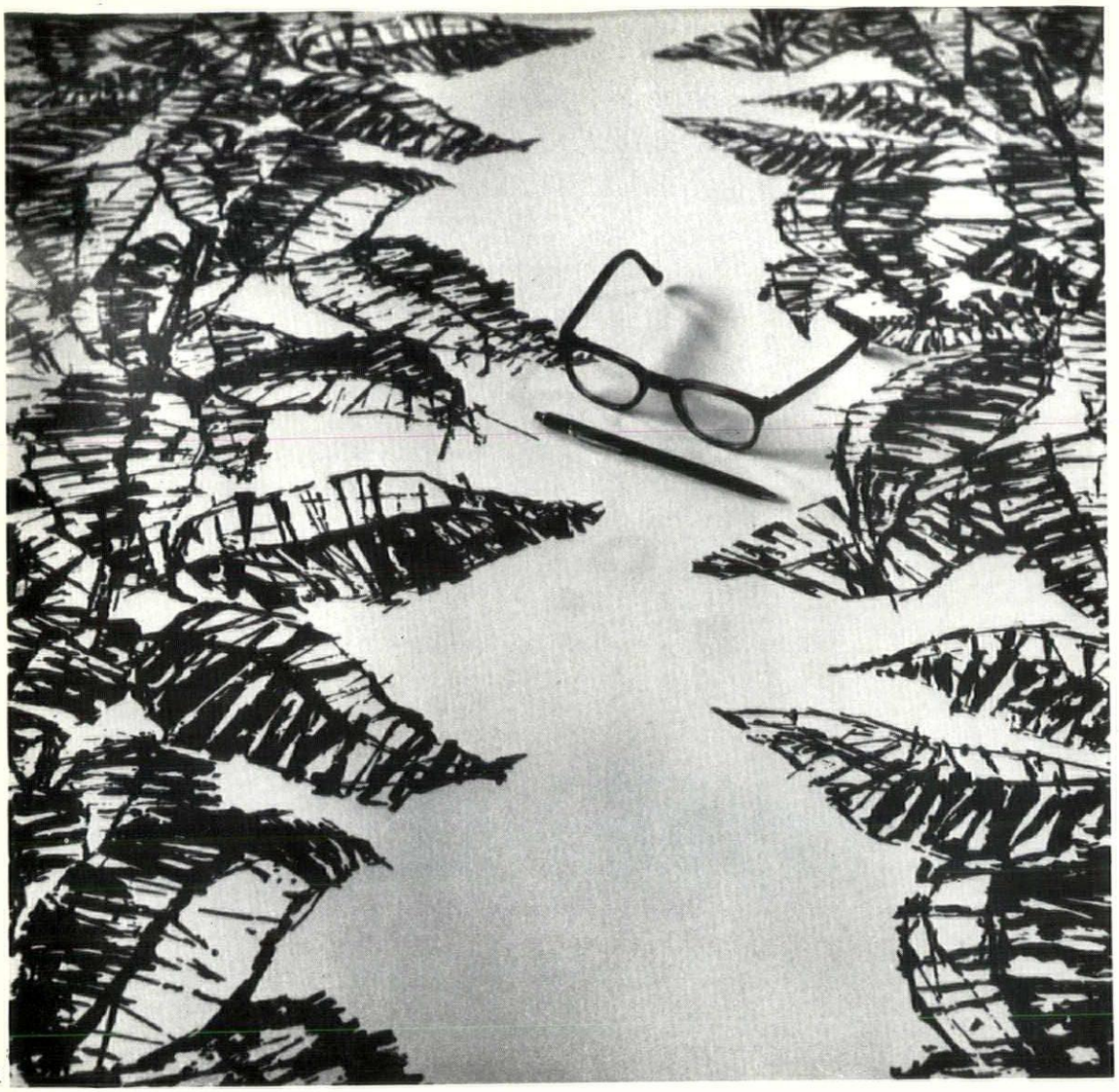
7, detail of the stainless steel legs and brackets that support the board-room table (assistant designer, Philip Lacey). The top is walnut, as is the veneering of the 'skirt' carried on brackets from the back of the legs. The table, which is a little over seventeen feet by ten feet, seats a maximum of twenty persons.

8, typical door-pull for entrance and board-room doors. The turned walnut handle is slotted over stainless steel shanks, secret-fixed to the door.

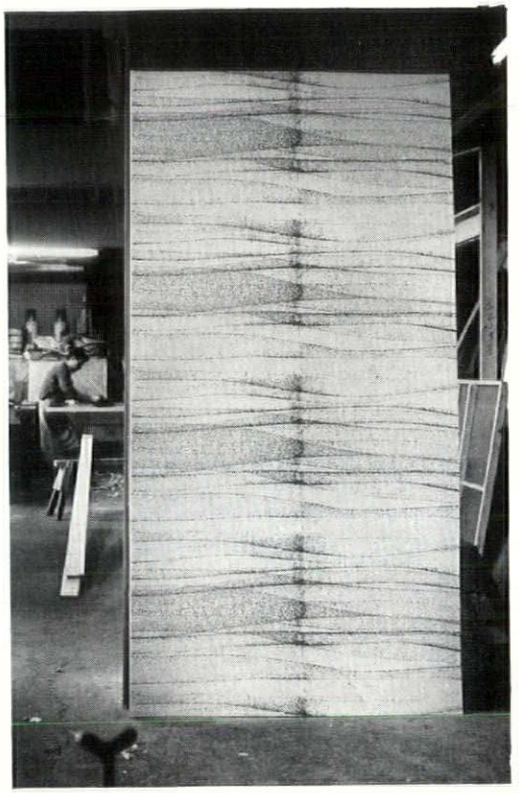
9, door-knob of the type used on the other doors in the corridor; elliptical in section, it is turned from walnut and also carried in stainless steel plates.

10, board-room chair, purpose-designed by Misha Black. The legs are in walnut, the rails in stainless steel and the upholstery in grey leather.

DR
design review



1



2

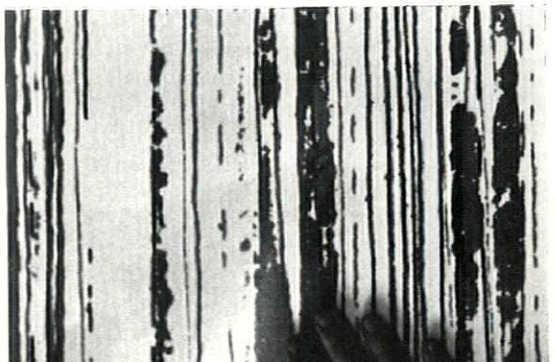
1, close up of part of the pattern *Tobacco*; two repeats of this running foliage design occupy the full width of a four-foot panel.
2, one standard eight-foot by four-foot panel from the Architectural Range, showing the size of the pattern repeats.
3, 4, 5, three sample patterns (3, *Strata*; 4, *Current*; 5, *Horizons)* shown as they would appear with the main dimension of the panel laid horizontally, as it might be in spandrel-panels, etc. All are shown to approximately the same scale, which may be judged by the hand, in 5, or by comparing 4 and 2.

Large Scale Laminates

Until recently, the kind of patterned laminated boards available on the market suffered from two outstanding defects as materials for exterior use. One was that, even when the board was stable and resistant to weathering, the colours were not fast in sunlight. The other, that the patterns, though adequate in scale for interior work, were too small to read even as texture in exterior situations. Formica's new 'Architectural Range' of laminates has overcome the colour-fastness problem (all colourways are good for ten years, which is sufficient for most of the situations in which it will be used) and some, at least, of the patterns answer the visual problem. Their use is to be restricted to architects and interior designers.



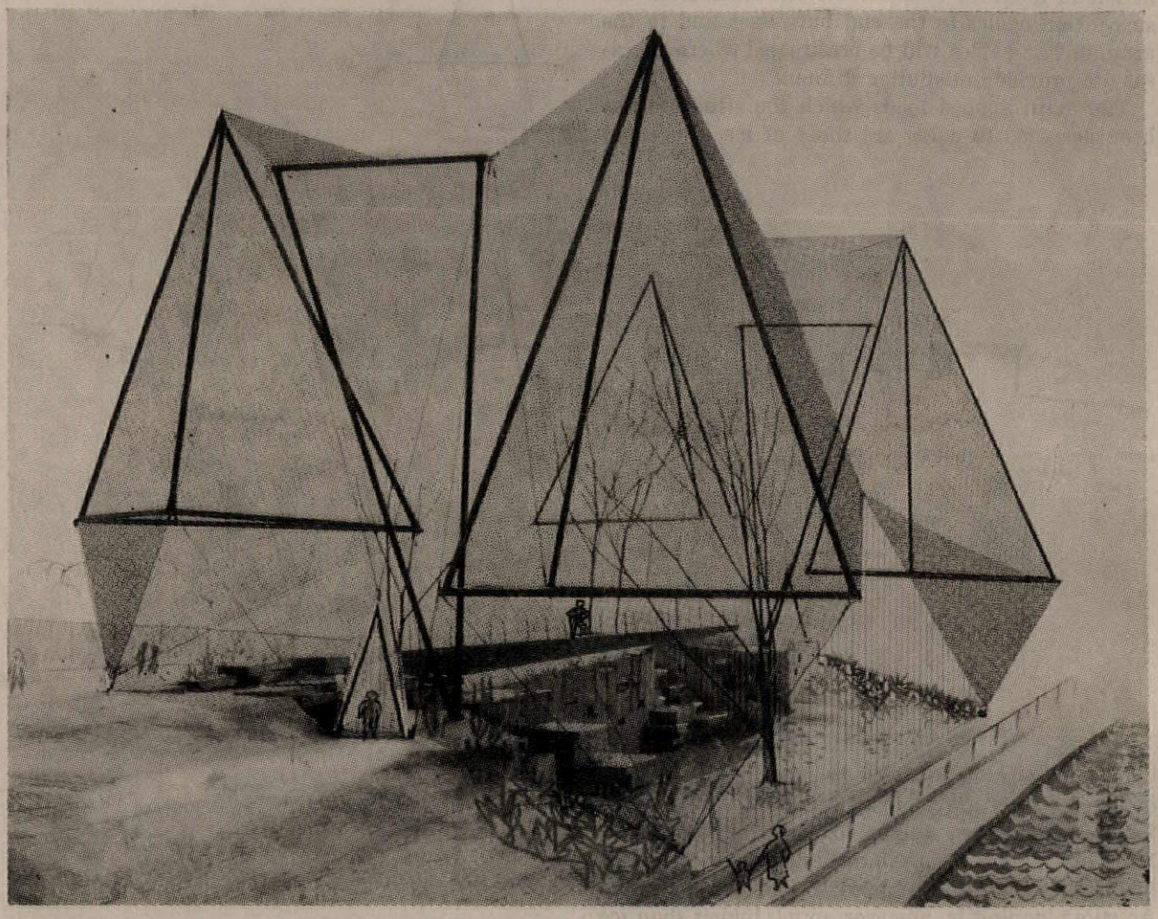




AVIARY AT THE LONDON ZOO

designers:
The Earl of Snowdon
Cedric Price

consulting engineer:
Frank Newby

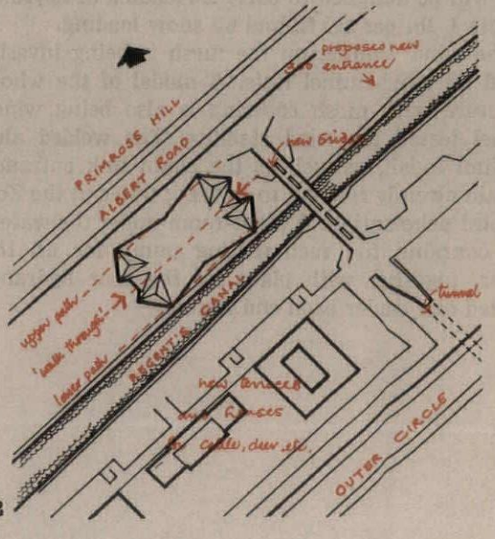


1, (right) the aviary as it will appear from the canal-side path, looking west—see site plan below, 2.

This will be one of the first structures to be erected as part of the general replanning and reconstruction of the Royal Zoological Society's gardens in Regent's Park, the plans of which have been prepared by Sir Hugh Casson in association with F. A. Stenglehofen, the Society's architect. The aviary, 1, is in the North Garden, between the canal and Prince Albert Road (see plan, 2, below), in the area of which Mr. Peter Shepheard is designing the landscape and several canal-side buildings.

The aviary, which measures 150 ft. by 63 ft. at ground level and has a maximum height of 90 ft., is to contain birds from temperate and sub-tropical regions. These will include sacred ibises, demoiselle cranes, blue pie, small gulls, large terns, guillemots, choughs, lesser flamingoes, jay thrushes, wading birds, perching ducks and herons. It will be the first open-air aviary at the London Zoo to which visitors have access.

The following points were considered essential when the design was being made: to obtain the maximum volume of usable enclosed space that the site would allow: to cater for all the activities of the birds exhibited in the aviary—nesting, breeding, perching, washing, feeding, etc.; to provide sufficient sheltered areas for the birds while allowing the public to observe them—see diagram 4—from both inside and outside the aviary (this is made possible by two chain-link entrance curtains, 3, through which visitors can pass but which birds will not penetrate, and the walk-way); to provide a structure and



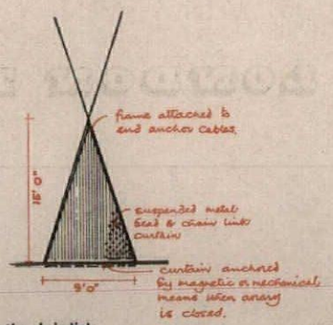
2

ground-works requiring minimum maintenance; to give the aviary a recognizable form when seen (both inside and outside the Zoo) from a distance at which the birds themselves are not visible.

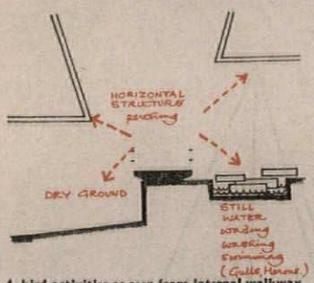
The structural system resulting from the above requirements is shown in diagram 5. The choice of aluminium was influenced by the Zoo's request for a maintenance-free structure. The space-frame ties (for reasons of clarity only the end tie is shown at left in diagram 5) distribute the loads from the suspension cables to the end buttresses and to the ground. The cables will be prestressed where necessary to provide anti-flutter stiffness.

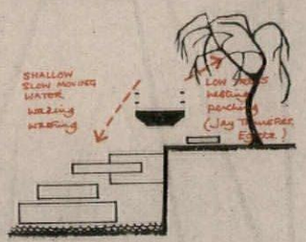
The main applied loads which the structure has been designed to carry are those of ice, snow and wind, snow being included because in those areas of mesh which are almost horizontal it is possible for the wires when iced to collect snow. The possibility of de-icing the mesh to eliminate ice and snow loading was investigated but was found uneconomic. As snow loading is, however, much higher than ice loading various methods are still being investigated to eliminate or minimize the collection of snow on the mesh, which is of 10 gauge, 6 in. by $1\frac{1}{8}$ in. black anodized aluminium. To date, a simple laying of surface heating cables on the mesh appears to be most feasible. If this method is followed, the structure will be designed to carry ice loading of approximately 1 lb. per sq. ft. and no snow loading.

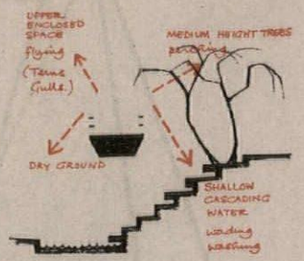
The wind loading on the mesh is being investigated by wind-tunnel tests. A model of the whole structure with mesh covering is also being wind-tunnel tested for wind stability. The welded aluminium mesh, as well as the chain link entrance curtain already referred to, is being tested at the Zoo for bird penetration. A plant-room under the waterfall contains the recirculating pump for all the water, together with plant for the four hydrants located one under each end frame.

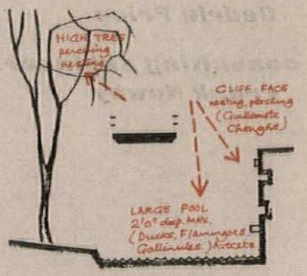


3, the chain-link entrance curtain

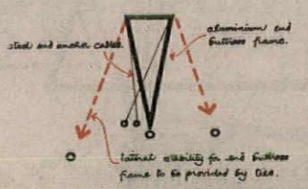


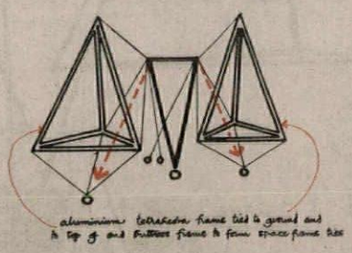


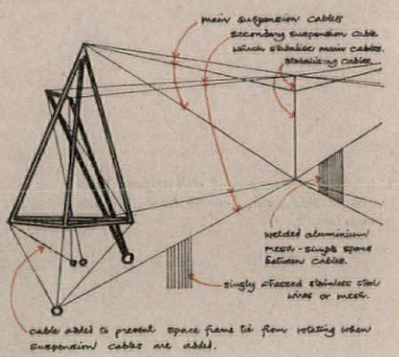




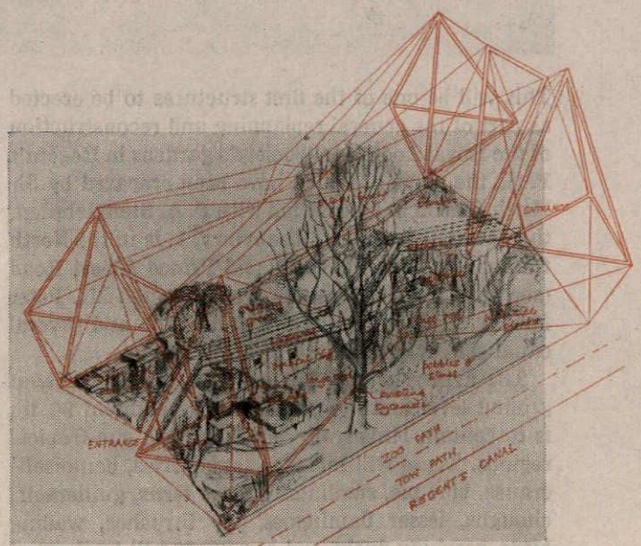
4, bird activities as seen from internal walkway



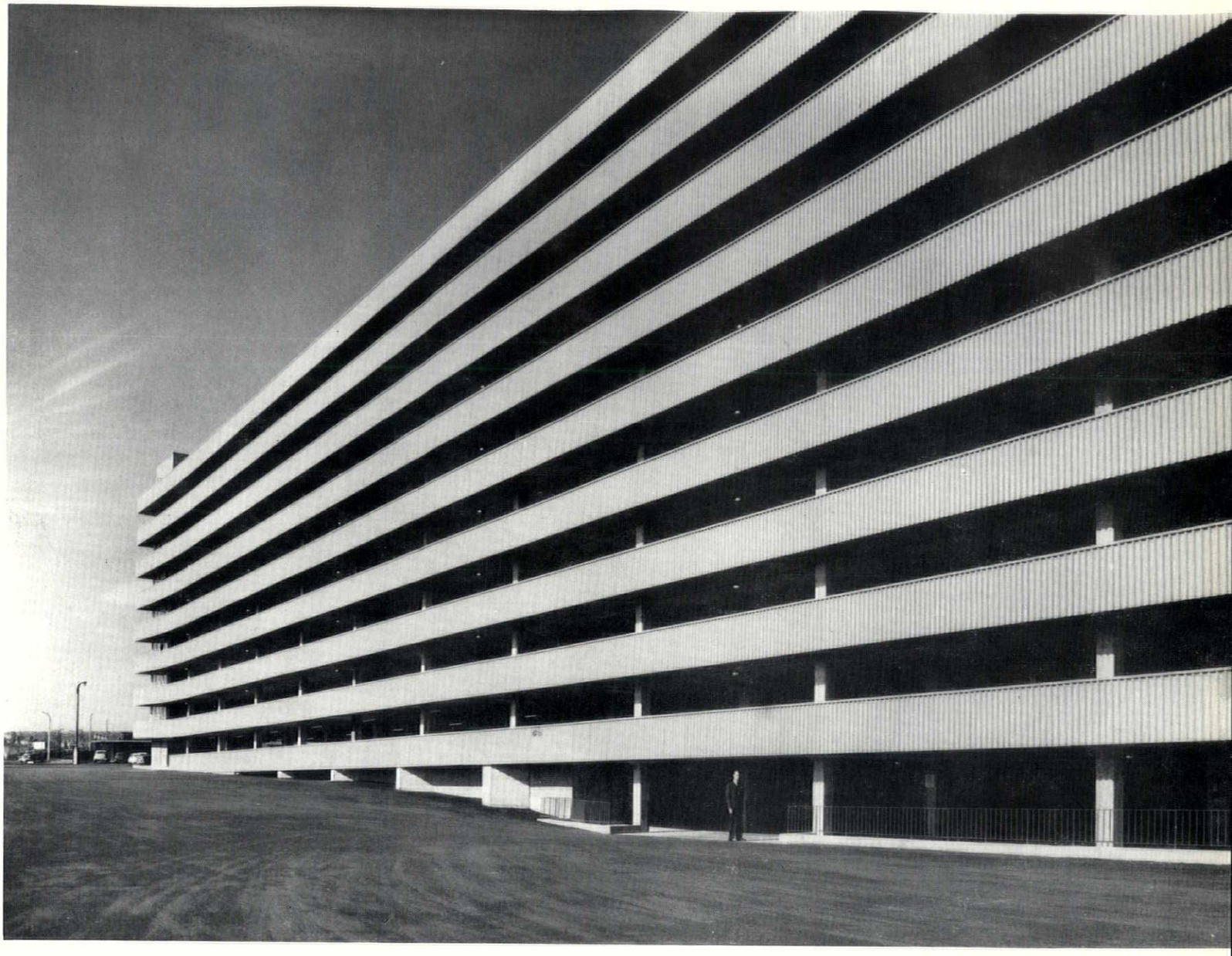




5, the structural system



6, sketch showing the internal layout and landscaping of the aviary, with the structure superimposed.



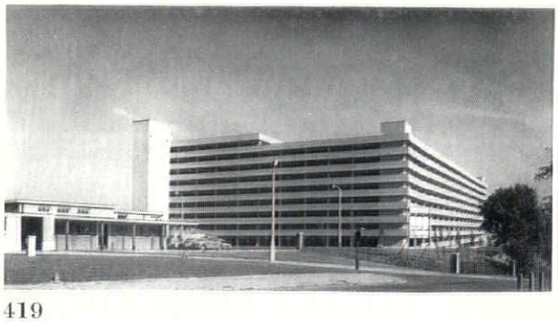
1

1, *the close-up of the storage garage at Longbridge; the cladding is plastic-faced embossed aluminium.* 2, *distant view.*

4 GARAGES

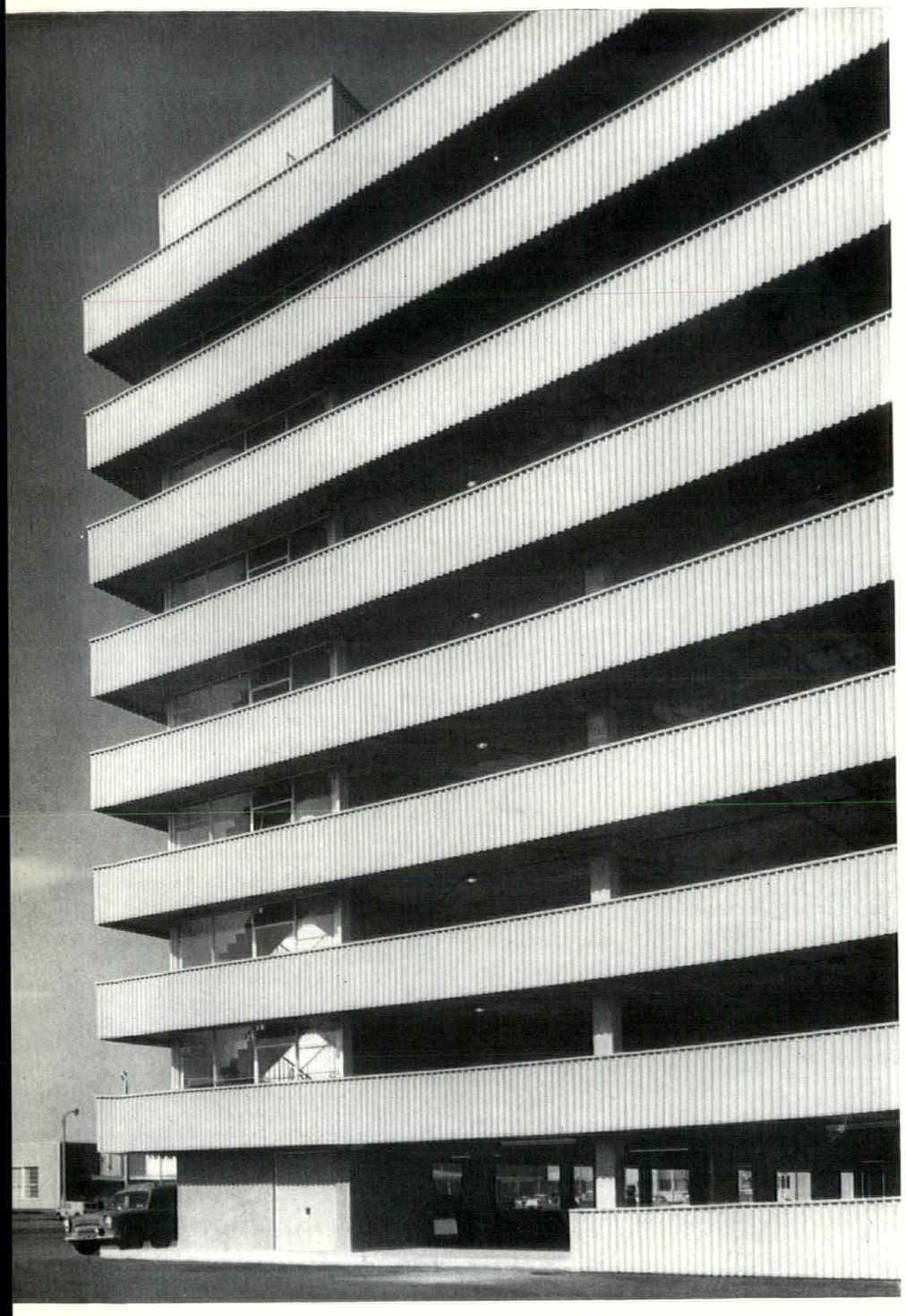
1, at Longbridge, Birmingham

ARCHITECTS: HARRY W. WEEDON & PARTNERS



2

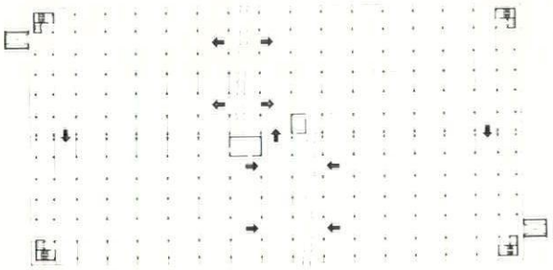
The expansion of the Austin factory into the available storage space for newly-manufactured cars, created the need for a storage garage to absorb an increased output on a smaller area of ground. The solution adopted is a split-ramp system, with parking on the ramps, each of which occupies half the full width of the structure, with flat areas only at the end and centre turn-rounds. The great length of the site enabled the ramps to rise at a sufficiently gentle angle without abnormally low floor-heights and—since the cars will be driven by works



3

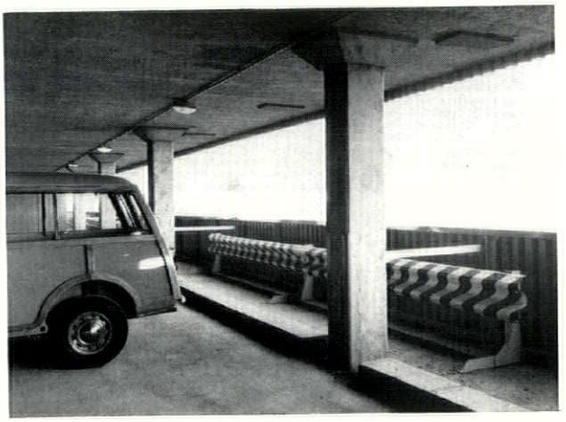
drivers—it was possible to go up to a greater height (eight full storeys) than in drive-yourself parks for non-professionals. Although the capacity is the largest of any multi-storey garage in the world—3,000 cars—and there is no problem of peak operating periods, as in normal parking, half the garage can be emptied in thirty minutes in case of emergency.

The construction is in flat-plate concrete floor slabs, probably the largest structure ever to be slab-lifted with tilted floors—the total height was so great that the columns had to be raised in two pieces. The exterior is partly enclosed by means of a light balustrading of plastic-faced, embossed aluminium sheeting that follows the line of the slab edges. Car lifts are provided to reduce the time in reaching the three upper floors (the drive, by ramp, is half-a-mile from entrance to top) and other ancillary services include passenger lifts for drivers, access and escape stairs, lavatories and a tea-bar.



intermediate floor plan

3, *one of the corner staircase shafts.* 4, *typical parking floor, showing crash barriers.*

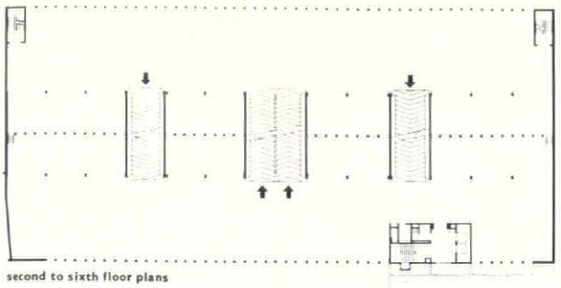


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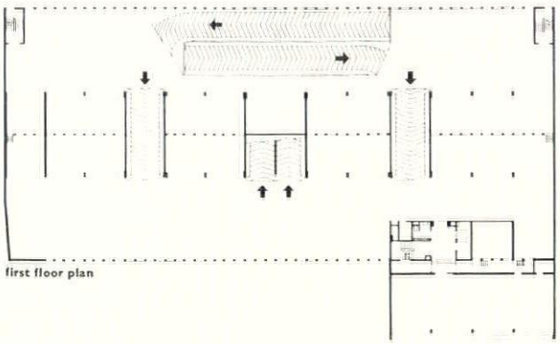
2, at Aldersgate, London

ARCHITECTS: OSCAR GARRY & PARTNERS

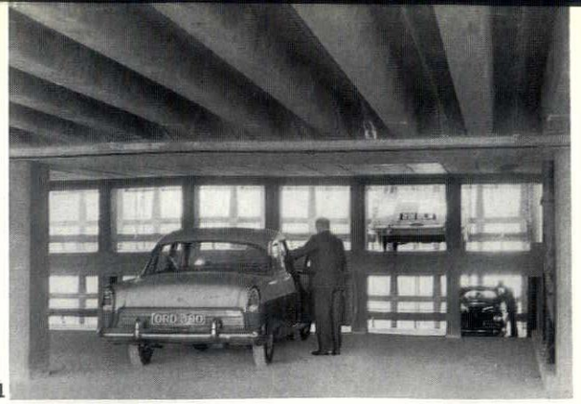
A multi-storey drive-up parking-garage with accommodation for a peak load of nearly seven-hundred cars, with a filling station in the forecourt and adjoining offices for rent to firms in related businesses, has been fitted into a cramped site in Aldersgate Street almost opposite the western end of the new Route Eleven (London Wall). The parking area, disposed on eleven half-floors (in order to keep ramp-lengths to reasonable minimum of length and gradient) is operated on a self-service system devised by the American company who are the concessionaires—access is direct and without control from the street, but cars cannot be reclaimed without presenting a ticket which was obtained at the time of parking. Access to the parking floors is by scissored ramps from ground level, and there is a special parking floor, with extra head-room for commercial vehicles, in the basement. Construction to first floor level is by in-situ reinforced concrete, and above that the floors are of deep precast beams of inverted



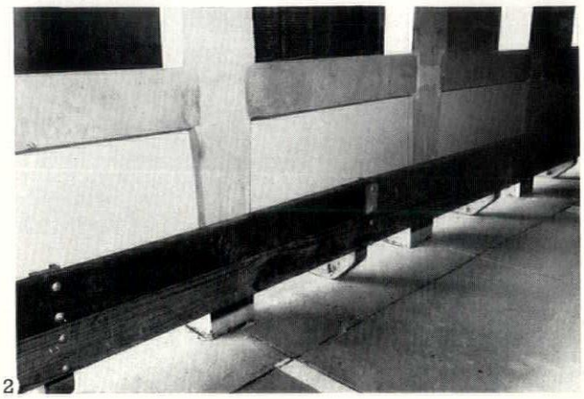
second to sixth floor plans



first floor plan



1

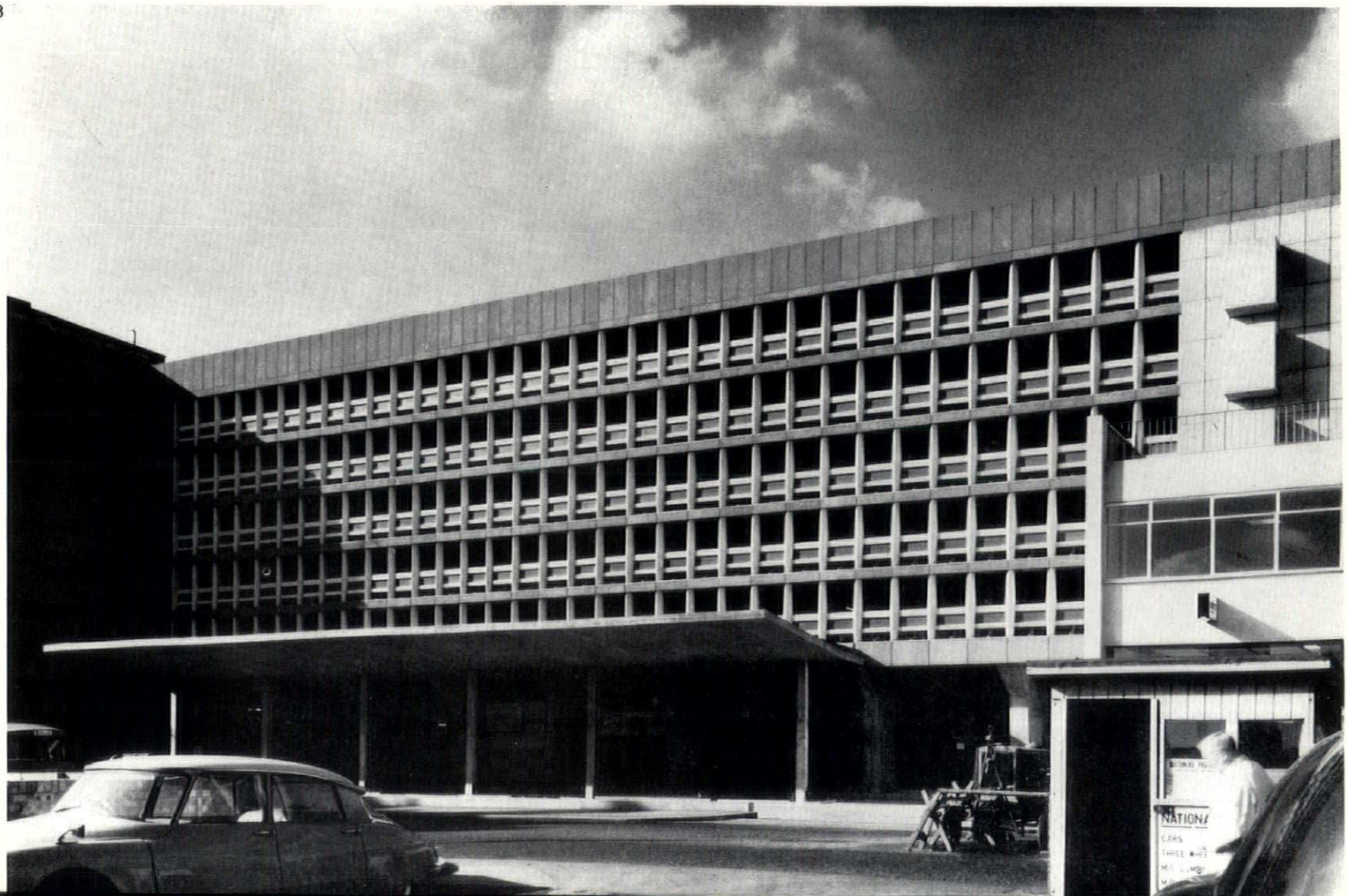


2

trough section, topped by two-inch screed, carried at their outer ends by the precast tapering members of the façade, and at their inner ends by a complex in situ structure accommodating the ramps, and the two innermost ranges of parking bays and taking up the differences in level of half a storey-height between the front and back of the building.

1, *typical half-floor parking bays.* 2, *protective barrier.* 3, *the main façade facing Aldersgate Street.*

3



3, at Southwark Bridge, London

ARCHITECTS: C. EDMUND WILFORD AND SON

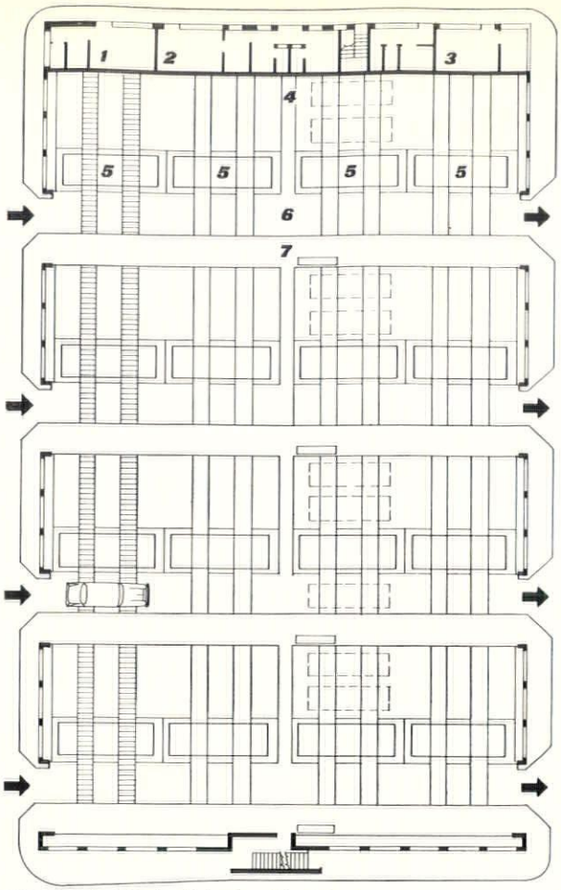
In contrast to any other urban parking garage in Britain to date, this one has a fully automatic mechanical handling installation (Zidpark system), in which cars are raised and lowered on lifts, and transferred sideways in the horizontal plane by rollers at a maximum rate of twelve cars per minute, the whole operation being controlled from centrally placed consoles in each access way—no human foot need



1

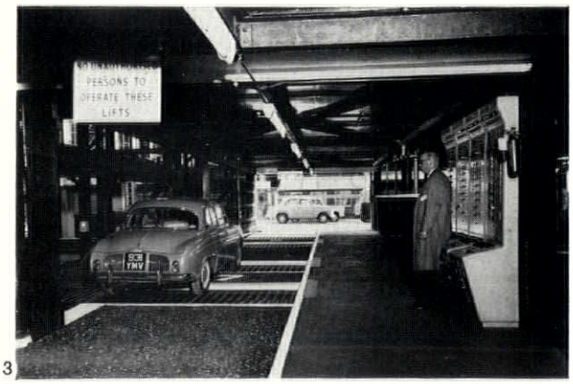


2



ground floor plan 1, female staff. 2, male staff. 3, waiting room. 4, walk way. 5, lifts. 6, driveway. 7, footway.

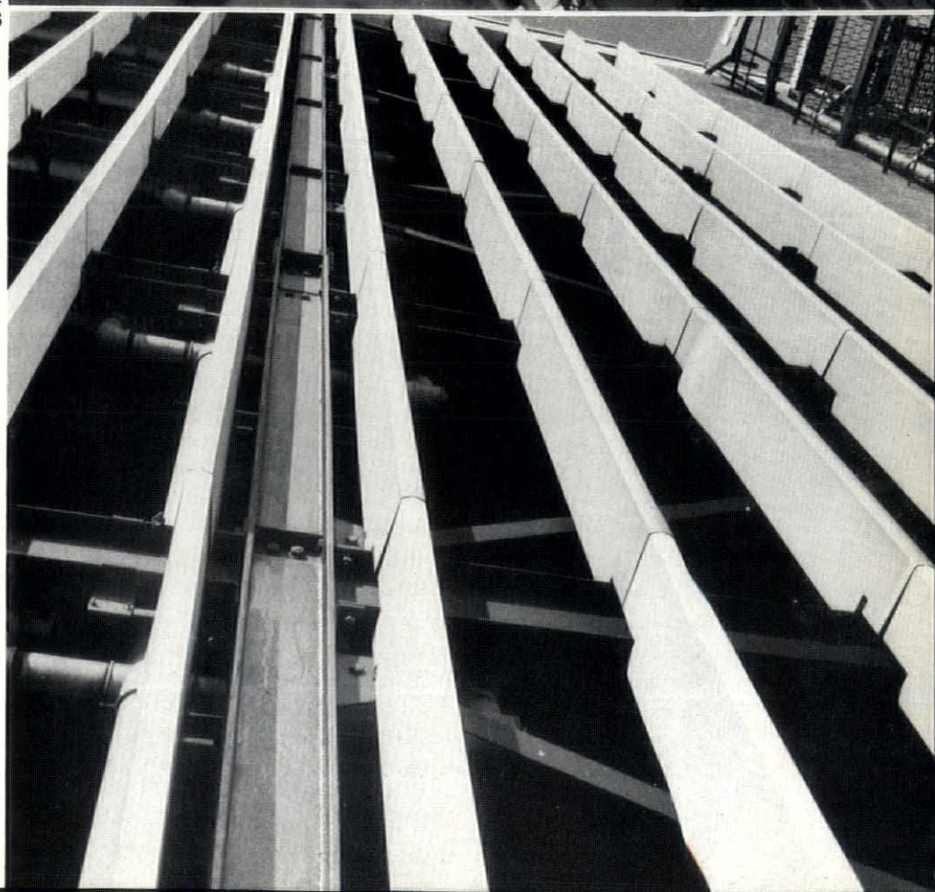
Opposite: **1**, *distant view with the River Thames behind.* **2**, *close-up view.* **3**, *one of the control consoles on the ground floor.* **4**, *the rollers which carry the cars.* **5**, *detail of the façade.*



3



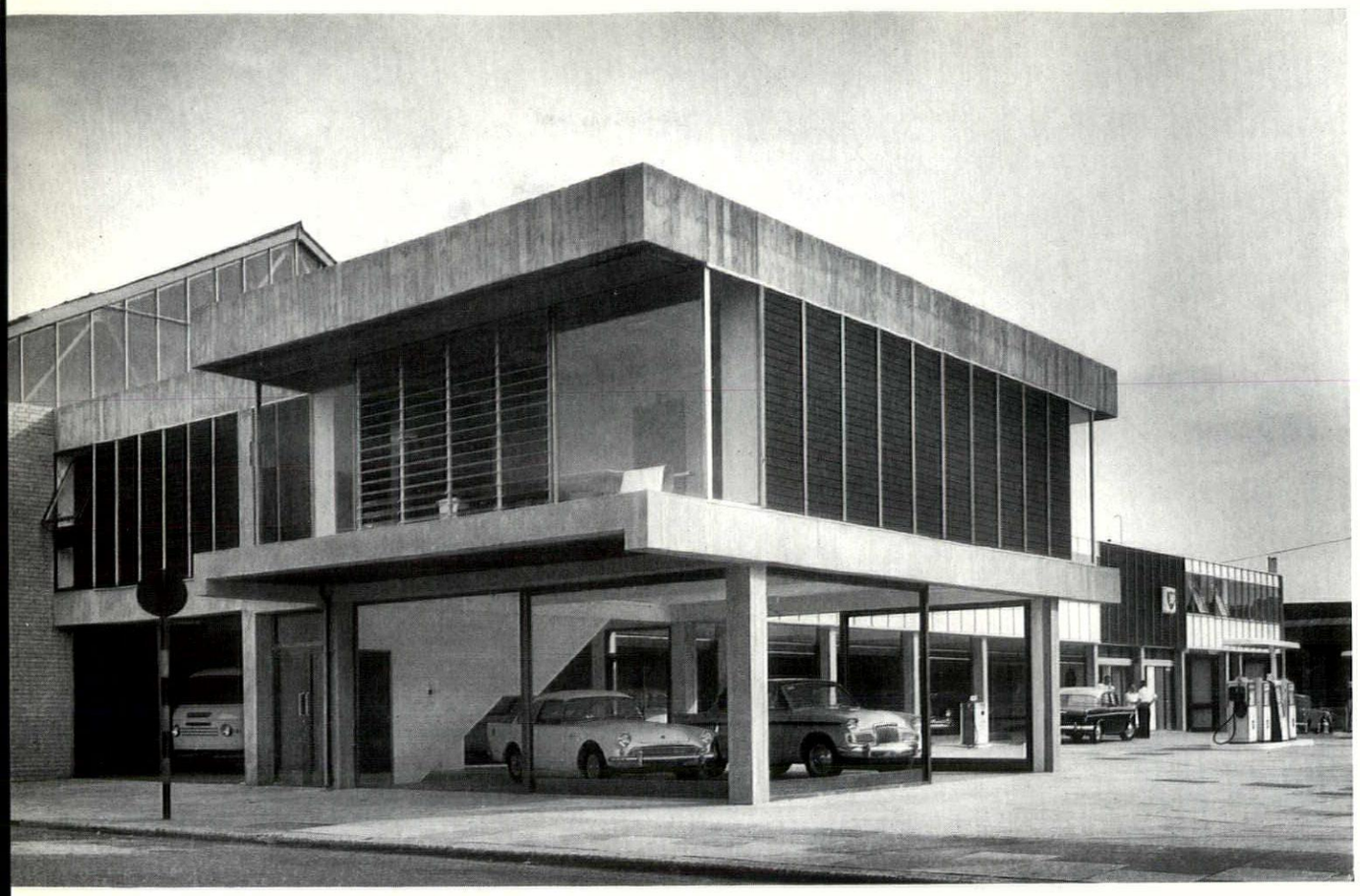
4



5

be set on the upper floors except for maintenance. The 'St. Paul's ceiling' affects the site, which adjoins Lower Thames Street, and the height of the garage block is therefore restricted to eighty feet above datum. Nevertheless, eight parking floors have been accommodated, housing 464 cars, while another forty-odd vehicles can be disposed in various parts of the ground floor for peak loads (one parking floor is below ground level).

Construction is a bolted steel frame (which needs no fireproof casing because the exterior is more than fifty per cent open) resting on a concrete basement carried on 100 concrete shell piles. The external screening, which is for purely visual functions, consists of V-section steel fins, plastic faced and carried at twenty-inch centres. At ground level the installation is surrounded by a security wall of brickwork and open louvres, and the access ways can be closed off by means of folding steel gates. On the side towards Lower Thames Street are a suite of offices, lavatories, etc., at ground level, and a large filling station.



1

1, *the projecting showroom, with the directors' suite above.* 2, *looking along the forecourt past the lubrication bay.*

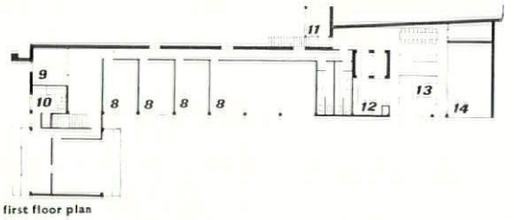


2

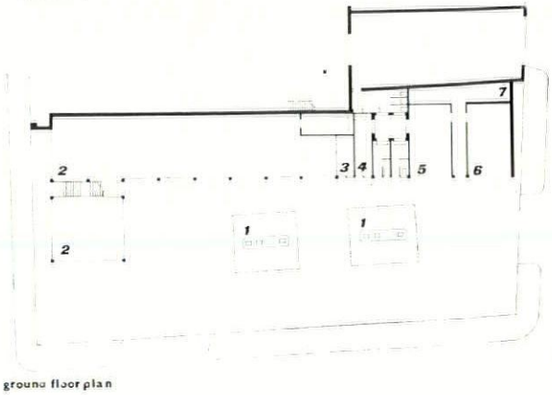
4, at Leyton, London

ARCHITECTS: CHALLEN AND FLOYD

On a site facing the open courtyard of a Victorian Almshouse, in Lea Bridge Road, these extensions to an existing transport-depot provide office space for a haulage business, a canteen, showrooms and a complete service station with washing and lubricating installations and two pump-islands in the forecourt. The construction of the two-storey building is steel-framed with concrete fire-proofing cover, and the floor and roof carried on wooden joists. The showroom and service facilities occupy most of the ground floor of this structure, while the upper floor is occupied by the canteen, offices and directors' suite. All exposed concrete is fair-faced, the glazing of the ground floor consisting chiefly of storey-height plate glass in fixed and sliding frames while the upper floor has patent glazing with opening lights, except where these are replaced by louvres (directors' office) or horizontal boarding (food-preparation areas and lavatories). The back wall of the showroom is in fair-face brick, while office partition walls are of concrete blocks plastered and painted white. The forecourt is paved in six-inch concrete slab, except for the area in front of the projecting showroom, which has two-inch precast paving slabs and the pump-islands which are in black granolithic with concrete kerbs.



first floor plan



ground floor plan

key
1, pumps
2, showroom
3, manager
4, staff room
5, wash bay
6, lubrication bay
7, oil store
8, offices
9, reception
10, bathrooms
11, foreman
12, food preparation
13, canteen
14, upper part of lubrication bay

EXHIBITIONS

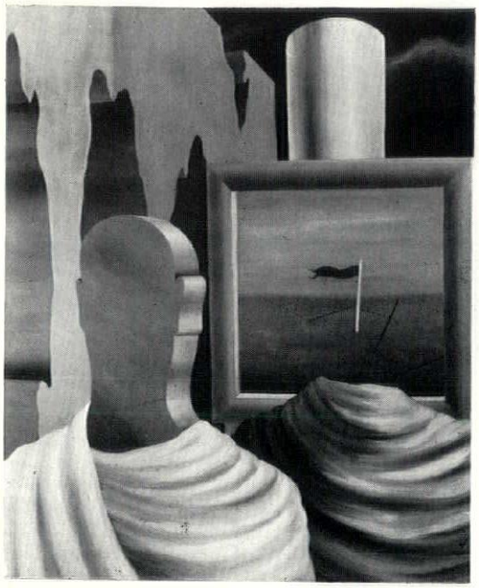
PAINTING

Magritte's poetic insight operates at a cultural level so disconcertingly low and in terms of an illusionism so brutally utilitarian that the only people who are not reluctant to admire him are those who believe—and know—that poetry is not necessarily committed to art.

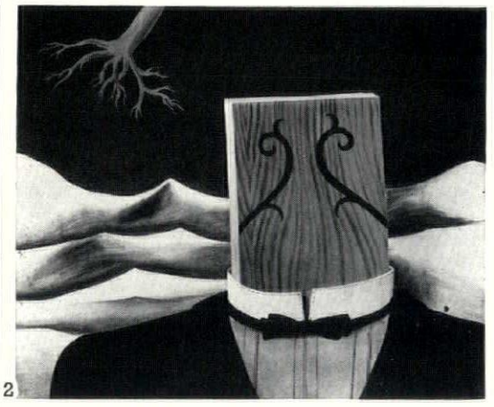
Magritte's insights take the form of jokes. They are at their best and most powerful when they are an insult to our intelligence and emerge on to the canvas without betraying any sign of an artistic purpose. He hasn't set himself a light task; he doesn't find it easy to reach rock bottom, and he has many failures. He has to demand from the act of painting a totally abject devotion to the mechanics of the joke he is perpetrating. The draughtsmanship has to be inert, the colour dull and glum, and the illusionist technique so devoid of distinction that it can make a landscape as mean and commonplace as a piece of cheese in a third-rate Flemish *trompe l'oeil*. When all these factors are in harmony the joke is so devastatingly obvious that it registers as a sudden giddiness.

Neither of the two exhibitions of his work which opened in London on the same day a few weeks back were entirely satisfactory, and I don't think they would have been any more satisfactory if they had been joined together. But in their different ways they have helped to clear the ground for a museum exhibition devoted only to his successful works. Provided that all the owners would lend, it would not be difficult to decide upon the selection. In this sense, Magritte has placed himself in a peculiarly exposed position. His best works set standards of clarity and hallucination by which the others are almost automatically condemned. Even people unfamiliar with modern art could soon learn to tell a good Magritte from a bad one with as much assurance as their grandfathers passed judgment on academic drawings of the nude. The fact that his best work offers no resistance to dull eyes suggests that he ought to be the most popular artist alive, and it would be fascinating if the matter could be put to the test in a public gallery.

The exhibition at the Grosvenor Gallery contained many early works and they made it abundantly clear that it was in the paintings of Chirico's visionary period



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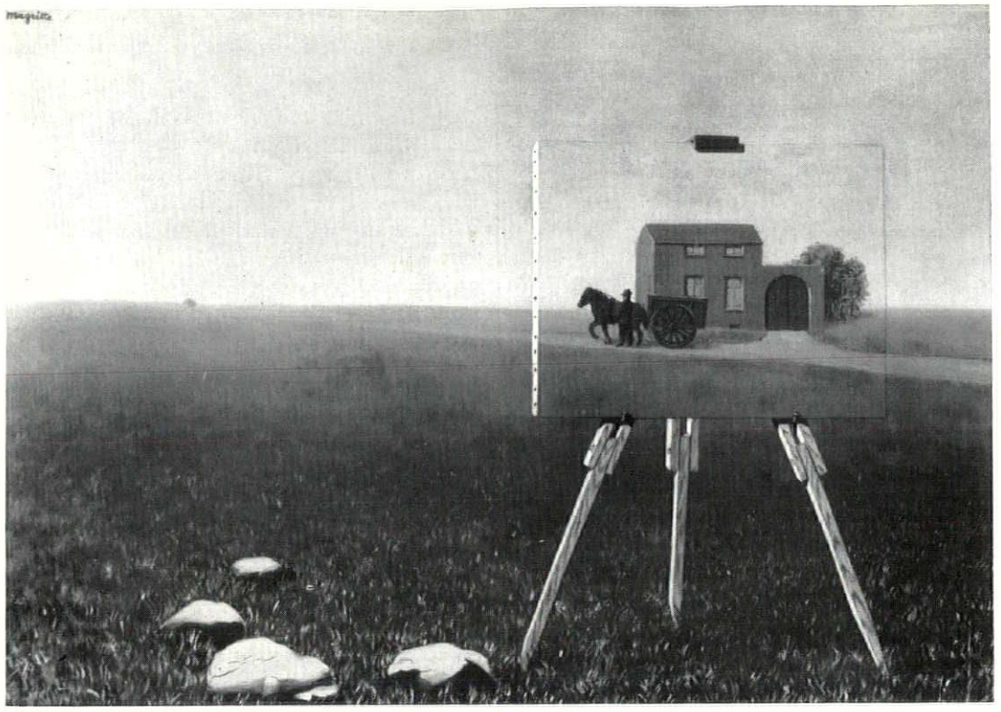
(1910-1917) that Magritte found the signposts to his own unique territory. But art is Magritte's worst enemy and his attempts to wrestle with Chirico's pictorial system led to abominable pastiches and incoherent picture-making, as in the painting containing the fretwork 'philosopher,' 1. This picture provides evidence enough that Magritte was thoroughly aware of the latent content of Chirico's images, but the influence of Chirico's compositional devices has produced only a kind of lumber room of Freudian props.

In a picture painted a year earlier, in 1925, entitled 'Le Conquérant,' 2, exhibited at the same gallery, the influence of Chirico is no less evident, but it's a psychic influence rather than a pictorial one. Magritte learnt from Chirico's 'The Jewish Angel,' in which a head is composed of a fragment of a shadowy arcade topped by a black wig, that almost anything could be used as a stand-in for the human head. His wooden plank in 'Le Conquérant,' made even more horrible by the effect of applied graining, brusquely divests the idea of the romantic associations it had in the Chirico, and although the illusionist technique is nowhere near perfection, it is one of the first of his images to emerge from his exploration of the possibility of producing an image which is not only a substitute for the head but a substitute for the kind of impassive object that has the power to frighten us in dreams. It's also a clumsy prophecy of the terrible image of displacement which he called 'The Rape,' where a girl's head is composed of her body, with breasts for eyes, a navel marking the place where the nose should be and the uncovered sex forming a nightmarishly poignant effect of a puritanical pursing of the mouth. This picture was lent to the Grosvenor Gallery show by George Melly, along with a painting called 'The Black Flag' which is one of the best Magrittes I know. It depicts a night sky filled with antiquated aeroplanes whizzing about in all directions without pilots. It contains the notion of a visitation from another planet worthy of Mack Sennett, but it also brings to mind the eerie, hysterical swooping of bats, and the aerial battles of demons in Bosch's Temptations. All done in glum colour and with mechanical efficiency. I'm sorry no photograph of it was available, but I can at least illustrate one example of his work which I admire without reservation. It was included in the exhibition at the Obelisk Gallery.

This was a different kind of exhibition. It included many pictures in which the images were presented in his perfected illusionist technique, but in which the *frisson* was weak. The sort of thing I have in mind is the dead-pan, factitious image of plants turning into night birds, 3. It's a nice joke against the metamorphic preoccupations of some of the artists of our time who are considered to be more 'creative' than Magritte, but the image doesn't really break free from nineteenth-century gothic. Another work which was fascinating in its way and yet somehow lacked bite was the apparition in a night sky of enormous brass-band instruments which have caught fire. It would make a splendid frontispiece for an illustrated



3



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edition of Freud's 'The Interpretation of Dreams,' for it mingles the psychoanalytical significance of dreams about flying with dream-like projections of such verbal material as 'playing one's instrument' and 'playing with fire' in a compact, concrete image. The only thing is that Magritte's best images do not rely upon the spectator to work out their meaning. They operate as if the spectator were actually dreaming.

The one truly masterly example of his joking in the Obelisk Gallery show was from his brilliant series of paintings within paintings. (The first crude sign of his interest in this theme appears in the early picture of the robed fretwork figure.) The painting of a landscape in which the canvas on the easel depicts the part of the landscape which it hides from view, 4, is a text-book demonstration of the vital role played by his devitalized illusionism in the exposition of the idea. It produces an optical magic as rich in impossible possibilities as the verbal magic of Lewis Carroll. Is there a house behind the canvas? How will the horse get on to the 'real' road when it reaches the edge of the canvas? How did it get into the canvas in the first place? Was the canvas somehow slipped into the scene the way one puts a piece of paper in the path of a crawling insect in order to carry it away? If the horse should fall when it comes to the edge will it fall into the foreground and become larger than the canvas it occupies? These are idle questions. They only tempt us to doubt reality. Let us return to the firm ground of art appreciation.

The exhibition of impressionist and post-impressionist paintings called 'Masterpieces of French Painting' which was recently at the National Gallery, was formed by a German industrialist, Emile G. Buhrle, who died in 1956. It is a very remarkable collection to have made, considering that Buhrle only began to collect in earnest in 1938 and was concerned primarily with acquiring the works of the acknowledged masters of the most popular and most publicized school of painting the world has ever known. Perhaps it is more remarkable for the immense amount of money which must have been available than for any special sensitiveness on the part of the collector. The money came from armaments, and it's quite clear that finally there was so much of it that if Buhrle wanted something that was going he didn't have to worry about competitors. It's said in the catalogue that 'the opinions of museum officials, authoritative critics or other collectors had no real importance for him' and that he 'seldom allowed advice to influence him decisively,' but it's difficult to believe that museum officials and authoritative critics would be likely to cast doubt upon such obvious examples of the gilt-edged, unless, of course, they had some other collector in mind.

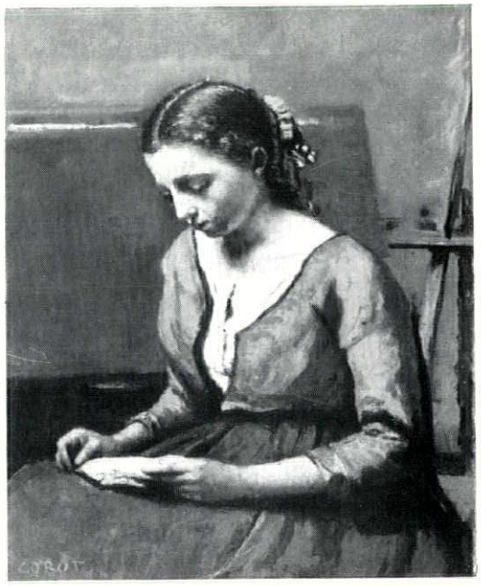
It's the kind of collection which enables the critic to strike the right note of awe simply by reciting the number of Cézannes it contains, and the number of Van Goghs and Manets and Monets and Renoirs. I realize now that my four illustrations must have been chosen compulsively, for I can find no trace of system in it and it includes nothing by the artists I have mentioned.

The writer of the catalogue notes says truly of Corot's fair haired girl in a red dress, 5, that it is 'neither a portrait nor a *genre* piece but a subtle poetic image evoking a mood of calm, contemplation and melancholy,' but it seems unnecessary to have added, after noting the relationship with the art of Vermeer, that it is 'free from the Dutchman's descriptive and narrative detail.' The use of the word 'free,' and even of the word 'Dutchman,' seems to carry the absurd implication that it is an *improvement* on Vermeer.

The Degas study of Vicomte Lepic and his daughters, 6, is a nice example of his play with the idea of informality. I fancy that I chose it partly because I like little girls and partly because it is a reminder of the same painter's marvellous 'Place de la Concorde,' where Lepic and his daughters, three or four years older, occupy the foreground.

The Rouault called 'A Couple,' 7, painted in 1905, is a work of his greatest period. His art strikes me as having grown lighter with the passing of the years. What once seemed to be a tragic awareness of sin and damnation now seems to me to be a kind of exquisite brutalism, as if the influence of his master, Gustav Moreau, were working its way, twisted and distorted, to the surface.

The fact that Gustav Moreau himself is once again being taken seriously, and Salome in all her flashing jewels is knocking



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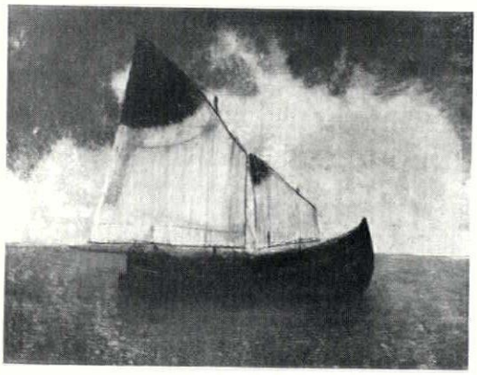


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on the doors of authoritative critics, is a natural consequence of the steadily deepening regard for the art of Odilon Redon. It is a sign that Redon is now a fully-fledged and officially acknowledged French Master that one of his pastels is in the Buhrle collection. But it is not surprising that it stands out rather sharply from the other masterpieces around it, for this superbly



8

visionary and poetic work, 8 (it's called 'Drifting') speaks up for what has been for too long a suppressed minority. Redon's work springs from an attitude to reality absolutely opposed to that of the impressionists. This attitude was expressed by Moreau, and subsequently echoed by Chirico, in the words 'I believe only in what I do not see,' and by Redon himself when he said 'My whole originality consists in putting the logic of the visible at the service of the invisible.' This is also a precise explanation of the aims of Magritte, and for the first time in my life I would like to write a manifesto. Its title would be: 'Independant Visionaries of the World, Unite!'

Robert Melville

TOWNSCAPE

DERBY MARKET PLACE

Derby . . . . the most Midland of all cities, bricky and slaty from the air, with a purple haze almost like an aura. Saturday night and Monday morning, here. Circle it, like the beginning of an esoteric film, and you pick out a tiny central square, 1, lost by comparison with the roundabout and the civic improvements, full of cars and buses. Funny fag-end of a pre-technological age, you may think, I wonder what that's like.

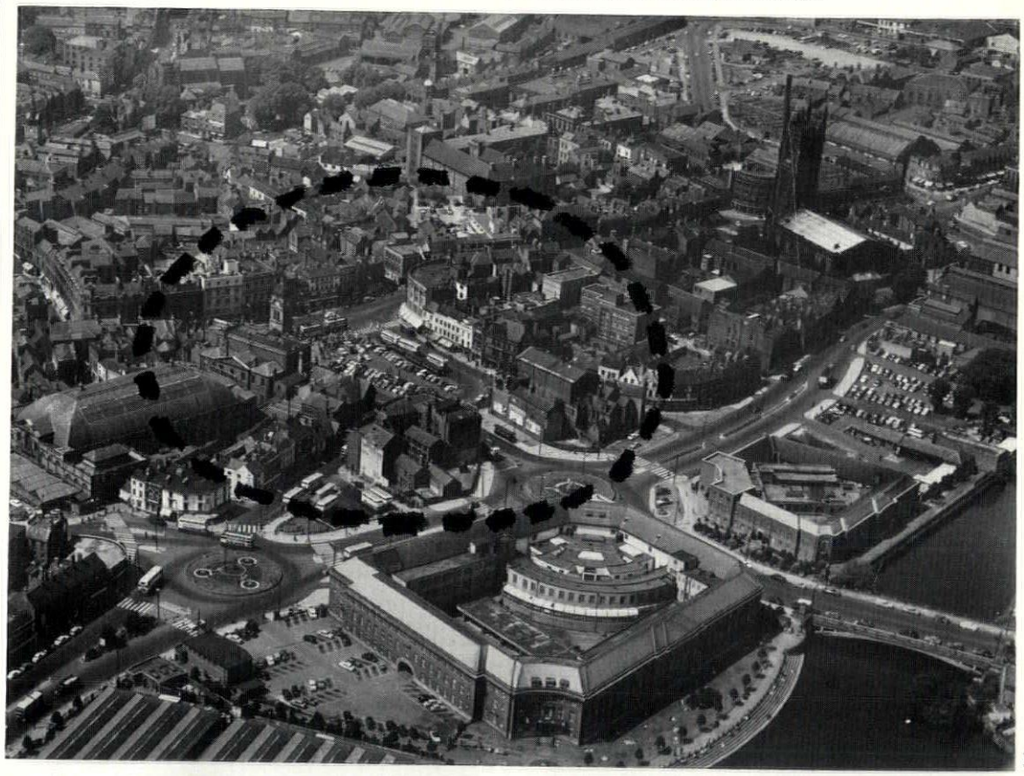
Go down and have a look, and it turns out to be still, in spite of the attempts at Civic Centres, the centre of gravity of Derby. Also, in spite of the slate and red brick, it manages to feel incredibly Continental—because enough people always want to congregate and feel themselves at the centre of things, whether it is in Derby or Siena.

One kind of reaction made the floral roundabouts and the pseudo-avenues. Another, very naturally reacting against this, would want the whole of Derby Market Place pedestrian. Leisured ease, reflections of Venice, no horrible motor-cars. The truth, yet not the whole truth. That is something here much more intricate and subtle, which may be true for Derby, but for nowhere else.

Derby Market Place is unusual, in Britain. It is a miniature of the Brussels *Grand'Place*, a place which draws its life from the coming-and-going. A6, from London to Manchester, runs up one side of it, and traffic is continually on the move, both local and national, 2. The trouble is that the balance is all wrong. There is

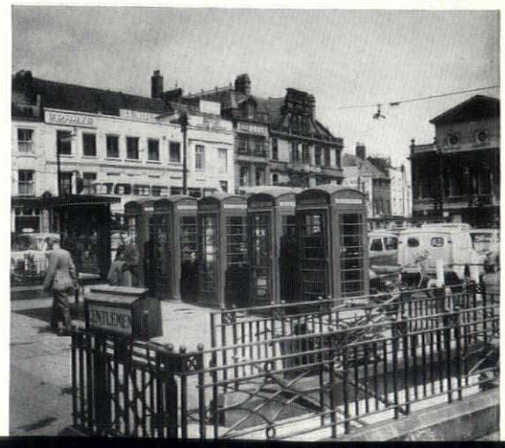


Map showing location of Derby Market Place (circled in 1, below). Compare with map on page 429.



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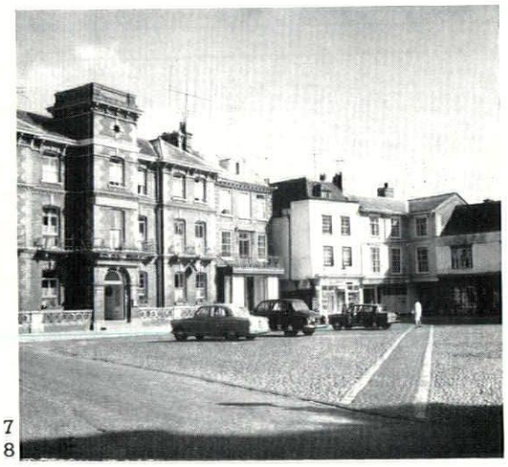


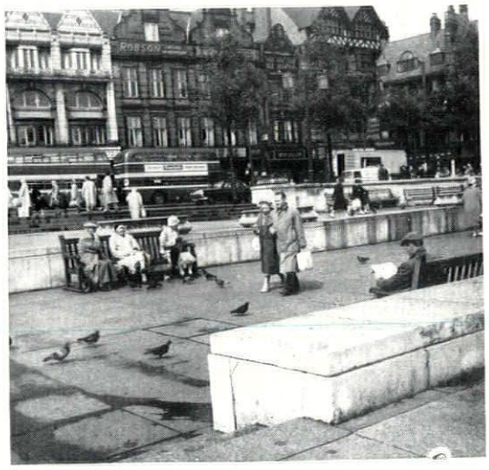


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nothing left but the traffic and its appurtenances in the way of street-furniture and parked cars, 3. And in the way that English provincial towns have, it is beginning to lose its buildings like a middle-aged business man loses hair. There is already a gap on the east side which would have to be filled before it began to be a proper square again. To take all of the traffic out of the square would be to devitalise it: and the talk of 'opening it up to the river,' which is in the air, is simply the old roundabouts and formal axes brought up-to-date. The river at this particular point is a confusion of car-parking and nondescript buildings dominated by a power station; the space would leak out irretrievably and the scale, which at the moment is just about right, would have been exploded to no purpose.

The point, of course, is to control the amount of traffic. So far, our practice has been to polarise, just as clumsily as we do in politics: Left or Right, all cars or no cars. But how about a controlled number of vehicles, a number that need not necessarily be the same as that for Nottingham or Leicester or any other place? The A6 down one side (with a bus lay-by) and about twenty parking places might fill the bill. If it did not, then it could be varied by experiment, like a chef making a sauce; the daytime parking charges could ensure the correct sort of in-and-out (first hour free, second hour 10s., third hour £2).

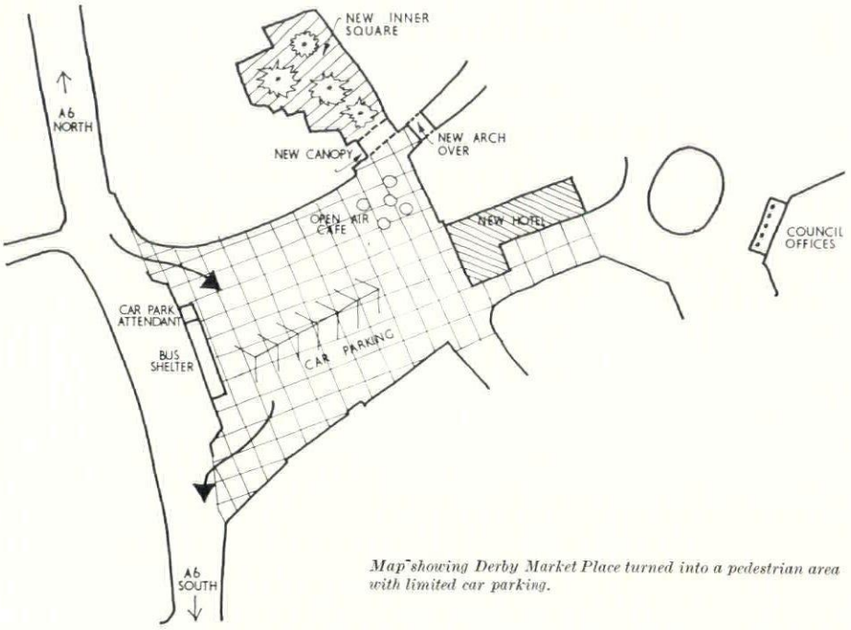
The clutter should certainly go, because the square is too small to stand it. One sweep from side to side would be ideal, whether setts, paving or squared concrete—anything to differentiate it clearly from the asphalt of A6. One object would have to remain, a single long bus-shelter, with a car-park attendant's hut built into one end. Certainly, the over-furnishing of most pedestrian squares would never work here, whether the style is 'ancient' as at Nottingham, or 'modern' as at Burslem (AR December, 1960).

What is needed is much more the simplicity of Sheep Market at Leek, 4, or the easygoing to-and-fro of a place like Newark, 5, with cars and market stalls happily nudging each other. Life is all one; any kind of segregation, except as an absolute last resort, is denying part of it. The best comparable example is at Abingdon, where market-stalls, 6, and cars, 7, happily counterchange throughout the day, and where changes of purpose are deftly expressed in the road-surface. A solution at Derby need not copy the materials but ought to copy the deftness. Derby has a big covered market, hence probably no need of open market-stalls, though the idea could be tried (if there's money in it, people will take it up; if not,

there's nothing lost). What it does need is some kind of place that can become a Speakers Corner without being labelled 'Speakers Corner.' When I was there, tiny meetings were trying to get going amongst the mudguards and front bumpers.

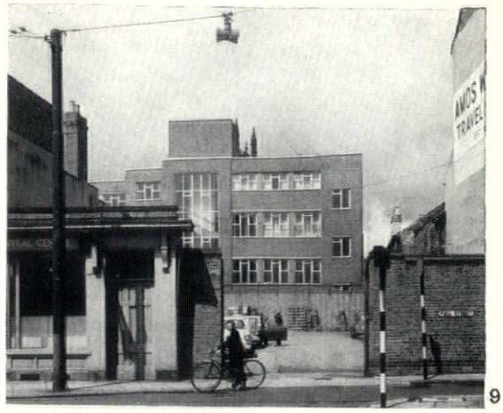
Also, obviously, people need somewhere, bang in the centre, to be able to sit down. The view of Nottingham half-an-hour after a heavy shower, 8, shows how seats will be used regardless of how dreary the surroundings are. Derby does not possess such a place.

I have tried to show that the *genius loci* of the Derby Market Place is something different; but Derby needs both, and the sit-down square could be built next door. In the north-east corner there is a gap, 9, now used as a car park. This could become a space like a City churchyard, full of trees and seats, with a canopy across the entrance to maintain the line of the main square: an 'inside' to balance the 'outside' of the busier Market Place. This would be next to the eighteenth-century Assembly Rooms, and this corner would naturally be the pedestrian focus, with café tables and awnings, weather permitting. So the final mixed-up, empirical, this-time-only suggestion for Derby Market Place would look, in plan, like the above.



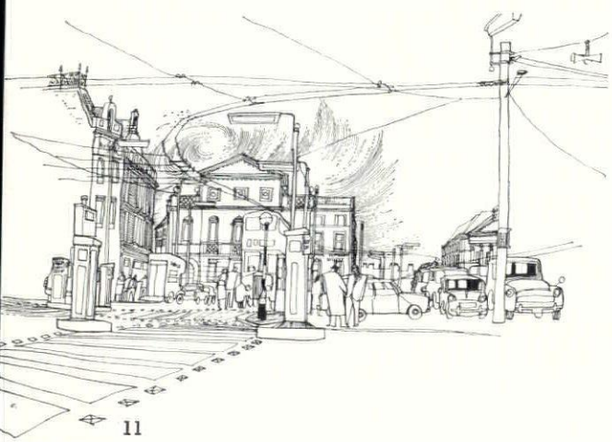
Map showing Derby Market Place turned into a pedestrian area with limited car parking.

In the process the trolley-buses have disappeared, as they are likely to anyway. The bus shelter could look like those at Burslem, 10, except that it would be much longer, double-sided, and have an attendant's hut put under one end. Full Street has become pedestrian, with an arch over it, and Derwent Street has undergone a process which ought to be more widespread and which could be called road narrowing. The aim here is to provide an oblique view of the portico of the Council Offices transforming an indigestible neo-Georgian lump into a townscape incident. The natural thing to build in the gap would seem to be an hotel, which the centre of Derby certainly needs.


9


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The main object is to get a balance of motor and pedestrian traffic, neither no-cars nor all-cars, which will meet the specific needs of this specific site. If the balance were not quite right, in either direction, it could be changed after a trial run. Traffic engineering is as subtle and


11


12

Drawings by Richard Reid illustrating Derby Market Place, 11, as it is now and, 12, how it could appear if the suggestions in Ian Nairn's article were to be adopted. The Assembly Rooms are on the left with the proposed new hotel on the right, giving an oblique view of the portico of the Council Offices beyond.

delicate an operation as a bit of brain surgery. If we are as rational and skilled as we continually boast of, let us try to use our abilities—not only in Derby, but all over the country—to define not only black and white but every conceivable shade of grey. There is no one solution, and no easy answer, only perpetually different sets of circumstances. Meanwhile, here is Richard Reid's interpretation of a possible 'before' and 'after' in Derby.

Ian Nairn



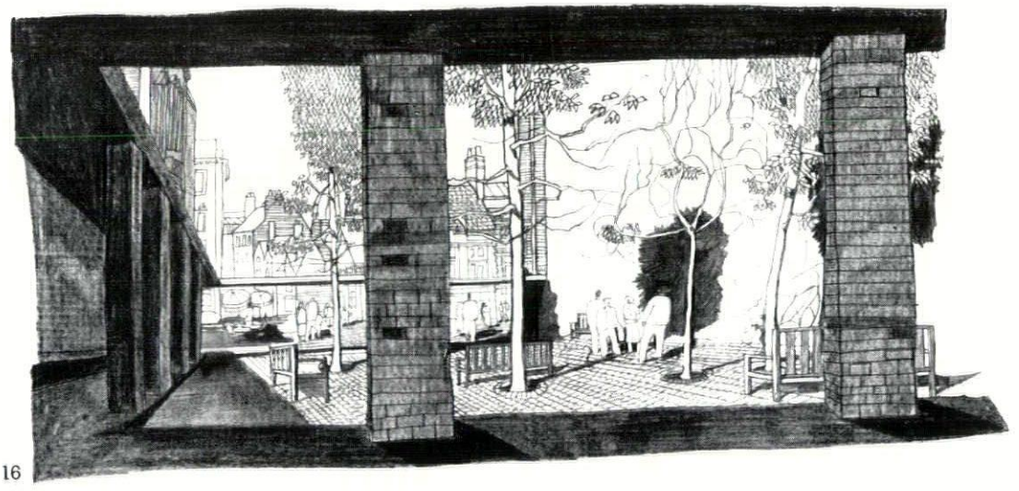
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Further drawings by Richard Reid showing Derby Market Place as it is and as it could be. 13, present view from the south-west and, 14, proposed, with the tower of the Town Hall on the right. 15, looking from the north and, 16, the proposed inner square, looking through to the main square. 17, seen from the front of the Assembly Rooms and, 18, from the same viewpoint with the proposed open-air cafe in the foreground. Two more views of the Town Hall are on the next page.



17



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Derby Market Place



19



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The Market Place as it could be: 19, the Town Hall floodlit at night; 20, looking from under the Town Hall tower. See Ian Nairn's article on preceding pages.

PLANTS

DIEHARDS, GREY & GLAUCOUS

Many municipal and landscape planting schemes have a certain deadliness, based as they are on bare survival and stay-as-you're-planted principles. One such municipal slave is *Senecio laxifolius*, a woody, herbaceous ever-grey perennial of the Compositae family with silvery foliage and in mid-summer unimportant yellow daisy flowers. It grows in any soil but tends to straggle if not cut back in early spring when new growth appears.

Many of these plantings would be improved by introducing other diehards to provide either a change of leaf-tone or a contrast in leaf form. For instance, equally willing survivors in poor soil are Jerusalem Sage, *Phlomis fruticosa* and its near relation *P. chrysophylla*, 1, two woody-bushy sages with a habit similar to Senecio but of a more green-grey tinge and rougher leaf texture. The effect could be enriched by planting substantial groups of purple sage, *Salvia officinalis purpurascens* (*atropurpurea* in catalogues), though this is not quite so hardy, and attendant clumps of Achillea. *A. clypeolata* has fine-feathered silver leaves, and yellow plates of flower in August. A silvery groundwork for these bushy plants would be *Stachys lanata* (Lambs' Tongues or Rabbits' Ears) or the silver furred *Anaphalis margaretaceae*, which makes dense small-scale mats.

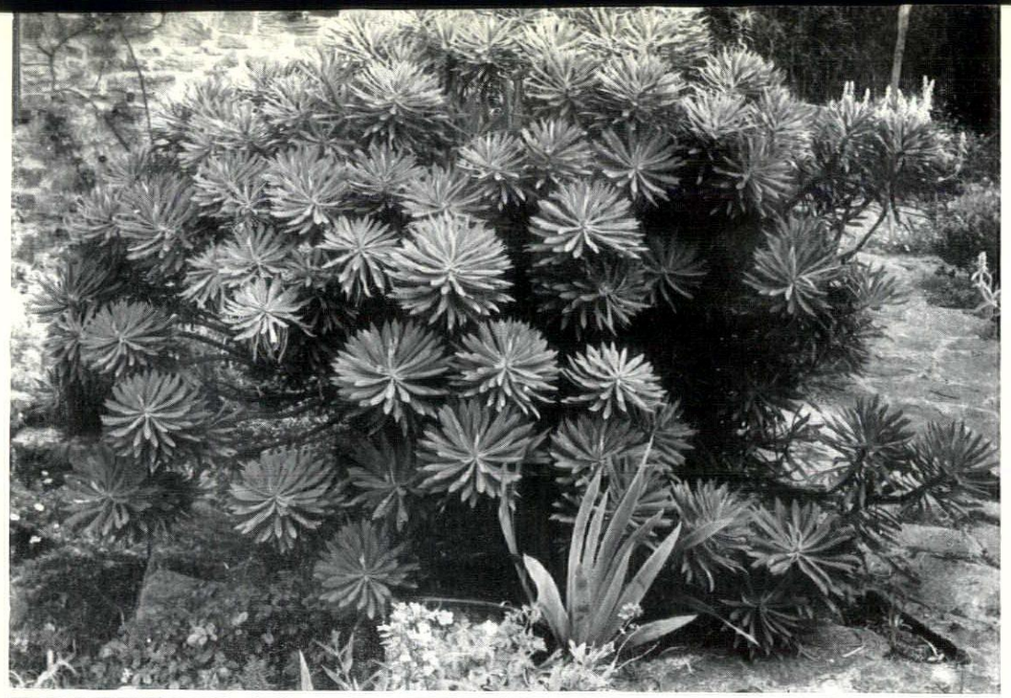
I have seen one successful planting of Senecio alone at Harlow (where Sylvia Crowe is planting consultant); great wodges of these plants are set in fore-court beds, alternating along the roadway with equally dense plantings of prostrate juniper. This produces a solid textured effect.

The best contrasting plant form to use with Senecio and Sages is the Iris; not the common flag, *Iris pseudacorus*, which requires a damp position, but *Iris ochraurea* (cross between *I. ochroleuca* and *I. aurea*) which has 4-foot leaf shafts and flowers freely, yellow with deeper markings on the falls, good seedheads and grows in ordinary soil in sun. *Iris pallida dalmatica* is the other candidate, a valiant weed-throttler, with fragrant pale lavender flowers. It keeps the beauty of its grey-green foliage, vertical swordthrusts, through the summer (2½ to 3 ft.). Self-seeding aquilegias (columbines) like *A. alpina* and *A. vulgaris nivea* (the grey-leaved old-fashioned Munstead White Columbine) associate well with these.

Two further things about Sage: rather like Lavenders (two of the best grey forms



1, Phlomis Chrysophylla.



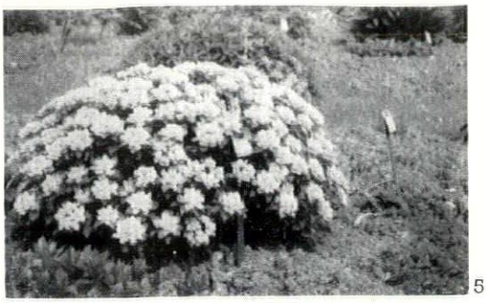
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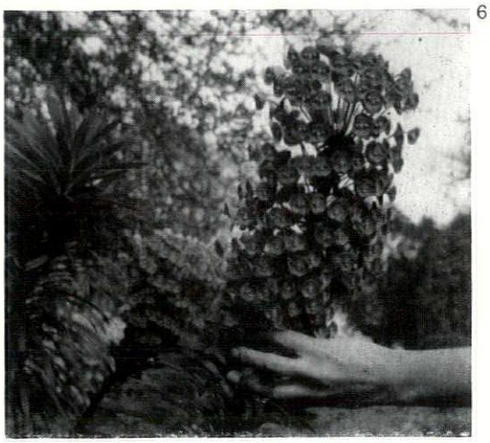
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2, 6, Euphorbia Wulfenii. 3, Euphorbia Robbiae. 4, *a very fine-leaved Senecio*, S. Cineraria '*White Diamond*,' *suitable only for sheltered sunny well-drained sites*. 5, Euphorbia Epythymoides *in April*.

of these familiar-to-all plants are 'Hidcote' and *Lavandula lanata*) they tend to straggle if not severely clipped. The time to do this is not autumn but spring. I have pruned a ten-year-old sage into a dense deep mattress 4 ft. 6 in. by 3 ft. by 1 ft. 6 in. high. It looks good beside a bushy *Euphorbia Wulfenii*, 2 and 6, a glaucous green bottlebrush plant of splendid form, and a silvery cotton lavender, *Santolina napolitana*. This is an idea for courtyard planting. Another happy combination is purple sage with fine-leaved glaucous clumps of Rue—*Ruta graveolens* '*Jackman's Blue*' is its best form. The metallic colour bites like a slice of Sorrentine lemon between the teeth.

In April in the Dublin Botanic Garden I was struck by the vigorous splendour of the Spurges (Euphorbias), growing in ordinary soil, then in flower. *E. Wulfenii*, a large succulent bush 3 ft. by 3 ft., is commonly sold by plantsmen, but the Sunningdale Nurseries, Windlesham, Surrey, have a good selection. These include *E. characias*, up to 4 ft. 6 in. high and wide, finer than *E. Wulfenii*, its flowerheads green with maroon-black eyes. *E. Robbiae*, 3, colonizes easily; height, 1 ft. to 1 ft. 6 in.

There is a low, dense clumpy plant, *E. epythymoides* (syn. *E. polychroma*), 5, like a rounded yellow-green dome in spring. (*E. Sikkimensis* and *E. Griffini* are both Himalayan spurges, leaf veins and stems bright red in early spring, but these are more tender gardener's, not architect's, plants). Euphorbias come into the in-

teresting category of virid-flowering plants. The Caper Spurge, *E. lathyris*, is very much for architects, with a remarkable arrangement of leaves, a startling vertical geometry. It was once a popular cottage plant biennial, seeds itself, and crops up in spring to astonish in unexpected places. I noticed it this year on Maurice Prichard's stand (Riverslea Nurseries, Christchurch, Hants). Thompson & Morgan have the seeds.

Patience Grey

CREDIT

PARK HILL PUBS

It is a deserved compliment to the urbane social aspirations behind the Park Hill redevelopment in Sheffield (*see pages* 402-410) *that it should be graced with the first signs of renewed vigour in the design of street-corner pubs.* Houses like the *Scottish Queen* and the *Earl George*, 1, are no longer misquotations of the country pub style in an urban setting. These two Tetley pubs, designed by John Foster, of the Tetley organization (architect in charge, J. B. Moorhouse), in consultation with the City Architect's office, fit into the Park Hill scene not only in terms of the planning module, but also in the general feel of their external treatment with its appreciation of both the frame-and-fill tradition and the use of three-dimensional illusion.

But it is one thing to fit, and another to exploit and develop the fit, and on this score the two Tetley houses, though praiseworthy, must yield the palm to Park Hill's third pub, the *Parkway*, 2. Here, the frame-and-fill aesthetic has not merely been appreciated but extended and diversified in a manner that suggests that the designers, G. R. Adams and Alan Baggaley (of Hadfield, Cawkwell and Davidson) really savoured the possibilities of the commission. The use of large areas of mosaic suggests a new exterior material that can stand punishment as well as those of the pub tradition, while at the same time lending itself to pattern-making and graphic advertising—the use of bold recessed sans lettering cut into mosaic in contrast with more ornate forms in enamelled work, 3, suggests façade treatments that could be developed even further by exploiting current trends in graphic design.

Further development, indeed, seems to be what is most needed here. All three pubs contain so much promise that one can be prepared to excuse the occasional faults of detail that all three exhibit, in the hope that the architects will have chances to develop these beginnings. In particular, the Hope and Anchor Brewery would do well to give Adams and Baggaley opportunities to spread themselves in interior work. While all three interiors suffer in varying degrees from the institutional bleakness that spoils nearly all brewers' architecture even now, the use of window-seats and the low ceiling in the *Parkway*, 4, give promise of an approach that could re-establish true pub atmosphere without period revivalism or self-consciousness.

P.R.B.



1



2



3


4

SKILL

WALLS, FENCES AND GATES

Outdoor space dividers play a larger part in environment than most architects recognize. This month Robert Haynes investigates the present position covering, as he does so, dividers of brick, concrete, timber, reed and iron.

The history of walls, fences and gates is as old as building itself and many of the techniques employed today have had their origins in the forgotten past. At some time or another, most building materials have been used in the construction of these elements. Some have been found unsatisfactory; those which are still in general use have passed a test, which only time and the weather could set and are assured of continued employment in the future.

For the purpose of this review, walls, fences and gates will be considered generally according to the material from which they are made. There are, of course, those composite examples which confound classification, but these are so well known that it is of no great significance into which section they are placed.

Brick

A traditional material for boundary and screen walls; wide ranges of finish, texture and colour can be obtained from the use of standard bricks with variations in bond and joint treatment. The Sussex & Dorking Brick Co. markets units for use with non-load bearing screen walls. A concrete unit of similar shape made by the same organization is shown in 1. Many small brick companies will, however, make specials for solid and screen walls, provided they can be fitted into their production programme. Prices range from 50 per cent above to double the cost of the standard brick.

Stone

The use of dressed stone for free standing walls is very limited because of its cost. For short lengths of walling, however, which are extensions of, or closely associated with, buildings of similar character, natural stone is sometimes used. This may be solid or as a facing to brick or concrete block. The Stone Firms Ltd. of Bath market standard range units for Beer and Bath stones in the following sizes:

Standard Range Units for Bath Stone

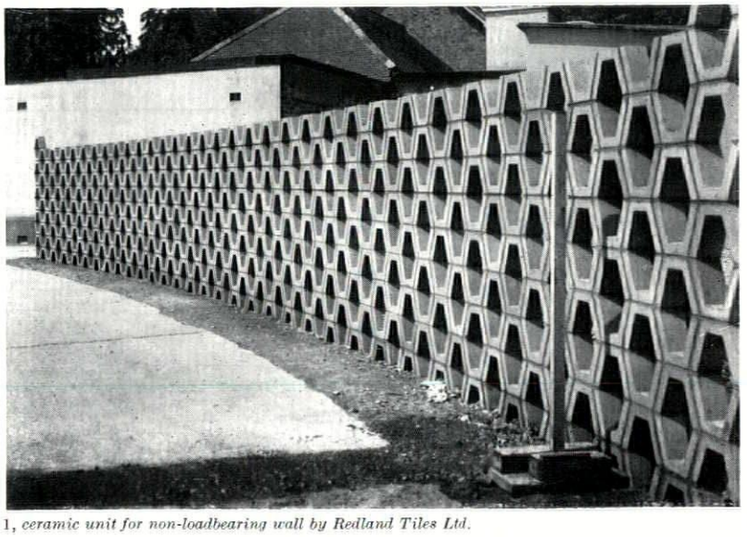
Standard depth 6″	Random lengths 9″ to 2′ long
Width on bed—4″	
Depths of 3″ to 8″ available	Ashlar 8″ and above

Standard Range Units for Beer Stone

Lengths	Random from 6″ to 15″
Width on bed	4″, unless otherwise specified
Heights	$2\frac{3}{4}$″, $5\frac{3}{4}$″, $8\frac{3}{4}$″

Rangework is supplied in the following percentages of wall heights:
$2\frac{3}{4}$″ 15% $5\frac{3}{4}$″ 40% $8\frac{3}{4}$″ 45%
Other percentages of heights to special order. Bed-widths and wall heights of other than standard sizes also supplied to special order.

Range work is available in either sawn or knapped finishes. The same firm offers a variety of machine patterns on slabs for a very small additional cost over and above that of plain faced work.



1, *ceramic unit for non-loadbearing wall by Redland Tiles Ltd.*

Concrete

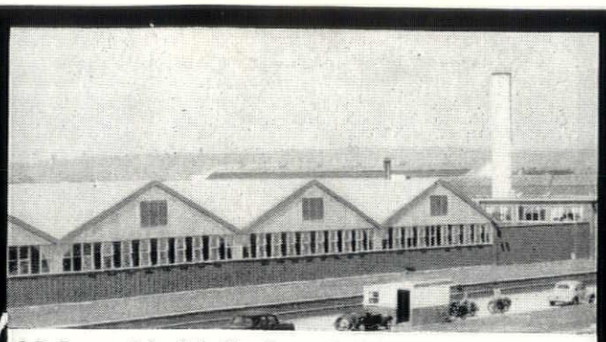
In recent years considerable development has taken place in this material to produce new and interesting shapes and textures in both in-situ and block construction. For in-situ work, the use of green unwrot timber shuttering to impart the texture of the wood to the surface of the concrete is well known. The aggregate transfer method was developed to give to in-situ concrete exposed aggregate finishes similar to those available on concrete blocks. The system consists of gluing aggregates to form liners and casting the concrete against these. When the liners are removed, the aggregate remains embedded in the surface of the concrete. Subsequent sand blasting, grinding, polishing or bush hammering can be carried out if desired. Another technique has been developed in which plastic moulds have been produced, against which the concrete is cast. These will impart a bold pattern to in-situ work. Satisfactory moulds have been made using various butadiene styrenes and linear polyethylenes and these can be used a number of times. Rubber sheets giving a shallower, overall pattern have also been used for this type of finish.

Concrete blocks for boundary and screen walls fall into four groups: plain blocks; profiled blocks; pierced blocks and exposed aggregate blocks.

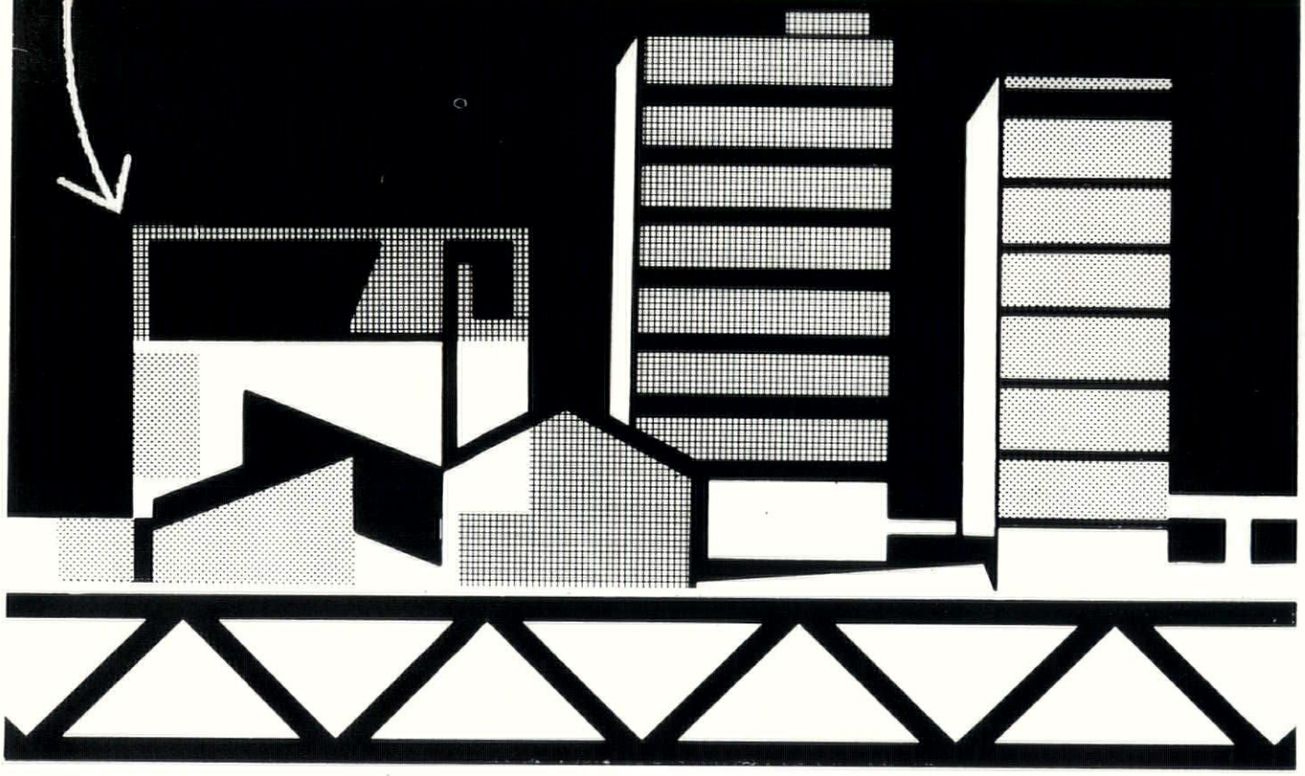
They can be used in conjunction with each other, either as single-skin buttressed walls (usually 4 in. wide), double skin cavity walls, 8 in. solid wall or as a facing to a block or in-situ backing.

Plain blocks need no introduction. They produce a solid, economical, rather unimaginative wall and have been used extensively for agricultural

[continued on page 436



J. R. Freeman & Son Ltd., Cigar Factory, Penarth Road, Cardiff
ARCHITECT: *G. Austyn Henry, Staff Architect, Gallaher Ltd.*
CONSULTING ENGINEER: *Alexander Gibb & Partners*
MAIN CONTRACTORS: *Sir Robert McAlpine & Sons*
QUANTITY SURVEYOR: *W. W. Kerr*



OMNIA FOR FACTORIES

In J. R. Freeman & Son Ltd's new single-storey cigar factory at Cardiff extending over 10,000 sq. yds., an 8″ deep slab spanning 15 ft. had to carry a load of 224 lb/sq. ft. whilst allowing for 2-ton point loads for fork lift trucks. It was further necessary to suspend the slab only three feet above ground level. The Omnia Floor was chosen because it met all these requirements economically by giving continuity over supports and dispensing with the need for shuttering. Omnia Floors play an important part in the rational design and construction of many other factories, offices, flats, houses and special purpose buildings of all kinds throughout the country.

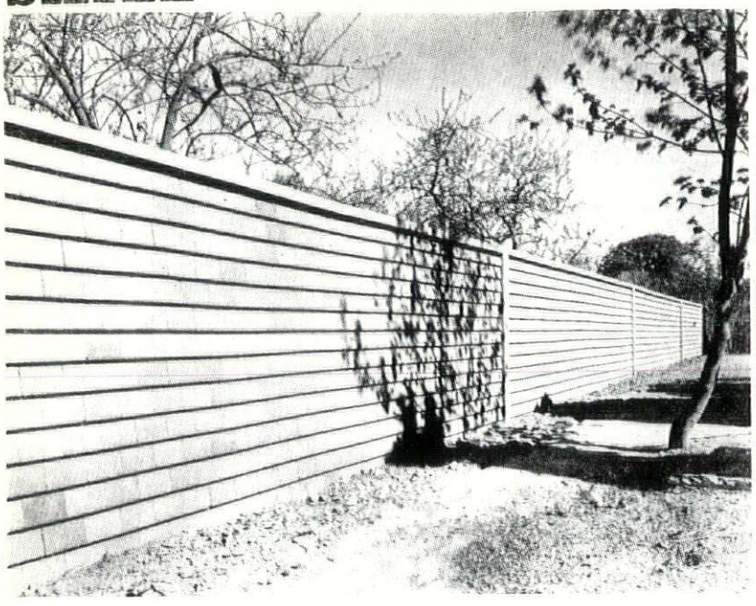


Light, yet monolithic
Uninterrupted soffits
Needs no shuttering
Quick and simple to erect
Spans up to 40 ft.
Adaptable in design
Economic in installation

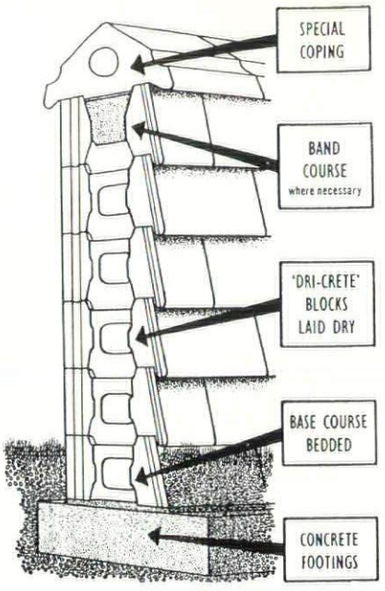
The OMNIA Concrete Floor is supplied in all parts of the country from any of 16 local OMNIA Licencees:

Aberdeen. George W. Bruce Ltd.
Falkirk. James K. Millar Ltd.
Sunderland. Samuel Tyzack & Co. Ltd.
Penrith. Edenhall Concrete Products Ltd.
Malton. Derwent Cast Stone Co. Ltd.
Manchester. The Cheetwood Co.
Prestatyn. Prestatyn Precast Concrete Co. Ltd.
Nottingham. T. C. Campbell Ltd.
Norwich. Hydraulic Precasts Ltd.
Darlaston. Bradleys (Concrete) Ltd.
Bedford. C. A. E. C. Howard Ltd.
Abingdon. Cowley Concrete Co. Ltd.
London. Atlas Stone Co. Ltd.
London. F. Bradford & Co. Ltd.
Southampton. The Blokcrete Co. Ltd.
St. Austell. English Clays Lovering Pochin & Co.

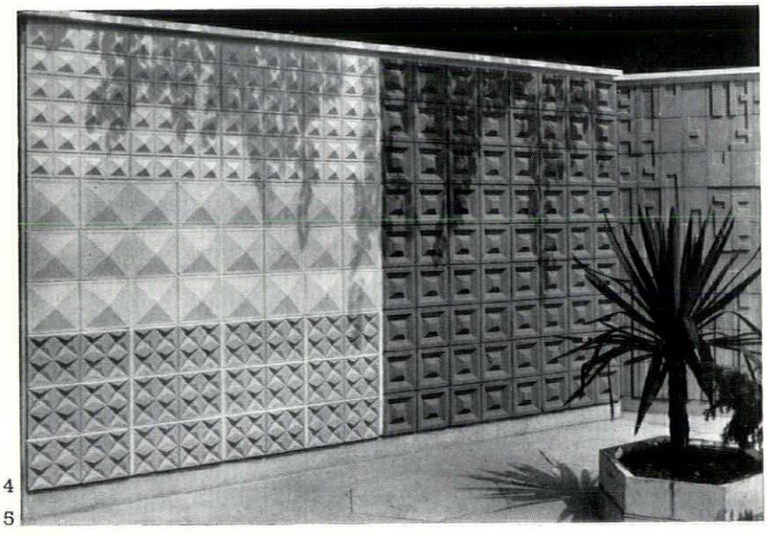
Full details about Omnia will gladly be provided by one of the Licencees or by
OMNIA CONSTRUCTIONS LIMITED, 25-35 City Road, London E.C.1. Telephone: MONarch 2272



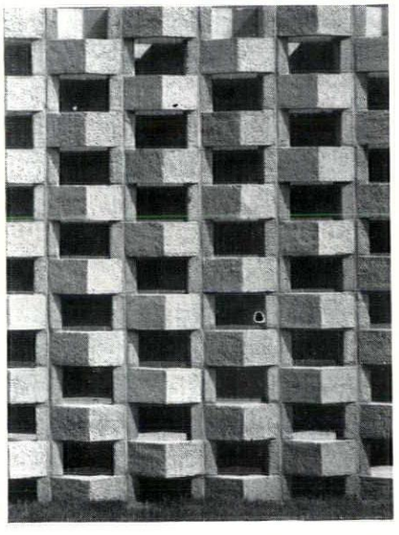
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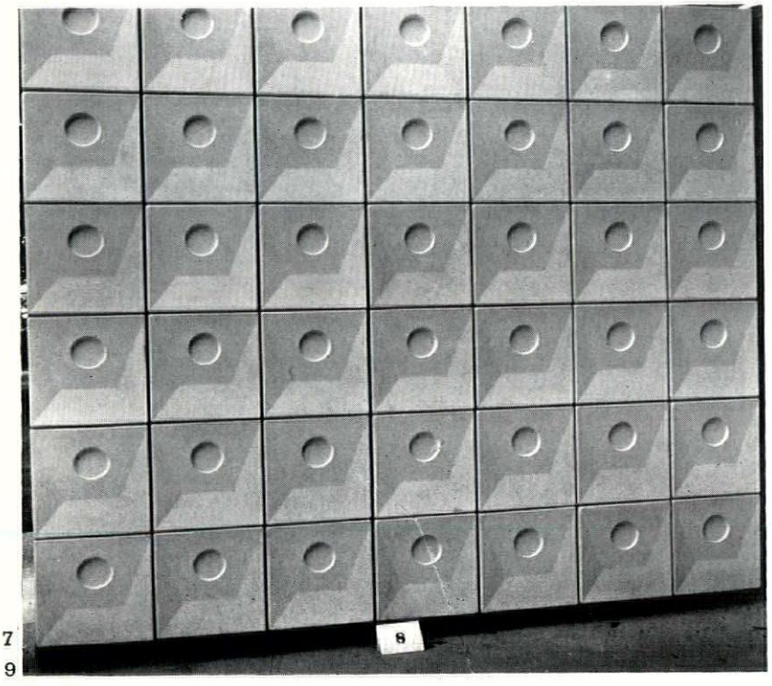


2, 3, 'Dri Crete' mortarless concrete block. 4, profiled block walling by Flynn Brothers. 5, pierced wall made from U-shaped units, designed by Bryan Westwood and made by Mono Concrete Co. Ltd. 6, profiled blocks cast against thermoplastic forms by Modular Concrete Co. Ltd. 7, exposed aggregate block by Atlas Stone Co. Ltd.

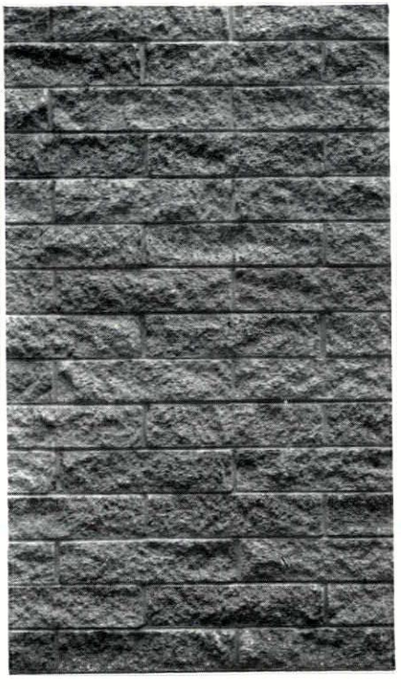


4
5





7
9



continued from page 434]

purposes. Their construction is covered by BS 2028 and there is a considerable range of sizes, although the most common is 17⅝ in. by 8⅝ in. by 4 in. An interesting development of the plain block is the 'Dri-Crete' mortarless concrete block by British Art Tile Company Ltd. of Cambridge, 2. The blocks are available in a range of sizes from 4½ in. to 10 in. wide and can be made in a variety of materials and colours. It is claimed that erection speed is four to ten times faster than that of brickwork and the cost of material is less.

Profiled and pierced blocks have been developed to a much greater extent in America than in this country. One British block manufacturer has stated that in England bricks are too cheap. It must be remembered however that bright sunlight gives a sparkle and interest to the most poorly designed block. In a dull climate, greater reliance must be placed on shape, colour and texture and profiles tend generally to be coarser. A number of firms have experimented in recent years with these types of block and some of their products are on permanent exhibition at the Cement and Concrete Associations Research and Development Division at Wexham Springs. 4-6 show some of these. 7 shows Shadowal Blocks by the Atlas Stone Co. Ltd. These are made in any of the usual aggregates—ballast, clinker, foamed slag, aglite, etc., and can be combined to give a very wide variety of patterns. It is claimed that the cost of the profiled block is only fractionally higher than that of plain blocks.

There is room on the market for more standard blocks, which can be combined with each other, particularly for screen walls and also possibly for paving as well. One can understand the reluctance of manufacturers to embark on a project which may leave them with a stock of unused concrete units in their yard; on the other hand there is little doubt that if the units were available, they would be used for countless small jobs, where at present the high cost of a 'special' mould makes the architect think again—and not in terms of concrete blocks.

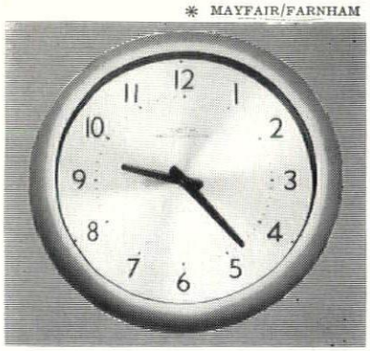
Exposed Aggregate Blocks

Considerable experiment has taken place since the war in the development of exposed aggregate panels for use as cladding to light steel buildings. A wide range of colour is available using natural stone and surface texture can be varied by the size of the aggregate and by treatment of the block before or after it has been removed from the mould.

Smooth surfaces are obtained by grinding or casting against plastic sheeting; fine textures by acid etching, felt floating or scraping some hours after casting. Medium to coarse textures are obtained by spraying with water before hardening has taken place or brushing after the concrete has begun to harden. For coarse textures, the larger aggregate is either set in sand in the bottom of the mould and the concrete cast on top or the blocks are cast face up and the aggregate bedded in a layer of mortar by rolling or tamping. Subsequent tooling of the surface can also be carried out. All these techniques can be applied equally well to the manufacture of exposed aggregate blocks, and a growing number of manufacturers is producing these as a standard article. 7 shows a pressed concrete slab by the Atlas Stone Co.

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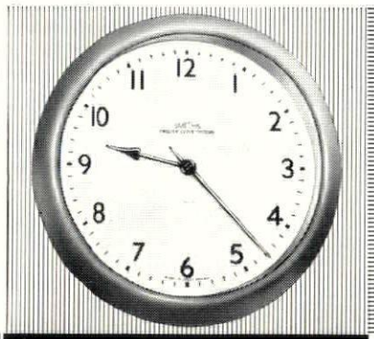
* MAYFAIR/FARNHAM

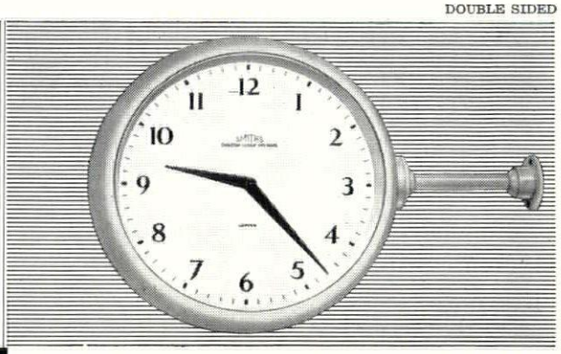


A certain style

DOUBLE SIDED

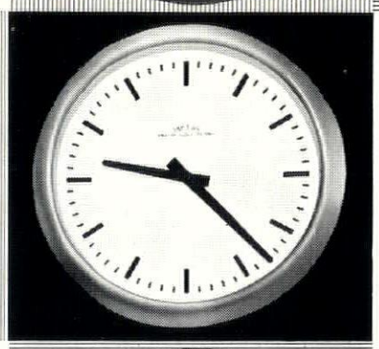
* MEDWAY/FIFE







FALCON *



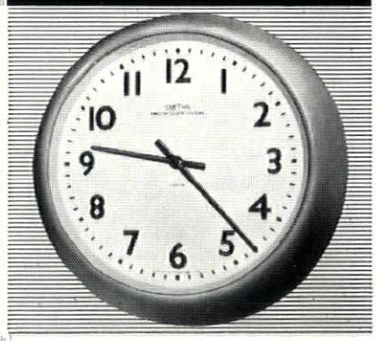
MOSTYN/FLEY *

—a style for every setting in every type of building.

A selection of the wide range of E.C.S. wall clocks are shown here. Those marked with an asterisk have already been accepted by the Council of Industrial Design for Design Index.

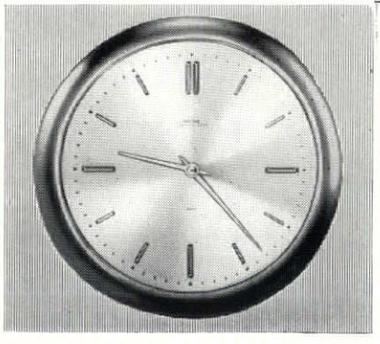
They are made in a number of sizes for operation from A.C. mains or from the E.C.S. Master Clock as part of a controlled time system.

For full details of the complete range write to Department W.



MELTON/FLEET *

FULMAR *

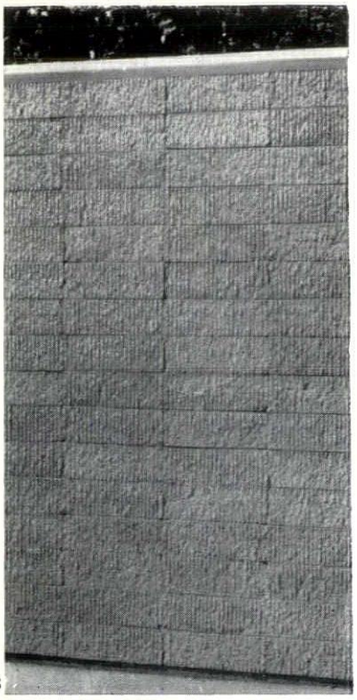


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Branch Offices in:
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A branch of the Clock and Watch Division of
SMITHS



8

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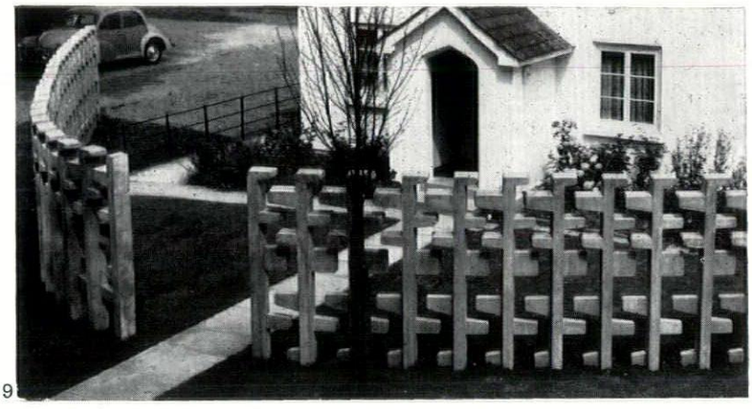
split on a guillotine to produce an exposed aggregate and profiled face. A similar technique is employed in Messrs. Selleck, Nicholls 'Reformite.' 8 shows a split block with a ribbed face.

A departure from the usual run of screen walling is shown in 9. The possibilities of this type of wall are very great, although the cost of manufacture and handling on a small contract might be rather high.

Timber

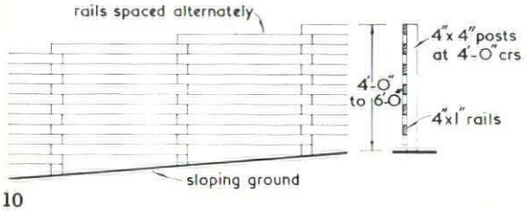
New designs and techniques in this exceptionally adaptable material are forever making their appearance and whether they serve fashion or function their arrival is always of interest.

10 and 11 are prototypes from the Timber Development Association, which have not yet been tried out in the field. 10 reflects the current fashion for heavy-section horizontal boarding which has been used so successfully for screen walls to filling stations and schools. 11 is a welcome design, for to date plywood as a fencing material has generally been used for surrounding builders' compounds when it has not been doing duty as shuttering.

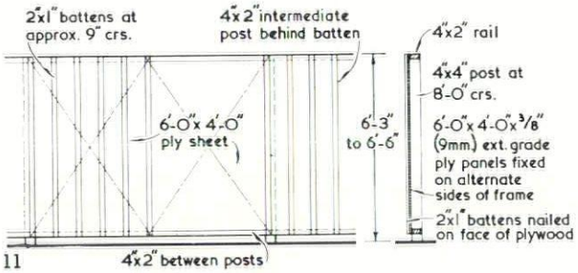


9

8, concrete block with ribbed face. 9, screen wall of precast concrete posts designed by Bryan Westwood and manufactured by Mono Concrete Co. Ltd. 10, TDA prototype timber fencing using horizontal boarding. 11, TDA prototype fence incorporating plywood sheets. 12, 13, wattle fencing. 14, reed screen fencing from Glamorgan and, 15, from Norfolk.



10



11

The tendency to manufacture building components in the factory rather than build them on site is reflected in the prefabricated fencing panels and kits now on the market. The earliest of these was the interwoven panel. There are now four variations available:

1. the simple interlaced panel with one vertical stiffener on both sides, which cost approximately 33s. creosoted 6 ft. by 6 ft. and about twice as much in Western red cedar.

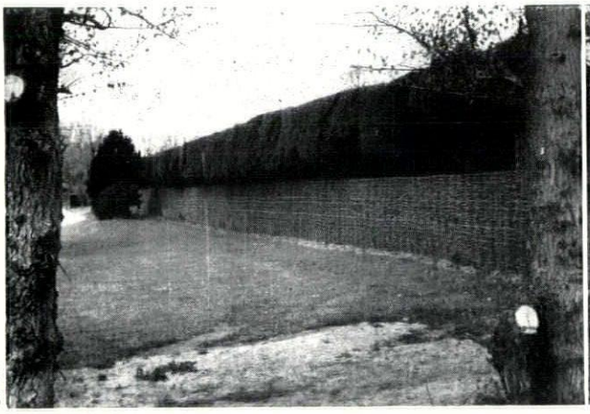
2. a variation which may cost up to 20 per cent more has slats overlapping ½ in. and two stiffeners at each side to hold the slats in position.

3. a proprietary make 'Superlap' notches the slats where they lap each other, thereby considerably stiffening the panel.

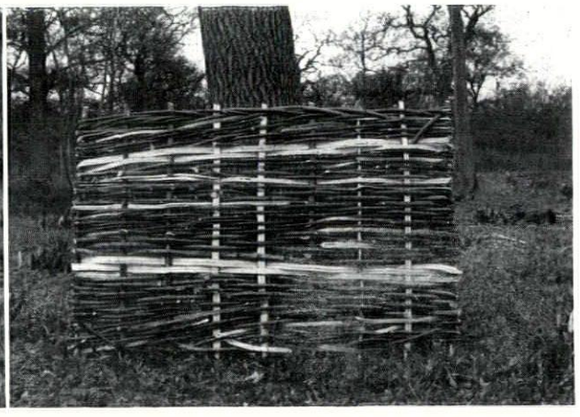
4. 'Larch-lap' by Joseph Corbett & Son, Stourport-on-Severn, which is considerably stronger and has a much longer life at approximately 39s. 6d.

City Timber Ltd. supply kits for closeboarded, post and rail, and pale fences. All timbers are cut to size and prepared and are delivered in packages ready for erection. Six-foot-high Close Boarded kits range from 92s. to 125s. per 10 ft. panel, dependent upon timber and finish; six-foot paling, 93s. to 111s. per panel; post and rail 5 ft. high 62s. to 89s. per 8-ft. panel.

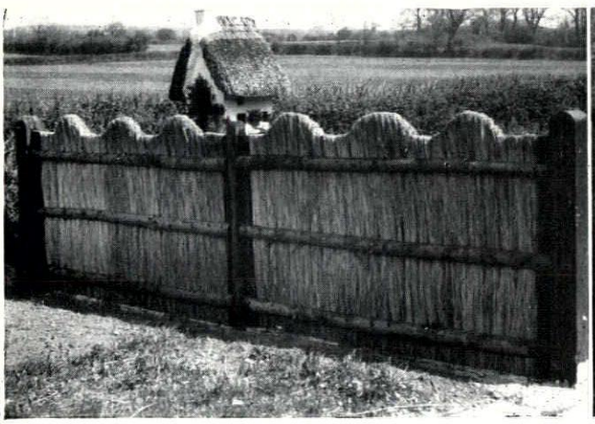
In rural areas traditional materials may provide the only really satisfactory answer. The Rural Industries Bureau is most helpful in all these matters. Wattle hurdle fencing is shown in 12 and 13. Interesting reed screen fencing from Glamorgan and Norfolk, which is wind and sheep proof and well suited for domestic and agricultural use, is shown in 14 and 15.



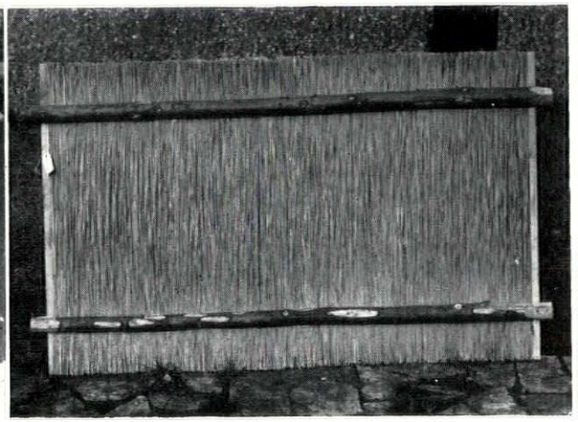
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13



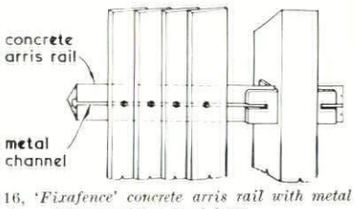
14



15

Maintenance and Repairs

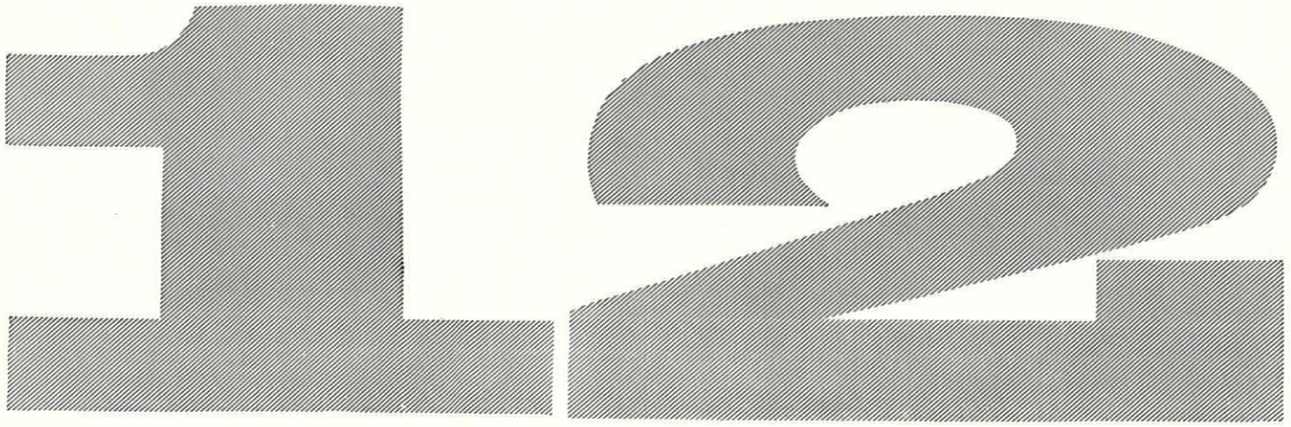
The cost of keeping fences in good repair can be very high. This consideration often determines the initial selection of a fence and also those unfortunate decisions to replace old but pleasant fences with new ones, which are ugly but maintenance free. Domestic timber fences, usually constructed from comparatively light sections, are liable to rot where the posts enter the ground and also at the joints. Concrete spurs have been used for many years to strengthen or replace defective posts; indeed cases have arisen where timber posts have been bolted directly to the spurs in the first instance. Reinforced concrete has been used for the framing of CB and pale fences in order to preserve the beauty of the timber on face, but avoid the rot in the supporting members at the rear. One firm makes a concrete arris rail, into which is cast a timber insert, to which the boards are fixed. Another firm casts in a metal channel, 16, and the boards are fixed thereto with ordinary wood screws. There is



16, 'Fixafence' concrete arris rail with metal channel for repairing wood fence.

[continued on page 440

THE LOGICAL USE OF COLOUR IN BUILDING



The eye-contrast and the enhancement of contrast

The importance of ensuring the right degree of contrast in the several parts of a decorative scheme cannot be over estimated. That such contrasts should lie between certain limits, and that contrasts can nowadays be partly calculated, is well known.

It is not the purpose of this note to consider contrast in general, but the use of colour to produce an enhancement of colour contrast by placing colours near to each other but not adjacent to each other. In this way certain complementary colours can be used to make certain objects or architectural features more or less prominent. Simply, the basic hues, blue-yellow, red-green, when placed near but not adjacent to each other, enhance or increase the chroma of each colour. If the pair are originally of high chroma, then the enhancement effect can almost reach the pain level. If one is of high luminance and the other low, then the high luminance colour appears lighter and the low luminance colour darker than if they were viewed separately. The effect of this contrast enhancement can be controlled by the degree of separation of the colours and framing one with another different colour. This serves to emphasise the chroma of the colour and to prevent the unpleasant adjacent complementary colour associations. If the frame of a door (already painted a high chroma colour) is painted with a high value colour (say cream and white), the decoration of the door is enhanced.

By suitable choice of the position or area of the red-green, blue-yellow parameter colours, the enhancement of colour can be made a decorative feature.

This is one of a series by Goodlass Wall and Co. Ltd. paint specialists since 1840 and manufacturers of the famous Combinol and Valspar paints — who will be pleased to give free advice on colour schemes and painting specifications. Goodlass Wall and Co. Limited, Corn Exchange, Liverpool 2 and 179/185 Gt. Portland Street, London, W.1

continued from page 438]

a bracket available which can be screwed to the post to take the arris rail when the joint has gone. A similar bracket in mild steel by Metal Mouldings Ltd. can be adapted for the repair of rails damaged along their length by cutting off the fixing lugs and using it as a sleeve.

Metal Fencing

A survey of the metal fencing field reveals that most types have been in the running for many years. Horizontal bars have fenced drive and paddock for generations and will still do so from 20s. a yard (3 ft. 6 in. high ex works). Vertical bars, the successors of eighteenth-century urban railings, can still surround town houses from about 38s. a yard. Corrugated steel pale fencing 6 ft. high costs from 76s. and corrugated sheet iron from 58s. a yard.

The most far reaching development however has probably taken place with regard to chain link. Whatever its aesthetic shortcomings, it provides a fence which is cheap and easy to erect, fairly difficult to climb and forms an efficient barrier against balls, children and smaller animals. Maintenance costs are low and repairs are easily effected. With the foregoing points in its favour its use in ever increasing quantities seems assured.

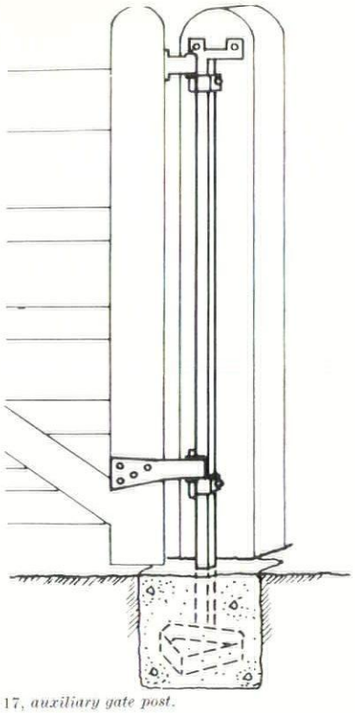
By making the fence from coloured plastic covered wire, its life has been lengthened considerably and with careful colour selection it could blend with its surroundings and become almost invisible. It may suggest the old army adage that 'if you can't lose it, paint it,' but it is a fact that if the fence is invisible many objections to its being there will also disappear. By coating mild steel standards with coloured plastic, these could also be lost in the background. Experiments have been made to vary the colour of concrete supporting posts, although up to now these have not been an unqualified success. A further use of plastic lies in the coating of small assemblies by dipping, spraying or sleeving when the construction makes this possible. These techniques improve the weathering qualities of the fence and by the introduction of permanent colour may make it more attractive or suitable for its purpose.

Gates

It is significant that in contrast of walls and fences, a review of gates reveals little that is new. This may be due to the satisfactory design of the traditional types or to the lack of scope for innovation in an element where the user requirements are simple, yet inflexible.

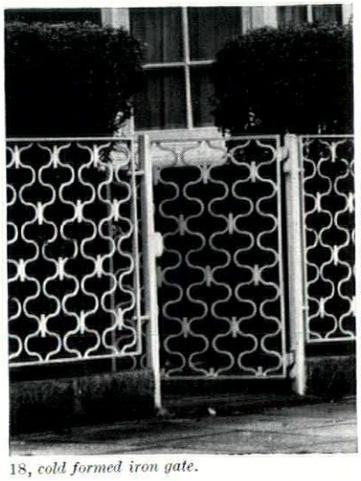
In agriculture, the timber five-bar gate is still in general use. Its metal counterpart, whether in angle iron or tube, riveted or welded, follows the same basic design. Even when the gate opening has to be increased, from the desirable maximum of 10 ft. for a timber gate to 14 ft., to allow agricultural machinery to pass, this is accomplished by thickening the m.s. frame rather than by altering the form. An inexpensive and efficient field gate by MAC Bristol is hung on eyebolts fitted into a slotted hanging stile, which allows a vertical adjustment should a periodic build up of the ground level take place.

17 shows an auxiliary gate post by Woburn Engineering Ltd. This also incorporates a vertical adjustment and is primarily intended for the repair of gate posts which have begun to rot around the lower hinges. It can also be fitted to a new post.



17, *auxiliary gate post.*

A wide range of domestic gates is available both in wood and metal. Timber gates are usually variations of traditional palisade designs or framed and boarded types. Both are of relatively light section timbers and must be maintained regularly to give long service. Failure invariably occurs at the metal fixings and at morticed joints, and there would appear to be room for experiment with lightweight gates, assembled with waterproof glue, in which these sources of corrosion and rot are eliminated. Lightweight metal gates of thin cold bent rolled sections, electrically welded together, are being produced in their thousands and are roundly condemned for their poor design and weak imitation of traditional wrought ironwork. There are, however, some gates which have been designed within the limits of this material and technique which, while not of the highest quality, at least offer an inexpensive and aesthetically not unpleasing solution to the problem of a light 'open' domestic gate. An interesting gate has been pioneered by the Rural Industries Bureau using a new technique of cold formed sections. Bars are bent on edge, having their width as their face side. These are made in six standard shapes which can be combined to produce a great variety of patterns, 18.



18, *cold formed iron gate.*

Conclusion

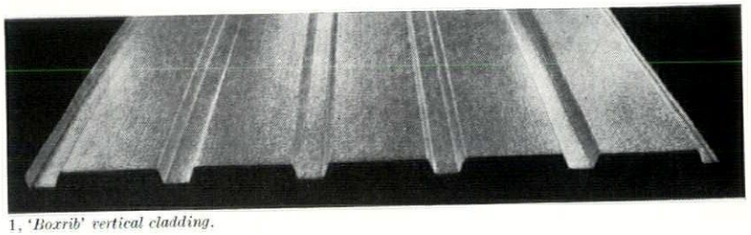
Reviewing the position of fencing and gates as a whole, it is apparent that, more and more, cost rather than quality is the criterion. This is of course true throughout the building industry, but it is particularly unfortunate with regard to these elements, which are always the first to suffer when economies have to be made. While there is no ready-made solution, a twofold approach to the problem is possible—attempts could be made to streamline production techniques and at least keep prices stable against a background of rising costs; and greater care could be taken in selection, bearing in mind that a simple product is often the best and that which is cheap is not necessarily of poor design.

THE INDUSTRY

Aluminium cladding

James Booth Aluminium Limited announce that they are extending their activities to the manufacture of building products. They have introduced 'Boxrib' vertical cladding, 1, designed specifically for wall cladding. It is an 8 in. pitch troughed aluminium sheet with 1 in. deep ribs. It is available in one gauge—21 s.w.g. (0.032 in.)—and one finish—stucco embossed. Standard lengths are from 6 ft. to 24 ft. in 6 in. increments. Standard width is 41⅝ in. overall, providing a cover of 40 in. allowing for lap. The aluminium alloy is ALM, corresponding to BS 1470-NS3. An informative catalogue has been produced to A4 size with an SfB number.

James Booth Aluminium Limited, Kitts Green, Birmingham, 33.



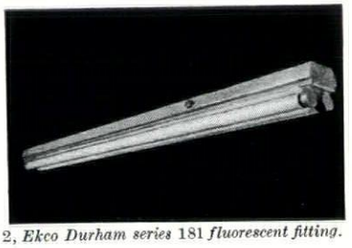
1, *'Boxrib' vertical cladding.*

Fluorescent lighting fittings

A new range of fluorescent lighting fittings, known as the Durham range, appeared on the market for the first time in September. The manufacturers, Ekco-Ensign Electric Limited, describe the new range as filling the gap between their de-luxe Essex range and the Super Slim packaged fittings. A feature of the new fittings is a spring mounted lampholder, which is bi-pin and completely encloses the lamp cap. It is attached to the fitting by flat strip springs. All fittings are based on standard single or twin-lamp spines, complete with built in control gear and lampholders, ready wired.

Every fitting in the range is available in 4 ft., 5 ft., and 8 ft. lengths. Spines have only two suspension holes. The same channel sections are used for all fittings, whether single or twin-lamp. All spines have flat, vertical ends. Starter switches are mounted in the sides of the spines. The designers say that the choice of this position for starter switch sockets is dictated by popular demand. Cover plates, reflectors and diffuser suspension plates are interchangeable. They may be easily attached by means of two large cheese head screws on the spine which engage in keyhole slots and are then tightened. Diffusers are attached by a simple system of hooked lips. They may be taken down for cleaning or hinged down from either side of the fittings for re-lamping. Control gear may be either 'Quickstart' or 'Switchstart.' Typical prices are as follows (these all relate to 'Switchstart;' 'Quickstart' circuits cost slightly more): for the batten fitting type (two tubes) 4 ft. is £5 16s., 5 ft. is £8, 8 ft. is £11 12s.; for the angle reflector type (two tube) 4 ft. is £7, 5 ft. is £9 6s., 8 ft. is £14, and for the totally enclosed diffuser fitting (two tube) the 4 ft. is £9 14s., 5 ft. is £12 8s. and 8 ft. is £17 17s. (purchase tax on the diffuser is not included.)

Ekco-Ensign Electric Limited, 45, Essex Street, Strand, London, W.C.2.



2, *Ekco Durham series* 181 *fluorescent fitting.*

Up and over doors: Corrections and an omission.

In the first Skill article on Up and Over Doors (August, 1961) on page 142 we stated that the Bolton Glydover Door was made in steel up to 30 ft. by 15 ft., that this door was made in timber as well as in steel and that the price for a steel door 8 ft. by 7 ft. is £40 12s. 0d. It seems that our contributor misunderstood some information given to him over the telephone. The Glydover Door is not available in steel 'up to 30 ft. by 15 ft.;' there is no timber version of

[continued on page 442

whatever the load

STAND FIRM ON...

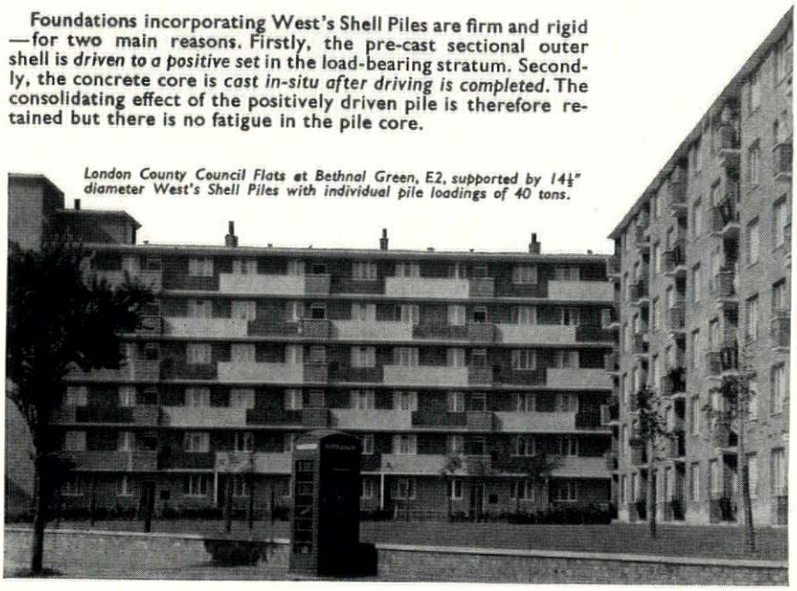
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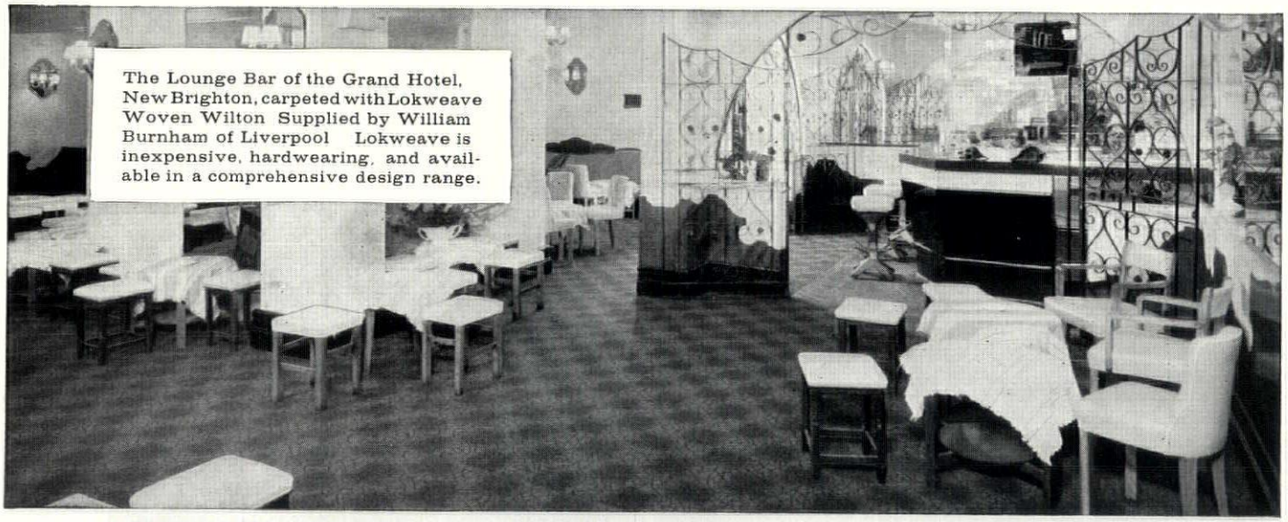
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A10



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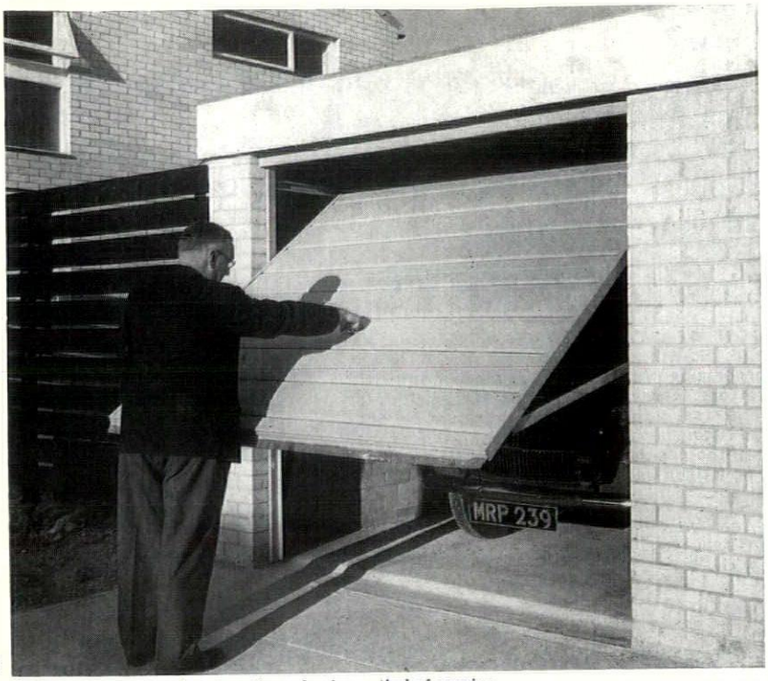
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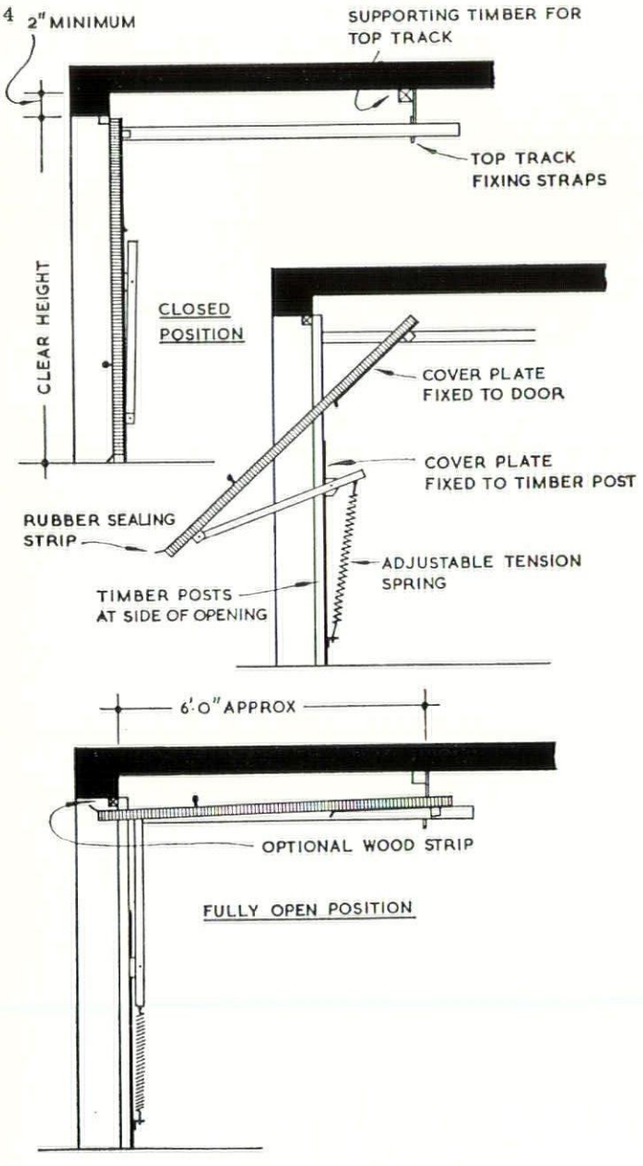
Carpets are supplied only through normal trade channels.

E



3

3, *Haskins' Rol-over-dor*; 4, *sections showing method of opening.*



continued from page 440]

this door; and the price for the 8 ft. by 7 ft. steel version is £28 delivered only.

In the second article of the series (September, 1961) illustrations number 13 (page 212) described as 'Hilladam "Flyover Two"' and number 15 (page 214) described as the 'Portaldor' have been transposed. We much regret these mistakes.

It has also been pointed out that the Rol-over-dor of Messrs. Haskins has been missed out altogether. REVIEW articles of this kind can seldom be fully comprehensive, but we consider that the omission of so well established a manufacturer calls for some amend. We, therefore, give below details of this which will enable readers to compare it with the others.

The Rol-over-dor is a galvanized steel door which operates in the manner shown in the diagram. It is made in three sizes. Prices are as follows:

7 ft. by 6 ft. 6 in.	£18 15s. 0d.
7 ft. by 7 ft.	£19 5s. 0d.
8 ft. by 7 ft.	£21 0s. 0d.

All prices include delivery. The manufacturer's address is *Haskins, Gnome House, Blackhorse Lane, Walthamstow, London, E.*17.

CONTRACTORS etc

Chemistry Buildings, Leicester University. *Architects:* Architects' Co-Partnership. *General contractor:* Wilson Lovatt & Sons Ltd. *Sub-contractors: Heating and ventilation, plumbing:* G. N. Haden & Sons Ltd. *Electrical installation:* Witcomb & Blackwell Ltd. *Tanking and asphalt roofs:* Flexi-Mastic Roofs & Asphalt Ltd. *Nuraphalte roofing to teaching building plant room:* The Weatherall Roofing Co. *Floor finishes: wood block and strip:* Hollis Bros. Ltd. *Terrazzo, quarry tile and granolithic:* The Standard Pavements Co. *Granolithic in teaching building plant room:* W. Herbert & Sons. *Cork tiles, studded rubber tiles, PVC sheet, vinyl tiles:* Haskell Robertson Ltd. *Mosaic facing to teaching building and external facing bricks above d.p.c.:* Proctor & Lavender Ltd. *Facing bricks below d.p.c.:* Eastwoods Sales Ltd. *Foundations bricks:* Richard Parton (Builders Merchants) Ltd.; W. L. Jackson & Co. *Internal facing bricks:* Stonehenge Bricks Ltd. *Partition blocks:* Thermalite Ytong Ltd. *Precast concrete and terrazzo:* The Croft Granite Brick & Concrete Co. *Structural steel frame to teaching building plant room:* R. O. Wright & Co. *Aluminium windows (teaching building):* Quicktho Engineering Ltd. *Rooflights:* T. & W. Ide. *Window gearing (research building):* Teleflex Products Ltd. *Asbestolux suspended ceilings:* Sundeala Board Co. *Suspended heated ceilings:* Frenger Ceilings Ltd. *Flush doors:* F. Hills & Sons Ltd. *Venetian blinds:* The Crittall Manufacturing Co. *Blackout blinds:* London Blinds Ltd. *Roller shutters:* Dennison Kett & Co. *Ironmongery:* A. G. Roberts Ltd.; Parker Winder & Achurch Ltd. *Sliding door gear:* E. Hill Aldam & Co. *Rubber mats:* Tyre Products Ltd. *Lifts and hoist:* Evans Lifts Ltd. *Floor duct covers:* The Dover Engineering Co. *Fire hose reels:* John Taylor Dunford & Co. *Chalkboards:* Tabula Chalkboards Ltd. *Lecture room seating:* Race Furniture Ltd. *Escape ladder (teaching building):* Loft Ladders Ltd. *Escape ladder (research building):* Minimax Ltd. *Lightning conductors:* W. J. Furse & Co. *Fume cupboards (both buildings):* Griffin & George (Laboratory Construction) Ltd. *Fixed laboratory benching (teaching building):* Griffin & George (Laboratory Construction) Ltd. *Movable laboratory benches and storage units (research building):* Sintacel Limited. *Painting:* G. & C. Whittle Ltd. *Paint:* ICI Ltd. *Plastering, wall tiling and floor screeds (teaching building):* W. Herbert & Sons. *Plastering (research building):* F. C. Meason Ltd. *Floor screeds (research building):* L. Shelbourne. *Light fittings (fluorescent):* Simplex Electric Co.; Atlas Lighting Ltd. *Light fittings (tungsten):* Troughton & Young (Lighting) Ltd.; The Merchant Adventurers Ltd.; Ega Electric Ltd.; GEC Ltd.; Rotaflex Great Britain Ltd.; Holophane Ltd.

Lecture Theatre in the Oxford Museum. *Designer:* J. Lankaster (surveyor to the University). *General contractor:* Benfield & Loxley Ltd. *Ventilation:* Harris Engineering Co. Ltd. *Sound equipment:* RCA Great Britain Ltd.

Garage at Longbridge, Birmingham. *Architects:* Harry W. Weedon and Partners. *General contractor:* British Lift Slab Ltd. *Sub-contractors: Cladding:* Roofing Engineers Ltd. *Mineralite:* Kendalls Flooring Ltd. *Lifts:* Evans Lifts Ltd. *Colourweld:* British Aluminium Co. *Barrier railing:* Shelton Iron & Steel Ltd.

Garage at Aldersgate. *Architects:* Oscar Garry and Partners. *General contractors:* The Fram Group. *Sub-contractors: Facing slabs and stonework:* Saunders (Ipswich) Ltd. *Windows:* Standard Maclean Ltd. *Basement ventilation:* Lorne Stewart (Heating) Ltd. *Basement sprinklers:* Mather & Platt Ltd. *Lifts:* The Express Lift Co. *Electrical:* Troughton & Young Ltd. *Roof decking:* Frazzi Ltd. *Fire shutters:* Dennison, Kett & Co. *Ironwork:* Harold W. Cooper Ltd. *Petroleum spirit tanks:* Gilbarco Ltd.

Garage at Southwark Bridge. *Architects:* C. Edmund Wilford and Son. *General contractor:* Myton Ltd. *Sub-contractors: Entrance gates:* Acme Metal Works (1921) Ltd. *Ironmongery:* G. & S. Allgood. *Windows:* Aygee Ltd. *Steel deck roof:* William Briggs & Sons. *Sanitary fittings:* John Boldings & Son Ltd. *Joinery:* Builders Supply Co. (Hayes) Ltd. *Vertical metal plastic covered fins:* W. G. Cannon & Sons Ltd. *Metal work:* Clark Hunt & Co., H. & C. Davis & Co. *Floor and wall tiles:* Durastic Ltd. *Painting:* Decorative Specialists Ltd. *Drainage and plumbing:* Ellis (Kensington) Ltd. *Fire extinguishers:* Extinguere Co. *Automatic control gear:* Expert Industrial Controls Ltd. *Lightning conductors:* J. W. Gray & Sons Ltd. *Electric wiring:* Hartley Electromotives Ltd. *Plastering:* J. H. Jenner (Plasterers) Ltd. *Coping stones:* Kendell's Stone & Paving Co. *Structural steelwork:* Lindsay Paddington Ironworks (1948) Ltd. *Bricks:* Richard Parton (Builders Merchants) Ltd. *Car conveyors and sheet steel floors:* S. E. Opperman Ltd. *Car lifts:* Porn & Dunwoody (Lifts) Ltd. *Lift gates:* Potter Rax Ltd. *Electric signs:* Phoenix Electrical Co. (London) Ltd. *Piling to foundations:* West Piling & Construction Co. *Metal work:* Zenith Light Engineering Products Ltd.

Garage at Leyton. *Architects:* Challen and Floyd. *General contractor:* Stirton Partners Ltd. *Sub-contractors: Steelwork:* Joseph Parks and Son Ltd. *Electrical:* F. W. Gale. *Glazing:* Warrer (Glass) Ltd. *Showroom flooring:* Jaconnello Ltd.

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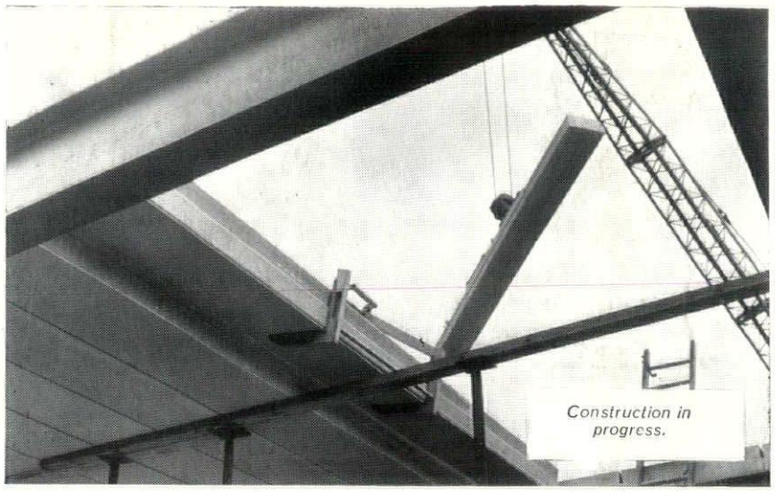
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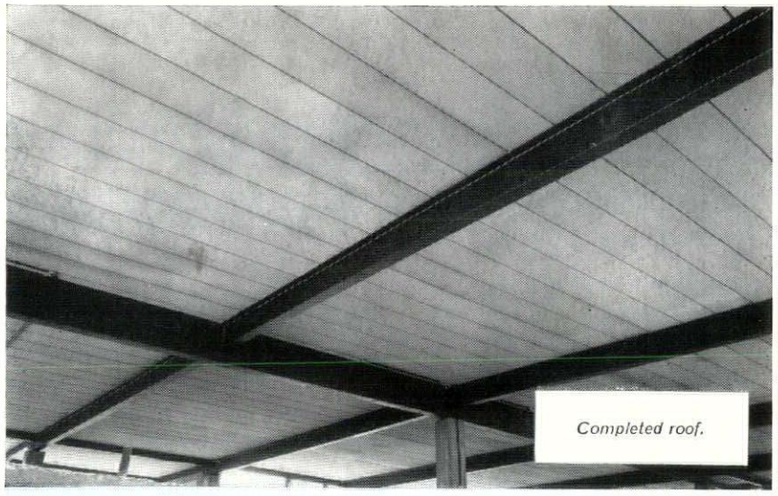
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